



HEARING LOSS | EAR PRESSURE | TINNITUS | HYPERACUSIS | SOUND SENSITIVITY | VERTIGO - MENIERE'S DISEASE

| LUMOMED LASER THERAPY |

THE GENTLE WAY TO BETTER HEARING

DEAR PATIENT,



We live in a world that heavily burdens our senses. Mostly, the burdens affect our ears. When our sensitive inner ear falls ill, it can painfully affect many aspects of our lives. For example, some people may experience loss of hearing, dizziness or tinnitus (ringing in the ears.)

On the following pages we will explore the possibilities of treatment with Lumomed Laser Therapy. Discover the possibilities of treating what many other physicians consider to be “untreatable”.

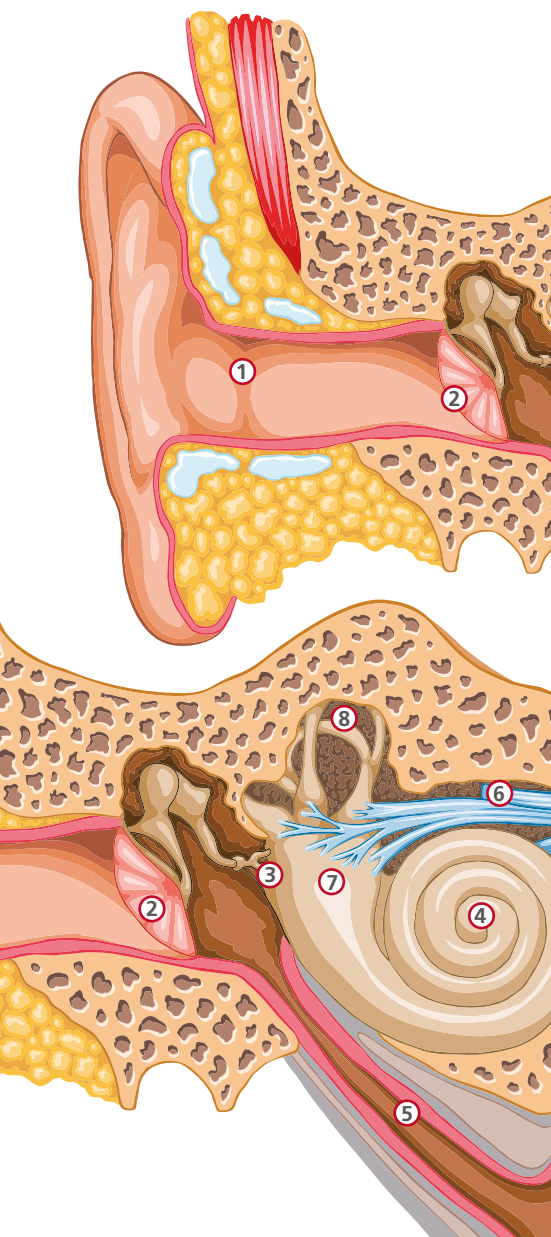
Your Lumomed Specialist,
DR. LEE NAGEL

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Midwest Functional
HEALTH



• HOW THE INNER EAR WORKS

When we hear something, the sound waves pass through the eardrum and middle ear mechanically to the cochlea. In the cochlea, the sound waves are compressed in a highly complex fluid system and then converted into an electrophysiological nerve stimulus. During this process, the sensory cells of the cochlea are significantly involved. In particular, the movements of the cell membrane protrusions (which are called cilia) ultimately determine our hearing result.

When we move, however, our respective head and body position is transmitted to the sensory cells in the semicircular canals of the labyrinth. In these cells, the process for transmission is nearly identical to that of what takes place when sounds are processed, except the process provides the body with spatial orientation. The cochlea and labyrinth are also interconnected via a common fluid system. This makes the inner ear a very powerful, but also highly sensitive organ system.

- ① EAR CANAL
- ② EAR DRUM
- ③ STIRRUP
- ④ COCHLEA
- ⑤ EAR TRUMPET

• HOW THE INNER EAR BECOMES UNWELL

Noise and stress overwhelm our inner ears and can be relentless. Not only is there acoustic overstimulation, but there are also stressors that can cause inner ear tensions, which result in additional degeneration. If the sensory cells are constantly overwhelmed, they cannot cope with sustaining the energy needed for maintenance. Due to a constant lack of energy, the auditory and vestibular cells lose their vitality. This leads to an insidious onset or acute onset of diseases such as: sudden hearing loss, ear pressure, tinnitus, hearing sensitivity, hearing distortion, poor balance and vertigo or hearing loss over time. Acute or chronic stress to the cells in the inner ear can cause permanent damage, so their overall vitality is reduced. The longer this state lasts, the more difficult the regeneration process will be.

- ⑥ AUDITORY NERVE

ORGANS OF EQUILIBRIUM:

- ⑦ ROUND WINDOW
- ⑧ SEMICIRCULAR CANALS

THE INNER EAR: HIGHLY COMPLEX AND HIGHLY SENSITIVE

We hear with our ears, but our inner ears do much more than just receive sound. The inner ear is a highly complex and graceful organ that unites hearing with the sense of balance through the cochlea and labyrinth. In this system, thousands of stressful acoustics and spatial perceptions are processed daily, however, noise and stress leave their mark.

🔊 IT'S ALL ABOUT ENERGY FOR THE CELLS

Each sensory cell in our inner ear is a unique individual cell that accompanies us throughout our lifetime. Though the cells are very specialized, they have no ability to divide. This means that the cells of the inner ear cannot regenerate through cell division, like skin cells can. They do, however, have a high individual regeneration capability that enables it to work over many years, even if the cells are already heavily overloaded. The work capability of the cells of the inner ear is regulated by the cell's own energy source, ATP (adenosine phosphate). ATP is the cells energy currency. The ATP is produced by mitochondria, which are the power plants of the cell. When the body is biologically overtaxed, all body cells are affected, including the auditory and vestibular cells. This requires energy in the form of ATP which is necessary for the cells to maintain their regenerative abilities.



GOOD TO KNOW: HOW BIOSTIMULATIVE LASER LIGHT HELPS

- ▶ Biostimulative laser therapy has been shown clinically to revitalize the sensory cells of the cochlea and labyrinth.*
- ▶ Because of their regenerative ability, an exhausted but vibrant inner ear cell is able to recover faster and continues to endure the brunt of its intense work load.
- ▶ Lumomed laser therapy is based on these biological principles.



INNER EAR DISEASE: A LONGSTANDING AND COMMON ISSUE

Inner ear disease and their symptoms have been a problem for thousands of years. The ancient Greeks even believed that the ringing in the ears was actually the Gods talking to them.

GOOD TO KNOW: TIPS FOR HEARING AID WEARERS



Hearing aids are basically sound amplifiers: no matter where they are placed (behind the ear, in the ear, or as an implant) and regardless of whether it is an analogue or digital device:

- ▶ Make sure to wear your hearing aids only as much as necessary and as little as possible to avoid the additional burden of pointless enhanced monitoring and background noise.
- ▶ Remember to treat your already overtaxed hearing organ to plenty of regenerative breaks. This can be done by taking out or turning off your hearing aids and using ear plugs.

The philosopher Plato could hear a sort of "cosmic music." The Romans gave the constant ringing in the ears the name tinnitus; it comes from the Latin word "tinnire" which translates into the word "ringing." Composers such as Beethoven and Smetana are known to have suffered from "rushing and roaring ears." Less famous people are not spared.

In the U.S.A. 10-15% of the population suffer from Tinnitus.

More and more children and young people are affected. There is a parallelism between increasing hearing problems and an increasing civilizational volume and its duration of impact on the auditory organs.

Proper care of recently emerging or acute problems can quickly subside. Longstanding or chronic diseases could require a longer treatment.

Sufficient preliminary diagnostics can rule out malignant causes of tinnitus, ear pressure, hyperacusis, dysacusis, hearing loss, dizziness, infection and Meniere's disease. If the results of the preliminary diagnostics are benign, medical or surgical treatments are often ineffective.

Patients should not be discouraged. We have alternative treatment options.

Tinnitus, dizziness or ear pressure is considered to be the side effects of various inner ear diseases. It is important to diagnose the distressing symptoms of the inner ear and apply therapies that make sense to support these cells.

● SUDDEN HEARING LOSS

Sudden hearing loss is an acute overload of the entire ear organ and manifests itself by the rapid decrease in hearing.

Soothing the Inner Ear

The first meaningful therapeutic measure is immediate immobilization of the affected organ. In acute sudden deafness, it is advisable to use earplugs consistently as soon as possible and to be persistent about protecting the inner ear. This is so the overloaded hearing organ can be protected from further unnecessary burdens.

● EAR PRESSURE

Pressure in the ear is a symptom of acute inner ear overwork. The pressure caused by edema is from the swelling of the lymphatic tube systems in the cochlea and the labyrinth.

● DYSACUSIS AND HYPERACUSIS

Dysacusis is hearing impairment characterized by difficulty in processing details of sound due to distortion in frequency or intensity. The usual aural impression suddenly changes: sounds and language are perceived as distorted and can resonate loudly in the ears. This condition is also often associated with pressure in the ear, or hyperacusis. Hyperacusis indicates a hypersensitivity to volume – as a whole or with respect to individual frequencies, i.e. very high notes.

Protect the Affected Organ

Treat yourself to plenty of rest and protect your ears with earplugs. Try to wear the earplugs more often than not. These are the first meaningful and useful measures. Just as a swollen joint is relieved with a bandage or a congested liver is immobilized by an appropriate diet, the ear can be protected also.

● TINNITUS

The public perception of ear dysfunction is dominated by tinnitus. The majority of people with inner ear overuse suffer from tinnitus. Tinnitus is a very serious biological distress signal that the inner ear sends to your brain.

Watch Changes

Try to find out what you can do to positively affect your tinnitus. Pay attention as your tinnitus responds to volume and use earplugs in everyday life. It is important to consciously protect the affected organ of hearing against daily environmental noise.

● MENIERE'S DISEASE

This inner ear disease is named about the French physician Prosper Meniere. The attacks of vertigo are usually sudden and can be accompanied by nausea, vomiting, unilateral hearing loss, ear pressure and tinnitus. This is usually due to viral infections.

● VERTIGO

Dizziness and poor balance can have many causes. Usually accompanied by hearing loss and tinnitus, this is usually a result of an inner ear disorder. Additional incoordination, wavering, nausea and sweating may be experienced.

● DEAFNESS

The hearing ability of a person does not necessarily decrease with age. Often hearing loss exists for many years and is barely perceived during the overworking of the hearing organs. Acute hearing losses are experienced during a sudden loss of hearing. There are also genetic and other causes of hearing loss.



GOOD TO KNOW: PRELIMINARY TESTING

The preliminary testing of each patient is necessary and may need to be done by a primary doctor or ENT physician.

► In certain cases, it is advisable to perform an MRI scan of the head to exclude tumorous changes in the central nervous system. The so-called acoustic neuroma was previously regarded as the only apparent cause of "ringing in the ears of the brain." This, of course, would have to be treated surgically.

Tip: Bring ear plugs for events, concerts, movies, and even for MRI's and CT scans.

► In patients over 50 years, particularly those suffering with pulsatile tinnitus, it may be useful to additionally perform doppler sonography of the carotid arteries.





GOOD TO KNOW:

HOW DOES THE LUMOMED LASER THERAPY WORK?

- ▶ It is concentrated light from the red and infrared spectrum of the visible portion of electromagnetic radiation (light).
- ▶ The biostimulative laser reaches deep and revitalizes body cells.

••) **THE LUMOMED INNOVATION**

The development of laser therapy started more than 20 years ago to help people with hearing difficulties. Lumomed laser therapy was closely linked to the outset of the development of international laser therapy research. Lumomed itself is internationally pioneering laser therapy through ongoing and innovative quality improvements.

In 1997, a German physician developed the first global mobile laser device for self-treatment of inner ear disorders. There were also other technical innovations developed to continuously improve therapy in practice.

••) **THE LUMOMED PHILOSOPHY**

The welfare of the patient is the focus of our work. It is the priority of the Lumomed laser therapist to make the progress of laser medicine fully available to the patient. This is especially true since in some areas the effects of low-level laser treatments as a particular science is not yet widely recognized by mainstream medicine. We feel it is our ethical obligation to educate the patient about the possibilities of modern laser medicine that go beyond the school of mainstream medicine.

Patients benefit from our friendly diagnostics and laser therapy, which are based on further development of highest quality standards and passionate commitment. We use the most advanced medical laser devices and operate their continuous development by evaluating current medical knowledge and treatment experiences of our patients.

LUMOMED CERTIFIED TREATMENT

Lumomed is a composite of dedicated and highly specialized laser therapists. Lumomed means high quality and service through innovative technology and methods. Lumomed stands for progress and experience.

•) LUMOMED QUALITY

Only the laser therapist can exercise the precise application of Lumomed laser therapy and meet the requirements for the treatment criteria. We also require regularly performed quality inspections.

Lumomed specialists have many years of therapeutic experience and must undergo an intensive training in theoretical and practical fields related to laser medicine. In addition, we continuously evaluate the national and international developments in laser medicine, and integrate this knowledge into our treatment and in our training of our Lumomed specialists and in the further development of laser devices.

Our Lumomed specialists are aware of the controversy in the medical community and are actively lobbying for the recognition of Biostimulative low-level laser therapy in the treatment of inner ear conditions.



GOOD TO KNOW: HOW DOES SELF TREATMENT WITH LUMOMED HOME THERAPY SYSTEMS WORK?

► The Lumomed home therapy systems have been specifically designed for long-term self-treatment even in advanced inner ear disorders

The light application is carried out by means of patented and custom-made, high quality laser light sources. The patented laser device allows a user friendly and convenient application of laser light at the ear. During treatment you can read a book, work on the computer or just relax.

Continuous self treatment is a complement to many successful outcomes.



Inner ear symptoms are not specific to individual cases. Any disease process is as individual as the person affected. Lumomed specialists offer personal consultations, provide a diagnosis, and develop an optimal treatment plan for each patient. The main objective: relief for your ears!



GOOD TO KNOW: NO PRESSURE

The expected result of laser treatment depends on the severity of inner ear disease.

- ▶ Allowing yourself to feel less pressured and stressed will give you the best chance of an optimal laser treatment result.
- ▶ Lumomed practices provide professional quality laser treatments. Our specialists also recommend our Lumomed-Laser device for self-therapy at home.

•» **WHAT YOU WILL EXPERIENCE DURING TREATMENT**

Before treatment begins, you will need to have a consultation with your Lumomed specialist to develop a personal starting point.

•» **YOUR PERSONAL TREATMENT PLAN**

The individualized treatment plan is arranged between you and your specialist. It will include the therapy duration and weekly repetitions as well as the overall expected duration of the course of care.

•» **THERAPY AND WELLNESS FOR YOUR EARS**

Treatment with Lumomed lasers in our treatment center is performed in a comfortable position and in a relaxed atmosphere.

•» **REGENERATION**

During and after the laser treatment, it is especially important that you make sure to protect yourself from noise and stress. The parameters and characteristics of hearing are measured by means of a follow up audiometric test. The most important way to measure improvement is to talk with your Lumomed specialist about how your symptoms have changed and to ensure that a satisfactory result was received.

•» **WHAT TO EXPECT AFTER TREATMENT**

After the treatment, you may feel a soothing or nourishing effect. Any symptoms of congestion may change for the better, as wellness of the ears equates to quality of life and relaxation.

•» **ARE THERE ANY UNWANTED SIDE EFFECTS?**

No – there are no unwanted side effects known.

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