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# Possibilities available for the prevention of hearing impairment

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**Abstract**--The individual can hear different sounds, and the hearing impairment ranges in severity from degrees Mild and moderate levels that result in hearing impairment, to very severe degrees that result in designed by her Causes of hearing impairment Hereditary causes, familial, acquired causes Causes during pregnancy causes during childbirth Postpartum causes External ear strikes-auricle abnormalitie disappearance of the external auditory canal Congenital disappearance of the external auditory canal and its closure may be at any site from the channel Hearing impairment is classified into three axes, according to the age group: According to the hearing loss, according to the nature and location of the injury. Therefore, early diagnosis and early intervention lead to the best results, but what is better than early intervention is to follow the golden rule prevention is better than cure.” These are some examples that can help avoid the “occurrence of a disability.

**Keywords**--ear, postpartum, abnormalitie, congenital disappearance.

**Introduction**

The hearing function performed by the ear is one of the main and important functions of the living organism the individual feels his value in this job when the ability to hear is disrupted for some reason related to the ear itself. The mechanism of hearing is the transmission of the auditory stimulus from the outer to the middle ear and then internal to the auditory nerve and then to the central nervous system where it is interpreted auditory stimuli. Hearing impairment has become one of the things that happen Controlled by scientific progress and disability audio Means A deviation in hearing that limits the ability to communicate auditory-verbal , and the deaf is the one who has lost A degree of hearing so that he is unable to follow speech and hear it fully. and he An

individual who suffers from a severe hearing disability that prevents him from relying on the sense of hearing to understand speech with or without hearing aids and the hard of hearing is the individual who suffers from hearing loss. Hearing ranges from 0 to 69 decibels, which makes him have difficulty understanding speech with 35 dependence on hearing only. Which should be early attention and treatment, and the use of hearing aids and treatment. Conversational. Many citizens in Iraq suffer from the problem of hearing, and this problem is diverse. The reason for its occurrence is not only related to a genetic cause, but there are some things that help to get this problem, including high noise exposure to explosions and others, and based on that, the research was divided into the following paragraphs

First - the concept of hearing impairment

Second - the causes of hearing impairment

Third - types of hearing impairment

Fourth - Suggestions to reduce hearing impairments

The research concluded with a summary and a list of sources

First - the concept of hearing impairment

Hearing impairment is Problems that prevent the individual's auditory system from performing its functions, or reduce the ability of the individual to The individual can hear different sounds, and the hearing impairment ranges in severity from degrees Mild and moderate levels that result in hearing impairment, to very severe degrees that result in designed can distinguish between Hearing impairment and deafness: Deafness: It is a degree of Hearing loss is more than 70 decibels per person. Hard of hearing: It is a degree of hearing loss that is more than 35 decibels and less than 70 than It makes the individual suffer from difficulties in understanding the speech hereceives.

Definition of a hearing impaired: From a medical point of view: He is that individual whose system has been damaged Hearing loss or an organic defect prevented him from using it in public life as normal as other people Normal individuals, and this defect may have affected the outer, middle or ear interior. from the side Educational: A person who cannot rely on the sense of hearing to learn a language or learn a language Benefit from different educational programs, and this person needs educational programs Especially to compensate for the loss of hearing. Definition of hard of hearing: He is a person who suffers from Hearing loss, but he can make up for it Hearing aids and high sound intensity, and does not need special educational programs to benefit of education with the use of hearing aids; Without it, the hearing impaired will turn into<sup>1</sup> (Hearing impaired Hearing disability has varying levels of hearing impairment, ranging from mild hearing impairment to very severe hearing impairment<sup>2</sup>

## **Second - the causes of hearing impairment**

Genetic-familial causes )<sup>3</sup> (

It may be an error in the composition of genes or chromosomes, as well as it may be visible at birth or appear at a later age

Often there is more than one affected person in the family) inheritance laws are )dominant, recessive, and sex-linked

Cases increase with consanguineous marriages. Example: Wardenberg's syndrome, in which there is a severe sensorineural hearing impairment in both ears with a difference in the color of the eyes (the iris) (or more than one color in one eye with a tuft of white hair in the front of the head. It is a genetic disease prevalent so that if one of the parents is sick, half of the children suffer from the disease Acquired causes causes during pregnancy Such as fevers that afflict the mother during pregnancy, especially in the first three-months, the most important of which is German measles, which leads to sensorineural hearing impairment and congenital defects of eyesight and heart Preeclampsia, high blood pressure and kidney injury Direct injuries, bleeding and exposure to radiation (other than television or ultrasound - Medicines harmful to the fetus, as well as exposure to smoke and smoking Continuing vomiting and severe fluid deficiency for the mother during pregnancy, especially in the first months

### **Reasons during childbirth**

Such as obstructed childbirth, which leads to a lack of oxygen to the fetus the umbilical cord wraps around the neck, going down the sitz Injury to the fetus during childbirth use of surgical instruments such as peat Twins or a small fetus less than 1500 g. Causes after childbirth Gallbladder infection after childbirth especially if it reached 20 mg in the blood, such as incompatibility of blood Various fevers measles, chicken pox, meningitis, parotid, influenza Head injuries from inserting hard objects into the ear to a fracture of the base of the skull

Acute and chronic ear infections, whether behind the tympanic infiltration, purulent inflammation, or tuberculosis Abuse of medications harmful to the auditory nerve, such as garamycin and aspirin Exposure to noise (factories allowed at 85 decibels of noise for 8 hours per day Blood / vascular causes such as high blood pressure and anemia - Atrophy and fibrosis of the peripheral and central auditory system, such as scattered sclerosis General or specific immune diseases of the ear - Tumors in the ear area causes - Cerumen - Foreign bodies - Stiffness of the stirrup bone - Old age - Meniere's disease (vertigo) - Hormonal disorder - General diseases such as diabetes mellitus

One of the causes of conductive hearing loss is also a disorder of the outer and outer ear <sup>14</sup> (middle:

External ear strikes\_

Auricular malformations, which are congenital malformations of the auricle from birth not small Normal ear pinna called -smith micrtia deviation of pinna from its normal position -(melotia)

Anotia disappearance of the external auditory canal (atresia)

Congenital disappearance of the external auditory canal and its closure may be in any location from channel

### **Third - Types of hearing impairment <sup>15</sup> (.**

Hearing impairment is classified into three areas

A : According to the age group

1- :Design pre-language or congenital deafness

It is the occurrence of a disability before the child acquires the language, and this type of deafness does not allow the child to acquire language or speech,

and in this case he needs to learn the language through the sense of sight or the use of sign language

Design after language acquisition

It is that the child acquires language and speech before becoming deaf. This type of deafness may occur suddenly or may occur gradually )called acquired deafness( and hearing aids )ie, hearing aids( must be provided in order for the communication process to take place effectively

*B : According to the hearing loss*

Mild hearing impairment

The amount of hearing loss here is from 20-39 dB, and these people have a simple hearing problem and can learn within the schools of ordinary individuals  
Moderate hearing impairment

The amount of hearing loss in these individuals from 40-69 dB They are called hard of hearing, they have hearing difficulties but are able to learn in regular schools using hearing aids

Severe hearing impairment

The loss is between 70-89 decibels, and these individuals have greater problems with communication and language learning and need specialized educational services  
Very severe hearing impairment

Here the hearing loss is more than 90 decibels, and they also need specialized educational services

A : According to the nature and location of the injury

1- :Communicative hearing loss

It results from a defect in the outer and middle ear that prevents the transmission of sound waves to the inner ear, and the use of headphones is beneficial

Sensorineural hearing loss -2

It results from a defect in the inner ear or the auditory nerve, and the use of headphones in this type is of little benefit

2- :Mixed hearing loss

A person with simultaneous communicative hearing loss and sensorineural hearing loss, the use of headphones may be beneficial

Central hearing loss -4

It is what occurs in the case of a defect in the auditory pathways in the brain stem or auditory centers, and the use of headphones in this type is of limited benefit

Hearing impairment may be real organic resulting from a disease or injury to the auditory system or it may be false i.e. a person claims hearing impairment to obtain compensation in a case or a percentage of disability from a factory or even a child who refuses to go to school and there may be weakness Hearing is real but the patient exaggerates it

True organic( hearing impairment \*

Peripheral hearing impairment )outer ear, middle ear, inner ear, and auditory nerve( -

#### **Fourth - Suggestions to reduce hearing impairments**

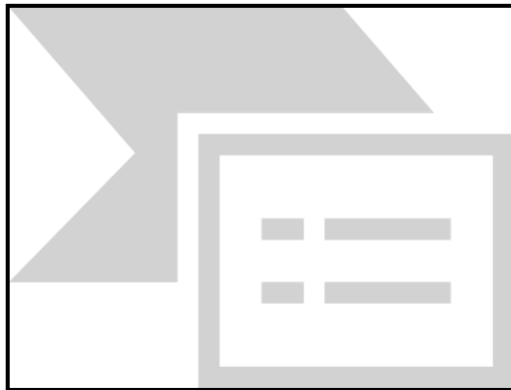
Hearing disability represents a challenge to the normal development of language in children. Therefore, early diagnosis and early intervention lead to the best results, but what is better than early intervention is to follow the golden rule "prevention is better than cure." These are some examples that can help avoid the occurrence of disability Hearing disability resulting from hereditary familial hearing loss: This disability can be reduced through pre-marital examination with advice not to marry relatives in accordance with the advice of religion in this so as not to focus the genetic characteristics that cause hearing loss Leakage behind the eardrum: It is a very common disease in children, and although most cases improve with drug or surgical treatment, some chronic cases lead to hearing impairment and delay in language development, and these cases can be prevented by simple instructions from the mother in the way to breastfeed the child. The head of the newborn should be elevated when feeding, so as not to lead to inflammation and blockage of the Eustachian tube, which injects air into the middle ear to equalize the pressure on both sides of the tympanic membrane and empty the natural mucous secretions from it. Also, leakage behind the eardrum is considered an immune disease, which increases with general weakness and exposure to dust, smoke and allergens such as foods that contain preservatives. Therefore, leakage behind the eardrum can be prevented by not exposing the child to smoke and by advising the father not to smoke at home or carry the child and the smell of Smoke emanates from his mouth, and it is preferable to reduce the iced drinks or ice water during the treatment period or for frequent cases, and it is preferable to raise the immune status of the child by inhaling fresh air and a lot of fresh vegetables and fruits, which contain vitamins, especially vitamin A, such as carrots and vitamin C. Like green pepper, they also have an important role in the vitality and safety of the mucous membranes lining the mouth, nose and middle ear Chronic purulent otitis media: Chronic otitis media results from acute inflammation that is not treated well, and here is a big role for the mother, as acute inflammation can be cured without any complications. If the mother feels that the child has recovered from the disease after a few days of treatment, where the heat and pain disappear, the hearing improves, and the child exercises his normal life, these evidences are not enough to stop the treatment and the treatment must continue for the period specified by the specialist doctor even if this leads to the purchase of another dose of medicine Expensive, the apparent improvement may end after a short period and the child relapses the disease again and the child needs to repeat the treatment completely. With the recurrence of such inflammation, an acute disease that is completely curable develops into a chronic disease that requires surgical intervention or a hearing aid with a hearing loss rate that harms children in their first years of life

Exposure to noise: The hearing impairment resulting from exposure to noise is one of the disabilities that can be avoided. If the noise is caused by the sounds of factory machines, following the industrial safety guidelines to reduce noise emanating from machines, reduce noise transmission from machines to workers, and determine the duration of exposure to noise that is inversely proportional to the noise level. All of this reduces the possibilities of hearing impairment, and the use of personal ear protectors or even A small piece of cotton in the ear may be

enough to reduce the volume of sound that reaches the ear from the harmful level to the safe level allowed

As for the noise pollution and noise resulting from cars and weddings, and the wrong use of audio recorders, the prevention of the resulting hearing impairment requires a civilized method of education for children from a young age and educating those who harm others without awareness or understanding of the damages resulting from noise. Here, it should be noted that the negative effects of noise far exceed hearing and ear damage, as it also leads to high blood pressure, inability to sleep and breathing disturbances, including what leads to serious social problems in the family

### **Audiometer showing hearing impairment after exposure to loud sound**



Medicines harmful to the nerve of hearing: Some medicines, such as antibiotics from the group of aminoglycosides, lead to severe hearing loss, especially at high frequencies. We have avoided severe hearing impairment that requires rehabilitation and hearing aids. Other medicines that are harmful to the nerve of hearing include the group of salicylates, which are used without consulting the doctor in cases of headaches and colds, although the symptoms of this group such as tinnitus, imbalance and hearing impairment are temporary symptoms that can be cured after stopping the medication, but it is advised not to overdo it





**cilia were destroyed after the aminoglycoside drug, the healthy natural cilia**

General diseases such as high blood pressure and diabetes mellitus: These diseases directly affect the function of nerves, blood circulation and the exploitation of oxygen in different tissues, and thus lead to hearing impairment and difficulty in interpreting words. Regular treatment of such diseases reduces exposure to various complications, including hearing impairment

***Audiometer representing a hearing impairment in the left ear )blue color( As a result of high blood pressure***

Viral and bacterial infections: Viral infections such as infection with the group of influenza viruses and the parotid gland, as well as bacterial infections such as meningitis and typhoid fever, and such infections result from infection through droplets and presence in crowded places or exposed foods for typhoid fever Disability can be avoided from these causes by avoiding crowded places and bad habits

### **Conclusion**

Hearing impairment is Problems that prevent the individual's auditory system from performing its functions, or reduce the ability of the individual to The individual can hear different sounds, and the hearing impairment ranges in severity from degrees Mild and moderate levels that result in hearing impairment, to very severe degrees that result in designed by her Causes of hearing impairment Hereditary causes, familial , acquired causes Causes during pregnancy causes during childbirth Postpartum causes External ear strikes-auricle abnormalities Disappearance of the external auditory canal Congenital disappearance of the external auditory canal and its closure may be at any site from the channel Hearing impairment is classified into three axes , according to the age group: According to the hearing loss , according to the nature and

location of the injury Hearing disability represents a challenge to the normal language development in children. Therefore, early diagnosis and early intervention lead to the best results, but what is better than early intervention is to follow the golden rule "prevention is better than cure." These are some examples that can help avoid the occurrence of a disability

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