Infant hearing loss is one of the most frequent disorders at birth, with an estimated 17 babies born with hearing loss every day in South Africa. Approximately 6 babies in every 1 000 live births in developing countries will present with a significant bilateral hearing loss. If milder losses are included, this figure increases markedly. Unfortunately the invisible nature of the condition makes it undetectable by clinical examination and it only becomes apparent once secondary symptoms such as delayed speech and language or behavioural problems appear. These are often exacerbated by inappropriate advice to ‘wait and see’ by clinicians who are unaware of the critical window of opportunity for spoken language acquisition, which must be accessed in the first 12 months of life.

The devastating effects of undetected infant hearing loss, of any degree, must be understood in the light of the critical first few months of life when an infant absorbs and assimilates language from the environment. Any hearing loss that is not detected and does not receive intervention within the first year of life may result in significant and persistent delays in language development. As language is the cornerstone of literacy and academic performance, children with late-identified hearing loss are restricted to limited educational and vocational outcomes. Although the condition is not life threatening, those affected by it face limited opportunities, isolation and stigmatisation during their entire lives, while societal costs are significantly greater owing to increased educational costs, loss of income, and limited contribution to the economy. Fortunately, if infant hearing loss is identified early and followed up by timely intervention children can have outcomes on a par with those of their hearing peers. Studies have demonstrated that intervention in the form of amplification with hearing aids or cochlear implants, followed by family-centred early intervention services initiated within the first 6 - 9 months of life, leads to significantly better outcomes compared with late-identified children who exhibit persistent delays in language, speech and socio-emotional development. Therefore, screening newborns for hearing loss has been implemented as standard of care in countries such as the USA and UK where close to 95% are screened before discharge from hospital.

South African estimates indicate that fewer than 10% of newborns have any prospect of being screened for hearing loss, which translates to 15 babies born with hearing loss every day who will be sent home without parents or professionals aware of the babies’ condition. Risk factors may give an indication of children who are at risk of permanent hearing loss in 50% of cases. Common risk factors include: family history of permanent childhood hearing loss; admission to neonatal intensive care unit for more than 5 days; in utero infections (cytomegalovirus, herpes, rubella, syphilis, and toxoplasmosis); any craniofacial anomaly, especially those related to the ear or temporal bone; physical findings associated with a syndrome known to cause hearing loss; neurodegenerative disorders; meningitis; head trauma; and chemotherapy. In addition to these risk factors it is important to recognise that any concern by a caregiver with regard to a child’s hearing, speech, language, or delayed development warrants immediate attention and referral for screening or assessment with regard to hearing.

The only reliable means to screen hearing in newborns and young infants is by way of two electrophysiological techniques – otoacoustic emissions (OAEs) and auditory brainstem responses (ABRs). OAEs entail a single probe inserted into the ear canal, measuring the active properties of the outer hair cells in the cochlea as low-level acoustic signals. ABRs require a probe in the ear and three electrodes placed on the scalp to measure the change in electroencephalographic signals in response to sound. Automated devices are available that can provide a pass or refer response in less than 1 minute. If an infant is referred for a screening test or a physician or health care professional is concerned about the child’s hearing, a referral should be made to an audiologist for a diagnostic hearing assessment to determine the type, degree, and configuration of hearing loss. If a medical condition of the ear, such as otitis media, is suspected a referral to an ENT specialist should be made.

Intervention for infants with hearing loss aims to provide access to auditory input through amplification devices as soon as possible. These may include hearing aids fitted to match the unique hearing loss of the child, or in cases of severe to profound hearing loss a cochlear implant that electrically stimulates the auditory nerve in response to sound. This process must be accompanied by and followed up with family-centred communication intervention by trained interventionists (e.g. speech therapists or early interventionists) who assist parents to facilitate auditory skills and language development for their child.

The combination of 21st century technology and dedicated family-centred early intervention has made it possible for infants with hearing loss to access the hearing world and to have equal opportunities and outcomes compared with their hearing peers. Prompt referral and early identification is the first step to ensuring these outcomes – it is never too early for a hearing test, but it may be too late.

References