

Trigger point treatments

(abstracted from. Levine, R. A.; Nam, E. C.; Oron, Y.; Melcher, J. R. Evidence for a tinnitus subgroup responsive to somatosensory based treatment modalities. *Prog Brain Res*, 2007, 166:195-207.)

Trigger point injections of the cervical and jaw muscles can transiently abolish tinnitus. It has been reported in a large statistical study of 178 “non-selected primary care ENT patients,” (Estola-Partanen, 2000) as well as in anecdotes (Wyant, 1979). The statistical study found that within 5 to 10 days of injection the tinnitus disappeared in about 15% of these patients. By six months after the last in a series of trigger point injections, more than 30% of the patients felt improved, as compared to about 15% of a control group (Estola-Partanen, 2000). The study also found that the the most cervical tension occurred on the side to which the tinnitus was referred. Women responded better than men and “chirping” tinnitus better than other descriptions.

The anecdotes include a woman with recent onset of tinnitus referred to her right ear in which she had no hearing since a labyrinthectomy 12 years earlier (Wyant, 1979). The tinnitus she referred to her right ear was associated with occipital headache radiating to the vertex and the eyes. With a steroid and lidocaine injection of her right splenius and scalenus medius trigger points her headache and tinnitus resolved promptly. The injections were repeated eight times; the relief lasted from several days to 4 weeks.

A second patient had mid cervical pain radiating to the left face and eye, accompanied by tinnitus referred to the left ear. Injection of multiple left cervical trigger points with steroid and lidocaine provided relief of both tinnitus and pain for four months. No mention was made of his hearing status (Wyant, 1979).

Massage and stretching of trigger points have also eliminated tinnitus in some patients for up to 24 hours (Eriksson et al., 1995)

TMD treatments

Several reports have described the effects of non-operative TMD treatment upon tinnitus in TMD patients (Bernstein et al., 1969; Bush, 1987; Gelb and Tarte, 1975; Kerstein, 1995; Rubinstein and Carlsson, 1987; Wright and Bifano, 1997a). The reports are not explicit but most of the participants in these studies appear to have had normal hearing and tinnitus ipsilateral to their TMD (Curtis, 1980). Tinnitus resolved in over 50% of those who rated “their tinnitus as moderate or severe (Wright and Bifano, 1997a),” and in up to 65% of less severe cases (Wright and Bifano, 1997b). Pure tone hearing threshold data is not presented. But of those who responded to TMD treatments 70% (23 of 33) felt that their hearing ipsilateral to their tinnitus was normal, whereas all of those who did not respond to treatment felt their hearing ipsilateral to their tinnitus was not normal (Wright and Bifano, 1997a). Note the similarity to the Hansen et al. (Hansen et al., 1982) data (table 2).

Furthermore, Wright and Bifano did some limited somatic modulation testing on the participants in their study and found a significant association between the ability to modulate tinnitus with “maximum voluntary clenching” and improvement or resolution of tinnitus with their TMD treatment program. Thus this study is consistent with the thesis that somatic testing can predict which subgroup of patients with TMD will benefit from TMD treatment for their tinnitus.

The finding of an association between response to somatic testing and the outcome of tinnitus treatment is unique amongst tinnitus treatment studies. No studies using auditory assessments of tinnitus such as residual inhibition, minimal masking level, tinnitus loudness and level matching, otoacoustic emissions, evoked potentials, etc. have found any correlation between the test results and the outcome of treatment.

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Bush, F. M. (1987) Tinnitus and otalgia in temporomandibular disorders. *J Prosthet Dent* 58, 495-8.

Curtis, A. W. (1980) Myofascial pain-dysfunction syndrome: the role of nonmasticatory muscles in 91 patients. *Otolaryngol Head Neck Surg* 88, 361-7.

Eriksson, M., Gustafsson, S. and Axelsson, A. (1995) Tinnitus and trigger points: a randomized cross-over study. In: Fifth International Tinnitus Seminar, pp. 81-83. Eds. G. E. Reich and J. A. Vernon: Portland, OR.

Estola-Partanen, M. (2000) Muscular tension and tinnitus: an experimental trial of trigger point injections on tinnitus. In: Faculty of Medicine, pp. 118. University of Tampere: Tampere.

Gelb, H. and Tarte, J. (1975) A two-year clinical dental evaluation of 200 cases of chronic headache: the craniocervical-mandibular syndrome. *J Am Dent Assoc* 91, 1230-6.

Kerstein, R. B. (1995) Treatment of myofascial pain dysfunction syndrome with occlusal therapy to reduce lengthy disclusion time--a recall evaluation. *Cranio* 13, 105-15.

Rubinstein, B. and Carlsson, G. E. (1987) Effects of stomatognathic treatment on tinnitus: a retrospective study. *Cranio* 5, 254-9.

Wright, E. F. and Bifano, S. L. (1997a) The Relationship between Tinnitus and Temporomandibular Disorder (TMD) Therapy. *Int Tinnitus J* 3, 55-61.

Wright, E. F. and Bifano, S. L. (1997b) Tinnitus improvement through TMD therapy. *J Am Dent Assoc* 128, 1424-32.

Wyant, G. M. (1979) Chronic pain syndromes and their treatment. II. Trigger points. *Can Anaesth Soc J* 26, 216-9.

More recently Sanchez et al. reported that pressure release of trigger points in 8 muscles (infrapinatus, levator scapulae, upper trapezius, splenius, sternocleidomastoid, masseter and temporalis) resulted in abolishment of tinnitus in 8% of subjects for more than 3 months. Responses were more favorable in subjects who had normal hearing and whose tinnitus quieted with somatic testing.

Sanchez TG, Rocha CB. Diagnosis and management of somatosensory tinnitus: review article. *Clinics (Sao Paulo)*. 2011;66(6):1089-94.