

## OTOTOXIC DRUGS

Harriet B. Jacobster, AuD  
ASHA Certified Doctor of Audiology

We all take them at some point in our lives. But, can those very medicines that keep us healthy be the cause of that horrible ringing in our ears? or the balance problems we suddenly experience? Unfortunately, YES.

Just about every medication has side effects. An ototoxic drug is one that can damage the delicate structures of the cochlea (inner ear) and/or the vestibular (balance) system either alone or in combination with other substances. How much damage these medications cause depends on several factors: the dose, the duration, other substances being used, individual health, etc. Signs of ototoxicity can include ringing (tinnitus) in one or both ears, fullness or pressure in the ears, hearing loss, and vertigo, dizziness, or balance problems. Sometimes, the damage is temporary and may reverse once the medicine is discontinued or the dosage is lessened. However, often the damage is permanent.

So, which drugs are ototoxic?

- Aspirin and anything containing salicylates. Many over-the-counter medicines contain aspirin (such as Pepto-Bismol). Long term use of 6-8 pills a day can cause tinnitus and vertigo.
- Nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen and naproxen. Again, these are all available over-the-counter. Hearing loss and tinnitus can occur after long term use of 6-8 pills a day.
- Antibiotics. Many antibiotics that end in *-mycin* (e.g., streptomycin, neomycin, gentamycin) belong to a group known as *aminoglycosides*. These drugs damage the delicate hair cells of the inner ear. The first symptom is usually tinnitus. The effects of these drugs are additive even if taken years apart. Many antibiotics ending in *-mycin* are not *aminoglycosides* but have ototoxic potential as well. Examples of these are vancomycin and erythromycin. There appears to be a genetic factor in aminoglycoside toxicity, so it is important to know if any family members developed symptoms from these medications.
- Loop diuretics, such as Bumetanide, Bumex, Demadex, Edecrin, Ethacrynic Acid, Furosemide, Lasix, Torsemide. These can cause tinnitus and vertigo.
- Anti-Neoplastics/Chemotherapy Agents. Examples are cisplatin, and vincristine. The ototoxic effects of these drugs are enhanced when taken with

other ototoxic drugs such as the aminoglycosides. Hearing loss tends to be bilateral, permanent and high frequency.

- Quinine. This substance is found in antimalarial drugs and drugs used to relieve night cramps. It is also found in tonic water. The effect of quinine is similar to aspirin and causes tinnitus and hearing loss.
- Certain cardiovascular drugs such as quinidine and atorvastatin.
- Antidepressants and psychotropic medications. Many of these cause vertigo and tinnitus.
- Many vaccines, such as the flu, hepatitis A and B, measles and rubella vaccines, can cause symptoms of vertigo and hearing loss.
- Vitamins. Some vitamins such as B-12 and D-2 can cause vertigo, dizziness and tinnitus.

When you begin taking a medication, be sure to ask your physician or pharmacist about possible side effects. And be especially careful to tell your physician of other medications you take or have taken.

Now, you find that you are taking one or more of these medications. What can be done to lessen their effects? Well, first, NEVER STOP OR CHANGE A MEDICATION WITHOUT CONSULTING YOUR PHYSICIAN. Next, talk with your physician and ask if there is a substitute that will work just as well without the ototoxic effects. Ask if a lower dose would be just as effective. And – very important – consult an audiologist and have your hearing monitored regularly to see if there is any change.

It is very important to note that there is a possibility of a synergistic interaction between noise and ototoxic medications. So, avoid noise or wear ear protection as much as possible. If you wear a hearing aid, discuss with your audiologist about lowering the output temporarily.

*Dr. Harriet Jacobster is an ASHA Certified Doctor of Audiology and a Fellow of the American Academy of Audiology with 25 years of experience working with children and adults. She specializes in the Patient-Centric Approach to Total Hearing Healthcare. She can be reached at her office in Monroe at 845-395-0300 or by e-mail [hearingarts@aol.com](mailto:hearingarts@aol.com).*