# DOWNLOAD PDF V. 3. HEARING IMPAIRMENT.

## Chapter 1 : Hearing Impairments - Project IDEAL

*Here are 3 tips for getting the most out of watching television with hearing loss. On average, American adults aged 50+ spend 6 hours 45 minutes per day watching television, according to The Total Audience Report.*

Have you ever heard a ringing or buzzing sound in your ears after going to a party, concert, or other really loud event? This condition is called tinnitus pronounced: Going to concerts or blasting your stereo once in a while is common. But over time, too much exposure to loud noise can lead to a condition known as noise-induced hearing loss NIHL. Personal music players are among the chief culprits of NIHL among teens. Video games, television sets, movie theaters, traffic, and some machines and appliances can also make the environment too noisy for the average person. In fact, many experts believe that people are losing their hearing at much younger ages than they did just 30 years ago. In addition to noise-induced hearing loss, other types of hearing impairment can affect people during their teen years. Some people are born with hearing impairment â€" and kids and teens can lose their hearing for many reasons. How the Ear Hears Think about how you can feel speakers vibrate on your sound system or feel your throat vibrate when you speak. Sound, which is made up of invisible waves of energy, causes these vibrations. Hearing begins when sound waves that travel through the air reach the outer ear or pinna, which is the part of the ear you can see. The sound waves then travel from the pinna through the ear canal to the middle ear, which includes the eardrum a thin layer of tissue and three tiny bones called ossicles. When the eardrum vibrates, the ossicles amplify these vibrations and carry them to the inner ear. The inner ear is made up of a snail-shaped chamber called the cochlea pronounced: When the vibrations move through the fluid, the tiny outer hair cells amplify the vibrations. Then, the inner hair cells translate the vibrations into electrical nerve impulses and send them to the auditory nerve, which connects the inner ear to the brain. When these nerve impulses reach the brain, they are interpreted as sound. The cochlea is like a piano: Hearing may seem like a long process, but it happens almost instantly. The school bell rings and you know you need to get to your next class. The phone rings and you automatically pick it up. You hear a question and immediately respond to it. But in reality, every time you hear a sound, the various structures of the ear have to work together to make sure the information gets to your brain. What Is Hearing Impairment? Conductive hearing loss results from a problem with the outer or middle ear, including the ear canal, eardrum, or ossicles. A blockage or other structural problem interferes with how sound gets conducted through the ear, making sounds seem quieter. In many cases, conductive hearing loss can be corrected with medications or surgery. The most common type is caused by the outer hair cells not functioning correctly. The person has trouble hearing clearly, understanding speech, and interpreting various sounds. This type of hearing loss is permanent. In many cases, hearing aids can help the person hear normally. This is also a type of permanent hearing loss and usually people can benefit from cochlear implants. In some other cases, the outer hair cells work correctly, but the inner hair cells or the nerve are damaged. This type of hearing loss is called auditory neuropathy spectrum disorder. The transmission of sound from the inner ear to the brain is then disorganized. Children with auditory neuropathy spectrum disorder can develop strong language and communication skills with the help of medical devices, therapy, and visual communication techniques. Mixed hearing loss happens when someone has both conductive and sensorineural hearing problems. Central hearing loss happens when the cochlea is working properly, but other parts of the brain are not. This is a less frequent type of hearing loss and is more difficult to treat. Auditory processing disorders APD. This is not exactly a type of hearing loss because someone with APD can usually hear well in a quiet environment. But most people with APD have difficulty hearing in a noisy environment, which is the usual environment we live in. In most cases, APD can be treated with proper therapy. The degree of hearing impairment can vary widely from person to person. In some types of hearing loss, a person can have much more trouble when there is background noise. One or both ears may be affected, and the impairment may be worse in one ear than in the other. The timing of the hearing loss can vary, too. Congenital hearing loss is present at birth. Acquired hearing loss happens later in life â€" during childhood, the teen years, or in adulthood â€" and it can be sudden or progressive happening slowly over time. Another 26 million are exposed to hazardous noise levels on a regular basis. Hearing loss is also the

most common birth anomaly. What Causes Hearing Impairment? The most common cause of conductive hearing loss in kids and teens is otitis pronounced: Ear infections cause a buildup of fluid or pus behind the eardrum, which can block the transmission of sound. Even after the infection gets better, fluid might stay in the middle ear for weeks or even months, causing difficulty hearing. Blockages in the ear, such as a foreign object, impacted earwax or dirt, or fluid due to colds and allergies , can also cause conductive hearing loss. People also get conductive hearing loss when key parts of the ear â€" the eardrum, ear canal, or ossicles â€" are damaged. For example, a tear or hole in the eardrum can interfere with its ability to vibrate properly. Causes of this damage may include inserting an object such as a cotton swab too far into the ear, a sudden explosion or other loud noise, a sudden change in air pressure, a head injury, or repeated ear infections. Sensorineural hearing impairment results from problems with or damage to the inner ear or the auditory nerve. Injuries to the ear or head. Injuries such as a skull fracture can cause hearing loss. Complications during pregnancy or birth. Some babies are born with hearing impairment due to infections or illnesses that the mother had while she was pregnant, which can interfere with the development of the inner ear. Premature babies are also at higher risk for hearing impairment. Certain conditions, such as repeated ear infections, mumps, measles, chickenpox, and brain tumors, can damage the structures of the inner ear. Certain medications, such as some antibiotics and chemotherapy drugs, can cause hearing loss. Remember that these cells help us hear soft sounds. If exposure to loud noise continues for long periods of time, the inner hair cells and even the auditory nerve can become affected. How Do Doctors Diagnose It? All babies are screened before they leave the hospital to see if they have hearing loss. Certain symptoms in teens should prompt a trip to the doctor. According to the American Speech-Language-Hearing Association, you should let your parents or doctor know if: You feel that people mumble or that their speech is not clear, or you hear only parts of conversations when people are talking. You often ask people to repeat what they said. You need to ask others about the details of a class or meeting you attended. People say that you play music or your TV too loudly. The doctor will do an ear exam and, if necessary, refer someone with these symptoms to an audiologist, a health professional who specializes in diagnosing and treating hearing problems. The audiologist will do various hearing tests that can help detect where the problem might be. For example, to test the function of the inner ear, the audiologist can put a special device behind the ear that transmits tones directly there. This helps to distinguish between inner ear and middle or outer ear problems. For other tests, the audiologist will place a small probe at the entrance of the ear canal and record tiny responses from the cochlea. The audiologist can also study how the brain reacts to sounds by placing electrodes small stickers on the scalp. Some other tests will require the person to indicate what they heard when the audiologist is playing sounds or words, in quiet or in the presence of a background noise. A person may also need to see an otolaryngologist pronounced: How Is It Treated? Treatment for hearing loss varies depending upon the cause of the hearing impairment. Treatment may involve removing wax or dirt from the ear or treating an underlying infection. If there is damage or a structural problem with the eardrum or ossicles, surgery may help to repair it. If the problem is with the cochlea or hearing nerve, a hearing aid or cochlear implant may be recommended. Hearing aids come in various forms that fit inside or behind the ear and make sounds louder. They are adjusted by the audiologist so that the sound coming in is amplified enough to allow the person with a hearing impairment to hear it clearly. In those cases, a cochlear implant may be recommended. Cochlear implants are surgically implanted devices that bypass the damaged inner ear and send signals directly to the auditory nerve. A small microphone behind the ear picks up sound waves and sends them to a receiver that has been placed under the scalp. This receiver then transmits impulses directly to the auditory nerve. These signals are perceived as sound and allow the person to hear. Depending upon whether someone is born without hearing congenital deafness or loses hearing later in life after learning to hear and speak, which is known as post-lingual deafness , medical professionals will determine how much therapy the person needs to learn to use an implant effectively.

## Chapter 2 : Deafness and hearing loss: Causes, symptoms, and treatments

*Other causes of hearing loss include viral infections, genetic disorders, and, rarely, a benign tumor on the nerve of hearing and balance called an acoustic neuroma.*

This is a reduced ability to hear sounds in the same way as other people. This occurs when a person cannot understand speech through hearing, even when sound is amplified. This refers to a total lack of hearing. An individual with profound deafness is unable to detect sound at all. The severity of hearing impairment is categorized by how much louder volumes need to be set at before they can detect a sound. Some people define profoundly deaf and totally deaf in the same way, while others say that a diagnosis of profound deafness is the end of the hearing spectrum. How does hearing work? Sound waves enter the ear, move down the ear or auditory canal, and hit the eardrum, which vibrates. The vibrations from the eardrum pass to three bones known as the ossicles in the middle ear. These ossicles amplify the vibrations, which are then picked up by small hair-like cells in the cochlea. These move as the vibrations hit them, and the movement data is sent through the auditory nerve to the brain. The brain processes the data, which a person with functional hearing will interpret as sound. Types There are three different types of hearing loss: This type can occur for many reasons, including: The ossicles may become impaired as a result of infection, trauma, or fusing together in a condition known as ankylosis. This kind of hearing loss is normally due to damaged hair cells in the cochlea. As humans grow older, hair cells lose some of their function, and hearing deteriorates. Long-term exposure to loud noises, especially high-frequency sounds, is another common reason for hair cell damage. Damaged hair cells cannot be replaced. Currently, research is looking into using stem cells to grow new hair cells. Sensorineural total deafness may occur as a result of congenital deformities, inner ear infections, or head trauma. Long-term ear infections can damage both the eardrum and the ossicles. Sometimes, surgical intervention may restore hearing, but it is not always effective. Deafness and speech Hearing loss can affect speech ability depending on when it occurs. Prelingual deafness This is an inability to fully or partially hear before learning how to utter or understand speech. An individual with prelingual deafness was born with a congenital deformity or will have lost hearing during infancy. In the majority of cases, people with prelingual deafness have hearing parents and siblings. Many are also born into families who did not already know sign language. They consequently also tend to have slow language development. The few who were born into signing families tend not to face delays in language development. If children with prelingual deafness are given cochlear implants before the age of 4 years, they can acquire oral language successfully. Oral language and the ability to use social cues are very closely interrelated. That is why children with hearing loss, especially those with severe symptoms, may not only experience delayed language development, but also slower social development. As a result, children with prelingual deafness risk becoming socially isolated, unless they attend a school that has a well-run special needs department with other children who have the same condition. Children who identify with a "deaf subculture," or those who have learned how to use sign language, might feel less isolated. However, some young people might experience isolation if their parents have not yet learned sign language. Post-lingual deafness Most people with hearing loss have post-lingual deafness. They acquired spoken language before their hearing was diminished. A medication side effect, trauma, infection, or disease may have caused losing their sense of hearing. In most people with post-lingual deafness, hearing loss onsets gradually. Household members, friends, and teachers may have noticed a problem before they acknowledged the disability. Depending on the severity of hearing loss, the individual may have had to use hearing aids, receive a cochlear implant, or learn how to lip-read. People who experience hearing loss face different challenges, depending on when it occurs and how long it takes to develop. They might have to become familiar with new equipment, undergo surgery, learn sign language and lip reading, and use various communication devices. A feeling of isolation is a common problem, which can sometimes lead to depression and loneliness. A person with post-lingual hearing loss also has to face the often-distressing process of coming to terms with a disability. The condition may also pose challenges for household members, loved ones, and close friends, who have to adapt to the hearing loss. Miscommunication can place a strain on

relationships, not only for the person with the hearing impairment, but also the people around them. If the hearing loss is gradual and has not yet been diagnosed, family members may mistakenly believe that the individual with the condition is becoming more distant. Unilateral and bilateral deafness Single-sided deafness SDD , or unilateral deafness, refers to hearing impairment in just one ear, while bilateral deafness is hearing impairment in both. People with a unilateral hearing impairment may find it hard to carry on a conversation if the other person is on their affected side. Pinpointing the source of a sound may be more difficult, when compared with those who can hear well in both ears. Understanding what others are saying when there is a lot of environmental noise might be hard. With little to no background noise, a person with unilateral deafness has virtually the same communicative abilities as a person with functional hearing in both ears. Babies born with unilateral deafness tend to have developmental speech delays. They may find it harder to concentrate when they go to school. Social activities may be more challenging than it is for children with no hearing problems. Symptoms The symptoms of hearing impairment depend on its cause. Some people are born without being able to hear, while others suddenly become deaf due to an accident or illness. For most people, symptoms of deafness progress gradually over time. Some conditions may have hearing loss as a symptom, such as tinnitus or stroke. Hearing impairment in infants The following signs may indicate a hearing problem: Before the age of 4 months, the baby does not turn their head toward a noise. By the age of 12 months, the baby still has not uttered a single word. The infant does not appear to be startled by a loud noise. The infant responds to you when they can see you, but respond far less or do not respond at all when you are out of sight and call out their name. The infant only seems to be aware of certain sounds. Hearing impairment in toddlers and children These signs might become more evident in slightly older children: The child is behind others the same age in oral communication. The child keeps saying "What? When the child speaks, their utterances are not clear. Four levels of deafness There are four levels of deafness or hearing impairment. Mild deafness or mild hearing impairment: The person can only detect sounds between 25 and 29 decibels dB. They may find it hard to understand the words other people are saying, especially if there is a lot of background noise. Moderate deafness or moderate hearing impairment: The person can only detect sounds between 40 and 69 dB. Following a conversation using hearing alone is very difficult without using a hearing aid. The person only hears sounds above 70 to 89 dB. A severely deaf person must either lip-read or use sign language in order to communicate, even if they have a hearing aid. Anybody who cannot hear a sound below 90dB has profound deafness. Some people with profound deafness cannot hear anything at all, at any decibel level. Communication is carried out using sign language, lip-reading, or reading and writing. Diagnosis Patients who suspect something is wrong with their hearing will initially go and see their doctor. The doctor will talk to the patient and ask several questions regarding the symptoms, including when they started, whether or not they have gotten worse, and whether the individual is feeling pain alongside the hearing loss. A physical examination An otoscope is an instrument that allows a physician to examine the inside of the ear. The doctor will look into the ear using an otoscope. This is an instrument with a light at the end. The following may be detected during the examination: Do you often find yourself asking people to repeat what they said? Do you find it hard to understand people on the telephone? Do you miss the doorbell when it rings? If so, does this happen frequently? When you chat with people face-to-face, do you have to focus carefully? Has anybody ever mentioned to you that you might have a problem with your hearing? Do you find more people mumble today than they used to? When several people are talking, do you find it hard to understand what one of them is telling you? Are you often told that the television, radio, or any sound-producing device is too loud? Do you find male voices easier to understand than female voices?

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## Chapter 3 : Getting Veterans Disability Compensation for Vision or Hearing Loss | calendrierdelascience.co

*Hearing impairment (called auditory impairment in Texas) is defined by IDEA as "an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance." Deafness is defined as "a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing.*

What is hearing loss? Hearing loss means you have trouble hearing or you cannot hear at all in one or both ears. Hearing loss can happen suddenly or slowly over time. What are the types of hearing loss? Conductive hearing loss occurs when there is a problem with the outer or middle ear. Sound waves cannot reach your inner ear. This type of hearing loss may be caused by earwax buildup, fluid, or a punctured ear drum. It can often be treated by correcting the cause of the problem. Sensorineural hearing loss is caused by damage to parts of the inner ear. There is usually no cure for sensorineural hearing loss. Mixed hearing loss includes both conductive and sensorineural hearing loss. What causes hearing loss? Regular exposure to loud noise Head injury Blockage in your ear caused by earwax buildup, swelling, cyst, or other growth Medical conditions such as ear infections or otosclerosis abnormal growth of bones in the ear Medicines that damage your ears such as aspirin, certain antibiotics, and diuretics What are the signs and symptoms that you may have hearing loss? You often ask others to repeat what they just said. You may think people are mumbling or not speaking clearly. Family members ask you if your hearing is okay. You cup your hand behind one of your ears when you listen. You need to have the radio or television louder than usual. You need to lean forward or turn your head to be able to hear. You have ringing or buzzing in your ears, or you are dizzy. You avoid certain situations because you have a hard time hearing. How is hearing loss diagnosed? Your healthcare provider will ask about your hearing loss and examine your ears. You may need any of the following: Hearing tests may be done to check how well you hear whispered words or soft sounds such as a finger rub. A tuning fork may be used to test your hearing. A tuning fork is made of metal. It vibrates and makes noise when it strikes an object. Your healthcare provider will hold the tuning fork to the left and right of your head. He will ask if you can hear the noise and feel the vibration in each ear. Audiometry is a test used to measure how well you can hear different sounds. You will put on headphones that are attached to a machine. Sounds will be sent through the headphones. You will press a button or raise your hand when you hear the sounds. Each ear will be tested separately. Another device will be placed on the bone behind your ear. The device will test how well vibration moves through the bones. This is called bone conduction. Tympanometry is a test used to find hearing problems in the middle ear. A device is placed into your ear. The device creates pressure changes that make your eardrum vibrate. How is hearing loss treated? Treatment depends on the cause of your hearing loss. Removal of earwax or treatment for any medical conditions that have caused your hearing loss may be needed. A hearing aid is a small device that fits inside your ear and helps you hear better. Your healthcare provider can help you choose a hearing aid that is right for you. A cochlear implant is a tiny device that is put into your cochlea part of your inner ear during surgery. This device can only be used in people with sensorineural hearing loss. Assistive listening devices ALDs pick up sound and send it through earphones or a headset. ALDs can help you hear better when you are in a place with background noise. Examples include theaters, classrooms, or auditoriums. ALDs are also available for phones. ALDs can be used alone or with hearing aids or cochlear implants. Surgery may be needed if your hearing loss is caused by otosclerosis. Surgery may also be done to place small tubes in your ear. These tubes help drain fluid and help prevent ear infections. How can I manage my hearing loss? Use ear plugs or ear protectors if you do activities that are very loud. These include using a lawnmower and power tools or going to a concert that has loud music. Use well-fitting foam earplugs that completely block your ear canal. Do not listen to loud music through headphones or earphones. Tell people that you have hearing loss. Ask people to face you directly when they speak to you, and to slow down if they are speaking too fast. When you are in a group setting, sit in a location where you can clearly see the faces of the people who are speaking. Ask people not to speak loudly or shout when they are speaking to you. Try to talk with others in a quiet place. Background noise makes it harder for you to hear. Pay close attention to your surroundings when you drive. Do not talk to people in your car while you are driving. Watch for

problems on the road or approaching emergency vehicles. When should I seek immediate care? You have fluid, pus, or blood leaking from your ear. You have sudden, severe hearing loss. When should I contact my healthcare provider? You have a fever. You have ear pain that is getting worse. You have ringing in your ears or dizziness that will not go away. You have questions or concerns about your condition or care. Care Agreement You have the right to help plan your care. Learn about your health condition and how it may be treated. Discuss treatment options with your healthcare providers to decide what care you want to receive. You always have the right to refuse treatment. The above information is an educational aid only. It is not intended as medical advice for individual conditions or treatments. Talk to your doctor, nurse or pharmacist before following any medical regimen to see if it is safe and effective for you.

## Chapter 4 : CalVet Veteran Services Hearing Loss and Tinnitus

*The official definition of a hearing impairment by the Individuals with Disabilities Education Act (IDEA) is "an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but is not included under the definition of 'deafness.'".*

Noises may seem too loud or too quiet Difficulty following a conversation when two or more people are speaking at the same time Problems listening in noisy environments e. Treatment There is no medical or surgical method of repairing the tiny hair-like cells of the inner ear or the auditory nerve if they are damaged. Assistive listening devices, like alerting devices, vibrating alarm clocks and captioned phones help provide a complete hearing solution. Conductive hearing loss Ear infections in children are a common cause of conductive hearing loss. Conductive hearing loss may be temporary or permanent, depending on the cause. The following symptoms are also consistent with this type of loss: These causes usually result in temporary hearing losses. The treating physician and hearing healthcare professional will monitor hearing ability and work with the patient to determine when and if a hearing solution is needed. Conductive hearing losses caused by other abnormalities, like stenosis of the ear canal, exostoses, otosclerosis and ossicular chain discontinuity are more difficult to treat medically and may be considered a permanent hearing loss. These conductive losses may be treated with traditional or bone-conduction hearing aids, bone-anchored implantable devices or middle ear implants. Assistive listening devices, like amplified telephones or headphones for television, may help provide a complete hearing solution. Causes Mixed hearing loss commonly occurs when the ear sustains some sort of trauma. It can also happen gradually over time when one hearing loss is compounded by another. For example, an individual with a long-standing conductive hearing loss might experience presbycusis as they age. Alternatively, an individual with sensorineural hearing loss may have a temporary mixed hearing loss due to wax impaction. Symptoms The symptoms of mixed hearing loss will be some combination of those listed above for the other two types of hearing loss. Treatment Treatment options for mixed hearing loss will depend on whether the loss is more sensorineural or conductive in nature. If a greater portion of the loss is caused by a conductive component, surgical procedures and other medical treatments might be more effective in correcting the hearing concerns. If a greater portion of the loss is sensorineural, hearing aids or implantable devices may be the best option. Read more about Mandy.

## Chapter 5 : Hearing Impaired Phone: calendrierdelascience.com

*Hearing impairment can also include muffled hearing and distorted hearing. Hearing impairment, also called hearing loss is a symptom or result of a variety of diseases, disorders and conditions. The ear includes three areas: the outer ear, middle ear and inner ear.*

The examples and perspective in this section may not represent a worldwide view of the subject. You may improve this article , discuss the issue on the talk page , or create a new article , as appropriate. By correcting for age in assessing hearing, one tends to overestimate the hearing loss due to noise for some and underestimate it for others. As noise damage progresses, damage spreads to affect lower and higher frequencies. Various governmental, industry and standards organizations set noise standards. Exposures to other ototoxins such as pesticides, some medications including chemotherapy agents, solvents, etc. This is called a synergistic interaction. Since noise damage is cumulative over long periods of time, persons who are exposed to non-workplace noise, like recreational activities or environmental noise, may have compounding damage from all sources. Many people are unaware of the presence of environmental sound at damaging levels, or of the level at which sound becomes harmful. Noise damage is cumulative; all sources of damage must be considered to assess risk. Sound intensity sound energy, or propensity to cause damage to the ears increases dramatically with proximity according to an inverse square law: In the USA, Studies of primitive peoples indicate that much of what has been attributed to age-related hearing loss may be long term cumulative damage from all sources, especially noise. People living in preindustrial societies have considerably less hearing loss than similar populations living in modern society. Among primitive people who have migrated into modern society, hearing loss is proportional to the number of years spent in modern society. A summary report was published in Syndromic deafness occurs when there are other signs or medical problems aside from deafness in an individual. These are diseases that have deafness as one of the symptoms or as a common feature associated with it. Many of the genetic mutations giving rise to syndromic deafness have been identified. In nonsyndromic cases, where deafness is the only finding, it is more difficult to identify the genetic mutation although some have been discovered. A single base change in a large Costa Rican family was identified as causative in a rare form of low frequency onset progressive hearing loss with autosomal dominant inheritance exhibiting variable age of onset and complete penetrance by age The most common dominant syndromic forms of hearing loss include Stickler syndrome and Waardenburg syndrome. The most common recessive syndromic forms of hearing loss are Pendred syndrome and Usher syndrome. The congenital defect microtia , deformed or unformed outer ear, can be associated with partial or complete conductive deafness, depending upon the severity of the deformity and whether the middle ear is also affected. It can also be associated with abnormalities of the inner ear giving rise to an additional sensorineural component to the hearing loss mixed deafness. Dozens of additional genes for nonsyndromic deafness have been identified. Premature birth can be associated with sensorineural hearing loss because of an increased risk of hypoxia , hyperbilirubinaemia , ototoxic medication and infection as well as noise exposure in the neonatal units. Disorders[ edit ] strokes â€" Depending on what blood vessels are affected by the stroke, one of the symptoms can be deafness [45]. Multiple sclerosis, or MS, is an autoimmune disease where the immune system attacks the myelin sheath , a covering that protects the nerves. If the auditory nerve becomes damaged, the affected person will become completely deaf in one or both ears. There is no cure for MS. This usually occurs as a consequence of trauma, including barotrauma, and can give rise to vertigo as well as hearing loss. The patient may be generally unwell at the time. Measles may cause auditory nerve damage but usually gives rise to a chronic middle ear problem giving rise to a mixed hearing loss. Syphilis is commonly transmitted from pregnant women to their fetuses, and about a third of infected children will eventually become deaf. Although rare, it is possible for autoimmune processes to target the cochlea specifically as a first presentation. Granulomatosis with polyangiitis is one of the autoimmune conditions that may precipitate hearing loss. Otosclerosis is a condition that can cause fixation of the stapes or stirrup in the middle ear preventing its movement and causing a conductive hearing loss. Vestibular schwannoma , erroneously known as Acoustic

neuromas , and other types of brain tumors can cause hearing loss by infringement of the tumor on the vestibulocochlear nerve Congenital problems Superior semicircular canal dehiscence , a gap in the bone cover above the inner ear, can lead to low-frequency conductive hearing loss, autophony and vertigo. These medications are considered ototoxic. This includes loop diuretics such as furosemide and bumetanide, non-steroidal anti-inflammatory drugs NSAIDs both over-the-counter aspirin, ibuprofen, naproxen as well as prescription celecoxib, diclofenac, etc. The link between NSAIDs and hearing loss tends to be greater in women, especially those who take ibuprofen six or more times a week. Food and Drug Administration FDA announced that a warning about possible sudden hearing loss would be added to drug labels of PDE5 inhibitors , which are used for erectile dysfunction. Ototoxicity In addition to medications, hearing loss can also result from specific chemicals in the environment: It damages the cochlea with lesions and degrades central portions of the auditory system. The effects is greatest when the combined exposure include impulse noise.

# DOWNLOAD PDF V. 3. HEARING IMPAIRMENT.

## Chapter 6 : Learn about the 3 types of hearing loss

*SPA - LundeenÂ© 3 13 Meniere's Disease â€¢ Incidence - #3 cause of sensorineural hearing loss in adults - Low end = , (Stahle et al., ).*

Printer-friendly version Functional hearing loss ranges from mild to profound. Often, people who have very little or no functional hearing refer to themselves as "deaf. Accommodations for students who are deaf or hard of hearing can be classified as "visual" and "aural. Visual accommodations include sign language interpreters, lip reading, and captioning. Aural accommodations include amplification devices such as FM systems. Hard of Hearing Some students who are hard of hearing may hear only specific frequencies or sounds within a certain volume range. They may rely heavily upon hearing aids and lip reading. Some students who are hard of hearing may never learn sign language. Students who are hard of hearing may have speech impairments as a result of their inability to hear their own voices clearly. Being deaf or hard of hearing can affect students in several ways. They may have difficulty following lectures in large halls, particularly if the acoustics cause echoes or if the speaker talks quietly, rapidly, or unclearly. Students who are hard of hearing may use hearing aids. Students who use hearing aids will likely benefit from amplification in other forms such as assistive listening devices ALDs like hearing aid compatible telephones, personal neck loops, and audio induction loop assistive listening systems. Some students use FM amplification systems which require the presenter to wear a small microphone to transmit amplified sound to the student. Deafness Students who are deaf may have little or no speech depending on the severity of the hearing loss and the age of onset. They will often communicate through a sign language interpreter. Other students may use manual English or signed English , which is sign language in English word order. A certified interpreter is used for translation into either language. Students who are deaf may also benefit from real-time captioning, where spoken text is typed and projected onto a screen. It is important to remember that a student who is using an interpreter, who is lip reading, or who is reading real-time captioning cannot simultaneously look down at written materials or take notes. Describing written or projected text is therefore helpful to this student. Handouts that can be read before or after class or other presentation are useful. Accommodations Examples of accommodations for students who have hearing impairments include:

## Chapter 7 : Military Disability ratings for Ear conditions

*Video to help understand hearing loss and hearing impairment by explaining how hearing works. Cochlear implants can help children and adults with hearing loss.*

The impairment ranges from mild hearing loss to total hearing loss and can either be temporary or permanent depending on the cause. There are three main forms of hearing loss: Conductive hearing loss is caused by damage to the outer or middle ear and can usually be repaired or will heal over time, making it unlikely to result in total hearing loss. Sensorineural hearing loss is caused by damage to the inner ear cochlea or the retrocochlear nerves nerves that connect the ear to the brain. Unlike conductive hearing loss, sensorineural hearing loss is often total and irreparable. Mixed hearing loss is a combination of conductive and sensorineural hearing loss. It can either be caused at once, or be caused by a buildup of ailments to the ear. Conductive hearing loss is usually caused by temporary factors. Many illnesses or some drugs, such as aspirin, can cause partial hearing loss as a symptom or a side-effect. Other causes can be foreign objects caught in the ear, malformation of the outer ear from birth or accident, tumors growing within the ear or even something as simple as a buildup of ear wax. Sensorineural hearing loss can be caused by the same things as conductive hearing loss. It can also be suffered after noise exposure, head trauma or simply the natural aging process. Mixed hearing loss is simply a combination of conductive and sensorineural hearing loss and can be caused by anything that would inflict both forms of hearing loss or be a compound of different sources. Two of the main causes of sensorineural hearing loss can be encountered commonly in the military. The first, head trauma, is the more unpredictable of the two because it is all but impossible to tell how the body will react. The second cause, noise-induced hearing loss, is caused by sustained exposure to dangerous levels of sound. Anything at or above 85 decibels will eventually cause damage to the ear. A decibel is a measurement that determines the noise level of a sound. Decibels are measured by studying the amount of pressure a sound places on the ear drum, which then transmits them through the ear. In higher decibels, the amount of pressure placed upon the ear can damage the sensitive hair cells of the inner ear. Once damaged, these cells cannot regrow or repair, so any damage incurred is permanent. It is important to note that the further an individual is from the noise source the lower a sound will be when it reaches the ear, so decibels are not exact measurements. The following are decibel levels associated with common military noises. These are averages and will vary with distance, conditions and types of equipment. Recoilless Rifle -

## Chapter 8 : Hearing and Speech Impairment - Resources for Support

*Sensorineural hearing loss, caused by damage to the inner ear and auditory nerve, is permanent, but can often be helped through the use of hearing aids. As of the close of fiscal year , more than , Veterans were receiving disability compensation for hearing loss, and nearly million received compensation for tinnitus.*

Key facts Around million people worldwide have disabling hearing loss 1 , and 34 million of these are children. It is estimated that by over million people will have disabling hearing loss. Hearing loss may result from genetic causes, complications at birth, certain infectious diseases, chronic ear infections, the use of particular drugs, exposure to excessive noise, and ageing. Interventions to prevent, identify and address hearing loss are cost-effective and can bring great benefit to individuals. People with hearing loss benefit from early identification; use of hearing aids, cochlear implants and other assistive devices; captioning and sign language; and other forms of educational and social support. It is estimated that by over million people â€" or one in every ten people â€" will have disabling hearing loss. Disabling hearing loss refers to hearing loss greater than 40 decibels dB in the better hearing ear in adults and a hearing loss greater than 30 dB in the better hearing ear in children. The majority of people with disabling hearing loss live in low- and middle-income countries. Approximately one third of people over 65 years of age are affected by disabling hearing loss. Hearing loss and deafness A person who is not able to hear as well as someone with normal hearing â€" hearing thresholds of 25 dB or better in both ears â€" is said to have hearing loss. Hearing loss may be mild, moderate, severe, or profound. It can affect one ear or both ears, and leads to difficulty in hearing conversational speech or loud sounds. People who are hard of hearing usually communicate through spoken language and can benefit from hearing aids, cochlear implants, and other assistive devices as well as captioning. People with more significant hearing losses may benefit from cochlear implants. They often use sign language for communication. Causes of hearing loss and deafness The causes of hearing loss and deafness can be congenital or acquired. Congenital causes Congenital causes may lead to hearing loss being present at or acquired soon after birth. Hearing loss can be caused by hereditary and non-hereditary genetic factors or by certain complications during pregnancy and childbirth, including: Acquired causes Acquired causes may lead to hearing loss at any age, such as: Among children, chronic otitis media is a common cause of hearing loss. Spoken language development is often delayed in children with unaddressed hearing loss. Unaddressed hearing loss and ear diseases such as otitis media can have a significantly adverse effect on the academic performance of children. They often have increased rates of grade failure and greater need for education assistance. Access to suitable accommodations is important for optimal learning experiences but are not always available. Social and emotional impact Exclusion from communication can have a significant impact on everyday life, causing feelings of loneliness, isolation, and frustration, particularly among older people with hearing loss. This includes health sector costs excluding the cost of hearing devices , costs of educational support, loss of productivity, and societal costs. In developing countries, children with hearing loss and deafness rarely receive any schooling. Adults with hearing loss also have a much higher unemployment rate. Among those who are employed, a higher percentage of people with hearing loss are in the lower grades of employment compared with the general workforce. Improving access to education and vocational rehabilitation services, and raising awareness especially among employers about the needs of people with hearing loss, will decrease unemployment rates for people with hearing loss. Prevention Overall, it is suggested that half of all cases of hearing loss can be prevented through public health measures. Overall, preventable causes of childhood hearing loss include: In infants and young children with hearing loss, early identification and management through infant hearing screening programmes can improve the linguistic and educational outcomes for the child. Children with deafness should be given the opportunity to learn sign language along with their families. Pre-school, school and occupational screening for ear diseases and hearing loss is an effective tool for early identification and management of hearing loss. People with hearing loss can benefit from the use of hearing devices, such as hearing aids, cochlear implants, and other assistive devices. They may also benefit from speech therapy, aural rehabilitation and other related services. The lack of

availability of services for fitting and maintaining these devices, and the lack of batteries are also barriers in many low-income settings. Making properly-fitted, affordable hearing aids and cochlear implants and providing accessible follow-up services in all parts of the world will benefit many people with hearing loss. People who develop hearing loss can learn to communicate through development of lip-reading skills, use of written or printed text, and sign language. Teaching in sign language will benefit children with hearing loss, while provision of captioning and sign language interpretation on television will facilitate access to information. Officially recognizing national sign languages and increasing the availability of sign language interpreters are important actions to improve access to sign language services. Encouraging organizations of people with hearing loss, parents and family support groups; and strengthening human rights legislation can also help ensure better inclusion for people with hearing loss. WHO response WHO assists Members States in developing programmes for ear and hearing care that are integrated into the primary health-care system of the country. In , the 70th World Health Assembly adopted a resolution on the prevention of deafness and hearing loss. This resolution calls upon Member States to integrate strategies for ear and hearing care within the framework of their primary health care systems, under the umbrella of universal health coverage. It also requests WHO to undertake a number of actions for promotion of ear and hearing care at global level, including many of those noted above.

## Chapter 9 : Hearing Problems and Deafness | Hearing Loss | MedlinePlus

*B Anyone including children as well as adults can be affected by hearing and speech calendrierdelascience.com defined by Disabilities Education Act (IDEA), " a hearing impairment, whether permanent or fluctuating, adversely affects the child's educational performance".*

While the term "hearing impairment" is often used generically to describe a wide range of hearing losses including deafness, the regulations for IDEA define hearing loss and deafness separately. In contrast, a child with hearing loss can generally respond to auditory stimuli, including speech. Department of Education reports 5,, students receiving special education services in the school year. Of that number, roughly 1. Characteristics There are four major types of hearing loss that are categorized by the site of the disorder in the auditory system. Conductive Hearing Loss is caused by damage or obstruction in the external or middle ear that disrupts the efficient passage or conduction of sound through those chambers. Sensorineural Hearing Loss is caused by damage to the inner ear cochlea or auditory nerve that transmits impulses to the brain. Sensorineural hearing loss tends to be more severe, permanent, and usually affects oral language development. Mixed Hearing Loss is a combination of both a conductive and a sensorineural hearing loss. Central Hearing Disorders are the results of a disorder or dysfunction in the central auditory system between the brain stem and the auditory cortex in the brain. It is useful to know that sound is measured by its loudness or intensity measured in units called decibels, dB and its frequency or pitch measured in units called hertz, Hz. Impairments in hearing can occur in either or both areas and may exist in only one ear or in both ears. Hearing loss is generally described as slight, mild, moderate, severe, or profound, depending upon how well a person can hear the intensities or frequencies most greatly associated with speech. Generally, only children who cannot hear sounds generating less than 90 decibels dB are considered deaf for the purposes of educational placement. Impact on Learning Variations in causes, onset, degree, and type of hearing loss, as well as family and educational situations, result in a widely diverse hearing impaired population. However, students with auditory impairments characteristically experience significant issues with regard to social and intellectual development, speech and language, and educational achievement. Social-emotional development in children with hearing impairments follows the same developmental pattern as those without a hearing loss. However, since social-emotional development relies so heavily on communication, the student with a hearing impairment may not participate in cooperative play or learning activities. Without a common communication system, the ability to develop friendships is negatively impacted. Research has determined that individuals with hearing impairments have normal cognitive ability, in the absence of any coexisting disability. Any difficulties in performance appear to be closely associated with speaking, reading, and writing the English language, not the level of intelligence. Speech and language skills are the areas of development most severely affected for those with a hearing impairment, particularly for children who are born deaf. For individuals with mild or moderate hearing loss, the effect may be minimal, especially with early diagnosis and treatment. Children with more profound hearing impairments and deafness are unable to access auditory feedback, impairing the normal development of speech and language. The educational achievement of students with hearing impairments may be significantly delayed in comparison to that of their hearing peers. Students with a hearing impairment have considerable difficulty succeeding in an educational system that depends primarily on the spoken word and written language to transmit knowledge. Teaching Strategies Students with auditory impairments are provided special education services by a variety of professionals. These include the following specially trained individuals: Audiologists are professionals who diagnose, treat, and manage individuals with hearing loss. Teachers of the Hearing Impaired are specially trained educators who provide educational support to the student, the family, and other educators. Speech-Language Pathologists provide treatment for speech and language disorders. Interpreters are specially training individuals who relay to the student anything that is said in the class by employing communication processes such as repetition, sign language, fingerspelling, body language, and verbal expression. Children who are hearing impaired will find it much more difficult than children who have normal hearing to learn vocabulary, grammar, word order, idiomatic

expressions, and other aspects of verbal communication. By the age of four or five, most children who are deaf are enrolled in school on a full-day basis and practice special work on communication and language development. It is important for teachers and other professionals to work together to teach the child to use his or her residual hearing to the maximum extent possible, even if the preferred means of communication is some type of visible communication. Other specific strategies and services include: Hearing Aids and Auditory Training Devices: Hearing aids are one of the most well-known types of devices used by individuals with hearing impairments. There are a great variety of hearing aids, but all are intended to amplify sound. Auditory training devices include devices such as FM systems. FM systems are more simplistic than hearing aids. To use a FM system, the teacher speaks into a microphone and the student would use headphones or speakers. There are many special software programs for students with hearing impairments. The programs can supplement instruction by providing speech drills, auditory training, sign language instruction, and reading and language instruction. Many everyday devices have been adapted for individuals with hearing impairments, including items such as watches, doorbells, fire alarms, school bells, and alarm clocks. Instead of using noise, these devices use vibration and light to alert the individual. Televisions are equipped with the ability to provide captioning for individuals with hearing impairments. Closed-captioning makes television and film accessible for individuals with hearing impairments. In order for individuals with hearing impairments to communicate using the telephone, they may use a telecommunication device for the deaf TDD. A TDD is a small keyboard with a display and modem. In order to use the TDD, the individual must relay information to an operator. Text messaging has recently become a very useful avenue for individuals with hearing impairments to relay messages without using the TDD. The cochlear implant is a surgically implanted device designed to make sounds audible for individuals with sensorineural hearing loss. Organizations Texas School for the Deaf The Texas School for the Deaf provides educational and related services to students who are deaf and hard of hearing at their residential campus in Austin. In addition to serving its residential students, TSD serves as a resources center on deafness for students, parents, professionals, and others throughout the state.