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Methods for reducing pain

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Pain plays a crucial role in transmitting hazard signals to the body, but it causes discomfort. Various studies have shown that pain perception is reduced when we are concentrating on something such as sports. In this study, we examined the effects of music listening (popular music or ballads) as well as several oral functions (biting, chewing and tasting) on pain perception. Thirty-five subjects were given laser stimulation by CO_2 laser on their ankles with each condition. Subjects assessed by themselves the intension of pain level using visual analog scale (VAS). The thresholds of pain on oral areas (tongue, buccal mucosa, and upper and lower jaw gingivae) were investigated by pain vision PS-2100 while the subjects were listening to popular or classical music or ballads. Furthermore, the blood oxygenation level-dependent signals in the cingulate cortex were analyzed using functional magnetic resonance imaging (fMRI), when ten subjects were given electrical stimulation of 80μ A on their ankles while biting chopstick or listening to music. In the VAS levels, we found significant pain reduction when the subjects were listening to music (Shaffe's test, *p*< 0.0001), whereas no significant pain reduction was seen with the oral functions (Wilcoxon test, *p*< 0.05). The thresholds of pain on oral areas were significantly higher with listening to favorite music than those to other music. In the fMRI study, biting and music listening attenuated BOLD signals in the cingulate cortex in 6 subjects. The finding suggests that listening to music is capable of reducing pain perception.

Biography

Tomida has graduated from School of Dentistry at Asahi University in 1993. She graduated from Gifu University Graduate School of Medicine and acquired Ph.D. in the year 2003 and She was assistant professor at Tokyo Women's Medical University. She is now working as associate professor at Matsumoto Dental University.

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