3. PRE-SPEECH-AUDIOMETRIC TESTS OF HEARING : DETECTION AND ASSESSMENT OF DEAFNESS.

The word 'detection', originated from the Latin Verb 'detegere', means 'to discover the existence or presence of' and the 'assessment' comes from the Latin Verb 'assessare', and stands for 'to estimate the value of'. Detection and assessment of deafness are made with the help of some audiological testings. There are many types of hearing testings: Some old and many new, some crude and some very refined and elaborate, some intended for screening and other designed for diagnosis. Here the technique and precautions for these tests are being discussed in a very abridged form as the present thesis is not a 'cookbook of audiometry'. Before going to discuss on speech audiometry, it is necessary to discuss the tests followed in the developed countries for screening and diagnostic purpose. In India still such screening and diagnostic tests are rarely methodically followed owing to various reasons.

Here some basic informations are given to understand the results of these hearing tests. It is known that the sound is always the result of vibration. There are many different sounds: low sounds and high sounds, loud sounds and soft sounds. The pitch or frequency of a sound depends upon the rate or frequency of vibration. If there are only a few vibrations within one second, a very low sound will be heard. The greater the
vibrations are produced within one second, the higher the frequency or pitch of the sound will be.

Since sound is the result of vibrations, its loudness depends upon the strength or the power which creates the vibration. The power is measured in decibel (dB). To simplify the matters, it can be said that a decibel (dB) is the power of the faintest sound that can be heard by the average normal ear. A normal conversational voice in a quiet room at a distance from about one metre has the power of about 60 decibels, a whisper of about 30 decibels and a shout of about 90 decibels.

Speech sounds range from a frequency of 125 vibrations or cycles per second (125 Hertz or 125 Hz) up to at least 8000 vibrations or cycles per second (8000 Hertz or 8000 Hz). All sounds, including speech sounds, are in fact not the result of a single vibration, but of group of vibrations. Among the Speech sounds, the main components of vowel sounds lie between 125 Hz and 2000 Hz, the voiced consonants between 1000 Hz and 3500 Hz and the unvoiced consonants between 2500 Hz and 8000 Hz approximately.

In order to be able to understand an audiogram, two terms need to be known, namely threshold of hearing and threshold of discomfort. The faintest level of sound, which a person can hear, is called the threshold of hearing. The level can be very slightly
even among people with normal hearing. The minimum level of intensity at which a person begins to experience discomfort is called threshold of discomfort. It is considered to be about 120 dB or so. The threshold of hearing of a deaf person will certainly vary from the normal threshold of hearing and in case of some deaf persons the threshold of discomfort begins at lower intensities.

3.A. SCREENING TESTS OF HEARING

It is now widely accepted that it is advantageous to detect sensory handicap as early in life as possible. In no handicap could this be more important than in hearing impairment where failure to detect may result in massive language deficit and damage to the child's developing personality. The child fails to hear and therefore fails to develop understanding and ultimately fails to learn to talk. The most effective means of detecting deafness in very young children is a screening test of hearing. The aim of such type of test is to identify children with impaired hearing without actually measuring their levels of hearing or determining the nature of any hearing problem. The types of screening tests followed are described here:

i) DISTRACTING TESTS:

Distracting tests are such in which the child responds by locating the sources of sounds made whilst he is occupied
in play. These tests are used with children from the age of about 7 months. The test sounds are made to the left and right sides of the child's head, outside his range of vision and at a distance of about a metre. For low pitched sounds, hearing is tested by very quiet voiced sound, such as vowel 'oo' rhythmically presented and to test high frequency range a high frequency rattle or the consonant 's' - rhythmically presented.

ii) CO-OPERATIVE TESTS:

Co-operative tests are such in which the ability to discriminate very quiet speech is tested. This type of tests is used with children from the age of about 16 months when comprehension of speech should be developing. The tester joins in play with the child and begins to ask simple questions requiring action from the child, e.g., 'show me dolly's shoe'. He then asks similar questions in a very quiet voice at a distance of one metre on both left and right sides. Hearing for high and low pitched sounds is tested by the distracting techniques, but in addition, the child's ability to locate sounds at a distance upto 4 metres is tested.

iii) PERFORMANCE TESTS:

Performance tests are such in which the child is encouraged to respond to the test sound by performing some simple activity,
perhaps taking a brick out of a box can frequently be used with children from the age of 2½ years. The procedure is first demonstrated to the child by the tester along with an assistant or the child's mother. The tester says, "See, what Mummy is going to do." "Take a brick out, Mummy." When the child learns to cooperate, the tester moves to a distance of one and a half metres from one ear of the child and utters the direction in a just audible voice. After that, the opposite ear is tested in the same way. Hearing for the high pitched consonants is then assessed. The tester then utters a fairly loud 'S' sound and on hearing this the mother takes a brick out of the box. When the child learns the procedure, the tester uses the 'S' sound loudly at first, then dropping to the quieter and then the quietest possible level and tests each ear of the child under test at a distance of one metre.

The greatest advantages of screening tests, their speed and effectiveness, enables a large number of children to be tested quickly and economically.

iv) SWEEP FREQUENCY TEST:

There is another type of screening test which is called Sweep-Frequency-Test. For the children from the age of about 5 years, this type of screening test may be carried by a pure-tone audiometer. In this test the screening level is usually
set at 25 dB and the child, to pass the test, must respond on each ear at any six of the following frequencies: 250 cps, 500 cps, 1000 cps, 2000 cps, 4000 cps, 6000 cps and 8000 cps. For young children, it is best to allow the child to respond by some simple activity, e.g., by putting a marble onto a board each time he hears a test sound. The test is begun at a level and frequency which the child may be expected to hear easily (above 60 dB at 1000 cps). The level is reduced at 60 dB, then to the screening level (25 dB) and a test-sound is given at that level at each of the chosen frequencies.

The criteria for validity of screening tests are as follows:

1) All with normal hearing should pass ________ no false negatives.

2) Children with hearing impairment should fail ________ no false positives.

3) All sound levels when testing should be minimal.

4) Test material should be appropriate to the age and capacity of the child.

5) Test should be solely a test of hearing ________ responses should not include skills that may not be possible for the child.
6) The test should be brief and easy to do _______ economical on time.

7) Decision for pass and fail should be simple and swift.

A child who fails the first time is tested as soon as possible for the second time. If he fails this time, the child is referred for diagnostic tests.

In India, the works on early detection and assessment of deafness due to enormous problems are negligible. But at present the early detection of hearing impairment is given a greater importance and priority than ever before. It can lead to preventive education for many a child afflicted by deafness. The pre-requisite for this, however, is very early detection and early education must begin right after then, without further delay. So, attempt of finding the children with hearing problem early at pre-school stage at least should be accelerated. A pilot programme on screening test of hearing was conducted by a team of specialists in the year, 1992. The writer of this thesis was also a member of this team as an educator of the deaf. The reports of the programme are placed here:

SCREENING TEST OF HEARING ... ... ... ... ... ... No.1.

1. Name of the school : IDEAL K.G. SCHOOL
2. Address of the school : Raja Rajballav Street, Calcutta - 700 003.
3. Period of testing : 3.4.1992 to 10.4.1992 (8 days)
4. Number of the Students tested : 71 (Seventy one)
5. Average age of the students : 4½ years
        b) PAEDIATRIC SCREENING AUDIOMETER (KAMPLEX-PA - 2)
7. Noise Level : 40 dB (A)
8. Input Range : 30 dB (MAX.) in 500 HZ. & 4 KHZ.
9. Result : Out of 71 students - 4 students named -
           a) Priyanka Gupta (Age 4½ yrs.)
           b) Manu Khemka (Age 2½ yrs.)
           c) Sandip Jain (Age 4½ yrs.)
           d) Monoj Bhattacharya (Age 3½ yrs.)
           - failed to respond twice to the sound stimuli.

SCREENING TEST OF HEARING ......................... No.2.

1. Name of the school : BARNAPARICHAYA K. G. SCHOOL
2. Address of the school : Bhupen Bose Avenue, Calcutta - 700 005.
4. Number of the students tested: 32 (Thirty two)

5. Average age of the students: 4½ years

6. Equipments used:
   a) SLM-3, BS-5969, TYPE-2 (KAMPLEX)
   b) PAEDIATRIC SCREENING AUDIOMETER (KAMPLEX-PA-2).

7. Noise Level: 40dB (A)

8. Input Range: 30 dB (MAX.) in 500 HZ & 4 KHZ.

9. Result: Out of 32 students -
   2 students named -
   a) Tushi Bhawal (Age 4 yrs.)
   b) Surojit Kundu (Age 3½ yrs)
   - failed to respond twice to the sound stimuli.

After screening out the above six children who did not react to the test stimuli as expected, the parents of those children were advised to go to the audiologist for proper diagnosis and assessment of their children's hearing acuity.

3.B. DIAGNOSTIC TESTS OF HEARING

In this section, only the assessment of impaired hearing can be considered. The purpose of diagnostic tests is to assess the extent of the auditory handicap in terms of -
(a) Intensity and frequency (the important measure is the difference between the subject’s hearing and the normal hearing at frequencies within the speech range).

(b) Capacity for speech discrimination indicated, in many cases, indirectly by means of puretone audiometry and measured directly by means of speech tests of hearing.

(c) Possible differences between hearing levels for air-conducted and bone-conducted sounds.

For children who are too young or immature to be able to take part in pure-tone and formal speech tests, much information can be gained by using the procedures outlined for the screening tests of hearing of young children. This information will be much precised if a Sound Level Meter (SLM) is available to measure the intensity of the sounds to which the child responds.

For the children who are not sufficiently mature to cooperate in tests, distracting-techniques are used, but the intensity of the test sounds is varied and the lowest level of which the child responds is noted. This is done for sounds of different frequencies. For this purpose pitch pipes which have relatively specific frequency ranges are most valuable.

The performance methods can be employed even for very young children with impaired hearing, provided that the procedure
is clearly demonstrated, laying special emphasis on first allowing the child to learn thoroughly what he is required to do by means of vision along with his residual hearing. Again the lowest level at which the child responds to a particular sound is noted.

Particular attention is given to the child's development of understanding of speech. If the child has sufficient understanding to follow simple directions, the intensity level at which he is just able to follow is noted.

A child, who has learnt the performance test procedure, particularly if a pitch pipe has been used, will very quickly be able to carry out a pure-tone audiometric test.

3.C. PURE TONE AUDIOMETRY

A pure-tone test is the most common measure of hearing. Its purpose is to determine the minimum level of intensity that a person requires in order to experience a sensation of sound. Typically, the person being tested wears headphones through which the tones are delivered. On hearing a tone the person signals to the tester that the tone is audible. If the person has a hearing level of 60 dB on the signal level dial of an audiometer for a particular frequency his hearing is 60 dB worse than the normal hearing. The results of the pure-tone audiometric hearing test are recorded on a form known as

18
"AUDIOGRAM". This form comprises a horizontal axis corresponding to the reading to the signal level dial of the audiometer. The threshold of hearing for each test tone is simply read off the signal level dial of the audiometer and recorded on the audiogram form. An "O" (red colour) and an "X" (blue colour) are used to denote results of the right ear and the left ear respectively. Once the air conduction audiogram has been obtained, the tester should proceed to bone conduction audiometry. The test is similar to that used with headphones excepting the fact that the signal transducer, which is a small bone oscillator, is placed on the mastoid bone behind the ear tested. If a person displays a loss for air conduction and normal hearing for bone conduction, the conclusion drawn would be that the inner ear pathway is normal and that the problem lies somewhere along the conductive pathway of the ear. This would be termed as "CONDUCTIVE HEARING LOSS". If a person displays an equal loss for air and bone conduction, the conclusion to be drawn would be that there must be damage in the inner ear pathway and the conductive pathway must be normal. This would be termed as "SENSORI NEURAL HEARING LOSS". If a person displays a loss for both air and bone conduction with a more significant loss for air conduction, a "MIXED HEARING LOSS" would be concluded.

Pure tone audiometry is the basis for any audiological assessment. It reveals the degree and type of loss. It facilitates
the decision as to the need for further tests or medical intervention. The knowledge of pure tone audiometry gives way to the development and standardization of further tests, such as SISI, ABLB etc. The process of pure tone audiometry is uncomplicated and easily administered. Identification of the stimulus by the listener presumes a relatively simple neural apparatus and the response usually raising the hand is not complex one.

Inspite of having such advantages pure tone audiometry also has many limitations. It serves the possibilities but not realities. It helps in estimation only. Pure tones are not common in everyday life situation. Speech sounds are more meaningful. It reflects the critical activities of life and the comprehension of Social Communication. The conventional pure tone proceedings fail to provide any information about a person's ability to hear above the threshold. Ability to perceive pure tones does not require any psychic integration or synthesisation. Thus the results are inadequate in the diagnosis and differential diagnosis of various auditory disorders. One of the major purposes of Pure Tone Adiometry is to help to define the nature of a subject's hearing problem in each ear. By conducting pure tone audiometry at a diagnostic level we can get various categories of hearing loss as such:
### VARIOUS CLASSIFICATIONS OF DEGREE OF HEARING LOSS

<table>
<thead>
<tr>
<th>Average percentage loss in better ear at 500, 1000 &amp; 2000 cycles</th>
<th>American Academy of Ophthalmology and Otolaryngology</th>
<th>Newby</th>
<th>Berg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>&quot;Not Significant&quot;</td>
<td>&quot;No Classification&quot;</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>&quot;Slight&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>&quot;Mild&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>&quot;Marginal&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>&quot;Moderate&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>&quot;Moderate&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>&quot;Severe&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For diagnostic purpose the writer examined some subjects, results of which are being given here.
1. Name: Saumyadip Das (Male/Female)  
2. Case No.:  
3. J. Age.: 4 yrs.  
4. Name of the Institute: Parents' Own Clinic  
5. Date of Testing: 2.1.93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005  
7. Sound Level of the Testing Room: 25 dB(A)  

**PURE TONE AUDIOGRAM**

A) INSTRUMENT USED: P.T. Audiometer MK-I S.-500 (ARPHI)  
B) HASKING DETAILS: X

**ASSESSMENTS**

1. P.T.A.:  
   - Left Ear: 78 dB  
   - Right Ear: 73 dB

2. Preliminary findings of O.L.L.:  
   - Left Ear: 118 dBSPL  
   - Right Ear: 116 dBSPL

3. Type of Deafness: Bilateral Sensory-Neural Type of Deafness.

4. Category of hearing loss: Severe to Profound hearing loss in the Left Ear and Moderately severe hearing loss in the right Ear.

5. Nature of Curve: Quite flat response curve in both the ears.

6. Frequency range: Wider frequency range in both the ears.


8. Retro-Cochlear Lesion: X / Cochlear lesion: √

**REMARKS**

* Advised to use a high-power hearing-aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing-aid should be selected at 120 dBSPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume-control and automatic volume control systems of the aid.

* Recommended for Speech-Discrimination Test by using the Bengali Picture Name matching cards, prepared for this test.

22
1. Name: Jyoti Sarkar (Male/Female: Male)  
2. Case No.: PT2  
3. Age: 3 yrs.  
4. Name of the Institute: Own Clinic  
5. Date of Testing: 2.1.93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.  
7. Sound Level of the Testing Room: 35 dB(A)  

*** P U R E T O N E A U D I O G R A M ***

A) INSTRUMENT USED: P.T.Audiometer MK-I S-400 (ARPHI)

B) HASKINS DETAILS: X

FREQUENCY IN KHZ

ASSESSMENTS

1. P.T.A.  
   : Left Ear: 103 dB  
   : Right Ear: 103 dB

2. Preliminary findings of O.L.L.  
   : Left Ear: 128 dBSPL  
   : Right Ear: 126 dBSPL

3. Type of Deafness  
   : Bilateral Sensory-Neural Type of deafness.

4. Category of hearing loss  
   : Severely profound hearing-loss in both the Ears.

5. Nature of Curve  
   : Mid-Falling - response-curve in both the ears.

6. Frequency range  
   : Narrow frequency range in the Left Ear and Wider frequency range in the Right Ear.

7. Vibro-Tactile Responses  
   : Present.

8. Retro-Cochlear Lesion  
   : X / Cochlear lesion: √

REMARKS

* Advised to use a high-power hearing-aid with A.V.C. system along with 'V' cord and two receivers. Out-put the hearing aid should be selected at 130 dBSPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume-control and automatic volume control systems of the aid.

* Recommended for Speech-Discrimination Test by using the Bengali Picture-Name matching cards, prepared for this test.
1. Name: Sumon Mondal
   (Male/Female) 2. Case No.: PT3
3. Age: 3 yrs.
4. Name of the Institute: Parents' Own Clinic
5. Date of Testing:...
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35 dB(A)

**************************
PURE TONE AUDIOGRAM

A) INSTRUMENT USED: P.T. Audiometer MK-I S -500 (ARPHI)

B) HANDLING DETAILS: X

REMARKS
* Advised to use two separate high power hearing aids with A.V.C. system one for right ear and other for left ear. Output of the hearing aids should be selected at 130 dB SPL (very close point to the optimum listening level) for the right ear and 115 dB SPL (very close point to the optimum listening level) for the left ear by adjusting volume control and automatic volume control system of the aids.
* Recommended for Speech-Discrimination Test by using the Bengali Picture-Name matching cards, prepared for this test.
1. Name: Suman Ghosh (Male/Female)  
2. Case No.: PT 4  
3. Age: 3½ yrs.  
4. Name of the Institute: Parents' Own Clinic  
5. Date of Testing: 5.1.93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.  
7. Sound Level of the Testing Room: 35 dB(A).

***************  
PURITY TONE AUDIOGRAM  

A) INSTRUMENT USED: P.T. Audiometer  
MK-I S -500  
(ARPHI)  

B) HASKING DETAILS: X  

--- FREQUENCY IN KHZ ---

--- ASSESSMENTS ---

1. P.T.A.  
: Left Ear: 103 dB  
: Right Ear: 105 dB.

2. Preliminary findings of O.L.L.  
: Left Ear: 126 dB SPL  
: Right Ear: 128 dB SPL.

3. Type of Deafness  
: Bilateral Sensory-Neural type of deafness.

4. Category of hearing loss  
: Severe to Profound hearing loss in both the ears.

5. Nature of Curve  
: Sloping-response curve in both the ears.

6. Frequency range  
: Narrow frequency range in both the ears.

7. Vibro-Tactile Responses  
: Present.

8. Retro-Cochlear Lesion  
: X / Cochlear lesion: ✓

--- REMARKS ---

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 130 dB SPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for speech discrimination test by using the Bengali Picture Name matching cards, prepared for this test.
1. Name: Anurupa Ghosh
2. Preliminary findings of O.L.L.
3. Type of Deafness
4. Category of hearing loss
5. Nature of Curve
6. Frequency range
7. Vibro-Tactile Responses
8. Retro-Cochlear Lesion

---

**REMARKS**

* Advised to use a high-power hearing aid with A.V.C. system along with 'Y' cord and two receivers. Output of the hearing aid should be selected at 120 dB SPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for speech Discrimination Test by using the Bengali Picture name matching cards, prepared for this test.

**REMARKS**

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 120 dB SPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for Speech Discrimination Test by using the Bengali Picture Name matching cards, prepared for this test.
1. Name: Shilpi Bhattacharya (Male/Female: Female) P.T. 7
2. Case No.: 2
3. Age: 3 yrs.
4. Name of the Institute: Parents' Own Clinic
5. Date of Testing: 8.1.93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005
7. Sound Level of the Testing Room: 35 dB(A)

REMARKS
* Advised to use a high power hearing-aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 120 dBSPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for Speech Discrimination Test by using the Bengali Picture Name matching cards, prepared for this test.
1. Name: Bidesh Roy (Male/Female) PTB 7 yrs.
2. Case No.
3. Age.
4. Name of the Institute: Parents' Own Clinic
5. Date of Testing: 8/1/93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35 dBA

********************
PURE TONE AUDIOGRAM

A) INSTRUMENT USED: P.T. Audiometer MK I S - 500 (ARPHI)
B) HASKINS DETAILS: X

FREQUENCY IN KHZ

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Left Ear</th>
<th>Right Ear</th>
</tr>
</thead>
<tbody>
<tr>
<td>125 Hz</td>
<td>95 dB</td>
<td>88 dB</td>
</tr>
<tr>
<td>250 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8000 Hz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ASSESSMENTS

2. Preliminary findings of O.L.L.: Left Ear: 122 dBSPL, Right Ear: 120 dBSPL.
3. Type of Deafness: Bilateral Sensory Neural Type of Deafness.
4. Category of hearing Loss: Severe to profound hearing loss in both the ears.
6. Frequency range: Wider frequency range in the Left Ear and Narrow frequency range in the Right Ear.
8. Retro-Cochlear Lesion: X / Cochlear lesion: ✓

REMARKS

* Advised to use a high-power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 125 dBSPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.
1. Name: Santer Baruah (Male/Female) 2. Case No. PT9 3. Age: 11 yrs.
4. Name of the Institute: Parents Own Clinic 5. Date of Testing: 9/1/93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35 dB(A)

***************

PURE TONE AUDIOGRAM

******

A) INSTRUMENT USED: P.T. Audiometer MK-I S-500 (ARPHI)

B) HASKINS DETAILS: X

ASSESSMENTS

3. Type of Deafness: Bilateral Sensory Neural Type of Deafness.
4. Category of hearing Loss: Severe to Profound hearing loss in both the ears.
5. Nature of Curve: Sloping response curve in both the ears.
6. Frequency range: Narrow frequency range in both the ears.
8. Retro-Cochlear Lesion: ✓, Cochlear lesion: X

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'Y' cord and two receivers. Output of the hearing aid should be selected at 130 dB SPL (very closed point to the optimum listening levels of the Child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with sponges words and SD test with PB words.

30
1. Name: Jayeeta Banerjee (Male/Female) 2. Case No. 3. Age: 9 yrs.
4. Name of the Institute: P.T.
5. Date of Testing: 9.1.93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 85 dB(A)

**TONE AUDIOGRAM**

**INSTRUMENT USED:** P.T. Audiometer MK-I S-500 (ARPHI)

**MASKING DETAILS:** X

**ASSESSMENTS**

   Left Ear: 123 dBSPL Right Ear: 124 dBSPL
2. Preliminary findings of O.L.L.
3. Type of Deafness: Bilateral Sensory Neural Type of deafness
4. Category of hearing loss: Severe to Profound hearing loss in both the ears.
5. Nature of Curve: Sloping response curve in both the ears.
6. Frequency range: Narrow frequency range in both the ears.
7. Vibro-Tactile Responses: Present
8. Retro-Cochlear Lesion: √ / Cochlear lesion: X

**REMARKS**

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 125 dB SPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.
1. Name: ௃ංගී මී ප්‍රංශ (Male/Female) 2. Case No. PT11 3. Age: 7 yrs.
4. Name of the Institute: Parents' Own Clinic 5. Date of Testing: 9.1.93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35 dB(A)

 **************************
PURITY TONE AUDIOGRAM

A) INSTRUMENT USED: P.T.Audimeter MK-I S -500 (ARPHI)

B) HASKING DETAILS: X

FREQUENCY IN KHZ

HEARING LEVEL (dB ISO)

1. P.T.A. :
   - Left Ear: 93 dB
   - Right Ear: 67 dB

2. Preliminary findings:
   - Left Ear: 120 dB SPL
   - Right Ear: 108 dB SPL

3. Type of Deafness: Bilateral Sensory Neural Type of Deafness.
5. Nature of Curve: Mid-Falling - response curve in both the ears.
6. Frequency range: Wider frequency range in both the ears.
8. Retro-Cochlear Lesion: X / Cochlear lesion: √

REMARKS

* Advised to use two separate high power hearing aids with A.V.C. system one for right ear and other for left ear. Output of the hearing aids should be selected at 110 dB SPL (very close point to the optimum testing level) for the right ear and at 120 dB SPL for the left ear by adjusting volume control and automatic volume control systems of the aids.

* Recommended for SRT test with spondee words and SD test with PB Words.
1. Name: Major Das (Male/Female) 2. Case No.: 3. Age: 65 yrs.
4. Name of the Institute: Parent's Own Clinic
5. Date of Testing: 9/1/93
6. Address: 80A, Shyam Bazar Street, Calcutta, 700 005.
7. Sound Level of the Testing Room: 35 dB(A)

*************************************************************

PURE TONE AUDIOLoGy

A) INSTRUMENT USED: P.T. Audiometer
MK-1 S.-500
(ARI III)

B) HASKING DETAILS: X

FREQUENCY IN KHZ

ASSESSMENTS

1. P.T.A.
   : Left Ear: 93 dB • Right Ear: 93 dB.
2. Preliminary findings of O.L.L.
   : Left Ear: 126 dBSPL • Right Ear: 125 dBSPL.
3. Type of Deafness
   : Bilateral sensory Neural Type of Deafness.
4. Category of hearing Loss
   : Serve hearing loss in the Left Ear and Severe to Profound hearing loss in the Right Ear.
5. Nature of Curve
   : Sloping response curve in the Right Ear and Rising response curve in the Left Ear.
6. Frequency range
   : Wider frequency range in the Left Ear and Narrow frequency range in the Right Ear.
7. Vibro-Tactile Responses
   : Present.
8. Retro-Cochlear Lesion
   : X / Cochlear lesion: ✓

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'Y' cord and two receivers. Output of the hearing aid should be selected at 125 dB SPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.

33
1. Name: Sumit Bhattacharya
2. Case No: PT13
3. Age: 8 yrs.
4. Name of the Institute: Parents' Own Clinic
5. Date of Testing: 11.1.93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35 dB(A).

**PURE TONE AUDIOGRAM**

A) INSTRUMENT USED: P.T. Audiometer
MK-I S -500 (ARPHI)

B) HASKINS DETAILS: X

FREQUENCY IN KHZ

ASSESSMENTS

3. Type of Deafness: Bilateral Sensory Neural Type of Deafness.
4. Category of hearing Loss: Severe hearing loss in the Left Ear and Severe to Profound hearing loss in the Right Ear.
5. Nature of Curve: Sloping response curve in both the ears.
6. Frequency range: Narrow frequency range in both the ears.
8. Retro-Cochlear Lesion: ✓ / Cochlear lesion: X

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 125 dB SPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume-control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.
1. Name: Ria Dey (Female)  
2. Case No.: PT14  
3. Age: 7 yrs.  
4. Name of the Institute: Parents' Own Clinic  
5. Date of Testing: 11.1.93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005  
7. Sound Level of the Testing Room: 85 dB(A)

**PURE TONE AUDIOMETER**

**FREQUENCY IN KHZ**

**ASSESSMENTS**

1. P.T.A.  
   - Left Ear: 107 dB  
   - Right Ear: 97 dB

2. Preliminary findings of O.L.L.  
   - Left Ear: 130 dBSPL  
   - Right Ear: 124 dBSPL

3. Type of Deafness: Bilateral Sensory Neural Type of Deafness.

4. Category of hearing Loss: Severe to Profound hearing loss in both the ears.


6. Frequency range: Narrow frequency range in the Left Ear and Wider frequency range in the Right Ear.


**REMARKS**

* Advised, to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 130 dBSPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with Spondee words and SD test with PB words.
1. Name: Prianka Bera (Male/Female)  
2. Case No: PT15  
3. Age: 5 yrs.  
4. Name of the Institute: Parents' Own Clinic  
5. Date of Testing: 12.1.93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.  
7. Sound Level of the Testing Room: 35 dB(A)  

*******PSEUD TONE AUDIOGRAM*******

A) INSTRUMENT USED: P.T.Audimeter MK-I S -500 (ARPHI)

B) HASKING DETAILS: X

FREQUENCY IN KHZ

-20  0  20  40  60  80  100  200  500  1000  2000  4000  8000

ASSESSMENTS

1. P.T.A.: Left Ear: 97 dB  
2. Preliminary findings of O.L.L.: Left Ear: 124 dB SPL  
3. Type of Deafness: Bilateral SensoryNeural Type of Deafness.  
4. Category of hearing Loss: Severe to Profound hearing loss in both the ears.  
5. Nature of Curve: Mid-Falling - response curve in the Left Ear and Sloping response curve in the Right Ear.  
6. Frequency range: Narrow frequency range in both the ears.  
8. Retro-Cochlear Lesion (in the Left Ear): ✔ / Cochlear lesion; ↑ (in the Right Ear)

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 130 dB SPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with Spondee words and SD test with PB words.
1. Name: Sonali Roy (Male/Female) 2. Case No. 3. Age: 11 yrs.
4. Name of the Institute: Parents' Own Clinic 5. Date of Testing: 12/1/93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35 dB(A)

************************************
PURE TONE AUDIOGRAM

A) INSTRUMENT USED: P.T. Audiometer MK-I S -500 (ARPHI)
B) HASKINS DETAILS: X

<table>
<thead>
<tr>
<th>ASSESSMENTS</th>
<th>Left Ear: 103 dB</th>
<th>Right Ear: 112 dB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Left Ear: 126 dB SPL</td>
<td>Right Ear: 132 dB SPL</td>
</tr>
<tr>
<td>Type of Deafness</td>
<td>Bilateral Sensory Neural Type of Deafness</td>
<td></td>
</tr>
<tr>
<td>Category of hearing Loss</td>
<td>Severe to Profound hearing loss in both the ears.</td>
<td></td>
</tr>
<tr>
<td>Nature of Curve</td>
<td>Sloping response curve in both the ears.</td>
<td></td>
</tr>
<tr>
<td>Frequency range</td>
<td>Narrow frequency range in both the ears.</td>
<td></td>
</tr>
<tr>
<td>Vibro-Tactile Responses</td>
<td>Present.</td>
<td></td>
</tr>
<tr>
<td>Retro-Cochlear Lesion</td>
<td>✓ / Cochlear lesion: X</td>
<td></td>
</tr>
</tbody>
</table>

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 130 dB SPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.
1. Name: Debapriya Mukherjee (Male/Female) 2. Case No: R17 3. Age: 5 yrs.
4. Name of the Institute: Parents' Own Clinic 5. Date of Testing: 13.1.93
6. Address: 89A, Shambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35dB(A)

****************************
**P U R E T O N E A U D I O G R A M**

A) INSTRUMENT USED: P.T.Audiometer MK-I S -500 (ARPFI)

B) HASKING DETAILS: X

---

**FREQUENCY IN KHZ**

**ASSESSMENTS**

3. Type of Deafness: Bilateral Sensory Neural Type of Deafness.
4. Category of hearing Loss: Severe to profound hearing loss in both the ears.
5. Nature of Curve: Sloping response curve in both the ears.
6. Frequency range: Narrow frequency range in both the ears.
8. Retro-Cochlear Lesion: Present / Cochlear lesion: X

**REMARKS**

* Advised to use a high-power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 130 dB SPL (very close point to the optimum listening levels of the Child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.

***************

PURE TONE AUDIOMETER

A) INSTRUMENT USED: P.T. Audiometer MK-I S ... 500 (ARPHI)

B) HASKING DETAILS: X

---

ASSESSMENTS


REMARKS

* Advised to use two high power hearing aids with A.V.C. system separately - one for right ear and other for left ear. Output of the hearing - aids should be selected at 125 dB SPL (very closed point to the optimum testening level) for the right ear and at 115 dB SPL (very closed point to the optimum listening level) for the left ear by adjusting volume control and automatic volume control system of the aids.

* Recommended for SRT test with spondee words and SD test with PB words.
1. Name: Debajyoti Chakraborty (Male/Female) 2. Case No.: PT19 3. Age: 11 yrs.
4. Name of the Institute: Parents' Own Clinic 5. Date of Testing: 13.1.93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35 dB(A)

********************************

PURE TONE AUDIOGRAM

<table>
<thead>
<tr>
<th>FREQUENCY IN KHZ</th>
<th>ASSESSMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.T.A.</td>
<td>Left Ear: 100 dB* Right Ear: 105 dB*</td>
</tr>
<tr>
<td>Preliminary findings of O.L.L.</td>
<td>Left Ear: 123 dB SPL* Right Ear: 126 dB SPL*</td>
</tr>
<tr>
<td>Type of Deafness</td>
<td>Bilateral Sensory Neural Type of Deafness.</td>
</tr>
<tr>
<td>Category of hearing Loss</td>
<td>Severe to Profound hearing loss in both the ears.</td>
</tr>
<tr>
<td>Nature of Curve</td>
<td>Peaky response curve in the Left Ear and Sloping response curve in the Right Ear.</td>
</tr>
<tr>
<td>Frequency range</td>
<td>Wider frequency range in the Left Ear and Narrow frequency range in the Right Ear.</td>
</tr>
<tr>
<td>Vibro-Tactile Responses</td>
<td>Present*</td>
</tr>
<tr>
<td>Retro-Cochlear Lesion (in the Left Ear)</td>
<td>✓</td>
</tr>
<tr>
<td>Retro-Cochlear Lesion (in the Right Ear)</td>
<td>✓</td>
</tr>
</tbody>
</table>

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 125 dB SPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with Spondee words and SD test with PB words.
1. Name: Chottu Das (Male/Female)  
2. Case No.:  
3. Age.:  
4. Name of the Institute: Parents' Own Clinic  
5. Date of Testing: 14.1.93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.  
7. Sound Level of the Testing Room: 35 dB(A)  

***************

PURE TONE AUDIOGRAM

A) INSTRUMENT USED: P.T.Audiometer MK-I S -500 (ARPHI)

B) HASKING DETAILS: X

---

ASSESSMENTS

1. P.T.A.:  
   - Left Ear: 95 dB  
   - Right Ear: 103 dB  

2. Preliminary findings of O.L.L.:  
   - Left Ear: 123 dB SPL  
   - Right Ear: 127 dB SPL

3. Type of Deafness: Bilateral Sensory Neural Type of Deafness

4. Category of hearing loss: Severe to Profound hearing loss in both the ears

5. Nature of Curve: Mid-Falling response curve in both the ears.

6. Frequency range: Wider frequency range in both the ears.


8. Retro-Cochlear Lesion: X / Cochlear lesion: ✓

REMARKS

* Advised to use a high-power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 125 dB SPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.

---
1. Name: Srijita Bagchi
   2. Age: 11 yrs.
   3. Name of the Institute: Parents' Own Clinic
   4. Date of Testing: 14.1.93
   5. Address: 89A, Shyambazar Street, Calcutta - 700 005.

---

**PURE TONE AUDIOGRAM**

- **FREQUENCY IN KHZ**
  - P.T.A.
  - Preliminary findings of O.L.L.
  - Type of Deafness
  - Category of hearing loss
  - Nature of Curve
  - Frequency range

- **ASSESSMENTS**
  - Left Ear: 100 dB
  - Right Ear: 102 dB
  - Left Ear: 128 dBSPL
  - Right Ear: 128 dBSPL
  - Bilateral Sensory Neural Type of Deafness
  - Severe to Profound hearing loss in both the ears
  - Sloping response curve in both the ears
  - Narrow frequency range in both the ears
  - Present

- **REMARKS**
  - Advised to use a high-power hearing aid with A.V.C. system along with 'Y' cord and two receivers. Output of the hearing aid should be selected at 130 dBSPL (every closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.
  - Recommended for SRT test with spondee words and SD test with PB words.
1. Name... Pankaj Mahato ............... (Male/Female) 2. Case No........... 3. Age. 6 yrs.
4. Name of the Institute Parents' Own Clinic .... 5. Date of Testing........... 15.1.93
6. Address......... 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room ................. 35 dB(A)

***************

A) INSTRUMENT USED : P.T.Audiometer
MK-I S -500
(ARPHI)

B) HASKINS DETAILS : X

ASSESSMENTS

2. Preliminary findings of O.L.L. : Left Ear : 128 dBSPL • Right Ear : 115 dBSPL •
3. Type of Deafness : Bilateral Sensory Neural Type of Deafness.
4. Category of hearing Loss : Severe to profound hearing loss in the left ear and Moderate to severe hearing loss in the right ear.
5. Nature of Curve : Sloping response curve in the left ear and Quite flat response curve in the right ear.
6. Frequency range : Narrow frequency range in the left ear and Wider frequency range in the right ear.
8. Retro-Cochlear Lesion (in the Left Ear) : ✓ Cochlear lesion : ✓ (in the Right Ear)

REMARKS

* Advised to use two separate high power hearing aids with A.V.C. system one for right ear and other for left ear. Output of the hearing aids should be selected at 115 dBSPL for the right ear and 130 dBSPL (very closed point to the optimum listening level) for the left ear by adjusting volume control and automatic volume control systems of the aids.

* Recommended for SRT test with spondee words and SD test with PB words.
Amit Panchal

1. Name: Amit Panchal (Male/Female) 2. Case No.: PT23 3. Age: 7½ yrs.
4. Name of the Institute: Parents Own Clinic 5. Date of Testing: 15.1.93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 55 dB(A)

********************

PURE TONE AUDIOGRAM

A) INSTRUMENT USED: P.T.Audiometer MK-I S -500 (ARPHI)

B) HASKING DETAILS: X

ASSESSMENTS

3. Type of Deafness : Bilateral Sensory Neural type of deafness.
4. Category of hearing loss : Moderate to severe hearing loss in both the ears.
5. Nature of Curve : Mid-Falling - response curve in both the ears.
6. Frequency range : Wider frequency range in both the ears.
7. Vibro-Tactile Responses : Present
8. Retro-Cochlear Lesion : X / Cochlear lesion : ✓

REMARKS

* Advised to use a high-power hearing aid with A.V.C. system along with 'Y' cord and two receivers. Output of the hearing aid should be selected at 110 dB SPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.
1. Name: Pinki Roy (Male/Female) 2. Case No.: 3. Age: 10 yrs.
4. Name of the Institute: Parents' Own Clinic 5. Date of Testing: 15.1.93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35 dB(A)

***************

PURE TONE ACOUSTIC

A) INSTRUMENT USED: P.T. Audiometer MK-I S -500 (ARPHI)

B) HASKINS DETAILS: X

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 125 dB SPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.
1. Name: Tanim Datta (Male/Female)  
2. Case No.  
3. Age:  
4. Name of the Institute: Parents Own Clinic  
5. Date of Testing: 16.1.93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005  
7. Sound Level of the Testing Room: 35 dB(A)  

**********************

**Preliminary findings of O.L.L.**

3. **Type of Deafness**
4. **Category of hearing loss**
5. **Nature of Curve**
6. **Frequency range**
7. **Vibro-Tactile Responses**
8. **Retro-Cochlear lesion**

---

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 125 dB SPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.

---

**ASSESSMENTS**

1. **P.T.A.**
   - Left Ear: 83 dB  
   - Right Ear: 93 dB  

2. **Preliminary findings of O.L.L.**
   - Left Ear: 124 dB SPL  
   - Right Ear: 124 dB SPL  

3. **Type of Deafness**
   - Bilateral Sensory Neural Type of Deafness  

4. **Category of hearing loss**
   - Severe to profound hearing loss in both the ears  

5. **Nature of Curve**
   - Sloping response curve in both the ears  

6. **Frequency range**
   - Wider frequency range in both the ears  

7. **Vibro-Tactile Responses**
   - Present  

8. **Retro-Cochlear lesion**
   - X / Cochlear lesion  

**REMARKS**
1. Name: Manab Chatterjee (Male/Female)  
2. Case No.: PT26  
3. Age: 6 yrs.  
4. Name of the Institute: Parents' Own Clinic  
5. Date of Testing: 16/1/93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005  
7. Sound Level of the Testing Room: <35 dB(A)  

***************
PURE TONE AUDIOGRAM
***************

<table>
<thead>
<tr>
<th>FREQUENCY IN KHZ</th>
<th>HEARING LEVEL (dB ISO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>90</td>
</tr>
<tr>
<td>250</td>
<td>80</td>
</tr>
<tr>
<td>500</td>
<td>60</td>
</tr>
<tr>
<td>1000</td>
<td>50</td>
</tr>
<tr>
<td>2000</td>
<td>40</td>
</tr>
<tr>
<td>4000</td>
<td>30</td>
</tr>
</tbody>
</table>

A) INSTRUMENT USED: P.T.Audiometer  
MK-I S -500  
(ARPHI)  

B) HASKINS DETAILS: X  

ASSESSMENTS

1. P.T.A.  
   Left Ear: 93 dB  
   Right Ear: 93 dB  

2. Preliminary findings of O.L.L.  
   Left Ear: 125 dBSPL  
   Right Ear: 125 dBSPL  

3. Type of Deafness  
   Bilateral Sensory Neural Type of Deafness.  

4. Category of hearing Loss  
   Severe to Profound hearing loss in both the ears.  

5. Nature of Curve  
   Sloping response curve in both the ears.  

6. Frequency range  
   Wider frequency range in both the ears.  

7. Vibro-Tactile Response  
   Present.  

8. Retro-Cochlear Lesion  
   X  / Cochlear lesion: ✓

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 125 dBSPL, the optimum listening levels of the child's right and left ears, by adjusting volume control and automatic volume control systems of the aid.  

* Recommended for SRT test with spondee words and SD test with PB words.
1. Name: Sayantani Mukherjee (Male/Female)  
2. Case No.: PT27  
3. Age: 7 yrs.  
4. Name of the Institute: Parents' Own Clinic  
5. Date of Testing: 16.1.93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.  
7. Sound Level of the Testing Room: 35 dB[A].

**********

PURE TONE AUDIOGRAM

ASSESSMENTS

3. Type of Deafness: Bilateral Sensory Neural Type of Deafness.
5. Nature of Curve: Sloping response curve in both the ears.
6. Frequency range: Narrow frequency range in the Left Ear and Wider frequency range in the Right Ear.
8. Retro-Cochlear Lesion: X / Cochlear lesion: √

REMARKS

* Advised to use two separate high power hearing aids with A.V.C. system, one for right ear and other for left ear. Output of the hearing aids should be selected at 115 dB SPL for the right ear and 130 dB SPL for the left ear (both are very close point to the optimum listening levels) by adjusting volume control and automatic volume control systems of the aids.

* Recommended for SRT test with spondee words and SD test with PB words.
1. Name: Atreyee Bhattacharya... (Male/Female) 2. Case No.: PT28 3. Age: 64 yrs.
4. Name of the Institute: Parents' Own Clinic 5. Date of Testing: 18.1.93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35 dB(A)

***************

PURE TONE AUDIOGRAM

A) INSTRUMENT USED: P.T. Audiometer
   MK-I S -500 (ARPHI)

B) HASKINS DETAILS: X

ASSESSMENTS

1. P.T.A.
   : Left Ear: 105 dB • Right Ear: 105 dB.

2. Preliminary findings of O.L.L.
   : Left Ear: 128 dB SPL • Right Ear: 128 dB SPL.

3. Type of Deafness
   : Bilateral Sensory Neural Type of Deafness.

4. Category of hearing Loss
   : Severe to Profound hearing loss in both the ears.

5. Nature of Curve
   : Sloping response curve in both the ears.

6. Frequency range
   : Narrow frequency range in both the ears.

7. Vibro-Tactile Responses
   : Present.

8. Retro-Cochlear Lesion
   : √ / Cochlear lesion: X

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'v' cord and two receivers. Output of the hearing aid should be selected at 130 dB SPL, the optimum listening levels of the child's right and left ears, by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with Spondee words and SD test with PB words.
1. Name: Poulami Dev (Male/Female)  
2. Case No.: PT29  
3. Age: 6 yrs.  
4. Name of the Institute: Parents' Own Clinic  
5. Date of Testing: 18-1-93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005  
7. Sound Level of the Testing Room: 35 dB(A)  

***********

PURE TONE AUDIOGRAM

---

A) INSTRUMENT USED: P.T. Audiometer  
MK-I S -500  
(ARPHI)

B) HASKING DETAILS:  

---

FREQUENCY IN KHZ

---

ASSESSMENTS

1. P.T.A.
   : Left Ear : 107 dB. Right Ear : 120 dB.
2. Preliminary findings of O.L.L.
   : Left Ear : 129 dBSPL. Right Ear : 134 dBSPL.
3. Type of Deafness
   : Bilateral Sensory Neural Type of Deafness.
4. Category of hearing Loss
   : Severe to Profound hearing loss in both the ears.
5. Nature of Curve
   : Sloping response curve in both the ears.
6. Frequency range
   : Narrow frequency range in both the ears.
7. Vibro-Tactile Responses
   : Present.
8. Retro-Cochlear Lesion
   : \(\checkmark\) / Cochlear lesion : X

REMARKS

* Advised to use a high power hearing aid with A.V.C. system alongwith 'V' cord and two receivers. Output of the hearing aid should be selected at 130 dB SPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with Spondee words and SD test with PB words.
1. Name: Mohitosh Roy  
   (Male/Female)  PT30  6 yrs.
2. Case No.:  
3. Age:  
4. Name of the Institute: Parents' Own Clinic
5. Date of Testing: 18.1.93
6. Address: 89A, Shyambazar Street, Calcutta - 700 005.
7. Sound Level of the Testing Room: 35 dB(A)

*******************************************************************

PURITY TONE AUDIOGRAM

** A) INSTRUMENT USED: P.T. Audiometer MK-I S-500 (ARPHI) **

B) HASKING DETAILS: X

** FREQUENCY IN KHZ **

HEARING LEVEL (dB ISO)

<table>
<thead>
<tr>
<th>Frequency (KHz)</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
<th>8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left Ear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right Ear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ASSESSMENTS

2. Preliminary findings of O.I.L.: Left Ear: 120 dBSPL, Right Ear: 119 dBSPL.
3. Type of Deafness: Bilateral Sensory Neural Type of Deafness.
4. Category of hearing Loss: Severe to Profound hearing loss in both the ears.
5. Nature of Curve: Mid-Falling -Response curve in both the ears.
6. Frequency range: Wider frequency range in both the ears.
8. Retro-Cochlear Lesion: X / Cochlear lesion: ✓

REMARKS

* Advised to use a high power hearing aid with A.V.C. System along with 'V' cord and two receivers. Output of the hearing aid should be selected at 120 dBSPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with the Spondee Words and SD test with PB words.
1. Name: Aradhya Dey  
   (Male/Female)  
2. Case No.: PT31  
3. Age: 6½ yrs.  
4. Name of the Institute: Parents' Own Clinic  
5. Date of Testing: 19.1.93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005  
7. Sound Level of the Testing Room: 35dB(A)  

***************

PURE TONE AUDIOTRIB

A) INSTRUMENT USED: P.T.A. Audiometer  
   MK-I S-500  
   (ARPHI)

B) HASKING DETAILS: X

ASSSESSMENTS

1. P.T.A.:  
   Left Ear: 100 dB  
   Right Ear: 97 dB

2. Preliminary findings of O.L.L.:  
   Left Ear: 127 dB SPL  
   Right Ear: 127 dB SPL

3. Type of Deafness:  
   Bilateral Sensory Neural Type of Deafness.

4. Category of hearing Loss:  
   Severe to Profound hearing loss in both the ears.

5. Nature of Curve:  
   Sloping response curve in both the ears.

6. Frequency range:  
   Narrow frequency range in both the ears.

7. Vibro-Tactile Responses:  
   Present.

8. Retro-Cochlear Lesion (in the Left Ear):  
   ✓  
   Cochlear lesion (in the Right Ear): ✓

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord with two receivers. Output of the hearing aid should be selected at 130 dB SPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with Spondee Words and SD test with PB words.
1. Name: Bapi Ghosh (Male/Female)  
2. Case No: PT32  
3. Age: 11½ yrs.  
4. Name of the Institute: Parents' Own Clinic  
5. Date of Testing: 19.1.93  
6. Address: 89A, Shyambazar Street, Calcutta - 700 005  
7. Sound Level of the Testing Room: 35dB(A)  

***************

PURE TONE AUDIOMETR

---

A) INSTRUMENT USED: P.T. Audiometer MK-I S-500 (ARPHI)

B) HASKING DETAILS: X

---

FREQUENCY IN KHZ

<table>
<thead>
<tr>
<th>FREQUENCY (KHZ)</th>
<th>LEFT EAR</th>
<th>RIGHT EAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ASSESSMENTS

1. P.T.A.  
Left Ear: 82 dB
Right Ear: 83 dB

2. Preliminary findings of O.L.L.  

3. Type of Deafness  
Bilateral Sensory Neural Type of Deafness.

4. Category of hearing Loss  
Severe hearing loss in both the ears.

5. Nature of Curve  
Quite flat response curve in both the ears.

6. Frequency range  
Wider frequency range in both the ears.

7. Vibro-Tactile Responses  
Present *

8. Retro-Cochlear Lesion  
X / Cochlear lesion: ✓

REMARKS

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 120 dB SPL (very closed point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.
**PURE TONE AUDIOGRAM**

<table>
<thead>
<tr>
<th>FREQUENCY (KHz)</th>
<th>HEARING LEVEL (dB ISO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>50</td>
</tr>
<tr>
<td>250</td>
<td>50</td>
</tr>
<tr>
<td>500</td>
<td>50</td>
</tr>
<tr>
<td>1000</td>
<td>50</td>
</tr>
<tr>
<td>2000</td>
<td>50</td>
</tr>
<tr>
<td>4000</td>
<td>50</td>
</tr>
<tr>
<td>8000</td>
<td>50</td>
</tr>
</tbody>
</table>

**ASSSESSMENTS**

1. P.T.A.  
   - Left Ear: 100 dB  
   - Right Ear: 103 dB
2. Preliminary findings of O.L.L.  
   - Left Ear: 127 dBSPL  
   - Right Ear: 128 dBSPL
3. Type of Deafness  
   - Bilateral Sensory Neural Type of Deafness
4. Category of hearing loss  
   - Severe to Profound hearing loss in both the ears
5. Nature of Curve  
   - Slightly sloping response curve in both the ears
6. Frequency range  
   - Wider frequency range in both the ears
7. Vibro-Tactile Response  
   - Present
8. Retro-Cochlear Lesion  
   - Present / Cochlear lesion: ✓

**REMARKS**

* Advised to use a high power hearing aid with A.V.C. system along with 'V' cord and two receivers. Output of the hearing aid should be selected at 130 dBSPL (very close point to the optimum listening levels of the child's right and left ears) by adjusting volume control and automatic volume control systems of the aid.

* Recommended for SRT test with spondee words and SD test with PB words.