

Rates of Neonatal Hearing Screening Referrals Based on Test Time

Annelie Tjernlund*

Department of Laboratory Medicine, Karolinska Institutet, Sweden

Editorial

Bilateral hearing loss is a frequent problem in neonates, affecting 1–3 out of 1,000 healthy babies and 2–4 out of 100 babies in the Neonatal Critical Care Unit (NICU). The peripheral auditory organs are fully established at birth, but it takes 2–3 years for the auditory cerebral cortices to develop through sound stimulus. Regardless of hearing rehabilitation, the brain's plasticity declines beyond this period, and language development is limited. To ensure good hearing development and rehabilitation, it is advised that all infants undergo New-born Hearing Screening (NHS) utilising an Automated Auditory Brainstem Response (AABR) test or an Otoacoustic Emissions (OAEs) test within one month of birth. Following NHS, new-borns who are referred for additional examination of one or both ears should have a confirmatory hearing test within three months of birth, and hearing impaired new-borns should get early intervention by six months of birth.

Between 34 weeks of pregnancy and 1 month after birth, NICU and premature babies should be checked for hearing. Screening should be done within 24–72 hours of birth and promptly before discharge in healthy new-borns. The presence of residual birthing debris and middle ear exudates in the ear canal shortly after birth can lead to false positive NHS results. Screening should be delayed for at least 24 hours, especially in new-borns born via caesarean section, to allow ear canal material to clear. New-borns who do not pass the first-step NHS should have a second-step screening at least 12 hours later for the OAEs test and several hours later for the AABR test in a two-stage NHS. Within one month of delivery, a second-step screening should be performed.

Within three months of launching such a programme, the referral rate should be kept below 8% for NHS quality control.

The referral rate should be kept below if second-step tests are performed in an outpatient department after discharge. Identifying the right NHS timing will result in a reduced, more consistent referral rate, saving time and money on unneeded screening and confirmatory hearing tests. This may also lower the number of new-borns who are referred for additional diagnostics, easing parental or caregiver worry. The anxiousness of their parents or caregivers is reduced as a result of the testing. In general, as the incidence of hearing loss rises, so does the referral rate. Indeed, NICU kids with a high incidence of hearing loss have a referral rate of 2.8–9.2 percent, which is significantly greater than that of healthy babies.

One study found a lower referral rate for NICU babies (2.8 percent), which was due to the earlier testing time for NICU kids in that study (13 days after delivery), compared to other studies' testing times. Determining the best time to screen NICU neonates can reduce false-positive and false-negative results, as well as improve the identification of new-borns with hearing loss, without incurring additional costs or causing concern among caregivers. The goal of this study was to determine the best time for NHS based on an analysis and comparison of referral rates according to screening scheduling in order to achieve consistent and low referral rates. There was a substantial difference in referral rates between healthy babies and new-borns admitted to the NICU for 5 days based on the time from birth to NHS. NHS should be performed at 2–20 days after delivery in healthy kids (resulting in a referral rate of 1–4%) and at 5–31 days after birth in NICU babies (resulting in referral rates of 2.9–5.7%) to reduce the referral rate to an adequate level.

How to cite this article: Tjernlund, Annelie. "Rates of Neonatal Hearing Screening Referrals Based on Test Time." *J AIDS Clin Res* 12 (2021): 864.

*Address for Correspondence: Annelie Tjernlund, Department of Laboratory Medicine, Karolinska Institutet, Sweden, E-mail: anelie.tjnlund@ki.se

Copyright: © 2021 Tjernlund A. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received 11 September 2021; **Accepted** 16 September 2021; **Published** 21 September 2021