

What is an additional learning need (ALN)?
Welsh Government (2022) states an individual with ALN either a learning difficulty or disability which will need additional learning provision. This system supports children and young people aged zero to twenty-five. Swansea Council (2023a) futhers this stating there is a wide variety of ALN that can change and develop over time. Dalton (2018) and Swansea Council (2023a) imply that every child is unique and different. The Additional Learning Needs and Education Tribunal (Wales) Act 2018 (the ALN act) and the Additional Learning Needs Code for Wales 2021 (the ALN Code) are in place to support all learners with ALN in order for them to achieve their full potential (Welsh Government, 2022). Similarly the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) supports and identifies the rights of disabled people to promote and protect them (United Nations, 2006).

What is Sensory Processing Disorder(SPD)?
Swansea Council (2023b) and Schumacher *et al.* (2020) states SPD is a ALN that consists of the brain and nervous system having trouble to process and integrate stimuli. OT Practice (no date) and Pathways (2014) states this applies to the 5 senses as well as proprioception which considers movement, vestibular for balance and interoceptive which is an internal sense. Glover and Dabholkar (2023) state SPD can affect one sense or multiple. According to Schumacher *et al.*, (2020) Chein *et al.*, (2016) Corbett *et al.*, (2016) and Crozier *et al.* (2016) this results in inappropriate behavioural responses which has a negative effect on individuals coordination, behaviour and language. Chein *et al.*, (2016) Corbett *et al.*, (2016) and Crozier *et al.* (2016) suggest this could delay sensorimotor development, hindering daily life activities.

There are a range of signs and symptoms of SPD. Swansea Council (2023b) state practitioners should be aware of these. These can range from outbursts over trying new foods to struggling to balance. Pathways (2014) states the earlier in life a child receives the better. Parham and Ecker (2007) reveals in order for an individual to be diagnosed with SPD they will need to combine clinical observations, parent reports, medical history and standardised assessments. Clinical observations observe the individual's reaction to their senses. The parent interview gathers information from the parent perspective to develop understanding. Parham and Ecker (2007) suggest the sensory process measure (SPM). This evaluates SPD across various different sensory domains through assessments of sensory processing patterns to provide valuable information. Brown (2013) and Dunn (2014) state the SPM (2007) consists of three different forms. Firstly the home form is completed by parents to provide information on SPD at the home environment. SPM school form is completed by their educator on information about the individual's SPD in the school environment. Finally a SPM short form is a condensed version of the SPM that combines both home and school forms. This is often used for screening purposes or when time is limited.

Combining these diagnostic methods, healthcare professionals are able to accurately identify SPD and develop targeted inventions to support the child.

Any barriers that prevent support to children with SPD?
Firstly, insufficient knowledge among healthcare professionals can lead to underdiagnosis or misdiagnosis of SPD. Schumacher *et al.* (2020) reveals a significant barrier to helping children with SPD is not all health professionals are aware which reduces diagnosis. Hilton (2017) states SPD is poorly misunderstood. Critz, Blake and Nogueira (2015) state this can make a diagnosis very difficult. Mohd Natar and Abd Rashid (2020) found 79% of SENCOS demonstrated a lack of understanding of SPD. Information about knowledge of SPD is insufficient and limited. Grover and Dabholkar (2023) found that there is a lack of serious knowledge on SPD assuming behaviour was response to the environment. This results in a lack of awareness on how to treat SPD such as including integrated approaches. A lack of knowledge can result in a misdiagnosis or in correct diagnosis. Critz, Blake and Nogueira (2015) state although SPD can stand alone it often is embedded in other additional learning needs such as autism and behavioural disorders. Ben-Sasson, Carter and Briggs-Gowan (2009) develops this highlighting due to the lack of understanding health professionals struggle to detect the distinct symptoms due to an overlap with other disorders such as ASD. Due to this, health professionals will need an in-depth knowledge of SPD in order to differentiate the ALN. The lack of knowledge about SPD among healthcare professionals, limited awareness significantly limits the effective diagnosis of SPD.

To overcome this Mohd Natar and Adb Rashid (2020) suggest occupational therapists need to be aware of the lack of understanding so they are able to help educational staff gain knowledge and perception about SPD. Lang Du Plessis (2019) and Mohd Natar and Adb Rashid (2020) suggest teachers need to be trained regarding special teaching methods for the students with SPD in order to meet the individual needs of the child. Grover and Dabholkar (2023) reveal 88% of educational staff agreed communication between therapists and special educators will lead to better outcomes. Mohd Natar and Abd Rashid (2023) highlight the significance of professionals understanding SPD in order to help students achieve maximal performance and development in school. If staff have knowledge on SPD, they are able to detect it and support it sooner.

Additionally there is a lack of access to treatment for SPD profoundly impacting their quality of life and developmental outcomes. Davies and Gavin (2007) and Schaff *et al.* (2013) imply there is limited access to specialised services including OT. Waiting lists for assessments and interventions therefore delay access to support and treatment. According to Schaaf, Hunt and Benevides (2013) and McIntosh and Miller (2018) some locations are unable to access sensory integration or even diagnoses due to location, availability and cost.

What strategy can support SPD?
According to Schaaf *et al.* (2014) occupational therapy (OT) treats SPD by introducing strategies to manage sensory input more effectively. Furthermore Lonkar (2014) and Schaaf *et al.* (2014) state OT creates personal goals for each individual through a variety of techniques such as sensory integration. This is effective in improving sensory processing and reducing the symptoms of SPD. Pathways (2014) sensory integration combines the 8 senses. The sensory integration process can be divided into 4 phases. These consist of registration, modulation, discrimination and response (Galiana-Simal *et al.*, 2020).

OT for kids (2024) states OT assesses difficulties with SPD and how these are impacting children's ability to function at home and in school socially. OT will identify difficulties and provide effective treatment to develop sensory processing.

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Welsh Government (2022) states an individual with an additional learning need (ALN) has either a learning difficulty or disability which will need additional learning provision. This system supports children and young people aged zero to twenty-five.

Swansea Council (2023a) futhers this stating there is a wide variety of ALN that can change and develop over time. In some cases there can be an overlap in areas of need. Dalton (2018) and Swansea Council (2023a) imply that every child is unique and different, this still applies to ALN. The Additional Learning Needs and Education Tribunal (Wales) Act 2018 (the ALN act) and the Additional Learning Needs Code for Wales 2021 (the ALN Code) are in place to support all learners with ALN fairly and provide information to overcome barriers in order for them to achieve their potential to the fullest (Welsh Government, 2022). Similarly the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) supports and identifies the rights of disabled people to promote and protect them. With the UNCRPD in place disabled people are enabled to enjoy the same human rights as everyone else. This allows them to participate in society by receiving the same opportunities as others.

Similarly both Swansea Council (2023b) and Schumacher *et al.* (2020) state that sensory processing disorder (SPD) is a ALN that consists of the brain and nervous system having trouble to process and integrate stimuli. OT Practice (no date) and Pathways (2014) states there are the 5 senses as well as proprioception which counts movement, vestibular for balance and interoceptive which is an internal sense. Glover and Dabholkar (2023) state that SPD can affect one sense or multiple. According to Schumacher *et al.*, (2020) Chein *et al.*, (2016) Corbett *et al.*, (2016) and Crozier *et al.* (2016) this results in inappropriate behavioural responses which result in affecting the individuals coordination, behaviour and language. Chein *et al.*, (2016) Corbett *et al.*, (2016) and Crozier *et al.* (2016) suggest this could delay sensorimotor development, hindering daily life activities. Schumacher *et al.* (2020) highlights that SPD might lead to stress, anxiety and depression. Miller *et al.* (2018) reveals that sensory symptoms and empathy show negative correlation with each other. SPD can wrongly link to ASD however does not mean ASD if they have SPD.

There are a range of signs and symptoms of SPD. Swansea Council (2023b) states the general signs that practitioners should be aware of. They should look out for any outbursts from sensory overload. This could be seen through children trying new foods or change in their routine. In addition to this children with SPD might not react to temperature changes or pain. They might struggle with balance and play too rough. Swansea Council (2023b) SPD can cause frustration and make it difficult for children to manage their emotions.

Strategies to diagnose??

Pathways (2014) states that the earlier in life a child receives the diagnoses the better. Parham and Ecker (2007) reveal that in order for an individual to be diagnosed with SPD they will need to combine clinical observations, parent reports, medical history and standardised assessments. To recognise the symptoms clinical observations and parent interviews take place. Clinical observations observe the individuals to see reaction to their senses and the parent interview gathers information from the individuals parents to understand their experience switching the senses. Parham and Ecker (2007) futhers this stating the sensory process measure (SPM). This evaluates sensory processing difficulties across various different sensory domains. This allows assessments of sensory processing patterns and provides valuable information on understanding how sensory issues impact individuals daily functioning. Brown (2013) and Dunn (2014) state that there are three different forms to be completed in the SPM tool. Firstly a home form is completed by parents and carers to provide information on SPD at the home environment. SPM school form is completed by their educator and provides information about the individual's SPD in the school environment. Finally a SPM short form is a condensed version of the SPM that combines both home and school forms. This is often used for screening purposes or when time is limited. Brown (2013) states that SPM assesses the SPD difficulties across various sensory domains.

Combining these diagnostic methods, healthcare professionals are able to accurately identify sensory processing difficulties and develop targets to support the child's overall well-being.

According to Schaaf *et al.* (2014) occupational therapy (OT) is an effective strategy to support SPD by introducing and managing strategies to manage sensory input more effectively. Lonkar (2014) and Schaaf *et al.* (2014) develop this revealing that occupational therapy creates personal goals for the individual. This usually involves a stimulating environment in order to develop socialisation and high self-esteem when completing activities. Schaaf *et al.* (2014) states OT is carried out through a variety of techniques such as sensory integration therapy, sensory diets and environmental modifications to help the individual better process sensory information. Pathways (2014) sensory integration combines the 8 senses.

Galiana-Simal *et al.* (2020) reveals the sensory integration process can be divided into 4 phases. These consist of registration, modulation, discrimination and response. This is effective in improving sensory processing and reducing the symptoms of SPD.

OT for kids (2024) states that OT assesses difficulties with SPD and how these are impacting children's ability to function at home and in school socially. Occupational therapists will identify difficulties and provide effective treatment to develop sensory processing.

Unfortunately there are barriers that prevent support to individuals with SPD. Firstly, insufficient knowledge among healthcare professionals can lead to underdiagnosis or misdiagnosis of SPD. Schumacher *et al.* (2020) reveals not all health professionals are aware which reduces diagnosis. Hilton (2017) SPD is poorly misunderstood. Critz, Blake and Nogueira (2015) state this can be very difficult.

Mohd Natar and Abd Rashid (2020) found that 79% of SENCOS demonstrated a lack of understanding of SPD. Information about knowledge of SPD is insufficient and limited. Understanding SPD is essential in order to help students achieve maximal performance and development in school. If staff have knowledge on SPD, they are able to detect it and support sooner. Grover and Dabholkar (2023) found that there is a lack of serious knowledge on SPD assuming behaviour was response to the environment. This results in a lack of awareness on how to treat SPD such as including integrated approaches. A lack of knowledge can result in a misdiagnosis or in correct diagnosis. Critz, Blake and Nogueira (2015) state that although SPD can stand alone it often is embedded in other additional learning needs such as autism and behavioural disorders. Ben-Sasson, Carter and Briggs-Gowan (2009) develops this highlighting due to the lack of understanding health professionals struggle to detect the distinct symptoms due to an overlap with other disorders such as ASD. Due to this, health professionals will need an in-depth knowledge of SPD in order to differentiate the ALN.

In summary, the lack of knowledge about SPD among healthcare professionals, limited awareness significantly limits the effective diagnosis of SPD.

To overcome this Mohd Natar and Adb Rashid (2020) suggest that occupational therapists need to be aware of the lack of understanding so they are able to help educational staff gain knowledge and perception about SPD. Lang Du Plessis (2019) and Mohd Natar and Adb Rashid (2020) suggest that teachers need to be trained regarding special teaching methods for the students with SPD in order to meet the individual needs of the child. Grover and Dabholkar (2023) reveal 88% of educational staff agreed communication between therapists and special educators will lead to better outcomes. Mohd Natar and Abd Rashid (2023) highlight the significance of professionals understanding SPD in order to help students achieve maximal performance and development in school. If staff have knowledge on SPD, they are able to detect it and support it sooner.

An additional barrier could be the lack of access to treatment for SPD profoundly impacting their quality of life and developmental outcomes. Davies and Gavin (2007) and Schaff *et al.* (2013) imply there is limited access to specialised services including OT. Waiting lists for assessments and interventions therefore delay access to support and treatment. According to Schaaf, Hunt and Benevides (2013) and McIntosh and Miller (2018) some locations are unable to access sensory integration or even diagnoses due to location, availability and cost.

Sharon - How can parents be aware of SPD?

SPD can make it difficult for families to carry out typical day to day activities therefore it is essential they are aware of SPD to receive support

Parent-focused educational interventions are effective in increasing awareness and understanding of sensory processing issues, enabling parents to identify potential signs of SPD in their children. Regular consultations with healthcare providers, including paediatricians and occupational therapists, can help parents gain insights into SPD. These professionals can offer guidance on observing sensory behaviours and provide referrals for further evaluation if needed. Access to reliable online resources and support networks can also enhance parental awareness. Practitioners could play a pivotal role in identifying SPD and communicating these observations to parents.

Chloe - How would you suggest overcoming the lack of access barrier?

Lack of access to treatment is a critical barrier for individuals with SPD. Addressing these barriers requires comprehensive policy interventions, increased funding for healthcare services, and enhanced training programs for professionals. By improving access to treatment, we can ensure better developmental outcomes and quality of life for those affected by SPD.

Reference List

- Ben-Sasson, A., Carter, A. S. and Briggs-Gowan, M. J. (2009) 'Sensory over-responsivity in elementary school: Prevalence and social-emotional correlates.', *Journal of Abnormal Child Psychology*, 37(5), pp. 705-716.
- Brown, T. (2013) 'Sensory Processing Measure', In Volkmar, F.R. (eds) *Encyclopedia of Autism Spectrum Disorders*. New York: Springer.
- Chein, C. W., Rodger, S., Copley, J., Branjerdpoe, G. and Taggart, C. (2016) 'Sensory processing and its relationship with children's daily life participations.', *Physical and Occupational Therapy In Pediatrics*, 36(1), pp. 73-87.
- Corbett, B. A., Muscatello, R. A. and Blain, S. D. (2016) 'Impact of Sensory Sensitivity on Physiological Stress Response and Novel Peer Interaction in Children with and without Autism Spectrum Disorder.', *Front Neurosci*, 10, p. 278. doi: [10.3389/fnins.2016.00278](https://doi.org/10.3389/fnins.2016.00278)
- Critz, C., Blake, K. and Nogueira, E. (2015) 'Sensory processing challenges in children.', *The Journal for Nurse Practitioners*, 11(7), pp.710-716.
- Crozier, S. C., Goodson, J. Z., Mackay, M. L., Synnes, A. R., Grunau, R. E., Miller, S. P. and Zwicker, J. G. (2016) 'Sensory Processing Patterns in Children Born Very Preterm.', *The American journal of occupational therapy : official publication of the American Occupational Therapy Association*, 70(1). DOI: <https://doi.org/10.5014/ajot.2016.018747>
- Dalton, J. (2018) *The unique child*. Oxfordshire: Routledge.
- Dunn, W. (2014) *Sensory Profile 2: User's Manual*. San Antonio: Pearson.
- Galiana-Simal, A., Vela-Romero, M., Romero, V., Oliver-Tercero, N., García-Olmo, V., Benito-Castellanos, P. J., Muñoz-Martinez, V. and Beato-Fernandez, L. (2020) 'Sensory processing disorder: Key points of a frequent alteration in neurodevelopmental disorders.', *Cogent Med*. 7(10).
- Grover, P. and Dabholkar, A. (2023) 'Survey of the knowledge, attitude and practices regarding sensory processing disorders in special educators.', *Medical Science*, 27.
- Hilton, C., Ryckman, J. Rogers, C. and Pineda, R. (2017) 'Sensory processing disorder in preterm infants during early childhood and relationships to early neurobehavior', *Early human development*, 113, pp.18-22.
- Lang, M. and Du Plessis, E. (2019) 'Sensory processing disorder: Perceptions on the clinical role of advanced psychiatric nurses.', *Health SA Gesondheid*, 24(1), pp.1-9.
- Miller, L.J., Tavassoli, T., Schoen, S.A., Brout, J.J., Sullivan, J. and Baron-Cohen, S. (2018) 'Sensory reactivity, empathizing and systemizing in autism spectrum conditions and sensory processing disorder.', *Developmental cognitive neuroscience*, 29, pp. 72-77.
- Mitchell, A.W., Moore, E.M., Roberts, E.J., Hachtel, K.W. and Brown, M.S. (2015) 'Sensory processing disorder in children ages birth–3 years born prematurely: A systematic review.', *The American Journal of Occupational Therapy*, 69(1), pp.69
- Mohd Natar, A.K. and Abd Rashid, A.F. (2020) 'Knowledge of sensory processing disorder among special education teachers in primary school at Melaka Tengah.', *Health Scope*, 3(1), pp.51-58.
- OT for kids. (2024) *Sensory Processing Disorder (SPD)*. [video] Available at: <https://www.otforkids.co.uk/conditions/sensory-processing-disorder-spd.php> (Accessed: 13 May 2024).
- OT Practice. (2024) *Sensory Processing Disorder*. Available at: <https://www.theotpractice.co.uk/how-we-help/conditions/sensory-processing-disorder> (Accessed: 12 May 2024).
- Parham, L. D. and Ecker, C. (2007) *Sensory Processing Measure*. Los Angeles, CA: Western Psychological Services.
- Pathways. (2014) *Importance of sensory integration*. [video] Available at: https://youtu.be/1_luj8dr9oY?si=speyKHoM-o1X4gCC (Accessed: 10 May 2024).
- Schaaf, R. C., Benevides, T., Mailloux, Z., Faller, P., Hunt, J., van Hooydonk, E. and Kelly, D. (2014) 'An intervention for sensory difficulties in children with autism: A randomized trial.', *Journal of Autism and Developmental Disorders*, 44(7), pp. 1493-1506.
- Schaaf, R. C., Hunt, J. and Benevides, T. (2013) 'Occupational therapy using a sensory integrative approach: A case study of effectiveness.', *American Journal of Occupational Therapy*, 67(4), pp. 460-467.
- Schumacher, U., Galiana-Simal, A., Vela-Romero, M., Romero-Vela, V. M., Oliver-Tercero, N., García-Olmo, V. and Benito-Castellanos, P. J. (2020) 'Sensory processing disorder: Key points of a frequent alteration in neurodevelopmental disorders'. *Cogent Medicine*, 7(1). DOI: <https://doi.org/10.1080/2331205X.2020.1736829>
- Swansea Council. (2023a) *ALN- Types of Additional Learning Needs*. Available at: <https://www.swansea.gov.uk/typesofALN?lang=en> (Accessed: 24 April 2024).
- Swansea Council. (2023b) *ALN - Sensory Processing Disorder (SPD)*. Available at: <https://www.swansea.gov.uk/alnSPD> (Accessed: 24 April 2024).
- United Nations. (2006) *The United Nations Convention on the Rights of Persons with Disabilities and Optional Protocol*. Available at: [enable convention cover \(un.org\)](https://www.un.org/en/about-us/enable-convention-cover) (Accessed: 16 May 2024)
- Welsh Government. (2022) *The additional learning needs transformation programme: frequently asked questions*. Available at: <https://www.gov.wales/additional-learning-needs-transformation-programme-frequently-asked-questions-html> (Accessed: 24 April 2024).