



Adverse Childhood Experiences

A review of ACEs and a deeper exploration of the impact of ACEs on the child.

AIMS

- Understand adverse childhood experiences (ACEs)
- define the impact of ACEs
- consider the support that can be offered to children and young people
- Topics covered: Relationships, Trauma and Toxic Stress



Activity: Check your understanding

- This session uses a number of key terms throughout. Before we progress, just spend a few minutes thinking about each of the following key terms. If you are unfamiliar with any of these, refer to the websites on the next slide for further guidance.
- Key Terms:
- Neglect
- Abuse: Emotional, sexual and physical
- Domestic abuse
- Mental illness
- Drug and Alcohol misuse



Useful organisations for additional information

- If you are unsure about any of these terms the following websites can help to develop your knowledge further:
- [NSPCC – Types of abuse and keeping children safe](#)
- [MIND - Information and Support](#)
- [NHS - Live well](#)
- [Citizens Advice - Domestic violence and abuse](#)



Your Understanding

- What do you know about ACEs?
- What are the types of ACEs?



Types of Aces

Types of ACEs can include:

- Abuse, including physical, emotional and sexual
- Neglect
- Domestic violence
- Parental separation
- Mental illness
- Alcohol abuse
- Drug abuse
- Incarceration



Adverse childhood experiences (ACEs)

- This short animated film has been created to inform the public about ACEs and their potential impact on health and well-being.
- This film has been produced by Public Health Cymru and Blackburn with Darwen Local Authority.
- (Animation: <https://youtu.be/YiMjTzCnbNQ>)



Activity: Thoughts and Processes

- The Public Health Network Cymru video is quite powerful and strongly highlights the impact of ACEs during childhood.
- Was this the first time that you have seen this video?
- If Yes, consider the impact that it had on you.
- If you were revisiting it, what did you notice about your own experience as you watched the film.



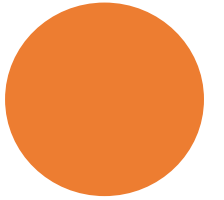
Key information and understanding adverse childhood experiences

- Adverse childhood experiences can be events that directly hurt the child such as physical, emotional, sexual or physical abuse. It can also include physical or emotional neglect.
- They can also be events that occur within the environment of the child, such as parental separation, domestic violence, parental incarceration and substance misuse.



What is the impact of ACEs?

- On the adult, after experiencing ACEs?
- On the child currently experiencing ACEs?



Impact of ACEs in Wales

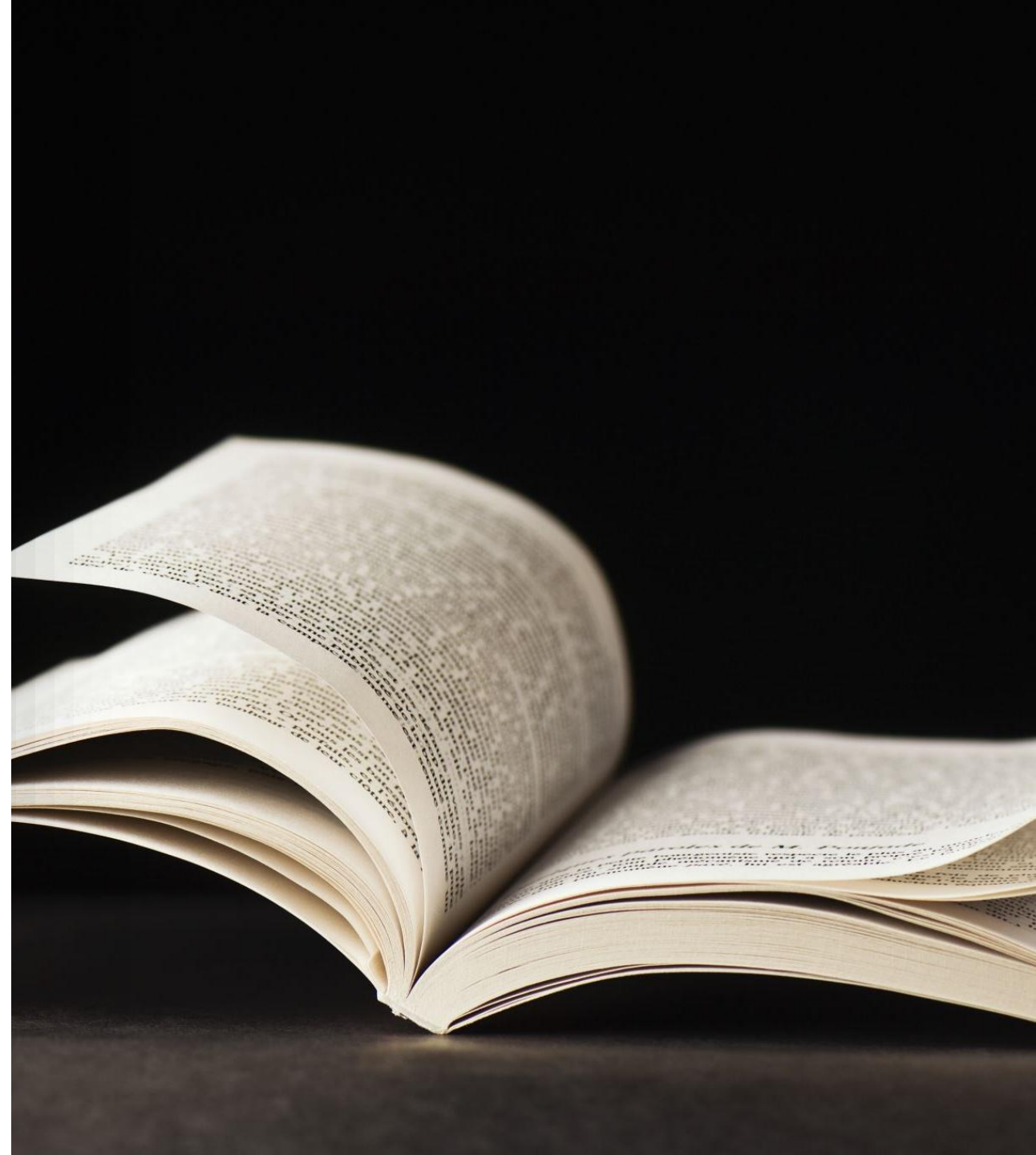
- 47% of the population in Wales have experienced 1 ACE, with 14% experiencing over 4.
- 23% of Welsh adults have experienced verbal abuse as a child, 17% have experienced physical abuse and 10% experienced sexual abuse.
- In Welsh households, 20% have experienced parental separation, 16% have witnessed domestic violence, 14% have observed alcohol abuse and 5% have experienced parental incarceration

(Source: Bellis et al., 2015)



The Welsh Government review process

- The publication of the PHW ACEs study prompted Cymru Well Wales (CWW), a collective of public and third sector organisations, and others, including the Future Generations Commissioner, to call upon the Welsh Government to take action to prevent ACEs. In particular, CWW called for action to:
 - reduce the number of ACEs in Wales;
 - make all public services in Wales able to respond effectively to prevent and mitigate the harms from ACEs (be ACE informed); and
 - build protective factors and resilience in the population to cope with ACEs which could not be prevented.
- In addition, CWW called for the establishment of an ACE Support Hub for Wales (Hub) as a centre of knowledge, evidence and expertise on ACEs.



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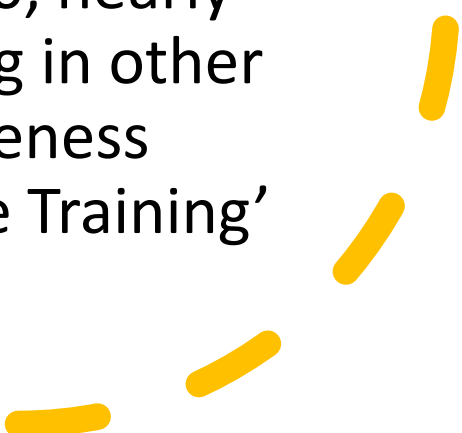
Good progress
has been made
towards the
establishment
of ACE aware
public services
in Wales

The Hub has delivered a comprehensive training programme to over 600 schools and more than 1,100 housing officers.

Training has been given to over 300 ACE Ambassadors, 140 Estyn inspectors and challenge advisors, 120 youth workers and 95 'train the trainers'.

The Hub has also supported services to go beyond this by working to become trauma informed.

By the end of the EATP, in March 2020, nearly 6,500 police officers and staff working in other organisations had received ACE awareness training through the EATP's 'ACE Time Training' programme.

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The Review of the Welsh Government's ACEs Policy

- The review was conducted in two phases. The first involved a desk-based review of the literature and evidence which informed the Welsh Government's ACEs policy at the overarching and individual policy area level.
- Phase 2 comprised 'discussions' with stakeholders and policy leads (Children and Families division) about their views on the Welsh Government's ACEs policy and how it should be developed in the future.
- Where we are now...

General findings and implications:

- ❖ **Health-harming behaviors:** Adults with four or more ACEs are significantly more likely to engage in health-harming behaviours. For example, they are 4.4 times more likely to be high-risk drinkers than those with no ACEs.
- ❖ **Mental health:** Individuals with four or more ACEs are 4.7 times more likely to report low mental well-being as adults.
- ❖ **Chronic illness:** The risk of developing chronic diseases increases with the number of ACEs. By age 49, 24.9% of individuals with four or more ACEs reported having one or more chronic diseases, compared to 6.9% for those with no ACEs.
- ❖ **Intergenerational impact:** ACEs can be passed down. A study of fathers in prison found that children of fathers with four or more ACEs were six times more likely to have experienced four or more ACEs themselves.

Findings: Impact of ACEs on the child or adolescent - education

- When children or adolescents are experiencing ACE's it can result in the following behaviours:
- Agitation, fidgeting, aggression and defiance.
- It can elevate stress hormones, which in turn can restrict the fight against infection.
- It can prevent the child from learning and retaining information in school.
- It can cause mistrust of adults or peers.
- It can have an impact on self-esteem, confidence and self-worth.

(Source: Bellis et al., 2015)





School Attainment

ACEs and childhood behaviours

Children who are growing up within a stressful and toxic environment will have increased resting cortisol levels. This will mean that they find it more difficult to relax after a particularly stressful or traumatic event. The outcome of this can result in one or more of the following behaviours.

- Emotional regulation - irritability, poor social responses
- Cognitive ability - concentration
- Behaviour- aggression, impulsivity



ACEs and academic performance

In addition to the detrimental behaviours, the effect of ACEs on academic performance can also be quite stark.

Research has indicated that children who are experiencing toxic stress in their home or neighbourhood may demonstrate:

- a low level of academic achievement, including poor literacy levels and reduced mathematical understanding
- a high level of absenteeism, including late arrival at school or early departure from school
- learning and behaviour problems



Activity: Impact of ACEs on the development of the child

Consider what you think might be the implications of ACEs on childhood development.

You might like to consider the following areas:

- academic attainment
- cognitive development
- the impact on the social, emotional and behavioural development of the child or young person



Impact on academic attainment

- In a systematic review of research, Perfect et al. (2016) explored the outcomes of trauma and ACEs on school-related functioning.
- The study indicated that the cognitive, academic and socio-emotional-behavioural functioning were all impacted by childhood trauma and ACEs.
- School drop-out and poor attendance were also of concern and an indication of ACEs and trauma.



Impact on cognitive functioning

The impact on cognitive functioning includes the child or young person's ability to retain information, to focus on tasks and remain attentive. It also includes the ability to develop language and the individual's cognitive intelligence.

Learners may be unable to engage verbally with peers. This may be due to a delay in language development, or it may be that they do not know how to engage in play with others.

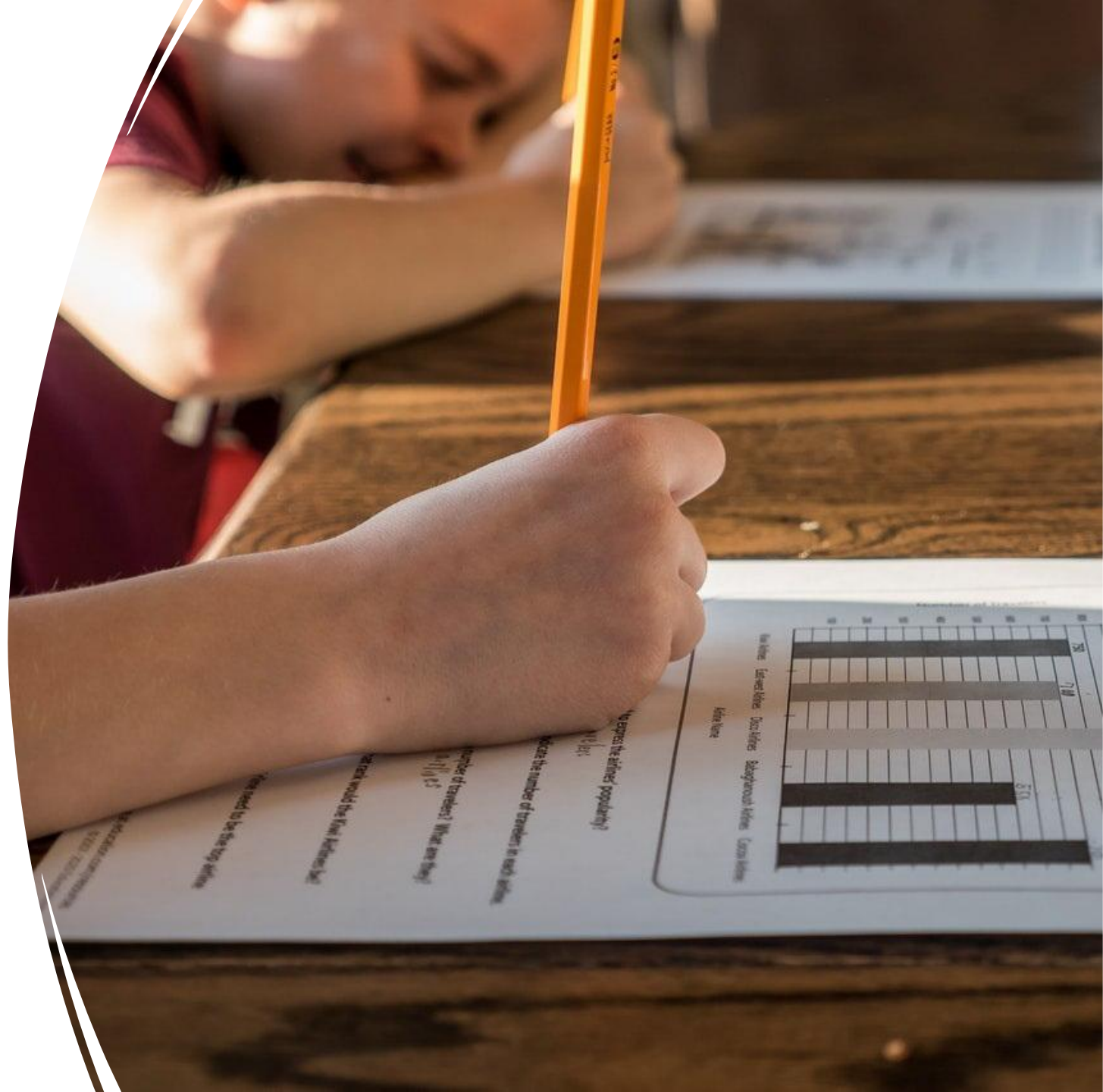
In addition, children may also be unable to focus on activities, which can lead to distracting behaviours.



Impact on academic functioning

Studies have indicated that children and young people who are experiencing childhood trauma are more likely to demonstrate lower academic performance than peers who have not experienced trauma.

These studies have highlighted poor literacy levels, as well as reduced levels of mathematical understanding. This in turn can lead to frustration for the learner. The impact of this is school withdrawal with high levels of absenteeism.



Impact on socio-emotional-behavioural functioning

For children and young people who have experienced ACES, their ability to develop appropriate relationships can be impaired. Studies have indicated that for some children the impact of a toxic, traumatic or stressful home environment can lead to higher levels of aggressive and disruptive behaviours both inside and outside of school.

Childhood trauma can also see the development of agitated and hyperactive behaviours.

In addition, adolescents who have experienced severe adversity can become sexually promiscuous and are 6 times more likely to have had sex under the age of 16.

Alcohol and substance misuse is another high risk for these young people. Risk taking behaviour is a key aspect of adolescent development, however teenagers who have experienced ACEs will engage in self-harming behaviour.



Routine

Home life can be extremely challenging for children with ACEs, routines may be limited, and the child or young person may come to school hungry, tired, fidgety and tense.

Providing a steady routine in the classroom can help. Starting and ending sessions in a similar manner can help to settle the child or young person. Setting out clear expectations, providing work that is achievable can all help to calm the child or young person down once they are in the classroom.

Consideration for where the child or young person is seated may also help. Sitting with their back to a wall can provide the steady, safe boundary that they may need.



Activity: Creating nurturing environments

For some children and young people, school is their only safe environment. A place that feels nurturing, with compassionate, caring teachers to support and enhance their self-esteem and confidence.

Spend 5-10 minutes thinking about this nurturing environment. What do you need to think about as you create your own classroom, to ensure that it feels safe and nurturing for all the learners in your class?



Classroom behaviours and teacher experience

Supporting children and young people who are displaying concerning behaviours can be challenging. Disciplinary measures, such as isolation or shouting at the individual can increase stress levels and cause further agitation, thus making the situation worse.

It can also be very difficult for teachers to witness these situations and can make teachers feel a range of difficult emotions, including:

- Helplessness
- Stress
- Being undermined
- Hurt
- Shame



Activity: Personal support systems and resources

Think about a time when you struggled in the classroom.

What or who helped you when you were feeling this way?

Think about the personal support systems and resources that you have. How might they help you in the future?





Key Relationships

Relationships in school

- Nurturing and caring for children and young people is as important as academic achievement. As noted within the ACE studies, children are unable to learn if they feel unsafe, have high cortisol levels or are anxious about their situation.
- Promoting positive friendships in school and supporting children and young people to engage in social interactions is beneficial for both their academic achievements and also their emotional well-being.



Teaching staff

In a single school day a child might interact with many different members of the school.

This can include the school crossing patrol officer, a variety of teaching staff and the lunchtime supervisors.

Every relationship and interaction with a traumatised child can have significance.



Home-school relationships

Communication between the networks that are involved in a child or young person's life can be crucial for the child or young person who is learning to trust again.

This means that the teacher may need to engage at a deeper level with parents and carers, who perhaps have specialist knowledge about a significant experience within that child's or young person's life.



Activity: The compassionate helper

Reflective activity

Think back to your own childhood and adolescence and consider 1 or 2 teachers or adults that helped you to feel safe and listened to. Think about the nature of these adults. What was it about their relationship with you that made you feel supported and nurtured? Did you feel that they listened well to you and demonstrated compassion? What was special about this person that helped you to know that they cared?

Now consider your own relationships with your learners. How might you demonstrate that you are there to support them? What are you already doing that allows your learners to know that you care about their well-being? What might you also need to do to provide that space for a child or young person to talk to you?



Remember, you might be the 1 key person that can change a child or young person's world for the better.



Trauma and Toxic Stress

The 3 stress response types

There are 3 different kinds of responses to stress: positive, tolerable and toxic.

- Positive stress response - a **brief, mild, and manageable** stress response. Positive stress is healthy. It strengthens the brain's stress-response systems and builds resilience.
- Tolerable stress response - **more serious**, but still manageable *with the right support*. The stress is intense but temporary. Supportive, stable, caring relationships help buffer the effects.
- Toxic stress response – next slide...



Toxic stress

Part of healthy childhood development is learning how to cope with adversity. Children learn these coping skills through education and experience in their home, their school and community.

When we are threatened our bodies prepare us to respond to the threat. Our heart rate will increase, as will our blood pressure and stress hormones, such as cortisol.



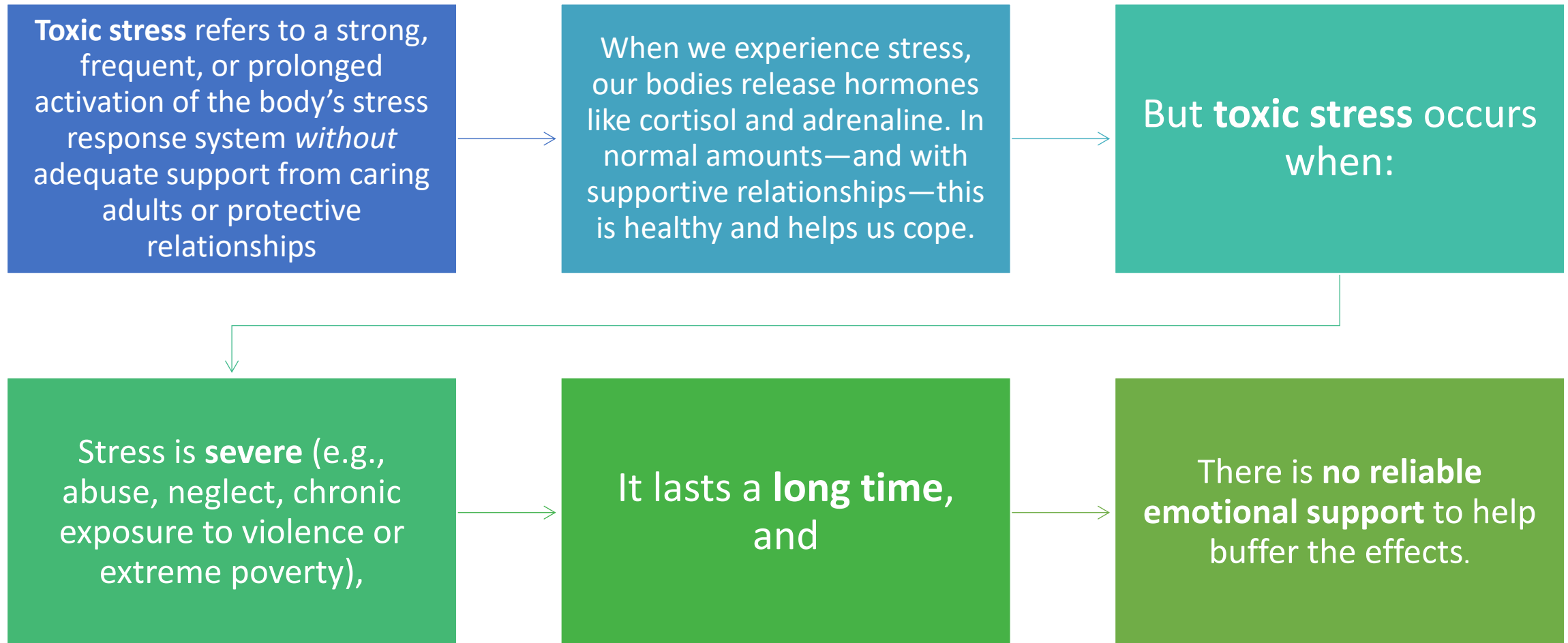
ACEs and toxic stress

Research is indicating that ACEs can have a detrimental impact on the individual, leading to significant problems across the lifespan. The term 'toxic stress' was a term coined in the early 2000s by the National Scientific Council on the Developing Child (the Council) and refers to the impact that these adverse experiences have on the stress response system on the child's developing brain.

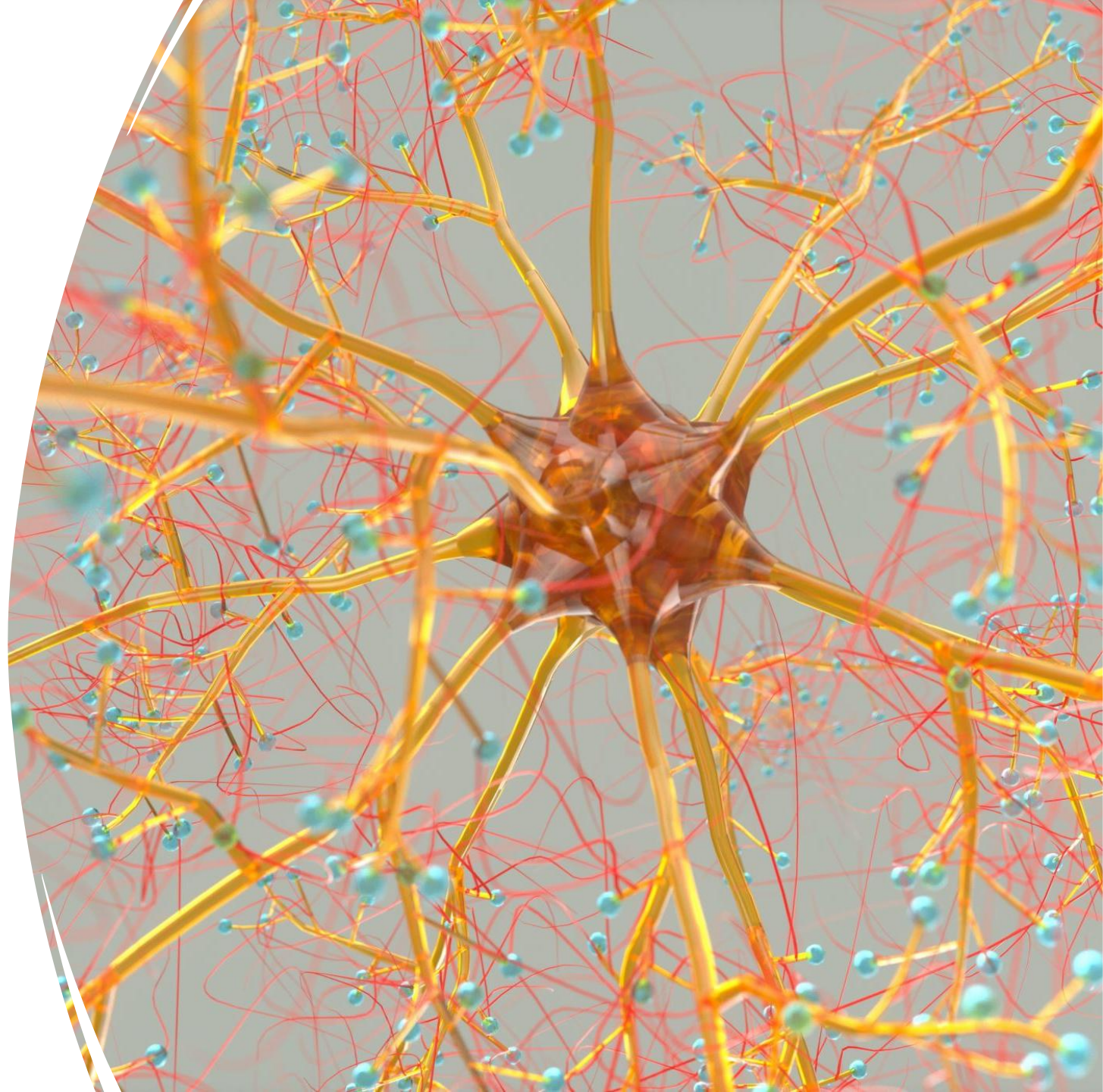
In addition, the Council also expanded the categories to include such experiences as racism, community violence and poverty. These additional categories were added because the body does not distinguish between stress inside the home and outside in the community. It just recognises that stress is happening, and it responds to it by going into a state of high vigilance.



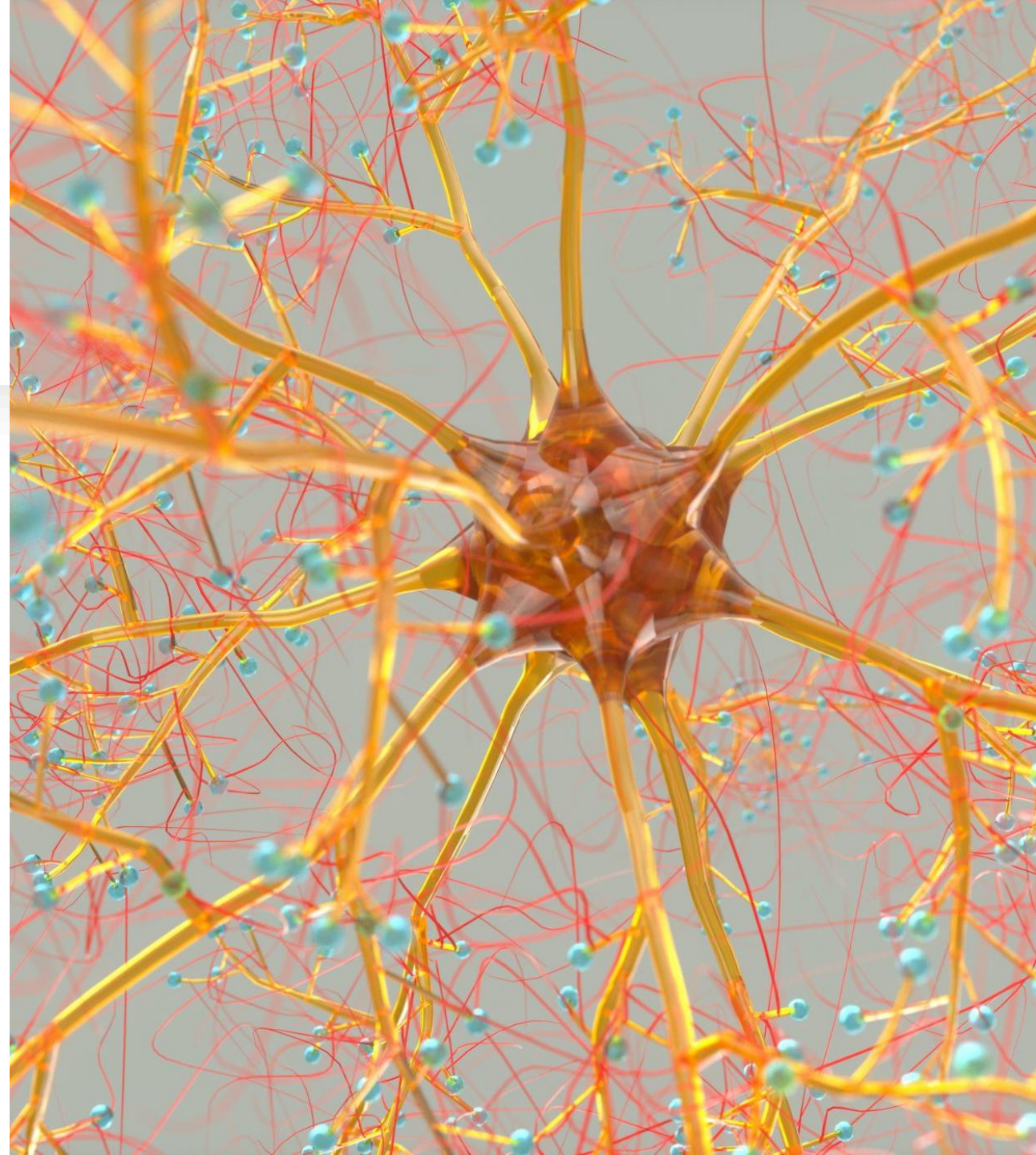
What exactly is toxic stress?



Toxic stress and the Vagus nerve



- **Toxic stress and the Vagus nerve are closely linked**, because the Vagus nerve is the main pathway the body uses to calm itself after stress. When stress is severe and long-lasting—*and there is no supportive caregiver to buffer it*—the Vagus nerve's ability to regulate the body becomes disrupted.
- During toxic stress, the sympathetic nervous system is repeatedly activated:
- High cortisol
- Rapid heart rate
- Constant alertness
- This chronic activation **suppresses** the parasympathetic system—especially the Vagus nerve, which is responsible for calming the body.

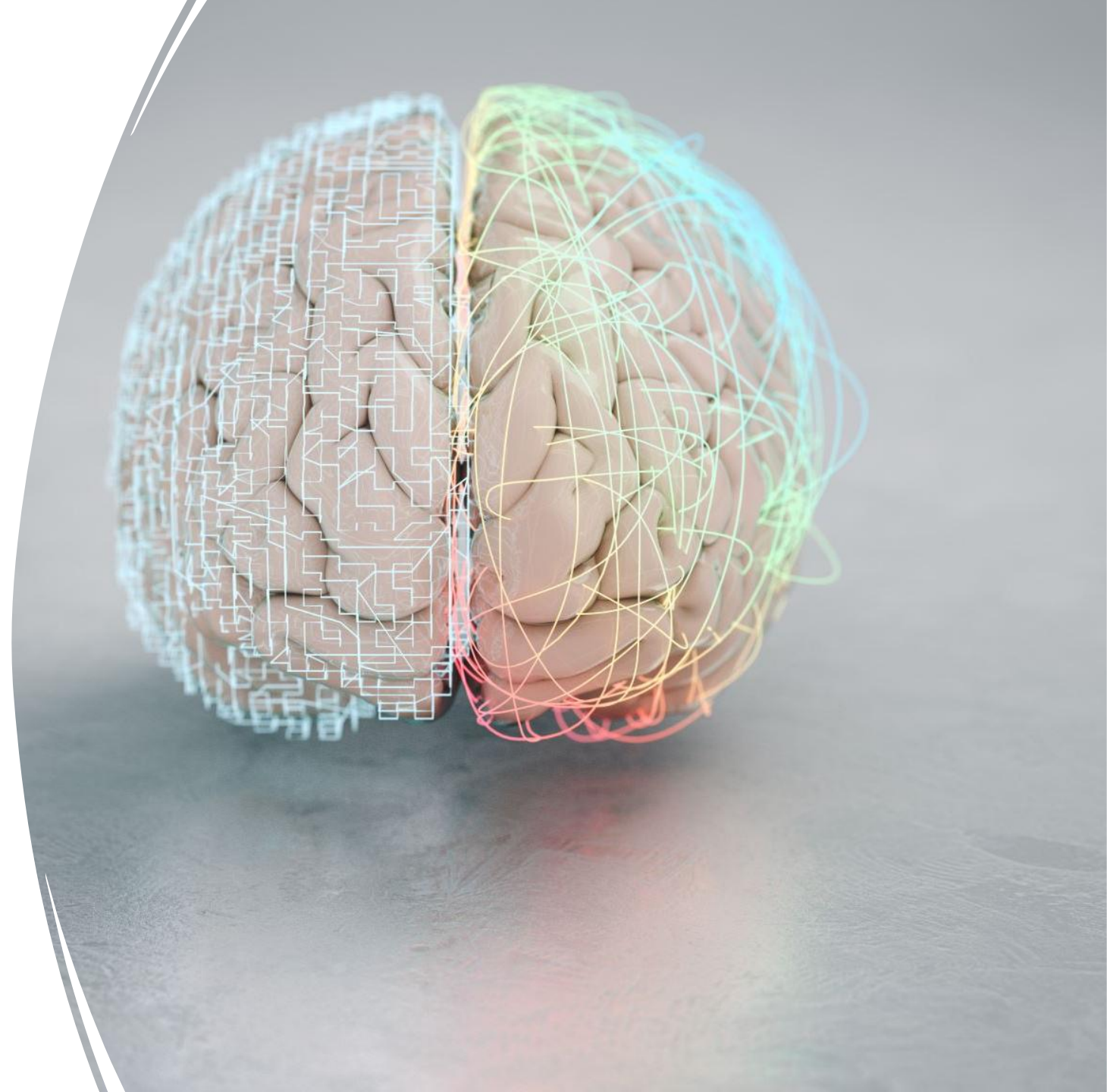


Reduced vagal tone

- “Vagal tone” refers to how effectively the vagus nerve can slow heart rate, calm the body, and support emotional regulation.
Toxic stress *lowers vagal tone*, which leads to:
- Difficulty calming down
- Stronger emotional reactions
- Poor stress recovery
- Anxiety-like symptoms
- Children exposed to toxic stress often show **lower heart rate variability (HRV)**, a key marker of reduced vagal function.

Effects on the developing brain

- The vagus nerve is deeply involved in the brain–body feedback loop. Toxic stress can impair:
- Prefrontal cortex development
- Emotional regulation systems
- Body awareness and calming pathways
- When these neural circuits are disrupted, the vagus nerve loses efficiency.



Impact on physical health through inflammation

- The vagus nerve normally helps **turn off inflammation** in the body.
During toxic stress:
- Inflammation increases
- The vagus nerve becomes less effective at controlling it
- This is one reason toxic stress is linked to long-term risks like:
- Autoimmune issues
- Cardiovascular problems
- Gut disorders



Emotional and social consequences

- Because the vagus nerve helps with social engagement (via facial expression, voice tone, and heart regulation), toxic stress can lead to:
- Social withdrawal
- Hypervigilance
- Difficulty forming secure relationships
- This is part of Polyvagal Theory, which highlights the vagus nerve's role in safety and connection.



Toxic stress and the importance of early supportive intervention

Thus, we have seen that If a child continuously experiences adverse childhood experiences the impact that it can have on their physical and mental health can last for a lifetime. Developmental delays, health problems and chronic disease can be the result of continuous toxic stress.

Research however, continues to demonstrate that supportive, nurturing relationships can inhibit the impact, particularly if introduced at an early age.



What is trauma?

Trauma refers to an experience that is life-threatening or terrifying. It can also refer to the emotional or psychological response to that experience.

An individual does not need to physically experience an event for it to be traumatic, just the very real sense of an impending life-threatening experience can cause a traumatic response in an individual.

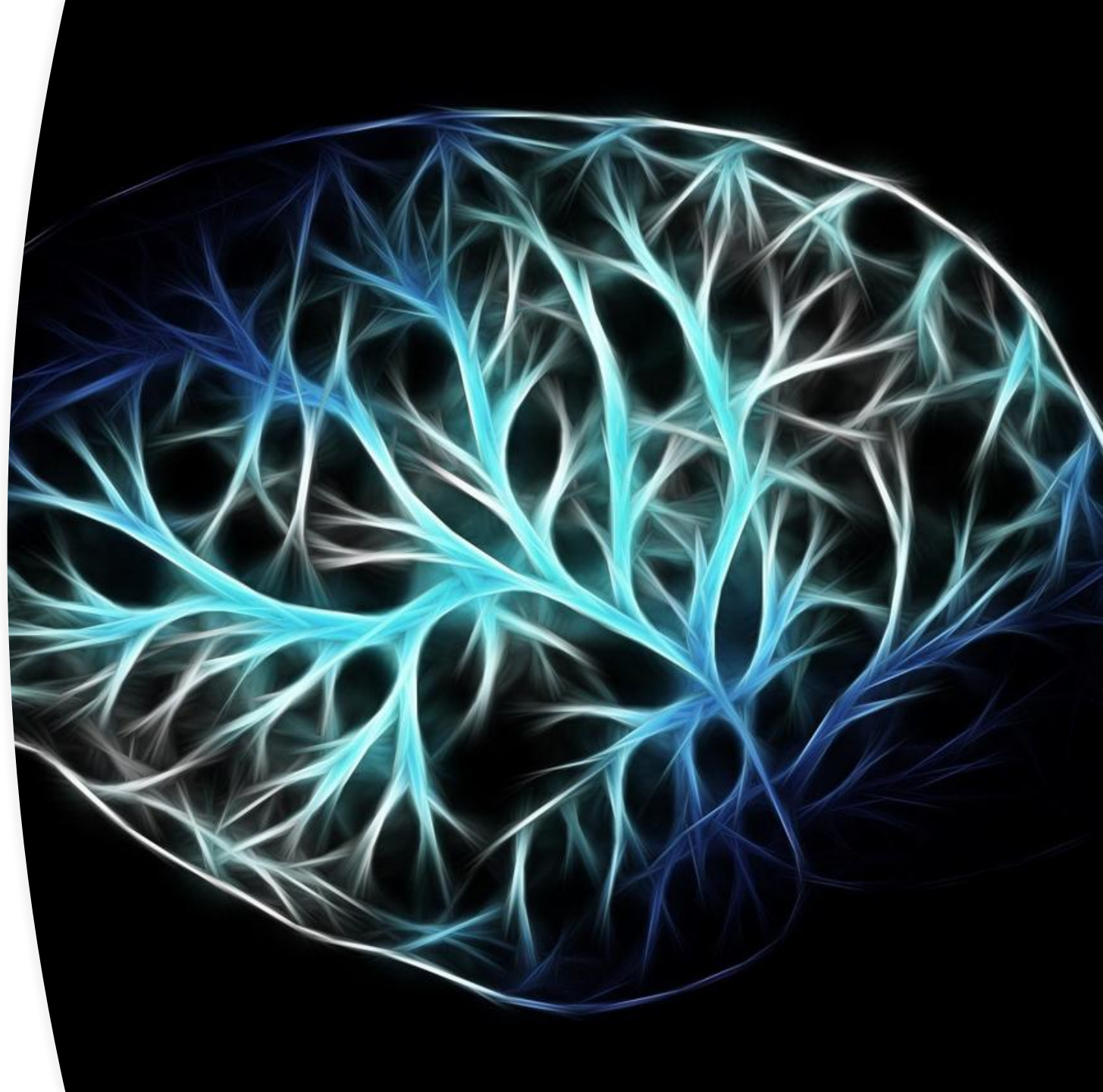


Factors that can impact traumatic experiences

History of previous trauma – childhood trauma, or previous traumatic experiences can mean that an individual develops mental health concerns when faced with a similar traumatic experience.

History of mental health problems – if an individual already experiences a significant mental illness such as depression, anxiety or substance misuse, their ability to cope with trauma can be impacted.

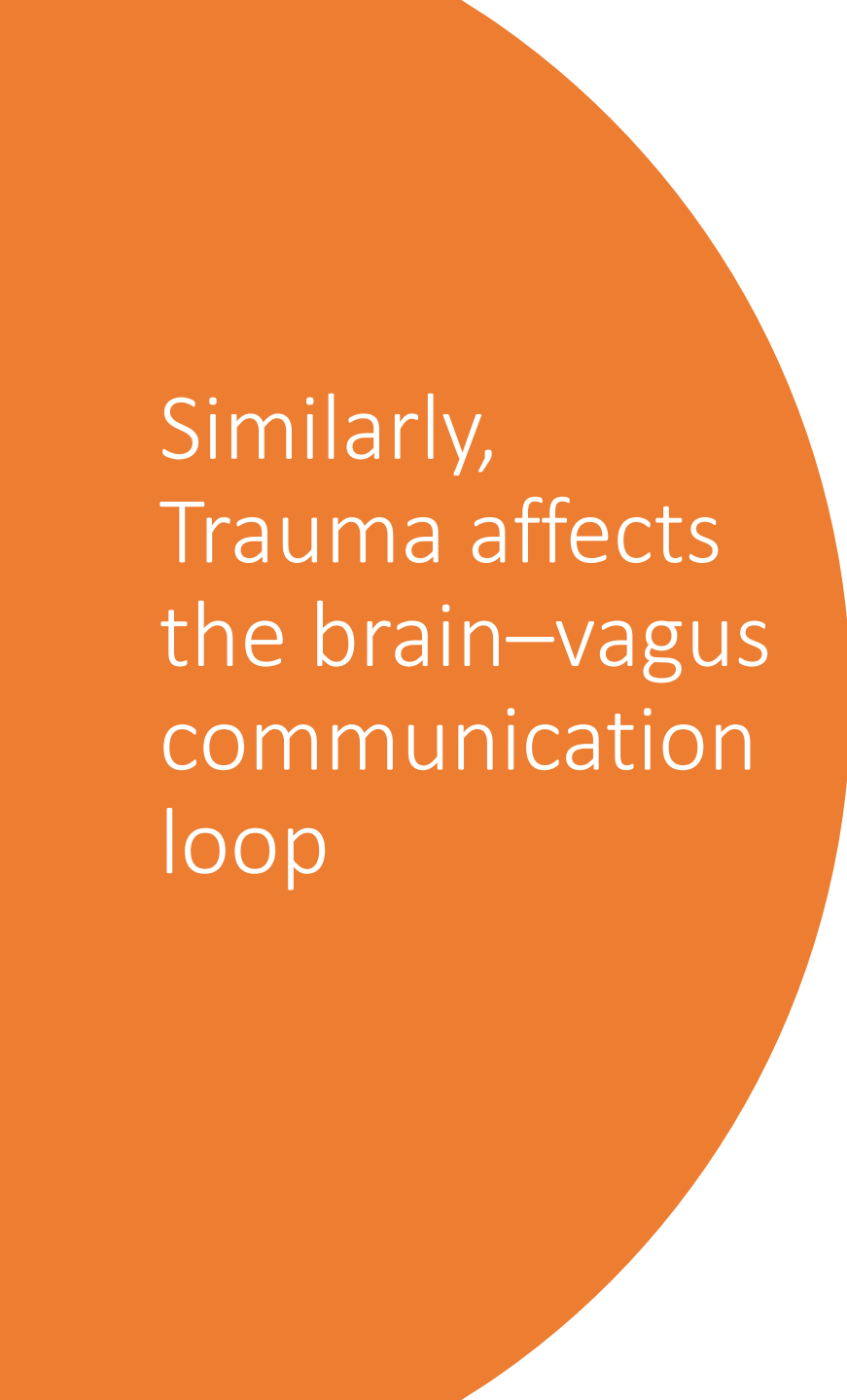
Proximity to the trauma – if an individual has been directly involved in the trauma, or has witnessed it, they are more likely to develop mental health problems at a later point.





Trauma and the Vagus nerve

- Just as Toxic stress, trauma activates the **sympathetic nervous system**.
When this happens repeatedly or without resolution:
- Heart rate stays elevated
- Muscles stay tense
- The body is constantly scanning for danger
- Because the vagus nerve drives the **parasympathetic** (“rest and digest”) response, trauma can **suppress** vagal activity, making it hard to calm down or feel safe.



Similarly,
Trauma affects
the brain–vagus
communication
loop

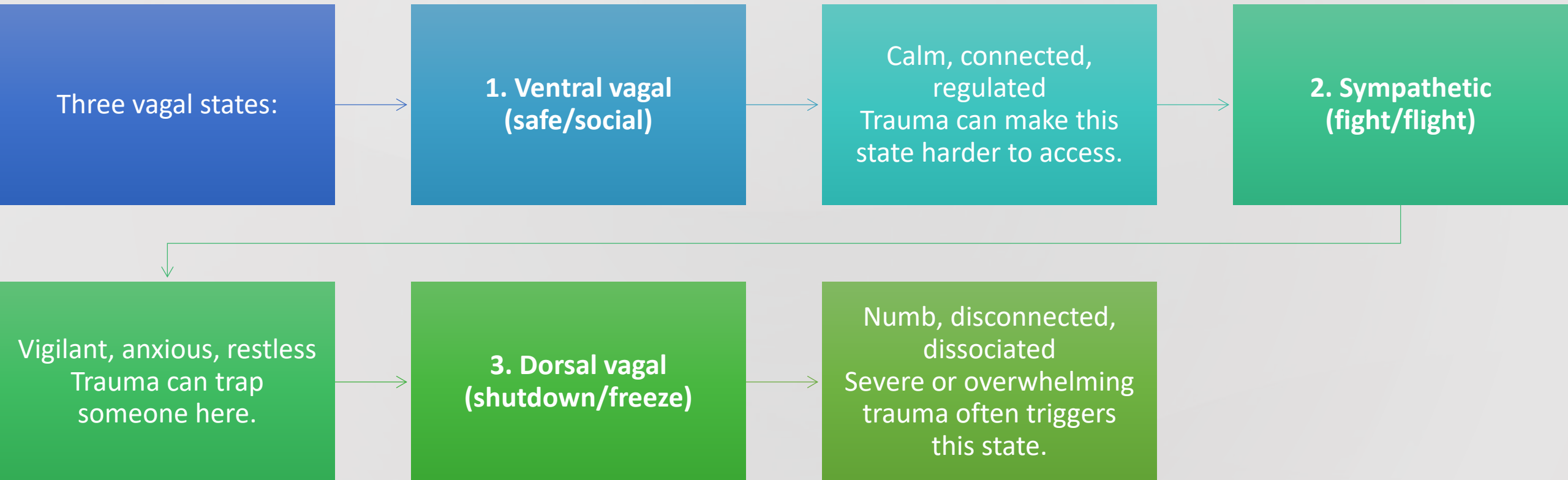
The vagus nerve constantly sends messages between the body and brain. Trauma can disrupt this loop by:

- Altering how the brain interprets bodily signals
- Creating “false alarms” of danger
- Making the body feel unsafe even when the environment is safe

This explains why trauma survivors often have:

- Panic without obvious triggers
 - Digestive issues
 - Chronic tension
 - Overactive startle responses
- 

Trauma and Polyvagal Theory (Porges,



Healing trauma often involves restoring vagal regulation

Body-based approaches

- Breathwork, Somatic experiencing, Yoga, Polyvagal-informed therapy, EMDR and Safe-touch therapies.
- These help the body return to safety.

Relational safety

- Because co-regulation strengthens vagal pathways, healing relationships are one of the strongest antidotes to trauma.

Vagal stimulation techniques

- Slow breathing, Humming or singing, Cold exposure, Gentle movement





Resilience

How can we help children to develop resilience?

Resilience comes hand in hand with developing healthy bodies and healthy relationships.

It is an important part of childhood, but children are not born resilient, they need to learn how to become resilient, just like they need to learn about the importance of exercise, how to look after themselves and how to eat healthily.

Relationship between biology and the environment.



Developing resilience in children

- This means helping them build the inner and outer resources that let them cope with stress, adapt to challenges, and bounce back from adversity. Resilience is *not* something you're born with—it grows through relationships, experiences, and skills.
- Stable, supportive relationships
- Strengthening emotional regulation – validate feelings, show calm behaviour, name emotions
- Encourage healthy communication – listen non-judgementally
- Develop competence – praise effort rather than outcome, let them make reasonable mistakes



Activity: Nurturing relationships

Consider the relationships that you have with your learners in the class. Firstly, think about the effective relationships. Why do these work so well, what is happening between you and the learner that is creating that engaging relationship?

Now consider the relationships that are perhaps more challenging. What is happening within the relationship that is causing difficulties? Is the child or young person triggering something in you? Or is there something underpinning the situation?

Consider what you might be able to do within your classroom environment that might support the more difficult relationships. What can you do to create that safe, quiet space where important conversations can happen safely and appropriately without interruption from other learners.

Think about what you might need to do personally to enable your learners to feel able to talk to you when difficulties arise. It may be that you need further training to develop your knowledge and understanding. Or it may be that you need to communicate further with the parents and carers or the community. Think about your own learning and what you might need to do to support your development.



Not all stress is harmful

- As has been noted, some stress can actually be a positive experience. It helps us to grow and develop and eventually will help us to develop skills that will enable us to cope in different situations as adults. These skills can be developed and strengthened at any age. It is never too late to support the development of resilience.
- Engaging in age-appropriate activities will help the individual to over-come stressful events. Even as adults, engaging in such things as physical exercise can help to reduce stress and traumatic responses. This in turn can be modelled for younger children.



Activity : Check your understanding now

Spend about 5–10 minutes just putting down the key learning points from today.



SUMMARY

In today's session we have looked at the following areas:

- Revised understanding of ACEs
- The impact of ACEs on school attainment
- Relationships
- Toxic Stress
- Trauma
- Resilience

Any questions?

Resources

Books, Games and Card Packs to discuss feelings and experiences

- Draw On Your Emotions– *Margot Sunderland, Nicky Armstrong, 2nd Edition. 2018*
- Bothered – Helping teenagers talk about their feelings – *Margot Sunderland, Nicky Armstrong*
- Hollie Rankin (a trained therapist) has developed a range of books and resources on the following themes: Rebuilding Trust, Following Trauma and Bereavement and Loss
- The Big Book of Blob Trees - *Pip Wilson and Ian Long* , also available as a set of cards
- Totika – *a game of Jenga, with a self-development twist*
- Sometimes I feel – *discussion cards* – *Pia Jones*

Additional practical resources

- Story cubes – useful to enable children to verbalise their experience in a non-threatening manner °Small world figures – to explore feelings and emotional experience
- Puppets to project out feelings of insecurity, worry and anxiety
- Mindfulness art therapy books are also an excellent tool to use with both children and young people. Whilst the child or young person are spending time with the resource, they can share their experiences in a less direct and challenging manner.



Final words

- It only takes one adult to change a child's future.
- Support, listen and be present, to help them to thrive and become healthy, engaged adults.



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- Did you complete a previous qualification at UWTSD between May and July 2024 (e.g. CertHE, BA / BSc, PGDip, etc.)?
- If so, HESA are currently contacting you on our behalf to invite you to complete the Graduate Outcomes survey.
- The survey gathers information about your activities and perspectives following your previous studies, and will ask about the current studies that you are engaged in.
- Whilst we know that you are continuing your studies with us, we can't provide this information on your behalf so we would really appreciate it if you could take a few minutes to complete the survey to demonstrate the varied qualifications that our graduates complete that lead on to your current studies.
- Check your emails (including your junk mail) for an email from **UniversityOfWalesTrinitySaintDavid@graduateoutcomes.ac.uk** or your texts from 'GradOutcome' that both contain your unique survey link, and please complete the survey before it closes on **30th November!**
- By taking the Graduate Outcomes survey, you'll be making a valuable contribution to the next generation of students.
- Thank you!

