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## Tinnitus – Ear Pain Management

### **Sensitive or Ringing Ears**

The over-activity of your jaw can make your ear canal sensitive. The ear has two important muscles: the tensor tympani (it attaches to the ear drum and stabilizes it from the excess vibration caused by loud sounds) and the tensor levi palatini (it attaches to the Eustachian tube, and helps to open and close the tube, thereby equalizing pressure within the inner ear...it is what "unplugs" your ears as you chew gum in an airplane).

### **Tinnitus and TMJ Symptom Sharing**

Over activity of these muscles can sometimes cause a ringing sensation, called tinnitus. It is not unusual for the patient with TMJ/CMD to complain of ringing in their ears, or vertigo. The tensor tympani and tensor levi palatini are tensed whenever the jaw-closing muscles are tensed, i.e., when ever the jaw is clenched. The reason is that the same nerve (the trigeminal) feeds all of the muscles of mastication as well as these two important ear muscles.

Many of the patients that we see at our office present with tinnitus (ringing in the ears) as a primary or secondary complaint. Tinnitus may occur alone, or in concert with other symptoms.

### **Age Factors?**

Not really... read the case history on our young patient pictured here. She had ear pain, beginning stages of hearing loss and other neuromuscular difficulties. Genetically based symptoms that were misdiagnosed.

The most common pattern of complaints with most patients is as follows:

- head, neck and back pain
- dizziness (vertigo)
- otalgia (ear pain)
- impaired hearing
- stuffy sensations in the ears
- double and blurred vision
- various jaw joint noises
- sinus pain
- frequent sore throats
- migraines, headaches

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People with tinnitus usually present to our office desperately looking for a solution for their multiple problems. The effect on the individual can vary from mild awareness to reduced work capacity, lack of concentration, total disability, and in some cases suicide.

### **Tinnitus Defined**

"Tinnitus can be defined as the conscious experience of a sound that originates in the head of its owner." Everyone has experienced sounds that did not originate from their outside world, at one time or another. But the true tinnitus victim suffers from a constant ringing, hissing, or buzzing sound that in some instances can drive the patient almost insane. They also suffer from many of the complaints described above.

### **Multiple Symptoms of Tinnitus**

The mechanism by which tinnitus occurs is not clear to many professionals, however the current medical theory is that the majority of cases of tinnitus have no detectable acoustic basis! Tinnitus can be a symptom of some ear disease such as otitis externa, chronic otitis media, otosclerosis, or Meniere's disease.

But even in the presence of obvious middle ear disease, such as otosclerosis or chronic otitis media, the actual site of the lesion which causes tinnitus remains obscure. Because tinnitus can be a symptom of serious ear disease, such as an acoustic neuroma, it is recommended that an ENT or neurological evaluation be performed prior to initiating TMJ/CMD evaluation and dental treatments.

The dental profession's interest in the relationship between ear symptomatology and craniomandibular disorders had its true beginning over sixty years ago.

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Research has proven that ear and sinus symptoms can be related to a disturbed TMJoint. In 1962 Pinto published his findings and observations which showed that there is a ligament which attaches from the TMJoint meniscus straight into the malleus of the ear. Other researchers have related ear disturbances to TMJ dysfunction due to the close proximity of neighboring blood vessels and nerves. It has been proven that there is a direct transmission of blood and nerve flow from the ears into the TMJoint.

A book, entitled Tinnitus and Craniomandibular Disorders: Is There A Link?, took a hard look at this problem and came up with some interesting observations.

Several of the findings indicated a relatively strong relationship between craniomandibular disorders, tinnitus, and subjective hearing loss. The prevalence of frequent headaches and fatigue, or even tension in jaw muscles, was higher in tinnitus patients than would have been expected even if these conditions were unrelated. Approximately one-third of the individuals suffering from tinnitus reported an influence on tinnitus by jaw movements, or pressure on the TMJoint.

### Tinnitus Treatment

Prior to initiating the dental assessment for TMJ/CMD, a thorough medical evaluation is necessary. Appropriate medical and neurological referrals should be made. A number of symptoms and signs can be found in association with tinnitus. These include:

- worn down teeth
- tenderness of the muscles of mastication
- pain in or around the TMJoint
- ear pain) aggravated by mandibular movement
- neck pain
- poorly fitting dental work or dentures
- bruxism (tooth grinding)
- dizziness and disequilibrium
- stuffiness in the ears

Clinical observations have found that tinnitus is present in approximately one-third of the patients who present with ear pain, fullness, hearing loss, etc. After proper dental therapy is performed, tinnitus is generally relieved.