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## **BRUXISM quantification using biofeedback device**

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**B**ruxism is a condition of involuntary teeth grinding, teeth clenching and teeth gritting, that causes teeth wear and breakage, disorders of the jaws and headache. This habit affects around 8-10% of the population and occurs in both children and adults. Sometimes the habit of clenching or grinding teeth continues even when we eliminate the cause. While devices like mouth guards alleviate the pain and discomfort and protect teeth from further damage, they are not highly effective in addressing the bad habit of clenching and grinding. The researches had shown that the most effective tool for permanently stopping bruxism is the Biofeedback treatment.

Biofeedback is the method used to detect the Electromyography (EMG) signals from any involuntary physiological activity and function in order to control it. The instruments used in the treatment provide information regarding the activity as well as a way to influence it somehow. A variety of instruments are available for the purpose of monitoring involuntary physiological activities and also to break those activities. Out of the many, the most effective is the Biofeedback headband and its usage for treating bruxism has been supported by considerable research.

The success of the biofeedback device in controlling the night time bruxism depends on the time used for the training during the day. When a control group was incorporated, the authors usually failed to match the patients by such variables as age, sex, facial morphology, and history of bruxism. Controlled trials evaluating the efficacy of biofeedback using electromyography found significant reductions of diurnal parafunctional activity during treatment but no evidence is available for the long-term use of biofeedback in the management of bruxism. Furthermore, the possible consequences of the frequent stimuli, like excessive daytime sleepiness, need more attention before this technique can be used for the safe treatment of patients with bruxism.

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