

# **TROUBLE SHOOTING A HEARING AID**



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# TROUBLE SHOOTING A HEARING AID

Trouble shooting refers to tracing and correcting faults in machinery. Trouble shooting of hearing aids is therefore the process of tracing and rectifying defects in hearing aid. By learning to trouble shoot a hearing aid, the user can detect the sources of defect and rectify them, to a certain extent. This handout describes the steps in trouble shooting hearing aids.

Some of the common malfunctions of a hearing aid, steps to identify the cause and the procedure to rectify the defect are described below :

## 1 NO SOUND :

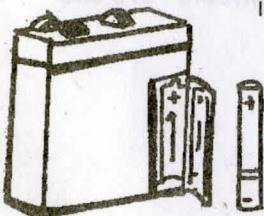
If you do not hear speech or other sounds, when the aid is switched on, turn it off and check the following :

### CELL BATTERY :



Seal  
to  
be  
removed

- i) Check if the seal on the cell or the plastic sheath or its lower surface have been removed. If not, remove the same.



- ii) Has the cell been placed correctly i.e., the positive sign on the cell on the same side as the one in the battery compartment? If not, place it correctly.

- iii) Look for leakage from the cell and for corroded battery terminals. If a leaking cell is found, replace it with a fresh one. Clean the corroded terminals with ethyl alcohol or carbon tetrachloride.



- iv) If the cell is placed appropriately, its seal has been removed and it is not leaking, but you still do not hear any signal, then replace it with a fresh cell and recheck.

If the aid functions normally, then the voltage of the previous cell must have been low. If despite replacing the cell, the aid does not work, the defect may be elsewhere. Check the following :-

#### **CORD :**

With the aid switched 'on' and the receiver at your ears, twist the cord gently between your fingers at the hearing aid end and at the receiver end. If the signal is intermittent, the cord is defective and needs to be replaced. If the aid continues to be defective check the earmold.

#### **EARMOLD :**



The mold may be clogged with wax/debris. Detach it from the receiver wash the mold with soap and luke warm water. Dry it thoroughly, replace and recheck if the aid works. If it does not, then the problem is likely to be internal and needs to be serviced by a trained personnel.

## **2. WEAK SOUND:**

Your hearing aid may deliver the sound but very softly and it may continue to be soft even when the volume is turned to a higher number. The causes for this may be a run down cell or a partially blocked earmold. Replacement of the cell and cleaning the mold should help rectify this problem.

## **3. DISTORTED SOUND :**

People tend to cover their aids with their clothing. This not only reduces the loudness of the signal by absorbing a part of it, but also brings about distortion. This is because the cloth rubbing against the microphone generates a noise that masks the wanted sounds such as speech or music. The user must therefore avoid covering the microphone with his clothing.

A run down cell may also give rise to a distorted sound. Replacing this by a new battery would solve the problem if that were to be the cause.

Distortion may arise from dirty or dusty microphones, broken receivers, broken or loose switches, etc. You may replace the correct receiver and clean the microphone on your own, but have the switches replaced by a trained personnel.

## **4. INTERMITTENT SOUND :**

A common cause for this defect is a broken cord. Replacement of cord would solve this problem.

Poorer contact of the battery terminals is yet another frequent cause for intermittent sound. There could be a slight difference in the length of the cell and that of the battery compartment. Verify with your audiologist as to which of the commercially available cells may be used with your aid.

Broken/loose switches could also result in an intermittent output from the aid. Help must be sought from a trained professional in replacing these.

### 5. SQUEAL FROM THE HEARING AID :



A squeal or a high pitched sound is normally heard when the receiver is held close to the microphone. If this sound is heard when the receiver is fixed to a mold which is placed in the ear, it could be because :

- 1) The aid is placed too close to the receiver
- 2) The volume setting is too high
- 3) The mold is not properly inserted
- 4) The mold is ill-fitting.

Squeal due to the first reason may be avoided by wearing the aid at a lower level or

on the opposite side (if used on one side). If this is not the cause for a squeal, check the volume control setting, bring it down if it is too high. Too high a volume will also over-amplify the sound which the wearer may not be able to tolerate. This would also distort the speech heard through the aid. If reduction in volume does not stop the squeal, check the mold.

Ensure that the mold is completely inserted into the ear. Proper insertion may be achieved by gently pulling the ear (pinna) upwards and backwards while inserting the mold. If this does not help abate the squeal, check if the mold is loose. If yes, have a new mold made.

Ensure that the contact between the receiver and the mold is firm. Improper connection between the two or the absence of the washer on the receiver may also result in a squeal. Replacing the ring or the washer respectively, would solve these problems. Personnel in the nearest earmold lab would be able to help you in this regard.

The following when adhered to, would help minimize defects in your aid ;

- a) Remove the cell whenever the aid is not in use for long time. As far as possible, use leak proof cells. Ensure that the cell is from a new stock.
- b) Don't wind the cord tightly round the aid. This increases the possibility of cuts in the cord.
- c) Don't disconnect the cord from the aid frequently. The pins are delicate and may break in the process.
- d) Don't drop the aid or the receiver.
- e) Avoid dropping of food, water etc. on the aid. In the case of young children, fix the aid on their back while feeding.
- f) Wipe the aid clean frequently.
- g) Wash the mold regularly. Dry them thoroughly before fixing to the receiver.
- h) Have the aid serviced at the institute once a year.