

## Hear Ye! Hear Ye!

### Hypertonic Middle Ear Muscles - Test and Correct

By Frank Mahony

**Object:** Identify and correct hypertonic muscles in the middle ear.

The ear is one of the major areas of sensory processing critical to sound and balance, and in so doing interacts with other major systems of the body. But, like the eyes, it is most sensitive and vulnerable. Two muscles of the middle ear, the stapedius and the tensor tympani, have been identified as being involved in protecting the inner ear from loud noise damage.

There are three tiny bones in the middle ear which transmit sound waves to the inner ear where sound is converted into electro-mechanical energy. These bones are called the stapes, malleus, and incus. Movement of these bones is modified by two of the smallest and quickest acting muscles of the body; the stapedius and the tensor tympani. Part of the role of these muscles is to dampen external and internal noise. The latter include the voice, screams, laughter, coughs, sneezes, chewing, and other body noises.

According to research by Metz (1946) and Wever and Lawrence (1964), the stapedius muscles contract and stiffen the middle ear bones, thus providing a dampening effect, particularly to loud, low frequencies. The tensor tympani is believed to be more involved with pressure and touch. (As always, there is some disagreement among researchers as to the precise purpose and function of this delicate apparatus).

When one thinks of loud low frequencies, heavy metal rock and roll music comes to mind as being a major threat to the well being of the very delicate miniscule bones and muscles of the middle ear. The latest rage among the young and well healed audiophile is to install the most powerful stereo system possible in their cars, and drive with the sound cranked up to maximum, often with the windows closed so as not to be disturbed by outside noises, like emergency sirens on ambulances and fire trucks. I have seen, felt,

and heard these mobile sound chambers with the volume so high that the windows and metal panels were actually vibrating with that driving base sound that seems to be an addiction of its own. While being near one of these cars you even feel the compression from the intensive base sound!

On another occasion I was in a sound recording class where we were recording a rock group. The musicians were separated as much as possible so that each instrument could be recorded separately and electronically souped-up, or distorted in some way so that you can't recognize what it is. You wonder why they chose to play that instrument in the first place since they always seem to want it to sound like something else, preferably from outer space. The musicians can't hear each other, so each musician is given a head set so they can hear the other instruments just in case they might not be playing the same tune, but more likely to make sure that someone isn't playing louder than he is. The rock drummer complained that the sound level in his head set was so low that he couldn't hear, a common phenomenon among rock musicians, rock fans, and sound technicians. We turned up the volume, but the drummer still complained. Since the equipment checked out OK, I put on his head set to see if his was faulty. Not only was it working, but the volume was so intense that I felt like both of my ears had been painfully squashed into the center of my head! These are just a few examples of sound pollution that is causing serious problems particularly with the rock and roll generation. But music isn't the only threat. There is the problem of everyday sound pollution in the workplace, with home appliances, traffic noise, etc., that are keeping our very sensitive auditory mechanisms under constant attack. When muscles are abused, overstressed, fatigued, etc., in my experience they become hyper-

tonic expressed in pain, weakness, and/or restricted range of motion.

From my hypertonic frame of reference, it occurred to me that these muscles could easily become hypertonic, and in some way cause a disturbance in the role of the middle ear responses, or, Acoustic Reflex Threshold (ART). If this is true, the following procedure may have far reaching benefits in a number of ways.

In Australia, I was reviewing information given to me related to the middle ear which I had been carrying with me for several months, but had not had an opportunity to give much attention to. A student then arrived with his wife, and they inquired as to what I was so deeply engrossed in. When I told them, I was informed that the lady had a mild, but nagging, stuffy earache lasting several days. I then improvised the following challenge and correction, which gave her immediate relief. My esoteric friends will now state something about how the Universe provides when needed, whether summoned or not. Who knows, but many similar coincidences have occurred which seemed to have pulled me onto the path which I now find myself. I will be terribly disillusioned if I one day find that this is all the work of some poltergeist who was having a slow day at the office.

In addition to the stiffening action of the middle ear muscles, there is also a ligament that attaches to the malleus and the temporal mandibular joint, called, conveniently, the mandibular-malleolar ligament (Walther, in *Applied Kinesiology Vol I*, and Upledger, in *Cranial Sacral Therapy II - Beyond the Dura*, refer to muscle fibers of the lateral pterygoid muscle passing through the interarticular disc of the TMJ and attaching to the malleus. It is not clear if this is the same tissue by different names or not.)

The purpose of this connecting tissue is not clear, but obviously movement of the jaw would evoke some response in the middle ear, possibly involving head righting and balance, but may also be providing information to the mechanism to dampen sound while chewing or shouting. I remember films showing members of World War II army artillery crews being taught to

open their mouths and scream as loud as they could to protect their hearing when firing the cannon. (This could explain some of the rock singers style which may be the body's defensive mechanism making a last ditch effort to save something). The TMJ-malleus connection could give further importance to the relationship of TMJ dysfunction, ear pain, balance, and organizational deficits. With all of the above in mind, the challenge and correction involves:

**Test.** The subject places one finger gently into the opening of the ear to amplify body sound, but not so as to create a vacuum.

The therapist tests the Indicator Muscle as he applies gentle pressure in various directions on the subject's hand, which pushes the outer ear about, theoretically extending the middle ear muscles. Repeat while subject hums softly at a low pitch.

Repeat with the jaw thrust forward to involve the malleolar-mandibular ligament. A weak IM indicates that there is hypertonicity in the direction that evoked the weak IM response.

**Correction.** Subject places fingers in ears in such a way as to magnify inner sounds. Then the jaw is thrust forward and down, but the lips are held together, also to magnify inner sound while humming.

Subject then applies gentle pressure in the direction that evoked weak IM response, and hums softly at a low pitch for six seconds. If any discomfort is experienced, as in all HYPERTON-X work, the maneuver is adjusted to eliminate the discomfort, or is stopped completely.

**Repeat Test Procedure.** If IM tests weak in any direction of stress, repeat correction. If IM still tests weak, the body may be processing (clearing emotions or settling energies), or there may be some emotion that needs to be cleared.

I have been teaching this procedure since early 1987 and the results vary from minor changes to very profound. It has been helpful in relieving chronic conditions of the feeling of inner ear congestion, pain, headaches, diminished hearing, tinnitus, and dizziness. On several occasions the subjects experienced

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improvement in vision. One person, deaf since birth, was able to hear her own voice more clearly.

I have found this simple procedure to be quite useful on many occasions and I am happy to share it with you. I would appreciate some feedback with your experiences and any variations that you develop.

As the old cheer goes,

"HEAR YE! HEAR YE!"

Good Luck!