Stuttering and neurodiversity across the lifespan: A moveable feast

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Abstract

Purpose: This viewpoint explores the idea that a neurodiversity-affirming social model and a medical model of stuttering healthcare are not mutually exclusive. In all cases, they should be used in combination. For any client, the only way to attain an optimal clinical outcome is to apply a combined medical and social healthcare perspective. The two models have a changing contribution across the lifespan, according to client requirements, age, presenting complaints, and neuroplastic change of the speech mechanism.

Conclusion: The benefits of neurodiversity applied to stuttering are a “feast” that is “moveable” according to the developmental stage of stuttering and the personal needs of clients. A less flexible view of the matter may prevent the best treatment outcome for clients. In the case of early stuttering, an inflexible approach may cause serious, long-term harm to children.

Background

The medical deficit-based model of healthcare involves diagnosing and treating physical or mental conditions with a focus on biological factors, including neurological differences. In contrast, the social model of disability views health as influenced by social, economic, and environmental factors. The neurodiversity movement advocates for societal change to accept such conditions as natural variations of human function rather than as conditions that need to be repaired because they are not "neurotypical." According to Constantino et al. (2022), the origins of the social model of disability were in a book by Oliver (1990). The term "neurodiversity" is generally attributed to Singer (1999), and the concept was applied originally with reference to autism spectrum disorder (Jaarsma, & Welin 2012, Ortega, 2009), and it has been applied to other conditions such as learning disability (e.g., Sewell, 2022) and ADHD (e.g., Baumer & Frueh, (2021).

The idea of accepting stuttering rather than struggling with it is a long standing one (for example, see Sheehan, 1953). In the past few years, the neurodiversity movement has prompted further development of stuttering acceptance (Byrd et al., 2024; Constantino et al., 2022; Gerlach-Houck & Constantino, 2022; Gerlach-Houck et al., 2023; Irani et al. 2025, Lamoureux et al., 2024, Mori, 2024; Prabhat et al., 2022; Reeves et al., 2023; Shenker et al., 2023; Sisskin, 2023). Within those discussions, some dichotomous perspectives about the matter have emerged. For example, some have suggested excluding "any approach that attempts to correct, cure, or fix a disabling condition" (Byrd et al., 2024, p. 1). During a recent conference panel discussion, there has been suggestion that pre-school children should be included within such an approach: "We should give children a chance to live in a world where children as young as 3 years old stutter openly, advertise their stuttering with pride, and say the word 'stuttering' with excitement" (Irani et al. 2025, p. 5). However, most of the discussion about stuttering and neurodiversity has been more nuanced, with several authors noting that a neurodiversity-affirming social model and a medical model of stuttering healthcare are not mutually exclusive (Gerlach-Houck & Constantino, 2022; Mori, 2024; Shenker et al., 2023). They can and should be used in combination. Consequently, this discussion pursues this notion and explores the contribution of the two models across the lifespan.

Adults and older adolescents

For adult and older adolescent clients, it is they who will determine the balance of social and medical perspectives, and they will do this according to their requirements. Those requirements lay on a continuum. At one end of that continuum, a client may wish only to deal with functional limitations imposed by stuttering because overt stuttering moments are time consuming. On average the rate of speech output for those who stutter is around a third of peers, and often it is one fifth (Johnson, 1961; Spencer et al., 2009). Consequently, the lifestyles of some adults and adolescents may benefit from dealing directly with those issues, using variants of speech restructuring (prolonged speech, smooth speech, fluency shaping) or stuttering modification (“stutter more fluently”) techniques. Documentation about the matter indicates that a reasonable proportion of adults presenting to clinics welcomes such an approach (Connery et al., 2022; Dsouza et al. 2021; Gerlach-Houck & Rodgers 2022; Hayhow et al., 2002; Tichenor, & Yaruss, 2019; Vanryckeghem, & Van Eerdenbrugh, 2024, Yaruss et al., 2002). This situation invokes a healthcare model where, as expressed by Constantino et al. (2022), clinicians are the “experts and holders of knowledge” and those who stutter are “the recipients of this expertise” (p. 1). Variants of speech restructuring involve reducing or eliminating the impact of overt stuttering signs, such as repetitions, blocks, prolongations, and superfluous verbal and non-verbal behaviors. In addition to being time consuming, those overt stuttering features can cause debilitating daily struggling to speak. Additionally, they may be associated with non-verbal superfluous events, such as grimacing, blinking, and head and torso movements that may be socially stigmatizing. There are well-known limitations of such approaches: the need for constant practice to maintain the requisite speech techniques, speech that feels different (Cream et al., 2003), and the risk of sustaining or inducing social anxiety (Lowe et al., 2021), However, for some clients, those disadvantages may prove in practice to trade off favourably against their benefits.

At the other end of the continuum of clinical requirement, clients may only require assistance to live successfully with stuttering without modifying its overt features. For the longer term, the social model of disability foreshadows a society that better accommodates those who stutter, as noted by some authors (Irani et al., 2025; Reeves et al., 2023). This model, as expressed by Constantino et al. (2022), is one where "people who stutter are the experts of their experience and holders of knowledge; professionals and academics are their allies, collaborators, and advocates for social change" (p. 1) Where clients require assistance to live successfully with stuttering, those allies are speech-language pathologists (SLPs), the families of those who stutter, and stuttering support groups. Social anxiety, which is common amongst those who stutter, may be an issue here. It has been argued that standard anxiety management is within the scope of practice for SLPs (Menzies et al., 2009). And if needed, there are stuttering-specific clinical resources to assist SLPs with that clinical process (Australian Stuttering Research Centre, 2024; Menzies et al., 2009). And of course, referral to a clinical psychologist is always an option.

More often than not, clients will sit somewhere between the extremes of the continuum outlined above, with different balances between modifying overt stuttering features and strategizing to live successfully with the condition. Establishing a suitable combination of the two approaches occurs as the SLP becomes acquainted with the client. From within a healthcare perspective where clinicians are the "experts and holders of knowledge" (Constantino et al., 2022, p. 2), there have been recommended formal assessments to guide the process of determining a management plan (Brundage et al. 2021). Finding the right balance between that healthcare perspective of modifying overt stuttering and managing anxiety, guided by client the client's experiences and lived experience of the condition, can be clinically challenging. For example, attempts to modify overt stuttering may in fact sustain, or even induce anxiety by promoting self-focused attention and safety behaviors (Lowe et al., 2021). And, of course, the balance of the two perspectives is likely to change during the treatment process. For example, as suggested by studies of the relation between speech-related anxiety and speech restructuring (Craig & Hancock, 1995; Iverach et al., 2009), reduction of the former may well increase the clinical viability of the latter. In other words, a client who is anxious but requires the benefits of speech restructuring may be able to attain those benefits better after first dealing effectively with anxiety.

Young children

There is a complicating matter here. Obviously, the presenting clinical requirements of clients are fundamental to determining clinical processes. Yet, stuttering begins early in life at a median of 31 months, and it may persist into old age (for an overview, see Onslow, 2025, Lecture Two). Adults, and older adolescents, will invariably present to clinics and explain their needs to SLPs. Those clinicians will then explore and clarify their needs—perhaps with the assistance of formal assessments (Brundage et al., 2021)—before proposing a management plan. But in the case of pre-school children who have recently begun to stutter, carers will bring them to SLPs to seek assistance. So, in that situation, the start of the therapeutic alliance (Asay & Lambert., 1999; Wampold et al., 1997) between clinician and carer begins with a treatment recommendation by the clinician after consultation with carers.

In this situation, SLPs need to incorporate empirical findings about the biological component of stuttering, which involves genetics (for an overview, see Onslow, 2025, Lecture Two) and networking of brain regions involved with spoken language (for an overview, see Neef & Chang, 2024). With children, neuroplasticity decreases with age, and this has implications for early stuttering management (Chang 2014; Neef & Chang 2024; Shenker et al., 2023; Venkatagiri, 2005). In short, given the neuroplasticity of the young brain, SLPs cannot dismiss the possibility that, to some extent, because of neuroplasticity of the speech mechanism, stuttering can resolve early in childhood. Not only does that make sense from a neuroscience perspective but it is also obvious from the fact that so many cases of early stuttering resolve “naturally” without the need for formal intervention. It is also consistent with outcomes of early intervention from clinical trials. Many reviews, including a Cochrane review (Sjøstrand et al., 2019), conclude that although the evidence is far from perfect, it conveys the existence of a large effect size from early stuttering intervention. That benefit is associated with improvement in domains of psychological health, quality of life, and communication attitude (De Sonneville-Koedoot et al., 2015; Woods; 2002). In short, basic and applied empirical evidence raises a reasonable prospect of lasting and clinically significant stuttering reduction shortly after onset. SLPs need to share this information from carers who present to clinics with stuttering pre-schoolers. In fact it cannot ethically be withheld. Its clinical application to pre-schoolers may well contribute to offsetting the well-known lifetime impacts of the condition.

Although the evidence is compelling that early stuttering intervention requires a medical healthcare focus, that cannot, and should not, exclude a social perspective. When a pre-school child experiences even a short period of stuttering before and during a successful early intervention, there is potential for that experience to attract negative social attention from peers (Ambrose & Yairi, 1994; Langevin et al. 2009; Weidner et al., 2015) and to distress the child and carers (Langevin et al., 2010). The negative psychological impact of that early stuttering is well documented (Briley et al. 2019; McAllister, 2016; Tığrak et al., 2020). All this highlights the need for counselling support with a therapeutic alliance (sometimes referred to as the working alliance) between the clinician and the client/carer (Asay et al., 1999; Wampold et al., 1997) to assist the child and family. Even in cases when early intervention quickly results in no stuttering, it is essential for the child and family to deal with the presence of stuttering for a short period.

The early school years

Much of the contemporary discussion about neurodiversity and stuttering focuses on the school years, and for good reason. A large body of research, dating from the start of the last century, has presented consistent reports that fear and avoidance of speaking, and concealment of stuttering, are common in classrooms (Barbara, 1956; Berchiatti et al., 2020; Boyle et al., 1994; Conradi, 1912; Daniels et al., 2012; Klompas & Ross, 2024; Peters & Starkweather; 1989; Schindler, 1955; Williams et al., 1969). The quality-of-life impairment from stuttering is equivalent to chronic adult medical conditions such as cardiovascular disease, diabetes, and cancer, and it spans domains of education, occupation, and mental health (Norman et al., 2023). The origins of all this are apparent during the early school years, with 7–12-year-olds who stutter being five times more likely to be diagnosed with social anxiety disorder than peers (Iverach et al., 2016) and educational disadvantage documented at that age (Berchiatti et al., 2020; Boyle et al., 1994; Conradi, 1912: Schindler, 1955, Williams et al., 1969).

Consequently, in all cases where a school-age child is managed by an SLP, everything possible needs to be done to assist the child to live successfully with stuttering during that time of life. The usual supportive counselling relationship with the child and carers may well be supplemented with anxiety management procedures. And usually that support will include teachers. There is comprehensive literature documenting how the input of teachers can provide a classroom environment in which students who stutter can thrive and feel safe (for example, see https://actionforstammeringchildren.org/support/support-for-schools/ and https://www.uts.edu.au/asrc/resources; see also Barbara; 1956; Cook et al., 2013; Cozart & Wilson, 2022; Davidow et al., 2016; Knudson, 1940; Lowe et al., 2023; Michael Palin Centre, 2018; Onslow, 2017; START, 2024).

For older school-age children, as for adults and older adolescents, fluency management may be a useful strategy, and this raises an issue that emerged earlier with pre-schoolers.

Clearly, neuroplasticity of the speech mechanism lies on a continuum, and there is no certain age at which early intervention procedures become non-viable for older children. This is shown by non-randomized evidence that one early intervention, the Lidcombe Program, attains clinical responses in one third of 7–12-year-olds that are identical to outcomes for pre-schoolers (Johnson, Onslow, et al., 2024). For another third, clinically significant improvements occurred. As is the case with older children, those improvements were associated with post-treatment gains in psychological health, quality of life, and communication attitude.

Again, this evidence cannot ethically be excluded from consideration for this age group. Resources are available to assist clinicians with the task of adapting the Lidcombe Program for 7–12-year-olds (Johnson, Carey, et al., 2024) and to determine as quickly as possible if the treatment will be viable for a child in that age range. There is also evidence that another early intervention based on syllable-timed speech may be applied to this age group without any of the penalties potentially associated with speech restructuring and stuttering modification (Andrews et al., 2012).

Other clinical approaches for this age group are variants of speech restructuring and stuttering modification. As some authors have commented, at this age, such techniques have potential to be harmful rather than helpful (Gerlach-Houck et al., 2023; Reeves et al., 2023). Although variants of speech restructuring and stuttering modification can increase fluency, for some children, they may sustain speech avoidance during social interactions because of fear that those techniques may fail to increase fluency as intended. Or such techniques simply may sustain anxiety by drawing peer attention to a child’s use of a novel way of speaking. This could in turn promote social rejection or even bullying. Considering such prospects, a clinical decision to teach a school-age child to use speech restructuring or stuttering modification procedures is an onerous one indeed. The consequences of a clinical error of judgment are far more serious than for such an error with adult clients.

Concluding comments

For every client who stutters, regardless of age, neurodiversity-affirming methods (social models) and the contrasting approach of deficit-based (medical) models of healthcare need to be involved to some extent. How they are combined, and the extent to which they are combined, is a clinical matter determined by the client's needs, age, presenting complaints, and the viability of neuroplastic change of the speech mechanism. A dichotomous and polarising view of the matter may prevent the best treatment outcome for clients (Shenker et al., 2023). In the case of children, such clinical thinking can be detrimental to their long-term health. For any client, the only way to attain an optimal clinical outcome is to apply a combined medical and social perspective.

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References

Action for Stammering Children (2014). *Top tips.* Retrieved from http://www.stammeringcentre.org/top-tips

Ambrose, N. G., & Yairi, E. (1994). The development of awareness of stuttering in preschool children. *Journal of Fluency Disorders*, *19*(4), 229–245. https://doi.org/10.1016/0094-730X(94)90002-7

Andrews, C., O'Brian, S., Harrison, E., Onslow, M., Packman, A., & Menzies, R., (2012). Syllable-timed speech treatment for school-age children who stutter: A Phase I trial. *Language, Speech, and Hearing Services in Schools*, *43*(3), 359–369. https://doi.org/10.1044/0161-1461(2012/11-0038)

Asay, T. P., & Lambert, M. J. (1999). The empirical case for the common factors in therapy: Quantitative findings. In M. A. Hubble, B. L. Duncan, & S. D. Miller (Eds.), *The heart and soul of change* (pp. 23–55). American Psychological Association. https://doi.org/10.1037/11132-001

Australian Stuttering Research Centre (2024) *iGlebe*. https://www.uts.edu.au/research/australian-stuttering-research-centre/resources/iglebe

Barbara, D. A. (1956). The classroom teacher’s role in stuttering. *Speech Teacher*, *5*, 137–141. https://doi.org/10.1080/03634525609376797

Baumer, N., & Frueh, J. (2021, November 23). *Mind and Mood: What is neurodiversity?* Harvard Health Publishing: Harvard Medical School. https://www.health.harvard.edu/blog/what-is-neurodiversity-202111232645

Berchiatti, M., Badenes-Ribera, L., Ferrer, A., Longobardi, C., & Gastaldi, F. G. M. (2020). School adjustment in children who stutter: The quality of the student-teacher relationship, peer relationships, and children’s academic and behavioral competence. *Children and Youth Services Review*, *116*, Article 105226. https://doi.org/10.1016/j.childyouth.2020.105226

Boyle, C. A., Decoufle, P., & Yeargin-Allsopp, M. (1994). Prevalence and health impact of developmental disabilities in US children. *Pediatrics*, *93*(3), 399–403. https://doi.org/10.1542/peds.93.3.399

Briley, P. M., O'Brien, K., & Ellis, C. (2019). Behavioral, emotional, and social well-being in children who stutter: Evidence from the National Health Interview Survey. *Journal of Developmental and Physical Disabilities*, *31*(1), 39–53. https://doi.org/10.1007/S10882-018-9625-X

Brundage, S., Bernstein Ratner, N., Boyle, M., Eggers, K., Everard, R., Franken, M.C., Kefalianos, E., Marcotte, A., Millard, S., Packman, A., Vanryckeghem, M., & Yaruss, S. (2021). Consensus Guidelines for The Assessments of Individuals Who Stutter Across the Lifespan. *American Journal of Speech-Language Pathology*, *30*(6), 2379–2393. https://doi.org/10.1044/2021_AJSLP-21-00107

Byrd, C. T., Coalson, G. A., & Conture, E. G. (2024). CARE model of treatment for stuttering: Theory, assumptions, and preliminary findings. *Frontiers in Psychology*, *15*, Article 1488328. https://doi.org/10.3389/fpsyg.2024.1488328

Chang, S. E. (2014). Research updates in neuroimaging studies of children who stutter. *Seminars in Speech and Language*, *35*(2), 67–79. https://doi.org/10.1055/s-0034-1382151

Connery, A., Yaruss, J. S., Lomheim, H., Loucks, T. M., Galvin, R., & McCurtin, A. (2022). Obtaining consensus on core components of stuttering intervention for adults: An e-Delphi Survey with key stakeholders. *International Journal of Language and Communication Disorders*, *57*(1), 112–127. https://doi.org/10.1111/1460-6984.12680

Conradi, E. (1912). Communications and discussions: Speech defects and intellectual progress. *Journal of Educational Psychology*, *3*(1), 35–38. https://doi.org/10.1037/h0074582

Constantino, C., Campbell, P., & Simpson, S. (2022). Stuttering and the social model. *Journal of Communication Disorders*, *96*, Article 106200. https://doi.org/10.1016/j.jcomdis.2022.106200

Cook, F., Botterill, W., Hughes, C., & Kelman, E. (2013). *Stammering: A practical guide for teachers and other Professionals*. Routledge.

Cozart, G., & Wilson, L. (2022). Strategies for teachers to support children who stutter: Perspectives of speech-language pathologists. *Perspectives of the ASHA Special Interest Groups*, *7*(1), 73–86. https://doi.org/10.1044/2021_PERSP-20-00281

Craig, A. R., & Hancock, K. (1995). Self-reported factors related to relapse following treatment for stuttering. *Australian Journal of Human Communication Disorders*, *23*(1), 48–60. https://doi.org/10.3109/asl2.1995.23.issue-1.04

Cream, A., Onslow, M., Packman, A., & Llewellyn, G. (2003). Protection from harm: The experience of adults after therapy with prolonged-speech. *International Journal of Language and Communication Disorders*, *38*(4), 379–395. https://doi.org/10.1080/13682820310001598166

Daniels, D. E., Gabel, R. M., & Hughes, S. (2012). Recounting the K-12 school experiences of adults who stutter: A qualitative analysis. *Journal of Fluency Disorders*, *37*(2), 71–82. https://doi.org/10.1016/j.jfludis.2011.12.001

Davidow, J. H., Zaroogian, L., & Garcia-Barrera, M. A. (2016). Strategies for teachers to manage stuttering in the classroom: A call for research. *Language, Speech, and Hearing Services in Schools*, *47*(4), 283–296. https://doi.org/10.1044/2016_LSHSS-15-0057

De Sonneville-Koedoot, C., Stolk, E., Rietveld, T., & Franken, M-C. (2015). Direct versus indirect treatment for preschool children who stutter: The RESTART randomized trial. *PLoS One, 10,* Article e0133758. https://doi.org/10.1371/journal.pone.0133758

Dsouza, A. J., Manivannan, V., & Maruthy, S. (2024). Expectations from stuttering therapy: Qualitative content analysis of client's perspective in Kannada-speaking adults who stutter. *Journal of Communication Disorders*, *107*, Article 106388. https://doi.org/10.2139/ssrn.4390763

Gerlach-Houck, H., & Constantino, C. D. (2022). Interrupting ableism in stuttering therapy and research: Practical suggestions. *Perspectives of the ASHA Special Interest Groups*, *7*(2), 357–374. https://doi.org/10.1044/2021_PERSP-21-00109

Gerlach-Houck, H., Kubart, K., & Cage, E. (2023). Concealing stuttering at school: "When you can't fix it… the only alternative Is to hide it. *Language, Speech, and Hearing Services in Schools*, *54*(1), 96–113. https://doi.org/10.1044/2022_LSHSS-22-00029

Gerlach-Houck, H., & Rodgers, N. H. (2022). The good, the bad, and the ugly: Unpacking the pros and cons associated with change for adults who stutter. *Journal of Fluency Disorders*, *73*, Article 105924. https://doi.org/10.1016/j.jfludis.2022.105924

Hayhow, R., Cray, A. M., & Enderby, P. (2002). Stammering and therapy views of people who stammer. *Journal of Fluency Disorders*, *27*(1), 1–17. https://doi.org/10.1016/S0094-730X(01)00102-4

Irani, F., Azios, M., Boyle, M., Coalson, G. A., Palasik, S., Rodriguez, J., & Swartz, E. (2025). Reimagining stuttering therapy and outcomes through an acceptance and collaborative lens. *Journal of Fluency Disorders*, *83*, 106105. https://doi.org/10.1016/j.jfludis.2025.106105

Iverach, L, Jones, M., McLellan, L., Lyneham, H., Menzies, R., Onslow, M., & Rapee, R. (2016). Prevalence of anxiety disorders among children who stutter. *Journal of Fluency Disorders, 49,* 13–28. https://doi.org/10.1016/j.jfludis.2016.07.002

Iverach, L., Jones, M., O'Brian, S., Block, S., Lincoln, M., Harrison, E., Hewat, S., Cream, A., Menzies, R.G., Packman, A., & Onslow, M. (2009). The relationship between mental health disorders and treatment outcome among adults who stutter. *Journal of Fluency Disorders*, *34*(1), 29–43. https://doi.org/10.1016/j.jfludis.2009.02.002

Jaarsma, P., & Welin, S. (2012). Autism as a natural human variation: Reflections on the claims of the neurodiversity movement. *Health Care Analysis*, *20*(1), 20–30. https://doi.org/10.1007/s10728-011-0169-9

Johnson, G., Carey, B., Onslow, M., & Kefalianos, E. (2024). Adapting the Lidcombe Program for 6–12-year-olds: Insights from a video telehealth trial. *Speech, Language and Hearing*, *28*(1), 2025. https://doi.org/10.1080/2050571X.2024.2391212

Johnson, G., Onslow, M., Carey, B., Jones, M., & Kefalianos, E. (2024). Lidcombe Program telehealth treatment for children 6-12 years of age: A Phase II trial. *Journal of Fluency Disorders*, *80*, Article 106057. https://doi.org/10.1016/j.jfludis.2024.106057

Johnson, W. (1961). Measurements of oral reading and speaking rate and disfluency of adult male and female stutterers and nonstutterers. *Journal of Speech and Hearing Disorders, Monograph Supplement No 7*, 1–20.

Klompas, M., & Ross, E. (2004). Life experiences of people who stutter, and the perceived impact of stuttering on quality of life: Personal accounts of South African individuals. *Journal of Fluency Disorders*, *29*(4), 275–305. https://doi.org/10.1016/j.jfludis.2004.10.001

Knudson, T. A. (1940). What the classroom teacher can do for stutterers. *Quarterly Journal of Speech*, *26*(2), 207–212. https://doi.org/10.1080/00335634009380554

Lamoureux, G., Tessier, A., Finlay, S., & Verduyckt, I. (2024). Critical perspectives in speech-language therapy: Towards inclusive and empowering language practices. *Disabilities*, *4*(4), 1006–1018. https://doi.org/10.3390/disabilities4040062

Langevin, M., Packman, A., & Onslow, M. (2009). Peer responses to stuttering in the preschool setting. *American Journal of Speech-Language Pathology*, *18*(3), 264–276. https://doi.org/10.1044/1058-0360(2009/07-0087)

Langevin, M., Packman, A., & Onslow, M. (2010). Parent perceptions of the impact of stuttering on their preschoolers and themselves. *Journal of Communication Disorders*, *43*(5), 407–423. https://doi.org/10.1016/j.jcomdis.2010.05.003

Lowe, R., Menzies, R., O'Brian, S., Onslow, M, & Packman, A. (2023). Supporting a student who stutters: What schools can do. *SCAN*, *42*(1), 53–56. https://education.nsw.gov.au/content/dam/main-education/teaching-and-learning/professional-learning/scan/media/documents/vol-42/Scan_42-1_Term1_2023_AEM.pdf

Lowe, R., Menzies, R. G., Onslow, M., Packman, S., & O'Brian, S. (2021). Speech and anxiety management with persistent stuttering: Current status and essential research. *Journal of Speech, Language, and Hearing Research*, *64*, 59–74. https://doi.org/10.1044/2020_JSLHR-20-00144

McAllister, J. (2016). Behavioural, emotional and social development of children who stutter. *Journal of Fluency Disorders*, *50*, 23–32. https://doi.org/10.1016/j.jfludis.2016.09.003

Menzies, R. G., Onslow, M., Packman, A. & O’Brian, S. (2009). Cognitive behavior therapy for adults who stutter: A tutorial for speech-language pathologists. *Journal of Fluency Disorders*, *34*, 187–200. https://doi.org/10.1016/j.jfludis.2009.09.002

Michael Palin Centre. (2018, November 21). Wait wait I'm not finished yet (20 minute version). https://www.youtube.com/watch?v=ibn04rxRo_I

Mori, K. (2024). Developmental stuttering as a neurodiverse speech style. *Acoustical Science and Technology*, e24-37. https://doi.org/10.1250/ast.e24.37

Neef, N. E., & Chang, S. -E. (2024). Knowns and unknowns about the neurobiology of stuttering. *PLos Biology*, *22*(2), Article e3002492. https://doi.org/10.1371/journal.pbio.3002492

Norman, A., Lowe, R., Onslow, M., O'Brian, S., Packman, A., Menzies, R., & Schroeder, L. (2023). Cost of illness and health-related quality of life for stuttering: Two systematic reviews. *Journal of Speech, Language, and Hearing Research*, *66*(11), 4414–4431. https://doi.org/10.1044/2023_JSLHR-23-00072

Oliver, M. (1990). The politics of disablement—New social movements. In *The politics of disablement* (pp. 112–131). Macmillan Education UK.

Onslow, M. (2017, January 31). Teased and bullied–the challenges of starting school with a stutter. *The Conversation*. http://theconversation.com/teased-and-bullied-the-challenges-of-starting-school-with-a-stutter-71699

Onslow, M. (2025, July). *Stuttering and its clinical management: Twelve lectures*. Retrieved July 29, 2025, from https://www.uts.edu.au/asrc/resources

Ortega, F. (2009). The cerebral subject and the challenge of neurodiversity. *BioSocieties*, *4*(4), 425–445. https://doi.org/10.1017/S1745855209990287

Peters, H. F. M., & Starkweather, C. W. (1989). Development of stuttering throughout life. *Journal of Fluency Disorders*, *14*(5), 303–321. https://doi.org/10.1016/0094-730X(89)90013-2

Prabhat, P., Rombouts, E., & Borry, P. (2022). The disabling nature of hope in discovering a biological explanation of stuttering. *Journal of Fluency Disorders*, *72*, Article 105906. https://doi.org/10.1016/j.jfludis.2022.105906

Reeves, N. A., Flynn, T. W., & Schuff, R. Z. (2023). Ableism to empowerment: Navigating school structures when working with students who stutter. *Language, Speech, and Hearing Services in Schools*, *54*(1), 8–26. https://doi.org/10.1044/2022_LSHSS-22-00026

Schindler, M. D. (1955). A study of educational adjustments of stuttering and nonstruttering children. In W. Johnson & R. R. Leutenegger (Eds.), *Stutttering in children and adults* (pp. 348–357). University of Minnesota Press.

Sewell, A. (2022). Understanding and supporting learners with specific learning difficulties from a neurodiversity perspective: A narrative synthesis. *British Journal of Special Education*, *49*(4), 539–560. https://doi.org/10.1111/1467-8578.12422

Sheehan, J. G. (1953). Theory and treatment of stuttering as an approach-avoidance conflict. *The Journal of Psychology*, *36*(1), 27–49. https://doi.org/10.1080/00223980.1953.9712875

Shenker, R., Rodgers, N., Guitar, B., & Onslow, M. (2023). Contemporary clinical conversations about stuttering: Neurodiversity and ableism. *Journal of Fluency Disorders*, *78*, Article 106014. https://doi.org/10.1016/j.jfludis.2023.106014

Singer, J. (1999). Why can't you be normal for once in your life? From a 'problem with no name' to the emergence of a new category of difference. In M. Corker, & S. French (Eds), *Disability discourse* (pp. 59–67). Open UP.

Sisskin, V. (2023). Disfluency-affirming therapy for young people who stutter: Unpacking ableism in the therapy room. *Language, Speech, and Hearing Services in Schools*, *54*(1), 114–119. https://doi.org/10.1044/2022_LSHSS-22-000

Sjøstrand, Å., Kefalianos, E., Hofslundsengen, H., Guttormsen, L. S., Kirmess, M., Lervåg, A., & Bottegaard Naess, K. -A. (2019). Non-pharmacological interventions for stuttering in children six years and younger. *Cochrane Database of Systematic Reviews*, *9*, Article CD013489. https://doi.org/10.1002/14651858.CD013489.pub2

Spencer, E., Packman, A., Onslow, M., & Ferguson, A. (2009). The effect of stuttering on communication: A preliminary investigation. *Clinical Linguistics and Phonetics*, *23*, 473–488. https://doi.org/10.1080/02699200902833373

START. (2024, July). *Teachers' guide to working with young people who stutter*. Stuttering Treatment and Research Trust (START). https://www.stuttering.co.nz/wp-content/uploads/2024/07/START-Teachers-Resource-For-Stuttering.pdf

Tichenor, S. E., & Yaruss, J. S. (2019). Group experiences and individual differences in stuttering. *Journal of Speech, Language, and Hearing Research*, *62*(12), 4335–4350. https://doi.org/10.1044/2019_JSLHR-19-0013

Tığrak, T. K., Kayıkcı, M. E. K., Kirazlı, M. Ç., & Tığrak, A. (2020). Emotional and behavioural problems of children and adolescents who stutter: Comparison with typically developing peers. *Logopedics Phoniatrics Vocology*, *46*(4), 186–192. https://doi.org/10.1080/14015439.2020.1855472

Vanryckeghem, M., & Van Eerdenbrugh, S. (2024). What do adults who stutter think about the nature of stuttering treatment? *Perspectives of the ASHA Special Interest Groups*, *9*(2), 320–330. https://doi.org/10.1044/2023_PERSP-23-00030

Venkatagiri, H. S. (2005). Recent advances in the treatment of stuttering: A theoretical perspective. *Journal of Communication Disorders*, *38*(5), 375–393. https://doi.org/10.1016/j.jcomdis.2005.03.001

Wampold, B. E., Mondin, G. W., Moody, M., Stich, F., Benson, K., & Ahn, H. N. (1997). A meta-analysis of outcome studies comparing bona fide psychotherapies: Empirically, "all must have prizes"." *Psychological Bulletin*, *122*(3), 203–215. https://doi.org/10.1037/0033-2909.122.3.03

Weidner, M. E., Louis, K. O. S., Burgess, M. E., & LeMasters, S. N. (2015). Attitudes toward stuttering of nonstuttering preschool and kindergarten children: A comparison using a standard instrument prototype. *Journal of Fluency Disorders*, *44*, 74–87. https://doi.org/10.1016/j.jfludis.2015.03.003

Williams, D. E., Melrose, B. M., & Woods, C. L. (1969). The relationship between stuttering and academic achievement in children. *Journal of Communication Disorders*, *2*(2), 87–98. https://doi.org/10.1016/0021-9924(69)90032-X

Woods, S., Shearsby, J., Onslow, M., & Burnham, D. (2002). Psychological impact of the Lidcombe Program of early stuttering intervention. *International Journal of Language and Communication Disorders*, *37*(1), 31–40. https://doi.org/10.1080/13682820110096670

Yaruss, J. S., Quesal, R. W., & Murphy, B. (2002). National Stuttering Association members' opinions about stuttering treatment. *Journal of Fluency Disorders*, *27*, 227–242. https://doi.org/10.1016/S0094-730X(02)00142-0