

Screening Protocol:

The Michigan Hearing Screening Program is a three-stage process designed to identify children with hearing loss and/or middle ear dysfunction. Most of the children screened are between 3 and 12 years of age. Over 475,000 children are screened each year in the following way:

STAGE I: Using a pure tone audiometer, a preliminary screening is performed at the frequencies of 1000, 2000 and 4000 Hertz (Hz) at the intensity levels of 20, 20 and 25 decibels hearing level (dBHL) respectively, in each ear. A child passes the screening by responding appropriately to each of the six pure tones. Any child who fails to respond appropriately to any one of the tone presentations is referred for Stage II screening. For children younger than 3 years of age, otoacoustic emissions (OAE) may be performed (if available).

STAGE II: Children referred from Stage I receive a more detailed screening approximately 4 weeks after the initial referral is made. This screening requires the child to respond to 250, 500, 1000, 2000, 4000 and 8000 Hz at the levels of 30, 25, 20, 15, 25 and 40dBHL respectively, in each ear. A child responding appropriately to all of the test tones is considered to be no longer at-risk for hearing loss. If the child fails to respond to just one stimulus presentation, an audiogram (threshold test) is immediately conducted for the octave frequencies 250 through 8000 Hz in each ear. Unmasked bone conduction thresholds are also obtained at 250, 500, 1000, 2000 and 4000 Hz.

STAGE III: This is the medical referral and final stage of the screening process. Parents of children with audiograms meeting referral criteria are notified by the local health department to consult with a physician concerning their child's hearing status. The parents may opt to: 1) attend a **free** local health department otology clinic 2) consult with their own physician; or 3) review options with local department staff for other means of follow-up. Children's Special Health Care Services (CSHCS) plays an integral role in this stage of the hearing screening. Funding for possible diagnostic service and subsequent financial assistance for a covered diagnosis may be possible through the program.

Referral Criteria:

The local health department hearing technicians utilize the following criterion when making a medical referral based on audiometric results. They are:

1. The first criterion is based upon air conduction thresholds. The technician refers a child to Stage III if TWO frequencies of the same ear are worse than the following intensity levels:

<u>250 Hz</u>	<u>500 Hz</u>	<u>1000 Hz</u>	<u>2000 Hz</u>	<u>4000 Hz</u>	<u>8000 Hz</u>
30 dBHL	25 dBHL	20 dBHL	15 dBHL	25 dBHL	40 dBHL

2. The second criterion is based upon the significance of bone conduction. The technician refers a child to Stage III when bone conduction thresholds are better than the better ear air conduction thresholds by at least the differences indicated:

<u>250 Hz</u>	<u>500 Hz</u>	<u>1000 Hz</u>
15 dBHL	15 dBHL	10 dB HL

3. The third criterion is based upon a significant difference between air conduction thresholds in each ear. The technician refers a child to Stage III when the *pure tone average* for each ear at 500 Hz, 1000 Hz, and 2000 Hz differ by 10dB or more. The technician considers this method only when the child's thresholds do not meet the first two criteria.
4. Technicians may occasionally encounter children who fit neither the typical normal pattern, nor meet established medical referral. The technician's concern is often alerted by a minor audiometric variation in combination with other facts such as a history of ear problems, observed ear distress, or teacher reports hearing loss/ear disease. These factors can be used in combination or isolation for a special medical referral collectively designated as "**History**".

This brief explanation may not fully answer all questions relative to the Michigan Hearing Screening Program. Please contact your local health department if you have specific issues or concerns to discuss.