

Title: *A mixed methods exploration of potential links between ankyloglossia (tongue-tie) and muscle tension relating to the voice in Western classical singers through analysis of literature, questionnaires and interviews with four singers and four health experts.*

Research question: *Are there any links between ankyloglossia and muscle tension relating to the voice in Western classical singers and what are the recommendations for singing teachers in recognising potential symptoms and offering guidance?*

Antonia Thwaites

2336293

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Table of Contents

Project Proposal	3
Introduction.....	5
– Personal Context.....	5
– Justification.....	5
– Intended Impact	5
– Learning Outcomes	6
Literature Review	6
– Methodology	6
– Introduction	6
– What is ankyloglossia?	7
– How could this relate to the singing voice?.....	9
Methodology and Methods	11
– Paradigm	11
– Research Design	12
Participants	12
Ethics	14
Insider Research	14
Data Analysis	15
– Descriptive Statistics.....	16
Findings and Discussion.....	16
Conclusion	31
References	32
Appendices	40

Project Proposal

This research was inspired by my experience as a Western classical singer (WCS) diagnosed with persistent Muscle Tension Dysphonia (MTD). After limited improvements from Voice Therapy (VT), I discovered I was tongue-tied. More positive outcomes were felt from Myofunctional Therapy - used to improve tongue function and strength (especially for those with tongue-tie) (Zaghi et al, 2019; Baxter et al, 2020; Summersgill et al, 2023). My Myofunctional Therapist and I hypothesised that tongue-tie was likely contributing to my MTD (Rogers, 2025).

However, controversy surrounds tongue-tie, with some doctors denying its existence (Kassandra, 2023) and others contending it contributes to myriad bodily symptoms (Messner and Lalakea, 2002; Zaghi et al, 2019; Baxter et al, 2020) such as chronic neck and shoulder tension, migraines, temporomandibular disorder, sleep issues, breathing difficulties, and vocal/singing problems (Zaghi et al, 2019; Baxter, 2022; Luffey, 2025). Limited research has been conducted on adults (Zaghi et al, 2019), less still on singers (Freedman-Muchnick, n.d). Considering how vital the tongue is in singing (Nair, 2021), it is surprising that only one peer-reviewed study exists linking ankyloglossia to MTD in singers (Summersgill et al, 2023). This study revealed largely positive findings suggestive of worthwhile further pedagogical research. Additionally, it implied that in some cases MTD might be related to undiagnosed ankyloglossia - which is potentially underacknowledged within the vocal community due to a lack of peer-reviewed literature (Summersgill et al, 2023). This research gap could affect singers' careers and vocal longevity. Summersgill et al (2023) suggest an assessment for ankyloglossia should be explored in singers with MTD that is unresolved through VT and other traditional pathways. However, many singing teachers and voice doctors appear unaware of any potential connection, meaning singers could miss out on treatment. Having studied with prominent singing teachers who had little knowledge of the condition, as a researcher practitioner I aim to:

1. Discover more about tongue-tie effects on WCSs.
2. Improve my pedagogical expertise – enhance ability to recognise and refer potential tongue-ties.
3. Further my research skill and ability to work with mixed methods research (MMR).
4. Contribute to an under-researched field.

If links are discovered in my research, I believe this will raise awareness and help more singers unlock their voices where traditional methods have fallen short (Summersgill et al, 2023; Luffey, 2025).

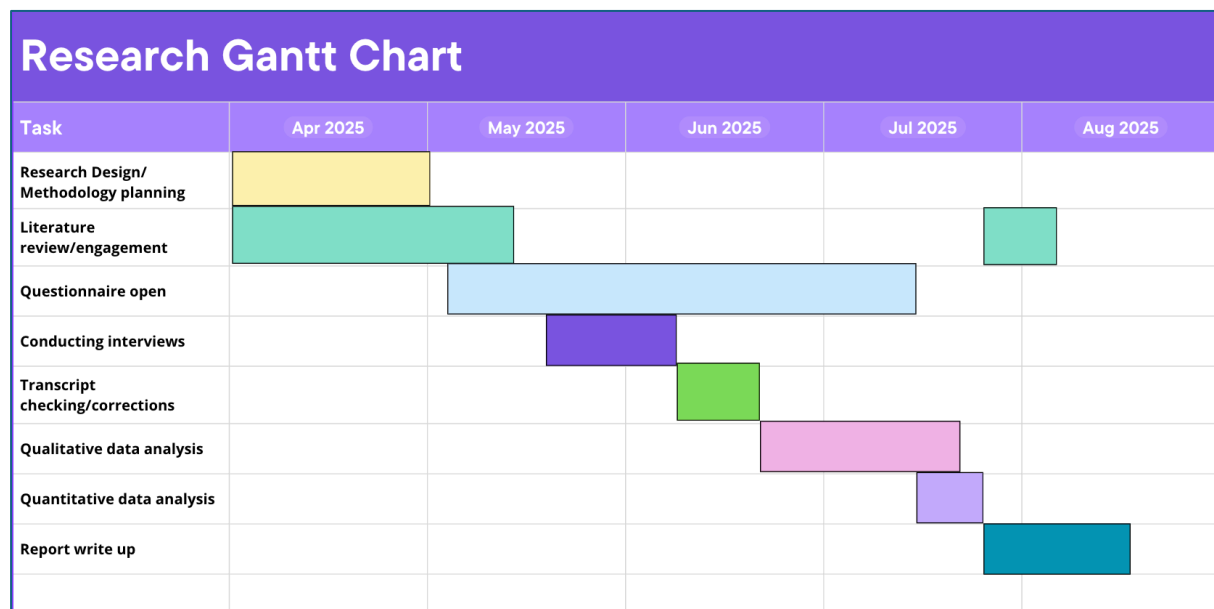
The study takes a MMR approach, embedding quantitative results within qualitative data. The overarching paradigm will be Pragmatism, which supports MMR focused on what best serves the research question (Kelly and Cordeiro, 2020; Pretorius, 2024).

Methods:

1. Literature review
2. Two sets of semi-structured interviews with
 - a. singers with experience of ankyloglossia
 - b. experts such as Myofunctional Therapists, Speech Language Therapists and surgeons
3. Quantitative questionnaire - to gather statistical data on incidence rate/more generalisable findings

As an insider researcher, I chose not to bracket my experience, since it offers unique insight into the topic and language (Holmes, 2020). Therefore, Reflexive Thematic Analysis which embraces the researcher's interpretation will be utilised, along with a reflective journal to ensure transparency and reflection on my subjectivity (Braun and Clarke, 2019). The study has undergone review by the UWTSD ethics board and will conform to ethical expectations such as anonymity, the right to withdraw at any time and data protection.

Project Timeline:



Report

Introduction

– Personal Context

As a Western classical singer (WCS) and singing teacher with personal diagnoses of Muscle Tension Dysphonia (MTD) and ankyloglossia (tongue-tie), I bring the insight of an insider-researcher to this study. After 17 years of Western classical singing (WC-Singing) lessons including conservatoire training, I was diagnosed with tongue-tie. During training I studied with renowned pedagogues, but tongue-tie was never mentioned. My diagnosis surprised my vocal circle but offered potential reasoning for why I developed persistent MTD after years of in-depth training. Having been advised by voice professionals that tongue-tie had no link to MTD, I decided to pursue therapy regardless, having seen limited results from traditional Voice-Therapy and rehabilitation. After several months of Orofacial Myofunctional Therapy (OMT), I noticed improvements in swallowing and orofacial muscular function. I believe this contributed to reduced vocal tension, improved vocal stability and range increase.

– Justification

Given limited research in this area (Freedman-Muchnick, n.d), the significance of personal improvements was naturally based on conjecture. Yet validating links were found on singers' blogs and online websites (Csok, 2023; Algoet, 2024; Radosz, 2024; Luffey, 2025). Considering how vital the tongue is in singing (Nair, 2021), it is surprising how little awareness there is of tongue-tie (Freedman-Muchnick, n.d; Ebrahimian, 2025). To date, only one peer-reviewed study linking ankyloglossia to MTD in singers exists (Summersgill et al, 2023) which showcased significant improvements following intervention. Positive findings render the research gap more concerning because singers may miss out on treatments that could enhance their careers and vocal longevity.

– Intended Impact

Therefore, this research aspires to contribute to knowledge, raise awareness of a condition that could be highly relevant for WCSs, and help students release their voices where traditional methods have fallen short (Summersgill et al, 2023; Luffey, 2025).

– Learning Outcomes

Project aims:

1. Discover more about tongue-tie effects on WCS's tension.
2. Improve my pedagogical expertise – enhance ability to recognise and refer potential tongue-ties.
3. Further my research skill and ability to work with mixed methods research (MMR).
4. Contribute to an under-researched field.

Literature Review

– Methodology

Preliminary investigation highlighted limited peer-reviewed research on tongue-tie and vocal tension. Grey literatures (dental websites/singing teachers/podcasts) were therefore important to supplement data from my initial search of 'tongue-tie effects on singing'. The focus was on two peer-reviewed search avenues: tongue-tie/ankyloglossia as a medical condition, and tongue-tension in WC-Singing as a separate phenomenon. Inclusion for ankyloglossia literature were a mention of voice/speech or tension that could be assumed relevant to singing. Where possible, literature within the last ten years was prioritised but more historical perspectives were included due to limited research on the topic.

– Introduction

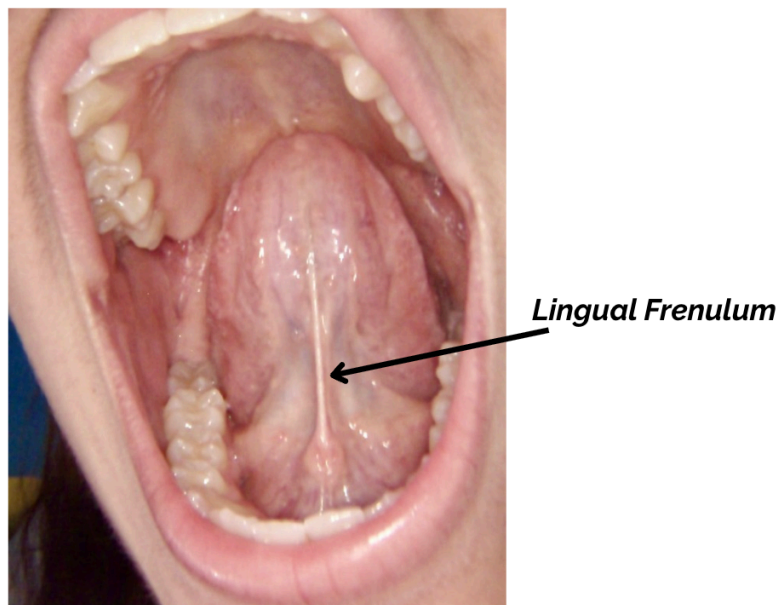
Ankyloglossia has been proposed as a condition that has the potential to hinder technical vocal development and increase susceptibility to vocal pathologies (e.g. Muscle Tension Dysphonia (MTD) (Luffey, 2025) - an umbrella term for tension relating to the larynx and/or surrounding muscles (Summersgill et al, 2023)). Its impacts on singing are potentially under-recognised due to limited research and awareness (Zaghi et al, 2019; Baxter, 2022). It is however widely acknowledged that WC-Singing requires intensive training (Chapman, 2017; Crocco, McCabe and Madill, 2020; Bruder and Larrouy-Maestri, 2023). Demanding muscular coordination means singers are likened to "vocal athletes" (Pestana, Vaz-Freitas and Manso, 2017, p.722; Kwok and Eslick, 2019, p.58; Savareh et al, 2023, p.875). Furthermore, singers tend to have a high vocal load (Pestana, Vaz-Freitas and Manso, 2017; Crocco, McCabe and Madill, 2020) which can increase susceptibility to vocal pathology/MTD (Cohen et al, 2009; Sielska-Badurek et al, 2017; Savareh et al, 2023). Pestana, Vaz-Freitas and Manso (2017) found 46.09% of singers self-reported dysphonia at some stage of their career and

Kwok and Eslick (2019) found “laryngeal pain” to be singers’ most common complaint (p.59). Additionally, it is recognised that grappling with some degree of vocal tension is unavoidable when learning to sing (LeFevre, 2011) and a goal of building vocal technique is to “reduce laryngeal tension” (Savareh et al, 2023, p.875). This supports a strong rationale for continued research into singers’ vocal health particularly pertaining to vocal tension and whether ankyloglossia has the potential to worsen symptoms (Baxter, 2022; Summersgill et al, 2023; Luffey, 2025).

– What is ankyloglossia?

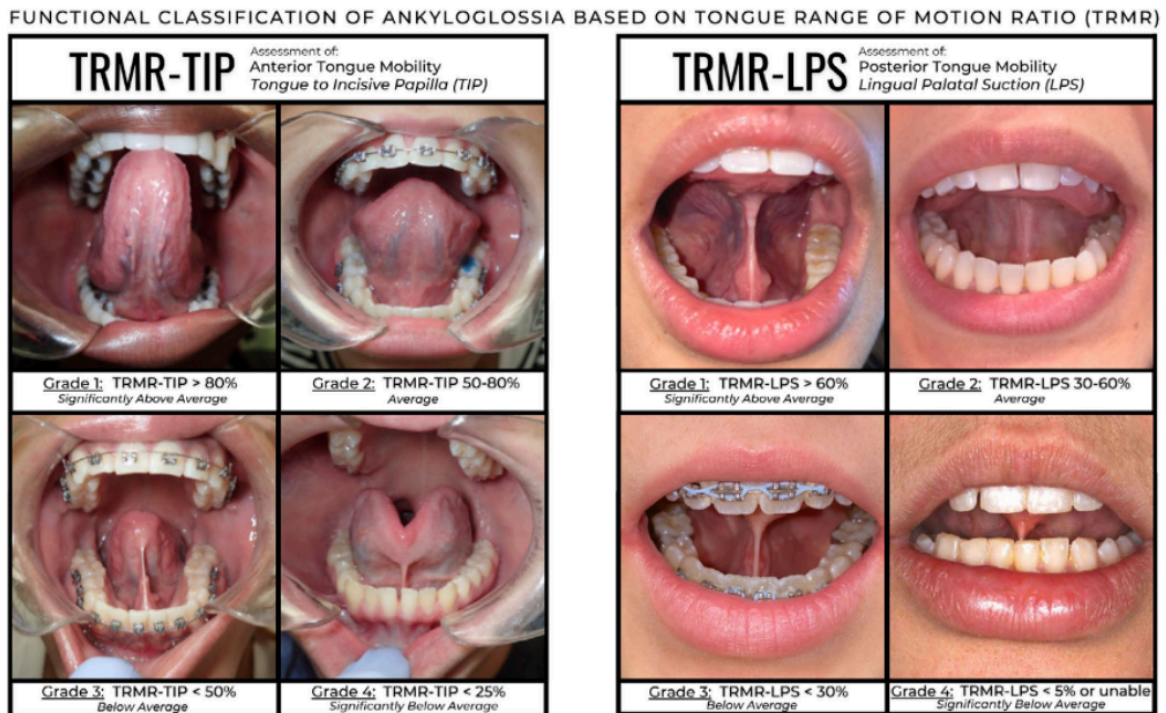
Ankyloglossia is a congenital condition where the lingual frenulum (layer of fascia attaching the underside of the tongue to the floor of mouth) is tethered, tight or thick, potentially leading to a restriction or abnormality of tongue function (Zaghi et al, 2019; Mills et al, 2020; Wang et al, 2021; Summersgill et al, 2023) (Figure-1).

Figure-1: Image showing a tight lingual frenulum.



This could cause issues such as poor oral hygiene, dysphagia, orofacial and bodily tension, neck/shoulder tightness, temporomandibular disorder (TMD), and sleep, breathing, speech or singing difficulties (Messner and Lalakea, 2002; Yoon et al, 2017; Zaghi et al, 2019; Summersgill, 2023; Luffey, 2025). Some professionals grade ties from 1-4 of severity (Figure-2) (Zaghi et al, 2021) and if symptoms are significant, tongue-tie release (surgery) may be warranted (Summersgill et al, 2023; Davis, 2024).

Figure-2: Grades of severity tongue-tie classification by Zaghi et al (2021) designed to measure anterior and posterior tongue mobility.



Perhaps the most recognised tongue-tie symptom is breastfeeding difficulty, which is why it is most widely researched in infants (Baxter et al, 2020; Wang et al, 2021). Historically, midwives kept a long fingernail specifically to run inside the mouths of newborns to cut any tethers (Kassandra, 2023). Wang et al (2021) additionally state that tongue-tie surgery was first proposed 2000 years ago in Greek medicine. This highlights long-standing awareness of the condition; however, its significance remains controversial (Messner and Lalakea, 2002; Kassandra, 2023), with some concerned by overdiagnosis (Caloway, Hersh and Baars, 2019; Birth-Savvy, 2025) and others suggesting it is the “latest trend in baby problems” (Kassandra, 2023).

Despite lack of consensus, research implies that tongue-tie could affect between 4-11% of the population, which is not insignificant (O’Shea et al, 2017). Baxter (2022) however claims a higher incidence rate of 32.54%, citing a study on the lingual frenulum in children by Martinelli, Marchesan and Berretin-Felix (2018). This study in fact found 32.54% of children had a posterior lingual frenulum, *not* a posterior tongue-tie. According to the authors, posterior lingual frenulum is a less common anatomical variation of the frenulum, but *does not* qualify necessarily as ankyloglossia (Martinelli, Marchesan and Berretin-Felix, 2018). Baxter is a respected voice in the tongue-tie community, but it is worth acknowledging that his views may be influenced by his personal experience of ankyloglossia as well as invested

interest due to working in the field. However, Baxter's claim of higher incidence is reinforced by his 2021 peer-reviewed article with Lashley and Rendell; finding 26.1% (1 in 4) of 314 child participants had a tongue-restriction. Further study would bolster such incidence rates; however, this does support opinion shared by others in the field that ankyloglossia is more common than many realise (Dovel, 2010; Milburn, 2024; Luffey, 2025).

– How could this relate to the singing voice?

A potential incidence rate as high as 1 in 4 suggests that across a teacher's career, several students could present with ankyloglossia (Dovel, 2010). Yet in many singing studios, the condition appears almost entirely unfamiliar (Freedman-Muchnick, n.d, Ebrahimian, 2025; Luffey, 2025). Tongue-tie could be a significant hinderance to WC-Singing since the tongue arguably plays one of the most fundamental roles as the primary articulator (Miller, 1996; LeFevre, 2011; Nair, 2023; Obert, 2022; Milburn, 2024). Furthermore, WCSs are expected to sing in multiple languages, so the tongue should be dexterous enough to cope with linguistic demands (Heine, n.d).

Anatomically, the tongue muscles attach to the hyoid bone which attaches to the thyroid cartilage of the larynx (Figure-3) (Freedman-Muchnick, n.d; Miller and Schutte, 1981; Miller, 1996; LeFevre, 2011) and links to the rest of the body via fascial networks that run down the midline to the toes (Zaghi et al, 2019; Bordoni and Myers, 2020) (Figure-4):

Figure-3: Diagram showing the muscles that make up the tongue and their attachment to the hyoid bone and thyroid cartilage (larynx).

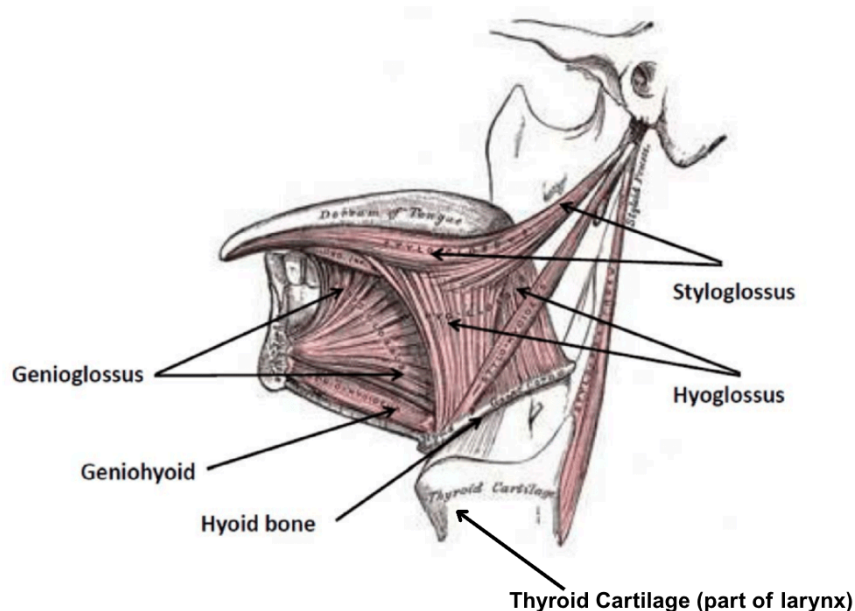
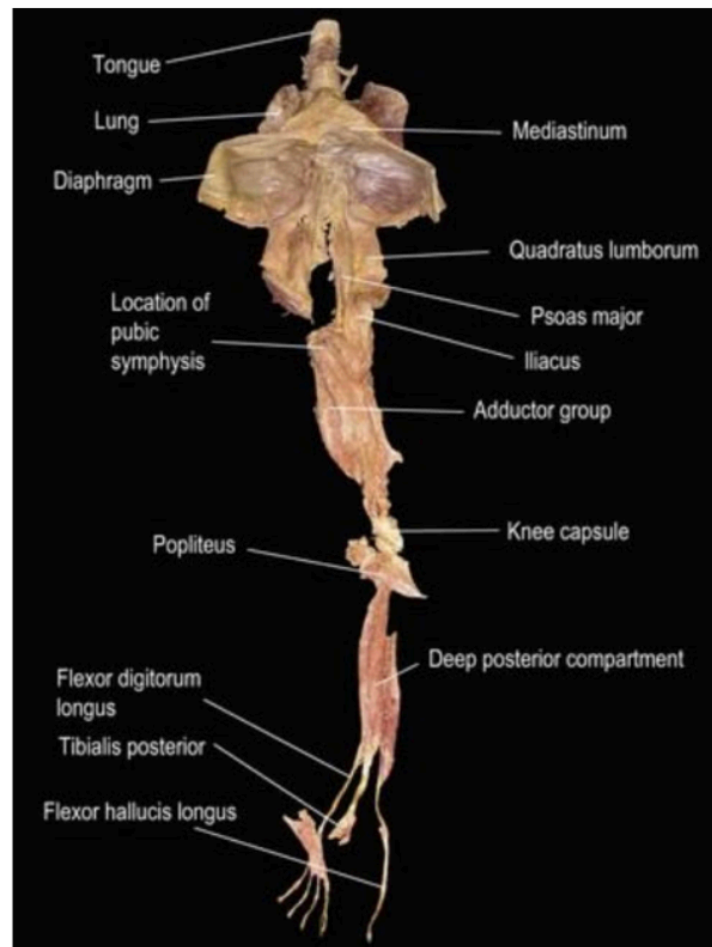


Figure-4: Image from Bordoni and Myers (2020) showing front line fascial connection from the tongue to the toes.



An improperly trained tongue is cited as wreaking havoc on the singing voice and leading to unwanted tension (Miller, 1996; LeFevre, 2011; Sataloff, 2017; Obert; 2022; Chapman; 2023). Therefore, it is not unreasonable to assume that restricted tongue mobility could further restrict the singing-voice (De Resende, Bagarollo, and Constantini, 2023). This opinion is supported on numerous websites and by singers with anecdotal experience and those working in the field as dentists or Myofunctional Therapists (MTs) (Csok, 2023; Freedman-Muchnick, n.d; Algoet, 2024; Davis, 2024; Radosz, 2024; Glen Park Dental, 2025). Symptoms discussed most frequently are vocal fatigue, low singing stamina, orofacial tension, and vocal quality issues such as range and clarity, all of which appear to have good chance of remediation through surgery (Baxter, 2022; Csok, 2023; Milburn, 2024; Luffey, 2025). Summersgill et al (2023) offer the most validating account in their peer-reviewed 12-case study of professional voice users (including four WCSs) with MTD and ankyloglossia. Following surgery, 11 reported considerable improvements to MTD symptoms, particularly

easier phonation, reduced muscle strain, enhanced stamina and superior vocal quality when singing. One soprano reported range increase as well as stronger, more reliable phonation which had previously been unattainable. Another opera singer recalled that directly following surgery their “throat opened up” and stamina immediately improved (Summersgill et al, 2019, p.3). A world-renowned opera singer also commented on the newfound vocal freedom which had previously been restricted by muscle tension (Summersgill et al, 2019, p.3). However, this particular case-study did mention that three weeks post-operation tension began to return to their voice during what is coined the contraction phase (Summersgill et al, 2023). This is a temporary phase due to scar tissue formation during healing (Zaghi, n.d). It implies that tongue-tie release is not a simple ‘fix all’ procedure, and there are considerations as with any surgery. To mitigate issues, the literature suggests the importance of OMT pre- and post-operation to strengthen the muscle and limit retraction and scar tissue (Freedman-Muchnik, n.d; Zaghi et al, 2019; Baxter et al, 2020; Radosz, 2024). Summersgill et al (2023) prescribed this opera singer OMT and bodywork to support them through retraction.

Since research that directly relates tongue-tie to the singing voice is limited, one must look at wider literature that could be applied to singing. For example, many mention speech/articulation and vocal issues as common with tongue-tie (Messner and Lalakea, 2002; Yoon et al, 2017; Baxter et al, 2020; Zaghi et al, 2021; Ebrahimian, 2025). Since it is possible that spoken voice issues carry over into the singing voice (Chapman, 2023), these findings are not irrelevant. Indeed, limited data on tongue-tie in WCSs, coupled with its potentially high relevance, are key factors in my decision to contribute to research in this area.

Methodology and Methods

– Paradigm

This study is rooted in the Pragmatist Paradigm, which allows methodological flexibility and can accommodate conflicting positionality (Pretorius, 2024). Given that singing is highly personal (Miller, 1996; Scott, 2022), I acknowledge a natural alignment to the constructivist ontological stance that suggests reality is subjective and formed of experience (Brown and Dueñas, 2019; Pretorius, 2024). However, I question whether this constitutes ‘reality’ itself or is an individualised perception of a singular reality, leading me towards a post-positivist ontological stance. As an insider researcher, complete objectivity – as expected in positivism – would be unattainable (Scott, 2022). I have therefore chosen to embrace a constructivist

axiological stance valuing subjectivity, reflexivity, and the researcher's involvement (Scott, 2022; Pretorius, 2024) along with a pragmatist epistemological position that considers knowledge incomplete and focuses on discovering practical outcomes (Pretorius, 2024). These ontological, epistemological, and axiological reflections have contributed to the choice of Pragmatism, which additionally encourages MMR concentrated on what best serves the research question (Pretorius, 2024; Winter, 2020; Kelly & Cordiero, 2020).

– Research Design

The study took an embedded MMR design, focusing on qualitative data from semi-structured interviews, whilst embedding a small sample of quantitative data from a questionnaire (Creswell, 2006). Semi-structured interviews were selected to provide deep insight since they allow the flexibility to be participant led (Wilson, 2012). This can be particularly helpful when looking for niche data (Lim, 2024; Masoodi, 2017; Degu and Yigzaw, 2006). Open ended interviews were less suitable since following the literature review, theory was emerging and informed specific interview questions (Foley et al, 2021).

Literature findings similarly inspired the questionnaire, prompting questions around symptoms and surgery (when applicable), including scale, checkbox and close ended questions ([Appendix-1](#)).

These mixed methods were used to provide richer theory evidence (Baran, 2019) as the questionnaire could offer a larger sample than interviews (which are resource heavy) (Lim, 2024) and therefore possibly shed light on incidence rate. Similar method selections were noted in a study on the career choices of music graduates by Wang, Choon and Cheong (2024) which utilised a quantitative questionnaire alongside qualitative interviews.

Participants

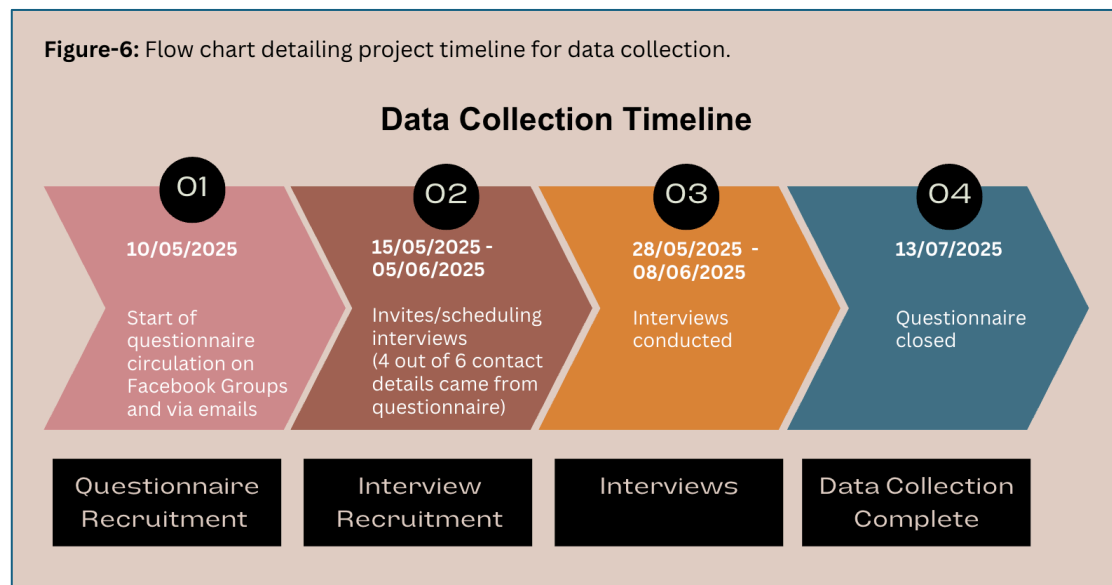
Participants were predominantly recruited via Facebook groups (Franz et al, 2019; Ashfield et al, 2023) for tongue-tie, singers with tongue-tie or singers/singing teacher groups. Members were invited to complete the quantitative questionnaire and/or take part in an interview. The questionnaire was open to WCSs (both hobbyists and professionals) with personal experience of tongue-tie and experts such as Speech-Language Therapists (SLTs), MTs, and dental-surgeons. Overall, 21 participants were recruited (Figure-5). 19 completed the questionnaire and 6 were selected for interviews based on knowledge, level of professionalism and breadth of personal experience. Two semi-structured interview pathways were utilised depending on professional background ([Appendix-2](#)). Interview

inclusion criteria for the WCSs depended on having trained professionally and undergone tongue-tie surgery. Two interviewees were singers with both personal experience and professional expertise. They underwent both question pathways totalling four data sets per pathway.

Figure 5: Table showing participant details and involvement in the research.

Participant Table					
Name (anon.)	Singer with tongue-tie	Expert in tongue-tie	Completed Questionnaire	Interviewed	Experience
Participant-1	✓	✓	✓	✓	Coloratura soprano / Bachelors Classical Vocal Performance / Masters Vocology / Current training programme for SLT and OMT
Participant-2	✓		✓	✓	Contralto / beginning PG vocal training in September
Participant-3	✓	✓		✓	Soprano / Specialist of Orofacial Myology (OMT) since 2018
Participant-4		✓	✓	✓	30 years as SLT, specialising in orofacial myology/oral/motor and ties / Qualified Vocologist.
Participant-5	✓		✓	✓	Soprano / Bachelors Classical Vocal Performance / partial Master of Music (performance) / 10+ years experience performing and teaching singing
Participant-6		✓		✓	30+ years as SLT / dysphagia specialist / tongue-tie and Myofunctional Therapist
Participant-7	✓		✓		Lifelong choral singer / a decade of private voice study
Participant-8	✓		✓		College voice major / freelance classical soloist / voice teacher
Participant-9	✓		✓		Experience as choral singer / small amount of formal voice training
Participant-10		✓	✓		Myofunctional Therapist / Singing Teacher
Participant-11	✓		✓		Classical singing degree / choral experience and as a choral soloist
Participant-12	✓		✓		7 years singing experience / competes in Barbershop
Participant-13	✓		✓		Singing for several years - opera and musical theatre, operatic training (non-professional)
Participant-14	✓		✓		Degree in singing / singing teacher 30+ years
Participant-15	✓	✓	✓		Osteopath / Classical singing degree / performs professionally
Participant-16	✓		✓		Musical Theatre singer / sings classically sometimes
Participant-17			✓		Professional opera, choral & solo singer / chorus and cover at Royal Opera House
Participant-18	✓		✓		Opera singer / Singing Teacher / full time opera chorus member
Participant-19		✓	✓		Specialist paediatric dentist / tongue-tie laser surgeon / treated more than 12500 tongue-ties.
Participant-20		✓	✓		Specialist dentist / tongue-tie laser surgeon
Participant-21		✓	✓		Dentist / performs functional frenuloplasty (tongue-tie surgery)

Data Collection



Ethics

Ethical approval was granted by the UWTSD Ethics Committee ([Appendix-3](#)) and important guidelines were followed such as providing participant information sheets and consent forms ([Appendix-4](#)) assuring anonymity, right to withdraw and data protection details (Lim, 2024; Scott, 2022). By chance, two participants (recruited via questionnaire) who offered to be interviewed had already been cited in the literature review. This is relevant to mention since naturally they supported the points already made. An additional statement was added to their consent forms to make them aware that for the purposes of transparency this would be acknowledged without explicitly naming them to maintain anonymity.

Insider Research

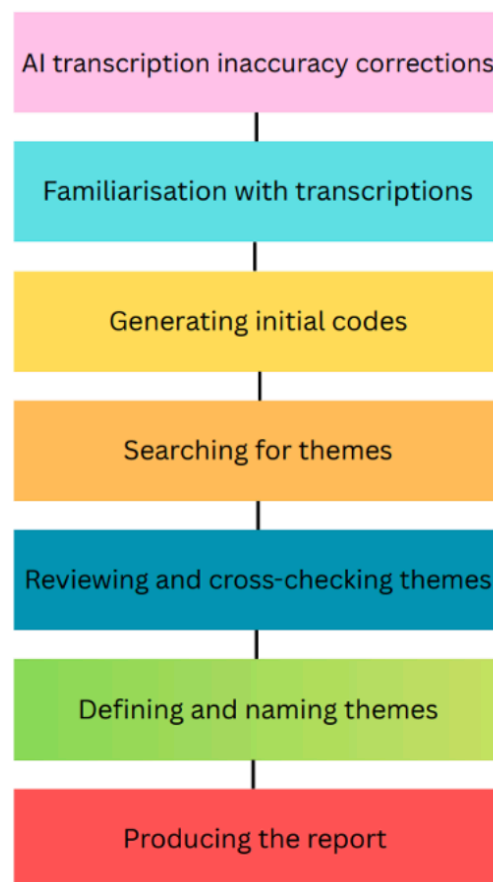
As an insider-researcher conducting qualitative interviews, I was aware of the potential pitfalls of researcher bias and leading questions (Foley et al, 2021). A reflexive journal was kept throughout to help mitigate bias (Scott, 2022) and identify where I could improve my interviewer technique. It has been suggested that insider knowledge can lead to deeper understanding of the material and more insightful questioning (Basit, 2013; Holmes, 2020). Therefore, personal insight was embraced as a positive rather than set aside. Consequently, Reflexive Thematic Analysis (RTA) was selected for data analysis since the researcher's subjectivity and individual interpretation is heavily encouraged in the knowledge generation process so long as reflexivity is practised (Braun and Clarke, 2019).

Data Analysis

– Reflexive Thematic Analysis (RTA)

Qualitative data was analysed using RTA (Figure-7) – chosen for its flexibility and ease for new researchers (Braun and Clarke, 2006). Transcriptions (T) ([Appendix-5](#)) were taken from online interviews via AI software and checked for inaccuracies. Participants were also offered the opportunity to check them. After transcript familiarisation, 214 codes were generated, organised into clusters and arranged in 4 themes and 4 subthemes. Initial coding was inductive, presenting multiple avenues. Themes were produced with attention to the research question and what topics might best relate generally to singers. Heavy corroboration meant themes represented both expert and singer data sets as one. Codes and extracts that contributed to themes can be viewed in [Appendix-6](#).

Figure-7: Image showing phases of data analysis following RTA by Braun and Clarke (2006).



– Descriptive Statistics

Questionnaire data ([Appendix-7](#)) were analysed using descriptive statistics measuring averages/central tendency (mean, median, mode) and standard deviation measure of spread for rating scale questions.

Findings and Discussion

Figure-8 presents the principal findings (qualitative themes). Given the research design and small study scope, the quantitative results are embedded directly into the discussion rather than reported in isolation. Integrative discussions can be appropriate for pragmatist MMR (Murry et al, 2023) as well as allow for immediate interpretation and triangulation with literature. Figure-9 outlines the narrative arch of discussion.

Figure-8: Image showing themes and subthemes.

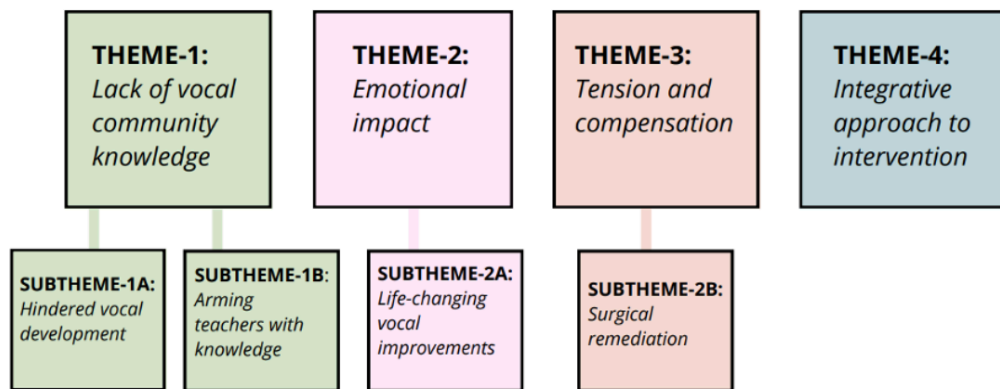
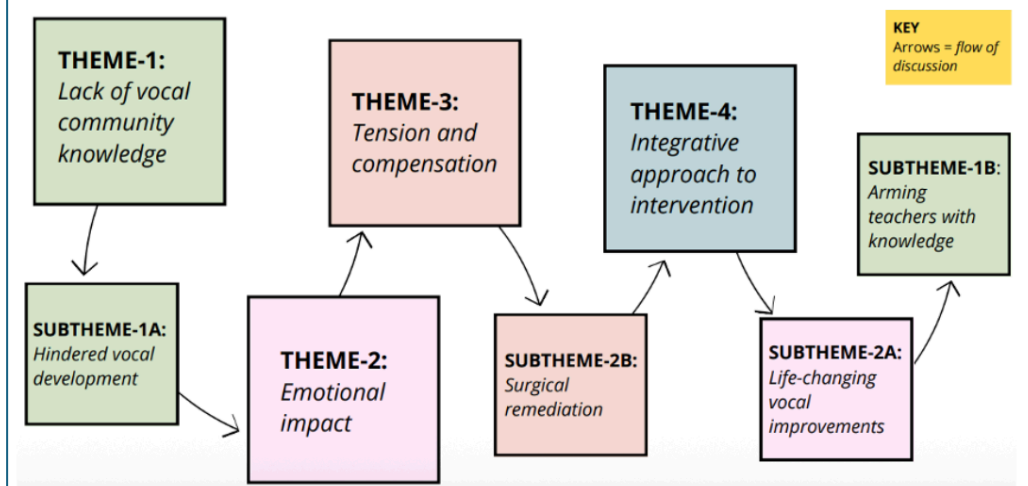


Figure-9: Image showing themes and subthemes in narrative arch of discussion.



This study investigated links between ankyloglossia and muscle tension in WCSs. Themes that emerged were inter-related and built a narrative around knowledge gaps, vocal and psychological issues, and pathways forward.

Participants described an overwhelming lack of awareness of ankyloglossia amongst singing teachers and other voice professionals.

“How could I be going to all these singing teachers and vocal coaches and vocologists and ENTs, and no one realised that I have a tongue tie.” –T4

This notion was corroborated in the literature (Zaghi et al, 2019; Baxter, 2022), and the quantitative questionnaire which revealed 4/14 (29%) respondents had their condition identified by their singing teachers. This is an arguably low statistic when singing teachers are often the first to recognise vocal health issues (Scearce, 2024). However, this may not hold true among other/larger samples so would require further research to confirm.

Instead of teacher detection, data suggested tongue-ties were self-discovered before seeking professional diagnosis.

I was pretty desperate [...] I did all my research [...] back then there was nothing [6/7 years ago]. Nothing about singers and tongue ties. I mean, it was like Mars.. barren.
– T3

Interviewed singers (who were not additionally tongue-tie professionals) spoke on the subject as though they were experts in their own right. Lack of vocal community guidance likely incited extensive solo research to understand their condition and how to move forward. Frustration that ankyloglossia’s effects are not better recognised turned them into passionate advocates.

Data further exposed that even professionals *with* knowledge offered varying treatments. One participant recounted their surgeon’s caution before their third release:

“...he said ‘your restriction is mild...I don't think you're going to see any benefits whatsoever from a release’...” – T5

This singer proceeded with surgery elsewhere (following advice from their OMT singing specialist) which had a “*mind-blowing*” vocal impact, notably gaining an octave in range on

the day of surgery. This highlights that knowledge on how to treat professional singers is inconsistent and seeing top professionals is necessary.

“If they're not the best person in the country, don't go there. It's not worth it.” – T3

Similarly, participant-3 described singing teachers who might be aware of tongue-tie but uninformed as to its significance:

“To lie to people and to say...Don't get a tongue tie release because it'll ruin your voice, I mean... I don't think some teachers understand how huge of an impact this has on people.” – T3

This emphasises how lack of awareness can foster false narratives, possibly obstructing access to intervention. This is particularly alarming if incidence is frequent or singing is profoundly impacted. Although incidence rate is elusive and warrants further study, several interviewees agreed it is *“way more common than people think”* – T3. This supports the Baxter, Lashley and Rendell (2021) revelation that 1 in 4 babies had a restriction. Additionally, in questionnaire responses, three surgeons estimated performing a total of 330 adult tongue-tie releases between them each year. Although conceptually this is modest, research being predominantly paediatric (Lichnowska and Kozakiewicz, 2021; Wang et al, 2021) could mean underdiagnosis in adults.

“There's a lack of research on adult tongue ties in general [...] not just among singers, but in the general population.” –T2

Another participant discovered their own tongue-tie through their baby's (T5), further enriching this viewpoint. Contextualising the questionnaire this way could make incidence more meaningful than at first glance.

The impact on singing appeared even more concerning across the data set as a whole. The experts who responded to the questionnaire strongly agreed on the relevance vocally, with two semantically opposite questions designed to confirm reliability (Figure-10). Low standard deviation scores displayed heavy corroboration, but spread was larger on question-A, showing more variation in responses. However, 6/7 selected '1', (hence the mode and median) so this variation accounted for the one response of '3' by a surgeon (suggesting they neither agreed nor disagreed). This may have been due to the wording of 'professional singers' of which tongue-tie experts may not have extensive familiarity.

Figure-10: Table showing descriptive statistics (averages) and standard deviation (spread) of responses to expert questions A and B:

<u>Question</u>	<u>Mean</u>	<u>Median</u>	<u>Mode</u>	<u>Standard Deviation</u> (2.d.p)
Expert Questions				
A) "I believe tongue-ties could negatively impact professional singers". (1 = strongly agree / 5 = strongly disagree)	1.29	1	1	0.70
B) "I believe a tongue-tie has little to no effect on the voice". (1 = strongly agree / 5 = strongly disagree)	4.71	5	5	0.45

Moreover, interviewed singers reported numerous examples of how their technical development was difficult, unreliable and confusing to their teachers.

"I had to [...] push my technique development against my anatomy..." – T5

Crucially, this led to them being wrongly profiled to explain technical insufficiency:

"I had some really horrible things said to me and to others of my clients... people are assumed that they're stupid, that they're dumb, that they're lazy." – T3

Others felt *"blamed"* for their difficulty, judged as *"not a very good singer"* –T2 and mistreated in lessons:

"Every voice teacher..."yelled" at me about not opening my mouth wide enough."
–T1

Participant-1 found that during surgery their jaw was able to *"open more and more"*, something that was physiologically impossible previously. Literature supports the effect of tongue-tie on jaw opening (Lichnowska et al, 2024), therefore, had Participant-1's teachers known they might have taught more sympathetically. Indeed, if the overall research gap were less prominent, working positively with tongue-tied singers would likely be well within a singing teacher's capabilities - especially given their adaptability to individual needs and ability to identify unique vocal issues (Fletcher, Davidson and Krause, 2024).

This oversight had direct psychological consequences for the singers. A quote that captured this crossover is:

*“I started to be really [...] **disappointed** because I would [...] always hear [...] you have a lot of talent. Not a lot of skill [...] how many damn degrees do I need before I have the skill?” –T3*

As demonstrated here, singers recounted deeply frustrating vocal journeys prior to diagnosis. One expert confirmed that singers’ tongue-ties were *“not being discovered at the beginning of their training”* –T4, with most of them training numerous years yet still *“missing something”* vocally –T2. One singer - whose voice transformed after surgery - was even encouraged by their teacher to consider a different career path, knocking their confidence (T5). The long-term emotional impact ran deep as they reflected on how their confidence still needs work despite their post-release vocal enhancement:

“...counter a lifetime of restriction and those messages of... ‘your instrument’s not good enough’...it’s challenging.”

These examples indicate that the singers believed their lack of achievement was down to ability rather than external factors, undermining their self-confidence. Literature acknowledges that vocal dysfunction can cause emotional strain (Chapman, 2017; Kwok and Eslick, 2019) but there is a gap in peer-reviewed literature that links this to tongue-tie. Consequently, emotional impact was not addressed in the literature review and its prominence appeared unexpectedly in interviews. Singers’ mental health awareness is highly relevant for pedagogues however, with Bernardini and DiMaio (2022) noting the influence teachers have on students’ confidence. Interview data suggested misjudgement from teachers triggered immense *“frustration”* –T3, *“lacking self-worth, depression”* –T4 and the desire to *“give up”* singing –T2/T3. Participant-3 even became tearful explaining the *“huge emotional impact”* this had on them and countless clients. Students’ mental health might be better supported if teachers understood tongue-tie. Empowering teacher knowledge is therefore addressed on page 29.

Data emphasised repeatedly that the concerns discussed thus far were the result of tongue-tie induced compensation and tension, particularly in the orofacial structure, neck/shoulders and diaphragm. This was endorsed by the literature (Baxter, 2022; Csok, 2023; Summersgill, 2023; Milburn, 2024) and questionnaire which saw similar reports of tension (Figures-11/12). The most reported were ‘laryngeal muscle tension’ and ‘neck and shoulder tension’ across both expert and singer responses.

Figure-11: Chart showing number of singer participants who identified relevant symptoms in answer to question: ***‘Please tick all vocal symptoms you have or have had that you feel relates/related to your tongue-tie.’***

14 overall responses

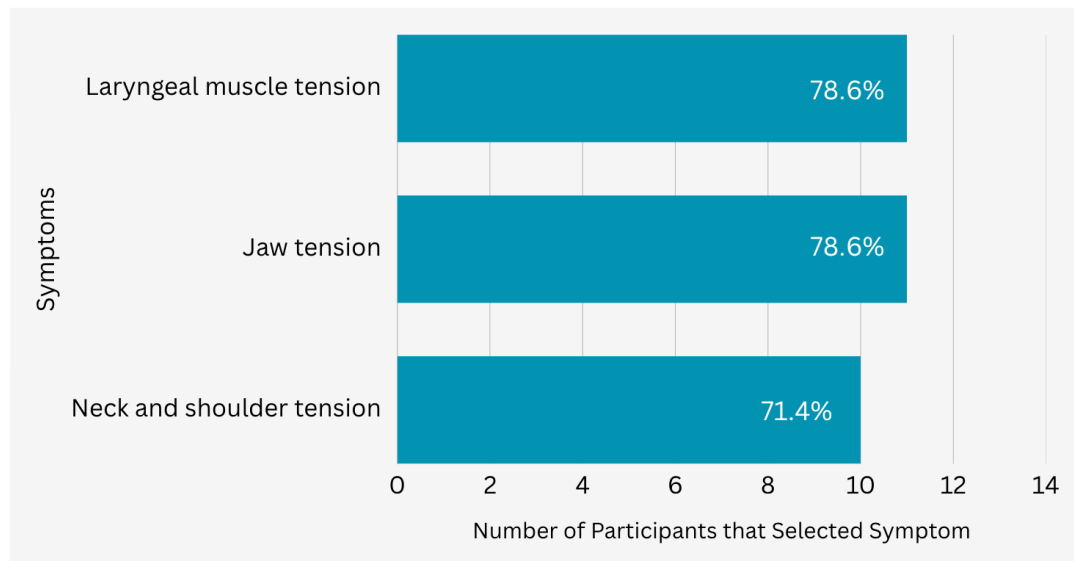
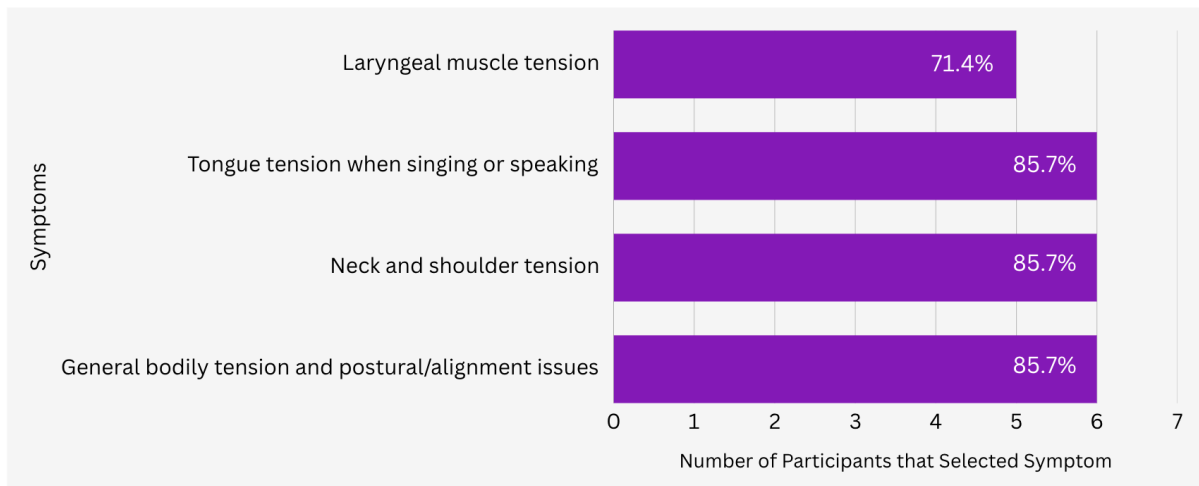


Figure-12: Chart showing number of expert participants who identified relevant symptoms in answer to question: ***‘In your expert opinion, could the following symptoms observed by singers be related to tongue-tie? Tick all that may be relevant.’***

7 overall responses



Interview data implied working in compensation against this tension produced issues with “range, stamina, hoarseness” –T4, “posture”, “fatigue” –T1, “voice-loss” –T6 and demanded “massive [vocal] effort” –T2. Participant-1 commented:

“...it was like somebody was like standing on my diaphragm when I was trying to breathe” –T1.

Another declared:

“Pain. God, so much pain” –T3.

Given that many pursue professional careers motivated by enjoyment and love of music (Wang, Choon and Cheong, 2024) it is striking how unenjoyable singing with these issues became.

Despite this, singers learnt to camouflage their restriction:

“Having the tongue tie, everything inside has to compensate to be able to replicate what you think is normal...” –T1

However, many commented that compensation came at a high physical cost. One memorable example came in T5:

“I was able to manufacture a very high-pressured tongue roll...that was so muscular and intense in pressure that my eyes would vibrate and I couldn't see.”

This emphasises the lengths to which singers may go to achieve vocally, possibly even to the detriment to their vocal health. As Van-Houtte, Van-Lierde and Claeys (2011) imply: vocal compensation around an underlying issue could increase susceptibility to MTD meaning this extra-hard work could be ill-placed.

Furthermore, one expert noted that as singers age, sustaining compensatory patterns tends to be trickier:

“...when you can't compensate anymore, it [symptoms] becomes more prevalent...”
–T4

Participant-5 also explained their issues only began to show by post-graduate level, meaning they became technically *“obsessive to keep up with [their] peers”* –T5. This highlights that compensation is unsustainable. Even working hard on technique to reduce vocal tension (LeFevre, 2015; Savareh et al, 2023) may not offer remediation.

“Regardless of how good/bad my technique was, there was always going to be an element of tension that would exacerbate everything else I did.” –T2

These examples are significant findings for the research question and support desirability of earlier intervention. The difficulty for singing teachers, however, may lie in recognising when tension is an inevitable result of vocal training (Savareh et al, 2023) and when it might warrant review. Attainable teacher recommendations are addressed on page 29.

The tension and tongue-tie link was further strengthened when positive results were seen post-release.

“On the day of surgery [after surgery] ...my colleagues commented that there was visibly less tension in the anterior neck when I was singing.” –T5

The potential for tension release post-operation was reinforced in the literature (Baxter, 2022; Csok, 2023; Summersgill et al, 2023; Luffey, 2025) and in the questionnaire which saw a mode of 1 and mean of 1.75 in answers to the below question (Figure-13). Additionally, the standard deviation 0.83 (Figure-14) showed low variability in answers, reinforcing the agreement amongst participants. However, it is important to recognise that 3 individuals who answered were also interviewees. This overlap may enhance the incidence of these overall findings superficially.

Figure-13: Graph showing responses to question: **‘Overall, how beneficial was the surgery for reducing tension in your singing voice?’**

8 responses

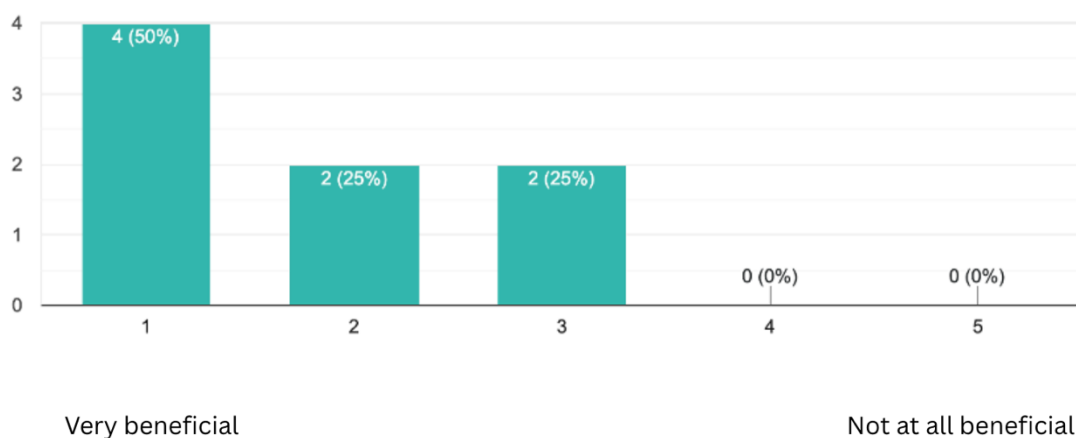


Figure-14: Table showing descriptive statistics (averages) and standard deviation (spread) of responses to singer question:

<u>Question</u>	<u>Mean</u>	<u>Median</u>	<u>Mode</u>	<u>Standard Deviation</u> (2.d.p)
<u>Singer Questions</u>				
Overall, how beneficial was the surgery for reducing tension in your singing voice? (1 = very beneficial / 5 = not at all beneficial)	1.75	1.5	1	0.83

Despite generally positive results, participant-1 explained that their MTD symptoms did not entirely resolve, highlighting that surgery is not a simple solution for all vocal tension. However, improvements were felt, and they gained strategies/exercises to keep symptoms at bay.

Others shared the notion that tension release was not necessarily simple. An expert explained:

“They’ll most likely experience immediate release in muscle tension and pain, and it’ll be the best right after the release and as it starts to heal, they may get a little tighter...”

–T4

Therefore, all interviewees advocated that the success of intervention hinged on an integrative approach that went beyond the release itself. Participants indicated that tension and compensation patterns embedded over years require “*persistent work*” to healthily reprogramme –T5. This was achieved through OMT exercises and bodyworks such as Osteopathy, Chiropractic, Physiotherapy and Myofascial release:

“It wasn’t just surgery, and it wasn’t surgery and Myofunctional Therapy, it was also bodywork.” –T5

Experts stressed the absolute necessity of long-term engagement with OMT pre-and post-release for neuromuscular repatterning – an opinion reinforced in the literature (Freedman-Muchnik, n.d; Zaghi et al, 2019; Baxter et al, 2020; Chapman, 2023). One attributed the controversy surrounding tongue-tie surgery (Kassandra, 2023) to improper release protocols:

“The backlash to tongue tie release with other clinicians, ENTs for example: ‘oh it doesn’t work’. Well, it doesn’t work because you can’t just cut a tongue. You haven’t got the patterning...” –T6

This viewpoint was further supported in the questionnaire (Figure-13) where 6/8 (75%) felt surgery was beneficial for reducing vocal tension, but the remaining 2 who felt unsure were the only ones who never engaged with OMT.

Questionnaire participants were also asked to share their ‘results of myofunctional therapy *only*’, which generated modes of 1 and 5 showcasing the variance in opinion (presented also by the higher standard deviation score) (Figures-15/16).

Figure-15: Graph showing responses to question: *‘Overall, how beneficial was Myofunctional Therapy for reducing tension in your singing voice?’*

7 responses

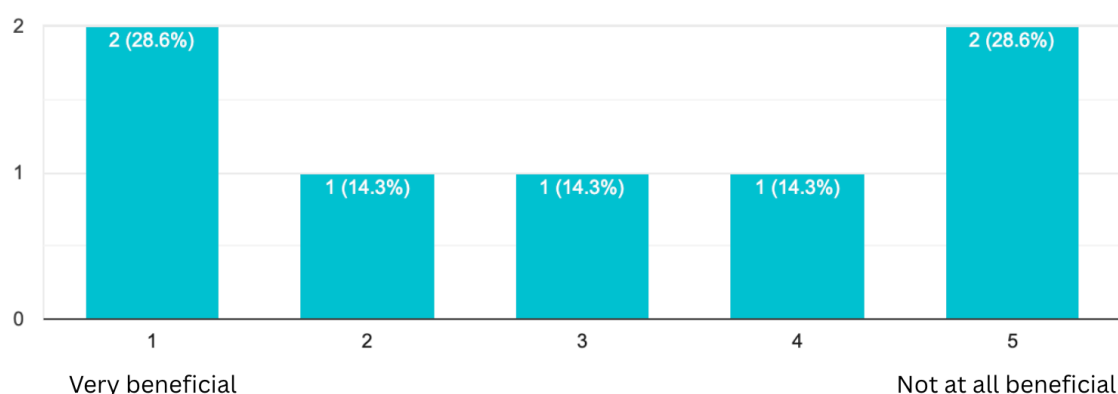


Figure-16: Table showing descriptive statistics (averages) and standard deviation (spread) of responses to singer question:

Question	Mean	Median	Mode	Standard Deviation (2.d.p)
Singer Questions				
Overall, how beneficial was Myofunctional Therapy for reducing tension in your singing voice? (1 = very beneficial / 5 = not at all beneficial)	3	3	1 & 5	1.60

This supports the necessity of an integrative approach since the generalisable efficacy of OMT may hinge on its use in conjunction with surgery. However, one expert acknowledged

OMT's potential for improving symptoms even before surgery but revealed it could depend on severity and individual factors (T6). This perhaps explains these varied results.

Overall, interviewed experts were mostly in agreement, however recommended OMT therapy times differed. The two MTs with clinical SLT backgrounds insisted on more caution and time around the entire therapeutic process, with one warning that some MTs without this clinical background operate therapy *"package programmes"* for *"marketing"* purposes rather than individualised care –T4. The slight difference in approach between the singers and SLTs may have been due to the singer's personal tongue-tie experience. They may have been more readily aware of the mental and vocal strain affecting their clients, perhaps aiming to facilitate change as soon as possible for this reason. It was also suggested that singers are a *"different breed"* of client due to their vocal training rendering them *"aware of posture, alignment, of vocal hygiene"* –T6. Another expert agreed:

"Singers usually start with much more muscle tone than normal humans, so they can start a little bit further [ahead with OMT] sometimes." –T3

This implies that singers may be able to complete the necessary therapeutic programme quicker than average, however, even those experts operating generally quicker processes agreed that readiness for release should be assessed case by case.

"...you're not ready 'till you're ready." –T3

A further endorsement of OMT came in T4 where an expert attested that proper engagement with OMT leads to *"less scarring and [tie] reattachment"* - an idea also seen in the literature (Lichnowska and Kozakiewicz, 2021), questionnaire and interviews: Two interviewees underwent their first release *without* OMT, attributing the lack of therapy in part to why they required further revisions. One questionnaire participant wrote that their tie regrew as they were not aware of OMT at the time. These points further illustrate how essential a holistic approach is in gaining optimum outcomes. However, they also reveal the commitment involved, often to performing mundane daily exercises (Lichnowska et al, 2024).

"Myo is habits, chewing, tongue posture, swallow..." – T3

This may appear somewhat extraneous, but de Resende, Bagarollo and Constantini (2023) support that these functions have a direct effect on singing. Consequently, the process is time-consuming, which was the only downside highlighted by the singers.

Nevertheless, commitment to this holistic process revealed life-changing improvements for singers post-release, including enhanced mental health and career prospects (Freedman-Muchnick, n.d).

“Some of my clients even tell me that [...] emotional BS leaves. They sleep better, their relationships are better, their lives are better...not to mention all of the people that are this close to quitting...then all of a sudden[...] they get to blossom in their careers.” –T3

Similar opinion was reflected in the questionnaire where the majority saw quality-of-life improvements, with low deviance in answers (0.83) (Figures-17/18).

Figure-17: Graph showing responses to question: *‘Overall, how beneficial was the surgery to your quality of life as a singer?’*

8 responses

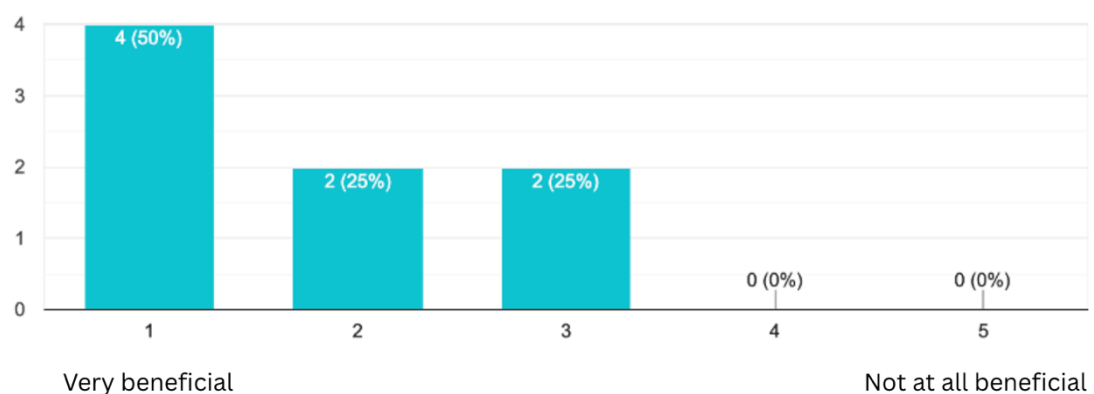


Figure-18: Table showing descriptive statistics (averages) and standard deviation (spread) of responses to singer question:

Question	Mean	Median	Mode	Standard Deviation (2.d.p)
Singer Questions				
Overall, how beneficial was the surgery to your quality of life as a singer? (1 = very beneficial / 5 = not at all beneficial)	1.75	1.5	1	0.83

Other interviewees spoke emotively of their vocal liberation:

“It's like a tree on a hill [...] that withstands the storms, and its roots are really strong... I had to push against this for so many years singing[...] that once it was released, my technique was free to fly...” –T5

In summary, participants advocated so strongly for tongue-tie release that the general unawareness appeared startling. *“Singing teachers need to be educated on this” –T5* was echoed across interviews, with one singer specifying:

“If I was a teacher, I would always check my students for tongue-ties first thing.” –T2

In participant-2's case, having developed expert-like knowledge, this would be superlative. In practice though, this requires teachers to have in-depth understanding particularly if recognising mild/posterior tongue-ties. This is worth noting since participant-5 experienced huge reductions in tension yet was only 'mildly' restricted. The notion that even moderate ties can be highly symptomatic is further corroborated in literature (Baxter et al, 2020) and especially relevant to WCSs (Chapman, 2023). Expert participants agreed:

“...many posterior or mid tongue restriction ties have worse functional symptoms than a severe anterior tie...” –T4

Consequently, singing teachers should be aware of symptoms, since they may be more relevant (Baxter et al, 2020) in determining surgical choices than appearance alone (T3/T4). This is a notable finding for my research question; however, the aim is not to encourage teachers to diagnose their students. Accordingly, how to execute tongue-tie tests have not been discussed (Kotlow, 2015; Zaghi, 2021). Instead, the research intends to raise awareness of symptoms, empowering teachers with knowledge so that singers with symptoms can be properly referred. Therefore, a selection discovered within this research is shared in Figure-19. This is by no means an exhaustive list of potential symptoms and further research would better confirm symptom incidence rates. If teachers detect these in their students, referrals can be made following the recommendations in [Appendix-8](#).

Figure-19: Table detailing potential signs and symptoms of tongue-tie.

Potential Symptoms	
Description	Signs/Symptoms
Difficulty building reliable technique / slow development despite practice and comprehension	<u>May have issues with:</u> • rolled R (tongue-trill) • articulation • mouth opening wide • range • stamina • fatigue • breathing • intonation • mid tongue dip when singing • posterior tongue lift • palate lift
Persistent tension despite technical training	<u>May be felt in the:</u> • orofacial structure • tongue/ tongue root • jaw • larynx • neck/shoulders • diaphragm • pelvic floor • head (tension headaches/migraines)
Tongue mobility and function issues	<u>May have issues with:</u> • range of motion • ability to raise tongue tip to incisive papilla with mouth wide • ability to perform lingual palatal suction hold • ability to perform lingual palatal suction hold with wide mouth • floor of mouth compensation/lifting in order to perform these actions
Structural characteristics	<u>May present with:</u> • poor posture/postural alignment • Forward/hunched head/neck position (pulled forward by tongue-tie) • narrow face shape/undeveloped jaw • narrow / high palate (upper maxilla forms around proper resting tongue position = difficult with tie) • crooked teeth • history of orthodontics • deviated septum • dysphagia
Sleep	• light / disrupted sleep • mouth breathing at night • feeling groggy / unrested • sleep apnoea
Digestion	• IBS symptoms • acid reflux

Limitations

The study had a small sample size due to niche phenomena and limited timeframe - particularly notable for the quantitative element which values larger, more generalisable samples (Park, Kong and Artino, 2020). Because of this my quantitative analysis was descriptive rather than inferential (unable to reflect other samples). 20 participants offered to be interviewed which could have yielded more generalisable results, but this was time-wise unattainable. Four of the six interviewees were selected from the questionnaire, and two had already been cited in the literature review, meaning some corroboration from the same source when triangulating the discussion will have occurred. This could lead to bias since certain participants' opinions could be over-represented in the data.

The questionnaire remained open during the interview process. Later participants who offered to be interviewed were therefore unable to be considered. Two were surgeons who could have offered valuable clinical perspective.

The small scope of the paper meant lip and buccal ties were not addressed despite appearing linked in literature and interviews to facial tension, TMD and speech issues (Baxter et al, 2023). They are often released during tongue-tie procedure (Baxter et al, 2023) so singers in this study may have had them removed (they were not asked to clarify). It is therefore impossible to surmise what improvement may have been solely from tongue-tie release.

Reflection

As an insider-researcher, I was initially confronted in interviews by my involvement with the subject. As the interviewer, I had to tread carefully to ensure not to lead answers and remain appropriately distanced. However, with ongoing reflection I navigated this and believe my insight also helped me to ask 'the right' questions, to elicit deep sharing, and comprehend specialist terminology (Holmes, 2020). Participants were made aware of my personal experience before commencing, meaning some of what they shared assumed my understanding (Holmes, 2020). Without this prior knowledge, findings could be harder to replicate. Despite my insider perspective, at the point of data analysis I had not undergone my own surgery, meaning I approached the research with personal scepticism and was cautious to question the largely positive data. The findings, however, were illuminating and supportive of one-another, building persuasive themes suggestive of high pedagogical relevance. I learnt a huge amount about tongue-tie and how to utilise this awareness in the singing studio, as well as gaining experience of executing mixed-methods research, fulfilling my original learning outcomes.

Conclusion

Discussion and findings demonstrated that lack of tongue-tie awareness led to long-term technical struggles caused by the hidden restriction. Negative judgments were made by the vocal community when these affected singers failed to improve at the expected rate, leading to low self-esteem and the desire to give up. Hindered development was caused by excessive tension and compensation in response to ankyloglossia. When this tension was addressed holistically, combining surgery with OMT and bodywork, largely positive outcomes improved singers' lives and career prospects. These findings are deserving of greater awareness pedagogically - hence the practical recommendations for singing teachers with aim to address this negative pattern.

Findings, particularly pertaining to tension, endorse the clinical relevance of tongue-tie assessment as part of MTD and vocal pathology screening/diagnoses (Summersgill et al, 2023). Although not specifically tongue-tie research, de Resende, Bagarollo and Constantini (2023) further validate Stomatognathic System assessment (including mobility tests) as part of vocal rehabilitation and training due to the significance of these structures on phonation. Yet, singing teacher knowledge of the subject cannot grow, nor be expected without supplementary research. Therefore, future avenues could include tongue-tie effects on vocal health, larger scale studies on WCSs' related tension and vocal quality, and the relevance of all oral ties; buccal, lip, and posterior tongue-tie, which may presently be overlooked or undiagnosed in singers.

References

Algoet, S. (2024) 'Understanding and Overcoming Tongue Tie in Singers' [blog]. 12th October 2024. Available at: <https://www.singsing.be/onlinecourses/2023/06/18/understanding-and-overcoming-tongue-tie-in-singers/> (Accessed 12th April 2025)

Ashfield, S. et al (2023) 'Challenges and Opportunities in Recruiting Research Participants Using Facebook: Lessons Learned from an Exemplar Study', *Canadian Journal of Nursing Research*, 56, (3), pp.247-256. doi.org/10.1177/08445621231207546

Baran, M. (2019) *Applied Social Science Approaches to Mixed Methods Research*, United States: IGI Global.

Basit, T. (2013) 'Ethics, reflexivity and access in educational research: Issues in intergenerational investigation', *Research Papers in Education*, 28, (4), pp.506-517. 10.1080/02671522.2012.689318

Baxter, R. (2022) *Can Tongue-Tie Impact Singing and Vocal Quality?* Available at: <https://tonguetieal.com/can-tongue-tie-impact-singing-and-vocal-quality/> (Accessed 20th April 2025).

Baxter, R. (2022) 'Tongue-Tie Update: What Florida's Dentists Need to Know About This Common Condition', *Florida Focus*, Available at: <https://www.lightscalpel.com/publications/tongue-tie-update-what-dentists-need-to-know-about-this-common-condition/> (Accessed 14th February 2025).

Baxter, R. Lashley, A. and Rendell, N. (2021) 'Tongue Restriction Questionnaire: A New Screening Tool to Identify Tongue-Tied Patients', *Compendium*, 42 (3). Available at: www.dentalaegis.com/cced (Accessed 27th May 2025).

Baxter, R. et al, (2020) 'Functional Improvements of Speech, Feeding, and Sleep After Lingual Frenectomy Tongue-Tie Release: A Prospective Cohort Study', *Clinical Pediatrics*, 59 (9–10), pp.885–892. doi.org/10.1177/0009922820928055

Baxter, R. et al (2023) 'The buccal frenum: Trends in diagnosis and indications for treatment of buccal-ties among 466 healthcare professionals', *Journal of Oral Rehabilitation*, 51 (2), pp.369–379. doi.org/10.1111/joor.13609

Bernardini, D. and DiMaio, L. (2022) 'Students' Mental Health and the Voice Studio: How to Help Without Losing Lesson Time', *Journal of Singing*, 78 (5), pp.591–599.

doi.org/10.53830/gnbx2732

Birth-savvy, (2025) *Tongue Tie and Breastfeeding: What the Latest Research Says*.

Available at: <https://birthsavvy.com.au/tongue-tie-and-breastfeeding-what-the-latest-research-says-2025-update/> (Accessed 17th July 2025)

Bordoni, B. and Myers, T. (2020) 'A Review of the Theoretical Fascial Models: Biotensegrity, FasciIntegrity, and Myofascial Chains', *Cureus*, 12 (2), doi.org/10.7759/cureus.7092

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology*, 3 (2), pp.77–101. doi.org/10.1191/1478088706qp063oa

Braun, V. and Clarke, V. (2019) 'Reflecting on reflexive thematic analysis'. In *Qualitative Research in Sport, Exercise and Health*, 11, (4), pp. 589–597.

doi.org/10.1080/2159676X.2019.1628806

Brown, M. and Dueñas, A. (2019) 'A Medical Science Educator's Guide to Selecting a Research Paradigm: Building a Basis for Better Research', *Medical Science Educator*, 30, pp.545-553. 10.1007/s40670-019-00898-9

Bruder, C. and Larrouy-Maestri, P. (2023) 'Classical singers are also proficient in non-classical singing', *Frontiers in Psychology*, 14. doi.org/10.3389/fpsyg.2023.1215370

Caloway, C. Hersh, C. and Baars, R. (2019) 'Association of Feeding Evaluation With Frenotomy Rates in Infants with Breastfeeding Difficulties', *JAMA Otolaryngology - Head and Neck Surgery*, 145 (9). Doi-10.1001/jamaoto.2019.1696

Chapman, J. (2017; 2023) *Singing and Teaching Singing: A Holistic Approach to Classical Voice*. 3rd and 4th Ed. San Diego: Plural Publishing.

Cohen, S. et al. (2009) 'Development and validation of the singing voice handicap-10', *The Laryngoscope*, 119, pp.1864-1869. 10.1002/lary.20580.

Creswell, J. (2006) 'Choosing a mixed methods design' in Creswell, J. and Plano Clark, V. *Designing and Conducting Mixed Methods Research*, Thousand Oaks, CA: Sage Publications.

Crocco, L. McCabe, P. and Madill, C. (2020) 'Principles of Motor Learning in Classical Singing Teaching', *Journal of Voice*, 34 (4), pp.567–581.
doi.org/10.1016/j.jvoice.2018.12.019

Csok, A. (2023) *How Does Tongue-Tie Impact Your Speech and Singing Quality?* Available at: <https://www.clevelandtonguetiecenter.com/blog/does-tongue-tie-affect-ability-to-speak-and-sing/index.html> (Accessed 20th April 2025).

Davis, M. (2024) *The Art of Singing: Can a Tongue-Tie Cause Problems?* [blog]. Available at: <https://www.floridatongue.com/blog/2024/12/18/the-art-of-singing-can-a-tongue-tie-cause-problems/> (Accessed 27th April 2025).

Degu, G. and Yigzaw, T. (2006) 'Research Methodology Lecture Notes for Health Science Students', *Ethiopian Public Health Training Initiative*, pp.1-138.

De Resende, R. Bagarollo, M. and Constantini, A. (2023) 'The Relationship Between the Stomatognathic System and Voice in Classical Singers', *Journal of Voice*.
doi.org/10.1016/j.jvoice.2023.04.018

Dovel, J. (2010) 'Teaching Tongue-Tied Students: Ankyloglossia in the Instrumental Classroom', *Music Educators Journal* 96, (4), pp.49–52. Sage Publications
doi.org/10.1177/0027432110368478

Ebrahimian, A. (2025) *Can Tongue-Tie Impact Singing and Vocal Quality?* Available at: <https://functionalsmiles.com/tongue-tie/can-tongue-tie-impact-singing-and-vocal-quality/> (Accessed 12th April 2025).

Fletcher, H., Davidson, J. W., & Krause, A. E. (2024) 'Examining the empathic voice teacher', *Research Studies in Music Education*, 46 (2), pp.337–352.
<https://doi.org/10.1177/1321103X231172065>

Foley, G. et al. (2021) 'Interviewing as a Vehicle for Theoretical Sampling in Grounded Theory', *International Journal of Qualitative Methods*, 20, pp.1-10.
10.1177/1609406920980957

Franz, D. et al (2019) 'Using Facebook for Qualitative Research: A brief Primer', *Journal of Medical Internet Research*, 21 (8). doi.org/10.2196/13544

Freedman-Muchnick, D. (n.d.) *Voice, Resonance and Tongue Tie*. Available at:

<https://myofunctionalspot.com/voice-therapy%2Ftongue-tie>

(Accessed 13th April 2025).

Glen Park Dental, (2025) *Can a Tongue-Tie Impact Singing and Voice Quality?* Available at

<https://www.glenparkdental.com/tongue-tie/can-a-tongue-tie-impact-singing-and-vocal-quality/> (Accessed 13th April 2025).

Heine, V. (n.d.) 'The Benefits of Singing in a Foreign Language', Available at:

<https://www.trinitycollege.com/qualifications/music/grade-exams/singing/resources/singing-songs/the-benefits-of-singing-in-a-foreign-language#:~:text=With%20Russian%2C%20it%20can%20be,equal%20parts%20terrifying%20and%20thrilling> (Accessed 25th April 2025).

Holmes, A. (2020) 'Researcher Positionality - A Consideration of Its Influence and Place in Qualitative Research - A New Researcher Guide', *Shanlax International Journal of Education*, 8, (4), pp.1-10. 10.34293/education.v8i4.3232

Kassandra, J. (2023) *Why Are We So Divided About Tongue-Tie?* Unpublished PhD thesis. Victoria University of Wellington.

Kelly, L. and Cordeiro, M. (2020) 'Three principles of pragmatism for research on organizational processes', *Methodological Innovations*, 13, (2), pp.1-10.

10.1177/2059799120937242

Kotlow, L. (2015) 'TOTS –Tethered Oral Tissues, The Assessment and Diagnosis of the Tongue and Upper Lip Ties in Breastfeeding', *Oralhealth*, Available at:

<https://www.oralhealthgroup.com/features/tots-tethered-oral-tissues-the-assessment-and-diagnosis-of-the-tongue-and-upper-lip-ties-in/> (Accessed 20th July 2025).

Kwok, M. and Eslick, G. (2019) 'The Impact of Vocal and Laryngeal Pathologies Among Professional Singers: A Meta-analysis', *Journal of Voice*, 33, (1), pp.58-65.

10.1016/j.jvoice.2017.09.002.

LeFevre, C. (2011) 'Tongue Management', *Journal of Singing*, 68, (2), pp157-162.

LeFevre, C. (2015) 'Techniques for Maintaining a Low Larynx and Open Throat in Classical Singing', *Journal of Singing*, 71, (4).

Lichnowska, A. et al (2024) 'A Prospective Randomized Control Trial of Lingual Frenuloplasty with Myofunctional Therapy in Patients with Maxillofacial Deformity in a Polish Cohort', *Journal of Clinical Medicine*, 13 (18). doi.org/10.3390/jcm13185354

Lichnowska, A. and Kozakiewicz, M. (2021) 'The effectiveness of frenotomy on speech in adults', *Applied Sciences (Switzerland)*, 11 (6). doi.org/10.3390/app11062727

Lim, W. (2024) 'What Is Qualitative Research? An Overview and Guidelines', *Australasian Marketing Journal*, 00, (0), pp.1-31. 10.1177/14413582241264619

Luffey, J. (2025) *Tongue Tied Singers: The Hidden Cause of Vocal Struggles (What Teachers Miss)* [video]. Available at: <https://www.youtube.com/watch?v=EoLJQWfGhAE&t=15s> (Accessed 15th May 2025).

Martinelli, R. Marchesan, I. and Berretin-Felix, G. (2018) 'Posterior lingual frenulum in infants: occurrence and maneuver for visual inspection', *Revista CEFAC*, 20 (4), pp.478–483. doi.org/10.1590/1982-0216201820410918

Masoodi, M. (2017) 'A Comparative Analysis of Two Qualitative Methods: Deciding Between Grounded Theory and Phenomenology for Your Research', *Vocational Training: Research and Realities*, 28, (1), pp.23-40. 10.2478/vtrr-2018-0003

Messner, A. and Lalakea, L (2002), 'The effect of ankyloglossia on speech in children', *Otolaryngology - Head and Neck Surgery*, 127(5), 452–454. doi.org/10.1067/mhn.2002.129823

Milburn, G. (2024) *Gemma Milburn talks about her experience with tongue ties & it's effects on vocal health* [video]. Available at: <https://www.youtube.com/watch?v=eFIYmEJigXM&t=235s> (Accessed 12th April 2025).

Miller, R. (1996). 'Taming the Terrible Triplets of the Vocal Tract: Tongue/Hyoid Bone/Larynx' in *On the Art of Singing*. United States: Oxford University Press. doi.org/10.1093/acprof:osobl/9780195098259.001.0001

Miller, R. and Schutte H, (1981) 'The Effect of Tongue Position on Spectra in Singing', *Journal of Singing*, 76, (1).

Mills, N. et al (2020) 'Understanding the Lingual Frenulum: Histological Structure, Tissue Composition, and Implications for Tongue Tie Surgery', *International Journal of Otolaryngology*, 2020, pp.1–12. doi.org/10.1155/2020/1820978

Murry, L. et al (2023) 'Integration in mixed-methods studies: existing practices, considerations and recommendations for pharmacy research', *International Journal of Pharmacy Practice*, 31, (4), pp.431–437. doi.org/10.1093/ijpp/riad033

Nair, A. (2021) *The Tongue as a Gateway to Voice, Resonance, Style, and Intelligibility*. San Diego: Plural Publishing.

Nair, A. (2023) 'The Tongue: Perception versus Physiology', *Journal of Singing*, 79 (5), pp.615–625. doi.org/10.53830/cvfu1590

Obert, K. (2022) 'A Tonguecentric Conversation About This Important Structure' [video]. Available at: https://voicestudycentre.instructure.com/accounts/1/external_tools/111?launch_type=global_navigation (Accessed 14th April 2025)

O'Shea, J. et al (2017) 'Frenotomy for tongue-tie in newborn infants', *Cochrane Database of Systematic Reviews* (3). doi.org/10.1002/14651858.CD011065.pub2

Park, Y. Konge, Lars. and Artino, A. (2020) 'The Positivism Paradigm of Research', *Academic Medicine: Journal of the Association of American Medical Colleges*, 95 (5). 10.1097/ACM.0000000000003093

Pestana, P. Vaz-Freitas, S. and Manso, M. (2017) 'Prevalence of Voice Disorders in Singers: Systematic Review and Meta-Analysis', *Journal of Voice*, 31, (6), pp.722-727. 10.1016/j.jvoice.2017.02.010.

Pretorius, L. (2024) 'Demystifying Research Paradigms: Navigating Ontology, Epistemology, and Axiology in Research', *The Qualitative Report*, 29, (10), pp.2698-2715. 10.46743/2160-3715/2024.7632

- Radosz, J. (2024) *The Myofunctional Singer*. Available at: <https://www.voicewithjulia.com/the-myofunctional-singer> (Accessed 13th February 2025)
- Rogers, K. (2025) Conversation with Antonia Thwaites, 24th February 2025.
- Sataloff, R. (2017) *Vocal Health and Pedagogy Science, Assessment, and Treatment*. 2nd Ed. San Diego: Plural Publishing.
- Savareh, S. et al. (2023) 'Immediate Effects of Semi-occluded Vocal Tract Exercises as a Vocal Warm-Up in Singers', *Journal of Voice*, 37, (6), pp.875-880.
10.1016/j.jvoice.2021.05.014.
- Scearce, L. (2024) *What Every Singing Teacher Should Know About Vocal Health: Fact-finding and Myth-busting* (Part 2) [video]. Available at: https://voicestudycentre.instructure.com/accounts/1/external_tools/111?launch_type=global_navigation (Accessed 15th July 2025).
- Scott, S. (2022) 'Insights, Considerations, and Suggestions for the Practitioner-Researcher in Voice Studies', *Voice and Speech Review*, 18, (2), pp.146-165.
10.1080/23268263.2022.2137972
- Sielska-Badurek, E. et al. (2017) 'Combined Functional Voice Therapy in Singers With Muscle Tension Dysphonia in Singing', *Journal of Voice*, 31, (4), pp.508.e24-509.e31.
10.1016/j.jvoice.2016.10.026.
- Summersgill, I. et al (2023) 'Muscle Tension Dysphonia in Singers and Professional Speakers with Ankyloglossia: Impact of Treatment with Lingual Frenuloplasty and Orofacial Myofunctional Therapy', *International Journal of Orofacial Myology and Myofunctional Therapy*, 49 (1), pp.1–8. doi.org/10.52010/ijom.2023.49.1.1
- Van-Houtte, E. Van-Lierde, K. and Claeys, S. (2011) 'Pathophysiology and treatment of muscle tension dysphonia: A review of the current knowledge', *Journal of Voice*, 25, (2), pp. 202–207. doi.org/10.1016/j.jvoice.2009.10.009
- Wang, J. et al (2021) 'The effect of ankyloglossia and tongue-tie division on speech articulation: A systematic review', *International Journal of Paediatric Dentistry*, 32, (2), pp.144–156. doi.org/10.1111/ipd.12802

Wang, X. Poon, C. and Cheong, K. (2024) 'Intrinsic Factors Influencing Career Choice of Music Graduates in Fujian, China', *Education Sciences*, 14, (3), pp.1-15.
doi.org/10.3390/educsci14030256

Wilson, V. (2012) 'Research Methods: Interviews', *Journal of the Medical Library Association*, 100, pp.20-27. 10.3163/1536-5050.100.1.005

Winter, D. (2020) 'Understanding Research Methods: From Singing Teacher to Practitioner Researcher', 10.13140/RG.2.2.16046.13122

Yoon, A. et al (2017) 'Toward a functional definition of ankyloglossia: validating current grading scales for lingual frenulum length and tongue mobility in 1052 subjects', *Sleep and Breathing*, 21 (3), pp.767–775. doi.org/10.1007/s11325-016-1452-7

Zaghi, S. et al (2021) 'Assessment of posterior tongue mobility using lingual-palatal suction: Progress towards a functional definition of ankyloglossia', *Journal of Oral Rehabilitation*, 48 (6), pp.692–700. doi.org/10.1111/joor.13144

Zaghi, S. et al (2019) 'Lingual frenuloplasty with myofunctional therapy: Exploring safety and efficacy in 348 cases', *Laryngoscope Investigative Otolaryngology*, 4 (5), pp.489–496.
doi.org/10.1002/lio2.297

Zaghi, S. (n.d.) 'Frenuloplasty: Post-Operative Instructions', Available at:
<https://www.zaghimd.com/frenuloplasty-post-op#:~:text=13.,Discontinue%20if%20bleeding%20occurs> (Accessed 5th May 2025).

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Appendices

Appendix-1: Link to blank copy of quantitative questionnaire.

<https://forms.gle/fHdPWZeSMFgPewyB8>

Appendix-2: Interview questions for both singer and expert pathways (page 41-42)

Interview Questions for Singer Pathway

1. Please can you outline your experience/level of training/career as a Western classical singer?
2. Please can you confirm when you had your tongue-tie release surgery?
3. Could you please share your experience surrounding vocal health and whether you have any history of tension issues or vocal difficulties?
4. Prior to release surgery, did you experience any particular technical difficulties when singing?
5. If yes, do you attribute any of these difficulties to your tongue-tie? (If not already explicit).
6. How did you discover you were tongue-tied?
7. Did you get diagnosed with a particular grade tongue-tie?
8. Looking back to the point when you discovered you were tongue-tied, how did your formal diagnosis come about?
9. (and then what happened?) Could you briefly outline the process you went through from the moment you discovered you were tongue-tied all the way up to your surgery?
10. Did your singing teacher or others in your vocal circle know about tongue-tie?
11. (If not already mentioned) did you engage with Myofunctional therapy?
12. If yes, how did this impact you voice?
13. Why did you decide to go for the surgery? (If not already explicit)
14. What were your initial experiences of the release, did you notice any immediate changes in your body or voice?
15. What have been your longer-term experiences of the release?
16. What effects do you feel the release had on your singing voice, if any?
17. Did you have any negative experiences/symptoms caused by the release?
18. Do you have any regrets or are you pleased with the outcome?
19. (If pleased), would you recommend release surgery to others?
20. Do you have any further insights or comments to add?

Interview Questions for Expert Pathway

1. Please could you outline who you are and your experience working with the condition tongue-tie? / How long have you been working in this field?
2. In your opinion, what are the most important/common factors/symptoms that determine whether someone is tongue-tied?
3. Do you consider there to be any links between vocal tension or vocal problems and a tongue tie? (If not already mentioned).
4. Have you ever treated tongue-tied professional singers in your practice?
5. Do you know if these singers were Western classical singers?
6. If yes, are you able to recount some of their symptoms that you felt were caused by the tongue-tie?
7. In your opinion, is it important to have tongue-ties treated?
8. Are there any instances where you wouldn't treat a tongue-tie?
9. What symptoms have you seen improve in patients post tongue-tie surgery?
10. Do you think those with grade 1 or 2 tongue-ties would still benefit?
11. Are there any negative issues?
12. What are the potential complications of tongue-tie release?
13. How frequently do you come across said complications in your profession?
14. If you have worked with singers, do you know if they benefitted vocally from the release? (And if so, how do you know)?
15. How important is Myofunctional Therapy in the treatment of ties? (If not already discussed).
16. Would you be able to summarise perhaps your top three red flags that you think singing teachers could look out for in their students?
17. Would you be able to summarise perhaps your top three red flags that you think singing teachers could look out for in their students?
18. Do you have any further insights or comments to add?

Appendix-3: Ethics Form Signed Copy (pages 43-55) and Permission Letter (page 56)



PG2 / E1 FORM

APPLICATION FOR ETHICAL APPROVAL

RESEARCH STUDENTS

This form is to be completed by the student within **SIX** months for full-time students and **TWELVE** months for part time students, after the commencement of the research degree or following progression to Part Two of your course.

Once complete, submit this form via the **MyTSD Doctoral College Portal** at (<https://mytsd.uwtsd.ac.uk>).

This document is also available in Welsh.

RESEARCH STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the "principal researcher".

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

SECTION A: About You (Principal Researcher)

1	Full Name:	Antonia Thwaites			
2	Tick all boxes that apply:	Member of staff:	☐	Honorary research fellow:	☐
	Undergraduate Student	☐	Taught Postgraduate Student	☒	Postgraduate Research Student
3	Institute/Academic Discipline/Centre:	WAPPAR			
4	Campus:	Online			
5	E-mail address:	antonia_thwaites@hotmail.com			
6	Contact Telephone Number:	07730393126			
For students:					

April 2022

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PG2 Ethical Approval Form

7	Student Number:	2336293
8	Programme of Study:	PG Cert Professional Practice (Voice Pedagogy)
9	Director of Studies/Supervisor:	Louise Emanuel, Julie Crossman, Debbie Winter

SECTION B: Approval for Research Activity

1	Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)	YES	☒	NO	☐
Date					
2	If Yes, please indicate source of approval (and date where known): Approval in principle must be obtained from the relevant source prior to seeking ethical approval	Research Degrees Committee	☐		
		Institute Research Committee	☐		
		Other (write in) WAPPAR Ethics Board Representative	☒		

SECTION C: Internal and External Ethical Guidance Materials

	Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed.	
1	UWTSD Research Ethics & Integrity Code of Practice	☒
2	UWTSD Research Data Management Policy	☒
3	<i>[List any other relevant documents here]</i>	☐

SECTION D: External Collaborative Research Activity

If there are external collaborators then you should gain consent from the contact persons to share their personal data with the university. If there are no external collaborators then leave this section blank and continue to section E.

1	Institution	
2	Contact person name	
3	Contact person e-mail address	
4	Is your research externally funded?	YES ☐ NO ☐
5	Are you in receipt of a KESS scholarship?	YES ☐ NO ☐
6	Are you specifically employed to undertake this research in either a paid or voluntary capacity?	Voluntary YES ☐ NO ☐
7		Employed YES ☐ NO ☐
8	Is the research being undertaken within an existing UWTSD Athrofa	If YES then the permission question YES ☐ NO ☐

	Professional Learning Partnership (APLP)?	below does not need to be answered.				
9	Has permission to undertake the research has been provided by the partner organisation?	(If YES attach copy) If NO the application cannot continue	YES	☐	NO	☐

Where research activity is carried out in collaboration with an external organisation

10	Does this organisation have its own ethics approval system?	YES	☐	NO	☐
	If Yes, please attach a copy of any final approval (or interim approval) from the organisation (this may be a copy of an email if appropriate).				

SECTION E: Details of Research Activity

1	Indicative title:	Are there any links between ankyloglossia (tongue-tie) and Muscle Tension in singers and what are the recommendations for singing teachers in recognising potential symptoms?			
2	Proposed start date:	31/03/2025	Proposed end date:	16/09/2025	
	Introduction to the Research (maximum 300 words per section) Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the points below: <i>Purpose of Research Activity</i> <i>Proposed Research Question</i> <i>Aims of Research Activity</i> <i>Objectives of Research Activity</i> Demonstrate, briefly, how Existing Research has informed the proposed activity and explain <i>What the research activity will add to the body of knowledge</i> <i>How it addresses an area of importance.</i>				
3	Purpose of Research Activity The purpose is to add to a growing field of understanding about tongue-tie and vocal tension. Summersgill, et al' (2023) research showed significant links between laryngeal muscle tension and tongue-tie in singers. This research was the first of its kind, but I have come across discussion of this issue in online singers' forums, suggesting there may be a growing understanding/curiosity relating to the condition, as well as discussion on how tongue-tie release can improve singing. Tongue-tie itself is widely documented online as relating to increased general bodily tension, breathing issues and vocal fatigue. However, relation to singing voice is not often discussed academically. Therefore, this study is focused on discovering more about how this knowledge could apply to singers. (this box should expand as you type)				
4	Research Question Are there any links between Tongue-Tie and Muscle Tension in singers and what are the recommendations for singing teachers in recognising potential symptoms? (this box should expand as you type)				
5	Aims of Research Activity				

	The aims are to contribute to this growing field and establish whether Myofunctional Therapy and tongue-tie release surgery can provide benefits to the singing voice. This is significant to the singing teaching community, since tongue position and mobility play a vital part in healthy singing. Therefore, I aim to establish whether teachers should have a knowledge of tongue-tie and potentially related vocal issues. Although singing teachers cannot diagnose, they are often the first point of contact for a singer and therefore arguably have a responsibility to be aware of conditions that may affect health and ease of the singing, as well as potential suggestions. (this box should expand as you type)
6	Objectives of Research Activity The objectives are to: recruit participants with first-hand experience of tongue-tie and laryngeal tension to gain insight into tongue-tie related voice issues; to recruit specialists for an expert insight into tongue-tie related voice issues; and to use data analysis and triangulation of findings with literature to establish any links and suggest recommendations for treatments. (this box should expand as you type)
	Proposed methods (maximum 600 words) Provide a brief summary of all the methods that may be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. You do not need to justify the methods here, but should instead describe how you intend to collect the data necessary for you to complete your project.
7	The proposed study would utilise qualitative research methodology and involve three to four different methods. 1. A literature review, from which questions for interviews will be refined. 2. Interviews with singers with a lived experience of laryngeal muscle tension and tongue-tie. 3. Interviews with experts/professionals within the field of tongue-tie and/or voice. I will therefore seek to recruit two speech and language therapists, two myofunctional therapists and two dentists with specialism in tongue-tie who perform tongue-tie release surgeries. 4. Questionnaire may be used to supplement the interviews. The interviews will be transcribed through an automatic software and assessed through reflexive thematic data analysis by the researcher to determine popular themes relating to tongue-tie and laryngeal tension. The approach will be a hermeneutic phenomenological approach, due to the researcher's personal experience with both tongue-tie and laryngeal tension. (this box should expand as you type)
	Location of research activity Identify all locations where research activity will take place.
8	Online via Google Meet. (this box should expand as you type)
	Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised

	by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants. If you live in the country where you will do the research then please state this.
9	(this box should expand as you type)

10	Use of documentation not in the public domain: Are any documents NOT publicly available?	NO	☐
		YES	☒
11	If Yes, please provide details here of how you will gain access to specific documentation that is not in the public domain and that this is in accordance with the current data protection law of the country in question and that of England and Wales. I am not intending to use medical records for this study, but participants may voluntarily share them with me during interviews due to the nature of the topic, i.e. Tongue-tie is a medical diagnosis as is laryngeal tension (often diagnosed as Muscle Tension Dysphonia). (this box should expand as you type)		

	Does your research relate to one or more of the seven aims of the Well-being of Future Generations (Wales) Act 2015?	YES	NO
12	A prosperous Wales	☐	☒
13	A resilient Wales	☐	☒
14	A healthier Wales	☐	☒
15	A more equal Wales	☐	☒
16	A Wales of cohesive communities	☐	☒
17	A Wales of vibrant culture and thriving Welsh language	☐	☒
18	A globally responsible Wales	☐	☒
19	If YES to any of the above, please give details:		
	(this box should expand as you type)		

SECTION F: Scope of Research Activity

	Will the research activity include:	YES	NO
1	Use of a questionnaire or similar research instrument?	☒	☐
2	Use of interviews?	☒	☐
3	Use of focus groups?	☒	☐
4	Use of participant diaries?	☐	☒
5	Use of video or audio recording?	☒	☐
6	Use of computer-generated log files?	☐	☒

7	Participant observation with their knowledge?	☒	☐
8	Participant observation without their knowledge?	☐	☒
9	Access to personal or confidential information without the participants' specific consent?	☐	☒
10	Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒
11	Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
12	Investigation of participants involved in illegal activities?	☐	☒
13	Use of procedures that involve deception?	☐	☒
14	Administration of any substance, agent or placebo?	☐	☒
15	Working with live vertebrate animals?	☐	☒
16	Procedures that may have a negative impact on the environment?	☐	☒
17	Other primary data collection methods. Please indicate the type of data collection method(s) below.		
	Details of any other primary data collection method: (this box should expand as you type)	☐	☒

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

If there are no participants then do not complete this section, but go directly to section H.

	Who are the intended participants:	YES	NO
1	Students or staff at the University?	☒	☐
2	Adults (over the age of 18 and competent to give consent)?	☒	☐
3	Vulnerable adults?	☐	☒
4	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒
5	Prisoners?	☐	☒
6	Young offenders?	☐	☒
7	Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
8	People engaged in illegal activities?	☐	☒
9	Others. Please indicate the participants below, and specifically any group who may be unable to give consent.		
	Details of any other participant groups: (this box should expand as you type)	☐	☒

	Participant numbers and source Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
10	How many participants are expected?	10 in total. 5 singers with first-hand experience of tongue-tie and laryngeal tension for the first set of interviews and 5 specialist/experts in the field for the second set. All 10 participants may also be asked to partake in a questionnaire. <i>(this box should expand as you type)</i>
11	Who will the participants be?	Singers with first-hand experience of vocal muscle tension and tongue-tie, as well as professionals with expert knowledge of tongue-tie and voice, e.g. Myofunctional therapists, Speech and Language Therapists and dentists with specialism in tongue-tie. <i>(this box should expand as you type)</i>
12	How will you identify the participants?	I will recruit via social media in the Facebook group for 'Tongue-Tie and Singers', and do an email call out at the Voice Study Centre. I will also approach professionals such as myofunctional therapists and dentists via their professional email addresses that I already have access to and ask them to circulate the proposition at their workplaces. <i>(this box should expand as you type)</i>

	Information for participants:	YES	NO	N/A
13	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	☐
14	Will you tell participants that their participation is voluntary?	☒	☐	☐
15	Will you obtain written consent for participation?	☒	☐	☐
16	Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☒	☐	☐
17	If the research is observational, will you ask participants for their consent to being observed?	☒	☐	☐
18	Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
19	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☒	☐	☐
20	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐
21	Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
22	If NO to any of above questions, please give an explanation			
	<i>(this box should expand as you type)</i>			

	Information for participants:	YES	NO	N/A
24	Will participants be paid?	☐	☒	☐

25	Is specialist electrical or other equipment to be used with participants?	☐	☒	☐
26	Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐
27	Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐
28	If YES to any question, please provide full details			
(this box should expand as you type)				

SECTION H: Anticipated Risks

Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them. If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.							
1	<table border="1"> <tr> <td>Full risk assessment completed and appended?</td> <td>Yes</td> <td>☐</td> </tr> <tr> <td></td> <td>No</td> <td>☒</td> </tr> </table>	Full risk assessment completed and appended?	Yes	☐		No	☒
Full risk assessment completed and appended?	Yes	☐					
	No	☒					
2	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information <table border="1"> <tr> <td style="width: 50%; vertical-align: top;"> Risk to participants: - Emotional Risk - Transfer of Personal Data (this box should expand as you type) </td> <td style="width: 50%; vertical-align: top;"> How you will mitigate the risk to participants: - Point the participants towards BAPAM / mental health support so that they can reach out for support if this brings up difficult emotions. - Participants will be made aware from the beginning that they are not required to disclose anything that they aren't comfortable sharing. Data will be held securely in a password protected file and then deleted after the study. Video and audio recordings will be deleted once transcripts have been made. (this box should expand as you type) </td> </tr> </table>	Risk to participants: - Emotional Risk - Transfer of Personal Data (this box should expand as you type)	How you will mitigate the risk to participants: - Point the participants towards BAPAM / mental health support so that they can reach out for support if this brings up difficult emotions. - Participants will be made aware from the beginning that they are not required to disclose anything that they aren't comfortable sharing. Data will be held securely in a password protected file and then deleted after the study. Video and audio recordings will be deleted once transcripts have been made. (this box should expand as you type)				
Risk to participants: - Emotional Risk - Transfer of Personal Data (this box should expand as you type)	How you will mitigate the risk to participants: - Point the participants towards BAPAM / mental health support so that they can reach out for support if this brings up difficult emotions. - Participants will be made aware from the beginning that they are not required to disclose anything that they aren't comfortable sharing. Data will be held securely in a password protected file and then deleted after the study. Video and audio recordings will be deleted once transcripts have been made. (this box should expand as you type)						
3	If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities						
	Participants may disclose personal/medical information voluntarily, even though it's not what I am asking for, since it will relate to the topics discussed in the interviews. They will be made aware from the beginning that they don't have to disclose anything they aren't comfortable sharing. Data will be held securely in a password protected file and then deleted after the study.						

(this box should expand as you type)	
4	Risks to the investigator For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest
Risk to the investigator: 1. Emotional Risk (this box should expand as you type)	How you will mitigate the risk to the investigator: 1. The risk is a very small, because I've already processed emotionally what I've been through in my own case of muscle tension dysphonia. However, I will ensure I take breaks and keep reflecting through keeping a reflective journal. Additionally, I am aware of the mental health support available, should I need it. (this box should expand as you type)
5	University/institutional risks For example: adverse publicity, financial loss, data protection
Risk to the University: 1. Potential risk of adverse publicity (this box should expand as you type)	How you will mitigate the risk to the University: 1. I will ensure I follow the ethical guidelines and conduct myself with integrity throughout the study. (this box should expand as you type)
6	Environmental risks For example: accidental spillage of pollutants, damage to local ecosystems
Risk to the environment: Not applicable. (this box should expand as you type)	How you will mitigate the risk to environment: (this box should expand as you type)

Disclosure and Barring Service				
	If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	YES	NO	N/A
7	Does your research require you to hold a current DBS Certificate?	☐	☒	☐
8	If YES, please give the certificate number. If the certificate number is not available please write "Pending"; in this case any ethical approval will be subject to providing the appropriate certificate number.			

SECTION I: Feedback, Consent and Confidentiality

1	Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
	A short debrief at the end of the interview to conclude the conversation will be given, where participants will be thanked for their participation and reminded of the mental health support available, should they need it. Otherwise, the interview will be a one-time session without follow up. Participants will be provided with an email address for any queries or concerns as part of their forms. (this box should expand as you type)
2	Informed consent

	Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
	The potential participants will be provided with a consent form prior to data collection that details all aspects of the study, their rights to withdraw at any time and how their data will be used and stored. The participants must sign the form and retain a copy for themselves before the interview process can begin. In the case of online survey, there will be a screen before the survey questions that acts as a consent form, and participants will read that clicking 'next' confirms their consent. <i>(this box should expand as you type)</i>
3	Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
	The researcher will be aware of the personal names and email addresses of the participants, but their names will be anonymised for the purposes of the report and email addresses will be kept on a private password protected computer. All audio and video recordings will be deleted once transcripts have been made and any identifying data in the transcripts will be redacted. <i>(this box should expand as you type)</i>

SECTION J: Data Protection and Storage

	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
1	"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.	☒	☐
	If YES, provide a description of the data and explain why this data needs to be collected:		
2	Consent forms - are needed to confirm participants are happy to be involved and consent to sharing their data. A redacted version of these will be in the report. All personal information will be deleted once the study is complete. Audio data – the interviews will be recorded in order to be transcribed and analysed. The recordings will be stored securely in a password protected online drive and will be deleted once transcripts have been made. <i>(this box should expand as you type)</i>		
	Does it involve special category data (as defined by the GDPR)?	YES	NO
3	"Special category data" means sensitive personal data consisting of information as to the data subjects' – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life, (g) genetics,	☒	☐

	(h) biometric data (as used for ID purposes),		
	If YES, provide a description of the special category data and explain why this data needs to be collected:		
4	Participants may disclose personal/medical information voluntarily, even though it's not what I am asking for, since it will relate to the topics discussed in the interviews. They will be made aware from the beginning that they don't have to disclose anything they aren't comfortable sharing. Data will be held securely in a password protected file and then deleted after the study. <i>(this box should expand as you type)</i>		

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	YES	NO
5	Manual files (i.e. in paper form)?	☒	☐
6	University computers?	☐	☒
7	Private company computers?	☐	☒
8	Home or other personal computers?	☒	☐
9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☒	☐
10	"Cloud" storage or websites?	☒	☐
11	Other – specify:	☐	☒
12	For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation: All data will be kept in password protected google drive storage on the researcher's laptop, which will not be shared. Audio data will be transcribed and shown to participants to check the accuracy of reporting. Any USB sticks used to store or transfer data will be password protected. All participants will be given a unique identifier to ensure confidentiality, and this list will be kept securely in the password protected folder. Manual files will be digitised at the earliest convenience and then disposed of. Audio and video recordings will be deleted once transcripts have been made. <i>(this box should expand as you type)</i>		

Data Protection			
	Will the research activity involve any of the following activities:	YES	NO
13	Electronic transfer of data in any form?	☒	☐
14	Sharing of data with others at the University outside of the immediate research team?	☐	☒
15	Sharing of data with other organisations?	☐	☒
16	Export of data outside the UK or importing of data from outside the UK?	☐	☒
17	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☒	☐
18	Publication of data that might allow identification of individuals?	☐	☒
19	Use of data management system?	☐	☒

20	Data archiving?	☐	☒
21	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and any international equivalents, where appropriate):		
	All data will be encrypted and kept in password protected google drive storage on the researcher's laptop which will not be shared. Any USB sticks used to store or transfer data will be password protected. All data transfers will be encrypted, and password protected. All participants will be given a unique identifier to ensure confidentiality, and this list will be kept securely in the password protected folder. The data will be stored until the completion of the project and then deleted. In accordance with the DPA2018, participants will have the right to ask to see what data is held relating to them, and this data will be deleted immediately if the participant requests this, in which case the data will not be used in the project. <i>(this box should expand as you type)</i>		
22	List all who will have access to the data generated by the research activity:		
	The principal researcher (me) and my research supervisor. <i>(this box should expand as you type)</i>		
23	List who will have control of, and act as custodian(s) for, data generated by the research activity:		
	The principal researcher. <i>(this box should expand as you type)</i>		
24	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.		
	All data will be encrypted and kept in password protected google drive storage on the researcher's laptop which will not be shared. Any USB sticks used to store or transfer data will be password protected and will be reformatted at the end of the project in order to destroy the data. The data will be stored until the end of the project and then deleted. <i>(this box should expand as you type)</i>		
25	Please indicate if your data will be stored in the UWTSD Research Data Repository (see https://researchdata.uwtsd.ac.uk/). If so please explain. <i>(Most relevant to academic staff)</i>		
	No <i>(this box should expand as you type)</i>		
26	Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	YES	☒
27	Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☒

SECTION K: Declaration

	The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants.	
	In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtsd.ac.uk/research/research-ethics/	
1	Signature of applicant: <i>Adhwaifas</i>	Date: 19/03/2025

For STUDENT Submissions:

2	Director of Studies/Supervisor:	Laura James	Date: 11-04-25
3	Signature:	<i>Laura James</i>	

For STAFF Submissions:

4	Academic Director/ Assistant Dean:		Date:
5	Signature:		

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

☒	I have read the guidance notes supplied before completing the form.
☒	I have completed ALL RELEVANT sections of the form in full.
☒	I confirm that the research activity has received approval in principle
☐	I have attached a copy of final/interim approval from external organisation (where appropriate)
☐	I have attached a full risk assessment (where appropriate) ONLY TICK IF YOU HAVE ATTACHED A FULL RISK ASSESSMENT
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.
☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Academic Director.

RESEARCH STUDENTS ONLY

Once complete, submit this form via the **MyTSD Doctoral College Portal** at (<https://mytsd.uwtsd.ac.uk>).

RESEARCH STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk , with the title 'Ethical Approval' followed by your name.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

[Antonia Thwaites] Antonia Thwaites, Singing Teacher
8 Trenchard Street, London, SE10 9PA / antonia_thwaites@hotmail.com
11th April 2025

Dear UWTSD,

RE: [Are there any links between ankyloglossia (tongue-tie) and Muscle Tension in singers and what are the recommendations for singing teachers in recognising potential symptoms?]

I confirm that I approve of the research proposed into 'tongue-tie and singing' to be carried out by [Antonia Thwaites, Singing Teacher] between April 2025 and September 2025.

Kind Regards,

 **Antonia Thwaites**

Appendix-4: Participant Information Sheet (page 57-58) and Redacted Consent Forms (page 59-66).

Participant Information Sheet

Study Title:

A mixed methods exploration of potential links between Ankyloglossia (tongue-tie) and muscle tension relating to the voice in Western classical singers through analysis of literature as well as questionnaires and interviews with singers and health experts.

I, Antonia Thwaites would like to invite you to participate in the above research study I am undertaking for my Post Graduate Pedagogical studies at The Voice Study Centre, University of Wales Trinity St David. The study has been approved by the UWTSD Research Ethics Committee.

- The research aims to gather first-hand experience of the condition tongue-tie and link this knowledge to Western classical singers, searching for greater awareness on how this condition could affect singing.
- This is a small mixed methods study that will have up to ten interviewed participants, up to five will be singers with personal experience of tongue-tie and the remaining participants will be experts in the field.
- Participation in the study is entirely **voluntary**, refusal to participate will involve no penalty and you may discontinue participation at any time **without penalty**.
- The time commitment for the study involves **one interview** at a convenient time for you **online via google teams**. The interview is anticipated to last between **20-60minutes**.
- The interview will be recorded for the purposes of transcribing. You may request a transcript of the interview from me at my email address (below) as well as the final report and any future publications.
- All information you provide for this study will be treated confidentially. Any reference to you or the insights you have shared will be made anonymous in my report by changing your name and disguising any details that may reveal your identity.
- In the interview you may be asked to reflect on your personal experience which may bring up emotions. You do not have to answer any question you do not wish to and you may take breaks at any time. Additionally, if you feel you need support, helplines are at the bottom of this sheet.

Thank you for considering participation in this study.

Please feel free to contact me via email: antonia_thwaites@hotmail.com with any questions.

The supervisor of this study is Louisa Morgan who can be reached at louisa@voicestudycentre.com

Contacts for Support:

BAPAM (British Association For Performing Arts Medicine)

info@bapam.org.uk

020 8167 4775

Help Musicians

<https://www.helpmusicians.org.uk/get-support/mental-health/mental-health-support>

info@helpmusicians.org

020 7239 9100

The Royal Society of Musicians

<https://www.rsmgb.org/health-and-wellbeing>

grants@rsmgb.org

020 7629 6137

Mind

0300 102 1234

Samaritans

jo@samaritans.org

116 123

Participant Consent Form

Research Title: *A mixed methods exploration of potential links between Ankyloglossia (tongue-tie) and muscle tension relating to the voice in Western classical singers through analysis of literature as well as questionnaires and interviews with singers and health experts.*

- I,  voluntarily agree to participate in this research study.
- I understand that even if I agree to participate now, I can withdraw at any time.
- I understand that I can refuse to answer any question involved during the research process without any consequences of any kind.
- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.
- I understand that participation involves an online interview where I will be asked about my experience of the topic.
- I understand that I will not benefit directly from participating in this research.
- I agree to my interview being audio-recorded.
- I understand that all information I provide for this study will be treated confidentially.
- I understand that in any report on the results of this research my identity will remain anonymous.
- This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.
- I understand that disguised extracts from my interview may be quoted in a written report, internal university presentation and potentially published papers.
- I understand that if I inform the researcher that myself or someone else is at risk of harm they may have to report this to the relevant authorities - they will discuss this with me first but may be required to report with or without my permission.
- I understand that signed consent forms and original audio recordings will be retained in a password protected online drive accessed only by the researcher and supervisor until November 2027.
- I understand that a transcript of my interview in which all identifying information has been removed will be retained until November 2027 (two years after the exam board has confirmed the grade of the report).
- I understand that under freedom of information legislation I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Researcher: Antonia Thwaites
antonia_thwaites@hotmail.com

Supervisor: Louisa Morgan
louisa@thevoicestudycentre.com

Signature of research participant

Date

 ----

27/05/2025

I believe the participant is giving informed consent to participate in this study.

Signature of researcher

Date

Antonia Thwaites



28/05/2025

Participant Consent Form

Research Title: *A mixed methods exploration of potential links between Ankyloglossia (tongue-tie) and muscle tension relating to the voice in Western classical singers through analysis of literature as well as questionnaires and interviews with singers and health experts.*

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- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Researcher: Antonia Thwaites
antonia_thwaites@hotmail.com

Supervisor: Louisa Morgan
louisa@thevoicestudycentre.com

Signature of research participant

Date

24/05/25

I believe the participant is giving informed consent to participate in this study.

Signature of researcher

Antonia Thwaites 

Date

29/05/2025

Participant Consent Form

Research Title: *A mixed methods exploration of potential links between Ankyloglossia (tongue-tie) and muscle tension relating to the voice in Western classical singers through analysis of literature as well as questionnaires and interviews with singers and health experts.*

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- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Important information:

Please be aware that I have already cited you or a paper you authored as an academic source at various points in my paper. Your identity will remain anonymous as an interviewed participant but in order to be transparent, I would like to add a statement to my report that two interview participants are also cited as academic sources in my literature review due to their specialist expertise. Please confirm that you also agree to this by signing below.

Researcher: Antonia Thwaites
antonia_thwaites@hotmail.com

Supervisor: Louisa Morgan
louisa@thevoicestudycentre.com

Signature of research participant

Date

---  -----

May 29, 2025

I believe the participant is giving informed consent to participate in this study.

Signature of researcher

Date

Antonia Thwaites  -----

29/05/2025

Participant Consent Form

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- I agree to my interview being audio-recorded.
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Important information:

Please be aware that I have already cited you or a paper you authored as an academic source at various points in my paper. Your identity will remain anonymous as an interviewed participant but in order to be transparent, I would like to add a statement to my report that two interview participants are also cited as academic sources in my literature review due to their specialist expertise. Please confirm that you also agree to this by signing below.

Researcher: Antonia Thwaites
antonia_thwaites@hotmail.com

Supervisor: Louisa Morgan
louisa@thevoicestudycentre.com

Signature of research participant



Date

5/29/25

I believe the participant is giving informed consent to participate in this study.

Signature of researcher



Date

5/29/25

Antonia Thwaites

Participant Consent Form

Research Title: *A mixed methods exploration of potential links between Ankyloglossia (tongue-tie) and muscle tension relating to the voice in Western classical singers through analysis of literature as well as questionnaires and interviews with singers and health experts.*

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- I understand that under freedom of information legislation I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Researcher: Antonia Thwaites

antonia_thwaites@hotmail.com

Supervisor: Louisa Morgan

louisa@thevoicestudycentre.com

Signature of research participant

..........

Date

6/06/25

I believe the participant is giving informed consent to participate in this study.

Signature of researcher

..........

Antonia Thwaites

Date

06/06/2025

Participant Consent Form

Research Title: *A mixed methods exploration of potential links between Ankyloglossia (tongue-tie) and muscle tension relating to the voice in Western classical singers through analysis of literature as well as questionnaires and interviews with singers and health experts.*

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- I understand that signed consent forms and original audio recordings will be retained in a password protected online drive accessed only by the researcher and supervisor until November 2027.
- I understand that a transcript of my interview in which all identifying information has been removed will be retained until November 2027 (two years after the exam board has confirmed the grade of the report).
- I understand that under freedom of information legislation I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Researcher: Antonia Thwaites
antonia_thwaites@hotmail.com

Supervisor: Louisa Morgan
louisa@thevoicestudycentre.com

Signature of research participant

Date



8/6/25

I believe the participant is giving informed consent to participate in this study.

Signature of researcher

Date

Antonia Thwaites

08/06/2025

Appendix-5: Participant interview transcripts

Interview 1 Transcript (page 67-88)

May 28, 2025, 6:05PM

● **Antonia Thwaites (2336293)** started transcription

Antonia Thwaites (2336293) 0:06

OK.

Brilliant. OK, so that's now transcribing and recording, so I've received your returned consent form, but I just want to reiterate that if at any point you want to stop or you feel uncomfortable, that's completely within your rights.

I really appreciate that you are participating. And could you just reiterate once more that you're happy to be recorded for the purpose of this interview?

Participant 1 0:38

Yes, I am totally fine with being recorded.

Antonia Thwaites (2336293) 0:42

Perfect. Thank you.

OK, so let's get into it. So I'd love to... If you could just kind of start by outlining your experience as a Western classical singer, your career to date, anything that you feel is relevant.

Participant 1 1:03

As far as just singing, I've been singing probably for like going on 15 years.

And I have a bachelor's degree in vocal performance, opera classical - so I've been doing that since I was 13 years old. I have vocal pedagogy, masters of VOCOLOGY certification and I'm working on an SLP programme right now.

So, but I said I've been singing just professionally semi-professionally since college so.

Antonia Thwaites (2336293) 1:48

OK. Wow - that's amazing. Yeah, that's lots of experience!

So I'd like to go kind of straight into your experience with tongue tie your personal

experience, and this first section will just be kind of pre-release primarily and then we'll see where we get to. So, could you just confirm when you had your tongue tie surgery?

Participant-1 2:15

2021.

Antonia Thwaites (2336293) 2:16

OK.

Participant-1 2:17

In summer, maybe August of 2021.

Antonia Thwaites (2336293) 2:21

OK, great. And could you just share any experience that you have around what your vocal quality was like prior to the release, whether you had any technical issues, whether there's anything of note?

Participant-1 2:38

Hmm, so I had a lot of symptoms that weren't necessarily related to singing but affected my singing. I had dental crowding. I have a deviated septum, so I had to have braces growing up. I also always had a lot of infections in my throat like just Mono and Strep all the time at least like two or three times a year because I was a mouth breather and my tonsils were always constantly inflamed, so I had to have those removed when I was about 21. That made a big difference in my singing just because they were so enlarged all the time because they were constantly inflamed.

That I always had to really push to get any sound out because they were taking up my whole throat. So, once I got those removed that helped a lot, but I said I was still experiencing, I said I was still mouth breathing, a lot of general tension in my body just from the bound up fascia, so a lot of diaphragm restriction. I got diagnosed with Muscle Tension Dysphonia in my throat area so that really, I mean, I'm still kind of working on getting all this unstuck and my diaphragm is still kind of... it doesn't really want to let go, but I had a lot of just general tension and fatigue problems.

Antonia Thwaites (2336293) 4:03

Mm hmm. OK. Yeah, that's really interesting and totally hear you and can relate.

I mean, you've already said it, but can you just kind of confirm that you do attribute a lot of these tension symptoms to the tongue tie?

Participant-1 4:19

Absolutely. Mm hmm.

Antonia Thwaites (2336293) 4:21

OK, so how did you first discover that you were tongue tied?

Participant-1 4:27

So I came across it by accident, so I'm a, I've been teaching voice for a long time, and you know, tongue tension's a huge thing in the singing teacher world, everybody's got tongue tension you know, so.

Antonia Thwaites (2336293) 4:38

Ha hmm (chuckle).

Participant-1 4:42

I, during COVID I was just looking for things to do because we were stuck in the house and I found this programme that was called the 'Myofunctional Singer', and it was about tongue ties, and I was like, well, I don't have any tongue problems, but I might as well try it in case I get students that have that and the more I did the course, the more I was like, oh my goodness - that's me. I have all of these problems and so I met my boss Jessica, and then I did the myofunctional therapy with her for 6... 5/6 weeks before I got released, we got the release scheduled and then I did more myofunctional therapy five weeks post release.

Antonia Thwaites (2336293) 5:24

Amazing. That's so interesting.

Participant-1 5:26

I had no idea and I had had maybe, I don't know if you guys do this in...um over there, in our like bachelor programmes at the end of a semester, we'll do a vocal jury as you... do y'all do stuff like that?

Antonia Thwaites (2336293) 5:43

It's not - we don't call it that, we just do a kind of a recital, but what's a... what's a jury? Is that the same thing?

Participant-1 5:49

It's similar. It's a recital that's like a whole, like an hour's worth of music. And that's your, like, final after you hit all four years of university, but then a jury's just at the end of every semester where you have to sing, maybe like 5 songs for the entire vocal faculty. And then you get your grade for the semester based on that. And then your attendance for your lessons. So it's much smaller scale, and it's only a handful of songs you don't even have to always sing all of them. They kind of pick a random 3.

Antonia Thwaites (2336293) 6:19

Mm hmm.

Participant-1 6:20

But they usually write comment forms, so I would usually get comments about my tongue and they're like, oh, you're pulling your tongue back or you have something up with your tongue on my jury forms. But other than that, I'd never really had anybody address it in lessons or anything, so I had no idea until I started looking into all the other symptoms that come with it. And I had all of them.

Antonia Thwaites (2336293) 6:47

OK, that's really interesting. When you were diagnosed, were you diagnosed with a specific grade of tongue tie?

Participant-1 6:58

We think it was a 2. Because they have the, there's a bunch of different scales, but like Doctor Zaghi does the 1 through 4 and 1 is the smallest and the 4 is the most extreme. So, I had maybe like a 2, urr slight 3. And that, I said, I got that released just at an orthodontist just with a laser.

Antonia Thwaites (2336293) 7:24

OK, great. So, from the point that you discovered, you were tongue tied, what was kind of the next immediate steps and how long did that process take before you had your release?

Participant-1 7:39

So as soon as I kind of came to the conclusion that I was tied, I said I got into contact with Jessica, who is a Myofunctional Therapist that works specifically with singers. We did about, I said five weeks of exercises building up the muscles that were weak and or over working, compensating because of the restriction. So we would do an hour session once a week for I said about 5-6 weeks before my release and then post release, I also had to do, I said, 5-6 weeks an hour with her to make sure nothing re-grew because all of that

can grow back, and I did get my lip ties. I didn't really have a bad one, but she was like, well, you're there, just get that zapped off too. And I wasn't as good with the aftercare for those. So those did grow back. But as I said mine weren't very bad. But they do grow back very easily.

Antonia Thwaites (2336293) 8:34

OK. That's really, really interesting. So you already mentioned that basically people didn't know about it in your circle. Were... was there anyone who knew about it or was it a complete kind of – um people were like, 'what is this?'

Participant-1 8:57

Pretty much, I had never even heard of it until I did that programme. I'd, I'd never, never heard of anything like that and most research and everything that's done on it is catered towards infants and if they have eating problems, that's when it gets noticed. But if you have a smaller grade of a tie like a 2 or even a three, sometimes they don't notice that. But if you have like a level 4, that's when you can't latch as an infant, you can't eat, all these problems but that so... that's when a doctor might notice it, like a lactation specialist and they will have that taken care of at infancy in the first couple of months, but after that they don't really notice it. Sometimes there's and I didn't have any dentists that were airway specialists that noticed that, and I think it's still pretty new to to like tongue ties are just not something people think of unless it's to do with breastfeeding.

Antonia Thwaites (2336293) 10:07

Yeah, yeah no it's definitely such an interesting topic in the singing world, because it just feels like it's... you speak to teachers and it's like 'oh what is that?' Or it's so dismissive so yeah, that's interesting that you found that as well.

Participant-1 10:11

Mm hmm.

Antonia Thwaites (2336293) 10:13

So when you engaged with the Myofunctional Therapy before and after, before in particular, did you find that it already helped to do some of those exercises? Did you find any improvements vocally from that?

Participant-1 10:29

Yes, 'cause, I did have a lot of weaknesses just in my face even, she had me do a lot of exercises just with my cheeks, and those do have connections to the soft palate. So even

just strengthening here, which I had had teachers mention that to me they're like 'you're like dead in the eyes when you sing' you don't look like, 'you just look bored', because I didn't have these muscles really activate at all when I sang.

So, I did notice a difference in just my resonance because I had more control over the soft palate and it was lifting more because this was activating a little bit more. (*Indicating to cheeks/cheekbones*)

Antonia Thwaites (2336293) 11:11

OK. Yeah, that's really interesting.

I suppose the next thing is we'll go to the surgery, but I would like to come back to the myofunctional therapy as well.

Participant-1 11:24

Mm hmm.

Antonia Thwaites (2336293) 11:25

But could you just talk me through your actual experience of the surgery itself?

Participant-1 11:31

OK, so I said I just had to go to an orthodontist. And we had to drive about... it was like an hour away. So not too bad. But Jessica likes to find people that are specifically trained by Doctor Zaghi. And the orthodontist he would only take the incision to the muscle -he was not comfortable going past that, so I don't know if I needed more than that, but he only just took a little like most of the frenulum off - not all the way down to the muscle. So he did that with, I said, a laser. Really, really nice laser they've got in there. It probably took like 10 minutes total. So, when you've done the myofunctional therapy, you can be more of like an active participant like they'll have you do specific postures with your tongue like suction it to the roof of your mouth and hold it there, so that they can get under there to the frenulum and zap it off and it cauterises in, you know, in the office. So, you don't need stitches or anything because it's that the laser is very very nice. So it's just all one and done, they numb everything. It was a little sore for three days. It mostly, I only really felt the soreness when I was swallowing, but I could notice immediately the difference with even how far I was able to open my mouth. So, while I was having the release, I had my tongue suctioned to the roof of my mouth and I could feel it as he was lasering like just opening more and more and more because I have less connective tissue as he was doing the procedure.

Antonia Thwaites (2336293) 13:09

Wow, that's fascinating...

You mentioned earlier that Jessica likes to use Doctor Zaghi. Is there like a particular reason for that?

Participant-1 13:21

He is the top tongue tie specialist, at least in the United States. I don't about the world, but he is like the best of the best here and he's very knowledgeable. His website's fantastic. If you haven't looked at it yet, but it has courses, but he is like the pioneer in like tongue tie releases for all grades, not just babies.

Antonia Thwaites (2336293) 13:45

Yeah, no, I've heard so much about him and he sounds amazing. I suppose...I wonder, like, is there anything... are you aware of anything that is different in the way that he approaches the work as opposed to maybe other providers?

Participant-1 14:01

I know he is more laser oriented because you can do the procedure with scissors. Even in a like a dental office, you can just numb everything and scissor everything and that maybe requires a suture afterwards. But he, I think is more into, I said, the laser surgery. But I know he trains a lot of orthodontists that can just do the procedure I said at an orthodontist's office.

Antonia Thwaites (2336293) 14:26

OK.

Participant-1 14:32

I don't know about... 'cause if it's... if it's more than a 2, if it's like a 3 or a 4, you do have to get anaesthesia and go under to have it. It's like they have to knock you out because it is more into the the deep muscle of the tongue. So, I don't know, I'm sure he does all that too. But I said he trains a lot of just smaller like orthodontists to do it so that they can just do the laser procedure.

Antonia Thwaites (2336293) 15:01

Wow, OK, I had no idea about that for the Grade 3 and Grade 4.

Participant-1 15:06

Uh huh.

Antonia Thwaites (2336293) 15:07

That's quite major, yeah. OK, so if we can just talk a bit more about your vocal quality post-surgery now. So you said directly after you had some pain swallowing, which is quite standard. How long did it take before you were singing again?

Participant-1 15:33

That was, I could probably sing the day of, I said it was just not... it was....it was just sore, so it wasn't super comfortable. But I noticed an immediate difference as far as just being able to hit notes even, because I am a coloratura soprano, so I've always been able to hit high notes and they never felt difficult for me, but as soon as I got the release, I didn't even have to think about it. It just like popped out and it was so easy. I'm like, I didn't even realise I was working as hard as I was before! Because I said so, I didn't even notice because that was just my normal.

Antonia Thwaites (2336293) 16:14

That's amazing. That's really inspiring! You also mentioned that you had an MTD diagnosis. Was it a diagnosis?

Participant-1

Hmm mm.

Antonia Thwaites

Did you find those symptoms improved post release?

Participant-1 16:34

That I still have some issues with and it comes and goes it just it just depends, but I do still have a little bit of that and that still can cause like fatigue. But I did notice a lot of other just bodily tension that kind of went away. I did have... it was funny for one of the exercises Jessica had me do was just lay on the floor and I had to keep my arms flat and just go like this. And I couldn't do it, like my arms should have been flat, but I had to touch the floor like this. I couldn't get my arms down. And I'm like, why can't I do that? She's like, that's because of your tongue tie. And that's because of all the fascial connections that go all the way down the body. And after my release, my whole body became more flexible and I had had this giant muscle knot in my one shoulder that I always had, and it went away after my surgery. And I was able, like I... this is still, I'm still a little like, just residually tight 'cause that's something my whole body has been like for, you know, 20 plus years, it takes a long time to undo all that. But I can now do at least the floor exercise with my hands flat. I don't have to be super far away.

Antonia Thwaites (2336293) 17:49

That's amazing. That's really interesting.

Participant-1 17:50

Mm hmm. So I noticed more as I said in the rest of my body, which helps with singing. If you're not, you know...

Antonia Thwaites (2336293) 17:57

Yeah. So, you did find that, that in a roundabout way did improve the vocal quality?

Participant-1 18:03

Yes, and I struggle with a lot of dryness as well because I slept with my mouth open because I couldn't with my mouth shut...and so now I can sleep with my mouth closed and I nasal breathe a lot more so I don't have as much... like just dryness issues with my throat and my just mouth and everything, which makes a difference.

Antonia Thwaites (2336293) 18:08

Mm hmm. Yeah, I can imagine.

OK so... We've kind of covered this, but I suppose it would be good to understand a bit more about the, I suppose the longer-term experience of the release, like you've mentioned these improvements happening quite immediately...and then did they kind of remain consistent or did it come on over time or?

Participant-1 18:58

I feel like any improvements that I had, have stayed consistent. It's not been like a 'they were great at first and then now they're gone'. I have seen just improvements in my range. I didn't really... and I'm not sure if this is because of the tie, but I know this can... it can affect your range. Most people have issues with their higher range like just being able to access high notes, but I had....in my undergraduate degree I had like no chest voice, so like C4 that was like it, and then I underneath that was just breathy and non-existent...It was just you couldn't hear me do it and I would try so hard. But I also, I didn't work that area of my voice very much just because I was a coloratura soprano. But I have noticed that I have a much easier time hitting lower pitches and it's fuller and I can access that a little bit, a lot easier, like it exists now. It didn't exist before. So, I, and that was... I started noticing that more post-release, so I think that definitely was a factor. I also got older and you know your voice settles a little bit more when you reach late 20s or 30s so that could be it too, but I said, I did notice it post release and I wasn't quite at that age yet so.

Antonia Thwaites (2336293) 20:27

OK. Yeah, that's interesting...

So overall, it sounds very positive. Were there any negative parts of the whole experience?

Participant-1 20:46

Not for me personally, no.

Antonia Thwaites (2336293) 20:50

OK.

Participant-1 20:51

I did have a student... and I don't know if you want to talk about any because I've worked with a couple other singers that had restrictions so I have a couple other instances where I... it did, not backfire, but I had one student in particular where she was 60 years old when she got her release...

Antonia Thwaites (2336293) 21:12

OK...

Participant-1 21:16

But that's a long time to be, you know all all those restrictions and everything in her whole body and she had countless dental surgeries. She was always seeing different massage therapists and craniosacral therapy. And she, hers was almost a four, and she got hers released and her body didn't respond very well to it.

Antonia Thwaites (2336293) 21:39

OK.

Participant-1 21:41

And she also had to get a lip tie release, and they had to...I mean, they cut her like the joker. It was so stuck, she couldn't even do that at all and it was, it was...she cried a lot in my lessons, because she's, like: 'I can actually kiss my husband now, I didn't know I couldn't before!' 'Cause she would just lean the head forward. She couldn't even do that.

(Kissing lip position indicated.)

Antonia Thwaites (2336293) 22:03

Aw!

Participant-1 22:05

But I said her lips were so stuck down, and so was her tongue, and that caused so many different physical issues for her. And I said she'd lived 60 years of her life having all of those things, so she had a lot of problems after the surgery just because it... I said... it's really hard to undo all of that after that long of being... having those restrictions and having... not being able to do things and we had to kind of relearn how to sing 'cause she couldn't....she had to compensate and articulate in completely different ways before.

Antonia Thwaites (2336293) 22:43

I see.

Participant-1 22:44

Like how she produced Rs and THs and anything had to be way further back 'cause she couldn't reach to her teeth.

Antonia Thwaites (2336293) 22:52

OK. That's really interesting. Could you elaborate a bit more on what her symptoms were that that kind of backfired, that were so bad afterwards?

Participant-1 23:07

I'm trying to remember... I am trying to think what exactly she said. I think a lot of it was frustration because I said she did have to relearn how to do a lot of different things. She had a lot of pelvic floor and diaphragm issues and I said again, I think it was just from that fascial line being stuck all the way down, and I think that's where she was having the most problems was in the diaphragm and the pelvic floor area. I think it just didn't know what to do with the new normal. You know, 'cause I said it had that normal for 60 years and it didn't know what to do with all that extra wiggle room and freedom. So I think she got... she was getting just issues with maybe like tummy issues I will say.

Antonia Thwaites (2336293) 24:11

OK.

Participant-1 24:11

She was having a lot of just things with the lower body.

Antonia Thwaites (2336293) 24:16

OK. And you feel that was more like a physical issue rather than necessarily a singing issue or it played both?

Participant-1 24:25

More of a physical issue because I know like singing was easier, even though we had to relearn a lot. Just, just articulation, even or or breathing was completely different for her. So but... I don't feel like it negatively impacted her singing. It made a lot of things easier because we had worked on a lot of different aspects of singing in for so long... she had no experience to start, but I said we were working on just breathing things and articulation and just little, you know, basic, basic things. And she struggled with those a lot. And then after the release, even though we we had to kind of relearn placement for a lot of the the consonants, it was still freer for her.

Antonia Thwaites (2336293) 25:12

OK, OK. So it was more physical, yeah.

OK, so I think I understood what you're feeling is on this, but I suppose just for your personal release, were you pleased with the outcome and would you recommend it?

Participant-1 25:34

Absolutely yes. I would definitely recommend because it can make such a big difference in your overall life and your overall well-being not even just your singing life, but if you are taking care of your overall health, you're helping your singing. So, if you have any of those symptoms... and it can cause a lot of other things that I didn't personally experience, like Sleep Apnea. And I have a couple students and friends that have gotten nose turbinates.

Antonia Thwaites (2336293) 26:05

Right....

Participant-1 26:06

Which can be caused from the tongue tie actually. No, I had a friend who just had surgery, had a bunch of those removed, and he also had a bone spur in his nasal cavity because it was so inflamed and swollen in there. And I know another person that she has also has the really bad turbinates, she's got a like a grade three or four tongue tie. So, she's gonna have to get... she has to go under, get a actual surgery surgery, and they're gonna have to like break her nose and do a whole rhinoplasty after they remove the turbinates too. But I know that they can... if you don't get...if you get these removed and you don't get the tie fixed, they just grow back.

Antonia Thwaites (2336293) 26:51

OK. Wow! We're sort of touching on to, if you remember, I emailed you about having these two pathways for my questions and we've sort of been touching a bit on the expert side of things as well, so do you mind if we just kind of transition onto those, do you have time?

Participant-1 27:10

Yeah, I I set aside a whole hour, so I'm totally good.

Antonia Thwaites (2336293) 27:14

OK. Because I'd love to ask you more about that but with like your expert hat on! I suppose my question is how did you learn about this? Like how as an expert, how did you learn that these things actually are due to the tongue tie?

Participant-1 27:32

So I actually I did the same programme you're doing: the voice study centre. I did my final module was on tongue ties and singers.

Antonia Thwaites (2336293) 27:40

Oh wow!

Participant-1 27:41

I spent a lot of... I wrote too much actually. They were like, it's too long. You have to take pages out! So, I went really in depth with that and I've just been kind of looking into that on a personal level ever since because I found it fascinating. And I work for, for Jessica, who has her own Myofascial business and she specialises in working with singers and she and I are conducting research right now on some of her clients who are also singers, so she's trying to get as much data from them pre-release, you know, with the therapy. And then we have the release, you know, all documented, when and where. And then just post release we're trying to get recordings and do acoustical analysis for all of that. So that's kind of... I don't have... I'm getting my certification, my oral fascial myology certification this fall.

Antonia Thwaites (2336293) 28:37

OK.

Participant-1 28:38

So I said right now I just have a vocology certification from NYU and then I'm working on some speech language pathology to kind of just pepper in there. But but I said I'd started

learning in depth about tongue ties during my MA when I was doing my final module on tongue ties and singers.

Antonia Thwaites (2336293) 28:58

OK. That's really fascinating. Yeah, that's a lot.

Participant-1 29:01

Yours is much more organised than mine ever was. I was looking at all of your stuff. I was like, oh, this is so much better than mine. Mine was a mess!

Antonia Thwaites (2336293) 29:08

I am sure it's not but thank you. I'm glad it came across like that. Thank you.

Participant-1 29:11

I kept Debbie on her toes.

Antonia Thwaites (2336293) 29:18

Yeah, my my supervisors do keep emailing me for things like yeah, I need to get writing, but there's so much, isn't there? It's such a fascinating topic, it's hard to actually put pen to paper at this point.

Participant-1 29:27

There really is.

Antonia Thwaites (2336293) 29:35

So when you say that Jessica is your boss, it's because you work with her as a Myofunctional Therapist?

Participant-1 29:44

I'm more of her assistant right now. I said I'm not certified, so I am not... I'm not certified to do the therapies with her, but I do assist her with research, and outreach and anything like that. So I, we geek out about tongue tie stuff all the time. We're always sending each other different articles and videos and different tools we find.

So I said I'm not certified yet to work with her, but I'm an assistant.

Antonia Thwaites (2336293) 30:13

I see. I see. Thanks for clarifying.

OK. So, I suppose I can kind of work this out, but how long exactly then would you say you've worked in tongue tie as a professional?

Participant-1 30:39

I would probably say. We'll say like 2023. So maybe like two years that I... 'cause I've that's after I finished my masters and the vocology and everything like that and I started working for Jessica and I have since like I can see it in students now whenever they have it and I know how to assess if they have it or not, and I and I won't you know do any therapy with them or anything but I can at least cater their voice lesson towards just helping with making singing a little easier or working around the issues until they have a release. And then I'll send them to Jessica for the therapy.

Antonia Thwaites (2336293) 31:24

I see. Yeah. Could you elaborate a bit more on that, I suppose of what you actually see as the main factors in a voice studio when you're working with a singer, what are the main factors you think can help a singing teacher diagnose or suspect?

Participant-1 31:43

Looking in your singer's mouth while they're singing. It... you can usually see if they're trying to hit a pitch and the tongue has to go down because it it physically can't go any higher. It'll have a little dip in the middle. Maybe when they try to hit a high note. You can sometimes you can physically see you know the tension in in the actual throat or sometimes even just the forward head posture is them trying to create space in their airway because they don't have it, because the tongue is taking up too much of their airway space. So those are a couple little things to look out for, general weaknesses in the face. Like I said, I had like nothing going on in my cheeks like just so weak. So sometimes, like you can see that they just when they sing it's very dead faced. They don't move any muscles, or the tongue cannot activate the sides of the tongue at all like it they have a hard time doing something like...**(demonstrates skinny tongue out of mouth stretch)** versus... **(demonstrates flat/flabby tongue out of mouth)** and keeping it there. Also, just them being able to stick their tongue out at all. That's it.

Antonia Thwaites (2336293) 32:55

OK, OK.

Participant-1 33:03

'Cause they can't get it any...Like if they can't stick their tongue out very far. Right, that that's a big indicator too that they are restricted.

Particularly to fatigue is definitely a big thing, if they just struggle to get through phrases or they after one piece they're (*makes a pooped noise*), you know, that's a big indicator too.

Antonia Thwaites (2336293) 33:29

Have you worked with singers of differing grades of tongue tie?

Participant-1 33:37

Yes.

So I said I think the 60-year-old student that I talked about, she was like a 3 or a 4.

And then I've had other students that were more like a 2.

And that made a... My student that was more of like a 2 or a 1 and I had her get a release and everything and she went through that and it didn't make a huge difference in her singing. But then it also brought to attention a lot of things we didn't notice, just like things that she had to do to compensate because she couldn't do it the right way. Like we found out like after her release, she's like, "no, everything still feels really like light and small"...and I'm like, maybe plug your nose, I want to see if you...But she was singing everything through her nose because that was the only way she could access high notes or how she felt that she could get replicate the sound that she thought that she thought she was supposed to be making.

Antonia Thwaites (2336293) 34:33

OK.

Participant-1 34:38

So now we're trying to relearn to not... that's not where you get brightness and high notes, it's not through the nose, but that's how she had to sing to get a head voice... how she felt like... she thought she had to do to produce that sound.

Antonia Thwaites (2336293) 34:54

Right. That's really interesting...

But you didn't feel that, there were... so I suppose the question I was wondering about was, say a grade one, grade two, do you still feel it's really worth investigating?

Participant-1 35:16

Yes, especially a 2. If it's a 1, you could probably benefit even just from the Myofunctional Therapy. Because I said there's going to be still some compensations going on in the rest of the face or the body. So if you can learn to relax and strengthen the areas that need to be relaxed or strengthened, that's going... it will improve your vocal quality if you do not want to

get a surgery, as long as you keep up on it because it is muscular and even sometimes when I forget to do my exercises 'cause, I'll still do the ones that Jessica gave me, even though that was, you know, almost four years ago, I'll still do them. And when I notice, I notice a difference. When I stop doing them.

'Cause, I said. It's all still muscular and things go back to the way they used to be. So. My face and tongue do like to revert to old habits still, so I do still have to keep up on that. So if you are like a one or two and you don't feel like you want a surgery, I still think it's not going to make you a bad singer.

Antonia Thwaites (2336293) 36:11

Mm hmm.

Participant-1 36:22

But I said there are still other things that I can help with. Like I said, I had a 2 almost a three, but I had like, I couldn't. My sleep was terrible. Dry mouth like I had a lot of tension in my diaphragm, which is huge for breathing like it was like somebody was like standing on my diaphragm when I was trying to breathe, which, you know, wasn't ideal for trying to sing anything. So.

Antonia Thwaites (2336293) 36:38

Of course!

OK. Yeah, that's really helpful to know.

You mentioned earlier about, obviously the 60 year old who had a bad experience and I think you mentioned there was one other student who maybe had a bad experience. Is that right? Would you be able to elaborate on that?

Participant-1 37:07

I I think it was just her that and and hers was a lot more just physical in the body and I think it was more, I said the body trying to cope with all the new freedom it had and it didn't know what to do with all of that after 60 years of being in that that way.

The I have the one student that had a 2 she didn't have any necessarily physical, physical negative things happen like I I do feel like it still improved her voice and that, but she was still struggling with everything being too head voicy when we were trying to do like she really wanted to learn how to belt. But then I said, we found out it was because she was like singing completely through her nose, which I just didn't catch before.

So that I said might have been due to the tongue tie or it was just, you know, that's she one day decided that's how I get bright sounds. And that's just how I'm gonna keep doing them. So that could be, you know, anything that might not necessarily be due to the tongue tie, but

I don't think the release worsen that. I think that was an already pre-existing thing that she was doing.

Antonia Thwaites (2336293) 38:18

OK.

Participant-1 38:20

I said I know two other singers that I've worked with that are that they're the ones with the turbinates. They haven't gotten released yet. The one is getting released this summer, but I said she's got to get a whole rhinoplasty, full surgery. A lot of... she's got to get a lot of work done on her face.

Antonia Thwaites (2336293) 38:40

OK.

Are you aware of other potential complications that could come from a tongue tie release, even if you've not seen these in your own studio?

Participant-1 38:57

I know there can be airway issues. But that's more like if you had sleep apnea and. I'm not... I don't know a tonne about that... So I'm not super qualified to answer that question, but I know there can be complications airway wise if you get the release maybe you don't have all the the therapies done 'cause you can because it is now loose and it can like... you can like swallow your tongue. I think that's something that can happen. So you do have to go through like doctors and stuff. Don't just like, go to an orthodontist and like here, slim my tongue. 'All right, I'm fine!' You know, like, you have to make sure everything around it is. I said strong enough to handle that new freedom. So I think that, I said, that's the only thing that I've heard of is that it can have some airway complications, mostly, like when you're sleeping.

Antonia Thwaites (2336293) 39:46

OK.

OK, OK...

So my final question, which you've already answered, which was how important is Myofunctional therapy in the treatment of ties, but I think from what you've said, quite important!?

Participant-1 40:11

I think so. It's very helpful in the long run and I said even if you don't wanna get the surgery,

it can help with with so much because I said we all have muscles in our face that we don't use like to the full capacity but if you use them they can be super helpful for singing or breathing. And... but I said having the tongue tie, everything inside has to compensate to be able to replicate what you think is normal, even though it's not how everybody else produces that particular sound, you know? So we find ways and that's a lot of times too why nobody notices them 'cause it's like well, you sound just like this person who's not tied when you sing or do this, but there's just, like, little things that add up eventually that'll kind of kick you in the butt! So, I said the Myofunctional Therapy I think is really important, especially after - I know people that have gotten the surgery didn't do the therapy before - but because it can grow back: that is why I think the therapy after is really important so that you don't have to do it multiple times. Like Jessica has had her tongue released three or four times!

Antonia Thwaites (2336293) 41:23

Wow, OK.

Participant-1 41:25

Before she got into the Myofunctional Therapy. So she... like that's a lot. That's a lot!

Antonia Thwaites (2336293) 41:26

Yeah... So, you attribute that to not having engaged with the Myofunctional therapy previously?

Participant-1 41:37

Yes. And then I said, I don't know if they just didn't do it right, which is part of the reason, like, why she's probably so "Doctor Zaghi has to...you know, it's got to be him!" Because some of the people don't have the best training, so she might have just had some some botched releases as well. You'll have to ask her about that on Friday and see like what I know that I said that she's had three or four.

Antonia Thwaites (2336293) 41:52

Mm hmm.

Yes.

Wow.

Participant-1 42:04

And then there's still still things like both of us are thinking about getting the Maxilla expansion like having a, a MARPE the palate of the rapid palate expanders because that well, what you you probably know, like, if your tongue's not on the roof of your mouth, the

maxilla is going to in on itself and become narrow, and that's why we get all the dental crowding and everything. But we, both of us, had had braces when we were younger and had a little palater or expander. But even now you can see, like my tongue still doesn't fit. I don't know if you can see.

Antonia Thwaites (2336293) 42:28

Mm hmm.

Mm hmm yeah.

Participant-1 42:45

Filling out edges so there's still not enough, even though I have the strength now to stay up there, and the mobility to do so, there's still not enough space for it, because I grew up and my bone did not, you know, form the way it was supposed to 'cause it didn't have that support of the tongue.

Antonia Thwaites (2336293) 43:06

I see. Yeah, that's really that's really helpful...And also something I've been thinking about recently.

Participant-1 43:14

Yeah. She's getting hers this summer. I think she's gonna get the palatal expander with the screws and everything, so I'm gonna wait until she gets hers done and see if she likes it. But I said I'm... I'm definitely seriously considering it 'cause I think that's the next step to really even everything out. And just just all the work I've put in is gonna finally, like, be able to fall into place 'cause I'll have this like.

Antonia Thwaites (2336293) 43:43

OK, amazing.

OK, so I'm just going to check, but I think that is everything, so unless you have any other insights that you'd like to share? Anything else that you feel is relevant?

Participant-1 44:00

One more thing I thought of that teachers can look for is just face shape.

Antonia Thwaites (2336293) 44:07

OK.

Participant-1 44:08

Because if students have a really narrow, undeveloped jaw, just a really thin face, an undeveloped jaw that can be a sign of the tie or and like braces, crooked teeth, any of that, because everything forms around that maxilla when you're younger - so if that's again not there, that's the floor of the nose so a lot of people get the deviated septum, nose problems. The whole face is gonna be narrower and the jaw's not gonna be as developed because your tongue wasn't able to support that bone. So that's something that teachers can also just look for is if their students are just very narrow, underdeveloped jaw.

Antonia Thwaites (2336293) 44:50

OK.

Participant-1 44:51

And they can ask also like do you have a deviated septum? Did you have braces like, did you have your tonsils removed? Cause those are very common things, like Jessica and I both all had all that too so.

Antonia Thwaites (2336293) 45:02

OK, OK.

Very interesting. Amazing. I think that's probably plenty of information for me, so thank you so much.

Participant-1 45:16

No problem.

Antonia Thwaites (2336293) 45:17

It's really... yeah, it's really great to talk to you with kind of having both angles of experience with tongue-tie. Yeah. Thank you very much for your time. I really appreciate that. And you can also request a transcript from me if you would like in future, and obviously I can send that to you to make sure I get everything down properly. I'm sure we'll touch base again because the tongue tie world is small as singers right.

Participant-1 45:50

It is absolutely, yes, and I'm super excited for you to talk to *name* because I said she, I feel like I've barely scratched the surface and I've been doing it for a couple of years, but she's been doing the Myofunctional Therapy for almost like 10 years. So she's like, she's got so much great knowledge. So she's and she's been working with singers the whole time too. So she's like, she's your guy.

Antonia Thwaites (2336293) 46:15

That's amazing. Well, thank you so much for for also suggesting her when when you filled out the questionnaire that was really, really great. So I'll wish you a lovely rest of the day.

Participant-1 46:26

You as well.

Interview stopped.

After the interview, Participant-1 emailed with further insight they had forgotten to mention:

Participant-1

After we wrapped up, I thought of a couple of additional points I forgot to mention that may be relevant to your paper. Two conditions that can be associated with tongue tie, particularly, are TMJ disorder and GERD (gastroesophageal reflux disease).

Reflux is something that I have dealt with my entire life, and I have read that *tongue ties can cause Gastroesophageal reflux disease or GERD in infants. Evidence suggests that infants, children, and adolescents with GERD are more likely to have symptoms later in life as adults.* My theory is that I developed reflux as a baby because of my tongue tie, and it just never went away. Growing up, I always had horrible reflux, lots of heartburn, etc. That has gotten better since my release, though it still flares up when I eat acidic or sugary foods or have too much alcohol.

Tongue ties can contribute to TMJ disorders and jaw pain. The restricted tongue movement caused by a tongue tie can affect jaw alignment, muscle function. This strain on the muscles can contribute to jaw or neck pain and limited range of motion (you'll have to ask *name* about that because I am pretty sure she experienced a lot of pain during singing pre-release). Personally, I don't have TMJ disorder, but I do experience a lot of tension in my jaw, which I am still currently dealing with. Every voice teacher I have ever had has always "yelled" at me about not opening my mouth wide enough. I try to use a gua-sha stone on my jaw for a few minutes every day to massage out all the muscle knots in my face, which helps quite a bit.

Interview 2 Transcript (page 89-122)

May 30, 2025, 11:01AM

● **Antonia Thwaites (2336293)** started transcription

Antonia Thwaites (2336293) 0:04

OK, so that is now recording. So, I want to start by just saying thank you again so much for agreeing to participate. I've received your signed consent form, but could you just confirm once more that you are happy to be recorded, ur for transcription purposes and that you have read the participant information sheet and signed the consent form?

Participant 2 0:33

Yeah, I'm happy with all of this.

Antonia Thwaites (2336293) 0:36

Great. Thank you.

OK, so let's start first with just asking you what your experience is as a Western classical singer... so that could be your career to date, training, any experience that you feel is relevant?

Participant 2 0:58

So I started singing three years ago, 3 and a half years ago, just after COVID, and I've been training privately with different teachers. And basically I started studying with Neil Baker now a few months ago and as I said, I'm about to start... I've been doing the introduction to opera course at Morley college and covering some scenes at the Morley Opera School. And then I'm starting a postgraduate diploma or Masters, probably the postgraduate diploma at Trinity Laban in September.

Antonia Thwaites (2336293) 1:38

That sounds really exciting...

OK so I'm aware, obviously, that you've had the tongue tie surgery already, so could you just confirm when you had that?

Participant 2 1:53

So I actually had two because I was really tied and I don't know, maybe... I can't tell whether it's like I think... if the surgeon couldn't do more, but I think in some cases you kind of need two releases.

Antonia Thwaites (2336293) 1:55

Oh...

Participant 2 2:06

So the first one was in October 23 and the second one was in September 24 and then after that in November 24, I had a Kenalog injection as well to release scar tissues and that actually made a big difference. It was almost like the same difference as having an extra surgery. So yeah...

Antonia Thwaites (2336293) 2:34

Oh, wow. OK. Yeah. Could you elaborate a bit more on that, maybe the reasoning for having the two releases first?

Participant 2 2:41

Yeah. Yeah. But I mean again, like so I...went... I had a Myofunctional Therapist - Myofunctional therapy UK...And I can't tell whether they just want your money and it just till you keep having releases. But after the first release, I felt like there was a lot of improvements...But I still had like quite a bit of tension and there was especially what they told me, and I think that there was quite a big difference between the two releases: is that even though it looks like the tip of my tongue could move quite freely when you put a finger on the roof of the mouth, I can... to keep the floor of the mouth from raising when you put your tongue to the spot, it was still quite tight and actually showed quite a lot of restriction, kind of under the floor of the mouth. Which I still felt like, especially when I was singing, I felt like man, there's a lot of tension... there and things were much, much better, but it could be best. And then after the second release things were much better, but they were like I'd be really ready for a third. And I thought, God, I'm not doing a third one. And so then I did this Kenalog injection because I think I didn't get sutures, so I had quite a lot of scar tissues. So then the Kenalog injection was a necessary injection and it dissolved a lot of the scar tissues, so then it gave me more mobility, and now I find that...I mean, I keep it in the back of my mind in case I think with my singing I hit a roadblock and I think it's

connected to my tongue, then I might look into it, but I think...the other surgeon I saw told me that he didn't think I needed to do that, so yeah.

Antonia Thwaites (2336293) 4:25

OK. So just to confirm because you demonstrated - so for the recording because it won't be visual....

Participant 2 4:33

Sure.

Antonia Thwaites (2336293) 4:34

Just to confirm that you demonstrated it was holding down the floor of your mouth, right, and then when you did that you...?

Participant 2 4:39

You are bringing the tongue to the spot so avoiding for the whole floor to lift. Yeah, because I think after the first release, if I did that, I still like, barely could raise my top. It was almost as though I still had the tie in a way.

Antonia Thwaites (2336293) 4:44

OK.

Participant 2 4:56

But when I didn't, I could still like stretch a bit, but that meant that the Hyoid bone was lifting, and all the like area had quite a bit of tension.

Antonia Thwaites (2336293) 5:10

Yeah, that makes sense and you...Do you feel that it was to do with the provider that you used?

Participant 2 5:19

I don't know. I think she said....So she was the recommended and I went to Belgium to see someone called Doctor Van Bell, and she does a lot of them, but she doesn't do sutures. And I think I do produce quite a lot of scar tissues. But she told me after when I went to the second time that she was actually pleased by how well it healed because I was so tight, so tied and so tied that she kind of wasn't expecting it to heal

that well. I do wonder whether having sutures, if I had had a surgeon that did sutures, I would have to have less scar tissues, and that would have been different. But then the surgeon in London, I think that does it, has like a lot less years of experience doing the surgery. So, I don't know, it's really hard to tell at this stage. I think I went with the surgeon that was like the one that was the most recommended by my Myofunctional therapist. They said at that time they were seeing the best results with her. So yeah.

Antonia Thwaites (2336293) 6:15

Yeah, that makes sense. I suppose it is always hard to tell with these things.

Participant 2 6:20

Yeah.

Antonia Thwaites (2336293) 6:22

I wonder. So, you... I think you said you were quite restricted. So you... did you have a severe tie. What... do you know what grade it was?

Participant 2 6:28

It was a grade 3, borderline Grade 4. So I wasn't tied all the way to the tip, but I was like definitely the tip of my tongue wasn't free to give you an idea. Like, if I was trying to sing um, and sing consonants, I was singing through my teeth like I couldn't...and I couldn't do the cave, like the tongue in suction thing, like this.

Antonia Thwaites (2336293) 6:50

OK.

Participant 2 6:50

Whereas now I can put three fingers and whatever. But as I was....Yeah, very... tied like less than 50% mobility maybe.

Antonia Thwaites (2336293) 7:02

OK. So do you think it's possible that the severity of the tie was an impact?

Participant 2 7:09

Yeah, I mean, the Myofunctional therapist told me from the the get go, she said with

the tie like yours, I think it's very possible you'll need several releases. So I think they've seen a lot of other people in the past and and... they said that up from so, and I think that's the other thing: What's tricky is when you're a singer, you know, if I wasn't a singer and I was doing it for other reasons, maybe like I'd have stopped after one and I wouldn't have gone back. But then as a singer you need...It's about like having the full functionality of your instrument every single like tiny thing makes a difference. So, I... in my case, like I knew I needed to go further, but I think maybe if you'd gone somewhere else and you're not a singer, like people might just have said, well, it's fine. Who knows? But yeah, it was....it was a big difference between the first two releases.

Antonia Thwaites (2336293) 8:11

Do you mind telling me a bit more about the Kenalog injection and what that was for and what it did?

Participant 2 8:14

Yeah. So that's a slightly experimental, I think, treatment that Doctor Zaghi has started like implementing, he's the guy that's the main surgeon in the US and then I went to the American Smile Clinic and Doctor Suraj in London to ask about... for a second opinion about whether I needed a third release and he said well, there's quite a lot of scar tissues... I wouldn't do a third one, but you can do a Kenalog injection. So it's just, I think... I can't remember which Kenalog it is, there's like different ones. And I think and he literally just did a couple of injection spots under my tongue at the spot of the frenulum. And then for me, there was an instant, instant difference, I think, for some other people it takes six months for things to really... like for me like all the difference was on the day just did that injection then suddenly I had a lot more stretch in my tongue like the tie itself before it was like quite hard and very white. And then it became a little bit more stretchy and a bit less white. I did have a side effect of like there was actually a small tear in my frenulum, but actually that was good because it allowed, like the extra restriction to go. And then I also had like, now I have a little bit of discoloring like white... couple of white spots on my tongue, but it doesn't hurt. There's nothing. It's just that's what it did to me. But I don't think that they've seen that with other people, but I think it's a relatively recent thing. I don't know how much... I don't think like it's anything the NHS would recommend doing, so you kind of do it a little bit at your risk. But yeah, for me like, after that I felt like, oh, yeah, now I really have realised the benefits of my tie. Like, I don't think I need if I

if I'm still restricted: it's only a bit. And I can probably do enough with my singing at this stage, like mainstream it's good enough to allow me to improve and then I don't know later down the line if I see like, all right, I physically can't do XYZ, then I'll consider what I need to do. But I think yeah, it made a big, big difference again.

Antonia Thwaites (2336293) 10:30

OK. Yeah, that's really interesting. I haven't heard about these Kenalog injections. So just so I understand correctly, is that usually something that is just used for scar tissues?

Participant 2 10:42

Yeah, usually I think, I looked it up. It says currently that's been used for two different things, allergies and inflammation, but also scar tissues like in I think...in like plastic surgery stuff so it's just for scar tissues, but probably more like externally than internally. Yeah. And I spoke to an American lady that's a Myofunctional Therapist and soprano, and I kind of had seen some of her videos online about tongue ties. When I started researching the topic. And she...she said after because I didn't know... yeah, what to do after the second surgery when I was recommended to do a third. And she said, yeah, I'll try that then, that she knew a few people that did it and it had quite a big, big impact. So yeah, that was like, you know, might as well give it a go, see what happens.

Antonia Thwaites (2336293) 11:33

Great, that's really insightful. Thanks.

So you have already sort of touched on this, but would you mind telling me more about your experience surrounding vocal health before you had the release?

Participant 2 11:52

Yeah. So...So again, like just a disclaimer is because singing is, even though I've improved quite quickly and I'm where I am now, like it's quite a recent thing. So there's stuff...it's difficult for me to tell sometimes like, what's the impact of the tongue tie versus what's the impact of my technique. But I'm pretty sure a lot of the reasons why I couldn't get the right technique from the start - because I'm someone that learns usually very quickly - were like tongue tie related. But when I first started singing, maybe after six months or a year I got vocal nodules. And at the time I went to ENT, wasn't necessarily the best ENT, but he said it was like reflux. But I think for

me it was a mix of three factors, so it was tongue tie, so regardless of how good/bad my technique was, there was always going to be an element of tension that would exacerbate everything else I did. I potentially did have like a reflux, although I'm not even sure that was the main thing...I did practise like far too much because I wasn't really... I didn't really know... I was an instrumentalist at first, so then kind of making the transition between knowing how much you can do things so... probably practising too much for the level I had and the amount of tension I had it for my technique, didn't have the best technique, and then I went to the South of France and got a bug or something maybe COVID, but I had the worst cough on the planet for three weeks and then I lost my voice, and then it didn't come back. So it was like a combination of everything and potentially...but I think the tongue tie was definitely like a part of that. I think definitely the other stuff I noticed prior to the surgery, but that was potentially also like a mix of the technique and stuff, but...I did have like vocal fatigue like after singing and loads of tension. So, I went to see, I don't know if you know her, Sophie Raitz, she's like the laryngeal osteopath.

Antonia Thwaites (2336293) 13:54

Yes I do.

Participant 2 14:00

So I saw her after the 1st release. I started seeing her and like when I was first seeing her I was like God like that was the most painful thing. Like the most painful thing on the planet. And I had so much tension like here (*indicates to larynx*). I think my larynx was always stuck a little bit too high. And I mean, in general loads of tension like I couldn't have a straight neck, so I was like going forward, like loads of back and shoulder tension, pelvic floor tension as well. And after the second release and then after the kenalog injection, all of the things went away. So, like, even when I sang, I used to feel like all of the S... Sternocleidomastoid – SCM muscles they were going... they would really get involved and like whatever I did you know...and I was like, but how? Like I'm not using... like I'm not... they're not meant to. So I felt like a lot of tension and it was really difficult to yeah, be straight when singing, it felt like a huge effort. Everything felt like a massive effort and there was only one way to get a nice sound. And it wasn't the right way, you know, like it felt like. I could only... and maybe that's like where there was a technique thing, but I think if I had done what was technically right at that time, it wouldn't have sounded very... good. And so I felt like I didn't have a lot of options of things that felt comfortable.

Antonia Thwaites (2336293) 15:26

Right.

Participant 2 15:27

So I was...ok. And then after the second release I had a period of time where I was just completely confused because suddenly a lot of things started feeling comfortable, and then I had no clue, like, you know, where's my tongue actually meant to go like? And then when I started lessons with Neil - I quit lessons with my teacher because for a time I didn't know: Is it the tie holding me back or is it my technique? And is it my teacher? And then I kind of after the tongue tie release, I felt like I still... things were easier, but I still felt like I don't think I'm getting the answers I need and there was a bit of a personality clash with my teacher. So I changed, I went, I tried two different people. None of them were really answering my questions, and then I started with Neil a few months ago and there was definitely like some bits that were technical, but I don't think I would have been able to do the things he asked me to do technically before the surgery. So, the thing of like being able to have a high tongue and like a low, like yawning thing at the same time, I think that would have been utterly impossible - just having a high tongue at the back, for example. And...Yeah so... and then also a lot of things about just the....One of the big things I noticed, that's definitely like I know... I knew from even my teacher before, but the big thing I was suddenly able to do after the tongue tie releases: switching the tongue from a high position at the back to like having the tip up, which is what you do all the time in singing. You know like when you say E (/) and then you try to do a consonant and that ability of it, to do this... like that before, it was just literally impossible because I was so restricted that the tip it couldn't go up at the back at all.

Antonia Thwaites (2336293) 17:11

Right...

Participant 2 17:12

So yeah, and it couldn't also go to... I couldn't do an R, like I couldn't do that. **(rolled R)** I was like UR UR UR **(demonstrated attempt at rolled R)**. And then... **(indicated the larynx lifting up)** Yeah. So...

Antonia Thwaites (2336293) 17:24

Wow. Yeah. So it had a big impact then.

Participant 2 17:28

Yeah, I think... I think I would not be able to consider a professional career in singing without having done the thing. And I'm kind of glad I found out about it quite early days because it's quite a long process as well... And not just with the surgery itself and the myofunctional therapy, but then for your whole body to adjust.... And then...

Antonia Thwaites (2336293) 17:52

Mm hmm.

Participant 2 17:52

Yeah, it took quite a while.

Antonia Thwaites (2336293) 17:56

Yeah, that really interesting and it's really good that you, like you said, did find out early and then that it had this impact on you, that was positive. So that's great. So... I'm going to ask you a bit more (because you've mentioned myofunctional therapy, and how long the process took).

Participant 2 18:20

Yeah.

Antonia Thwaites (2336293) 18:22

So...I'm just thinking where to go next... Yeah, maybe let's do that because you mentioned that just now. So, you said it took quite a long process from the moment that you found out you were tongue tied...actually first, who discovered you were tongue tied?

Participant 2 18:46

I did! Like I basically did this thing that is that like would never recommend someone doing, but at the time when I was not singing, I was like but struggling with my techniques, so I just started Googling things and I was like, Googling stuff about vocal support. Obviously, you get so much crap online, never do that, but then I

came across this video from yeah, this American soprano that I spoke to later on, who is a myofunctional therapist, and she had this video about vocal support...I don't think necessarily the stuff she said there were what I would recommend. But then she said something that intrigued me and she said, well, if you're tongue tied, you might not be able to realise the benefits of that. Then she was like, oh, and after the video to tell you about the tongue ties, and then I look into it... and she was explaining kind of... how a tongue tie affected singers. And then I just started licking my tongue and I was like no, my teacher keeps telling me I need to have a wide mouth and then articulate the consonants and it just feels like impossible to do... like even I think I've always spoken very fast and I've never articulated very well because it was such an effort to speak in the first place, like being tongue tied. I felt like so much...I didn't realise but once I started paying attention like I felt like, oh, God I've got so much tension in my face in my cheekbones and my jaw because it's a difficult so... So then after that...I think maybe that was like in March 23 before like the first surgery, I got in touch with... but she also said, oh, you need to go (if you have this), go to a myofunctional therapist. So... because they can diagnose it. So I found Myofunctional therapy UK and they're very busy so I couldn't get, I think an assessment until May that year and then from May until basically September it took that long between because I think... the the sessions I got a package of... I don't know how many... can't remember how many, but then after that I booked the surgery and I took an extra 3 months of wait to get the surgery. So, I'd say it's about 6 months of Myofunctional therapy and then it was three months of just waiting for the surgery. And then, but they said, and I think that's a good recommendation that that you need to wait at least six months after the first surgery to do the next one because, you keep doing the exercises and then you gain more mobility and then you can tell clearly or not whether there's still like a function issue, and your body keeps changing as well so I think if you do it earlier, it's such a big... it's crazy, but it's such a tiny thing, but your body goes completely... at least mine really went completely crazy after I was like the first day I was walking around like this (**demonstrated one shoulder higher up**) and then gradually, you know, like it kind of realigns itself in different way until it finds its centre. But I think that the first time round it took a good 6 / 7 months to settle. And then I did the next surgery and then quite quickly after that they said, yeah, you might consider a third or something and then I just got the kenalog shot I think in November. So, just two months afterwards... So overall it took a year and a half - two years.

Antonia Thwaites (2336293) 21:56

Ok.

Participant 2 21:57

And during that whole time, I was kind of working on my singing and other aspects of my technique. Like I didn't have very good support, actually...once I did the first surgery, a big difference was suddenly I think I could breathe for much longer phrases like because I think, the the...restriction probably affected everything down there, like maybe the diaphragm, maybe also the pelvic floor and the ability to relax those muscles and take a normal breath. So then, after that I did quite a lot of work on that and then I think resonance was only something I was able to start working on after the second surgery, because it's just not really possible to get things in the right position and I'm still working on that and vowel clarity is my next big thing, but yeah.

Antonia Thwaites (2336293) 22:48

Yeah, it's a never ending journey as a singer, isn't it?

That's really interesting though, so it was quite a long process, but sounds like it was worth it.

Participant 2 23:00

Oh, definitely. And for other things as well. I mean, not just singing. Just to be like the posture having been able not to be...I never noticed I had a lot of tension in my neck until like someone's like: "yeah, you might have a lot of tension in your neck". It's like, oh, is that, is that not a normal thing everyone has? And then yeah...

Antonia Thwaites (2336293) 23:20

Yeah, yeah, really interesting. So you mentioned about going to see Sophie Raitz... Did she or any other specialists that you saw (that weren't related to tongue tie necessarily), know about tongue tie in singers?

Participant 2 23:41

No, I've literally been educating everyone about it. So, Sophie didn't know about it, but now I'd say like she... having worked on me, she really...she saw a massive difference in things. A lot of teachers... My first teacher, she was like, "oh, you've got

a short tongue". And then when I told her about the tie, she had heard someone else having a tongue tie. So she was like, "oh, yeah, maybe you're right". That's that. The second teacher I saw she, I think, knew about it. Neil didn't know a huge amount about it, but I think now he kind of has seen a few people, like he's asked me... one of his students was doing the surgery, if I could speak to them. Pan didn't know about it, and I think at the start he was a bit really sceptical, but I think maybe now having seen the difference between me, first, then after surgery, I think he sees like... that but I don't think he really understands the details of it, and I don't think he'll be able to recognise it and there's a lot of people in my Opera course, (that introduction to opera) that are really tongue tied I noticed. But a few of them in that course have done the surgery. There's... my... I then went to see a speech therapist, after, because after I had some muscular tension issues...at some point just after the first surgery because I was singing trying to adapt and I think your body kind of tenses up in really weird ways. So that's when I went to see Sophie. But I went to see the ENT... What's his name? ... Nick Gibbons. He didn't know a huge amount about tongue ties, but then he rec... he sent me also to speech therapist. Um...what's the name? Tory Burn... Brene... And she's on the board of BAPAM, and she didn't know anything about tongue tie. It turns out she is tongue tied... And I...so we had our last session we didn't even do any speech therapy, but she asked me about it because apparently the dentist Dr Suraj reached out to her to ask like whether Bapam had any like, sort of pathway for people that are tongue tied. So she was really interested, and she asked me about it....all the things that I did... and I kind of, yeah, I put it down to the fact that they don't do like the kind of really quick test you can do just to see if someone is tongue tied. And I was like, well, you might be tongue-tied... and then she said like they they may be interested at some point and like yeah, doing some research, like doing more on tongue tie. So, it looks like there's a growing...but it's not...ur... I found, especially with coaches and teachers, when I said I was tongue tied like people just told me, like oh yeah, but no, you know, you can roll your Rs. I could kind of roll Rs. I could do (UR UR) with a lot of tension. Or and you can pronounce all your vowels, so you can't be tongue tied like they didn't understand that it's more profound than that. It's not that just the tip of your tongue can't move. It just affects the whole apparatus. And yeah, there's some of them been a bit like being saying like, oh, well, you're fixating on your tongue and that that. And I guess maybe I was a little bit, but also there is a real thing and I don't think people understood like what...what it is that you should be able to do and what are the things that your restriction will stop you from doing, and that I found that

really stressful I think throughout the whole process, that thing of not knowing is it me?...Is it my technique? Or restriction?... and I think yeah. After I got the Kenalog injection, I kind of decided again, for now, I'm just going to assume that there's no more restriction...it's all a technique thing. But before that I felt a bit stuck. Also because there's always that question mark if...Yeah.

Antonia Thwaites (2336293) 27:19

Yeah. No, you've said so many interesting things there. And I can also personally relate to a lot of them and it is very interesting. It does seem to be becoming a condition that's more known, but it's very slow, isn't it?

Participant 2 27:37

Yeah, I It's fascinating when...yeah....and I one of the things I found personally difficult as well was my relationship with my parents. So, when I first told them about this thing, I think my mom maybe, like, I don't know, she felt a sense of guilt of not having spotted that as a child. I don't know if anyone mentioned it...I always had acid reflux as a baby. There's definitely something there, but she just thought I was crazy because I said, like, you know, there's a lot of benefits that can come out of that, not just the singing, like better breathing, posture, things. And then she said, well must be a scam you know. She thought I was going to scam doctors and being a stupid or something, so. I think there's a lack of research on adult tongue ties in general. Like not just among singer, but in the general population. And you know what kind of co-morbidities quote on quote...kind of, health conditions people can develop after having that. Because I think it also did explain a lot of the kind of random small symptoms of things I had in my non singing life. Like yeah, having maybe reflux sometimes or digestive issues like I developed SIBO after they give me PPI. But like that's potentially also something that had to do with like the not being able to chew your food properly and in your mouth and things like that, like maybe more prone to that. Like pelvic floor tension issues, tension, things like not very good sleep, always having a blocked nose in the summer and like headaches because it wasn't...things weren't moving, it was just getting stuck. So, a lot of things like that, that just felt like, Oh, yeah, I get injured a lot doing sports as well when I was...I used to play rugby before at university. So then I kind of... for me it... when I learned about it and like from the people that know about it and they said a lot of the symptoms were... are things that other people experience it just made so much sense. But I don't think... I

think when you talk to people about it and you say these things, a lot of people think you're a bit crazy. Yeah. So, just have to do the work. Yeh...

Antonia Thwaites (2336293) 29:50

Yeah. I can relate. I can relate. It's very interesting. If I could just pick up on what you said about acid reflux, because that's something that I'm personally aware of as well, through having muscle tension dysphonia, that's something that is very frequently related to acid reflux, in voice clinics. And I've noticed that myself, and they'll often prescribe PPIs if you also have muscle tension dysphonia. So, the fact that you've mentioned acid reflux being related to tongue tie, would you mind just elaborating on that, or how you know that?

Participant 2 30:31

So I mean... so my reflux stuff isn't completely gone, but actually I'd say my experience with PPI was terrible. So that's everything... So, I would say because like your... like the top of your... in my understanding of the anatomy...that that your tongue is connected to the hyoid bone that's connected to the larynx, that's connected to trachea, that's connected to the like... a sphincter if you... if you're pulled forward constantly and there's all that tension up, I think just the fact that there is that Muscle tension in the first place, especially in babies that can be in itself just a physiological cause of reflux. I think from my experience of reflux, there's just so many other factors. I'd say if you have muscle tension dysphonia, it's very potentially connected to a tongue tie, which then is likely to have an effect on on that. The complicating factors, the factor, I think is like the PPI stuff. So in my case, I... after I got my nodules, the ENT prescribed PPI and then I started getting loads of heartburn which I hadn't had for years and it got worse and worse and then they increased my dose and they kept getting worse and worse until I decided, OK, it's enough, like no more PPis. I'm just gonna stop this thing. But then I started having like loads of burping and bloating and stuff, and that started on the PPI. And then I developed what's called Small Intense Bacterial Overgrowth, when you basically ... and that's a known consequence of PPI, that PPI decrease your level of acidity in your stomach. And so actually that can cause more heart burn and things going up because it stops your sphincter from working properly, and then you get more fermentation of and you get more and more bad bacteria.... Especially the good ones... So that it basically causes this bias. This is like an imbalance of your guts microbiota and then that can then maybe travel to your small intestines, which is

what SIBO is. And again, like there's a lot of, like, controversy about how to treat that. Usually, people give you antibiotics which can make it... worse. So now it's been a long time that I've been trying to kind of...and this happened... yeah... basically almost like three years ago...I'm trying to find a way to heal my gut. Things have improved a lot, but... so now I've decided I'm going to try probiotics only, like, not just trying to, like, the positive approach... And for three months, it's actually, like, already improved things. And if that doesn't work out, then I'll go to see a proper gastroenterologist and just take like antibiotics. But...I'm a bit pissed off at like the medical profession for prescribing PPI for every single case of acid reflux, like I they they didn't even... why they did check it...they're like, yeah, you're gonna have to take PPI for the rest of your life. But I didn't have reflux for ever and and things like that and that...and I think now there's more and more research that says that if you have well...yeah, I think the tongue Tie maybe was the cause in the first place. Potentially also, yeah, stress and...but they didn't recommend any like lifestyle changes or yeah, if it's... if it's... sometimes reflux can be caused by H pylori. And I mean, they did one test, but it's also like a test that's proven to be not very... the most accurate.

Antonia Thwaites (2336293)

Ok...

So yeah, I think they're all connected. It's quite difficult because if you have had a tongue tie a long time, I would say it's possible that you don't have very good gut health and a lot of people have said about it because you can't chew your foods properly. So then you'll have like fermentation in your stomach and that can cause like the bacteria to flourish. So that's why, like, there's a bit of a... a lot of things that can be connected and I really wouldn't be surprised if, like, people that have muscle tension dysphonia, if they were all like sent to a myofunctional therapist to kind of establish whether they have some level of restriction, not just like an obvious tongue tie, but like a posterior one like that... they would find out there is something like that. Like because...yeah...anything that's pulling on your throat...stress...pulls on everything else.

Antonia Thwaites (2336293) 34:52

Yeah, that's really interesting. That's... it's fascinating how it's all so connected potentially.

Participant 2 34:59

It's like, yeah.

Antonia Thwaites (2336293) 35:00

Yeah. So, but you did, I think, say that you did feel there was improvement to your acid reflux after the tongue tie releases, yeah?

Participant 2 35:09

I mean definitely in terms of like I could feel the physiology... like I wasn't necessary getting physiological symptoms. But then the problem is after they had given me PPIs, I had already like... now like I have like burping and that brings up back the stomach acid. So, I think that's the problem now, but there's no more like physiological cause of it necessarily. The other like thing that I saw a big difference in like medical symptoms is um, I used to have a lot of like pelvic floor tension and at some point I had like overactive bladder symptoms of like... and that really improved after the tongue tie thing, and like all the tension is... was kind of gone. And I think that really impacts the breathing and that will also impact on like vocal cord health. So, if you can't take a relaxed breath and then you can't have like, you can't control your air flow from those bigger muscles then, you're likely to... not...yeah... I think the nodules like, potentially also they came....were potentially connected to that... So I would say it, yeah, it has a big impact on vocal health.

Antonia Thwaites (2336293) 36:27

Yeah, yeah. No, definitely, that sounds... that sounds like it's really been quite obvious: the impact, in your experience...seeing the progress after the release, so that's really great that you were able to do that.

Participant 2 36:43

And I guess, I mean, I've spoken to a lot of people about it in the singing community because I don't... I feel like it's useful to educate people on it, but the people that I've met who have... didn't, never knew they had tongue ties...but then I kind of checked if, like they potentially had some in there, it looked like they were quite, they were tied and then they said like, 'oh, yeah, that makes sense'. 'I'm like sore all the time' or 'I have a lot of tension' or 'I have this issue with this note and it like an issue with...I keep get... potentially they have muscle tension dysphonia. She's like, 'oh, I've got a

weird thing happens in the transition like on...to this note'. And I was like potentially you have a vocal health issue/problem, but also potentially like the tongue tie thing is a thing and the more and more people I am... I can always tell like in singers now who has the tongue tie. And it's interesting that so many people in the Introduction to Opera course I'm doing have tongue ties because it's like singers that some of them are really good singers, but they're maybe missing something to be going a bit further further or... and then it's like: oh yeah now I understand why your voice sounds like that because you have a really good, like basis and stuff, but there's something a bit missing to the voice and it looks... and then it's like, oh, yeah, that's tongue tied, so.

Antonia Thwaites (2336293) 37:56

That's really interesting. So how do you... um what are the main... if you could say like the main three things or three or four things that you spot in other singers with all of your knowledge now, what would they be?

Participant 2 38:11

Yeah, I think... Maybe like pushing the sound, like doing weird things to get resonance. Like it depends on the level, right? But like, some people I can say like they're doing weird things to get resonance and like kind of micromanaging a bit too much on there, and...because at least for me, what I did when I started singing is like the only way I could get resonance (because I couldn't get my tongue up and the larynx down), is tongue-root tension. So, it's like, Urrr **(makes tongue root/throaty sound)**, and then you sing like this. And so I could tell that there's one person I recently figured out she was tongue tied and I think the transition to the bottom registers, like people that clearly like have the notes at the bottom, but they don't come out... Like my range, like my my ability to access all the notes in my range, it's become much better like after the surgery and I my... I'm a contralto...so I should have a good... a good bottom.

Antonia Thwaites (2336293) 39:15

Yeah.

Participant 2 39:16

But I found it quite difficult to access it with ease or without pushing which it could have been a technical thing, but I noticed like sometimes the transition between

registers with some people with tongue ties. Obviously, you can tell whether... if they're unable to have both, like the clarity of the vowel and the resonance, and then also like have an open mouth...so there's usually gonna be an issue with like resonance and usually an issue with articulation. But for like the more advanced singers it's harder to spot, but I think maybe there it's more about the clarity of the sound. It sounds like... they sound like they're very advanced and they've got a good voice, but then like maybe they're not articulating very well, or maybe the sound like lacks a bit of like focus.

Antonia Thwaites (2336293) 40:03

Hmm.

Participant 2 40:03

I think that those are things like sometimes, you spot... And then... and then if you were their teacher, you'd definitely know if they're... I think one of the things you should you should check well, is... um like people that clearly like should have a bigger range, or they have the notes, but they can't reach them. And you've tried all the technical things possible and it's really hard. Like before I always knew I had a top C, but I would reach it and it would be very, very tense and very difficult to reach. Now it's possible to do it. So, and then I spoke to another student of Niels who was having the surgery and she said she's like coloratura soprano, knew she had the notes, but she couldn't get them consistently right. And then she's diagnosed with the tongue ties. I think that's like, definitely one of the things the teacher should, should check. And yeah, if someone struggles to articulate. And then when you tell them, like, and struggles to...keep their mouth open. And have like instead of having different shapes of vowels for everything and then having... doing this with their mouth instead of keeping their mouth open, and then you just use your tongue to do. That difference like that's a big, big thing... But it's difficult to spot, I think, in beginners because, I mean: as a teacher because you'll think it's because they're beginners. It's weird, like it's very easy to spot in a way in those people 'cause they've not been hiding it or compensating so much. But then people will think like, oh, yeah, they're just not a very good singer or they're just a beginner...so....they just can't. They, they haven't quite learned how to do it yet, but it's actually they can't...they *can't* do it.

Antonia Thwaites (2336293) 41:41

Yeah, that's really interesting and a really good point because of course, I assume some level of... um, yeah, if you're a beginner, a lot of tension can occur anyway through not having the technique, so I suppose it's... yeah, it's, I suppose.... recognising...

Participant 2 41:59

Yeah. If I was a teacher, I would always check my students for tongue ties first thing, you know? Now that I know.

Antonia Thwaites (2336293) 42:08

Yeah.

Participant 2 42:08

Obviously, like I'm not a specialist, so like I'd be able to spot the obvious ones, but then if you do the function test and you see like they don't have all the mobility then and then I keep that in the back of my mind and I wouldn't actually recommend they do the surgery, if they wanted to become professional singers, I'd be like, yes, do it. But....But I keep... and then if it, when it became, yeah, I'd recommend them to consider it or think about it, or I'd take that into account in my approach, but because so few people know then... I think that's what's so difficult is that you get blamed and it's always like, well, you, you have tension like, you're over doing this, and you're doing that. And because I've always known that whatever I pick up, I pick up super quickly and I actually do have a very good perception of my own body. And when someone tells me I'll change that I can do it immediately. So I kind of knew it was like, not... I had the feeling like, it's not just me like, there must be...There's something else going on, so yeah.

Antonia Thwaites (2336293) 43:05

Yeah, that's a... it's a really good point. Also, the psychological effect that you've touched on because that's actually something I hadn't thought of so much with my research, but that's a really good point.

Participant 2 43:20

A lot of people will give up, you know? Like that have tongue ties and haven't been diagnosed because they can't reach their full potential, like it was their sound.... Um, there was this American, another American soprano that they did like a sort of

tongue tie symposium, trying to educate singers about it online. And she showed a video of her before and post tongue-tie. She was already very accomplished. But the sound was so different like...it's so much richer afterwards. She didn't change anything to her technique. She already had a really good technique like so... Psychology... and she was talking about that psychology of you just, you know, like someone will tell you 'do this' and then you have to work so hard to try to find it in-between those things because you have a restriction. So, you have to make compromises, but you can never reach the sweet spot where you're addressing like kind of all the compromises... in a way you can't get to that place where you have distribution if that makes sense... the resonance, especially on the higher notes. And psychologically, I mean, yeah, 'cause I think you probably, if you're a good singer and you get to that level, you're someone that's improved quickly at the start and then you get stuck and then everyone else like gets better than you. I was really lucky because I found it extremely frustrating, (because also I had to have two releases), and then and it took so long and I think not really having people... that I was the only person having that experience... So I think there's a lot of self-doubt and thinking, that you know, is that the right thing to do? But, but at least I didn't have the experience of like, getting to a good place, and then just not knowing what it was that was holding me off. And yeah, I heard of someone who was just kind of singing in the chorus of the opera house doing... I mean, that's a good job, but with the potential of being a soloist and not being able to really apply for any of the roles that they should be able to sing because the tongue tie meant they couldn't consistently reach those notes that in an audition, are like common... you don't want to put yourself in a position where you're just going to screech or... so yeah.

Antonia Thwaites (2336293) 45:35

Yeah, of course...yeah, it has the potential to be really impactful for someone's career then, yeah...

Participant 2 45:35

Yeah. Yeah, and psychology... I mean, you know, if you've gone through so much psychologically, I think psychology will have... 'cause. I'm sure you can have... There must be singers that are.... I wonder, like, professional singers that are tongue tied, even though they have been successful. Like, I think there's a contralto, like Natalie Streetsman and she is like very well-known and stuff. But I kind of wonder if she might have one. I guess... hasn't always like the best clarity and it's the most beautiful

voice. I think it's still possible to have a... depending on how it's affecting you and your specific things, it might still be possible to have a career, but it might be... you might not be depending on your... if you've got a really big range that you need...and you need to use your entire range and you're very restricted then, probably not.

Antonia Thwaites (2336293) 46:36

Yeah, it's interesting. I think you can go a certain distance with technique, of course. And I suppose then depending on the person and depending on the restriction, that could be like you've said, the missing piece. And I have heard of... because I've also seen a vocal osteopath, and she's told me about a couple of instances that she knows of, of professional singers who are singing at ENO, Royal Opera House, and realised in their late 30s that they had a tongue tie because they were coming up against a wall. And they couldn't go any further. It's like they'd become so accomplished, despite this.

Participant 2 47:15

Despite it, yeh...Like I think I got a bit stuck mentally with the tie at the start. I mean, I think I was so restricted that definitely I needed the first one. But after the first one, I...and when they told me I needed the second one, I think I had a bit of a mental block and I was like, well, I can't improve more than then, but I think I had the wrong teacher and he was making me do things that caused more tension and it wasn't quite working. But maybe if I'd been with another teacher, I might have been able to get more out of my voice in between the things. But yeah, if I hadn't had the first surgery like that was... like that's, I don't even think I would have been able to get into any college or.

Antonia Thwaites (2336293) 47:57

Yeah.

Participant 2 47:58

I think that would have stopped my career quite quickly.

Antonia Thwaites (2336293) 48:01

Yeah...Yeah, that would be really sad.

Participant 2 48:06

Yeah.

Antonia Thwaites (2336293) 48:07

Just to go back to something that you demonstrated earlier, just so... for the transcript so that it's clear because you were showing with your hand. So, you were talking about high tongue position, low larynx, is that correct?

Participant 2 48:15

Yeah, yeah. High position, low larynx. It's basically the whole thing being able to have a stretch pharyngeal space at the back and then also the ability to switch between high tongue position and then tip of the tongue to the alveola ridge, whilst keeping a low larynx.

Participant 2 48:37

Pretty much, I think if someone can't do that...they're very possibly tongue tied or they don't get it, but like either they don't get it, or there is a restriction.

Antonia Thwaites (2336293) 48:44

That's so helpful, really insightful. I'm just going to look over these. I think we've covered most of the things that I wanted to ask you...I suppose actually one thing if you could elaborate more on, obviously you had to have two releases, but I know you've said overall it was a very positive thing, but were there any negative symptoms or experiences that you did have along the way that... yeah, were not so positive?

Participant 2 49:23

Not hugely. I think. I'd just say I was expecting my sleep to get better, but I think I'm quite an anxious person so, I think there's all the factors around that and then... I mean, I guess the only thing is that, it's not a negative thing, but it's a long process and your body does take time to adjust. So, as it adjusted then at some point, yeah, I had a little bit of like muscular tension issues, and I had to go and see the laryngeal osteopath. But that was just... part of the process of your body goes a bit crazy and it takes a while to find its alignment again. I can't really think of anything, to be honest. No, I really don't regret it. I would say though, I've heard of people regretting

doing...not having any benefits from it. So, I have a friend who's a violinist and she had a tongue tie release around the same time as me. She saw no difference and if anything, it worsened her TMJ. Like I... for me, it improved my jaw tension, but she had a prior history of people messing about with her jaw and her bite. And I think the other thing...I would say is like...I'm a bit anxious about everyone just going and getting their tongue ties cut without doing the right due diligence first. I think first of all, like no one should get a tongue tie without doing myofunctional therapy. But even like the myofunctional therapist I went to see, for example, they never did, like an evaluation of whether... like a sleep study, or an evaluation of whether I had to like a good airway. I mean they checked visually. But I think that's the really important thing is that if you don't have space for your tongue to go. Like if you can't, once you've done a release, like you can't have your tongue like and your teeth... because you don't have enough space and you've got crowded teeth. Or maybe at the back here you have very little space. Some people might just be born with like a different physiology. It could make it worse for you because then you could get sleep Apnea and you can get issues with breathing and stuff like that. So, I think... I'd say for me my personal experience has been extremely positive, but I have met people for whom it's just not really changed anything or made some things worse. They were like, have specific circumstances, but... I think yeah, there's an element of caution to be had about like recommending the procedure. And I wonder like, you know, like what I'm... there's not been a lot of research on it on adult tongue ties and all of the research that's been conducted has been done by Doctor Zaghi. And I as much as I think it's incredible, I think a lot of the things he says are correct. It's become in my mind, like looking at all the videos and stuff he's posting online now, they're very like antagonistic 'cause I think he's been criticised by a lot of people and they're very... they sound a bit like...co... if I was looking at this and someone... as the first introduction to tongue ties and I saw this guy talking, I was like, 'yeah, that's a scam' because he's very like anti-establishment blah blah because everyone's scrutinised what he was doing, which is understandable. But I think what would help, is having studies that are more objective not done by him and also, I also... like multidisciplinary study at some point so. I was quite enthusiastic when the speech therapist asked me about it because I think what we need is... like... it's really useful to have a study that goes and asks people about their perceptions and their experience because that's kind of legitimate doing further studies. But then it would be really useful, and I don't know how you do that, but to have, like, studies where you also maybe involve like feedback from the external people that have, like,

worked with them...If it was possible to see something on an MRI like...you actually see physiologically what's going on and then having randomised trial where you do it, have people that consent to doing the procedure and then see like who it affects... and who are affected positively versus negatively. Like something that...it's like a high level of evidence, just to reassure people, because I... yeah, having read, I've read, probably should not do that, but on forums, like people that have had worse things coming after that and that it's always been on the back of my mind when I was doing it, I always thought like, what if it gets worse? Like what if it... and I think it would be... it'd be good if there was a bit more research on that.

Antonia Thwaites (2336293) 53:59

Yeah, definitely. And I think like you say, it's really important to, yeah... maintain an element of caution. And I suppose it's individual, isn't it, at the end of the day of whether it's worth going for it. And perhaps you also said that your friend was a violinist, and maybe if they were a vocalist, maybe it would...

Participant 2 54:25

They might have noticed something. Yeah, I don't know.

Antonia Thwaites (2336293) 54:29

It's...

Participant 2 54:29

I think the, yeah, I think for vocalists, it's like if you want to have a career you really do need to consider it. But you also need to know that there's always gonna be a risk. And that some people might not like it, because I guess, like everyone's made differently. I think, you know, like people that maybe have sleep Apnea, not just because of their tongue. But I think some people can have sleep Apnea because their larynx actually sits lower if they have too much space between. So, if you're doing the tongue tie surgery, then your whole larynx will relax even more and will sit even lower. So, like, I don't know if there might be cases like that where... that are rare, like, or where you wouldn't recommend doing that because it would just worsen things. One interesting topic as well of research is, and I don't know the answer, is like... If you do tongue tie surgery and your hypermobile, apparently if you're hypermobile, you're more likely to have scar tissues, so that might affect the impact of the surgery. But also, do wonder like does it make it worse for people that have

hypermobility? Because I feel I've got more mobility in my body, which is a good thing, and my upper body is more aligned. But if you... you're already prone to have a body that isn't like giving itself enough support like, if you do a tongue tie surgery that adds a bit to that like does it make it worse, I don't know. So, I think that's, yeah, all questions that I don't think anyone has answers to but...

Antonia Thwaites (2336293) 55:49

Yeah, not yet, sadly.

Participant 2 55:52

Yeah. And then definitely the thing of people just going to random dentists to do it, like, that's the worst thing. I think that's a lot of the cases that have had negative effects is maybe people that didn't know about myofunctional therapy, or went to wrong people, but not all of them, but... So I think having a path, a clear pathway for people that have tongue-ties for like diagnosis, from diagnosis to surgery, and like a clear like rehabilitation, and like a clear sense of, you know, what does someone need to do to know that the surgery is safe and is a recommended thing? What should they do after that? Is a good thing because I'm always worried... On the one hand, when I see people that have tongue ties, I'm always keen to tell them about it, but also, I'm also worried that they'll just go and try to do it through the NHS without doing it properly because it's cheaper. And I've got a colleague from work and I told her I was doing this study and she said 'oh my son has this' and I said well 'you should probably do it'. And I told her go and do... go and make him do myofunctional therapy. And she went straight to the NHS and he didn't do any of that. And it's probably better already, but I don't think he would have had a complete release, so I'm a bit worried about that. Like just people doing it but kind of it takes time and it takes forever. If you might take a year to just burn the bridges and say OK well, I just want to get it done, cut it and I can. But.

Antonia Thwaites (2336293) 57:22

I'm just aware that I hope this meeting doesn't just end.

Participant 2 57:24

Yeah. No, that's fine.

Antonia Thwaites (2336293) 57:27

Oh good it didn't. It didn't. It's just because I'd set it an hour and then it gave me a notification saying a few minutes. But it's good. It keeps going OK. Amazing.

Participant 2 57:32

Very good.

Antonia Thwaites (2336293) 57:37

I was worried it was going to cut you off.

Participant 2 57:40

Right.

Antonia Thwaites (2336293) 57:41

Yeah. No, that's all really fascinating. Thank you so much for everything that you've shared. I think it's all really relevant to the singing world, so we just need more research in this area, I think.

Participant 2 57:57

And more like awareness raising for teachers. I think especially in the institutions.

Antonia Thwaites (2336293) 58:02

Yeah.

Participant 2 58:04

Like, yeah, all of the teachers...even the ones that had a specialism in rehabilitation, like I've, I've seen like five or six different teachers since I started and all of them except for one I had to kind of educate on the topic so.

Antonia Thwaites (2336293) 58:22

Yeah, I find that really interesting because it's potentially so important.

Participant 2 58:30

So what's your I mean, can I reverse the rules and ask you like, are you?

Did you do the surgery? Are you just doing like research on...what made you look into it?

Antonia Thwaites (2336293) 58:45

Well, I haven't done my surgery yet, but I am planning to, so I've booked it for July. So, it's interesting that I'm doing this research alongside my own experience.

Participant 2 58:56

Yeah.

Antonia Thwaites (2336293) 58:59

So yeah, my experiences is as a Western classical singer, I also studied at Trinity, and I went through my degree... Well I always had so much tension.

Participant 2 59:10

Yeah.

Antonia Thwaites (2336293) 59:12

But I learned how to improve that with technique, and manage, but I think I was always compensating and things didn't feel easy ever. But I did get to a relative level like no one suspected anything. And then sadly, I got diagnosed with muscle tension dysphonia because I kept having to push more than, to get my voice to work, and I was always tired vocally. It was just constant fatigue, tension. So yeah, I went on a really long roundabout journey and then eventually got diagnosed with tongue tie.

Participant 2 59:54

How did you figure out?

Antonia Thwaites (2336293) 59:57

So, my chiropractor said that physically I looked like someone who might have one and from working on me, yeah, I'm narrow. And I don't have much space here, some crowding. I had braces.

Participant 2 1:00:11

Yeah.

Antonia Thwaites (2336293) 1:00:14

I get a lot of jaw tension, and she was always working on this area and she'd fix it, but then it would just slip, yeah.

Participant 2 1:00:21

Yeah, yeah. That's what happens. And then they go in there and they're like, oh.

Antonia Thwaites (2336293) 1:00:27

Yeah, so she said... but she also didn't spot it for a long time... I worked with her for ages and then eventually she said, you're not holding anything that I'm doing. Maybe you need to look into having a diagnosis of tongue tie.

Participant 2 1:00:42

That's interesting that they knew about it because that's not that many chiropractors as well, like the people I, the physio, like, didn't know about it either. I mean, they did see a huge difference and they're like now, now I think they know it's a thing, but yeah.

Antonia Thwaites (2336293) 1:00:59

Yeah, it's interesting. I was lucky she knew, because otherwise no one would have pointed me in that direction.

Participant 2 1:01:06

It'll be interesting to see if the muscle dysphonia thing improves.

Antonia Thwaites (2336293) 1:01:12

Yeah, I'm interested and I'm I'm kind of, I'm sceptical as well. I think my tie is not severe, I've managed with... it was Grade 2 and then I've done a lot of my functional therapy, which I think has almost improved my function to a grade one level. So, it's really much better and my voice has improved through doing that.

Participant 2 1:01:37

Nice.

Antonia Thwaites (2336293) 1:01:39

But, there's still compensation, so I don't know. We'll see.

Participant 2 1:01:45

Yeah. No, it will be interesting. Yeah, I'm also curious to see like because I've been told my vowels weren't clear enough, but I don't know if it's because I've got too far before my issue was like pushing the tongue too much forward and that's pushed it. And then now I've gone a bit further the other way and if it's just like a case of fixing that or if there's still like a little bit of restriction that is affecting clarity, I really hope I don't need to do it again, but.

Antonia Thwaites (2336293) 1:02:13

Yeah, yeah, maybe the Kenalog injection since that went so well for you is a good thing to consider. But I think that the thing that the reason I'm not super hopeful for immediate results is because I think I've sung for so long with these patterns and I've really... with the muscle tension dysphonia I've got a, like, an abnormal muscle pattern going on. So, to break that is going to take a long time.

Participant 2 1:02:43

Yeh.

Antonia Thwaites (2336293) 1:02:46

So even if I do see.... even if the tongue tie is a contributing factor, which I believe it is, it's not going to be instant.

Participant 2 1:02:49

Yeh... it will do.

Antonia Thwaites (2336293) 1:02:51

So, it's going to be still lots of work, I think.

Participant 2 1:02:58

Yeah. And that's such a, yeah, a pain because I think that sort of stuff happens to a lot of, I'd say, everyone that ends up having a vocal injury should get looked into for tongue-tie because...

Antonia Thwaites (2336293) 1:03:12

Yeah. A vocal injury did you say? Yeah.

Participant 2 1:03:1

Yeah, I mean, you know. Obviously, there's other reasons to develop them, like bad technique and stuff, but you know, lots of people have terrible techniques and they don't get vocal injuries. So.

Antonia Thwaites (2336293) 1:03:36

Yes.. haha. This is something I often think.

Participant 2 1:03:43

My thing it was like when I told her about the nodules, the first teacher I had, she was like, well, I sang with the terrible technique for very long and didn't get nodules. So, I don't think that it would have been your technique, but in my case, because of the underlying tension, then yeah.

Antonia Thwaites (2336293) 1:03:44

Yeah. Have you seen anything of Jessica Luffey?

Participant 2 1:03:55

Yeah, that's her. I spoke to her.

Antonia Thwaites (2336293) 1:03:57

Oh yeah, yeah.

Participant 2 1:03:58

She's the one who said the kenalog stuff was like, that... she thought like I had probably enough function because yeah, I wanted to have her opinion after I get the second release because she knows both of singing and myofunctional therapy.

Antonia Thwaites (2336293) 1:04:16

Yeah.

Participant 2 1:04:17

Which is quite uncommon so.

Antonia Thwaites (2336293) 1:04:21

Mm.

Participant 2 1:04:22

She seemed to think like I had enough now, like, of mobility, and then to try the Kenalog stuff. But she's really... it was her videos that made me... that I came across basically, that made me realise I was tongue tied so. I always send them to people 'cause I think she's probably one of the most knowledgeable people around it.

Antonia Thwaites (2336293) 1:04:40

Yeah, Yeah, definitely. Oh so interesting.

Participant 2 1:04:50

I'm interested in seeing what you end up writing and how yours go? I mean, I'm sure, like, even if the patterns don't change immediately, you'll probably notice some some difference.

Antonia Thwaites (2336293) 1:05:07

Yeah. I hope so. I'm hopeful. I think, I think so, but we'll... I'll try not to get my hopes too high.

Participant 2 1:05:14

I know what you mean. I know what you mean. I've definitely it felt like how I've been feeling about my singing for quite a long time, basically, until I got started singing with Neil and then started to change. I just felt like it's probably not going to happen anyways like.

Antonia Thwaites (2336293) 1:05:31

Yeah, yeah.

Participant 2 1:05:31

You've got to let go of the expectations, but.

Antonia Thwaites (2336293) 1:05:35

That's so true, yeah.

Participant 2 1:05:36

But but then, what we're doing right now, I mean about speaking to people about it, and then hopefully if and if you do anything about it afterwards, like raising the profile of it is also really, really valuable, because I feel like everyone, every single teacher singing teacher at all the conservatoires should go on a training course about tongue ties.

Antonia Thwaites (2336293) 1:06:00

Good point, haha really good point. Yeah, well, I can definitely send you the research, once it's finished, if you're interested and you are also very welcome to request your own transcript, of course, to...that's up to you if you feel you want to check and...

Participant 2 1:06:09

OK. OK, I'm sure...no.

Antonia Thwaites (2336293) 1:06:22

Yeah.

Participant 2 1:06:22

But yeh, feel free to use whatever's useful. Yeah. Are you... How big is your study? Are you still looking for people to interview or?

Antonia Thwaites (2336293) 1:06:34

I've...I'm done with the participants for interview, I've found enough, which is great. I still have my questionnaire open, which I would love to obviously have as many people answer. So, if you know of anyone else that you can circulate it with, that's really helpful. It's not done badly, though, I'm quite pleased. But yeah, of course it... I've done these two pathways, so I've done the singer one and the expert one and I definitely would like to gain more insight from experts because there's been less of that that has come forward. There's a lot more singers who have this personal experience, which is VERY valuable, but like you say...

Participant 2 1:07:14

Speak to Pan because he can speak about, I mean, he said, in my lesson that he saw...when I auditioned for Jennifer and I mentioned the tongue tie stuff, 'cause, she

said I... 'cause I said my vocal clarity might just be about the position of my tongue, and she's like, 'oh, most people get obsessed about the tongue' and Pan said, well, actually, I saw a big difference with me for post study. So, he may be able to say stuff, but also.

Antonia Thwaites (2336293) 1:07:18

Yeah. Pan, I yeah.

Participant 2 1:07:37

And so Sophie, Sophie Raitz as well. She can talk about the physiological...

Antonia Thwaites (2336293) 1:07:43

Change that was there. Yeah.

Participant 2 1:07:49

I don't know. Yeah.

I mean I don't have a really good relationship anymore with the teacher I parted on not very good terms with the teacher I... that I was with like kind of during this other stuff. So I I could... details.

Antonia Thwaites (2336293) 1:08:09

That's okay.

Participant 2 1:08:09

As long as you don't mention me!

Antonia Thwaites (2336293) 1:08:14

Haha don't worry. I don't want to put you in a difficult position.

OK, well I think I've got lots to go off there, so thank you so much for your insight. It's been really nice to talk to you.

Participant 2 1:08:28

That's a... best of luck with everything.

Antonia Thwaites (2336293) 1:08:31

Thank you. Best of luck with everything at Trinity as well and I hope that you continue to see these improvements.

Participant 2 1:08:37

Thanks. Speak soon.

Antonia Thwaites (2336293) 1:08:39

Bye. Thank you.

● **Antonia Thwaites (2336293)** stopped transcription

Interview 3 Transcript (page 123-147)

May 30, 2025, 2:05PM

- **Antonia Thwaites (2336293)** started transcription

Antonia Thwaites (2336293) 0:04

OK, that's now recording. So I just want to say thank you again for participating, I really appreciate it and I've received your signed consent form, but if you could just reiterate that you're comfortable with being recorded and transcribed for the research, then, that would be great.

Participant 3 0:28

Yeah, I'm totally OK with being transcribed, and you can reference me openly or privately, whatever you would like, either way.

Antonia Thwaites (2336293) 0:37

OK. Thank you so much. Well, I know that you have obviously personal experience as well as expert experience and for my research, I'm doing these two pathways of interviewing these different groups. I'd love to start with the expert pathway if you don't mind, and then if we have time, and you feel up for it then, or it might happen organically anyway, that you draw on your personal experience...we can see...

Participant 3 1:07

Sure, sure.

Antonia Thwaites (2336293) 1:11

...and fill in the gaps. So could you just first outline who you are and what your background experience is working in the field of tongue tie?

Participant 3 1:24

Sure. So I'm a certified specialist of Orofacial Myology, which as you probably know is like just another term for myofunctional therapist. I got certified back in 2018 when all of this was first starting to slowly become mainstream, and back then and even a little bit now, like we weren't quite sure what terms we wanted for everything and that's still an ongoing process that's changing a lot. So yes, I got certified back then

and I was a professional singer first and I still am. So I have a professional career but I came across myology by accident, frankly, not even because I found out I had a tongue tie, but because my father was an airway dentist so he got invited to this class and I instantly became obsessed with it because I felt like it was talking about a lot of the muscle relationships that my anatomy just kind of glossed over, and I thought that that was really powerful and growing up, being part of, like, sports and sports therapy. I thought, you know, I think this could be like the beginnings of a form of sports therapy for singers and it just kind of snowballed from there and, yeah, I've been working with singers ever since.

Antonia Thwaites (2336293) 3:01

That's amazing. So interesting. So, in your opinion, what would be the most common factors that you see in tongue tied people or singers particularly? What would be the red flags that you see?

Participant 3 3:22

Most common.. well. I think, let me preface by saying that singers we're so dedicated to our art that sometimes we forget that we're humans too. So I think singers are more in tune with some of what I call, like, singing symptoms, as opposed to human symptoms, and that can be a little bit difficult to then translate like for example...I'm a singer and I realised that I might have a tongue tie because I hear a singer's podcast or something and then I try and go and talk to even someone who's very qualified. We have to remember that there's not a lot of like....it's hard to talk about singing symptoms as if they're... I mean I hate to use this word....but like real, in the medical community, you know, so....not that they're not....but...I don't know if that makes sense, but I guess..... the biggest thing I would say it's a little... it's a little vague, but I've never had a single person who said that they didn't feel this. It's this idea that you can understand a technical idea that you can comprehend it, that you even know when other people are doing it, but you can't do it, or you can't do it consistently and when it does happen, it's like a fluke or luck.

Antonia Thwaites (2336293) 4:59

OK.

Participant 3 5:00

Yeah, I think that's probably the clearest sign.

Antonia Thwaites (2336293) 5:07

OK, so I suppose is that also kind of like a bit of like an unreliable vocal ability.

Participant 3 5:18

Yeah. I mean, there are more specific ones like there are measurable specific ones, like people who have tongue ties of pretty much any kind, they really hate I vowels. They have a lot of trouble, like balancing their chiaroscuro easily, without over pressing, and we can measure all of these things. But if you wanna talk about like one idea that every singer feels, it's being able to access and do what they know to be right.

Antonia Thwaites (2336293) 6:01

OK, hmm, that's really....

Participant 3 6:02

..and I think that that actually could, could be helpful to some people because you know when you're a beginner, there's so many things to learn, right? And I think that's why I get so many clients who are very far along in their careers and their success because as their knowledge and their experience and their skill continues to grow, that missing piece stands out so much larger in comparison.

Antonia Thwaites (2336293) 6:29

OK, yeah, that's really... that's really interesting. Would you be able to talk a bit more about the people that you work with and so that I suppose... also kind of... this is your career... but I suppose like the incidence rate roughly of ...like are you seeing this a lot I guess in your work?

Participant 3 6:39

Sure. Yeah. So I'm sure that you have taken some statistics because you're like making this, but one thing, one like statistic, what's it called, like a like a saying that they have is. You know... If you run a tongue tie clinic, if I run a tongue tie thing for singers, and everybody that comes in here, they don't all have tongue ties but some of them do. Am I catching everybody in the population? The answer is no, right? Because I'm already advertising as tongue ties, so naturally do I get lots of people

that have tongue ties? Yeah, of course. Because they're already searching for me, right.

Antonia Thwaites (2336293) 7:31

Yeah.

Participant 3 7:41

But how many people are we missing that have no clue? No idea. Right? So. I honestly can't say what the incident rate would be because it's so biased, you know? I can give you a good example though. I've been with my same voice teacher as her student for about 6 years now. So I was doing myology before, I was already doing that, and over the years she's, you know I've been teaching her about tongue ties and stuff.....and she's now like sending me people who she's already had for quite a long time. But now she's realising, oh, maybe their high notes is because of the tongue tie. Do you think they have one, you know, and I take... she sends me pictures and I'm like, yeah, definitely. So...yeah, I wish I could give you a better answer than that. The best I can say is it is **way** more common than people think. I think people assume that singers naturally sort of like filter themselves out. That's not... I don't think that's true.

Antonia Thwaites (2336293) 9:03

OK. Yeah. no, that's a great answer. It's a difficult question because we just don't... we can't know right now.. but that's a great answer because yeah, it's a.... it's a very new thing in the singing world, it feels like.

Participant 3 9:11

I think it would... I think people would be surprised to learn that the incident rate in singers is pretty close to equal to normal humans. I think people don't think that it would be and I think it is.

Antonia Thwaites (2336293) 9:34

OK. Yeah, interesting. So if we could talk a bit more about the specifically, Western classical singers that you've worked with...and if you can just recall some of the symptoms... like... that they've had before the release...and then what's changed?

Participant 3 9:58

Yeah...so there's some.. I found that there is some correlation between the grade of the tie and also the insertion point of the tie and what symptoms that manifests for example....and this is part of the research we're doing now, because in the normal human world, we just grade you 1, 2, 3, 4 right...and we don't really... you can be a Grade 3 all the way to your tip, but you could be a Grade 3 where it's just really tight in the back, and they don't differentiate between those two. But... and what I've seen in singers, if it inserts into the middle versus if it's really, really tight in the back, those give you totally different singing symptoms.

Antonia Thwaites (2336293) 10:58

Ooh, interesting.

Participant 3 11:00

Yeah. So, I would say. Where the tie is tightest in singers is almost more important than how tight it is.

Antonia Thwaites (2336293) 11:13

OK.

Participant 3 11:14

So for example, if I have someone who is a Grade 2 but they... but they're... this test where they lift the tip up right? (***tip of tongue to incisive papilla spot with wide mouth***). We're testing the middle of the tongue. They're... the middle of their tongue, is grade two and the back of their tongue is grade 2....they're going to show a lot of like middle tongue symptoms, anterior neck pain, tension. These people with middle tongue restrictions really struggle with staying in tune and in the pocket, going through their upper passaggio, versus people who have really tight cave suction, where it's all in the back. These are the people that have laryngeal height issues, high note issues. They really hate certain vowels. They feel really pinchy. They have a lot of endurance issues. Yeah. So I'm not sure, I guess if I was going to give you like a group of five that's common in Western classical singers. Falling out of pocket in various parts of the range, depending on where the tie is. Like everything stays nice and lined, and then every time I go, you know, B flat 4 to D5 I either have to drive my sound and squeeze it to stay in tune, or it falls back and it won't just ride

that line nicely, no matter what I do. One thing that I find fascinating is melismatic passages and agility. People who...they'll say things like, oh, you know, I am a... like... Rossini baritone, in every way, except that I can't keep my melismas in speed.

Antonia Thwaites (2336293) 13:20

OK.

Participant 3 13:21

So people don't really get much of a range addition, but I feel like melismatic passages and agility can really change, especially if people are like pre-inclined to be in a certain fach in every way except one thing they really, really struggle with. That's usually some tie integration happening there.

Antonia Thwaites (2336293) 13:45

OK. Interesting. Could you just clarify what you mean exactly by out of pocket? I think you said with... was it with the going through passaggio or.. and things like that? Did you mean in terms of tuning?

Participant 3 14:02

Yeah, tuning, they can go flat. They can go sharp, but also like....

Antonia Thwaites (2336293) 14:02

Or...

Participant 3 14:09

....out of pocket, meaning like people talk about in the mask, right? Keeping everything in the mask. But then I can't get certain pitches in the mask, or they fall back into my throat and so, like the chiaroscuro balance doesn't match and it always like sounds like a different part of my voice or my voice colour changes, or it gets really heavy in the mechanism, or I have to... all of a sudden my air starts really overblowing for no reason. Any of these things.

Antonia Thwaites (2336293) 14:39

OK, very interesting. Can relate.

Participant 3 14:44

Yeah, yeah, I had that too.

Antonia Thwaites (2336293) 14:51

When you said earlier about the position of the tie and you talked about the symptoms of the one if it was just further back or if it was mid, could they both exist together as well? Those things that you talked about?

Participant 3 15:09

Yeah, definitely. I mean, remember that if our tie is inserting into our middle, it's still passing through the back, right? But you...but it depends like...for example, we have... we have two people. They both have ties that insert into the middle, but in person A, their middle test is a 2 and their cave is a 2. On person B, their middle tests.....passes flying colours, but their cave is a 2. Those people have a little bit different symptoms. They'll still potentially have both, but what I found is that whatever area is the tightest, those are the symptoms that really, really bother them.

Antonia Thwaites (2336293) 15:49

OK. Really interesting. Do you think that, because we've talked a bit about the different grades, could you maybe just speak a little more to that of even grade 1 for example, all the way through to grade 4. Are there really obvious differences or do you feel there's instances where a tongue tie release might not be a good idea if it's say a grade 1 or anything around that?

Participant 3 16:31

Yeah...that's a really tricky question. I would say. There are some people that I've seen that have grade 1s and some of the symptoms that they describe are not things that I normally correlate with having a grade 1 tie and the posterior, the middle or whatever. And so I'll say to them, you know. Have you tried certain kinds of body work? You know, like, have you tried postural therapy? I know..I see you're standing on your right side?

Antonia Thwaites (2336293) 17:10

I see.

Participant 3 17:12

So. I'm....for me, I mean, I'm maybe the tongue tie lady, but I'm not here to just, like, cut everyone up, you know? I would... I would ask them, you know, how long have you had this issue? How many...how many other avenues besides just your voice teacher have you explored...and like asked for other help and feedback? If there's somebody who is already a full blown professional, they do body work and they...like they know what they're doing, I'm more inclined to more quickly pursue that, whereas you know, if I get a high schooler who says that they have breath tension, we might do some other things first.

Antonia Thwaites (2336293) 18:15

So kind of carrying on from that, are there any instant... instances where you really wouldn't treat a tongue tie?

Participant 3 18:28

No, **no**, because...and this has happened with me a few times... I've had someone that comes to the top of my head, she...she sang a lot of "ina" roles, and she had no what we call human symptoms. She passed the Mallampati score. She passed like the cave hold measurements. Everything was perfectly within range. But she had to sing Despina roles because she couldn't access her top. Well, you can't be a soprano and not access your top, right? And she had some other like, singer symptoms and I told her, look, you know, I can't guarantee that this is going to solve all of your issues, but if we see the right surgeon and we do good work, the worst thing that would happen is that everything would stay the same. And I'm very proud to say that that's never happened to me. Now I think that goes to say though, if you see, I know singers, you know we don't make a lot of money usually and people are trying to save some. I mean if there's anything that I could **beg** people to do, it would be just spend the money to go see someone who's excellent. If they're not the best person in the country, don't go there. It's not worth it.

Antonia Thwaites (2336293) 19:56

Mm hmm.

Participant 3 19:57

It's not worth the \$400.00 you save. So, if you have a really great team and you see

someone who's incredible, there's no reason not to and there's every reason to do it. Yeah.

Antonia Thwaites (2336293) 20:12

That's a great answer. Really interesting. OK. Right. Let me just see where we are. Would you be able to discuss anything further about tension in particular, in singers with tongue ties.

Participant 3 20:40

I think one red flag that's very specific to tension and pain is, as it relates to endurance, which is very, very good for or very important for opera singers, right? Because we're up there all the time, and especially in something like opera, where we're so inclined to be free and relaxed and healthy, whereas some other genres...

Antonia Thwaites (2336293) 20:51

OK.

Participant 3 21:06

...aren't focused on that, you know, so....I would say this is very blanket statement. Take it with a grain of salt, but like if you are grad school or above, Western, classically trained and you can't sing for more than an hour without pain and tension stacking, we need to take a look at that. There is no reason that that should be happening.

Antonia Thwaites (2336293) 21:34

OK and I guess in your profession you feel that that can often be related to a tie.

Participant 3 21:44

Yeah. And I think it's also important to notice that this tension can happen in lots of different places. For example, I had a singer who didn't actually get any neck tension, but she would get migraines the longer she sang. Now, that's something that most people would think is like, witchcraft wild, but it is directly related to tongue tie. So whatever the tension is, wherever it is, if it's in your pelvic floor, if it's in your feet, if it's in your neck, if it's in your tongue.....Yeah, if we can't do a solid hour in grad school, that's a big red flag.

Antonia Thwaites (2336293) 22:23

OK, great. Not great, but great.

Participant 3 22:28

Yeah, yeah, I know. You're like, boy, how many people are failing this test right now?

Antonia Thwaites (2336293) 22:37

Hahah hmm! Um...

Could we talk a bit more about myofunctional therapy and the role that that has?...

Participant 3 22:42

So yeah, sure.

Antonia Thwaites (2336293) 22:43

.....in tongue tie surgery and everything?

Participant 3 22:49

And you may know this. So just, just wave your hand at me and please interrupt me if you're like. Yeah, I know. 'cause. I know you've been through this, too, but the biggest thing that we're looking for in a surgeon is we need an active release. Where you're holding positions, right? We're not just, like, passed out unconscious, yeah.

Antonia Thwaites (2336293) 23:11

Mm hmm.

Participant 3 23:13

So the most important part for myofunctional therapy in the beginning is that we're teaching you those positions. We're making you strong enough to hold those positions and also by making your muscles bigger, it helps the surgeon more clearly, see what's tissue, what's muscle, what's blood vessels, right. They become a lot cleaner and clearer. So that's what we're doing in the beginning and we also may be addressing habits like correct swallow, correct chewing, which is gonna translate into later and then afterwards, yeah, we're doing stretches. But like, if you pretend that you have a bicep tie instead of a tongue tie, you've been living your whole life like

this. How hard is it to move 100lbs this far? Not very hard, right, but now, how hard is it to move 100lbs this far? Very difficult. Especially because you have no muscle mass, right? As we say in the PT world you need mobility to have strength and since you didn't have mobility, you don't have strength, and I think that's really important. People are like, oh, I'll just get ready for the surgery and that'll be fine. And I'm like, especially for singers, your tongue is so active. You're doing so many, like specific singing tongue skills. You have to put that muscle back in because you're not gonna have the strength. But also if you ever want isolation, the only way you get isolation, is if you have strength. So it's just like a snowball of skill, right? If you want isolation and ease, you have to have mobility and strength. Yeah, so you gotta work your way up the ladder. Also, just like as a side note.

Antonia Thwaites (2336293) 24:54

OK

Participant 3 25:02

People are so worried about finding the right surgeon. All these things I'm like, look, if you find a great myo, they'll do all that for you. You don't have to do that. So your myo should be like your best friend for this whole process. They're gonna be there day one. They're gonna be there on the last day. They're gonna give you checkups. They can, like, have a little like back you off the cliff moment, if you start to freak out. Right. So, yeah, your myo is.....

Antonia Thwaites (2336293) 25:09

OK.

Participant 3 25:25

....so, so, so, so important, yes.

Antonia Thwaites (2336293) 25:29

Amazing...and I know this can vary, I believe from person to person, but in your experience, how long is the process of myo?

Participant 3 25:45

Yeah, this is a sticky question. I'm trying to give a a good clean answer that most people would agree with. Well, the answer is you're not ready till you're ready.

People don't like hearing that, but that's the truth. You're not ready till you're ready. I would say most myos and their clients need 10 to 12 clinical hours together before their release. Some people see people, you know, once a week. Some people see people once every three weeks for half an hour. It also depends on the human. Singers usually start with much more muscle tone than normal humans, so they can start a little bit further sometimes. I would say, in this day and age, the longest that I've seen currently is people who do like, six months to get ready for the surgery. I think that's a little too long, but also like, I don't know how often they're seeing their myo and how often they're doing their exercises, right? I tend to be probably the fastest person around these days. I'll do five weeks beforehand, but I mean....

Antonia Thwaites (2336293) 27:25

OK.

Participant 3 27:28

...you're going hard. You're going hard and fast. Yeah.

Antonia Thwaites (2336293) 27:30

OK.

Participant 3 27:33

So you know.

Antonia Thwaites (2336293) 27:35

Yeah, great.

Participant 3 27:37

You know.

Antonia Thwaites (2336293) 27:40

And afterwards. After you've had the surgery, how long are we talking of? Are we talking forever to keep integrating these things?

Participant 3 27:56

I think all people, regardless of who your myo is, you're not going to feel back to a

new normal until four weeks after. So you need to be seeing people at least five to six weeks after the day because there's just so many things happening, you're getting stretches, you're getting new stretches as you heal. I mean, you're healing from week 1 to week two is vastly different, so you need somebody. I get uncomfortable with myos who send somebody to surgery and then don't see them until like one month after the surgery. I think that's a little, dare I say, dangerous. There's a lot of things happening in that time.

Antonia Thwaites (2336293) 28:39

OK...Mm hmm mm hmm.

Participant 3 28:41

So I would recommend that you see somebody more regularly after the surgery and anywhere from. I don't know five to seven weeks. People usually do about three or four months. The way I run it is I'll see everybody pretty much every week, every other week, for five to seven weeks afterwards.

Antonia Thwaites (2336293) 29:11

Mmm

Participant 3 29:12

And then from there I see them about once a month.

Antonia Thwaites (2336293) 29:16

OK.

Participant 3 29:17

So yeah, you wanna be right there at the at the start. Also, just emotionally from being the person you don't want to be like left in the cold, right? Yeah, yeah. You're like, I want to see you again. So, yeah, but, you know, I think it just depends on the person. It depends if are you an adult having ortho that's gonna change a lot of things, too. Right? Are you here about sleep? Sleep's tricky. We might need more time for that. Umm, have you really been practising your swallow exercises beforehand? If not, well, guess what. You're gonna be here another year. Yeah, but to your joke that you made earlier, which I love and I tell everybody, you know, a lot of myo is habits, chewing, tongue posture, swallow, all these things, right, lip posture.

You know, I joke with people, you know, you get to practise this every day for the rest of your life. You get lots of practise time.

Antonia Thwaites (2336293) 30:23

Yeah, that's true. Certainly true. Great.

So just to kind of finish this section, have you ever known anyone who has had a really negative experience of surgery itself?

Participant 3 30:44

I have known people who have had really scary surgeries who have, like, come to me for consultations afterwards. Or they come to me for a consultation and then they don't become my client and they do something else, whatever, and again, I hate to say this, but it's so true. Every time people try to save money or time, it bites them in the arse. Don't do it. Don't do it. Yeah, yeah, yeah. But they have been.... I mean, I can in eight years, I can think of maybe two or three.

Antonia Thwaites (2336293) 31:27

OK.

Participant 3 31:28

Yeah.

Antonia Thwaites (2336293) 31:30

That's good.

Participant 3 31:33

Yeah, two of them. One was in Japan and one was in India. So I'm not sure that that counts.

Antonia Thwaites (2336293) 31:45

OK, so how are you feeling? Time wise and would you be open to discuss some of your personal experience?

Participant 3 31:53

Yeah, I have no one. After you. Please go ahead.

Antonia Thwaites (2336293) 31:56

OK. All right, let me get this. So could you just tell me a little bit more then about your career as a Western classical singer as well?

Participant 3 32:20

Sure. So I was in grad school, when I found out I actually hold on....no, I was out....I was out of grad school, so I am running for all these years in my head. Let's see. Yeah, I've been out for a year or two when I found out that I had a tongue tie and I had struggled with pitch, kind of all over, but especially in my upper passaggio. I have a bigger voice and so, you know, all these little lies we tell ourselves about whatever fack that may be, right? So I had a big voice, so oh, I just over blow 'cause it's big and I'm not in the right rep and you know, loud singers sing flat, you know, stupid shit like that. I didn't really have an endurance problem, but I had a pain and tension issue. I just had tongue tension constantly. I never practised because I felt like practising was like, my teacher said, go into a practise room and roll the dice every time until you roll 66 and I thought well, that's stupid. Why would... what a waste of time? Why would I do that? Because eventually it got to the point where I knew I only made myself mad and unhappy and so I just didn't do it. That's a common thread, right? Yeah. So, and then I started to be really sort of like disappointed because I.... what I would always hear is, oh you, you have a lot of talent. Not a lot of skill, right? And I'm like, well, how many damn degrees do I need before I have the skill? Right, you know? And it was always. Oh, eventually, you'll get it. Well, that's fine. When you're 25...and then you turn 28 and people start kind of writing you off, you know. And so I was right in there, and I and I was starting to have the thoughts of I don't think I'm cut out for this. I guess I'm not talented enough. I'm just not one of those singers where it comes so easily to them. And they could just learn new things, and they can just practise. You know, I'm just not like that. That's not me. Because of whatever. And then I found out about my tongue tie and I thought, oh my gosh, could it, could this be like too good to be true? And I was, I was pretty desperate, so I thought, oh, fuck it, you know and I did all my research and you know, back then there was nothing. Nothing about singers and tongue ties. I mean, it was like Mars.. barren. I thought, oh well, you know. Well, I'm thinking of quitting anyway. You know, we'll just try it. And I saw someone. Who my myo instructor, who I got certified with recommended and he did a very nice job, but he didn't do it absolutely perfectly. And I didn't know that at the time. 'Cause I hadn't

started working with anybody. I was my first guinea pig and it instantly made so many things so much better. I would say 80% of my issues disappeared. And the last 20% got markedly better. So I went from being flat all the time to being flat, just in like upper passaggios. Sometimes that was still tricky. And, umm, and then you know the next set of lies started. Oh, that's just the hard spot. Upper passaggio. Just a tricky area. Blah blah, blah. So anyway, fast forward 4-5 years. And in that time I am working with singers. I am learning so much about the idiosyncrasies of all of this, and I start to realise, you know, a lot of the things that I see these people having, I still have that and I wasn't passing my tests perfectly at that point and one of my surgeons that I love in New York, I started to talk to him. I said, do you know? Do you think there's a chance that my guy that did this the first time didn't go all the way, as we say?

Antonia Thwaites (2336293) 37:23

Hmm.

Participant 3 37:24

Yeah, you know. I said I don't.... I'm I'm a little nervous to do it, but I think that this could be an issue. And he said, bless him, he said, 'you know what, come up here. I'll open you up. We'll, just take a little look and if you don't need it, I'll just sew you back up, send you on your way!' I said OK, we can, we can do that. Yeah, sounds good. We get up there, he opens me up. He goes, 'oh, no!' hahah.

Antonia Thwaites (2336293) 37:49

Yeah.

Participant 3 37:55

So then I had my second release and that was when everything, everything changed. I don't have a single symptom anymore. Now, hear me though. I still don't pass my test perfect. I don't, but I don't have any body symptoms and I don't have any singing symptoms.

Antonia Thwaites (2336293) 38:25

That's amazing.

Participant 3 38:26

Right. So that's where you know that's where like, it's never ... with science we want it to be black and white, but it's not you know. Symptoms first, grade second. So yeah, so I had my second release. So that's another thing, you don't need to necessarily be afraid of having a second release. I actually had a singing client who's had three.

Antonia Thwaites (2336293) 38:41

So interesting.

Participant 3 38:54

If we do it the right way with the right people, we can be successful, but that's really key. So, yeah, I guess more specifically, pitch issues. Pain. God, so much pain. Poor pelvic floor engagement. Bad body posture. Breath support. No idea what that was. The biggest thing that I feel now is that I feel like I finally turned into those singers that I was so jealous of. Where you just wake up and you warm up, and then you sing, and then you take a lesson and you get better and then you practise and you get better. I mean, I remember people telling me that and I just thought you're out of your mind. It's not like that. Who are you kidding? What the hell, right? And now I'm like, oh, yeah, it's like that. It's like that. And if it's not it, it should be. Yeah. And I think that's something...I don't know if this is part of your, like your dissertation....but like, I think that's something we should really encourage voice teachers to talk about. You know, if it's not easy, it's not something wrong here, you know (**pointing to the forehead/mind**). I had some really horrible things said to me and to others of my clients when... and I, I assume that you probably have experienced this too. Yeah, yeah. You know, people are assumed that they're stupid, that they're dumb, that they're lazy. That's a..... that's a horrible one. And often I find that these tongue-tied people are actually the most dedicated singers. Yeah, but they're just so frustrated and at the end of the day, they're like, you know what? Fuck this. I don't need this. You know. Yeah, I think it has a huge emotional impact on people.

Antonia Thwaites (2336293) 41:21

Yeah, for sure. No, I can. I can definitely resonate with a lot of what you're saying.

Participant 3 41:27

Yeah, yeah.

Antonia Thwaites (2336293) 41:29

I'd yeah, I'd quite like to talk a bit more about the psychological effect. But first, do you mind just clarifying when you say a lot of pain and you kind of indicate to your throat? Like more specifically, what was the pain?

Participant 3 41:43

Yeah, to me, my pain, and mine inserted into my middle. So my pain was here....**(indicating down the front of the throat either side of larynx)**

Antonia Thwaites (2336293) 41:52

Mm hmm.

Participant 3 41:53

...and also here. **(indicating to the tongue root under chin)**

Antonia Thwaites (2336293) 41:56

So under the chin, at the tongue root and SCMs.

Participant 3 41:57

Yeah floor of the mouth and anterior bilateral neck, but some people get it here. **(Jaw bones)**

Antonia Thwaites (2336293) 42:05

Mm hmm.

Participant 3 42:08

Some people get it here, **(under tongue internally)** not here **(chin)**. Yeah. People point different places. I also just think it's so funny that when we talk about tongue tension, nobody does this **(sticks out tongue and flaps it with her finger)**, tongue tension, right? They do this, this, this, right? Hahah! **(pointing to different parts of the orofacial and laryngeal structure)**.

Antonia Thwaites (2336293) 42:25

Yes. Yeah.

Participant 3 42:30

Yeah, I think that's very telling because what they're saying is it's not actually my tongue, it's the relationship that it has to everything else that's giving me pain. Yeah, it's not this thing sometimes, but usually it's everything else.

Antonia Thwaites (2336293) 42:45

Yeah.

Participant 3 42:47

Yep.

Antonia Thwaites (2336293) 42:48

Totally true. Yeah. So you did already imply this, but the throat pain also cleared up from the release?

Participant 3 42:57

Oh yeah, instantly. Instantly. Also, just like I don't know if you're considering like putting like fascial and body posture integration things in, but like...when basically a tongue tie is like malicious fascia, it's overly tight and it pulls people into a body posture. And, you know, people see their chiropractors afterwards and they're like, what the hell did you do? I fixed your neck every day for six years and now it's fine. Right. Yeah, yeah, so. It is...it is the fact that the tongue isn't free and mobile, but it's also that everything else is scrunched too. So, yeah, I would say there were things, and this is a common thread with my clients now, is like...things do disappear instantly. A lot of things do. However, your body doesn't understand that you're not tongue tied anymore, and you still have all of the same muscle memories, right? So you'll still try to do the same things, by the way, this is another reason myo afterwards is so important, right, 'cause we're convincing your brain. Look how much more you can stretch. Look how you can do these things with your jaw all the way open that you couldn't before, right? We're learning your new boundaries that you have. Yeah. And I think people say things like, you know, the tension's not gone all the time, but I can practise and I can fix it. And I can, like I can help myself. Whereas before I had.... there, there was nothing I could do. I didn't have tools. I didn't have choices. I was forced into that one compensation.

Antonia Thwaites (2336293) 45:01

OK. Yes, that makes a lot of sense.

Participant 3 45:06

Yeah.

Antonia Thwaites (2336293) 45:12

So I mentioned, yeah, that we might just touch a bit more on the psychological impact....

Participant 3 45:18

Yeah.

Antonia Thwaites (2336293) 45:18

...that that had on you or others that you have worked with.

Participant 3 45:24

Yeah, I think. I think the biggest common words that I hear is frustration, right, because a lot of these people, when they back off of their professional careers, they start to teach and they're frustrated because they say, well, all my all my students get better. But I don't. Or like I see them doing what I tell them to do, what I know. And I can't do it right. So there's a lot of frustration there and I think sometimes that frustration can turn into like self loathing, self disgust. Why am I so stupid? Why am I so whatever, right? Because, and you were nodding your head before, but like, if we if we can't do our new skills and people call us lazy, there is this moment of like, I'm not lazy. I understand, right? But if you hear it so many times, you think, oh, maybe I am. That must be the problem because I don't know what else it could be. Right? And so you do fight against it. Some people fight against it forever, which is good for them. But some people eventually are like, oh yeah, I am lazy. I am dumb. I am not a good enough singer, you know. And they become really....

Antonia Thwaites (2336293) 46:32

Yeah.

Participant 3 46:48

....I mean, their whole identity shifts. I think another thing that people talk about is confidence. Especially like stage confidence and like stage fright. It seems so obvious when you say it like this. But like if you like. I love this dice analogy, right? If you told someone, OK, you're gonna go sing for the Met competition. You're gonna get up on stage and you're gonna roll a double 6 and you think, well, F me? No way, you know! Hahhah! You're like.... and so people start, like, fixating on all of these psycho singerisms, right. Oh, I'm gonna. I'm gonna wear a blue dress, and I'm gonna do this and that, and I think. I think we do that because we know we have no control of the right things and so we're just like trying to find control somewhere else, you know. Yeah, because I feel like after my first release and especially my second one, I feel like I'm a different colleague. I'm a different stage singer. I don't really get nervous anymore because I finally am like no, I just go out there and I do this and if it goes wrong I can handle it. Right. I mean. What's stressful about that right? I have a plan and I follow it. Great. But if we have a plan and we can't execute it and we don't know, I mean, I always felt like I never knew what the fuck was going to come out of my mouth. I had no idea who I was gonna sound like that day. What my range was. I mean, it was all over the place. And that would stress anybody out. Come on.

Antonia Thwaites (2336293) 48:14

Yeah, absolutely.

Participant 3 48:33

Right. How are you supposed to feel confident with that? I mean, I guess if you're just super chill, I don't know.

Antonia Thwaites (2336293) 48:44

Yes, there are those rare people.

Participant 3 48:46

Yeah. So, I think that's one thing that pretty much all my clients say is you know, like I feel confident in a secure way, like I'm I have real confidence, not bravado. You know, I'm confident in my abilities. I know exactly what I struggle with and what I don't. I'm getting better and there's some of my clients even tell me that like because of all that...emotional BS leaves. They sleep better, their relationships are better, their lives

are better, you know? So I think it's profoundly impactful, not to mention, we didn't even mention all of the people that are this close to quitting (*uses fingers to indicate small distance*). And then all of a sudden, they get to keep their careers, they get to blossom in their careers. They get to do roles that they previously said no to, even though it was their dreams because they couldn't make it through the show, I mean.....

Antonia Thwaites (2336293) 49:27

Yeah.

Participant 3 49:47

Those things are.....

Antonia Thwaites (2336293) 49:49

Yeah.

Participant 3 49:50

Incredible.

Antonia Thwaites (2336293) 49:52

That really is... Do you feel that that's been your experience as well? As a singer.

Participant 3 50:08

I feel like... oh boy. I was wondering how long it would take before you made me cry.

Antonia Thwaites (2336293) 50:17

Don't because it'll get me going.

Participant 3 50:17

Yeah, I think.

Antonia Thwaites (2336293) 50:23

Are you OK?

Participant 3 50:23

This is just. Yeah, no, I think like it's so silly. But like these, these tongue tie things are so important to me and I'm so obsessed with it because how many people feel like they have to give up on their dreams for something that's not their fault. Yeah, they didn't do anything wrong. They just got dealt a tricky genetic hand, you know, and to lie to people and to say, you know, that doesn't matter. You don't need that. Don't get a tongue tie release because it'll ruin your voice, I mean. I don't think some teachers understand how huge of an impact this has on people and if they knew how much people were struggling, they wouldn't dare say that to them. They wouldn't dare.

Antonia Thwaites (2336293) 51:27

Yeah. It is... It is emotional stuff.

Participant 3 51:32

Yeah.

Antonia Thwaites (2336293) 51:34

When you have personal investment, obviously.

Participant 3 51:37

Yeah, yeah.

Antonia Thwaites (2336293) 51:38

Yeah, yeah. I can relate to that as well. But I've not even had my surgery yet, so.....

Participant 3 51:43

I was just gonna ask you. Yeah. OK. So we'll have to.... I'm gonna hear all about your story after this, OK? I'll hear all about it.

Antonia Thwaites (2336293) 51:52

OK, let me just check if there's anything else, but you've really... thank you so much because you've covered so much.

Participant 3 51:57

Oh, you're so welcome.

Antonia Thwaites (2336293) 52:00

Insightful. So it's just going to be so helpful. Do you mind just confirming when the date was of your first release, like what year that was?

Participant 3 52:10

Yeah. 2018.

Antonia Thwaites (2336293) 52:23

OK and I'm sorry if you did already touch on this but how did you actually find out you were tongue tied? I'm sorry if you said but I've forgotten.

Participant 3 52:36

Yeah. No. So I went to this myo class because my dad, the dentist, was like, I don't know, they're talking about facial muscles and I don't know, just go to it. You might find it interesting. I had no idea what I was getting myself into. Turned out it was myofunctional therapy. Like.. like a little lecture about it and I became totally obsessed. I was like, I need to learn how to do this so that I enrolled for the course. And it was in that course that they said, this is how we do a tongue tie test and this is how we... whatever, and I took it and I failed and I thought, no, that's not right. No, I don't have a tongue tie. I'm a singer. I can't be tongue tied. Look at all these things I can do with my tongue. I can do all of these things and then they kept talking about it. Kept talking about.... Oh, I do have tongue tension. Oh, I do sleep really bad. Oh yeah. I do. OK so it did take me like about two months during the course of this class to really be like, oh, I think this is a real thing. And I think I really do have it. Yeah. I was very, very hesitant, yeah.

Antonia Thwaites (2336293) 53:45

Thanks for confirming that.

Participant 3 53:47

Yeah.

Antonia Thwaites (2336293) 53:49

OK, I think that we've covered a lot and everything with my questions. So thank you so much again for participating. I'm just going to stop the record now.

Participant 3 53:54

Right. You're so welcome.

● **Antonia Thwaites (2336293)** stopped transcription

Interview 4 Transcript (page 148-164)

May 30, 2025, 6:14PM

Transcriber/recorder didn't quite catch the beginning where they were asked to confirm they were happy being recorded, which they confirmed.

● **Antonia Thwaites (2336293)** started transcription

Participant 4 0:03

Recorded.

Antonia Thwaites (2336293) 0:05

Perfect. Thank you. OK. So let's start with if you don't mind just telling me about your profession and about your experience working with tongue tie.

Participant 4 0:17

OK. I'm a speech, language pathologist, certified orofacial myologist and vocologist in New Jersey, United States. My interest in tongue tie started back in the 1990s.

I am working both in a school full time and in private practice and I noticed that a lot of my children in the public school were in therapy for, what would be considered a developmental speech sound disorder: lisp... and I started noticing that many of them could not imitate traditional articulation or phonetic placement cues like open your mouth, put your tongue to the spot, now close your teeth and say S... they could not physically do it, and I started noticing a common denominator that

children with fricative and affricative distortions, or lisps per se had comorbidity of tongue tie and that started my journey with getting trained in orofacial myology and orofacial myofunctional therapy. In 2016 is when I started really diving more into the research through first literature review, writing a text and then working side by side by otolaryngologists and oral surgeons in investigating different functional symptoms with oral restrictions to include sleep, swallowing, feeding and speech.

Antonia Thwaites (2336293) 2:14

OK, amazing. That's really, really interesting. So I'm obviously aware of the papers that

you've authored and co-authored, but would you mind just letting me know whether you've worked with singers, and if so, your experience with that particularly Western classical?

Participant 4 2:39

OK. So what's interesting is that I'm primarily a paediatric speech pathologist. However, my own ENT, doctor Anthony Yan, now retired, was the House doctor for the Metropolitan Opera and I had been sending him a lot of my paediatric patients with tongue tie and he was amazed at how many of these children had speech sound disorders and also problems differentiating oral and nasal resonance. And it got him thinking about could it be that some of my professional singers that are having muscle tension dysphonia or other issues with range, vocal fatigue, vocal hoarseness, et cetera, could be tongue tied. So he started doing some case studies and brought in Doctor Jenny Cho, who now has taken over that role at the Metropolitan Opera. While simultaneously, I started working with the Breathe Institute on a study of 12 professional voice users to include both classical and contemporary music singers and seeing common denominators between range, stamina, hoarseness, problems with tongue tension, neck tension, and we did a case series on these 12 patients. And that sparked my interest in the connection of singing and tongue tie. So I decided to go for a post Masters certification in Vocology to take a look at the correlation. So all of my postgraduate papers, so to speak and research projects in that vocology programme were focused on muscle tension dysphonia and voice, and I took that research, together with Dr Nancy Solomon and if you don't know Dr Nancy Solomon, you need to know her, because she's one of the most published authors in the United States on voice disorders. She's also the editor in chief of the International Journal of Orofacial Myology, where this paper, with the lead author of Isabel Somersgill on MTD, muscle tension dysphonia. So now yes, I have started working with professional voice users to include classical singers, in my role of what I consider to be a myofunctional vocologist. So I'm taking the principles of myofunctional therapy that we do with tongue tied patients, paired together with the habilitative efforts of the vocologist in that knowledge on working with the singing voice.

Antonia Thwaites (2336293) 5:58

OK. Thank you. That's a really insightful answer and I absolutely loved reading that paper. So interesting as someone with personal experience. So yeah, thank you. So of these, now that you've started working with singers in that way through research, but also now personally, could you recount some of the symptoms that maybe they had before having a tongue tie release surgery and then what happened afterwards?

Participant 4 6:34

What's interesting is in adults with singing, it really doesn't just affect the voice, but all the

muscles that are used to support the voice. So what I hear very commonly is about tension in the SCM muscles, tension in the neck, pain surrounding the larynx, pain in the jaw. I've seen comorbidity of malocclusion and or temporalmandibular joint dysfunction, headaches, emotional feelings, lacking self-worth or depression from changes in performance stamina, having difficulty at both the bottom and the top of their vocal range. So, I attribute this to the connections and the extrinsic muscles of the tongue tots (*tethered oral tissue*) can really affect the genioglossus muscle, genioglossus muscle attached to the hyoid bone, hyoid bone attached to the larynx. So what we know about fascia in the body is if you have tension in one fascial area, it can affect the surrounding areas as well. So muscle tension, even if it's not in the larynx directly, it's in those surrounding muscles. So I hear complaints of breathlessness, not being able to sing as long as they used to sing, and I think a lot of the compensations that performers can use when they're younger, and there's more agility, can change as they age, and there's other surrounding factors.

Antonia Thwaites (2336293) 8:40

Yeah, that's really interesting.

Participant 4 8:42

You know, when you think about it, when you're 15 or 16 years old and you're training, you're still tongue tied then, because you've been tongue tied your whole life, but you may not be drinking alcohol or smoking or staying up all hours of the night because you're hustling, doing your singing gig, but you're also maybe waitressing or, you know, doing voice lessons for young students. And as you can hear by my voice, I actually developed a vocal polyp. We're not quite sure how, but probably had something to do with doing therapy all day, and then, you know, being a student and doing lectures and all these different things. And I got a really bad cold and I never stopped sounding like this. So I'm dealing with this myself. But as we age, muscles change and our habits change. So a lot of these singers, it's not being discovered at the beginning of their training. It's being discovered later on, so it's a big surprise to them. Like, how could I be going to all these singing teachers and vocal coaches and vocologists and ENTs, and no one realised that I have a tongue tie.

Antonia Thwaites (2336293) 10:00

Yeah...

Participant 4 10:01

Because when you can't compensate anymore, it becomes more prevalent and that's what I see in a lot of these patients.

Antonia Thwaites (2336293) 10:09

OK. Yeah, that's really interesting and correlates kind of with a similar experience of mine and it's interesting that there isn't that much knowledge amongst singing teachers about this at the moment.

Participant 4 10:24

Yeah.

Antonia Thwaites (2336293) 10:26

Sorry, go ahead.

Participant 4 10:27

For sure.

Antonia Thwaites (2336293) 10:31

So what happens after the release?

Participant 4 10:36

Well, I think we have to back up because one of the things is a key component is you need therapy before the release. So whether you're a singer, a baby or a school-aged child with a tongue thrust swallowing issue, the pre op we're finding more and more and we're finally starting to see some research in this area, you have to prepare the musculature for the release...

Antonia Thwaites (2336293) 11:03

Mm hmm.

Participant 4 11:03

...and then those exercises that we do in myofunctional therapy with singers should be continued after the release and depending on the type of release that the patient has, if they have a laser release with an open wound, they're going to have to do the doctor's wound care, in addition to myofunctional therapy. And what makes it more complex for a professional singer is that many of the principles that are used in vocal rehabilitation are the opposite in myofunctional therapy. So I'll give you an example of this. In singing we're talking about a low jaw posture and a low tongue posture because we want a lot of room in the oral cavity for resonance, right? We don't want too much singing in the mask or twanginess or unless you know we're playing Loretta Lynn in a country musical play, right?

But in myofunctional therapy, we're concerned about high jaw posture, lingual tension, contraction of the genioglossus muscle, the transverse muscle, tongue tip to the alveolar ridge, lingual palatal suctioning and nasal breathing. Singing is mouth breathing. Myofunctional therapy strives for nasal breathing. So when I started training in vocology, I was like, wow, you know, the singer has a lot more to deal with after the release, because they have to adjust their orofacial myofunctional habits so that they're healthy and their tongue tie heals correctly, but they also have to practise adjustments with the whole power source filter system. How is this going to impact breathing for performance and the right balance of vibration in the vocal folds, because when you change any level of that track the other systems are going to compensate or adjust.

Antonia Thwaites (2336293) 13:31
OK.

Participant 4 13:31
So the lingual tension is definitely going to change.

Antonia Thwaites (2336293) 13:35
OK. Yeah, very interesting so even if the singers have to go through a period of adjustment and kind of recalibration of those muscles, with the singers you've worked with, have you mainly like, have you seen positive effects or some negative effects or what are the outcomes that you usually see?

Participant 4 13:48
Mm hmm. I think there's a level of impatience for all patients after release, because a lot of them focus on that the release is going to solve the problem. And it's a small part of the solution. (*Emphasises small with forefingers*)

Antonia Thwaites (2336293) 14:10
Mm hmm. OK.

Participant 4 14:16
And that's why the pre-op's so important and really outlining for the patient what the expected steps are going to be.

Antonia Thwaites (2336293) 14:18
Hmm.

Participant 4 14:26

Because tongue tie in particular impacts all the four Myo...I call them the four MYO domains. You have airway. So how are you breathing? How are you sleeping? The feeding and swallowing. Many times you know, patients, whether they're singing or not, are using compensatory swallowing patterns and if that's not corrected, the other areas won't improve. Their structure, they're just dealing with their tongue tie, like a recent patient I have was in shock when I told them that they needed to reassess their orthodontic situation because our teeth are part of the articulators and if the palate is too high and narrow, that's going to affect the singing as well.

Antonia Thwaites (2336293) 15:20

OK.

Participant 4 15:26

And then you have speech articulation, so singers want to hone in on singing, and when they find out, they have to practise swallowing, and actual articulation, diction, and where their tongue is going when they're making their sounds, both in speech and singing, it adds many layers.

Antonia Thwaites (2336293) 15:45

Yeah.

Participant 4 15:45

...and that can be very overwhelming.

Antonia Thwaites (2336293) 15:48

Yes.

Participant 4 15:49

So if we're prepared from the get go and they understand the stages, the outcomes after surgery will be much better.

Antonia Thwaites (2336293) 15:58

OK..and of course I understand it will be different for different people... but roughly how long would you say the process from....

Participant 4 16:07

Yeah.

Antonia Thwaites (2336293) 16:16

..... the release surgery to when they can start singing and maybe seeing some changes?

Participant 4 16:23

Yeah. It's really different and it would be dependent on how much pre op work they did for readiness, because too often we get calls for post op therapy and we've never met the patient. We don't know the baseline. A patient who's had really good pre op therapy, within....they'll most likely experience immediate release in muscle tension and pain, and it'll be the best right after the release and as it starts to heal, they may get a little tighter....

Antonia Thwaites (2336293) 16:54

Mm hmm.

Participant 4 17:00

...not necessarily dysfunctional, but patients will complain about that, that they feel a little tension again. But to really see carryover, I think it can, you know, changes can be seen as soon as a month and it can take up to a year. It all depends on the severity, the type of release they have, how many frenula are impacted. Did they just have a tongue tie release or did they have lip tie, buccal tie and how much are they practising at home? It's like any other exercise regime. So we don't really know a lot about this in the research because there hasn't been studies to date that follow up with the patients, like even the study we did. You know we looked at....

Antonia Thwaites (2336293) 17:52

Yeah.

Participant 4 17:56

...start with pre op, do the surgery, go post op and what did the patients immediately notice? But....what's the follow up months later?

Antonia Thwaites (2336293) 18:08

Yeah, yeah, that would be really interesting to know for sure.

Participant 4 18:13

There's there's so many pieces like we don't have incidents and prevalence data on a larger scale of reattachment or incomplete release.

Antonia Thwaites (2336293) 18:25

Yeah. Yeah, but you certainly advocate for myofunctional therapy being able to help mitigate those potential issues.

Participant 4 18:34

Yes, yes. Oral motor therapy in very young children, which wouldn't apply to singers because they're working that diligently on their singing, you know, children four and up can benefit from myofunctional therapy. But it's, you know, one modality. I could be working with an adult I see some of their infantile reflexes were not even integrated from growing up with this tongue tie, and compensating, sometimes these patients need body work, myofascial release. Some of them benefit from dysphagia therapy, if it's really affecting their swallowing. Some may benefit from techniques like Beckman oral motor that's more manual and massage based.

Antonia Thwaites (2336293) 19:32

OK.

Participant 4 19:32

I know no matter what the age of the patient I'm working with, I'm pulling kind of from all different tool boxes. But yes, if I had to pick the primary one in terms of a professional singer with a tongue tie, they're going to be volitional muscle-based activities that fall under that myofunctional therapy umbrella.

Antonia Thwaites (2336293) 19:57

OK. That's really helpful. So again, a kind of a similar question, but the myo beforehand, I understand that that will vary from person to person and given their history, but some people were like you can do it in five weeks, you can do it in like 6 months. So what's your opinion on that?

Participant 4 20:16

That's marketing.

Antonia Thwaites (2336293) 20:18

OK.

Participant 4 20:19

Here's the... here's the issue. I'll be completely honest with it.
Surgeons are surgeons and they want to fix.

Antonia Thwaites (2336293) 20:27

Mm hmm.

Participant 4 20:27

....and some patients, like I said are anxious to get this process done and see improvement and some patients don't want to wait. So the surgeon is left to say, well, having the surgery with no therapy is better than not having anything at all. So some creative professionals have tried to package programmes like you can do a release with six sessions before and six sessions after, or you can do this release with this doctor with three and three, and we've developed this little programme. But as a speech pathologist, I cannot ethically under my licence or my certificate of clinical competence with Asha give a prognosis that I cannot guarantee to be true.

Antonia Thwaites (2336293) 21:20

Yeah.

Participant 4 21:21

So, I'm a big proponent of response to intervention. Each session preoperatively should be diagnostic intervention and you're modifying that programme. You can't say that...what if the patient doesn't do the homework? Now, what was supposed to be 6 sessions is 12 sessions or 18 sessions. So bundle billing myo... Not a fan of that. Predetermining myo sessions. Not a fan of that.

Antonia Thwaites (2336293) 21:56

Yeah, that sounds very fair enough. Very good reasoning, yeah.

Participant 4 21:59

But we have to reassess. And is this working? Is this the right exercise? What if it's painful for the patient?

Antonia Thwaites (2336293) 22:08

Mm hmm.

Participant 4 22:09

Because all ties are different. They're in a different location. They have different level of fascia. They're intertwined with nerve and muscle.

They can have different levels of thickness and tautness, So what one tongue tied patient can do in myofunctional therapy, another may, you know, really have pain.

Antonia Thwaites (2336293) 22:34

Yeah, that's a really, really good point.

Participant 4 22:38

There was something that came up the other day like is lingual palatal suction.... you know 'my Myo won't let me get released because I can't hold a suction for five seconds'. Well, I have kids being released every day that can't do that either. That's a marker diagnostically, but I don't think we can make that a mandatory activity that a patient has to do because, if they have a Kotlow class 4 anterior tongue tie with, you know, only one to two millimeters of free tongue mobility, they're not gonna be able to do lingual... tip elevation with the mouth wide open. Or maybe not even suctioning with the mouth wide open. That could be very painful.

Antonia Thwaites (2336293) 23:37

That's a very interesting argument for sure...

So if you were a singing teacher....are there any particular markers you feel that a singing teacher could look out for in their students to assess? Obviously, they can't diagnose, but to assess whether a tongue tie assessment would be worthwhile.

Participant 4 24:00

Yes. I think range of motion is a good one. Can the patient stabilise the mouth in an open position and go through all the functional positions, out, in, touching the tip to the molars, tongue tip up and down, tongue bowling, tongue retraction, back tongue elevation.

Antonia Thwaites (2336293) 24:27

OK.

Participant 4 24:30

All those different shapes that the singing teacher already knows about. But are they looking for the singer's ability to do those positions without the jaw sliding or clenching? That could be... Are they having difficulty with resonance?

Antonia Thwaites (2336293) 24:50

OK.

Participant 4 24:52

Are they having difficulty with stamina or hoarseness?

Antonia Thwaites (2336293) 24:57

Mm hmm.

Participant 4 24:59

...and in singers, is there peripheral pain in the musculature, neck, shoulder, jaw and head. Those could be red flags if it's chronic.

Antonia Thwaites (2336293) 25:14

Yeah. OK. Yeah, great to know...

So, one other thing about the grading system of ties. I wonder whether obviously a Grade 1 and a Grade 2 is not as severe and I wonder whether you've worked with singers who have all spectrum of ties, and whether you still feel they benefit from relief?

Participant 4 25:41

Well, I don't think severity....so let's rewind and talk about grades of ties. There's different systems, right. So probably the earliest system that was made was the Karlos and Jenna classification system by location and there were originally five locations and then the fifth one kind of dropped off and we talked about four different locations. And then Kotlow came out with his free tongue range measurement grading system where we measure the frenulum to the tip of the tongue and he paired that with four grades of severity. But then he also added a tongue and lip tie classification system by location.

Antonia Thwaites (2336293) 26:33

OK.

Participant 4 26:34

And then Dr Zaghi came in and did the tongue range of motion ratio.

TIP for tip and LPS for lingual palatal suction and that has four grades in each. And then Dr Baxter and our team came out with the buccal tie grading system 1 through 3, and I don't think that any of them truly mark a true measurement of severity. Because I've seen patients that on Kotlow's free tongue range of motion have a mild tie... Mild tie usually equates to a

posterior tie, many posterior or mid tongue restriction ties have worse functional symptoms than a severe anterior tie. So yes, a release shouldn't be dependent on what the tie looks like or what grade it has. It should be based on the functional symptoms that accompany it.

Antonia Thwaites (2336293) 27:51

OK, great answer. Thank you. So, I wonder whether you have experience of any complications of surgery, whether you're aware of.....

Participant 4 28:06

There can definitely be complications. I have fortunately never experienced them with my patients. The biggest complications that I have seen is non-compliance with wound care protocols and I have thoughts on this. I wrote a paper on this. On gentle neuromuscular re-education to replace wound care, but it's a clinical perspective.

Antonia Thwaites (2336293) 28:24

OK.

Participant 4 28:36

I've seen reattachment and scarring. In the literature, there are case studies on tongue tip numbness, on airway issues in syndromic children, bleeding. You know, sometimes the patient doesn't know they have a bleeding disorder, it's their first surgery, and I'm talking about across the lifespan, not even, you know, just singers, but the three biggest problems I see is the non-compliance and it's always in the patients that didn't do enough pre-op or never went for pre-op and then patients can do everything right and....

Antonia Thwaites (2336293) 29:17

OK.

Participant 4 29:22

....they may be a person that develops keloids. They may be a person that scars down easily, or they may not as Doctor Baxter would say, not been applying enough pressure during wound care. Which is why when I work with adults, I usually recommend to the surgeon that they're stitched, not my clinical decision. I'm just the speech pathologist, but flexible, dissolvable stitches are usually desirable for adults, because who's going in there and stretching the wound? Feel pain on yourself. You have a pain response. You're not going to do it.

Antonia Thwaites (2336293) 30:02

Yeah, that's really interesting.

Participant 4 30:05

So I think that stitching for professional voice user is usually best.

Antonia Thwaites (2336293) 30:12

OK.

Participant 4 30:12

..and it kind of prevents that scarring and reattachment from having it, and it can be done with a laser or a scissor as long as the surgeon is well skilled. Dr Zaghi, for example, stitches all his procedures.

Antonia Thwaites (2336293) 30:25

Right. OK. That's really, that's great. That's given me so much insight. I'm just one final follow up to that is. How frequently do you come across these issues? That you've mentioned.

Participant 4 30:46

I feel like in infancy, there's a lot more risk of re-attachment because it's a brand-new healthy mouth and the mouth heals really fast and it heals incredibly fast in young children. Adults seem to have more pain after the procedure, whether it's awareness or there are some... there is a histological.... a small poster presentation on looking at how thickness can change over time with a frenulum. Perhaps with the adults there's a lot more intertwining of fibres with the nerve and muscles. So the healing seems to be... um...But thankfully in my office I very rarely take cases on that went for frenectomy and didn't have any pre-op care by choice because I sometimes feel like it's setting up for failure unless they're like a year out from the surgery and they're like they contact me and said I did a release and no one told me about pre and post op care. Can you help me?

Antonia Thwaites (2336293) 32:03

Hmm mmm.

Participant 4 32:05

No, and then we a lot of times we have to start the process all over again. Because they need to be re released.

Antonia Thwaites (2336293) 32:14

OK.

Participant 4 32:14

So it tends to be not in the patients that I'm with from the start of their process through their journey, but the ones that end up with me because they didn't have the right journey.

Antonia Thwaites (2336293) 32:26

Right. OK.

Participant 4 32:29

And that's what validates my clinical perception and data on patients with pre-op do so much better and they have less scarring and reattachment.

Antonia Thwaites (2336293) 32:41

That's great to know.

Participant 4 32:43

It's very hard to study because in terms of getting an IRB, hey, you need a tongue tie procedure. Are you willing to do no therapy so we can see if the other people who get the right help do better. You can't do a study like that!

Antonia Thwaites (2336293) 32:43

No, no. Yeah, totally hear you.

Ok...I've just realised there is one final question, if you don't mind, which is just are there any instances where you absolutely wouldn't treat a tongue tie?

Participant 4 33:16

I think that you have to be super cautious in any kind of muscle-based disorder. Dr Baxter and I just did a four-person case series on CP and tongue tie with positive outcomes. One of the markers for caution is Ehlers Danlos syndrome because of different aspects in healing. It can be successful but you have to be cautious. And then there has to be consideration of timing. If you're looking at comorbidity of low tone and like a severe obstructive sleep apnea. You know there's kind of this myth out there if you release the tongue, the tongue can fall back in the throat. I've never seen that happen. There is one case study on record of that very thing happening. So because it's out there, people are concerned about it, and of course, this is more related to babies, if they don't have a vitamin K shot, you have to be

really cautious and then you always look at the overall medical. You know, if you have a patient that has, let's say, an autoimmune disease or a blood clotting disorder, that's probably not something you want performed in an outpatient clinic maybe. That's more for an oral surgeon or an ENT in a hospital situation because no surgery is without risk. Have I ever seen anything really severe happen in my 30 years? No. Doesn't mean that it might not happen. And I've gone through hundreds of procedures with special needs children, with CP, with Down syndrome, Pierre Robin syndrome, autism, cleft palate. The adults that I've worked with have a lot less going on than the children that I work with.

Antonia Thwaites (2336293) 35:33

OK.

Participant 4 35:33

But there always has to be a very precise medical history for sure.

Antonia Thwaites (2336293) 35:39

Yeah. OK. That's really helpful. Yeah, but overall singers, yeah, you would say it's worth a look into?

Participant 4 35:48

Yeah.

Antonia Thwaites (2336293) 35:50

OK.

Participant 4 35:50

For sure.

Antonia Thwaites (2336293) 35:52

Brilliant. Thank you so much for your insights. It's been really, really great to hear. Do you have any further comments that you would add that relate?

Participant 4 36:04

The one thing I will say is I do notice a hesitation. You know, you think about Barbra Streisand, who's a famous singer here, and she has a very distinct nose. And she's been asked many times over the years. like, why haven't you fixed your nose and it's the fear of it changing her voice? Because we know that the spaces in the nasal cavity impact our vocal quality, our resonance. In that filter, but every bone in our face, every hole in our head is part

of our resonance and articulation system. So I have seen that hesitation, off being afraid. I've had singers come for the evaluation and go through the motions and decide not to release. They would rather live with jaw pain, with stamina issues than risk...am I going to sound different? And that's where I think the vocologist or singing teacher needs to work together with the speech pathologist that has a background in orofacial myology, to have the meeting of the minds or for me, I do both. But it's really important and we do have a lot of different professionals in the arena and it could be confusing for the patient.

Antonia Thwaites (2336293) 37:33

Yeah.

Participant 4 37:34

You know, there's this fallacy that orofacial myofunctional therapy isn't regulated. You know, you can go to a "myofunctional therapist", but when we're dealing with a professional voice user, I would argue that that professional delivering orofacial myofunctional therapy must be a speech language pathologist.

Antonia Thwaites (2336293) 37:57

OK. Yeah.

Participant 4 37:58

Because they need to understand the voice and the anatomy, physiology and science behind the voice as well, even if they're not a singing teacher or a vocologist, we still have the background to understand how the systems work together.

Antonia Thwaites (2336293) 38:16

Yeah, that makes a lot of sense and that's really, really interesting. Yeah.

Participant 4 38:18

Yeah.

Antonia Thwaites (2336293) 38:22

Great, that's.....

Participant 4 38:24

All right. Well, that bell was my call for the next part of my day, but thank you for asking me to be involved in your project.

Antonia Thwaites (2336293) 38:30

Well, thank you so much for participating. I really appreciate it and I'm glad we were able to squeeze it in.

Participant 4 38:38

You're welcome. OK, take care. I'll get you that paper. If you don't get it today, you'll get it Monday. It's right here. OK, bye.

Antonia Thwaites (2336293) 38:42

Thank you. OK. Thank you. OK, bye.

● **Antonia Thwaites (2336293)** stopped transcription

Interview 5 Transcript (page 165-220)

June 5, 2025, 9:42PM

● **Antonia Thwaites (2336293)** started transcription

Antonia Thwaites (2336293) 0:03

That should be transcribing now and recording, so I just want to thank you again, so much for agreeing to participate. I really appreciate it. Would you mind just confirming that you've received the documents and that you've signed and agreed to being recorded for the transcription?

Participant 5 0:14

Yep. That's correct, yes.

Antonia Thwaites (2336293) 0:27

Perfect. Thanks. So can we just start by you telling me a bit about your experience as a Western classical singer? Like your training, your career, anything related to that.

Participant 5 0:43

Sure, I started training in Western classical singing at the age of 18 when I started my undergraduate degree. Before that I was singing as a contemporary singer-songwriter, and I had training in contemporary singing. But the real, you know, bulk of of quality training started when I was 18 and I did a Bachelor degree, Bachelor of Music. And then I didn't have lessons for a couple of years, but I was still performing, but during that time I was focusing on doing a contemporary album and then I returned to classical singing again. And this time it was more exploratory and I then started to think, you know, I'd really like to do more. I'd like to do a master's, and I moved to Sydney and started training with a teacher there. I failed my first 2 masters auditions and the first one was devastating because my teacher in Newcastle was very confident that I would get in and maybe even get a scholarship.

Antonia Thwaites (2336293) 2:09

Hmm.

Participant 5 2:09

And then, and quite specifically, they were after, you know, bigger voices and the second time around, I was sick and I knew I didn't sing well.

Antonia Thwaites (2336293) 2:26

Oh.

Participant 5 2:27

And I could handle it I failed the audition but at that time my teacher said to me, she encouraged me, actively encouraged me to pursue a different career. If there was something else I was interested in.

Antonia Thwaites (2336293) 2:40

Wow.

Participant 5 2:41

That would be hard, and it took me a couple of weeks to bounce back from that.

Antonia Thwaites (2336293) 2:47

Of course.

Participant 5 2:48

But I knew... I knew I would continue. And I asked her, are you still willing to teach me? And she said yes. So, I continued or I was going to continue with her. Then a few weeks later, I got an e-mail from the historical performance department, saying your audition panel recommended you to us. Would you be interested in coming and auditioning to do a master's through our department instead of voice? So I was thrilled and I went and auditioned and that's when I found out that I could do both research and performance in the same degree.

Antonia Thwaites (2336293) 3:22

Right.

Participant 5 3:31

And I was very excited about that because I was interested in research.

So I started my master's and I was still training with the same teacher, so I was kind of bridging between modern classical voice and historical performance and you know, heaven blessed that the two should meet, and so that was interesting. And at the time, I felt really kind of beholden to the technique, like I had to be so diligent and I realised that it was actually really boxing me in. When I would think I was being expressive, my teacher would say there's no emotion coming through. I'm going, but I'm feeling all of it. Why? Why would it not be coming through? And I had such a strict sort of regimented way that I was singing and I was kind of scared to deviate from that. So then I was pregnant and was having my first baby and so at halfway through or maybe six, actually about six months into pregnancy I think, I developed two hernias, an umbilical hernia and an epigastric midline hernia.

Antonia Thwaites (2336293) 5:02

Oh gosh.

Participant 5 5:03

After a weekend of performances.

Antonia Thwaites (2336293) 5:07

Oh no.

Participant 5 5:07

So yeah, I stopped singing at that point and then figured I would return you know, maybe when he was about six months old. I'm happy to have the break. I wasn't remotely interested in singing. I just wanted to focus on baby time.

Antonia Thwaites (2336293) 5:27

Yeah, yeah.

Participant 5 5:27

And so I didn't even sing at home and I just wanted my body to heal and you know, I would get back to it when the time was right. Well, the day he turned 6 months old, we had a massive car accident.

Antonia Thwaites (2336293) 5:46

Oh God.

Participant 5 5:47

I had sternal spinal fractures and a leg fracture.

Antonia Thwaites (2336293) 5:53

Oh wow.

Participant 5 5:54

Yeah. So singing was then not even on the table for some time.

Antonia Thwaites (2336293) 6:02

Oh, that's awful.

Participant 5 6:05

But I did have well, maybe I'll come back to this, just before the accident I had my first tongue release.

Antonia Thwaites (2336293) 6:11

OK.

Participant 5 6:13

So then, eleven months after the accident, I returned to training with my teacher as part of my rehabilitation. Is that an IKEA cupboard behind you?

Antonia Thwaites (2336293) 6:27

Yes.

Participant 5 6:29

I had the same one.

Antonia Thwaites (2336293) 6:33

There's two of them, one in each. They're the best!

Participant 5 6:37

We had those in our apartment when we lived in Sydney, we really liked them. Same colour.

Antonia Thwaites (2336293) 6:43

Yeah, I'm happy with this colour!

Participant 5 6:48

Anyway and I was like, oh, shiny! So I returned to training and with all of that stacked against me, 18 months off singing, 2 hernias, 4 spinal fractures, 2 sternal fractures, time in a wheelchair, a lot of muscle wastage and I had abdominal surgery for a gallbladder and to repair the hernias. And that was only three months before I started training again.

Antonia Thwaites (2336293) 7:22

Gosh...

Participant 5 7:23

Return to singing and my teacher didn't know I'd had my tongue released and I turned up and I sang and she said this is the best I've ever heard you sing. How can this be? After everything you've been through?

Antonia Thwaites (2336293) 7:39

Oh my gosh.

Participant 5 7:40

She said you've had your tongue released. She knew we had discussed my tongue tie, but neither of us really understood the implications. I had said to her, I wonder if that's why I can't roll my 'r's. And she said you'll never get employed to sing in Italian. I try to roll my 'r's. She gave me tongue strengthening exercises and I was able to manufacture a very high pressured tongue roll...

Antonia Thwaites (2336293) 8:06

Hmm.

Participant 5 8:17

...that was so muscular and intense in pressure that my eyes would vibrate and I couldn't see.

Antonia Thwaites (2336293) 8:24

Oh my God.

Participant 5 8:25

It was a very hard kind of a thing and that's all I could muster. And now....

Antonia Thwaites (2336293) 8:35

Wow.

Participant 5 8:37

....it's normal. So that's all we understood. It was just a I wonder if....

Antonia Thwaites (2336293) 8:45

Right.

Participant 5 8:45

But what happened? My baby was born with a tongue tie. He couldn't breastfeed and I said in the hospital do... does he have a tongue tie? And without even looking at him, she said. We don't believe in tongue tie. I was like, what does that mean? And she said babies with tongue tie can still breastfeed and I thought, well, I was breastfed. So maybe she's right.

Antonia Thwaites (2336293) 9:16

Mmm.

Participant 5 9:16

And we left the hospital and baby was distraught. I'm like something's wrong and we ended up going to a different hospital to emergency and we saw the midwife and straight away, she said. He's tongue tied. He's dehydrated, he's hungry. He's lost too much weight.

Antonia Thwaites (2336293) 9:36

Oh wow.

Participant 5 9:38

And that is.... so he was treated...and that's also how I came to be diagnosed.

Antonia Thwaites (2336293) 9:43

Wow.

Participant 5 9:44

Diagnosed as a baby, however, but not treated.

Antonia Thwaites (2336293) 9:48

You were diagnosed as a baby?

Participant 5 9:50

Yes.

Antonia Thwaites (2336293) 9:51

Interesting.

Participant 5 9:53

My mom was afraid of hurting her baby and didn't have it treated.

Antonia Thwaites (2336293) 9:58

Right.

Participant 5 9:59

So I was diagnosed again at 29 and that's when I wondered, how is this affecting the singing voice? And that's when I discovered the complete lack of research in 2019, there was nothing and I was stunned. How could this be?

Antonia Thwaites (2336293) 10:22

Mmm hmm.

Participant 5 10:27

So back to singing. Oh well, just to wrap up the singing side of things. I kept

deferring my masters. I continued training until the second COVID lockdown in Sydney and that squashed it completely.

Antonia Thwaites (2336293) 10:48

Alright.

Participant 5 10:48

So at that time I stopped singing for probably nine months because it just really knocked me around.

Antonia Thwaites (2336293) 10:58

Of course.

Participant 5 11:00

Maybe I'll never perform live again. There were a lot of crazy things happening in Australia, and in Sydney and Melbourne and so I honestly thought this might be it. Like I might not actually perform again. So aside from writing a few COVID parodies, I moved to Tasmania to get away from Sydney and.....

Antonia Thwaites (2336293) 11:23

Oh.

Participant 5 11:28

...then I felt ready to start again. And I started with a teacher in Hobart. So we travelled down and she's actually a former colleague of my teacher in Sydney.

Antonia Thwaites (2336293) 11:42

All right.

Participant 5 11:42

Very different approach and she immediately in, in one lesson, my voice became more expressive, as she would specify, she's not just saying the emotion's not coming through, you need to emote. She would say do this in order to portray the emotion. So I had... I felt like I had permission now to explore my voice more instead of being so determined about the technique because I was afraid if I stepped out of

that, it would be wrong. And because I had needed to be, I guess it was almost obsessive about technique, just to keep up with my peers. So, I kept up really well in my undergrad. I mean, I excelled in my undergrad, but beyond that, you know, when I got to master's level, my teacher kept comparing me with undergrad students. So.....

Antonia Thwaites (2336293) 12:48

Yeah.

Participant 5 12:52

....yeah. So with this new teacher I....she's... she was really targeting things that worked well for me, and sometimes she would finish my sentence when I'm explaining how teachers have asked me to do this, but it doesn't work for me. It hasn't helped and she would finish my sentence and I'm going. How did she know that? Do you know where I'm going with this?

Antonia Thwaites (2336293) 13:22

I'm guessing...

Participant 5 13:24

So as I'm watching her talking and sometimes when she's speaking to me, I can see her frenulum when she's talking. So not only do we have a very similar voice types, I'm looking at her and I'm like, I think she might have a tongue tie.

Antonia Thwaites (2336293) 13:43

Wow.

Participant 5 13:45

And so I think that's why she was so intuitive about what would work for my voice, because she has experienced it and she has compensations that work for her. That also work for me. Now, one day we did talk about this and we did have a look at her tongue in the mirror, but I'm not...I'm not here to say, you know, yes or no, she has one, but it's a suspicion of mine.

Antonia Thwaites (2336293) 14:14

Right.

Participant 5 14:16

So that was very interesting and some of the compensations.....by the way, stop if you want to ask a particular question or go in another direction, because I have kind of wrapped up the summary of my training now and I'm.

Antonia Thwaites (2336293) 14:31

Yeah, that's OK. Yeah. Yeah. You're welcome to keep going, and then we'll....I'm getting questions coming.

Participant 5 14:37

So some compensations were and which she wouldn't have thought of that way, I think it would have been just a technique choice. One was to have a narrow mouth opening, in favour of, you know, space at the back, which of course is reasonably common. But a lot of people will go for a wider mouth opening, and of course that allows the tongue to have contact with the palate without having to stretch so much. So that was one thing and there were a couple of more specific compensations that she very carefully instructed me to use. She said I've never told anyone this before, but... or I think maybe I was the second person ever... she said just feel like your lower lip is drawing the mandible slightly forward.

Antonia Thwaites (2336293) 15:41

Oh.

Participant 5 15:41

How controversial does that sound?

Antonia Thwaites (2336293) 15:46

Right.

Participant 5 15:46

But it's for my anatomy, because I have a recessed maxilla and not only recessed, but

my mandible was kind of jammed back until I was given this mandible advancement device, which unfortunately resulted in an open bite malocclusion.

Antonia Thwaites (2336293) 16:10

Oh.

Participant 5 16:11

So if you do hear a slight kind of lispy, lack of clarity, it's because of that, not the tongue.

Antonia Thwaites (2336293) 16:19

OK, I don't hear it, but....

Participant 5 16:22

I do. Anyhow, so yeah, that was really interesting, seeing that she, you know, was in tune with what would work for my voice and I've returned to singing, performing professionally in 2023, which was three years after the accident, and I'm still going.

Antonia Thwaites (2336293) 16:50

That's amazing. Wow.

Participant 5 16:52

But that's with my tongue releases as well 'cause I've had three.

Antonia Thwaites (2336293) 16:57

Yes, I would definitely would like to ask you more about those. But I mean firstly just you've been through so much. So I mean, I'm so sorry that you've had these experiences. I mean, being a singer is hard enough. I think then like you add the tongue tie layer you add that, but then accidents all of this, is just like that's just so much to contend with. So it's amazing that you're still singing.

Participant 5 17:26

Thank you. We'll see. I mean, just being at the Voice Foundation.....

Antonia Thwaites (2336293) 17:27

Yeah.

Participant 5 17:33

...did stir up in me. It was wonderful, by the way, and very, very supportive atmosphere, but it did stir up in me questions about my potential and can I go where I want to go with this? So yeah, it's great that I'm singing. I still, I still feel a little bit lost.

Antonia Thwaites (2336293) 17:50

Yeah.

Participant 5 17:51

It really understanding the capacity of my voice, especially since after my most recent treatment in September, I came back to Australia and learned that my teacher had breast cancer and....

Antonia Thwaites (2336293) 18:09

Oh no

Participant 5 18:10

....haven't had any guidance since my release so.....

Antonia Thwaites (2336293) 18:15

Oh no, right.

Participant 5 18:17

...bit harder for me not having that positive feedback on a regular basis.

Antonia Thwaites (2336293) 18:24

Yeah, for sure.

Participant 5 18:24

Because, you know, counter a lifetime of restriction and those messages of, you know, 'your instruments not good enough'...

Antonia Thwaites (2336293) 18:28

Yeah.

Participant 5 18:37

...it's challenging.

Antonia Thwaites (2336293) 18:38

That's really challenging and I think it's it's a common theme that I'm hearing with those who, especially those who are tongue tied, feeling like they're not good enough because it's not, it's not often picked up early enough for like all of these compensations to come in. So I mean, I'd love to ask you more about...because you've mentioned certain things like with the rolled R and the jaw not opening too much, but were there any other noticeable issues in your singing voice prior to any release that you now consider were to do with the release? Anything also related to tension?

Participant 5 19:25

Absolutely. I just remembered something else. I want to add in. While I think of it after I told the teacher I'd had my tongue released and she had said this is the best I've ever heard you sing. She then said you sound so free and then she said maybe you just needed a rest and I was like, rest? You think that year has been restful with constant specialist appointments? Painful physiotherapy, lawyers, insurance and traumatised like, honestly, PTSD.

Antonia Thwaites (2336293) 20:03

That.

Participant 5 20:04

She was just looking for some other reason rather than accepting it was actually because of the tongue release and she, over and over, she's saying you sound so free. So I just wanted to add that.

Antonia Thwaites (2336293) 20:15

That's that's. Yeah, that's amazing and.....

Participant 5 20:18

And that's when I realised that singing teachers need to be educated on this because she's one of the top teachers in Australia and I just handed it to her on a silver platter. I said this is what's happened. This is the reason, and she didn't understand. So back to your....

Antonia Thwaites (2336293) 20:37

Yeah.

Participant 5 20:40

There were definitely. I'll talk about before I had any treatment at all.

Antonia Thwaites (2336293) 20:47

OK.

Participant 5 20:48

Breath control is a big one that comes to mind, simply because I noticed a massive change after treatment.

Antonia Thwaites (2336293) 20:57

OK.

Participant 5 20:58

And when I say after treatment, after the first frenectomy, which was only partially done.

Antonia Thwaites (2336293) 21:04

Right.

Participant 5 21:05

It was an anterior release.

Antonia Thwaites (2336293) 21:08

OK.

Participant 5 21:10

So, breath control in terms of getting through long phrases, my teacher had

observed, lack of expansion in my upper chest. So there was a lot of expansion happening down low, but he said this needs to be flexible too and I just couldn't figure out what the heck he was talking about. Like I don't know how to do that. And he was also perplexed, constantly looking for stronger fundamental frequency in my voice, and the lower harmonics that would give that richness. And he would try various things. And eventually he would stop and just have this puzzled look on his face and I had this very uncomfortable moment of realising he doesn't know what to do with me. He's pulled all of his tricks and none of them have worked. So that was an attempt to find, you know, richness and warmth in the tone and yeah, that was unsettling because he's tried everything.

Antonia Thwaites (2336293) 22:29

Yeah.

Participant 5 22:29

What else? When I was younger, I had, like in my undergrad I had access up to E Flat 6 and then when we pulled back and started focusing on mid range just to get a better foundation of technique, I lost that for quite a long while and and I also felt like I lost some agility as well. And although my agility, you know, I could sort of pull it off before, but it, I mean it wasn't....

Antonia Thwaites (2336293) 22:56

OK.

Participant 5 23:13

...it was still early in my training.

Antonia Thwaites (2336293) 23:15

Yeah.

Participant 5 23:17

And, so I had problems with certain sounds in terms of vowels. 'ah' has been a consistent challenge and I've heard a lot of singers talk about the 'oo' vowel, and I thought, oh yeah, that's not a problem for me. But then the final release, I heard the

change in the 'oo', but oh, yes, there was a bit of something there and I just wasn't aware of it. It was the volume of the 'oo' was then matching the other vowels. That was part of it.

Antonia Thwaites (2336293) 24:02

Interesting.

Participant 5 24:03

'ah' vowel....depending on the teacher and their approach. So with my teacher in Sydney it was sort of a darker 'ah' and I thought that I had nailed it and then my teacher in Hobart said let's change that. And since then, changing it has been really, really hard and it's not I can't do it, but, I have to really try to get out of my own head.

Antonia Thwaites (2336293) 24:39

Yeah.

Participant 5 24:39

It's like I can't place it there and just automatically go there every time.

Antonia Thwaites (2336293) 24:48

Mm hmm.

Participant 5 24:49

L and N were probably my two biggest problems.

Antonia Thwaites (2336293) 24:56

OK.

Participant 5 24:57

In terms of breaking the legato line and obviously the rolled 'R' , even, I forget what it's called, but the regular sort of R, Rd, whatever it is.

Antonia Thwaites (2336293) 25:17

Not sure what.

Participant 5 25:17

Feels uncomfortable to me sometimes in speaking.

Antonia Thwaites (2336293) 25:24

I just could you just clarify what you mean by that 'R'?

Participant 5 25:29

The regular 'R' like saying. If I'm spelling, you know, red or just saying red, red, that mid tongue movement can be a bit uncomfortable.

Antonia Thwaites (2336293) 25:41

OK

Participant 5 25:42

I always hated introducing myself because I didn't like saying **(name)** because the.....

Antonia Thwaites (2336293) 25:46

OK.

Participant 5 25:49

.....'K' was uncomfortable. And sometimes it wouldn't come out clearly. And I'm like, gosh, I can't even say my own name properly.

Antonia Thwaites (2336293) 25:54

Oh... gosh.

Participant 5 25:57

No.

Antonia Thwaites (2336293) 25:58

Of course.

Participant 5 25:59

I think it was. It was the K followed by the E too.

Antonia Thwaites (2336293) 26:04

OK.

Participant 5 26:04

Because if I use.... **(name)**, that doesn't bother me. But I didn't. I never used my full name unless it was for legal purposes or something. But now I use it frequently for my professional life.

Antonia Thwaites (2336293) 26:19

Hmm.

Participant 5 26:23

So I've noticed that yeah, it was the the K followed by the E was uncomfortable.

Antonia Thwaites (2336293) 26:28

Hmm.

Participant 5 26:31

Now I had this strange, interesting compensation of rolling my 'R's at the at the soft palate, like a gargle, but the tongue's not moving at all at the front. It was like a gargle.

Antonia Thwaites (2336293) 26:42

Is that...?

Participant 5 26:51

And that meant it was really challenging at sometimes to do a German 'ch' at the back. Like 'ach', because sometimes it rolls instead.

Antonia Thwaites (2336293) 26:59

Yeah. Oh, OK.

Participant 5 27:02

Ah, like ah.

Antonia Thwaites (2336293) 27:06

Yeah, that's.

Participant 5 27:06

So then, 'R' is sometimes challenging.

Antonia Thwaites (2336293) 27:10

That's the the uvula rolled 'R' right. That is, in some languages. Yeah, very....'

Participant 5 27:16

Yeah, I've heard that's an element in some languages.

Antonia Thwaites (2336293) 27:20

That's really interesting. I don't know how people do that.

Participant 5 27:25

It's like gargling. When you gargle water or something, you know? Yeah.

What else? I did have challenges with the legato line as I briefly touched on before and maintaining what my teachers identified as breath support and connection.

Breath, continual breath flow uninterrupted and support connection.

Antonia Thwaites (2336293) 27:59

OK.

Participant 5 28:01

And you know another thing is the jaw involvement that every singer needs to work out fairly early on? And had that much training, you expect that you should have a handle on that and I would find that even you know in my later training, we were still dealing with get your jaw out of the way.

Antonia Thwaites (2336293) 28:29

Yeah.

Participant 5 28:31

Well, at least by that stage I knew why. Later on, I would have jaw tension and

tongue root tension. So I had a lot a lot of tongue root tension. When I discovered that....

Antonia Thwaites (2336293) 28:40

OK.

Participant 5 28:45

..... I would check with my thumb and go oh my goodness. It's rock hard. And I would dig my thumb in under my chin and then sing. also that I couldn't engage it.

Antonia Thwaites (2336293) 28:58

Yeah.

Participant 5 28:58

And that was a way of trying to reduce that and it did reduce. But you know, I'm sure it was never completely gone and the other thing early in my training, I would push the larynx down with the tongue root and that makes complete sense because the tongue is pulling up on the larynx. So naturally, to lower the larynx, I was depressing the tongue.

Antonia Thwaites (2336293) 29:23

Yeah, that makes sense.

Participant 5 29:35

And, what else? Breath support. That's probably the main essence. Oh I didn't have much of a low range. So my usable range for solo performance for classical was pretty much middle C. Maybe B flat?

*And I would bottom out if it was contemporary singing, and if I hadn't been doing too much high singing, you know, I could do an A flat.

Antonia Thwaites (2336293) 30:08

OK. Right.

Participant 5 30:16

But I have a microphone and yeah, but it was it was limited, and even other sopranos would find out that that certain notes were too low for me. Let's say if we're singing

in a choir or something and they go, you can't sing, you know, like an A. Yeah, it was... especially if I'd been singing high, the low range would disappear.

Antonia Thwaites (2336293) 30:45

OK. That's interesting. Yeah, that... I'd like to definitely ask you, yeah, what changed? But first, just with regards to the tension that you mentioned, was that something that you felt physically or was it just something that you were aware of in the sound?

Participant 5 31:06

Early on, I was aware of the jaw involvement and I focused a lot on trying to reduce that. So, you know, putting my fingers here, my fingers here, checking what's happening here, looking in a mirror. Constantly. With the tongue root, once I became aware that that was a problem, I would feel it myself and with my hands, I'm not sure I'd be aware of it without that feedback.

Antonia Thwaites (2336293) 31:42

OK. Yeah.

Participant 5 31:45

Yeah.

Antonia Thwaites (2336293) 31:46

OK. Yeah. So I'm sure you're going to probably answer this in the next question, which is what changed, but in particular I'm quite interested in. how you know or how you like put down the breath support improvement to the tongue tie release, but I'd like to know about all the other things that changed too.

Participant 5 32:13

Well, I had a particular song, a lieder by Strauss that I was singing in Newcastle. So this is between my BMus and my Masters and it had long, it was slow, long phrases and it was hard, really hard to get through those phrases. The other song, the other Aria was "Dove sono i bei momenti" by Mozart. Long phrases, especially the repeat of the A section is brutal because he combines 2 phrases into one now. And they long and you listen to Fleming sing it and she's just cruising along with her impeccable breath control and that was a big challenge for me.

Antonia Thwaites (2336293) 32:55

Yeah.

Participant 5 33:05

Then we skip forward and I, well, I started training with my teacher in Sydney after my first lesson with her. The level of breath control she required, of breath support in terms of muscular activation was so intense that after my first lesson I had to go and sit in a cafe and eat something before I could drive home, because I was exhausted.

Antonia Thwaites (2336293) 33:31

Wow.

Participant 5 33:32

Now, I don't actually necessarily, see that is necessary anymore. But you know that's a teaching approach. So I did have a lot of vigorous support work with her. In addition, which could have contributed... what I found was that when I got down to Hobart, which was after I'd had the first release done, and after my teacher had said you sound so free, etcetera.

My teacher in Hobart kept remarking about how astounding my breath control was. I would get through, I decided artistically to join two phrases or to, you know, to sing a phrase in one breath that's usually done in two, and she stopped afterward and said she said that was amazing. I couldn't sing that in one breath. Now she's had a professional career. She still sings professionally. She has an amazing voice. And I was pretty chuffed when she said that and I told her I believe that's because, because it's like a tree on a hill, you know, that withstands the storms, and its roots are really strong... I had to push against this for so many years singing, and you know push my technique development against my anatomy, that once it was released, my technique was free to fly and I could sing these long phrases that I couldn't do before.

Antonia Thwaites (2336293) 35:22

Wow, that's amazing.

Participant 5 35:25

Yeah, it is. It's, it's very exciting, very satisfying.

Antonia Thwaites (2336293) 35:27

Yeah, absolutely amazing.

Participant 5 35:32

Yeah.

Antonia Thwaites (2336293) 35:36

Were there any other things that you found improved out of some of the other things you mentioned or range you talked about the low range?

What happened after the first release or even the 2nd?

Participant 5 35:58

Well I'm going to talk about my releases now.

Antonia Thwaites (2336293) 36:01

OK.

Participant 5 36:02

So the first one was an anterior release. I didn't have any myofunctional therapy and so I had some thickened scar tissue. That being said, that scar tissue would have been well and truly there by the time I started singing again, which was a year later, so there was still marked improvement. Fast forward about another year. So two years post frenectomy I was....is that right? Two years.....2 1/2 years..... about there, I started having myofunctional therapy. I was getting a lot of pain in my face, in my mouth, in the tongue, jaw, neck. But especially like this facial pain was just getting me every day and I would find constantly massaging trying to get relief and doing, you know, intraoral stuff trying to and it just was getting to be quite unbearable.

Antonia Thwaites (2336293) 37:09

Mmm.

Participant 5 37:11

So I started with my research by this stage I'd learned so much, I knew that I needed another release. Or, you know, I was pretty sure about it.

So I started myofunctional therapy with Jessica Luffy and I was preparing for the

release. I got a lot of relief of those pain symptoms from the myofunctional therapy and then I would have pain after singing as well. Particularly, I would feel it around, I guess around the hyoid bone area.

Antonia Thwaites (2336293) 37:53

Yeah.

Participant 5 37:56

Like this sort of ache in the larynx as well and I went for my second release, which was done in 2023, early in the year, so.

Antonia Thwaites (2336293) 38:03

Mmm.

Participant 5 38:13

...around March and unfortunately, things were not so transparent. Jessica had spoken with the dentist and had asked if she would release the posterior tongue and do a genioglossus myotomy. She said that she would release the posterior tongue. I was not involved in that conversation and I travelled to Melbourne. My husband took days off work because my little child was coming too, so it was a big effort and expense. And then I get there and she says I won't touch muscle fibres. You know, I tried so hard to get all of this information before I came here and I looked into so many different providers. I just what do I do like? I've come all this way. I'm not going to back out now. I'm in pain. I need a release done. And so I went ahead. She did the release, and she removed the scar tissue. But again, it was anterior.

Antonia Thwaites (2336293) 39:26

OK.

Participant 5 39:27

Immediately when I looked at it, she did a good job of what she did, but it wasn't enough and I was like, so disappointed and I called Jessica. I went back to my hotel room. I did a video recording before and after. And then I called Jessica and she looked at my tongue and she was trying to be encouraging. But right out told me, she said. Or maybe she told me later, she said. I was really pissed off.

Antonia Thwaites (2336293) 39:58

Yeah.

Participant 5 39:59

'Cause she knew as well that it wasn't sufficient. So I knew at some point I would have another release done. Alright.

Antonia Thwaites (2336293) 40:22

Oh.

Participant 5 40:23

About 6 weeks later, or in that interim, my mother-in-law died in the US and travelling over there for the funeral I thought I could have it done over here with all number of experts.

Antonia Thwaites (2336293) 40:29

Yeah.

Participant 5 40:31

So I looked up and I found somebody who I was interested in seeing, Katherine Ahn, and I went to her for an assessment and she said yes, unfortunately there is still some restriction there, but I don't want to go back in too soon when the scar tissue is still forming because it can result in worse scar tissue later on. Fabulous. So back to Australia. Who knows what's going to happen and when. So I continued with my exercises. I did have some improvement as well after the second release and the removal of scar tissue and the scarring was improved the second time 'cause I did myofunctional therapy and then I, you know, mentioned to my teacher that I was thinking of having another release done and at that point she kind of said something about my tendency to be a bit on the obsessive side with something. Someone how does she know that? Stop it, stop looking. So, oh, that reminds me, by the way, I mentioned there were times when I was like over- focused on lowering the larynx, engaging the tongue root. Another thing that I did was tilting the pelvis forward to like an obsessive degree.

Antonia Thwaites (2336293) 42:02

OK.

Participant 5 42:03

So effort to try to get my breath going, my breath support trying to probably trying to balance my posture which was thrown out by a forward head posture... just mentioned that. So I decided not to tell my teacher that I was planning on a 3rd release. I thought she's gonna think I'm a little bit crazy. And I'll just do it and come back and surprise her.

But then, unfortunately, when I came back, that opportunity was gone. She was under having cancer treatment straight away.

Antonia Thwaites (2336293) 42:41

Oh, sorry.

Participant 5 42:43

She didn't hear the results. It would have been great to hear her comments.

Antonia Thwaites (2336293) 42:48

Yeah.

Participant 5 42:50

Anyway, I travelled to the US. This was September last year, 2024 and I had treatment. And also you know still continuing with myofunctional therapy. And I had this time a partial genioglossus myotomy.

Antonia Thwaites (2336293) 43:11

OK.

Participant 5 43:12

And and that was specifically requested by Jessica Luffey. She was like singers need this and....

Antonia Thwaites (2336293) 43:19

Hmm.

Participant 5 43:21

...and the dentist was, you know, a little hesitant, but she agreed to do it and she ended up doing a partial myotomy because she said everything else felt soft. And that was what was needed.

Antonia Thwaites (2336293) 43:35

OK.

Participant 5 43:36

So. Incidentally, I've since found a post from Doctor Zaghi saying that in their clinic it was 50 something percent of patients required genioglossus myotomy to have a proper release. That was on his Instagram if you want to see it.

Antonia Thwaites (2336293) 43:59

OK. Yeah, that would be interesting.

Participant 5 44:01

I just sent it to my colleague. Oh, she's now, the dentist is now my research colleague. I sent it to her because she's an affiliate of Dr Zaghi and she, you know, I think she was a bit concerned, professionally, politically, about us...you know, publishing about doing the myotomy. And he has become more conservative and you know, wasn't doing deep releases so much anymore. According to Jessica Luffey as well.

Antonia Thwaites (2336293) 44:33

OK.

Participant 5 44:33

So good to find that.

Antonia Thwaites (2336293) 44:36

Yeah.

Participant 5 44:37

I had the second release and this time I also had both lips and all cheeks done.

Antonia Thwaites (2336293) 44:43

OK.

Participant 5 44:44

Well, the other thing that really ticked me off about that second dentist is that she refused to do my lip, my upper lip, which was more prominent, but I showed her both lips and she wouldn't do it.

Antonia Thwaites (2336293) 44:56

Frustrating.

Participant 5 44:57

I did not appreciate the white coat speech, you're kind of the singer, and I said to her, you know, I'm doing research on how it affects the voice and she said it's unlikely it will change anything with your voice. And in my mind I'm going, do you know anything about the voice? Like who are you? You're speaking to me like I just look on Dr Google.

Antonia Thwaites (2336293) 45:23

Yes.

Participant 5 45:25

It was an experience with her, but with Ahn we actually... I got in touch with her last year and said would you like to co-author a research paper and she said absolutely and we formed a team with a couple of her other colleagues and then we decided to use me as a case study.

Antonia Thwaites (2336293) 45:48

Right.

Participant 5 45:49

So that was secondary. We were just going to write up a paper and then we're like,

well, I need treatment. What about a case study? And so we have a lot of data on the results, the changes and that's after having already had partial treatment. If these results were from, you know, point 0 to after, they would have been even more stunning.

Antonia Thwaites (2336293) 46:18

Yeah. Wow.

Participant 5 46:20

So the results from afterward. I'll give you a version that would be what I would just share in the interview and then if you need to have more information about our results in terms of our CT scans and things like that. You know, airway, volume, etcetera. I'm happy to provide that as well and you can reference it. You could reference it as our poster at the Voice Foundation. We also did a hand out, so I'll, I'll keep the information separate so that it's clear.

Antonia Thwaites (2336293) 46:56

Okay thanks...

Participant 5 47:02

...for you use in the context of the interview.

Antonia Thwaites (2336293) 47:04

Yeah. Oh, thank you. That's really, really helpful. That would be great.

Participant 5 47:10

So the first noticeable change when I started singing and we were recording these singing tests was the change in tone and volume.

It was richer, it was more brilliant and it was louder.

Antonia Thwaites (2336293) 47:29

OK.

Participant 5 47:30

Then I went through. I had a list of singing tests, so they were all in order. So it's, you

know, things were made manifest in that particular order. So then I did vowels and I noticed that my 'ah' vowel would just sit happy. Wow.

Antonia Thwaites (2336293) 47:52

Nice.

Participant 5 47:53

Yes, the passaggi were very smooth. They felt very smooth. They sounded smooth. They sounded smooth before, but they didn't feel smooth, I suppose.

Antonia Thwaites (2336293) 48:07

OK.

Participant 5 48:09

Yeah, I needed to. I felt like I needed to concentrate on them a bit more. My... especially the first passaggio was so easy and and that mid range was very easy to focus and to maintain the consistent resonance. Moving through the mid range and on the different vowels. Then I tested dynamics and both the soft and loud extremes were greater, so I was able to sing softer as well with more focus and more ring and transitioning between them with crescendo decrescendo was smoother. Then, I suppose next would have been range. So I tested the range extremities and.....

Antonia Thwaites (2336293) 49:11

Mmm.

Participant 5 49:17

....before and after surgery, same day I gained 1 octave.

Antonia Thwaites (2336293) 49:24

On the same day. Oh wow.

Participant 5 49:29

Yeah. And that was mind-blowing. Didn't retain 1 octave. I retained I would say on average, you know, on an average day, 8 semitones.

Antonia Thwaites (2336293) 49:44

Pretty good...!

Participant 5 49:44

But that's also still... that's still during the wound contraction healing phase, which I'm still in. You know it takes time for the scar tissue to soften. So on the day of surgery I sang completely smoothly, effortlessly up to G6.... Sorry....ur G6. Yeah. Whistle, whistle register.

Antonia Thwaites (2336293) 50:08

Yes. Yeah.

Participant 5 50:10

...and easy access. Now my whistle register before was very inconsistent. It was more occasional and I go, oh, I can sing up to an F today. But wasn't usable.

Antonia Thwaites (2336293) 50:26

Hmm.

Participant 5 50:26

Wasn't at all consistent. I couldn't just switch it on whenever I wanted to. And all of a sudden..... before surgery, I was singing up to a D, and that was my maximum, and then all of a sudden is just like whoop, like, straight up to G6 totally easy. I could sing. Yeah, I could sing a D at pianissimo, and it was no effort. And then I also in my low range... also massively expanded.

Antonia Thwaites (2336293) 51:04

OK.

Participant 5 51:06

And was quite suitably retained as well and then I tested a high C. Just isolated for high C quality and it was, you know, the tone was more brilliant and I guess it would have been louder and easier.

Antonia Thwaites (2336293) 51:33

Great.

Participant 5 51:35

And then I sang some segments of songs and arias and tested those.

And there was better pitch consistency in one that had a lot of leaping intervals.

Hoping I would find changes in agility, but alas I did not really notice changes. My descending agility is good, it's the ascending that's been challenging.

Antonia Thwaites (2336293) 52:10

OK.

Participant 5 52:12

And is there anything else? Oh, breath support stuff, breath control.

I tested my maximum phonation duration and that extended, so I knew that I could sing longer, with better ease. And one of the songs that I sang was Dove Sono and it was easier to get through those phrases.

Antonia Thwaites (2336293) 52:40

OK.

Participant 5 52:44

There's something else.

Oh, there's something else would come under referencing our paper or our poster, yeah.

Antonia Thwaites (2336293) 52:54

OK, great. Oh, thank you. That's that's so much information and it's really, I mean, it's fascinating. It's just like so amazing, right, to experience that.

Participant 5 53:07

Yes.

Antonia Thwaites (2336293) 53:08

Just so I'm really clear, when so you said an octave on your range increase, so that's on the lower end and the higher end, right? Yeah.

Participant 5 53:16

Yes, an octave in all.

Antonia Thwaites (2336293) 53:17

Yeah. Yeah. Amazing. That's just. And I can't believe it was the same day. That's literally because, I mean, one of my questions was going to be about, like, how.... yeah, the recovery time a bit and the singing. But it sounds like you could sing the the same day. So that's pretty good.

Participant 5 53:38

We were doing research.

Antonia Thwaites (2336293) 53:39

Yeah.

Participant 5 53:41

You know. I was gonna say I wouldn't go out and do a concert, but actually that would be a really fun experiment, wouldn't it?

Antonia Thwaites (2336293) 53:51

Yeah.

Participant 5 53:52

Yeah, this was within the same period of a couple of hours.

Antonia Thwaites (2336293) 53:58

OK.

Participant 5 53:58

And only that is we were collecting so much data. We did CT scans and other tests as well, so what we did is I sang...and then I had the lingual frenectomy. Well,

frenuloplasty, technically, we're gonna get technical and the myotomy, and then I sang. Then I went back and we did the lips and cheeks, and then I sang again.

Antonia Thwaites (2336293) 54:28

OK. Yeah.

Participant 5 54:29

So a lot of that going on actually.

Antonia Thwaites (2336293) 54:31

Yeah. Very interesting. Would you mind just telling me a little bit more about the genioglossus myotomy? Is it called? Because I'm not really familiar with that, so I wonder if you can tell me kind of what the hesitation is for providers to do that?

Participant 5 54:59

Got the answer to that myself this past week.

Antonia Thwaites (2336293) 55:03

Oh really?

Participant 5 55:04

When when my colleagues and I were in Philadelphia and I was like, you know, why were you concerned about myotomy? And she said it's basically a risk of scar tissue, increase of scar tissue. That was the only issue.

Antonia Thwaites (2336293) 55:18

OK.

Participant 5 55:20

So for me, I'm not a practitioner, but from my perspective, the potential benefit outweighs the potential risk, especially things we can do to manage scar tissue as it's developing, you know, massage, even applying serrapeptase, even injections.

Antonia Thwaites (2336293) 55:31

Yeah.

Participant 5 55:43

So that's my perspective, but the frenulum, have you had a tongue tie, by the way?
Is is this your experience too?

Antonia Thwaites (2336293) 55:52

I have a tongue tie, but I'm not. I haven't had it released yet, but I am having it released in July. Yeah. So I'm on the journey too.

Participant 5 56:04

How wonderful.

Antonia Thwaites (2336293) 56:06

Yeah, I'm more new to it.

Participant 5 56:10

Oh, go to collect all your curiosities in terms of checking out your own singing and such.

Antonia Thwaites (2336293) 56:17

Yeah.

Participant 5 56:20

If you'd be interested, my colleagues and I are actually inviting. We're just kind of starting to collect contacts because we'd like to do another study.

Antonia Thwaites (2336293) 56:31

Oh, really?

Participant 5 56:32

And if you're interested, not sure exactly what that looks like yet, but at the very least, I would like to do some survey and interview as well.

Antonia Thwaites (2336293) 56:43

Yeah.

Participant 5 56:45

So, OK, well. I'll write you down and then we can talk more about that.

Antonia Thwaites (2336293) 56:50.

Yeah, that would be great. I'm absolutely up for it. I mean, yeah, I'm very curious to see what my experience is going to be, but I'm hopeful.

Participant 5 57:04

Yes.

Antonia Thwaites (2336293) 57:05

Yeah.

Participant 5 57:07

Actually, I should at some point talk about the differences in my body between the releases too.

Antonia Thwaites (2336293) 57:14

OK, yeah, go ahead.

Participant 5 57:15

But that relates to what an individual's experience is going to be. I ...my experience between the first one and the third one are completely different.

Antonia Thwaites (2336293) 57:28

Hmm.

Participant 5 57:28

Depends on how the treatment's done as to what experience you might have.

Antonia Thwaites (2336293) 57:33

OK.

Participant 5 57:35

But back to where we were. Myotomy. Yes, the frenulum is either comprised of

mucosa, probably less common, mucosa and fascia would be common and mucosa, fascia and genioglossus muscle. Mills 2019 paper on the histology of the frenulum.

Antonia Thwaites (2336293) 58:02

Oh yeah, sorry I didn't hear the first part. Did you say? Am I familiar with it?

Participant 5 58:05

Yes.

Antonia Thwaites (2336293) 58:09

No, I'm not. But I will. Look, I will look into that.

Participant 5 58:13

It was the 1st paper to actually, you know, dissect the frenulum and determine its anatomy.

Antonia Thwaites (2336293) 58:21

Right.

Participant 5 58:22

It's mind blowing that that hadn't been done till 2019.

Antonia Thwaites (2336293) 58:25

Yeah.

Participant 5 58:27

Anyway, so in some cases, the genioglossus is actually in the frenulum.

Antonia Thwaites (2336293) 58:37

Ah.

Participant 5 58:37

So to release the frenula you have to release the genioglossus and many providers won't do it. And I think it's out of ignorance. They obviously haven't read that paper.

Antonia Thwaites (2336293) 58:43

OK.

Participant 5 58:52

And they are probably unaware of Doctor Zaghi's idea that over 50% of his patients need that in order to gain full function. Or, maybe it's just a professional rivalry thing, like, I don't care what Doctor Zaghi does. I do my own thing. I don't know. Whatever.

Antonia Thwaites (2336293) 59:10

Yeah.

Participant 5 59:13

Some providers just won't do it and I got to the point of basically deciding, if somebody won't do it, I'm not going to them because they should be open to it, depending on the individual's anatomy when they go in there and what they see.

Antonia Thwaites (2336293) 59:34

Of course.

Participant 5 59:35

Because we know from Mill's paper that some frenula have the genioglossus drawn up into it, so if you tell me that you refuse to release it, then you might not release my tongue.

Antonia Thwaites (2336293) 59:55

Right.

Participant 5 59:56

In terms of what's actually happening with the myotomy I asked my colleague and we have a clear picture. When you read Mills, you'll see that there's a vertical curtain of connective tissue in between the genioglossus and the floor of the mouth, is this midline connection, so I was like, is that what's getting released, or is it something else? And my dentist colleague said that basically that there were elements of

connective tissue in amongst the muscle, and she was just kind of gradually removing bits here and there. She said the muscle fibres themselves are soft. It's the connective tissue within the muscle.

Antonia Thwaites (2336293) 1:00:41

Hmm.

Participant 5 1:00:48

So I guess that would be particularly midline that can be restrictive.

Antonia Thwaites (2336293) 1:00:53

OK, right. OK.

Participant 5 1:00:56

There isn't much on, there's one newer paper that came out that looked at, she called it miofrenectomy or was it miofrenuloplasty but it was spelled mi instead of my, I don't know why. Maybe that was a language issue, I don't know, but that's the first one I think I've seen that really compares the two, and I'm glad because we need that information out there.

Antonia Thwaites (2336293) 1:01:27

Yeah, that's really interesting. I've not really heard about that. That hasn't come up yet in my research, so that's really good to know. So thanks for your insight on that. Right. Oh, yeah. So shall we go back to the feelings in the body that changed.

Participant 5 1:01:51

Yes, OK. With my first release and my second release, I did not feel any change in my body. I heard, oh, I should say the body at large. I did feel...

Antonia Thwaites (2336293) 1:02:02

OK.

Participant 5 1:02:08

...some relief of tension in the orofacial area.

Antonia Thwaites (2336293) 1:02:13

OK.

Participant 5 1:02:16

Whereas with this third.....

Antonia Thwaites (2336293) 1:02:18

Sorry. Can I just ask you something that I meant to ask which relates to that you talked about, yeah, the orofacial pain before like the second release and how it was getting really frustrating and you really needed that release. Can I just ask whether you were really aware of that, also before the first release?

Participant 5 1:02:40

I'm glad you asked that because I left out a piece of information. I'm just gonna grab a drink of water here. First, with the first release I did have jaw tension. And I would....there was some clenching happening at night when I was sleeping. And I would get jaw pain and headaches.

Antonia Thwaites (2336293) 1:03:13

OK.

Participant 5 1:03:15

And did I have any relief from that? No, I did not. I hadn't any relief from that with the first release. And then what happened was after the car accident. I mean, hang on. I'll just have my drink now.

Antonia Thwaites (2336293) 1:03:34

Of course, take your time.

Participant 5 1:03:46

Yeah, it feels cold here. I'm going back over here. We're in winter here, so yes.

Antonia Thwaites (2336293) 1:03:55

I'm in a jumper too.

Participant 5 1:04:01

After the first release, then about 5 weeks later, the car accident happened.

Antonia Thwaites (2336293) 1:04:08

Right.

Participant 5 1:04:09

Car accident with the whiplash injury, I guess it shifted something with my TMJ.

Antonia Thwaites (2336293) 1:04:17

OK.

Participant 5 1:04:19

And then I started...I was also sleeping, reclined in a chair, because I couldn't tolerate being flat on my back with the spinal fractures. So, I was grinding a lot and I chipped a tooth and I felt like pressure on that tooth than there used to be. So something had changed and my dentist said there had been a mild bite shift and....

Antonia Thwaites (2336293) 1:04:35

Oh God.

Participant 5 1:04:46

...my insurer then paid for me to have this mandible advancement device made, which has since been called inappropriate treatment.

Antonia Thwaites (2336293) 1:04:55

Oh.

Participant 5 1:04:56

It did good things for my TMJ. Immediately the next day, it felt better. I didn't have jaw pain. I woke up without a headache, which was unusual.

Antonia Thwaites (2336293) 1:05:06

Right.

Participant 5 1:05:07

So I had relief from that, not from the tongue release. But what happened is that splint started to cause this malocclusion that I didn't have before. I had an overbite before. And so as the months rolled on, I started to have a return of those symptoms and they became more severe, so that was probably a lot to do with what was happening with my altered bite.

Antonia Thwaites (2336293) 1:05:42

OK. Yeah.

Participant 5 1:05:43

And myofunctional therapy really helped to settle down those symptoms, so it would have been, you know, my body's trying to find stabilisation now that it's asymmetric. So I have occlusion on this side and not on this side. The only way to get occlusion on this side is for my jaw to be out of proper alignment.

Antonia Thwaites (2336293) 1:06:04

Right, yeah.

Participant 5 1:06:07

So the tongue obviously is very closely related and has attachments to the jaw. So it would have been probably working over time trying to increase stability as well.

Antonia Thwaites (2336293) 1:06:23

Mmm.

Participant 5 1:06:24

And then after the third release I had increased range of motion and increased suppleness in the neck, shoulders, through the torso and the hips.

Antonia Thwaites (2336293) 1:06:42

Wow.

Participant 5 1:06:44

And in terms of details, you can access those details with our poster because

actually, with the handout, the handout will include more specifics than the poster. But just for a teaser, one of the increases in range of motion as over 150%.

Antonia Thwaites (2336293) 1:07:09

Wow.

Participant 5 1:07:11

Yeah.

Antonia Thwaites (2336293) 1:07:12

That's insane. Yeah.

Participant 5 1:07:14

Now it should be....you should be noting if you comment on that, that our treatment approach was integrative, so there was bodywork as well.

Antonia Thwaites (2336293) 1:07:26

Yeah.

Participant 5 1:07:27

And we believe that's really important to achieve optimal results because of the flow on of tension through the body. It wasn't just surgery and it wasn't surgery and myofunctional therapy, it was also body work.

Antonia Thwaites (2336293) 1:07:41

That's yeah, really important to know.

Participant 5 1:07:41

And yeah. So and all those details will be on on those things. I can send you and interestingly, during mid surgery, she took quite a long time. I don't know why it was so long, but mid surgery I felt the need to flex my jaw, to flex my ankles. And I did. And I immediately knew that I'd had increased range of motion in the right ankle, after my right ankle was injured and I lost 10° range of motion. And then after the surgery, I had more range of motion in the right than the left.

Antonia Thwaites (2336293) 1:08:32

So yeah.

Participant 5 1:08:32

Amazing. I'm not sure it was written, but that's what happened that day. 'cause I did have right side tension through the body. And yeah, the reduction of neck tension was also visible in videos of me singing when we.....

Antonia Thwaites (2336293) 1:08:53

Right.

Participant 5 1:08:55

Hold on, I'll just let my mom know I'm not available for a call.

Antonia Thwaites (2336293) 1:09:01

Oh...

Participant 5 1:09:06

OK, that's done. Oh, are you still there? Where are you? Come back... where is?

Antonia Thwaites (2336293) 1:09:15

Oh, can you not see me anymore?

Participant 5 1:09:17

My God, what's happened? Tap on that and it brings up join a meeting. But I'm already in a meeting.

Antonia Thwaites (2336293) 1:09:29

Yeah, I can see and hear you still.

Participant 5 1:09:32

Oh, maybe. Oh, will that do it? Video. Oh. Well, maybe we'll just continue and I can't see you anymore.

Antonia Thwaites (2336293) 1:09:46

Oh, you're frozen now anyway. So we're both in the same boat then.

Participant 5 1:09:50

Oh, OK. But you can hear me.

Antonia Thwaites (2336293) 1:09:52

Yeah, I can hear you. So that's the most important thing.

Participant 5 1:09:55

OK, I'm sure you have some delightful mid word face on your screen.

Antonia Thwaites (2336293) 1:10:02

Haha don't worry.

Participant 5 1:10:04

So in that case, back to yes, I recorded video also of my singing on the day of surgery and you could see in the video and my colleagues commented that there was visibly less tension in the anterior neck when I was singing.

Antonia Thwaites (2336293) 1:10:25

OK, that's really impressive

Participant 5 1:10:26

..and the shoulders.

Antonia Thwaites (2336293) 1:10:28

..and the shoulders?

Participant 5 1:10:29

Yeah.

Antonia Thwaites (2336293) 1:10:32

And when you mentioned body work.

Participant 5 1:10:35

Mm hmm.

Antonia Thwaites (2336293) 1:10:36

What specifically was that? Oh, I can see you again.

Participant 5 1:10:41

Oh, but I still can't see you. What if I hit join? The body work was chiropractic. I had three. Well, the details will be in. I don't need to tell you how many sessions, but chiropractic and manual physical therapy.

Antonia Thwaites (2336293) 1:11:02

OK.

Participant 5 1:11:03

We also used non invasive laser.

Antonia Thwaites (2336293) 1:11:09

Hmm.

Participant 5 1:11:10

*Which and we use the oralase protocol. Again the details will be in our study that I can send.

Antonia Thwaites (2336293) 1:11:18

Great. OK. That's so....

Participant 5 1:11:22

The manual physical therapy had a focus on fascia as well.

Antonia Thwaites (2336293) 1:11:28

Right.

Participant 5 1:11:30

And releasing fascial adhesions. And I had scar tissue in the abdomen from surgery

and releasing those were seen to be important for, you know, optimal release up in the mouth.

Antonia Thwaites (2336293) 1:11:50

OK. Interesting. Amazing. Well, I think we've covered a lot here.

You've shared some really, really insightful things, so thank you so much. I have kind of just one final question, which I'm pretty sure I know the answer to because of everything you've said. But it's kind of two, one was negative symptoms from the release and the other is any regrets?

And I can kind of obviously anticipate what you're going to say, but if there's anything you more you'd like to add to that.

Participant 5 1:12:34

Well. There is some tension that returns and that is probably largely inevitable. You know, when you have surgery, there's always going to be scar tissue, but it's not too much scar tissue, I think it's more about muscle memory... so to have patterns of tension that have been developed over years, many years. And that's something that I need to continue working on. I wouldn't call it a like.....it's certainly not a side effect of treatment. It was already there and it's just something that needs persistent work.

Antonia Thwaites (2336293) 1:13:11

Yeah.

Participant 5 1:13:16

To develop new pathways and to tell those muscles you don't have to be so active anymore.

Antonia Thwaites (2336293) 1:13:17

Hmm. Yeah, yeah.

Participant 5 1:13:23

So it's a continued challenge and I also find that doing my own manual therapy on my own body and in the mouth really helps with that.

My only regret is that it wasn't treated right the first time.

Antonia Thwaites (2336293) 1:13:49

Yeah.

Participant 5 1:13:51

Even in saying that, can I really call that a regret because I wouldn't be here with this awesome study now? If done right.

Antonia Thwaites (2336293) 1:14:01

Yeah.

Participant 5 1:14:02

So no, I don't regret having it done. I'm glad that I had it done.

And there is something else I should add. It's wonderfully fascinating and...

Antonia Thwaites (2336293) 1:14:16

Mm hmm.

Participant 5 1:14:20

...supports our case study I think you know in a really unexpected way. I consulted with another doctor before I went with Doctor Ahn. And this was a prominent, you know, tongue tie surgeon. And he said your restriction is mild because you've already had the release done. I don't think you're going to see you may not see any benefits whatsoever from a release, and I would rather give you a steroid injection instead. That's when I went well, I'm not gonna be seeing you, I think. Well, I was on Sport Fest and I was a bit like, oh, do I still... I'm about to book tickets to go to the US. Should I still be doing this? What? And then I spoke with Dr. Luffey and she said 100%, you still need a release.

Antonia Thwaites (2336293) 1:15:04

Yeah...

Participant 5 1:15:19

But I thought so too. And so that just proved to be really interesting. That not only did he say I had a mild restriction, so did Doctor Ahn. She said your range of motion

is, you know, reasonable and because the anterior tongue had already been released, it wasn't too bad. And so that told us that even a mild restriction can cause the symptoms, and to have this level of change from a so-called mild restriction is impressive.

Antonia Thwaites (2336293) 1:15:58

Yeah.

Participant 5 1:15:58

So even then, I wouldn't call it a regret that it wasn't done right before. Because now we can see that for somebody else who might have a minor restriction, that there's still potential that they could experience benefits from having treatment.

Antonia Thwaites (2336293) 1:16:18

That's a really good point. I'm glad you've made that point because I think that, yeah, that's highly relevant considering quite a lot of people might be dismissed because, oh, you seem to have good mobility and you're getting your way around certain things in singing with compensations or whatever. So it's really....

Participant 5 1:16:39

Hmm.

Antonia Thwaites (2336293) 1:16:42

Yeah, really nice to know that it's still had these major effects.

Participant 5 1:16:48

Some people I've seen posts on Facebook, some people, some practitioners will even say that a patient has good mobility with compensations, so they're happy to leave it there. And I'm going. Hello. Does the word compensations not alert you to a problem?

Antonia Thwaites (2336293) 1:17:10

Yeah.

Participant 5 1:17:10

Yeah, I would say like, oh, they compensate to a grade one. So we're going to leave it. There's a cost that comes with compensating.

Antonia Thwaites (2336293) 1:17:22

Yeah.

Participant 5 1:17:23

And so with singing. If you're compensating with singing, there's always there's going to be a cost because something else is not what it should be in order for you to be compensating.

Antonia Thwaites (2336293) 1:17:37

That's really interesting and makes a lot of sense to me. Yeah, great.

Participant 5 1:17:41

Hmm.

Antonia Thwaites (2336293) 1:17:44

Really great.

Participant 5 1:17:46

Wish I could see you too.

Antonia Thwaites (2336293) 1:17:49

Oh, you still can't see me? Oh, I really, really appreciate everything you said. That's really been very, very informative. Thanks so much for taking the time out to do that.

Participant 5 1:18:03

I'm really glad and it's my pleasure. But in terms of our.....I'm just wondering how how do you even go about..... I mean I can send you. I can send you our.....let me think. Let me check with my colleagues.

Antonia Thwaites (2336293) 1:18:28

Yeah, of course, yeah.

Participant 5 1:18:30

I'll check with my colleagues first because we're still, we're still writing up our paper...but obviously if you can, if you're referencing our poster then maybe that will be fine, but I'll just double check with them. 'cause last night I actually.... somebody asked for....if they could see our poster. And I checked with them and they said, you know, here are some potential issues with sharing it before we have our paper published. So I'll double check with them, but also in a sense, because we've done a poster, it is published.

Antonia Thwaites (2336293) 1:19:15

Yes.

Participant 5 1:19:17

Just that it's not publicly available for people who weren't at the symposium.

Antonia Thwaites (2336293) 1:19:23

I see, yeah.

Participant 5 1:19:24

So I'll double check with them. I imagine that that's something that I could send through to you, but you may not even... when is your thesis due to be completed?

Antonia Thwaites (2336293) 1:19:38

It's got to be finished by August. So it's quite soon. It's a very.... it's a small study, it's a short term kind of preliminary thing. So it's you know at this stage it's it's just for my, for my masters, for my postgraduate, so, it will be read internally, so that might also be relevant for them to know? It's not like it's going to get shared at this point, although I do... I am obviously very interested in this topic and we'll, you know, we'll see what happens. I'd like to be able to spread it further..

Participant 5 1:20:19

OK.

Antonia Thwaites (2336293) 1:20:21

But it's yeah for my postgraduate at the moment.

Participant 5 1:20:26

So is this an element of your master's and not the main thesis? Or is it a research master's and this is your thesis?

Antonia Thwaites (2336293) 1:20:34

Well, it's... I'm doing just the postgraduate. So this is my final study. Yeah, it's a research... It's not a research masters as such, but it's on vocal pedagogy.

Participant 5 1:20:46

Oh, I see. Yep.

Antonia Thwaites (2336293) 1:20:46

And and within it we have to conduct research on a topic of our choosing. So yeah, and it's a postgraduate certificate. So this is my my final one.

Participant 5 1:21:00

Interesting. Then in terms of the pedagogical application with, you know, compensations that you're, you know, symptoms you look for?

Antonia Thwaites (2336293) 1:21:08

Yeah, absolutely. I'm definitely looking for ways that singing teachers can be more aware of this. That's the aim.

Participant 5 1:21:21

I'm actually presenting on this at the Australian National Association of Teachers of Singing in July.

Antonia Thwaites (2336293) 1:21:28

Wow. Amazing!

Participant 5 1:21:32

And NATS wants to do our poster next year, the same poster.

Antonia Thwaites (2336293) 1:21:38

Amazing.

Participant 5 1:21:39

That's fantastic. We don't have to do any more work on it? It's already done and sure.

Antonia Thwaites (2336293) 1:21:47

Yeah.

Participant 5 1:21:49

Oh yeah. Slowly but surely the the information will get out to voice teachers.

Antonia Thwaites (2336293) 1:21:55

That's great.

Participant 5 1:21:56

And I'm, I'm sure your work will help too with that.

Antonia Thwaites (2336293) 1:22:00

I hope so. Yeah. Well, anything that you're able to share with me, I'm really appreciative. But of course, understand, if you can't at this stage, but I really look forward to reading what you publish 100%.

Participant 5 1:22:15

Yes, I'm done writing now. Now that the conference is done, and I also spent some time re-writing my proposal for post grad and that's done so.

Antonia Thwaites (2336293) 1:22:33

Oh yeah. Nice.

Participant 5 1:22:37

Computer work...

Antonia Thwaites (2336293) 1:22:40

Yeah. Oh, amazing. Well, thank you again so much for your time. And I wish you a lovely rest of the day.

Participant 5 1:22:50

Thank you for doing this important research for our field.

Antonia Thwaites (2336293) 1:22:54

Oh well, thank you. Thanks again

Participant 5 1:22:58

Best of luck with your treatment. That's so exciting. Are you already doing myofunctional therapy?

Antonia Thwaites (2336293) 1:23:04

Yes, I've been doing it for quite a while, so I thought I've found personal real, like real benefits just from that alone to lots of things in my singing. So.

Participant 5 1:23:12

Yeah.

Antonia Thwaites (2336293) 1:23:16

And I also have quite a minor tie, but I think that it has, well, I don't know. We'll see. I still think it will... has a big impact, so. Yeah.

Participant 5 1:23:30

Yeah, good, good.

Antonia Thwaites (2336293) 1:23:31

Yeah.

Participant 5 1:23:33

I'm just plugging in phone. It's almost out.

Antonia Thwaites (2336293) 1:23:37

Yeah. We've been going a while so I'll let you get on with the rest of your day now.

Participant 5 1:23:42

I'll send you an e-mail as well about potentially participating in some future research.

We're still working out what that looks like. I already know what I want for my postgrad, which actually is very similar to what you're doing here with doing a survey and an interview and in terms of what we do, if we do another study with my colleagues at Viera, that will be. Leave it more involved and we'll be wanting to get some data, but I don't like yet so and especially if if we actually incorporate people who are having treatment at different clinics versus everybody at the same treated by the same person. So we're still that out.

Antonia Thwaites (2336293) 1:24:21

Mm hmm. Yeah.

Participant 5 1:24:37

But in the meantime, even before we've worked it out, I don't want to miss the opportunity to gain that data from willing participants who are going through treatment.

Antonia Thwaites (2336293) 1:24:49

Yeah.

Participant 5 1:24:50

In time.

Antonia Thwaites (2336293) 1:24:52

Yeah, absolutely. If I can help, then I'm, I'm definitely willing to help. So I think it's an important field.

Participant 5 1:24:52

OK. Wonderful. Thank you.

Antonia Thwaites (2336293) 1:25:01

Yeah. Well, thank you. And yeah, we'll speak soon then.

Participant 5 1:25:06

Hey, it's just talk to you soon. Enjoy the rest of your evening.

Antonia Thwaites (2336293) 1:25:09

OK. You too.

Participant 5 1:25:14

I can't hang up from here. So that'll be up to you, I think.

Antonia Thwaites (2336293) 1:25:17

OK, let me. I'm gonna stop the record now anyway, and then I'll....

● **Antonia Thwaites (2336293)** stopped transcription

Interview 6 Transcript (page 221-237)

June 8, 2025, 9:08AM

- **Antonia Thwaites (2336293)** started transcription

Antonia Thwaites (2336293) 0:03

Ok I think that's now recording and transcribing. So, thank you again so much for participating. I really appreciate it.

Participant 6 0:05

Yeah. Brilliant.

You're welcome.

Antonia Thwaites (2336293) 0:12

Would you mind just confirming that you've seen the documents and that you've signed the participant consent form?

Participant 6 0:19

Yeah, I've I've seen the documents and signed them and yeah, yeah, they will be with you.

Antonia Thwaites (2336293) 0:23

Thank you very much. OK. So, could we start by just you outlining your experience of working with the voice and with tongue tie in particular?

Participant 6 0:39

OK, so I've been a speech language therapist since 1991.

So I have experience across all disciplines of speech language therapy, working with voice, I trained at Central School of Speech and Drama. And so voice was very integrated into the syllabus that I undertook. Since that time I've worked with voice working with somebody called Annie Elias, who is known in speech language pathology and yeah, working with individual clients. I have seen a number of singers who have been seeking improvements to their voice and you know, come to me because I have knowledge about tongue tie, and yeah.

Antonia Thwaites (2336293) 1:45

OK. Could you tell me a little bit more about, yeah, the tongue tie side of things and how that came about with your training?

Participant 6 1:56

Okay, so I am. I was well, I am a dysphagia therapist, so working with eating, drinking, swallowing and I kind of stumbled across tongue tie. People in the background, you know, very prevalent in working with babies, supporting feeding, but actually in older children on the caseload working in the NHS it was case by case. And identifying lingual restriction, but when you're talking about dysphagia, you're talking about the tongue not functioning efficiently. So, to set up chest infections, aspiration, the tongue not controlling a food bolus. That's obviously very serious for young children and a number of my patients were on tubes, so tube fed, gastrostomies and G tube feeding. And then I... one of my colleagues a respiratory consultant, said '....(name)' 'why are we getting so many children who are aspirating?' - we would take them to video thoroscopy (X-ray) and you know, they would be aspirating, but actually they had normal neurology, so. In my work with my colleagues, we identified actually that the difficulties they were experiencing were to do with the oral prep and oral phase of swallow. So, their swallow was disco-ordinated, untimely, and misplaced. They couldn't get the elevation of the tongue to support bolus transfer. And so, I... we looked at approximately... a third of the cases that were on my caseload had tongue tie, at that time. So, through another stream, a dentist referred a patient to me to support orthodontic treatment, to support teeth straightening with the young man who was undergoing that at age 8. And so, you kind of had, actually this young man had a tongue tie that wasn't addressed. So he was putting himself into reverse swallow, affecting swallow strength pressures. So that, I mean, that's how I came to it. And then you... you know, looking through, there are great people, great people like Garliner, who was kind of looking at exercises in the 70s. You know, tongue tie and the concept of oral facial myofunctional therapy has been around since the 1920s. So a long, long time. But people have come... kind of come to it, moved away from it, you'll see that in the research that you do. And this chap Garliner was looking at specific exercises to support tongue placement, so to technically improve the tongue placement to save teeth and to support swallow. So, I went off and I went to the US, I did some training, and I then became immersed in the field following the results that I had, which were amazing - just signing people off, taking children off tubes.

Phenomenal. And then I applied for a Winston Churchill Fellowship, which I won, back in 2019 to take this field to look at how to bring it into the UK. So as part of that, I went off... just before COVID to the US to do research across America with, you know pioneer... pioneers in in this field. America is further ahead than the UK in this area. And...so got to be with people like Joy Mola, Barbara Green, they're dental hygienists who trained with Garliner back in the 70s. And then, you know, looking at sleep and paediatric sleep and looking at early intervention with people like Kevin Boyd, who is a dentist in Chicago. COVID halted everything, obviously, and then I came back to my fellowship last year and I went off to Brazil. Brazil holds a lot of the key pieces in this field because they do extensive research, and they have looked at all areas. So, looking at sleep, speech, breathing, eating and drinking, connecting with outside of speech and language therapy with other disciplines. And really, when you're working in this area, it is interdisciplinary and take, you know, different people having the knowledge, knowing the stage and timing to support, you know, to support a patient through their journey, because just the release of a tongue tie on its own, it won't work. You have to do the muscle piece. And you have to think about, you know, tongue, the tongue is formed 9 to 14 weeks in utero, so it's starting to work. It's starting to be engaged to, you know, exchange amniotic fluid. A baby comes into the world ready to feed. When that doesn't go as planned, you know, that can throw up a lot of questions around lingual restriction, you know, not always you have, you know pre term and you have syndromes and things like that, but you have to be aware of people working in compensation very early on, and actually those compensation patterns pull us out of alignment, yeah.

Antonia Thwaites (2336293) 8:24

That's really interesting. Thank you. Yeah. It's, it's such a fascinating thing for singers. So, you mentioned, obviously, that you've worked with some singers. Were any of those Western classical singers?

Participant 6 8:38

Yeah, two of them. Classical singers. And yeah, they... we were looking at laryngeal restriction, laryngeal tension. And, yeah, took... So took them through myofunctional therapy and optimising use of the voice.

Antonia Thwaites (2336293) 9:05

OK. And they were also tongue tied?

Participant 6 9:09

Yeah, yeah, yeah.

Antonia Thwaites (2336293) 9:10

Yeah. OK. Do you recall some of the symptoms that they had before and after the surgery?

Participant 6 9:19

So let me think, let me think through, so.

Antonia Thwaites (2336293) 9:23

Yeah.

Participant 6 9:25

I think getting fatigue, before the surgery getting fatigued. Increased tension into the larynx before surgery. Some of them... One of them presented with significant reflux. One of them had nodules, so that needed attention. Unable... voice would be great and then it would drop out, so very effortful. What...What else? Unable to... so breathing was also affected, in in in that and I think that for singing, so it's bringing the voice under conscious control when you sing. But actually, when you're outside of singing, your breathing pattern changes. I don't know what you think about that and you don't have to comment because this is your interview.

Antonia Thwaites (2336293) 10:26

Yeah. Yeah. No, no, I agree. I agree. It's...But I think, yeah, obviously unhelpful patterns outside of singing probably are not going to help the singing, because you're doing that a lot more during the day. So...

Participant 6 10:36

Yeah. Yeah, yeah. And I... And I think, I mean, I think that the singers that I've worked with and you know Alexander technique posture being a big part of that and that was, you know, part of my core training. Obv... I wasn't... I'm not Alexander trained, but you know, we looked at kind of posture. And I think that around for you it is around vocal hygiene as well and you kind of have you know singers who are not classical, who you know, are not always fully aware of the vocal hygiene, the postural

implications, working out, that sort of thing. Because you have to think about, you know, the breathing and respiration and optimising to support the airstream up from the diaphragm.

Antonia Thwaites (2336293) 11:40

OK. Yeah. So, when working with probably anyone, but particularly Western classical singers who have a tongue tie as well as the Myo and all of that, you also recommend bodywork.

Participant 6 11:54

Oh, TOTALLY, absolutely, it's integral. It's integral. And you also have to think about the palatal space and shape, and actually you, you know, so speech...Speech in this area you know, speech language therapists when you're working in the English language, you're thinking about where specific phonemes are formed with good tongue to palette contact. But you have to appreciate that actually when the tongue comes to the palate for speech, it's very soft and there are compensations that can be made and you can sound great, you know, from a vocal perspective. In Brazil, for example, they make their sounds differently in different places, but still can get the same sounds, but that's kind of... So it's being mindful of tongue to palette contact, but it's being mindful of actually if you're...If you don't have good space in the, in the mouth and 'the box' if you like, and you're deficient, sagittally deficient then that's going to affect your tongue placement, but it's going to affect your breathing.

Antonia Thwaites (2336293) 13:19

Hmm.

Participant 6 13:19

And and so you have leanings towards people who struggle with their tongue as the mouth is closed, it takes up too much space, feel short of air, so I need to pop my mouth open actually to support my homeostasis and my breathing, and how I am. So that's kind of, you know, something to be thinking of. Nasal breathing is really king to support engagement of the diaphragm. And to get depth of air to support the generation of air from the lungs.

Antonia Thwaites (2336293) 13:58

Right. OK. Yeah, that's really interesting. Very helpful.

Antonia Thwaites (2336293) 14:06

OK, so we've already sort of covered this, but if you have anything more to add between... so it doesn't necessarily have to be relating to those singers that you've worked with, but vocal tension as a thing, linked to tongue tie. If you have anything further to add on that, that you've seen in your practise?

Participant 6 14:27

So I think that, you know, you you... if you take a look at where the tongue links to it has...it's integrated and has attachments to the pharyngeal wall, so it has attachments to the hyoid bone, so that restriction pulls everything up. OK, so there's a young man that I work with for about 14-16 months. He had a tongue type grade four, he... his voice hadn't dropped. He... everything was really tight. Everything was really tight. I... he worked so hard with me, took him to a tongue tie release provider and the tongue tie release provider said I can't do the release because he can't get his tongue high up to the palate.

Antonia Thwaites (2336293) 15:27

Wow.

Participant 6 15:30

I said to the tongue tie release provider: 'please just do it'. We'll deal with the fallout and, you know, he consented to that. Well, the operation was a success for him. And his larynx dropped, and his voice changed. And I think that you again, it's thinking about tension patterns that you'll put into your larynx to project your voice. And the overwork of this area to get voice thrown out in theatre, obviously. You see, you know, people who lose their voice very quickly and very easily linked to tension here, here. So yeah, I mean, I guess that the posture piece is a big piece. You've also got if you're... If you have kind of spinal fixing needing to be upright to get optimal airway and optimal airway is the driver for everything. In my opinion, you need to dig deep down in any clinical work at airway. Why does somebody sit like this? (I'm at risk of doing that myself!) Why do they sit that? Because they're getting their optimal breathing space. That changes into sleep as well. **(Showing a hunched position)**

Antonia Thwaites (2336293) 16:56

OK. Yeah, that's really great. Thank you. So are there any instances where you wouldn't treat a tongue tie?

Participant 6 17:06

Yeah, yeah, I would... I would never rush to release tongue tie, ever. NEVER, never, never. It's a team that has to be involved. I think that with the media as it is, it's like, 'oh yeah, tongue tie release and your problems are going to go away.' Cutting a tie can throw up big problems on its own in isolation. And again it goes back to the size and space the box.

Antonia Thwaites (2336293) 17:30

Yeah.

Participant 6 17:36

And you release the tie, so those people who are very narrow, you release a tie, you're at risk of pharyngeal wall collapse because the tie is connected to the to the pharyngeal wall, the superior laryngeal constrictor. So actually, if you don't have much space at the back, you have high narrow palate, that's going to be a risk for your sleep.

Antonia Thwaites (2336293) 18:08

Right...

Participant 6 18:08

OK, so that's first off the back. And I think that the Myo piece working with osteopathy, you can create change. So you know, doctors like myself, will grade it based on functional elevation of the tongue. If the tongue lacks tone, then the tongue is going to put itself in compensation, but you can actually change those scores with things like my functional therapy, so that you get, okay, what's the optimum movement of the tongue? What is the optimum interference of the tongue tie? So, you're never, ever rushing for release. Tongue tie release that happens, it takes 12 months of therapy.

Antonia Thwaites (2336293) 18:56

Hmm.

Participant 6 19:02

So being within that therapeutic environment and having that awareness to create subconscious change because there is a subconscious part to that as well, where the tongue sits in a new position, the body knows it, but the brain doesn't. So you have to have that flick over.

Antonia Thwaites (2336293) 19:23

Yeah. OK. Yeah, that's really interesting. And I suppose, does it, it varies from person to person, how long you'd spend with them prior to release?

Participant 6 19:31

Yeah, yeah, it it... I mean, I think that you, you know, the six sessions I always carry my treatment over kind of every other week.

Antonia Thwaites (2336293) 19:45

Yeah.

Participant 6 19:46

It's to give that longevity to support that neurological change and yeah, I mean. The back kind of... the backlash to tongue tie release with other clinicians, ENTs for example: 'oh it doesn't work'. Well, it doesn't work because you can't just cut a tongue. You haven't got the patterning. You're going to be more flexible with the release, but it's not going to sit right. So, you're at risk of throwing up further tension and compensation. So, the key people you know are osteopaths as well as Myo. Yeah, yeah, yeah.

Antonia Thwaites (2336293) 20:29

OK. OK. Yeah. Could you tell me a little bit more about the issues that you mentioned to do with the pharyngeal wall collapse and things like that? So how does that come about?

Participant 6 20:45

Well, haha you know, I'm sure you know anatomy. If you look at where, how the tongue sits and you have to think about the, the, the diagram or being a 3D structure. So it comes about as you release the tension and drop the larynx. So the laryngeal muscles might kind of hold you. They might hold you, but you want that tension to be gone in the laryngeal muscles. That's very disruptive to swallow. Swallow, sleep, and and breathing, you know. Breathing as well... as well as talking across all parameters. So yeah, I mean it's... that's something that you, you know, the community are mindful of. And you want to avoid CPAP, for example, if somebody has sleep issues, you want them to kind of hold their form.

Antonia Thwaites (2336293) 21:48

Yeah.

Participant 6 21:51

And yeah, and to have enough space at the back, so if everything's bunched together, they're going to be at risk.

Antonia Thwaites (2336293) 21:51

Yeah, OK. And how do you combat that space issue?

Participant 6 22:06

Um through... so through the team, through orthodontic expansion.

Antonia Thwaites (2336293) 22:12

OK.

Participant 6 22:12

OK. And in adults, that's something that's a bit more complicated.

Antonia Thwaites (2336293) 22:19

Mm hmm.

Participant 6 22:19

And involved, potentially, because you've got, you know, bones that are fixed and fused. In paediatrics, that's much easier. Paediatric sleep and adults sleep are not the same. You can't... you can't put them together.

Antonia Thwaites (2336293) 22:36

OK.

Participant 6 22:36

So you, you know adults. Yeah, adults and adults sleep and actually growing the space, growing the space would be key. What's the optimised area of the palatopharyngeus, so the back space where the, where the tonsils are. Are the tonsils that you have to breathe through as well? Question mark, question mark.

Antonia Thwaites (2336293) 23:01

OK, OK. So how frequently do you come across these sorts of complications in your line of work?

Participant 6 23:09

So, so, so what? Which complications?

Antonia Thwaites (2336293) 23:12

So any... anything that's negative to do with having had a release.

Participant 6 23:18

I think that the negative thing for a release, is that if it doesn't create change.

Antonia Thwaites (2336293) 23:26

OK.

Participant 6 23:27

As in, somebody will work very hard with myofunctional therapy. My job is to get optimal tongue release. They can do the exercises, they can get the tongue elevated to contact the palate, they can pull the tongue back to the pharyngeal wall. All of that. But actually, it's when there are retained tension patterns. So it's looking, I mean the... it's looking at you know you can have fibres within the middle of the tongue, the anterior tongue and at the back of the tongue. And so, you know, a surgeon can't always go... they can go as deep as they can without interfering with you know the nerves. So, but I think that tension, I mean, there's a guy that I'm working with who's a singer. He's a rock singer.

Antonia Thwaites (2336293) 24:16

Hm.

Participant 6 24:25

And he's just held all of the tension here and he's very tight. You know, he's very, very tight.

Antonia Thwaites (2336293) 24:30

OK.

Participant 6 24:35

Probably didn't do enough osteopath... osteopathy prior to release, but he's kind of not got the lingual elevation that we would have hoped.

Antonia Thwaites (2336293) 24:46

OK.

Participant 6 24:47

Another lady who isn't a singer, but she's worked really, really hard, like taking this so seriously. She had TMJ issues, orofacial pain, neck pain, left side of body pain and she's got... she's got increased power to her tongue that is way above normal and she's got a lift, so lingual suction hold, an elevation that's the same as her jaw opening. So she's like a brilliant client, you know, she's a brilliant, perfect client and she's really benefited from the whole walk.

Antonia Thwaites (2336293) 25:28

Ok, yeah. So it can really vary basically.

Participant 6 25:31

It can, it can. It can.

Antonia Thwaites (2336293) 25:33

But I suppose so, yes...you're saying the worst thing I suppose that can happen is that there's no change. But I suppose from a singers point of view, because obviously this is for singers, if there are those issues, would you say it's worth the risk?

Participant 6 25:49

Oh yeah, yeah. And I think singers, yeah, I think you're a different breed.

Antonia Thwaites (2336293) 25:51

Yeah.

Participant 6 25:56

In that you, you know, having gone through the training that you have, you're very aware of posture, alignment, of vocal hygiene. And I think that you know ok, you can't measure... well you can measure the height of the hyoid bone, and you know, that's what you're hoping to drop and to pull things out of compensation, so you get better movement. So yeah, yeah, yeah, I think you're a different kettle of fish. Because of that and it is around knowledge and I mean the osteopathy piece is really key and I think that for singers their compensation patterns end up putting... changing kind of when you... if you scope somebody it, it's kind of changing the angles in the larynx and around the area of the vocal folds...

Antonia Thwaites (2336293) 26:53

OK, OK.

Participant 6 26:54

and having asymmetry.

Antonia Thwaites (2336293) 26:56

Yeah, OK. How are you doing for time?

Participant 6 27:00

I have someone coming in at 11.

Antonia Thwaites (2336293) 27:03

OK, I've got just a couple more questions, if that's alright.

Participant 6 27:05

Yeah, no worries.

Antonia Thwaites (2336293) 27:09

I just wanted to ask you about the grades of tongue tie and whether you see a correlation between sort of... I suppose what happens with the more severe ties, whether that's more likely to lead to either more positive outcome or more...like whether there's more implication with that, because there's more problems prior. Just anything you have to say around that?

Participant 6 27:40

So I...mean I think that. I think the tongue, it's an amazing organ. It's interdigitated. It can move and flex in extraordinary ways. The human body will, will, you know, set up compensation to complete exercises across through...you know, throughout brain, brain, tongue, what... whatever. So I think the grade of tongue tie, I don't know that it's it... It does have relevance, it has relevance clinically from, you know, physical problems. So swallow for example. And again I guess for a singer you know that's...you want to be out of swallowing down air, reflux, keeping the larynx, as...what's the word: fresh and clear as possible. So, I'm not sure that the grade the...it's the other problems around the grade of tongue tie and it's looking at that backspace. So, when we, you know, we talk about Mallampati Friedman, that's about, actually is the tongue occluding the back of the pharynx? Is it affecting breathing? Is it kind of impacting, you know, the the area around the Villa junction? Question. You know, so yeah, the grade not really... Not really sure. I think a Grade 4 tie possibly you will be throwing yourself into further compensation. Yeah, yeah, yeah. But it's...there's no research on that and it's kind of a mixed field. It's a mixed bag and you know, as I say when you work in this area, you can take somebody down the scales of their level of tie and create opening of the space as you work on myofunctional therapy.

Antonia Thwaites (2336293) 30:04

OK. So I know obviously you're not a singing teacher, but the hope is that singing teachers might have some things that they can look out for. So, I wonder if there's a few... are there any symptoms that you see quite regularly as being kind of factors that you could pick up on. Oh, that person might have a tie or might have an issue?

Participant 6 30:32

I I well, I think we say, probably need to think about that one Antonia. Because it's,

it's kind of like a red flag list, isn't it that you're thinking about? And I think you, you know.

Antonia Thwaites (2336293) 30:43

Yeah.

Participant 6 30:50

I guess it's similar for other professional, other professionals, you know, I was speaking with the dentist the other day. I mean it's... it's, yeah, it's a hard one to answer specifically related to singing because there are other things going on on the background of singing. So, you might want to ask somebody about their sleep, you know, reflux. I don't know, eating, drinking, swallowing. But it's kind of... it's kind of figuring out actually what a singing teacher would have knowledge of to pick that up. I mean anatomically you can look inside somebody's mouth. Can you see the back of their tonsils and their uvula in the back of the mouth, you know, or not. That gives you information about the height of the tongue. Yeah, it's, you know, other symptoms, yeah.

Antonia Thwaites (2336293) 31:57

OK.

Participant 6 31:59

I don't know. Don't know what other people said.

Antonia Thwaites (2336293) 32:02

Yeah. Yeah, yeah. No, that's fine. Of course. You're not a singing teacher, so I don't expect you to necessarily relate it to voice, but that's interesting anyway just to know what you think.

Participant 6 32:11

Yeah. Yeah, yeah, yeah, it. And I mean, related to voice. It's reflux and passive reflux and sleep.

Antonia Thwaites (2336293) 32:17

OK. Yeah.

Antonia Thwaites (2336293) 32:20

OK. Yeah.

Participant 6 32:22

Yeah, yeah, yeah. Quality, quality. Sleep is related. It's again related to vocal hygiene and you know the health of the larynx.

Antonia Thwaites (2336293) 32:33

OK, great. Thank you so much. I think we've covered quite a lot. So, if there's, I mean, do you have any other comments that you'd like to add that you feel we haven't covered or?

Participant 6 32:45

No, I don't. Antonia. I think it's wonderful that you're doing this project.

Antonia Thwaites (2336293)

Thank you.

Participant 6

It really, it really is. And I think that you, you know, in time I mean, cases are very interesting for me. The compensation patterns and what that does to the voice. So you've got the breathing, you've got actually how the hyoid sits. Left side, right side one side overcompensating. It's the twists and turns, and how that affects the larynx and why does one vocal fold move more freely than the other?

Antonia Thwaites (2336293) 33:29

Yeah, yeah.

Participant 6 33:30

All of that and you know, yeah. I mean, the guy, the rock singer guy continues to have tension here. Yeah, yeah, yeah.

Antonia Thwaites (2336293) 33:43

But those two Western classical singers that you worked with, they experienced a different outcome?

Participant 6 33:48

Oh, yeah, yeah, yeah, yeah.

Antonia Thwaites (2336293) 33:51

So a release of tension?

Participant 6 33:52

Yeah. Yeah. And I had another, think he's a country and western singer, another country and western singer and he had a great outcome as well. But yeah, but yeah, yeah, yeah. And I think that, that, that particular person, so when I first met him, his voice sounded very hoarse and gravelly. And I was thinking, oh, you really need that... you need some voice therapy here. And he said that he just lowered his pitch because it felt more comfortable to him to save his voice for later on.

Antonia Thwaites (2336293) 34:35

Right...hmm ok.

Participant 6 34:35

But I don't know what you think about that. That was a new one on me.

Antonia Thwaites (2336293) 34:40

Yeah. Never heard of that.

Participant 6 34:41

His talking voice was awful, was awful.

Antonia Thwaites (2336293) 34:42

OK. Yeah. I've never heard of that. Usually, you'd think if it's bad in the speaking, it's not going to be good in the singing.

Participant 6 34:50

Oh, it was it, honestly, honestly, when I spoke to him on the phone and took the call, was thinking you really need voice therapy. Yeah, yeah, yeah. But yeah, yeah, yeah.

Antonia Thwaites (2336293) 34:57

Yeah, yeah. OK. Well, thank you so much again for participating, I really appreciate it.
I'm going to stop the record now.

Participant 6 35:04

You're welcome.

● **Antonia Thwaites (2336293)** stopped transcription

Appendix-6 Tables 1, 2, 3 & 4: Codes, themes and transcript extract examples

Table 1

<u>Theme-1: Lack of vocal community knowledge</u>		
Codes	Example Extracts	Transcript
Lack of research into tongue-tied singers / Tongue-tie is unknown in singing world	<i>"How could I be going to all these singing teachers and vocal coaches and vocologists and ENTs, and no one realised that I have a tongue tie".</i>	T4
Self-research necessary due to limited scientific research	<i>"I found this programme that was called the 'Myofunctional Singer', and it was about tongue ties... the more I did the course, the more I was like, 'oh my goodness - that's me. I have all of these problems'... I had never even heard of it until I did that programme."</i>	T1
Many singing teachers are unaware of tongue-tie /	<i>"...singing teachers need to be educated on this because she's one of the top teachers in Australia and I just handed it to her on a silver platter. I said this is what's happened. This is the reason. And she didn't understand."</i>	T5
<u>Subtheme-1A: Hindered vocal development</u>		

Singing teachers don't understand technical deficiency is linked to tongue-tie / Singing teachers should be educated on tongue-tie	<i>"He (singing teacher) was also perplexed...He would try various things. And eventually he would stop and just have this puzzled look on his face and I had this very uncomfortable moment of realising he doesn't know what to do with me. He's pulled all of his tricks and none of them have worked."</i>	T5
Tongue-tie meant certain technical elements inaccessible	<i>"It's this idea that you can understand a technical idea that you can comprehend it, that you even know when other people are doing it, but you can't do it, or you can't do it consistently and when it does happen, it's like a fluke or luck."</i>	T3
Tongue-tie meant certain technical elements inaccessible / Being tongue-tied means healthy technique harder to access	<i>"I'm pretty sure a lot of the reasons why I couldn't get the right technique from the start - because I'm someone that learns usually very quickly - were like tongue tie related."</i> <i>"So regardless of how good/bad my technique was, there was always going to be an element of tension that would exacerbate everything else I did"</i>	T2

Singing teachers don't understand technical deficiency linked to tongue-tie Lack of tongue-tie awareness causes harmful assumptions	<i>"I do experience a lot of tension in my jaw, which I am still currently dealing with. Every voice teacher I have ever had has always "yelled" at me about not opening my mouth wide enough."</i>	T1
Subtheme-1B: Arming teachers with knowledge		
Singing teachers should be educated on tongue-tie	<i>"...singing teachers need to be educated on this"</i>	T5
Singing teachers should be educated on tongue-tie	<i>"I feel like everyone, every single singing teacher at all the conservatoires should go on a training course about tongue ties."</i>	T2
Tongue supports bone and palatal growth/formation Check singers' mouths	<i>"You also have to think about the palatal space and shape...If you don't have good space in the, in the mouth and 'the box' if you like."</i> <i>"I mean anatomically you can look inside somebody's mouth."</i>	T6
Tongue mobility	<i>"I think range of motion is a good one. Can the patient stabilise the mouth in an open position and go through all the functional positions, out, in, touching the tip to the molars, tongue</i>	T4

Excessive tension = red flag	<i>tip up and down, tongue bowling, tongue retraction, back tongue elevation.”</i>	
Long-term vocal quality issues	<i>“...in singers, is there peripheral pain in the musculature, neck, shoulder, jaw and head. Those could be red flags if it's chronic.”</i>	
Low vocal stamina	<i>“Are they having difficulty with resonance? Are they having difficulty with stamina or hoarseness?”</i>	
Low vocal stamina	<i>“I would say this is very blanket statement. Take it with a grain of salt, but like if you are grad school or above, Western, classically trained and you can't sing for more than an hour without pain and tension stacking, we need to take a look at that. There is no reason that that should be happening.”</i>	T3

Table 2

<u>Theme-2: Emotional Impact</u>	Example Extracts	Transcript
Codes		
Emotional toll of unknown restriction hindering vocal performance	[Listed as part of symptoms] <i>"...emotional feelings, lacking self-worth or depression..."</i>	T4
Disheartened singers Undiagnosed tongue-tied singers frustrated by vocal journey	<i>"I don't think I'm cut out for this. I guess I'm not talented enough."</i> <i>"They're just so frustrated and at the end of the day, they're like, you know what? Fuck this. I don't need this...I think it has a huge emotional impact on people."</i> <i>"...oh boy. I was wondering how long it would take before you made me cry... these tongue tie things are so important to me...because how many people feel like they have to give up on their dreams for something that's not their fault...they didn't do anything wrong. They just got dealt a tricky genetic hand."</i> <i>"I thought, oh well... I'm thinking of quitting anyway."</i>	T3

	<i>"I think the biggest common word that I hear is frustration."</i>	
Singers feel inadequate	<i>"A lot of people will give up, you know? Like that have tongue-ties and haven't been diagnosed because they can't reach their full potential"</i>	T2
Tongue-tied (unknowingly) and misunderstood = low self-esteem Disheartened singers	<i>"Because, you know, counter a lifetime of restriction and those messages of, you know, 'your instruments not good enough'...it's challenging."</i> <i>"...my teacher said to me, she encouraged me, actively encouraged me to pursue a different career."</i>	T5
<u>Subtheme-2A:</u> <i>Life-changing vocal improvements</i>		
Release vital for professional career	<i>"I think I would not be able to consider a professional career in singing without having done the thing."</i>	T2
Vocal range increase post-op Massive vocal improvement post-op	<i>"I tested the range extremities and before and after surgery, same day I gained 1 octave"</i> <i>"...it's like a tree on a hill, you know, that withstands the storms, and its roots are</i>	T5

Post-op already learnt technique now accessible	<i>really strong, I had to push against this for so many years singing. And you know push my technique development against my anatomy that once it was released, my technique was free to fly and I could sing these long phrases that I couldn't do before."</i>	
Post-op singer's dreams realised	<i>"I finally turned into those singers that I was so jealous of. Where you just wake up and you warm up, and then you sing, and then you take a lesson and you get better and then you practise and you get better. I mean, I remember people telling me that and I just thought you're out of your mind. It's not like that. Who are you kidding? What the hell, right? And now I'm like, oh, yeah, it's like that. It's like that. And if it's not it, it should be."</i>	T3

Table 3

<u>Theme-3: Tension and Compensation</u>		
Codes	Example Extracts	Transcript
Orofacial tension because of tongue-tie Vocal pathology could be linked to tongue-tie Vocal tension due to tongue-tie	<i>"In singers, is there peripheral pain in the musculature, neck, shoulder, jaw and head. Those could be red flags if it's chronic."</i> <i>"...Seeing common denominators between range, stamina, hoarseness, problems with tongue tension, neck tension"</i>	T4
History of general bodily tension common	<i>"I had a lot of just general tension and fatigue problems."</i>	T1
Vocal tension due to tongue-tie Laryngeal pain/tension	<i>"Tension patterns that you'll put into your larynx to project your voice. And the overwork of this area to get voice thrown out in theatre, obviously. You see, you know, people who lose their voice very quickly and very easily linked to tension."</i>	T6
Tongue tension Persistent orofacial pain Low vocal stamina	<i>"I had a pain and tension issue. I just had tongue tension constantly."</i> <i>"Pain. God, so much pain."</i> <i>"Take it with a grain of salt, but like if you are grad</i>	T3

	<i>school or above, Western, classically trained and you can't sing for more than an hour without pain and tension stacking, we need to take a look at that. There is no reason that that should be happening."</i>	
Vocal pathology could be linked to tongue-tie Effortful singing Persistent bodily tension Low vocal stamina	<i>"I'd say if you have muscle tension dysphonia, it's very potentially connected to a tongue-tie, which then is likely to have an effect on that."</i> <i>"I felt like a lot of tension and it was really difficult to yeah, be straight when singing, it felt like a huge effort. Everything felt like a massive effort."</i> <i>"...vocal fatigue like after singing and loads of tension."</i>	T2
Muscle compensation as result of tongue-tie Muscle compensation in singing	<i>"Having the tongue tie, everything inside has to compensate to be able to replicate what you think is normal, even though it's not how everybody else produces that particular sound...So we find ways and that's a lot of times too why nobody notices them 'cause it's like well, you sound just like this person</i>	T1

Muscular compensation comes at a cost to voice/body	<i>who's not tied when you sing or do this, but there's just, like, little things that add up eventually that'll kind of kick you in the butt!"</i>	
Muscular compensation comes at a cost to voice/body	<i>"I think a lot of the compensations that performers can use when they're younger, and there's more agility, can change as they age."</i> <i>"...Because when you can't compensate anymore, it becomes more prevalent and that's what I see in a lot of these patients."</i>	T4
Muscle compensation in singing Muscular tension as result of trying to achieve technical element Orofacial tension because of tongue-tie	<i>"I was able to manufacture a very high-pressured tongue roll...that was so muscular and intense in pressure that my eyes would vibrate and I couldn't see."</i> <i>"I would have jaw tension and tongue root tension. So I had a lot a lot of tongue root tension."</i>	T5
Muscle compensation in singing Muscle compensation as result of tongue-tie Compensation hindering vocal ability	<i>"Someone will tell you 'do this' and then you have to work so hard to try to find it in-between those things because you have a restriction. So, you have to make compromises, but you can never reach the sweet</i>	T2

	<i>spot where you're addressing like kind of all the compromises."</i>	
<u>Subtheme-3A: Surgical Remediation</u>		
Post-op release of general bodily tension Release of neck tension	<i>"After the third release I had increased range of motion and increased suppleness in the neck, shoulders, through the torso and the hips."</i>	T5
Post-op release of general bodily tension	<i>"I did notice a lot of other just bodily tension that kind of went away."</i>	T1
Post-op tension release	<i>"Then I had my second release and that was when everything, everything changed. I don't have a single symptom anymore."</i>	T3
Immediate release of tension post-op	<i>"They'll most likely experience immediate release in muscle tension and pain, and it'll be the best right after the release..."</i>	T4
Post-op tension release	<i>I had so much tension like here [indicates to larynx]...in general loads of tension...loads of back and shoulder tension, pelvic floor tension as well. And after the second release and then after the kenalog injection, all of the things went away."</i>	

Table 4

<u>Theme-4: Integrative approach to intervention</u>		
Code	Example Extract	Transcript
Vocal improvement from OMT Building new neurological pathways Healthy muscle patterns need continuous training	<i>"I got a lot of relief of those pain symptoms from the Myofunctional Therapy."</i> <i>"Patterns of tension that have been developed over years, many years. And that's something that I need to continue working on. I wouldn't call it a like.....it's certainly not a side effect of treatment. It was already there and it's just something that needs persistent work."</i>	T5
OMT an essential piece of the release process	<i>"No one should get a tongue tie [release] without doing Myofunctional Therapy." -T2</i>	T2
Release alone won't necessarily help Integrative approach for optimal results	<i>"I think there's a level of impatience for all patients after release, because a lot of them focus on that the release is going to solve the problem, and it's a small part of the solution."</i> <i>"Sometimes these patients need body work, myofascial release. Some of them benefit from dysphagia therapy, if it's really affecting their swallowing. Some may</i>	T4

Daily habits addressed in OMT	<i>benefit from techniques like Beckman oral motor that's more manual and massage based."</i> <i>"So singers want to hone in on singing, and when they find out, they have to practise swallowing, and actual articulation, diction, and where their tongue is going when they're making their sounds, both in speech and singing, it adds many layers."</i>	
Rushing into tongue-tie release inadvisable Integrative approach for optimal results	<i>"The backlash to tongue tie release with other clinicians, ENTs for example: 'oh it doesn't work'. Well, it doesn't work because you can't just cut a tongue. You haven't got the patterning. You're going to be more flexible with the release, but it's not going to sit right. So, you're at risk of throwing up further tension and compensation. So, the key people you know are osteopaths as well as Myo."</i>	T6
OMT an essential piece of the release process	<i>"...exercises building up the muscles that were weak and or over working, compensating because of the restriction"</i>	T1

Building new neurological pathways Daily habits addressed in OMT	<i>“Your body doesn't understand that you're not tongue tied anymore, and you still have all of the same muscle memories, right? So you'll still try to do the same things...this is another reason myo afterwards is so important...”</i> <i>“Have you really been practising your swallow exercises beforehand? If not, well, guess what. You're gonna be here another year...”</i>	T3
Orofacial muscle repatterning requires long-term commitment	<i>“I would never rush to release tongue tie, ever. NEVER, never, never. It's a team that has to be involved. I think that with the media as it is, it's like, ‘oh yeah, tongue tie release and your problems are going to go away.’ Cutting a tie can throw up big problems on its own in isolation.”</i> <i>“Tongue tie release that happens, it takes 12 months of therapy.”</i>	T6
Reliable results based on OMT engagement Worse scar tissue if no OMT	<i>“...what validates my clinical perception and data on patients with pre-op do so much better and they have</i>	T4

	<i>less scarring and reattachment."</i>	
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Appendix-7: Questionnaire Responses (page 253-258)

Ankyloglossia (Tongue-tie) Experience Questionnaire

Timestamp	By selecting YES below: 1. I voluntarily agree to participate in this research study. 2. I understand that even if I participate now, I can withdraw my responses at any time. 3. I understand that I can refuse to answer any question involved during the research process without any consequences of any kind. 4. I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study. 5. I understand that participation involves completing this online questionnaire. 6. I understand that I will not benefit directly from participating in this research. 7. I understand that all information I provide for this study will be treated confidentially. 8. I understand that in any report on the results of this research my identity will remain anonymous. 9. I understand that my responses may form part of a written report, internal university presentation and potentially published papers. 10. I understand that my responses will be retained in a password protected online drive accessed only by the researcher and supervisor until November 2027. 11. I understand that under freedom of information legislation I am entitled to access the information I have provided at any time while it is in storage as specified above. 12. I understand that I am free to contact any of the people involved in the research to seek further clarification and information. Researcher: Antonia Thwaites antonia.thwaites@hotmail.com Supervisor: Louisa Morgan louisa@thevoicestudycentre.com	What is your profession/experience relating to tongue-tie?	Please briefly outline your experience/background as a singer:	Have you been diagnosed with Ankyloglossia (tongue-tie) yourself?	How were you first introduced to tongue-tie as a condition/who first noticed you may be tongue-tied?
2025/05/09 5:30:17 PM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	DMA in organ performance, lifelong choral singer, a decade of private voice study	Yes	Myofunctional Therapist
2025/05/09 6:08:07 PM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	Childhood performer, college voice major, freelance classical soloist, voice teacher, children's chorus conductor, lead singer cover band	Yes	Singing Teacher
2025/05/10 12:22:11 AM GMT+1	Yes I consent to the above	I am both of the above	I am a classically trained coloratura soprano. I have been singing for 18 years.	Yes	Myofunctional Therapist
2025/05/10 1:34:19 PM GMT+1	Yes I consent to the above	Expert professional who works with tongue-tie (includes myofunctional therapist/SLT/dentist/surgeon/singing teacher with specialism/osteopath/chiropractor/physio)			
2025/05/10 4:32:24 PM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	I'm a hobbyist raised by parents who were choral singers and with a small amount of formal voice training myself. Most of my performance experience is with church music, but I have more knowledge and experience than my "official" involvement would suggest.	Yes	Own Research
2025/05/10 5:28:55 PM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	Started singing 4 years ago, currently auditioning for postgraduate diploma diplomas	Yes	Own Research
2025/05/10 8:40:30 PM GMT+1	Yes I consent to the above	Expert professional who works with tongue-tie (includes myofunctional therapist/SLT/dentist/surgeon/singing teacher with specialism/osteopath/chiropractor/physio)			
2025/05/11 12:58:54 AM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	Trained classically at university, taught elementary school music for 27 years, sang in various high level community and semi-professional choirs over the years. Have been a soloist for many of these choirs. Sang in a modern Christian worship band, produced an album in 2005.	I suspect I am tongue-tied but haven't been officially diagnosed	Singing Teacher
2025/05/11 6:23:06 AM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	Been singing and competing in Barbershop for past 7 years	I suspect I am tongue-tied but haven't been officially diagnosed	Aware of it professionally (chiropractor), only recently considered how I was personally impacted
2025/05/11 1:29:25 PM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	Singing for several years - opera and musical theatre, operatic training (non-professional)	Yes	A friend pointed it out to me
2025/05/12 8:57:21 AM GMT+1	Yes I consent to the above	Expert professional who works with tongue-tie (includes myofunctional therapist/SLT/dentist/surgeon/singing teacher with specialism/osteopath/chiropractor/physio)			
2025/05/12 11:07:19 AM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	I have a degree in Voice, been singing most of my life. I was a worship minister and leader for several years as well as a voice and piano teacher for 30+ years. I sing with several groups doing a wide variety of music.	Yes	Dentist
2025/05/13 4:20:37 AM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	Contemporary, then classical in Bachelor of Music (voice), partial Master of Music (performance), high level training, 10+ years experience performing and teaching singing	Yes	My baby was born with ties and I asked his healthcare providers if I had one too. I then saw a dentist for 'official' diagnosis
2025/05/21 9:44:02 PM GMT+1	Yes I consent to the above	I am both of the above	Trained at Trinity College of Music and perform professionally now. I had a big break from singing due to chronic tonsillitis, reflux, sinus issues and then injuries from road traffic accident.	Yes	Singing Teacher
2025/05/22 6:29:28 AM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	I am a musical theatre singer, but we attempt some classical literature at times.	I suspect I am tongue-tied but haven't been officially diagnosed	Own Research
2025/06/16 1:58:36 PM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	I am a freelance professional opera, choral & solo singer, working most recently as chorus and cover at Royal Opera House	Yes	Singing Teacher
2025/06/23 4:54:43 PM GMT+1	Yes I consent to the above	Expert professional who works with tongue-tie (includes myofunctional therapist/SLT/dentist/surgeon/singing teacher with specialism/osteopath/chiropractor/physio)			
2025/06/30 12:13:53 PM GMT+1	Yes I consent to the above	Singer with tongue-tie experience (Western classical either professionally or as a hobby)	I work as both a singer teacher, a full time opera chorus member and a freelance opera singer	Yes	Own Research
2025/07/13 1:12:39 PM GMT+1	Yes I consent to the above	Expert professional who works with tongue-tie (includes myofunctional therapist/SLT/dentist/surgeon/singing teacher with specialism/osteopath/chiropractor/physio)			

Please tick all vocal symptoms you have or have had that you feel relates/related to your tongue-tie.	Did you engage in the currently advised treatments for tongue-tie (Myofunctional Therapy and/or Release Surgery?)	After the tongue-tie release surgery, did you see improvement/reduction in any of these symptoms?	If you have ticked any of the above, when did you feel these improvements and for how long did they last?	Did you engage with Myofunctional Therapy exercises before and/or after surgery?
I don't really have symptoms	Yes, I worked with a Myofunctional Therapist but have not had surgery			
Laryngeal muscle tension;Neck and shoulder tension;Law tension;Singing voice sound quality issues;Articulation issues;Tongue tension when singing or speaking;General bodily tension and postural/alignment issues	Yes, I worked with a Myofunctional Therapist and then had surgery	Laryngeal muscle tension;Neck and shoulder tension;Articulation issues;Tongue tension when singing or speaking	I felt improvement to some symptoms but not others	Yes, I performed Myofunctional Therapy exercises before and after surgery
Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Law tension;Unpredictable vocal quality;Singing voice sound quality issues;General bodily tension and postural/alignment issues	Yes, I worked with a Myofunctional Therapist and then had surgery	Neck and shoulder tension	The improvement to my symptoms was immediate and remained consistent	Yes, I performed Myofunctional Therapy exercises before and after surgery
Vocal fatigue;Neck and shoulder tension;Because I learned about tongue tie late in life, it didn't occur to me to wonder whether the challenges I experienced with singing might be influenced by ties, so I'm making educated guesses in hindsight.	Yes, I had surgery but did not engage with Myofunctional Therapy	Not sure		No, I did not engage with Myofunctional Therapy exercises
Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Law tension;Limited vocal range;Articulation issues;General bodily tension and postural/alignment issues	Yes, I worked with a Myofunctional Therapist and then had surgery	Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Limited vocal range;Articulation issues;General bodily tension and postural/alignment issues	Immediate improvement in some aspects but other improved with technique change gradually that were enabled by surgery	Yes, I performed Myofunctional Therapy exercises before and after surgery
Laryngeal muscle tension;Vocal fatigue;Law tension;Articulation issues;Tongue tension when singing or speaking	No, I did not seek treatments			
Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Law tension;Unpredictable vocal quality;Singing voice sound quality issues;Breathing difficulty;Tongue tension when singing or speaking;Pain in the throat, tongue and/or jaw after or during voice-use;General bodily tension and postural/alignment issues	Just about to start			
Laryngeal muscle tension;Neck and shoulder tension;Law tension;General bodily tension and postural/alignment issues	No, I did not seek treatments			
Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Law tension;Tongue tension when singing or speaking;Pain in the throat, tongue and/or jaw after or during voice-use;General bodily tension and postural/alignment issues;Difficulty with tongue trills	No, I did not seek treatments			
Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Law tension;Unpredictable vocal quality;Singing voice sound quality issues;Breathing difficulty;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;Pain in the throat, tongue and/or jaw after or during voice-use;General bodily tension and postural/alignment issues	Yes, I worked with a Myofunctional Therapist and then had surgery	Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Law tension;Unpredictable vocal quality;Singing voice sound quality issues;Breathing difficulty;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;Pain in the throat, tongue and/or jaw after or during voice-use;General bodily tension and postural/alignment issues	The improvement to my symptoms was immediate and remained consistent;After having a relapse of symptoms, they gradually improved again through stretching/Myofunctional therapy;All symptoms selected had immediate improvements after surgery, while some had slight relapse during scar tissue development	Yes, I performed Myofunctional Therapy exercises before and after surgery
Laryngeal muscle tension;Vocal fatigue;Law tension;Unpredictable vocal quality;Singing voice sound quality issues;Limited vocal range;Articulation issues;Pain in the throat, tongue and/or jaw after or during voice-use	Yes, I had surgery but did not engage with Myofunctional Therapy	Vocal fatigue;Law tension;Unpredictable vocal quality;Singing voice sound quality issues;Articulation issues;Symptoms improved but tie reattached so having it done again and doing myofunctional therapy which didn't exist when I had the release previously.	The improvement to my symptoms did not last;Only because my tie reattached	No, I did not engage with Myofunctional Therapy exercises
Limited vocal range;Tongue tension when singing or speaking;Difficulty in raising the soft palate, difficulty slowly tilting the larynx, though this does not apply to classical singing. More difficulties in musical theatre singing than classical	I have not but I am planning to have surgery and myofunctional therapy			
Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Law tension;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;General bodily tension and postural/alignment issues	Yes, I worked with a Myofunctional Therapist and then had surgery	Laryngeal muscle tension;Vocal fatigue;Articulation issues	The improvement to my symptoms was immediate but I had a relapse a few days - 1 month after surgery	Yes, I performed Myofunctional Therapy exercises before and after surgery
Laryngeal muscle tension;Neck and shoulder tension;Law tension;General bodily tension and postural/alignment issues;Lowering of the soft palate during certain vowels	Yes, I worked with a Myofunctional Therapist and then had surgery	Laryngeal muscle tension;Neck and shoulder tension;Law tension;Limited vocal range;Tongue tension when singing or speaking;General bodily tension and postural/alignment issues;Availing to separate the tongue function from soft palate, greater volume with less effort	The improvement to my symptoms was immediate and remained consistent	Yes, I performed Myofunctional Therapy exercises before and after surgery

Overall, how beneficial was the surgery for reducing tension in your singing voice? (1 = very beneficial / 5 = not at all beneficial)	Overall, how beneficial was the surgery to your quality of life as a singer? (1 = very beneficial / 5 = not at all beneficial)	"I feel satisfied with the outcomes of the surgery". (1 = strongly agree / 5 = strongly disagree)	"The surgery had a negative impact on my voice". (1 = strongly agree / 5 = strongly disagree)	After engaging with Myofunctional Therapy did you see improvement/reduction in any of these symptoms?	Overall, how beneficial was Myofunctional Therapy for reducing tension in your singing voice? (1 = very beneficial / 5 = not at all beneficial)
					5
2	3	4	5	No, there were no improvements	4
1	1	1	5	Singing voice sound quality issues	1
3	2	1	5		
1	2	1	5	No, there were no improvements	5
1	1	1	5		
3	3	3	5	I've been doing myofunctional therapy more recently as having release soon again. Hopefully this time with the myofunctional therapy the tie won't reattach	3
2	1	2	5	Jaw tension;Articulation issues;Tongue tension when singing or speaking	2
1	1	1	5	Neck and shoulder tension;Jaw tension;Tongue tension when singing or speaking	1

Please re-confirm which group you belong to in order to continue the questionnaire with the right section.	In what capacity do you work with those who are tongue-tied?	Please briefly outline your experience in the profession:	If you are a dentist who performs release surgery and/or a Myofunctional Therapist, how many tongue-tied adults do you treat per year?	Please list three markers you believe to be most important/common when diagnosing tongue-tie.	Amongst your clientele, how frequently do you work with singers?
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
I am both of the above	I am a myofunctional therapist/ am a singing teacher with a specialism in tongue-tie	I participated in the "Myofunctional singer" program for tongue tied singers, worked with an OM and had my tie released. I did my final research module on Tongue ties in singers with Voice Study Centre. I got my vocology cert from NYU, I'm currently enrolled in an SLP program at Northwestern and plan to become certified in orofacial myology this fall through AOMT.	n/a	high/narrow maxilla shape, mouth breathing, fascial restriction throughout the whole body	Often
	I am a myofunctional therapist/ am a speech and language therapist/vocologist	30 years as an SLP specializing in orofacial myology/oral/ motor and ties. New volcologist.	5-10 mainly pediatric	1) structural assessment with Kotlow free tongue range, quick tongue tie assessment, and Kotlow or corylls and genna scale by location, Kotlow scale for lip, Baxter for buccals 2) function 2) full functional assessment to include airway, voice, speech, feeding and swallowing (this is not always myo if it is a child under 4 will be oral motor/ lactation/feeding 3) Zagni's TRMR via Fairst-6	Sometimes
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
	I am a myofunctional therapist/ am a singing teacher with a specialism in tongue-tie	Working with singers and general population experiencing issues due to functional and physical limitations of the tongue	4-5	1. Tongue/jaw independence 2. Visible tongue tie 3. Tongue raise	Often
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
	I am a dentist/ am a dentist who performs tongue-tie release surgery/ am a myofunctional therapist	I am a dentist who performs functional frenuloplasty	100	Range of movement, function and symptoms	Sometimes
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
I am both of the above	I work with the body (physio/osteo/chiro)/And singer	I'm an osteopath and singer as well as also being tongue tied and having three releases with no MF therapy so for the fourth release I am doing MF therapy before and after the release.		Whether tie is anterior or posterior, if singer can open mouth and touch behind upper teeth with top of tongue, how long can do a suction hold. Not quite sure as early days for singers and tongue ties	Often
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
	Speialist Paediatric Dentist	I have been a specialist paediatric dentist for more than 40 years. I've been laser certified since 2002. I have treated more than 12500 tongue-ties. I now use lasers exclusively but have used scalpels and scissors in my early career.	Up to 30 Adults per year, most of my case load is paediatric	It's all about tinge function: elevation, protrusion and lateralisation	Rarely
Singer with tongue-tie experience (Western classical either professionally or as a hobby)					
	I am a dentist who performs tongue-tie release surgery		Around 200 adults per year.	Tongue mobility/function, narrow jaw, mouth breathing. Would also ask someone about their sleep and digestion - IBS / reflux issues.	Sometimes

In your expert opinion, could the following symptoms observed by singers be related to tongue-tie? Tick all that may be relevant.	If you have ever treated/worked with tongue-tied singers, have they ever made complaints about the following issues?	If you have worked with singers, have they reported improvements to their vocal symptoms following release surgery?	"I consider voice issues to be one of the many potential symptoms of a tongue-tie". (1 = strongly agree / 5 = strongly disagree)	"I believe tongue-ties could negatively impact professional singers". (1 = strongly agree / 5 = strongly disagree)
Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Unpredictable vocal quality;Breathing difficulty;Articulation issues;Tongue tension when singing or speaking;General bodily tension and postural/alignment issues	Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Singing voice sound quality issues;Breathing difficulty;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;Pain in your throat or tongue after or during voice-use;General bodily tension and postural/alignment issues	Yes	1	1
Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Unpredictable vocal quality;Singing voice sound quality issues;Breathing difficulty;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;Pain in the throat or tongue after or during voice-use;General bodily tension and postural/alignment issues	Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Unpredictable vocal quality;Singing voice sound quality issues;Breathing difficulty;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;Pain in your throat or tongue after or during voice-use;General bodily tension and postural/alignment issues	Yes	3	1
Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Unpredictable vocal quality;Singing voice sound quality issues;Breathing difficulty;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;Pain in the throat or tongue after or during voice-use;General bodily tension and postural/alignment issues	Laryngeal muscle tension;Neck and shoulder tension;Singing voice sound quality issues;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;Pain in the throat or tongue after or during voice-use;General bodily tension and postural/alignment issues	Sometimes	2	1
Neck and shoulder tension;Unpredictable vocal quality;Breathing difficulty	Neck and shoulder tension;Singing voice sound quality issues;Articulation issues	Yes	1	3
Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Unpredictable vocal quality;Singing voice sound quality issues;Breathing difficulty;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;Pain in the throat or tongue after or during voice-use;General bodily tension and postural/alignment issues	Laryngeal muscle tension;Vocal fatigue;Neck and shoulder tension;Unpredictable vocal quality;Singing voice sound quality issues;Breathing difficulty;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;Pain in the throat or tongue after or during voice-use	Yes	1	1
Unpredictable vocal quality;Singing voice sound quality issues;Limited vocal range;Articulation issues;Tongue tension when singing or speaking;Pain in the throat or tongue after or during voice-use;General bodily tension and postural/alignment issues	Vocal fatigue;Neck and shoulder tension;Unpredictable vocal quality;Limited vocal range;Tongue tension when singing or speaking;Pain in the throat or tongue after or during voice-use	Yes	1	1
Laryngeal muscle tension;Neck and shoulder tension;Breathing difficulty;Articulation issues;Tongue tension when singing or speaking;Pain in the throat or tongue after or during voice-use;General bodily tension and postural/alignment issues	Laryngeal muscle tension;Vocal fatigue;Singing voice sound quality issues;Tongue tension when singing or speaking	Yes	1	1

"I believe a tongue-tie has little to no effect on the voice". (1 = strongly agree / 5 = strongly disagree)

If you perform tongue-tie release surgery, how frequently do patients experience adverse side effects? i.e. bleeding, issues with wound healing, infection, restrictive scar tissue, damage to surrounding nerves.

Would you be open to taking part in an interview as part of this same study?

If yes, please write your name:

If yes, please write your email address:

	Yes		
	Yes		
5	Yes and I'd be happy to do a joint interview with my boss Jessica Luffey COM who also works with singers		
5 n/a	Yes		
	Yes		
	Yes		
4	No		
	Yes		
	Yes		
	Yes		
5 Occasionally	Yes		
	Yes		
	Yes		
	Yes		
5	Yes		
	Yes		
	Yes		
5 Very Rarely	Yes		
	Yes		
4 Very Rarely	Yes		

Appendix-8: Referral Recommendations Sheet for Singing Teachers

Referral Recommendations for Singing Teachers



UK/London suggestions of professionals who work with tongue-tie.

This has been compiled by Antonia Thwaites from research on tongue-tie in Western Classical singers and personal experience.

Myofunctional therapists

- **Katrina Rogers**
SLT and Myofunctional Therapist
www.integrativetherapysolutions.co.uk
- **Jessica Luffey**
Myofunctional Therapist and Singing teacher (online)
www.myoforsingers.com

Tongue-tie release surgeons

- **Dr Suraj Vatish**
www.americansmile.co.uk/tongue-tie/
- **Dr Aoife Stack**
www.nduclinic.com/dr-aoife-stack
- **Dr Imran Rangzeb**
www.townhalldental.co.uk

Osteopaths

- **Josephine Halsall**
Vocal Osteopath (Singers)
www.bapam.org.uk/practitioner-search/josephine-halsall/
- **Chris Harris**
Cranio Sacral Osteopath
www.chrisharrisosteo.com/

Resources

- www.zaghimd.com/tongue-tie
- www.tonguetieal.com/can-tongue-tie-impact-singing-and-vocal-quality/
- www.myoforsingers.com/blog
- www.youtube.com/lecture/on/tongue-tie
- www.voicewithjulia.com/the-myofunctional-singer