



# Better Hearing

The Audiology Newsletter published by the Hearing Professionals



## Personal Message

# Poison to Your Ears!

- by Dr. Lisa M. Nelson, Director of Hearing Professionals  
Laurel, Bowie, Waldorf, Leonardtown and Solomons



Have your ears been talking to you lately? Do you experience a “ringing, buzzing, or cricket-like” sound in either ear? Are you experiencing new symptoms of dizziness or balance issues? Then you may have been exposed to certain drugs or chemicals, which can result in ear poisoning. The medical term for this is ototoxicity (oto = ear, toxicity = poison). The chemicals or drugs can affect the nerve which is responsible for sending both hearing and balance information from the inner ear to the brain. Ototoxicity can result in a disturbance of both of these senses.

Symptoms vary from drug to drug and person to person. One individual may suffer only mild ear noises, tinnitus, while another person might experience total hearing loss. Side effects can also range from slight dizziness to total incapacitation. The tinnitus, hearing loss, and balance symptoms experienced from ototoxicity are unfortunately very similar to those symptoms caused by other diseases.

It is important to note here that the broad majority of people who experience ototoxicity have a temporary or reversible form and do not have major or long-term disruptions in their lives.

Each year, many people suffer from ototoxicity. The exact number is unknown. The effects can be terrible when they are permanent and extensive. No testing of the potential side-effects on the function

of the inner ear is required by the FDA prior to marketing a new drug to the public. Only after reports of people suffering the consequences of ototoxicity does a specific drug become known to cause symptoms of ototoxicity.

To diagnose ototoxicity the patient history, existing symptoms and test results must be reviewed. A full battery of tests is available for use by licensed audiologists. These tests are used to identify and quantify inner ear problems.

If the ototoxicity cannot be reversed, treatments focus on reducing the effects of the damage. People with hearing loss and/or tinnitus may benefit from audiologic treatment, which would include the use of hearing instruments. In the case of balance issues, physical therapy has been a great help for many.

So, if you’ve recently noticed the onset of tinnitus or balance/dizziness issues, consult an Audiologist. Review your medical history for changes in medications with your primary physician and be sure to read the information from your pharmacist regarding any potential side-effects of your medications.

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# What substances can cause ototoxicity?

by Dr. Lisa M. Nelson

Director of Hearing Professionals

Laurel, Bowie, Waldorf, Leonardtown and Solomons

You don't have to look far...many chemicals, from aspirin to xylene, have ototoxic potential. Included in this list are over-the-counter drugs, prescription medications, and environmental chemicals. The information below includes many substances thought to cause ototoxicity. It is impossible to create a complete list, because so little research has been done to determine the ototoxic potential of drugs in general. If you are taking any drug on the advice of your physician, DO NOT STOP TAKING THEM just because you see them listed here! Consult with your doctor or other personal health care advisor about your concerns to determine the best choice in your own unique situation.

## Aspirin like drugs (NSAIDs – Non steroidal, anti-inflammatory drugs – Motrin, Advil, Aleve, Naprosyn) & Quinine

These drugs are well known to cause temporary ototoxicity, particularly tinnitus, but may also reduce hearing in some people, usually when given at high doses. In addition, quinine products can also temporarily reduce balance ability. Once aspirin

or quinine is stopped, the ototoxicity generally disappears. Examples of quinine products include: chloroquine, quinidine, quinine (including Q-vel), and tonic water.

## Loop diuretics (a specific family of “water pills”)

The family of loop diuretics is also well known to occasionally cause temporary ototoxicity in some people. These drugs cause ringing in the ears or decreased hearing that reverses when the drug is stopped. Examples include bumetanide (Bumex), ethacrynic acid (Edecrin), furosemide (Lasix), and torsemide (Demadex).

Please note that Hydrochlorothiazide (HCTZ) and Maxide, diuretics commonly prescribed to people with Meniere's disease or other similar diseases, are not loop diuretics.

## Aminoglycoside antibiotics

All members of the aminoglycoside antibiotic



family are well known for their potential to cause permanent ototoxicity if they enter the inner ear. Some of these drugs are more likely to cause hearing loss, and others are more likely to cause vestibular loss. Others can cause either problem. Members of the aminoglycoside family include: amikacin, dihydrostreptomycin, gentamicin, kanamycin, neomycin, netilmicin, ribostamycin, streptomycin, and tobramycin.

**ALERT** - If loop diuretics are given during the same time period that a member of the ototoxic aminoglycoside family of antibiotics is also given, the chance of permanent ototoxicity occurring is thought to increase.

## Anti-neoplastics (anti-cancer drugs)

Anti-cancer drugs work by killing cancer cells. Unfortunately some can also damage or kill cells elsewhere in the body, including the ears. Cisplatin is well known to cause hearing loss that can be massive and permanent. Carboplatin has been implicated as well. There may be delayed effects with cancer treatments and radiation therapies, where the end results are not known for many months after treatment is completed.

## Environmental chemicals

Chemicals have been implicated in ototoxicity for many years. Little research has been done to substantiate their precise effect on ears, but most are associated with hearing disturbances that may be permanent. Mercury has also been linked to permanent balance problems. A starting list includes: butyl nitrite, carbon disulfide, carbon monoxide, hexane, lead, manganese, mercury, styrene, tin, and toluene.



You don't have to look far...many chemicals, from aspirin to xylene, have ototoxic potential. Included in this list are over-the-counter drugs, prescription medications, and environmental chemicals.





## Tips and Tricks



# HEARING SOLUTIONS TO FIT YOUR LIFESTYLE, COMFORT, SCHEDULE AND BUDGET

### What you'll **FIND** at Hearing Professionals:

**Accurate diagnostic hearing testing** to determine the extent of your hearing loss, the type of hearing loss, and screening for possible medical problems.

**Advanced diagnostic audiology services** measure the auditory balance system, in cases where symptoms indicate. The world's most advanced tests are available in most locations.

**Prescriptive hearing aid fittings** are available to determine the optimum correction for you.

**Computerized "Real-Ear Hearing Aid"** equipment is used to measure the actual sound pressure being delivered into your ear from the hearing aid, enabling us to confirm that your best prescription has been reached.

We have the latest in hearing aid technology including **high-fidelity, digitally programmable instruments and completely digital technology**. This allows for the most accurate fitting and provides automatic volume adjustments, eliminating annoying volume controls.

We offer **personal counseling** for you and your family to ensure that you receive all that can be achieved realistically from your hearing aids.

### What you **WON'T FIND** at Hearing Professionals:

**High-pressure sales**. Instead, your services are provided by university-trained professional audiologists, who have Doctorates or Master's degrees in the Science of Hearing. We assess your entire auditory system and then recommend your needs for more successful communication.

### Hearing Professionals, Inc.

Saturday appointments available. Call for details! ----->

### Ototoxicity:

- Don't take any more drugs than are absolutely needed.
- Follow your instructions carefully.
- Stay well hydrated.
- If possible, don not take multiple types of ototoxic drugs; i.e., aspirin (acetylsalicylic acid, ASA), Lasix, aminoglycosides, and quinine.
- When using chemicals that are potentially ototoxic, use good ventilation.
- If you are known to have Meniere's disease or similar issues, do not expose yourself to any potentially ototoxic substances unless they absolutely cannot be avoided.
- Ask your MD about potential side effects of any medications.
- Use hearing protections if you've been exposed to ototoxic substances.

### EAR CLEANING:

Good care means keeping your ears clean, dry (but not too dry), lubricated and healthy. Here are some tips:

First, if you have a history of ear drum perforation or lesion of the skin of your ear canal, (or you aren't sure), get medical advice before putting anything in your ears.

Avoid "washing" your ears too much, saturating them with moisture, which could promote fungal or bacterial infection.

If itchy ears are a problem, you can use an anti-itch (very mild hydrocortisone) cream.

One of the best substances for keeping skin lubricated is glycerin, one of the few chemicals that skin tissue can absorb. We have had great success with Cornhusker's Lotion. Others are available but check the ingredients.

Never stick Q-tips, hairpins, keys or other items in your ears! "Nothing smaller than your elbow in your ear" is true!

Have your ears examined periodically to ensure good ear health. We provide this service as part of your routine hearing healthcare check-up.

## CALL US TODAY!

### Waldorf

3475 Leonardtown Road, Suite 104  
Waldorf, Maryland 20604-1128

**Tel: (301) 932-4237**

### Bowie

14999 Health Center Drive, Suite 201  
Bowie, MD 20716

**Tel: (301) 464-2036**

### Laurel

14201 Laurel Park Drive, Suite 109  
Laurel, MD 20707

**Tel: (301) 604-3177**

# FAQ - Frequently Asked Questions About Hearing

## Some Questions and Answers Regarding Hearing Loss and Hearing Aids

**Q: How does the dosage level relate to the ototoxicity potential?**

A: In general, the risk of ototoxicity increases when the amount of a drug in someone's bloodstream is too high; when the drug is in the body for a long time and/or when the drug is being taken for a long time. The more drug someone gets into his or her blood stream the longer the drug is in the body, and the longer the time during which the drug is given.

**Q: Does my risk increase if I am taking more than one of the medications described?**

A: People receiving multiple ototoxic drugs (such as loop diuretic or with another antibiotic, vancomycin) are more at risk as are those who have insufficient kidney function or who are receiving a drug that causes insufficient kidney function

**Q: Does Family History factor into ototoxicity?**

A: Yes, genetic vulnerability to ototoxicity is also a factor.

**Q: Does the potential damage vary depending on whether I take a pill or received the drug at the hospital through an IV?**

A: For aminoglycoside antibiotics, these drugs enter the blood stream in the largest amounts when given intravenously (by IV) and in the least by pill. Inhaled drugs also get into the blood stream; an example of this is the use of inhaled tobramycin for long-term treatment of cystic fibrosis.

**Q: Can ear drops containing aminoglycosides be a problem?**

A: If they find their way into the middle ear in large enough quantities, they can diffuse into the inner ear and cause damage. Physicians do not agree about how often and under what circumstances this occurs.

**Q: If I have taken some of the potentially ototoxic medications listed but do not have any signs of damage, should I consult an audiologist?**

A: Yes, it is an excellent time to receive an evaluation which would include measurement of the activity of the inner ear outer hair cells, which typically suffer damage from the ototoxic medications listed.

## DO YOU NEED A HEARING EVALUATION?

Take this simple test...

YES	NO	
<input type="checkbox"/>	<input type="checkbox"/>	Do you hear words, but don't understand them?
<input type="checkbox"/>	<input type="checkbox"/>	Do you feel others mumble?
<input type="checkbox"/>	<input type="checkbox"/>	Do you experience sudden or fluctuating hearing loss?
<input type="checkbox"/>	<input type="checkbox"/>	Do you experience ringing in your ears (tinnitus)?
<input type="checkbox"/>	<input type="checkbox"/>	Do you experience dizziness or vertigo?
<input type="checkbox"/>	<input type="checkbox"/>	Do your ears pop or feel "plugged up"?
<input type="checkbox"/>	<input type="checkbox"/>	Do you have a newborn baby? (ALL newborns should be given a hearing test.)
<input type="checkbox"/>	<input type="checkbox"/>	Do you have concerns about your child's speech and language development?
<input type="checkbox"/>	<input type="checkbox"/>	Did you receive a baseline test at age 40 to monitor your health?
<input type="checkbox"/>	<input type="checkbox"/>	Do you have a history of diabetes, high blood pressure, or heart disease?
<input type="checkbox"/>	<input type="checkbox"/>	Do you have a history of smoking?
<input type="checkbox"/>	<input type="checkbox"/>	Do you take part in work or sports activities with high noise levels or that could affect your hearing—e.g. industrial noise, loud music, motorcycling, etc...

### Results:

If you answered yes to any of the questions: **CALL US**

The caring doctors at Hearing Professionals can help. We have state-of-the-art diagnostic equipment that enable us to find solutions and treatments that fit YOUR needs exactly.

You don't have to "live with it."





## Featured Audiologist

### Becky Guy, M.A., FAAA

Becky Guy was born in Washington D.C. and raised in Southern Maryland. She has been a St. Mary's County resident since the age of six. Ms. Guy resides in Hollywood, Maryland with her husband and three children (her pride and joy).

As far as her education, she attended the University of Maryland where she obtained her Bachelor of Arts Degree and Master of Arts Degree in Audiology. She is a Fellow of the American Academy of Audiology.

After completing her academic requirements in 1993, Ms. Guy has been providing audiology services in the Southern Maryland and Annapolis Areas.

Duties have included audiological evaluations, hearing aid evaluations and fittings, (including the latest technology; 100% digital hearing aids) aural rehabilitation and other advanced diagnostic testing. She has handled the needs of and enjoyed working with patients from birth to 100 years of age.

She has practiced with Hearing Professionals since the center opened its Waldorf branch in April of 1999. Ms. Guy currently works two days a week in the Leonardtown office and two days in the Waldorf location. She is committed to providing high quality, personalized hearing services at Hearing Professionals.

# SUCCESSSES

## Enjoying Full-Time versus Part Time Hearing



To begin with, it was a slow process, because I thought I could hear. But then people began to mumble, and others noticed that the TV & radio were extremely loud. Now, with my hearing aids, I am more a part of society. I never realized the difference that hearing aids make. I should have done it years ago. My husband says, "Thank you."  
—R.C.

I can definitely hear better. I can work in my woodshop and



not have to turn my hearing aids off. I hear better when my wife is calling from the house and I'm way out back!

I went to a wedding with music and could hear conversation and the music/crowd noises didn't bother me! With my old hearing aids, I would practically turn them off to

tolerate the background noise or just walk away.

I had tried new digital technology about 6 years ago and chose to stay with old technology. I'm glad I invested



in the new digital technology today. My wife is very glad!  
—B.H.

In late October, I would hear the crunch of oak leaves under my feet. December

would bring the sound of snow packing under my feet. It was amazing! I had been missing so much. Just the daily things, that I had accepted before as normal, such as believing people had been speaking too softly or mumbling, I now know were because I had been living with poor hearing. I now hear so much more. —S.B.



# NEED HEARING HELP?



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[www.hearing-professionals.com](http://www.hearing-professionals.com)



Hearing Professionals Inc. began in 1995. The practice started in Laurel, which grew from square one. The director, Dr. Lisa Nelson, had been providing services for over 5 years at other practices, but felt that personalized care should be the ultimate goal of her own practice. She also believed in using the most technologically advanced equipment as standard care. To achieve these goals she started HPI in Laurel. In April 1999, HPI acquired Waldorf Hearing Aid Center to expand the service area.

In March 2001, HPI began providing services in Bowie. HPI also established satellite offices providing services two days a week in each Solomons and Leonardtown.



Although our territory has expanded, the primary goal of HPI continues to be "providing personalized, professional hearing health care services".

## WE CARE ABOUT YOU!

Call us today for a free consultation at

<b>Laurel</b>	<b>Bowie</b>	<b>Waldorf</b>
<b>301-604-3177</b>	<b>301-464-2036</b>	<b>301-932-4237</b>
<b>Leonardtown &amp; Solomons</b>		
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