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# Influence of stimulus frequency and probe size on vibration-induced alleviation of acute orofacial pain

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## Abstract

The pain-relieving effect of vibratory stimulation, using different stimulus parameters, and placebo stimulation in acute orofacial pain is reported. The influence of 10-, 100-, and 200-Hz vibrations on pain reduction was studied in 96 patients; two different probe sizes were used. 54 out of 76 patients, receiving vibrations at any of the above frequencies, reported relief of pain to some extent, while only 6 out of 20 patients receiving placebo treatment experienced pain alleviation. No significant differences were found between the different frequencies and probe sizes used regarding the pain-relieving effect. However, placebo stimulation was significantly less effective than any kind of vibratory stimulation. Induction time for pain relief was significantly shorter using the larger probe as compared to using the smaller probe, regardless of frequency. The results indicate that the vibratory frequency (10-200 Hz) for activation of pain-inhibitory mechanisms is not critical in acute orofacial pain. Also, spatial summation from vibration-sensitive afferents seems to be of importance for a fast activation of the inhibitory systems.

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