

FLUCTUATING AND PROGRESSIVE HEARING LOSS

REFERENCE	DESIGN	RECRUIT- MENT	CASE DEFINITION	SUBJECTS	ASSESSMENT TOOLS	RESULTS	AUTHOR'S CONCLUSIONS
Brookhouser PE, Worthington DW, Kelly WJ. Fluctuating and/or progressive sensorineural hearing loss in children. Laryngoscope. 1994;104(8 Pt 1):958-64.	Retro-Spective.	Recruited from Boys Town National Research Hospital (Omaha, Nebraska) Computer search of medical records.	<i>Normal:</i> ≤15 dB* <i>Borderline normal:</i> 16-25 dB <i>Mild:</i> 25-45 dB <i>Moderate:</i> 46-65 dB <i>Severe:</i> 66-85 dB <i>Profound:</i> ≥86 dB Audiograms were also categorized as flat, gradual sloping, sharply sloping, rising, trough-shaped, jagged, and fragmentary.	Total: N = 229 With hearing loss: N = 229 Controls: N = 0 132 boys; 97 girls aged 1.0-19.9 years at first audiogram (mean age 6.85 years), which revealed at least a mild degree of SNHL* in 1 or both ears and who demonstrated threshold variation of 10 dB or more in at least 1 ear at 1 or more standard audiometric frequencies (.25-8 kHz). 35 had UHL* All had normal tympanograms.	A team of professionals evaluated the audiograms. They used an evaluation protocol outlined in other reports.	Most common pattern was fluctuating/ progressive loss. Initial SFA* for 69% of ears in normal-moderate range. Of 365 ears with changing threshold, only 22 (6%) showed progressive losses without upward fluctuation. 135 ears (37% with threshold variation) demonstrated fluctuation of ≥10 dB without permanent deterioration and with permanent improvement in some cases. Most powerful predictor of pattern of threshold variation in one ear was threshold behavior in contralateral ear; i.e. if threshold in one ear fluctuated, there was .91 probability of threshold fluctuation in opposite ear. Probability of progressive hearing loss with or without fluctuation in the ear contralateral to an ear with progressive loss was .67.	Diagnostic advances would clearly be helpful to physicians working with children who have fluctuating and/or progressive SNHL. Future therapeutic efficacy studies in these children must be carefully designed to allow for the high probability of spontaneous improvement of auditory threshold (albeit temporary in some cases). Audiologists and educators should be attuned to the possibility of threshold variation (usually bilateral) in children with SNHL and its potential impact on the efficacy of the amplification and rehabilitation plan.

* dB = decibel; SNHL = sensorineural hearing loss; UHL = unilateral hearing loss; SFA = speech frequency average

FLUCTUATING AND PROGRESSIVE HEARING LOSS (Review)

REFERENCE (Review)	OBJECTIVES	SUBJECTS	RESULTS	AUTHOR'S CONCLUSIONS
<p>Tharpe A, Bess F. Minimal, progressive, and fluctuating hearing losses in children. Characteristics, identification, and management. <i>Pediatr Clin North Am.</i> 1999;46(1):65-78.</p>	<p>Reviewed current clinical data on children with minimal progressive and fluctuating hearing loss. Articles on conductive and sensorineural (unilateral, bilateral, and high-frequency) hearing loss also included.</p> <p>Purpose was to heighten the general pediatrician's awareness of the significance of even very mild or minimal hearing losses in children.</p>	<p>Preschool and school-aged children</p>	<p>OME* may contribute to significant educational and communicative difficulties when accompanied by conductive hearing loss.</p> <p>Even very mild bilateral and unilateral sensorineural hearing loss seems to contribute to problems in the areas of social and emotional function, educational achievement, and communication.</p> <p>The article also reviewed causes of hearing loss.</p> <p>Management suggestions included:</p> <ul style="list-style-type: none"> -Early identification -Monitor and make adjustments in amplification devices when appropriate. -Amplification: hearing aids and FM* systems. -Soundfield amplification in classrooms. 	<p>There is an important need to place further emphasis on improving infant and school-age screening procedures.</p> <p>Pediatricians are the gatekeepers for children's health care and need an increased awareness of the significance of even very mild or minimal hearing losses in children.</p>

* OME = otitis media with effusion; FM = frequency modulated