

Somatosensory tinnitus vademecum

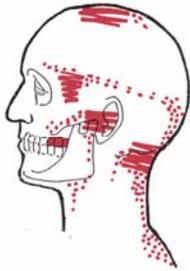
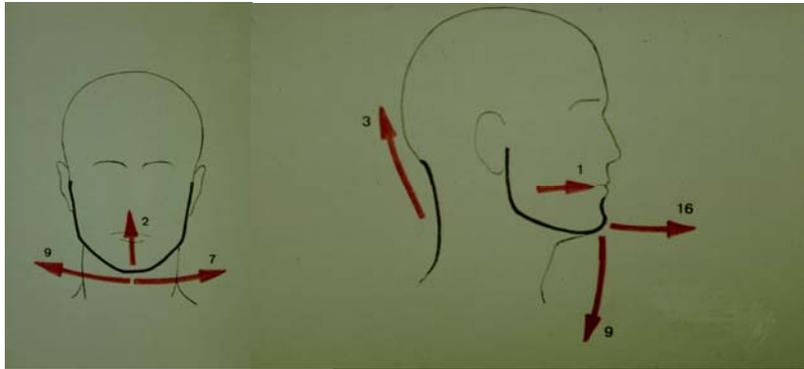
Information by Tinnitus Laser Centre (TLC)

1. Diagnosis

Tinnitus can have many backgrounds and is often thought to be located in the auditory organ although ENT doctors rarely find anything when examining the ears. Quite often, though, it rather is a “phantom” sensation, emanating from tense muscles. The origin may be stress, posture, malocclusion, dental para-function, muscular overload etc. A tinnitus phenomenon caused by muscular overload is called “somatosensory tinnitus”. To make a simple differential diagnosis, use the following steps:

1. Is the sound permanent in loudness and pitch night and day? A majority, but not all, somatosensory cases have a sound that changes with muscular movements.
2. Turn the head into rather extreme positions, forward, backwards, to the sides. Stay for a while and observe if the sound changes in any way, for better or worse. If it does, in any of the mentioned positions, there is a problem in the neck and upper m. trapezius. [Figure 1]
3. Check for tender points in the neck and trapezius. If present, it strengthens the assumption.
4. Move the lower jaw to an anterior position, then to the left and right extreme position [Figure 2]. If the sound changes in any of these positions, there probably is a connection with the masticatory muscular system.
5. Check by palpation the presence of tender areas in your head. [Figure 3] Tender points in the suboccipital muscles (right below the skull in the neck area) indicate a relationship with the mandible.
6. *Check the following:*
7. Do you clench or “grind” your teeth?
8. Have you had orthodontics?
9. Does the dental arch feel “narrow”?
10. Do you feel that your upper and lower teeth meet comfortably or does biting together force the lower jaw backwards?
11. If your tinnitus is unilateral, do you have the feeling that the occlusion forces the lower jaw towards that side?
12. Can you move your lower jaw freely and easily in all directions?
13. Does any of your mandibular (TMJ) joints click or crepitate?
14. Have you had fillings, crown or bridges that appear to be “too thick”?
15. Do you have a feeling of pressure in your ears?

If many answers to the points above are positive, ask your dentist to check your occlusion or ask your MD to refer you to a TMD (Temporo-Mandibular-Dysfunction) specialist.



Drawings by Assar Bjerne

2. Hints for the dentist

1. Check for signs of bruxism (shiny flat areas etc.)
2. Check the masticatory muscles for tender areas, especially the lateral pterygoids
3. Check if occlusion is balanced in central and retruded positions
4. Check for premature occlusal contacts
5. Remove these by minute grinding. Patient feedback works well except for cases of extreme bruxism
6. Common cause of somatosensory tinnitus is premature contacts in the front, forcing the TMJ into a posterior position, triggering a nociceptive response from the lateral pterygoid, trying to pull the jaw forwards. This eventually causes muscular overload
7. If only the left lateral pterygoid is tender to palpation, the problem is often to be found on the right side of the dental arch and vice versa. If both are tender, it is often located on the central incisors
8. Tenderness in the suboccipital muscles is related to the mandible. Tenderness in this area is also often related to vertigo.
9. Make the patient aware of the cause of bruxism – stress of various origins
10. Check the posture of the patient. “Vulture neck”? This often causes a C7 entrapment.
11. A bit splint may help but only if occlusal rehabilitation is unsuccessful or not deemed possible
12. For neck and trapezius problems, cooperation with a physiotherapist is valuable

3. The laser therapy

1. Laser is started after diagnosis and performed TMD therapy. The laser treats the secondary effects of stress, malocclusion, incorrect posture, muscular overload etc. Using the laser first will conceal the original reasons for the condition.
2. If not interfering with necessary medication, stop the patient's consumption of analgesics. These pills will disguise much of the symptoms.
3. Use infrared laser for better penetration, at least 100 mW, to avoid time consuming therapies.
4. Use 8-12 joules per tender point. If there is no change in pain upon palpation, add another 6 joules. It is not necessary, and not even wanted, to completely eliminate the palpation pain, only to reduce it during the first session. If the actual TMJ is involved, use lower dosage, 2-3 joules.
5. Make notes about location and intensity of tender points. At the following session check occlusion and location/intensity of the irradiated points. They are inter-related.

4. Why laser?

1. Adding laser will reduce muscular pain and tenderness and increase local microcirculation.
2. The therapy will be considerably faster

5. What can be expected?

In some cases the tinnitus will be eliminated within hours, but generally it takes weeks for the symptoms to fade away. In some cases an alleviation of symptoms can be expected but not a complete disappearance of the symptoms. The outcome will be related to the complexity of the diagnosis (stress, psychosomatic pressure in combination with more objective findings). A brief and transient exacerbation of symptoms will be observed in rare cases.

Waiting for treatment, what can you do yourself?

- Check your working posture and adjust it if needed.
- Massage tender points
- Perform daily stretching
- Think about what may cause your stress

