

Hearing & Amplification

Causes of Hearing Loss

Non-Genetic Hearing Loss

In about 25% of cases of hearing loss there is a non-genetic cause that can be identified. Non-genetic hearing loss is most often caused by illness or trauma before birth or during the birth process. Older infants and young children can also develop non-genetic hearing loss due to illness or trauma.

Some viral infections are known to be associated with hearing loss. These infections carry the highest risk of causing hearing loss if the mother has the illness during pregnancy or passes the infection to her baby during the birth process. The primary infections are Toxoplasmosis (Cat-scratch disease), Syphilis, Rubella (German Measles), Cytomegalovirus (also known by the initials CMV) and Herpes. The amount of hearing loss that can result varies widely and some babies show no hearing loss at all, even if they have one of these infections. These infections can affect other systems in the body as well and medical professionals will need extensive birth history and test information to identify these infections as a cause for hearing loss.

Low birth weight has also been identified as a risk factor for hearing loss. Newborn specialists identify 1500 grams (approx. 3.3 lbs.) as a cut-off point, with children weighing less than 1500 grams having an increased likelihood of hearing loss.

Hyperbilirubinemia (jaundice) that is severe enough to require a blood transfusion can also result in hearing loss. This is related to the potential damage that high levels of bilirubin can cause to the nerves of hearing.

Sometimes medications that are known to be ototoxic (damaging to hearing) are prescribed to babies, usually to treat serious infections or birth complications. The most common ototoxic medications used at this time include a family of antibiotics called aminoglycosides with names such as gentamycin, tobramycin, kanamycin, and streptomycin. Hearing loss resulting from the use of these antibiotics may also have a genetic component. They present more of a risk to hearing when they are used multiple times or in combination with other medications, such as diuretics. Although cancer in infants and young children is rare, there are some chemotherapy drugs that are used which are also ototoxic, especially when used to treat tumors that are in the skull.

All babies are evaluated at birth on a 10-point scale, called an APGAR score, for A: Activity (muscle tone); P: Pulse; G: Grimace (reflex irritability); A: Appearance (skin color); and R: Respiration. Newborns are given APGAR scores at 1 minute and 5 minutes after birth. The higher the score, the healthier the baby is. When babies have scores of 0-4 at one minute or 0-6 at five minutes, their risk for having hearing loss increases. Also, prolonged mechanical ventilation for a duration of five days or longer due to persistent pulmonary hypertension increases the risk for hearing loss. These conditions of breathing problems and other distress at birth do not mean that a baby will always have a hearing loss, but do indicate the need to monitor hearing closely.

One illness that carries a high risk of causing hearing loss and/or balance problems is bacterial or viral meningitis. Because of improvements in immunizations, the cases of bacterial meningitis have declined sharply in recent years, but immunizations are not available for the viral type of this infection. Because meningitis is an infection of the lining of the brain and spinal cord, the sense organs of hearing and balance are especially sensitive to this infection.

It is clear that non-genetic hearing loss can result from a wide variety of illnesses and problems at birth. Medical professionals depend on a careful review of birth information to help them identify non-genetic hearing loss.