



## Otoacoustic Emission (OAE) Screening

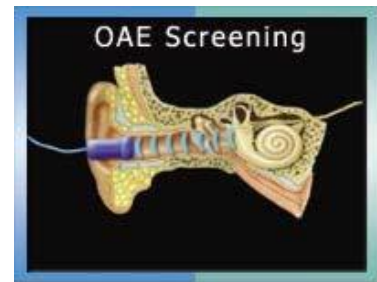
Otoacoustic emissions (OAE) hearing screening is used widely in hospital-based newborn hearing screening programs and represents a significant advance for screening young children. This method screens hearing in a range of sound frequencies critical for normal speech and language development in young children. A portable OAE screening device is the most practical method for screening infants and toddlers because it:

- Does not require a behavioral response from the child
- Can help to detect sensorineural hearing loss and call attention to hearing disorders affecting the pathway to the inner ear
- Is quick and painless
- Can be conducted by anyone who is trained to use the equipment and is skilled in working with children.



### The OAE Screening Procedure

The procedure is performed with a portable handheld screening unit. A small probe is placed in the child's ear canal. This probe delivers a low-volume sound stimulus into the ear. The cochlea responds by producing an otoacoustic emission, sometimes described as an "echo," that travels back through the middle ear to the ear canal and is analyzed by the screening unit.



In approximately 30 seconds, the result is displayed on the screening unit as a "pass" or a "refer." Otoacoustic emissions (OAE) screening can help to detect sensorineural hearing loss occurring in the cochlea. It can also call attention to hearing disorders affecting the pathway to the inner ear.

### Why is Hearing Screening Important?

A mild to moderate hearing loss is hard to observe or understand. Children with a mild to moderate hearing loss that is undetected or untreated may develop not only articulation errors in their speech (pronounce words incorrectly) but also may have language development problems such as learning past tense or plurals.

A person with a mild to moderate loss has so much hearing. What are they missing?

Soft sounds are hard to detect, primarily voiceless sounds such as p, t, k, s, h, th, sh.

The consonants carry the information of language. If you could not hear the sounds listed above how could you tell the difference among:

- |   |        |
|---|--------|
| • Hat   | • sat  |
| • cat (c in this word is the same sound as k) | • that |
|   | • pat  |

In addition some words in certain languages might not always be clear. For example "ed" at the end of a word to indicate past tense is really pronounced as a "t." The "s" at the end of a word to indicate plural would not be heard.