Theories which divert the origin of tinnitus to the brain impede the absolutely essential prophylaxis of hearing disorders and tinnitus

Currently there is a confusing awareness campaign of a group of tinnitus specialists, ENT doctors, ENT universities, neurologists and brain scientists which want to explain to millions of people suffering from tinnitus that their ailment is a dysfunction of the brain.

Their explanations are blatantly inconsistent with one another and very misleading. On one hand they claim that the root of the evil (the tinnitus) do not lie in the hearing (the hearing organ) but in the brain, but then they state that the claimed defective connections within the brain may be caused by hearing (organ) damage.

At the same time tinnitus scientists at universities claim that, though tinnitus patients usually do have hearing damage, this damage is completely insignificant for the appearance of tinnitus because the brain of tinnitus patients sort of autonomously, that is of itself, produces tinnitus, independently of organically existing strain of the hearing organs.
Thus the hearing organs are to be completely ignored when treating tinnitus.
Instead one is to concentrate exclusively, within the scope of tinnitus therapy financed by the health insurances, on irradiating the patients' hearing organs furthermore and additionally by hearing aids, so-called noisers, so-called tinnitus neurostimulators or all sorts of so-called music therapies and/or on manipulating their malfunctioning brain, e.g. by ultra strong magnetic fields or by implanting jamming transmitters, so-called electrodes.

Sources:

1. Gehirn und Geist, Spektrum der Wissenschaft Nr. 1-2/2011, p. 38, „Wege zur Stille", Tobias Kleinjung und Berthold Langguth, Tinnitus Research Center, ENT clinic of Regensburg university, www.spektrum.de
2. Süddeutsche Zeitung 13. January 2011, „Das große Rauschen" (www.sueddeutsche.de/wissen)
3. Apotheken Umschau 15. January 2011, „Besser hören" (www.apotheken-umschau.de)
4. Spiegel Online 24. January 2011, „Wie Ärzte gegen den Tonterror kämpfen" (www.spiegel.de)
5. http://www.stern.de/gesundheit/dauerlaerm-im-ohr-forscher-schalten-tinnitus-aus-1643070.html 14. January 2011, 08:49

The confusion caused by this has fatal consequences: Public and patients continue to be helpless and the not yet concerned are dangerously careless in respect of their own ears.
At the same time even a bit of knowledge about how our hearing organs work is sufficient to ease an existing tinnitus by protecting the ears from everyday noise, even to heal it and to efficiently avert hearing damage and tinnitus.

Almost 100% of all newly of tinnitus diseased people seek out ENT doctors as first contact or their GP who then refers them to an ENT specialist. The fewest go with a newly arisen tinnitus of their own accord to neurologist, a psychiatrist, a psychologist or a brain scientist.
This is because the patient at once relates the disorder of his hearing to his hearing organs as he perceives it there. Just like an appendicitis is at the very first and anatomically correctly perceived in the region of the belly.
This is also made clear by body language: if an appendicitis occurs people hold their belly and feel it, if a tinnitus occurs the hand goes to the ear, people pull their earlobes, press the cartilage in front of the auditory canal etc.
By this feeling of the ear and around it we cause transient changes in the perceiving of the ear which, however, still does not have a visual conception of how it looks like within the suffering hearing

organ. Common knowledge about what is "within the ear" usually contains the middle ear with eardrum and chain of ossicles, also known is the term ear tube (= the connecting tube between middle ear and fauces). But the inner ear, the actual working organ of our hearing organ, is usually quite unknown and thus is excluded from our imagination and our compassion.

Our inner ear organ is capable of regeneration and worthy of protection

To be able to protect something, we do need compassion, and for that we need some basic knowledge about our inner ear organ regarding its protection.
About this, the research group www.dasgesundeohr.de would like to present to the public the following basic information which is scientifically backed:

1) The inner ear houses two sense organs: the hearing organ, which is located in the cochlea, and the balance organ, which is located in the labyrinth. Each of these organs is about as big as a pearl.
2) Both senses together are our navigation system. It is our organ for early warning and flight. It is an organ very necessary for survival. Thus it is an organ which is 24 hours a day open and receptive, but which cannot protect itself like the eye.
3) As all other organs the inner ear has its specific stressors. The main stressor of the eye is intense light, for the liver it is, for example, alcohol, the lung's stressor is, for example, smoke, and for the inner ear it is most of all noise and movement. An organ's stressor strains the respective organ by its intensity as well as its exposure time.
4) The auditory and balance cells have to make living nerve impulses from the inorganic stimuli sound wave (acoustic pressure measured in dB and frequency) and gravitation (rotational and tangential lifting forces). This conversion process for the auditory and balance cells is a biological energy-consuming process. Just like the excretion process of the kidney cells, the metabolism work of the liver cells, the pumping of the heart cells, the seeing of the cells in the eyes or the thinking work of the brain cells are biological energy-consuming processes.
5) Within the cochlea there are only 25,000 auditory cells working for us. The eye has about 1.5 millions photoreceptors.
6) These 25,000 auditory cells are born with us, like all nerve cells, and die with us. That means that they have to enable us to hear all our lifetime as always the same cell individuals.
7) This is only possible because evolution gave them a very strong ability of regeneration. They use every moment of relaxation to regenerate. Thus the active protection of the ears against everyday noise is not only protection, but also therapy.
8) Of all the sense cells only the auditory cells have to do their work processes (for their hearing task) under mechanical strain. Those are enormous and cause in the auditory cells and other biological structures within the cochlea, under corresponding strain, excessive strain symptoms which can be distinctly experienced and measured.
9) Just like any other organ of our body the inner ear organ has its specific emergency and strain symptoms.
10) Those are: hearing loss, hyperacusis and dysacusis (hypersensivity and distortion of hearing), pressure in the ear, tinnitus, vertigo and morbus menière (rotatory vertigo with nausea)
11) As is the case with all other organ specific emergency and strain symptoms, these occur in the inner ear in certain variety corresponding to the extent of the individual excessive strain on the organ, that is from perhaps only one symptom to all symptoms at once.

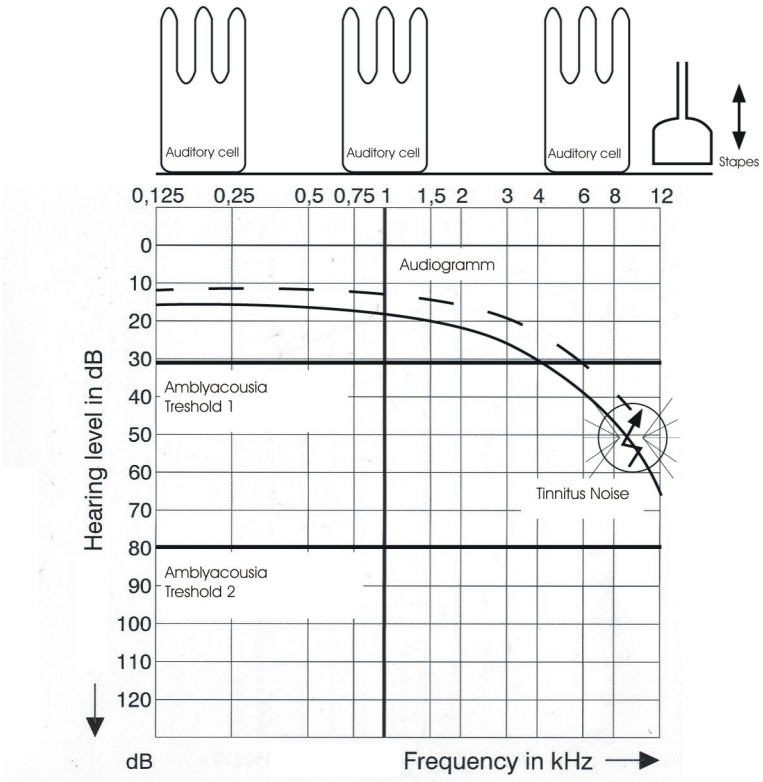
The biological quality of our inner ear organs is easy to measure and represent

The biological state of a hearing organ is measured and represented by the so-called audiometry (= hearing test). The result of the audiometry, the audiogram, shows the extent of the excessive strain of

our auditory cells as well as the place of the most serious excessive strain of the auditory cells within the cochlea (see also www.dasgesundeohr.de).
The audiogram shows the biological state of all auditory cells. It measures the quality of the auditory cells for the deepest sounds (0.125 kHz), for voice frequency (0.5 – 3 kHz) and of the auditory cells for the highest audible sounds (12 – 16 kHz). All of our 25,000 auditory cells per ear are situated on a swinging membrane, the basilar membrane.

The mechanical strain of our auditory cells is made visible in the audiogram

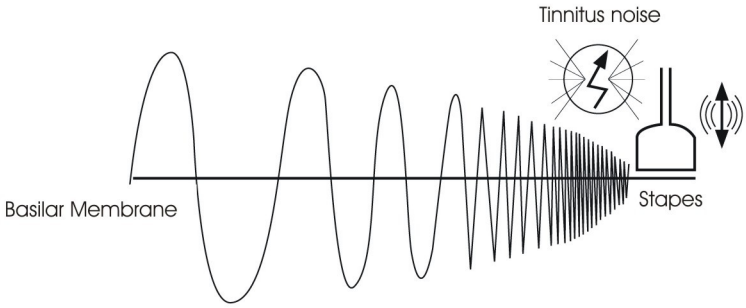
Each hearing process, even the noise around us which we call civilizing everyday sound intensity, causes the basilar membrane and the auditory cells on it to swing heavily.
All 25,000 auditory cells are jerked about, the stronger the louder the noise is and the longer the longer our ears are exposed to everyday sound.
The consequent biological strains are indicated in the audiogram. Because of the swinging behaviour of the basilar membrane the auditory cells for the highest frequencies are biologically overstrained the first and most. This we can see very distinctly in the audiograms of tinnitus patients.



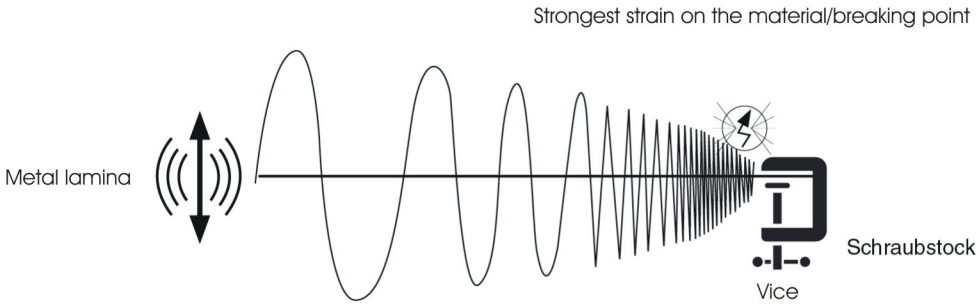
Almost all audiograms of tinnitus patients show a decrease of the hearing of high frequencies. The hearing ability of an auditory cell corresponds to its biological quality. Biologically good (because of protection) auditory cells can hear well, biologically strained (because they are not protected) auditory cells lose more and more their ability to hear well, they lose more and more their biological quality.

The people affected experience this as an increasing of their individual ailments, that is as an increasing of the organ specific emergency and strain symptoms of the inner ear organ. Among those there is also tinnitus. The vast majority of all tinnitus patients suffer from a high frequent tinnitus; they hear one or several high frequent noises. That means that the place visible in the audiogram where the

biological strain within the cochlea is the strongest corresponds to the sound (frequency) of the tinnitus.
At the same time the anatomic conditions within the cochlea are such that the basilar membrane and the auditory cells on it are subject to the strongest swinging in the high frequency part.



The biological strain involved is identical to the strain on the material of a metal lamina fixated into a vice.



So there is a clear local and functional connection between the inner ear mechanism, which is the same for all ears, and the inevitably occurring place of the strongest strain on the material and the strains we can see in the audiogram, especially the strains on the auditory cells which hear the high frequencies and the high-frequency tinnitus noise which are perceived the most often.

Simple and basic information about the inner ear organ makes a cheap and by all people exercisable prevention of tinnitus possible, as well as an effective self-help in case of existing tinnitus

Out of the knowledge of these facts we can easily understand that a reduction of the inner ear organ's specific stressor everyday noise in respect of its intensity and length of exposure makes a relief of the biological structures possible, especially of the basilar membrane and the auditory cells on it.

The team of www.dasgesundeohr.de argues for information which people should first get about these basic biological properties of their inner ear organ, so that they can have a biologically reasonable and self-determined handling of their organs of hearing and balance. The arguments of the advocates of the theories which divert the origin of the tinnitus into the brain impede this possibility.

Concerning the claims of the advocates of the theories which divert the origin of the tinnitus into the brain

The main mistake of tinnitus research on universities is that it completely leaves out the inner ear organ as cause of tinnitus and other symptoms of excessive strain of the inner ear (hyperacusis and dysacusis, pressure in the ear, hearing loss, vertigo and Morbus Menière).
For this they have been using first and foremost and for decades always the same story from the cabinet of curiosities of medicine. All other arguments are based on this story.

The story of the cut auditory nerve

Once upon a time, somewhere upon this earth, some chronic tinnitus patients in their desperation supposedly agreed to a surgery which cut their auditory nerves in two to stop the noise. This was supposedly without success; the patients still perceived torturing acoustic signals after the surgery. So, this was the conclusion of the tinnitus experts, it was proven that the cause of the noise could not be in the ear but in the brain (see sources 1, 2, 3, 4).
This story has the advantage of being very attractive for the audience (because it is creepy), while on the other hand it is difficult to prove exactly because of its creepiness, as there would hardly be any subjects for such a surgery.

The phantom has a clear biological cause

Apart from the fact that there isn't one single example for this story is found in medical world literature, we have to state the following:
If really such an important nerve as the nervus acousticus (auditory nerve) should be surgically cut in two, it would, like any other nerve in this situation, not be devitalized, but extremely traumatized (hurt) and therefore it would, of course, send massive signals to its respective cerebral area. It is self-evident that this would then be excited and would signal to us its excitement in its specific perception quality (in this case as acoustic perception).
These signals can continue for months and years because of the long regeneration time of nerve cells, usually slowly decreasing in time. Thus the famous term phantom pain, which seems to fit this story and is used wrongly by it, is no "phantom", that is, something like a fantasy or a brain disorder of the patient suffering an amputation, but a real biological process which, of course, comes with the cutting of a nerve.
Amputation surgery has known for decades that the so-called phantom pain slowly gets better of its own volition during the natural wound healing. We also know that, if this should not be the case, the continuing phantom pain is caused by an insufficient healing up of the cut nerves. The phantom pain can then be treated (and must be treated) by correcting surgeries of the cut nerves (stump correction) and not by interfering with the patient's brain.

Concerning the claim of university tinnitus research that the brain of tinnitus patients supposedly compensates reduced input of the ear by increased activity (tinnitus)

Because of the state of excessive strain of the hearing organ which usually exists with tinnitus patients and which is visible in the audiogram, university tinnitus experts obsessively reinterpret its meaning. They admit that the place of the most serious strain of the auditory cells visible in the audiogram is usually corresponding to the tinnitus frequency; that means that the tinnitus noise comes from the place of the most serious biological excessive strain within the cochlea – the most strained cells which are in charge of the perception of high-frequency sounds.
But then they claim that the cause of the signal is not the biological excessive strain (which they do not even mention as such) but a reduced input from the ear which the brain tries to compensate by producing a tinnitus noise (see sources 1,2,3,4).
This is a construction completely made up out of thin air:
Reduced input of a sensory organ nowhere causes a compensatory signal of the brain.
Silence does not cause tinnitus, just as darkness or a reduced sight of the visual cells (= reduced input from the visual cells) does not cause compensatory light signals in the brain. Pure air (= few smells, thus little input from the olfactory cells) or a reduction of the olfactory ability does not cause compensatory olfactory experiences in the brain, and so on.
At the same time there are absolutely no similar processes in all of the other brain research, that is, there are no processes where a poverty of stimuli causes compensatory stimuli of the brain. On the contrary, for millennia people try, e.g. by mediation, to calm their brains by conscious and volitional reduction of outer and inner stimuli.
The reduction of hearing of the auditory cells is not a reduced input but the expression of their increasing biological weakening and excessive strain. This strain causes a cellular stress situation, and because of this situation the auditory cell produces its typical emergency signals, one of which is tinnitus (see also www.dasgesundeohr.de).
Because of its extreme specialisation on acoustic signals the auditory cell cannot tell its biological emergency but acoustically.
This is also the case with visual cells. A hit on the eye will cause stress for the visual cells, we see "stars" or coloured optic sensations because the visual cell cannot tell us its biological emergency but visually because of its extreme specialisation on visual signals.
Tinnitus is the pain signal of the auditory cell.
Like any other pain signal that is sent by strained body cells the emergency signals of the auditory cells reach the brain and there, of course, cause an increasing of observable activities within the respective cerebral areas.

Current research results verify the biological fact that tinnitus is the pain signal of strained auditory cells

If we explain in a medically correct way the research results quoted by the authors of "Wege zur Stille" (ways to silence) they will verify that tinnitus causes the identical arousal patterns within the brain as pain signals.
As is the case with all other pain patients, in the brain of tinnitus patients are not only those cerebral areas aroused which are specific for the respective organ and which enables us to relate locally the pain signals, but also cerebral areas that are important for the regulation of attention, emotions and stress. This, however, is nothing new.
On the contrary, it is common knowledge that pain signals cause complex reactions within the brain and thus complex changes of our behaviour. The modern imaging methods mentioned by the authors, like functional magnetic resonance tomography (fMRT) or positron emission tomography (PET), the old electroencephalography (EEG) or modern magnet encephalography (MEG) prove only what every one of us experiences when we are in pain:

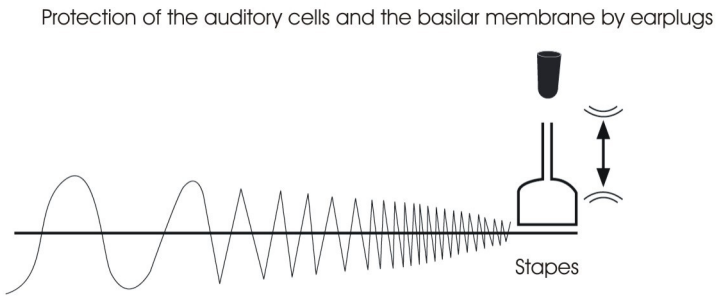
We are disquieted by the pain.
This is the meaning of pain signals. Pain signals want to and are supposed to disquiet us and to call our attention to the fact that something is wrong within the body.
They inform us about the intensity and the place of the respective disorders.
This is exactly what happens in the case of tinnitus. Our strained auditory cells situated within the cochlea of the inner ear are sending their acoustic emergency signals with the same intention as our big toe, if there is something heavy on it.
We are supposed to begin, at least now, to care for our completely strained hearing organs, we are supposed to begin to protect them!
But the message of the university tinnitus experts is quite different:
Do not care for your hearing organs, because "the inner ear has nothing to do with the noise", because "because of the fact that tinnitus causes the same observable cerebral activities as pain signals, we know now that the cause of tinnitus lies within the brain". (??) (See sources 1,4)

Concerning the claim of university tinnitus research that for the origin of tinnitus within the brain the learning aptitude (= plasticity) of the brain of tinnitus patients is responsible

According to university tinnitus research the brains of tinnitus patients have several disorders.
First a supposedly reduced input from the inner ear, that is, from the auditory cells, causes a singular (that is, only occurring for tinnitus patients), biologically absurd (= compensatory) hyperactivity within the auditory areas of the brain.
Additionally the learning aptitude (= plasticity) of the brains of tinnitus patients is again singular, that is, only in these brains is the learning aptitude damaged (because of a "fatal disorder") that the brain perceives this hyperactivity as ear noise "without an acoustic signal". (See sources 1,4).
While they mention a supposedly reduced input as argument for the supposed hyperactivities within the brains of tinnitus patients, any reason for the supposed "fatal disorder" of the "plasticity" of the brain of tinnitus patients falls by the wayside.
They are satisfied with an interrelation of a banality, like our brain is able to learn, and the claim of a faulty operation, presented with university gesture. They explain neither the possible cause of the supposed disorder nor its possible place within the brain, nor its possible interconnectedness within the brain.
Of course, this would be impossible to explain, because there is neither a reduced input nor a hyperactivity caused by that nor a probably necessary disorder within the patients' brains.
All those supposed brain oddities with which the patients are credited can not be verified in spite of all modern examination technologies. This is the actual research result.
The only thing that is verified is that our brain reacts to tinnitus signals just like it does to pain signals.
This is because tinnitus actually is the acoustic pain signal of strained and thus biologically suffering auditory cells.

Who benefits from the methodical disregard of the inner ear?

In the light of the varied suffering of the patients and the problems of strongly increasing excessive strain of the inner ear, which directly concern every one of us, the team of www.dasgesundeohr.de would like to invite all people who are responsible for the public health to enable an open discussion of the presented problems.
Who benefits from the methodical disregard of the inner ear?
Perhaps the rapidly growing hearing aids industry?
But hearing aids are, no matter what kind, always straining sound amplifiers. They increase the organ specific stressor noise into an already weakened organ and so directly and increasingly worsen its biological suffering.



This goes also for all current offers of tinnitus therapy which use all sorts of sounds (the so-called noisers, maskers or tinnitus neuro-stimulators), but also for all other advices that intend to drown out the emergency signal of the suffering auditory cells by additional sound exposure of the already excessively strained ear (= masking).

The simple connection between noise and excessive strain of the inner ear can, in this way, not be made clear to mankind and especially to the increasing number of customers of the hearing aids industry. Would this do damage to economic objectives?
In the light of the profits in the billions which the hearing aids industry makes yearly it is strange that from this part there are no activities for the prophylaxis of auditory damage.
The team of www.dasgesundeohr.de has been informing the public since 2004 about a protective handling of one's inner ears and has edited the first textbook for children and adults dealing with hearing ("Die wunderbare Ohrenschnecke", www.mausini.com).

Excessive strain of the inner ear is a lifestyle disease like diabetes

Because of public medical education everybody knows that a excessive feeding of carbohydrates (sugar) causes an increasing of the blood glucose level and thus can cause a serious metabolic disease, diabetes.
But the public does not yet know the connection between duration and intensity of exposure to everyday sounds and the effect on our inner ear organs.
Even today the public is left in the dark about this connection. Moreover it is confused by the criticized methods about its own perception.
The consequences are that the number of patients newly concerned by excessive strain on the inner ear is increasing and the already existing strains on the inner ear are increasing in their respective individual intensity.
40 % of the young men coming to the German Federal Armed Forces have irreversible hearing damage. In 2006 50 out of 1,000 insured children and adolescents under 18 had been prescribed a hearing aid. In 2010 the number was 63 out of 1,000. This is an increasing of 26 % (data of Techniker Krankenkasse, published 26. April 2011, PNP Passau).
To prevent a new widespread disease ear prophylaxis and education has to be statutory within our school system just like it is the case with caries prophylaxis in §21 of German Social Welfare Code.

Further information:
www.lumomed.de
www.dr-wilden.de (for scientific information please ask for password)
www.dasgesundeohr.de
www.tinnituspatient.de
www.tinnitus-lasertherapie.de
www.eurotinnitus.com

www.biolaserlicht.de