**Hypothesis**

Bruxism, or teeth grinding is a common issue faced by some people. We hypothesize a bruxism management device that can effectively detect teeth grinding in real-time using EMG sensors. This detection prompts immediate feedback through gentle vibrations to the cheek, reminding users to relax their jaw or subconsciously relaxing their jaw during sleep. Continuous use aims to increase user awareness and control over their grinding habits.We hope this will potentially reduce or stop bruxism. The accompanying app we will develop will provide advanced data insights, helping users monitor and manage their condition proactively, thereby improving oral health and quality of life by alleviating discomfort and preventing dental damage.

**Problem**

Bruxism, or teeth grinding, affects millions globally and can lead to significant dental issues and discomfort. Current management methods are limited by their subjective and reactive nature.

**Our solution**

We propose a wearable device that uses real-time EMG analytics and machine learning to detect bruxism episodes accurately, offering personalized insights and enabling proactive management to enhance oral health.

**Groups of users**

1. Bruxism Sufferers: Individuals experiencing symptoms like teeth grinding and jaw clenching, seeking relief from discomfort and dental issues.
2. Patients Diagnosed with Bruxism: People who have been clinically diagnosed and need proactive strategies to manage the impact on their oral health.
3. Preventative Users: Those aware of their susceptibility to bruxism due to stress, sleep disturbances, or temporomandibular joint disorders, and wish to take preventive measures against potential dental damage.
4. Dental Professionals: Dentists, orthodontists, and dental hygienists interested in integrating advanced technology into their practices to improve patient care outcomes.
5. Research Institutions and Clinics: Academic and healthcare researchers studying bruxism, its causes, and treatment effectiveness. The device can be a tool for data collection and analysis in clinical studies.

**Value proposition**

1. Innovative, Effective Management: This smart device uses real-time analytics and machine learning to detect teeth grinding episodes immediately, offering a proactive solution beyond traditional treatments. Current solutions are a mouthguard to wear during sleep or headphones which vibrate to relax jaw muscles.
2. Proactive Health Insights: The accompanying app provides personalized data and insights, helping users understand and manage their bruxism more effectively.
3. Improved Comfort and Dental Health: Regular use trains users to modify their behavior, reducing teeth grinding incidents and improving overall oral health. Additional benefits occur with the device’s ability to stop bruxism occurring during sleep through vibration.
4. User-Friendly and Empowering: Easy to use and accessible, the device empowers users to actively manage their condition, enhancing daily comfort and long-term dental health. Some use would be due to dentist recommendation but hopefully there is ability for users to purchase for themselves due to self identification of bruxism.

**We need your help…**

1. Technical Feasibility: for the use of EMG sensors and machine learning algorithms, are there any perceived technical challenges or limitations that need to be addressed?
2. Design and Usability: Is the design user-friendly? Are there any suggestions for making the device more comfortable or easier to use?
3. Market Viability: do you think there’s a real demand for this type of product? What are your views on the proposed pricing and distribution strategy?
4. Compliance and Safety: Are there any potential regulatory hurdles they foresee? Do you have suggestions for enhancing user safety and data security?
5. Impact and Value Proposition: How might it be improved to appeal more strongly to potential users?