

## The impact of hearing impairment on overall language development



Written by: Lee Wing Yan, Speech Therapist at the Hong Kong Speech and Swallowing Therapy Centre

In my work, I once encountered a 5-year-old child. Like other children of his age, he appeared well-behaved and polite. However, he had a distinctive feature that set him apart from his peers - he had a hearing aid in his left ear. He was a child with a hearing impairment.

As the name suggests, hearing impairment is defined as a "disability caused by impaired hearing, ranging from mild to complete deafness." Does hearing impairment only affect a child's auditory perception?

### Understanding Surrounding Sounds to Build Concepts

Consider this: before toddlers learn to articulate meaningful words, what ability do they possess? They engage in what we commonly refer to as "baby talk." Now, what crucial step do toddlers take before mastering "baby talk"? It's the ability to understand the sounds in their environment and establish concepts through interaction with sounds, including meaningful conversations with parents, nursery rhymes, etc. They learn to comprehend that different sounds represent different people, things, and objects, gradually understanding words and building language. Therefore, due to reduced and weaker sensory stimulation in the aspect of "hearing," children with hearing impairment may experience delayed language development.

## Reduced Listening Experience and Difficulty Following Instructions

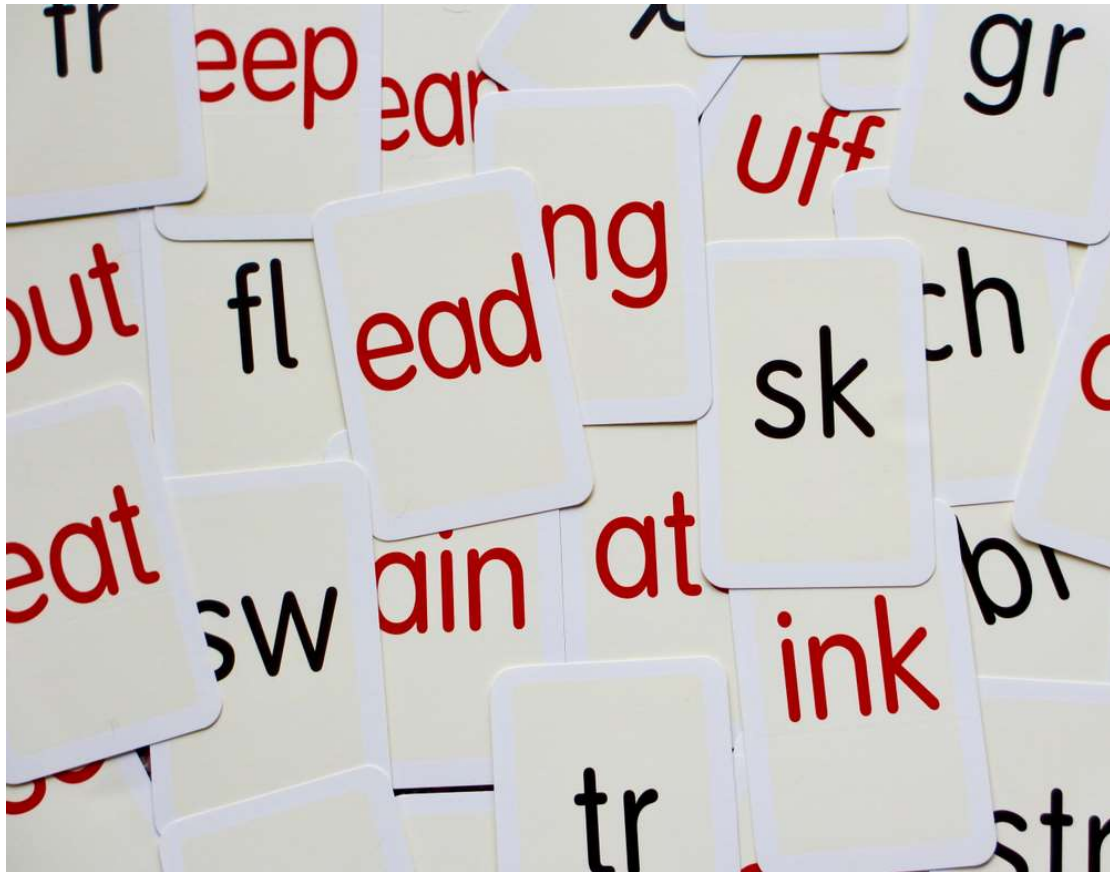
Children with hearing impairment cannot fully receive external information through the sensory aspect of "hearing," reducing opportunities for listening experiences and language exposure. As a result, they often exhibit inattentiveness, difficulty following instructions, and challenges in understanding more complex sentence structures, affecting their learning. Language learning occurs through paying attention and receiving external input, followed by repeated exposure to similar information, connecting specific concepts, imitation, and application. Consequently, many children with hearing impairment may exhibit weaknesses in grammar usage, sentence expression, and vocabulary recognition compared to other children. Research even suggests that the gap in vocabulary recognition between the two groups tends to widen with age.



### Impact on Speech Development: Difficulty Perceiving Differences in Tone

Another more noticeable effect of hearing impairment on the language development of young children is its impact on speech development. Children with hearing impairment often have lower sensitivity to higher-frequency and lower-intensity speech sounds. Consequently, they may not pay attention to these sounds, such as the Cantonese sounds /f/, /s/, /ts/, and /tsh/ found in words like "fei" (飛), "saam" (三), "zi" (吱), and "che" (車). Instead, they may

substitute other sounds, such as pronouncing "fei" as "bei," "saam" as "daam," "zi" as "di," and "che" as "dei." Since these pronunciation errors stem from the child's hearing impairment and their lower sensitivity to certain phonemes, the child may not necessarily be aware of the pronunciation mistakes they make or the differences between their pronunciation and that of others.



On the other hand, Cantonese is a "tonal language" with generally nine tones. The differences between tones are subtle, similar to nuances in pronunciation. Children with hearing impairment may also fail to perceive the distinctions between tones due to their lower sensitivity, much like in articulating individual sounds. To others, the child's speech might sound akin to a foreigner speaking or singing.

#### Early Intervention and Therapy

Of course, not every child with hearing impairment will experience delays in language development or pronunciation issues. I have encountered many hearing-impaired children and adults with excellent language abilities. Like any health issue, "early intervention" is the key to addressing problems. Therefore, if there is suspicion of any hearing issues in a child, an early assessment by an otolaryngologist and audiologist is crucial to determine whether hearing aids or

other treatments are needed. If a child indeed has hearing problems, relying solely on hearing aids may not completely resolve or prevent language development issues associated with hearing impairment. Therefore, early and appropriate speech therapy should also be sought to ensure the child's language development catches up with their peers as soon as possible.