SCREENING PROCEDURE FOR THE SCHOOL NURSE

Test Frequencies in Cycles Per Second	Screening Level In Decibels
1000 Hz	25 dB
2000 Hz	25 dB
4000 Hz	25 dB

Set the Frequency selector dial at 1000 Hz and the hearing level dial at 50 dB. Depress the interrupter switch, introducing the tone for one-to-two seconds and then release it, taking care not to allow it to spring back suddenly.(7) Present the tone one or two times at 50 dB to orient the child and to assure a response to the correct signal. Once you have received the desired response (hand raised), set the hearing level dial at the chosen screening intensity setting for the remainder of the screening test. Complete the sweep-screening test in the following manner:

Test the right ear at 1000, 2000 and 4000 Hz.
Switch the tone to the left ear, leaving the frequency selector dial at 4000 Hz.
Test the left ear at 4000, 2000 and 1000 Hz.
Record the results and dismiss the child.

If the child fails to respond to any tone at the screening intensity, you should immediately perform the first threshold test.

Make sure, in operating the interrupter switch that you do not fall into rhythmical patterns. Some children will perceive this rhythm and will respond, even though they do not hear the test tone. The pattern of tonal presentations should be irregular; that is, one time the interrupter switch may be off for several seconds and the next time it may be depressed almost immediately after it has been released. In any event, the child should not be able to predict the next presentation of the tone. Information regarding the validity of a child's responses is obtained by noticing how promptly the child becomes aware of the presence of the tone, and also how promptly he indicates that the tone is inaudible. Sometimes a child will continue to respond after you have released the interrupter switch. If the child's responses are inconsistent in either of these ways, it may be necessary to rephrase the instructions. Make certain the child understands that he is to signal as soon as he thinks he hears the tone and to keep signaling as long as the tone is present. Even with the repetition, there will be some children whose responses pose a problem in interpretation. In such cases, the tester must note on the audiogram that the child's responses were not consistent and/or any other conditions that may have adversely affected the test results.

Avoid the following errors:

- ***DO NOT LET THE CHILD SEE YOU OPERATE THE INTERRUPTER SWITCH.***
- ***DO NOT "LOOK UP" EACH TIME YOU PRESENT THE TONE.*** A child will soon associate your head or eye movements with the presentation of the tone and will begin to respond to these movements.

[7] Care must be taken to pause between each presentation of a frequency and each adjustment of the intensity. Changes in these controls should be made only while the interrupter switch is in "off" position. This will prevent the child from hearing and responding to switching noise that may be introduced into the earphones while the interrupter switch is in the "on" position. (cont'd)

Special procedures used to screen exceptional children are discussed later in this manual. Procedures to screen pre-school children can be obtained through the Child Health Disability Prevention (CHDP) program by attending an audiometric workshop. Please contact your local CHDP office.

PASS – FAIL CRITERIA

A child is considered to have "failed" the screening test if they fail to respond to any one of the test frequencies at the screening intensity in either ear.

Children "failing" the sweep screening test should be given a threshold test immediately **AT THE FAILED FREQUENCIES ONLY**. The second threshold test should occur two-to six weeks after the first test.

THRESHOLD TEST PROCEDURE

Remember, ***the first threshold test is used only to confirm the screening results. If the child responds to all of the previously failed frequencies at 25 dB, a second threshold test will not be required***. The same mode of response (hand raised) will be transferred from the screening test to the threshold test.

The procedure for determining threshold is the same for all frequencies. Start with the frequency selector set at a failed frequency and the hearing level dial at 40 dB. Depress the interrupter switch, introducing the tone for one-to-two seconds, and then release it taking care not to allow it to spring back suddenly.

If the child does not respond, increase the intensity 10 dB and present the tone again. If necessary, continue to increase the intensity in 10 dB steps until the child responds. At that point, increase the intensity an additional 10 dB to be absolutely certain that the child is able to hear at that level.

Whenever a difference of 40 dB or more exists between the ears in several frequencies, it is wise to refer the child immediately for an audiological evaluation. An audiometrist's role is to discover individuals with suspected hearing problems. An audiometrist, however, has the prerogative of suggesting to the physician the need for more detailed audiological testing. Generally, such testing should be accomplished through the school audiology program or at an audiological clinic.

Avoid spending a great deal of time on the test. The beginner usually makes the mistake of spending too much time in an effort to obtain the best possible thresholds for the subject. By prolonging the test, the audiometrist is only defeating the purpose of obtaining accurate results. It is preferable, therefore, to proceed through a test as quickly as accuracy will permit.

Threshold testing is very tiring to a child. Fatigue and all of its manifestations must be taken into account during a test, as they will affect reliability and validity. If the child becomes fatigued and you suspect he will "quit" before you complete the test, reschedule the testing for another time.

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FAIL – REFERRAL CRITERIA

A child is considered to have "failed" the threshold test and referred for a medical/audiological examination if either or both of the following criteria are met;

- A hearing level of 30 decibels or greater for two or more frequencies in an ear at 500, 1000, 2000 Hz, or a hearing level of 40 decibels or greater for any ONE of the frequencies tested, 500 through 4000 Hz on two threshold tests competed at an interval of at least two weeks and no more than six weeks;
  or
- There is evidence of pathology, e.g., an infection of the outer ear, chronic drainage or a chronic earache

A child with a partial or complete impairment in the speech range functions under adverse listening conditions. That is, the majority of speech sounds (vowels and consonants) that make up words are composed of frequencies in the range 500-4000 Hz. A hearing loss of 30 dB and greater in the frequency range will interfere with the normal development of speech and language. The outcome is a breakdown in communicative ability. As a result, the child's language development, school achievement, as well as his emotional and social adjustment, are jeopardized.

Keep in mind that "normal hearing" is a statistical concept and represents a range of hearing, rather than a single level. The Zero Hearing Level on the dial of the audiometer represents the <u>average</u> threshold level of a particular segment of the general population. Since this is a statistical concept and represents a restricted sample of the population, normal hearing is considered to include minor deviations above and below the zero reference. Consequently, a person's hearing is considered normal if his screening threshold level does not exceed 25 dB at the test frequencies.

In summary, the testing sequence is as follows:

1. Administer a sweep-check screening test.
2. Administer an individual threshold test, immediately following the sweep test to those children who fail the screening test.
3. Administer a second threshold test at an interval of at least two weeks, and no more than six weeks, to those children who fail the first threshold test.
4. Refer those children who meet referral criteria on the threshold test for medical/audiological examination.

THE CHOICE OF A TESTING ROOM

It is advisable to inspect the testing site prior to the time of testing for the purpose of selecting an appropriate room. This will probably necessitate an extra trip to the schools in your area. However, this can save time on the screening day and will, in the long run, help hold down program costs.

The first consideration in selecting a room is the level of noise in and surrounding the room. Secondary considerations are size and location. The testing room must be as quiet as possible and as remote from the street traffic, shop classes, locker rooms, restrooms, band or vocal music rooms, cafeterias, and hall traffic as the design and location of the building will allow. Noise from these and other sources may affect your testing results to the point of invalidating them. The quietest rooms in a school are usually located on the side away from the street traffic. An acoustically treated music room is an ideal location for testing.