

# Tinnitus

Dr. John Bergman

# What is Tinnitus?

**“Tinnitus is the perception of sound when no actual external noise is present.**

While it is commonly referred to as “**ringing in the ears**,” tinnitus can manifest many different perceptions of sound, including buzzing, hissing, whistling, swooshing, and clicking. In some rare cases, tinnitus patients report hearing music.

Tinnitus can be both an acute (temporary) condition or a chronic (ongoing) health malady.”

# Tinnitus Statistics

“Millions of Americans experience tinnitus, often to a debilitating degree, making it one of the most common health conditions in the country.”

- Over 50 million Americans experience some form of tinnitus
- Roughly 20 million people struggle with burdensome chronic tinnitus
- 2 million have extreme and debilitating cases
- **Tinnitus affects about 1 in 5 people**

American Tinnitus Association <sup>1-2</sup>, Mayo Clinic <sup>3</sup>

# Complications of Tinnitus

- Fatigue
- Stress
- Sleep problems
- Trouble concentrating
- Memory problems
- Depression
- Anxiety and irritability



# Causes of Tinnitus

“A common cause of tinnitus is inner ear cell damage. Tiny, delicate hairs in your inner ear move in relation to the pressure of sound waves. This triggers ear cells to release an electrical signal through a nerve from your ear (auditory nerve) to your brain. Your brain interprets these signals as sound. If the hairs inside your inner ear are bent or broken, they can "leak" random electrical impulses to your brain, causing tinnitus.”

## Common Causes

- Age-related hearing loss (Presbycusis)
- Exposure to loud noise
- Earwax blockage
- Ear bone changes (otosclerosis)

# Medications that Cause Tinnitus

- Antibiotics
- Cancer medications (chemotherapy)
- Diuretics
- Quinine medications (Antimalarial drugs)
- Tricyclic antidepressants
- Aspirin or other NSAID's

# Antibiotics

- Of the estimated **154 million** prescriptions for antibiotics written in doctor's offices and emergency departments each year, 30 percent are unnecessary
- About 44 percent of outpatient antibiotic prescriptions are written to treat patients with acute respiratory conditions

Approximately **50% of antibiotic prescriptions** written in the outpatient setting may be inappropriate

# Other Exposures to Antibiotics

## Confined animal feeding operations (CAFO's)

- American factory farms used **29 million pounds** of antibiotics in 2009 alone
- Estimated non-therapeutic use of antibiotics in livestock accounted for **70 percent** of the total antibiotic use (FDA)



# Solution: Optimize Your Gut Flora

- Organic plant based diet (Locally grown, seasonal foods)
- Healthy fats such as coconut oil and olive oil
- Fermented Vegetables
- Probiotic Supplements
- Juice Vegetables
- Blend Fruits
- Raw Dairy
- Reduce Omega 6 and Increase Animal based Omega 3



# Fermented Foods

- Help promote growth of beneficial bacteria, supports healthy immune function
- Help increase vitamin b, omega 3, digestive enzyme, and lactase/lactic acid

- Kefir (fermented milk)
- Kombucha
- Sauerkraut
- Pickles
- Miso
- Kimchi



# Cancer Drugs (mechlorethamine and vincristine)

- Each year, about **650,000** cancer patients receive chemotherapy <sup>13</sup>

“Chemotherapy drugs target cells at different phases of the process of forming new cells, called the cell cycle. However, **chemo drugs can’t tell the difference between healthy cells and cancer cells.**

This means normal cells are damaged along with the cancer cells, and this causes side effects.”

# Some of the Side Effects of Cancer Drugs

- Nausea, vomiting, weight loss, diarrhea, mouth sores, dizziness, or headache
- numbness/tingling/burning/pain of the feet/hands, weakness, difficulty walking
- inability to move your muscles blood in the urine, painful/difficult urination, black or tarry stools
- joint pain and stiffness similar to gout (high levels of uric acid in the blood)
- Jaundice, signs of liver problems (such as dark urine, persistent nausea, vomiting, stomach/abdominal pain, yellowing eyes/skin).
- loss of coordination/balance, a sensation of spinning or dizziness (vertigo)
- Seizures
- mental/mood changes (such as depression, hallucinations, confusion)
- **a ringing in the ears, decreased ability to hear**

# Cancer as a Metabolic Disease

“Lifestyle changes will be needed to manage and prevent cancer. This means that **there is no magic pill** that we can take to prevent or cure cancer. We must change our relationship with food and lifestyle to prevent and cure cancer.”

“A new era will emerge for cancer management and prevention, once cancer becomes recognized as a metabolic disease.”

Dr. Thomas N. Seyfried, “Cancer as a Metabolic Disease”

# Diuretics

“Diuretics are a class of drugs that increase the flow of urine (diuresis).

**Diuretics work by removing sodium and chloride from the body in the urine, and the sodium and chloride in turn draw excess water from the body.”**

Source <sup>11</sup>



# Diuretic Use

## In 2003

- 19.1 percent of the 217.6 million adults age 18 and older in the U.S. civilian noninstitutionalized population were reported as having received treatment for hypertension during the year
- Overall, **45.3 percent of these adults used a diuretic**
- That's over 18 million people in 2003
- **Diuretic use has increased significantly since 2003**

# Some Side effects of Diuretics

- low potassium (confusion, uneven heart rate, extreme thirst, increased urination, leg discomfort, muscle weakness or limp feeling)
- severe pain in your upper stomach spreading to your back, nausea and vomiting;
- headache, trouble concentrating, memory problems, weakness, loss of appetite, feeling unsteady, hallucinations, seizure, shallow breathing or breathing that stops;
- easy bruising, unusual bleeding (nose, mouth, vagina, or rectum), purple or red pinpoint spots under your skin;
- fever, sore throat, and headache with a severe blistering, peeling, and red skin rash; or
- **ringing in your ears, hearing problems, hearing loss**

# Natural Diuretics

- Dandelion
- Hawthorn
- Horsetail
- Juniper
- Green and Black Tea
- Parsley
- Hibiscus

Source <sup>58</sup>



# Quinine Medications- Antimalarial drugs

## Statistics on Antimalarials

- 200-400 million courses are used every year in Africa
- 100 million course are used in the rest of the



# Some of the Side Effects of Antimalarial drugs

- fever, chills, confusion, weakness, sweating
- problems with vision or hearing
- chest pain, trouble breathing, severe dizziness, fainting, fast or pounding heartbeats
- easy bruising, unusual bleeding (nose, mouth, vagina, or rectum), purple or red pinpoint spots under your skin
- loss of appetite, dark urine, clay-colored stools, jaundice
- depressed mood, feeling restless or anxious
- confusion, extreme fear, hallucinations, unusual thoughts or behavior
- severe or uncontrolled vomiting or diarrhea
- **Ring**ing in the ears, dizziness, spinning sensation (vertigo), loss of balance

# Natural Alternatives to Treat Malaria

- Grapefruit (contains natural quinine)
- Fever Nut
- Artemisia Annua (Sweet Wormwood)
- Cinnamon (with pepper and honey)
- Chirayata (Swertia Andrographis Paniculata)
- Limes and Lemons
- Holy Basil
- High Doses of Vitamin C
- Large intake of fruits (papayas, oranges, apples, pineapples, grapefruit, grapes, and mangoes)

# Tricyclic Antidepressants

## Statistics

- Antidepressants are the most consumed class of drugs in the U.S.
- Averaging about 270 million prescriptions per year
- **1 in 10 Americans is taking an Antidepressant**
- *1 in 4* among women aged 50 to 64 are taking Antidepressants

# Some of the Side Effects of Antidepressants

## **Effects on the CNS**

- Coma, Seizures, Hallucinations, delusions, disorientation, incoordination; ataxia, tremors
- Peripheral neuropathy, numbness, tingling, and paresthesias of the extremities
- Abnormal involuntary movements and tardive dyskinesia, dysarthria
- Anxiety, insomnia, restlessness, nightmares, drowsiness,
- Dizziness, weakness, fatigue, headache,
- **Tinnitus**

# Natural Solutions for Depression

- Proper exercise
- Vitamin D
- Omega 3
- Optimize your Gut Flora
- Proper Sleep



# Aspirin and other NSAIDs

- More than **70 million prescriptions** for NSAIDs are written each year in the United States.
- With over-the-counter use included,  
**More than 30 billion doses of NSAIDs are consumed annually in the United States**

# Some of the Side Effects of NSAIDs

- black, bloody, or tarry stools;
- coughing up blood or vomit that looks like coffee grounds;
- severe nausea, vomiting, or stomach pain;
- fever lasting longer than 3 days;
- swelling, or pain lasting longer than 10 days; or
- chest pain, weakness, shortness of breath, slurred speech, problems with vision or balance;
- severe headache, neck stiffness, chills, increased sensitivity to light, and/or seizure (convulsions)
- **hearing problems, ringing in your ears**

# Warnings for NSAIDs

## Kidneys

“Long-term administration of NSAIDs has resulted in **renal papillary necrosis and other renal injury.**”

## Skin

“NSAIDs, including MOTRIN (ibuprofen) tablets, can cause serious skin adverse events such as **exfoliative dermatitis, Stevens-Johnson Syndrome (SJS), and toxic epidermal necrolysis (TEN), which can be fatal.** These serious events may occur without warning”

# Warnings for NSAIDs

## Cardiovascular

“NSAIDs may cause an **increased risk of serious cardiovascular thrombotic events, myocardial infarction, and stroke**, which can be fatal. This risk may increase with duration of use.”

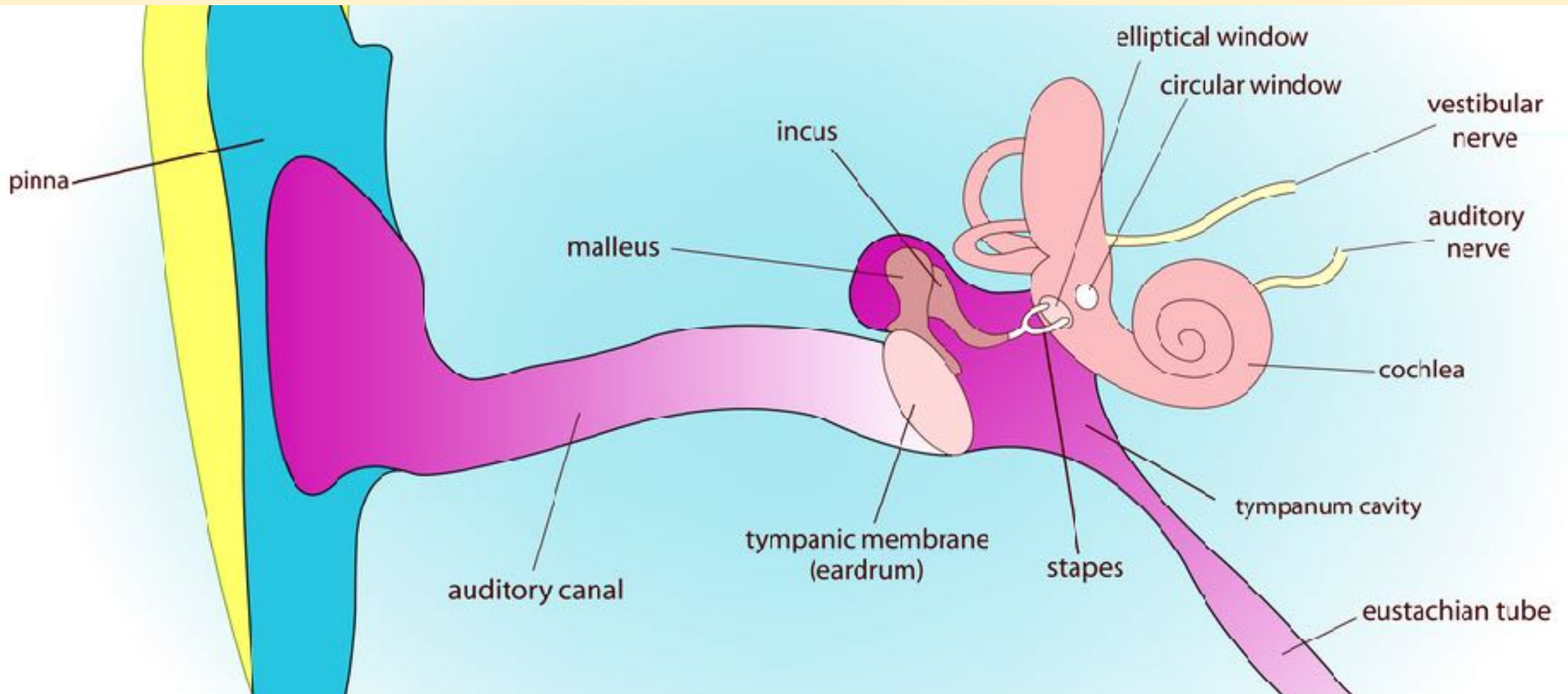
## Gastrointestinal

“Gastrointestinal (GI) adverse events including inflammation, bleeding, ulceration, and perforation of the stomach, small intestine, or large intestine, which can be fatal. **These serious adverse events can occur at any time, with or without warning symptoms, in patients treated with NSAIDs.**”

# Natural Pain Relievers

- **Omega 3:** powerful anti-inflammatory
- **Boswellia** (Indian Frankincense): contains specific active anti-inflammatory ingredients.
- **Curcumin:** reduced pain, blocks inflammatory pathways and increased mobility.
- **Cayenne Cream:** helps alleviate pain by depleting your body's supply of substance P, a chemical component of nerve cells that transmits pain signals to your brain.
- **Vitamin D:** vital for pain reduction mechanisms
- **Astaxanthin:** one of the most effective fat-soluble antioxidants known and far more effective than anti-inflammatory drugs
- **Ginger:** anti-inflammatory and pain relief
- **Bromelain:** enzyme, found in pineapples, is a natural anti-inflammatory.
- **Cetyl Myristoleate (CMO):** found in fish and dairy butter, acts as a "joint lubricant" and an anti-inflammatory

# Let's Find the Cause of Tinnitus!



Semicircular ducts

Anterior

Lateral

Posterior

Cristae within ampullae

Utricle

Saccule

Vestibulocochlear nerve

Vestibular duct

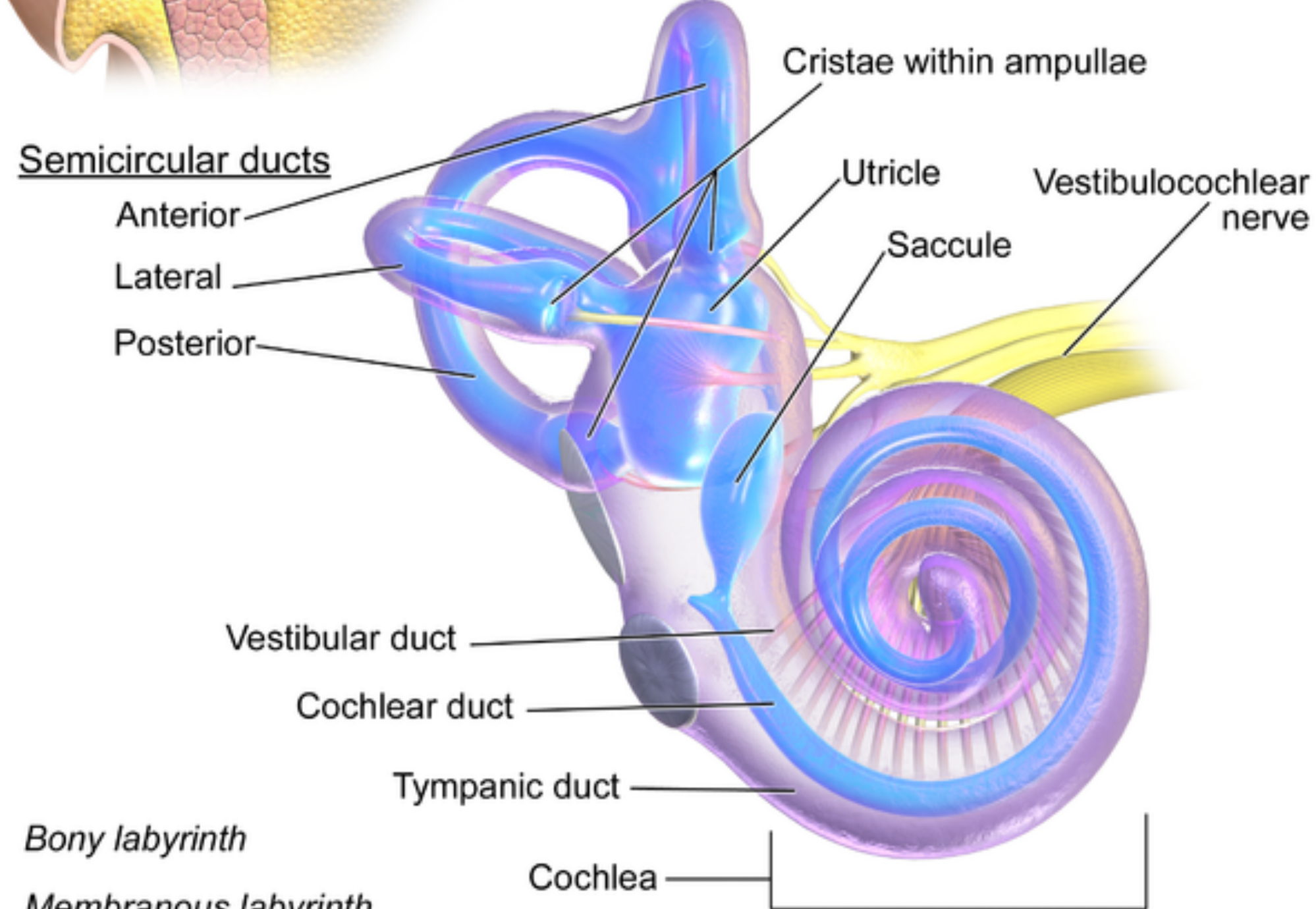
Cochlear duct

Tympanic duct

Cochlea

*Bony labyrinth*

*Membranous labyrinth*



# Pathophysiology of Tinnitus

“Most tinnitus is "sensorineural," meaning that it's due to hearing loss at the cochlea or cochlear nerve level.

Our bodies normally produce sounds (called somatic sounds) that we usually don't notice because we are listening to external sounds. Anything that blocks normal hearing can bring somatic sounds to our attention.

# Protect Your Ears

“Researchers from McMaster University in Canada found **"risky listening habits,"** including exposure to loud noise at parties or concerts, listening to music with ear buds and use of mobile phones excluding texting, were the norm.

**More than half of the study participants reported experiencing tinnitus** in the past, such as experiencing ringing in the ears for a day following a loud concert.

# Protect Your Ears

“The levels of sound exposure that are quite commonplace in our environment, particularly among youth, appear to be sufficient to produce hidden cochlear injuries ...The message is, '**Protect your ears.**'”

Larry Roberts, Ph.D., of McMaster University's Department  
ence and Behavior <sup>52</sup>



# Chronic Stress and Tinnitus

“There appears to be **a close link between tinnitus and stress**, such that stress may make tinnitus worse and vice versa. Emotional exhaustion or the feeling of being drained due to chronic stress was a strong predictor of tinnitus severity.”

Journal of Psychotherapy and Psychosomatics <sup>53</sup>

“**Chronic stress may be as large a risk factor for developing tinnitus as exposure to occupational noise**. Research has found that exposure to highly stressful situations and occupational noise each double the risk of tinnitus.”

Ear and Hearing Journal <sup>54</sup>

# Reduce Your Chronic Stress!!!

## The 3 Types of Stress:

**Emotional**



**Physical**



**Chemical**



# The 5 Keys to Health and Healing



Proper nerve supply



Regular Exercise



Proper Nutrition



Sufficient Rest



Prayer and Meditation

# Free Radicals and Tinnitus

“It has been recently observed that Reactive oxygen species ROS are implicated in the pathology of the inner ear and the peripheral and central pathways. In a previous study we detected high serum values of ROS in subjects with idiopathic tinnitus.”

“Oral antioxidant therapy in patients with idiopathic tinnitus seems to reduce the subjective discomfort and tinnitus intensity and may be considered as an additional treatment modality.”

# Antioxidant Rich Foods

- Help protect your body against free radicals
- Goji Berries
- Wild Blueberries
- Dark Chocolate
- Pecans
- Artichoke
- Elderberries
- Blackberries
- Kidney Beans



# Zinc

“Zinc is an essential trace element present in all organs, tissues, fluids, and secretions of the body and it is widely distributed in the central nervous system, **including the auditory pathway in synapses of the VIII nerve and in the cochlea.**

Zinc is an essential component of Cu/Zn superoxide dismutase (SOD) and in certain enzymes and it is important for proper function of the immune system.

**Three possible mechanisms have linked zinc to tinnitus; cochlear Cu/Zn SOD activity, synaptic transmission, and depression.”**

# Top 10 Zinc Rich Foods

- Grass-fed Beef
- Kefir or Yogurt
- Lamb
- Chickpeas (Garbanzo beans)
- Pumpkin seeds
- Cashews
- Cocoa Powder
- Mushrooms
- Spinach

Source <sup>60</sup>



# Melatonin

**“Melatonin is associated with a statistically significant decrease in tinnitus intensity and improved sleep quality in patients with chronic tinnitus.”**

Annals of Otology, Rhinology and Laryngology <sup>43</sup>

**“Melatonin use is associated with improvement of tinnitus and sleep. Melatonin may be a safe treatment for patients with idiopathic tinnitus, especially those with sleep disturbance due to tinnitus.”**

Journal of Otolaryngology <sup>44</sup>

# Melatonin Boosting Foods

- Pineapples
- Bananas
- Oranges
- Oats
- Sweet Corn
- Rice
- Tomatoes
- Barley

Source <sup>62</sup>



# Vitamin B12

**“These observations suggest a relationship between vitamin B12 deficiency and dysfunction of the auditory pathway.”**

American Journal of Otolaryngology <sup>47</sup>

**“A statistically significant increased incidence of vitamin B12 deficiency was identified in patients with chronic tinnitus and noise-induced hearing loss (NIHL)”**

The Journal of Laryngology and Otology <sup>57</sup>

# Top 10 Vitamin B12 Foods

- Beef Liver
- Sardines
- Grass-fed Beef
- Tuna
- Raw Cheese
- Cottage Cheese
- Lamb
- Raw Milk
- Eggs
- Salmon



# Chiropractic and Tinnitus

**“The clinical progress documented in this report suggests that upper cervical manipulation may benefit patients who have tinnitus and hearing loss”**

Journal of Manipulative and Physiological Therapeutics <sup>34</sup>

**“This case suggests that upper cervical spine manipulation may have positively affected hearing loss and tinnitus associated with cervicogenic pain in this patient.”**

Topics in Integrative Health Care <sup>37</sup>

# Why is Chiropractic Effective?

“The aim is to **relieve pressure on the nerve roots** in the upper neck thereby reducing activation of the spinal tract of the trigeminal nerve.”

The (C7-T4) model proposed that dysfunction at these vertebral levels causes joint fixation and pain. **This pain alters the neural messages received, and therefore sent by the Central Nervous System (CNS).**”

“Another model contends that irritation of the vertebral nerve by cervical lesions can produce a sympathetic syndrome, giving symptoms of headaches, vertigo, visual disturbances and **tinnitus.**”

# Only One Adjustment!

**“The first chiropractic adjustment given in 1895 was reported to have cured deafness.**

**This study examined the effects of a **single**, initial chiropractic visit on the central nervous system by documenting clinical changes of audiometry in patients after chiropractic care.”**

**Journal of Chiropractic and Osteopathy <sup>39</sup>**

# Only One Adjustment!

## Results of the Study:

- All patients were classified as hearing impaired
- Over **86% of the patients** experienced either a dramatic improvement or complete restoration of their hearing.
- **This is after only one adjustment!**



# The 5 Keys to Health and Healing



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Sufficient Rest



Prayer and Meditation

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