

SOUND SURGE

What is Sound Surge?

Sound Surge is an innovative application designed to remediate Spatial Processing Disorder in school-aged children. It integrates the science of a clinical remediation algorithm with a compelling game that combines multiple reward mechanics and a rich, captivating narrative.

A child's task is to identify a word from a target sentence presented in background noise. A weighted up-down adaptive procedure adjusts the signal level of the target based on the participant's response. Auditory training exercises the neural pathways in the brain dedicated to spatial audio processing.

Evidence-based data from clinical trials recommend participating in two therapy sessions per day (about 10 minutes each), five days per week until the program is finished. We understand that school schedules can be busy, so aim to plan regular therapy sessions that fit the available timetable.

Routine and consistency are two key factors in achieving a successful outcome in any auditory training. The more you engage in therapy with focused concentration and regularity, the better the outcome. Consequently, you will reap the benefits of remediation and complete the auditory training.

Results show that participants are better able to use spatial separation cues following training and that these improvements were maintained post-training. Significant benefits were also noted on some measures of attention and memory, as well as on reported measures of hearing deficit.



Why Sound Surge?

Around 70% of classroom time is spent either listening to a teacher in lecture-style teaching or communicating with their peers during group work (Mealings et al., 2015a). Having the ability to process sounds in noisy environments means a child with SPD can have the same opportunity as a child with normal hearing to develop spoken language, reading, and academic skills.

When we are trying to listen to speech in noisy environments, auditory processes in the brain help us to focus on the person we want to hear while simultaneously suppressing competing sounds coming from different locations.

The target speech appears to pop out from the competition, so to speak. The technical term for this process is spatial release from masking—or spatial processing—and it allows us to take in the vital information we need to be able to comprehend speech and participate in conversations*.

Sound Surge is an innovative app designed for children with Spatial Processing Disorder (SPD). It uses auditory training to improve the brain's ability to process spatial audio cues. Through engaging gameplay, children participate in daily therapy sessions that challenge them to identify words in noisy environments, thereby strengthening their neural pathways.

Evidence suggests that regular and consistent use of Sound Surge significantly improves a child's ability to process sounds in noisy environments, positively impacting their academic and social interactions.

*Graydon, K., Van Dun, B., Tomlin, D., Dowell, R., & Rance, G. (2018). Remediation of spatial processing disorder (SPD). *International Journal of Audiology*, 57(5), 376–384. <https://doi.org/10.1080/14992027.2018.1431403>