# Many children with hearing loss also have eye disorders

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About one-fifth of children with sensorineural hearing loss also have ocular disorders, according to a report in the February issue of *Archives of Otolaryngology-Head & Neck Surgery*, one of the JAMA/Archives journals.

An estimated one to three per 1,000 children have some degree of sensorineural hearing loss, which occurs as a result of damage to the nerves or the inner ear, according to background information in the article. Half of all cases in children result from environmental causes and half from genetic causes; one gene, GJB2, accounts for a large proportion of sensorineural hearing loss cases in white patients.

"Especially early in life, sensorineural hearing loss is associated with delays in language, speech, cognitive and social development," the authors write. "Given the effects of hearing impairment, children with sensorineural hearing loss are particularly dependent on other means of information acquisition. If these children were to have unrecognized ophthalmologic abnormalities that limited visual acuity, there could be further detrimental effects on development."

Arun Sharma, M.D., of the University of Washington, Seattle, and colleagues reviewed ophthalmologic findings in 226 patients with sensorineural hearing loss who were seen at a children's hospital between 2000 and 2007. Of these, 49 (21.7 percent) had an ophthalmologic abnormality, including 23 (10.2 percent) with refractive errors (including nearsightedness, farsightedness and astigmatism) and 29 (12.8 percent)

with non-refractive errors. The cause of sensorineural hearing loss was syndromic (having other symptoms associated) in 11 patients (4.9 percent), and 5 (2.2 percent) had syndromes with related eye problems.

All participants were offered genetic testing for mutations in GJB2. Of the 144 patients who underwent this screening, 27 (18.8 percent) had two mutated copies of the GJB2 gene, and one (3.7 percent) of those had ophthalmologic abnormalities. This compares with none of the 11 patients with a single copy of the mutated gene and 22 of 106 patients (20.8 percent) with no mutations. "This is consistent with the impression that GJB2 mutations result in sensorineural hearing loss but not in additional anomalies or syndromes," the authors write.

"A multidisciplinary approach is important in the evaluation and treatment of children with sensorineural hearing loss to ensure that their medical, education and social needs are met," the authors conclude. "Ophthalmologic evaluation can be beneficial for patients by allowing ophthalmologists to diagnose (and possibly treat) co-existing disorders that affect vision and by helping otolaryngologists to determine the cause of sensorineural hearing loss."

More information: *Arch Otolaryngol Head Neck Surg*. 2009;135[2]:119-123.

Source: JAMA and Archives Journals