Swiss Medtech Day 2020

Tongue **fi**tness training for sleep & speech therapy

Innosuisse Project 34052.1 IP-LS
April 2020 – October 2021

Bottmedical AG, Hochbergerstrasse 60C, Basel

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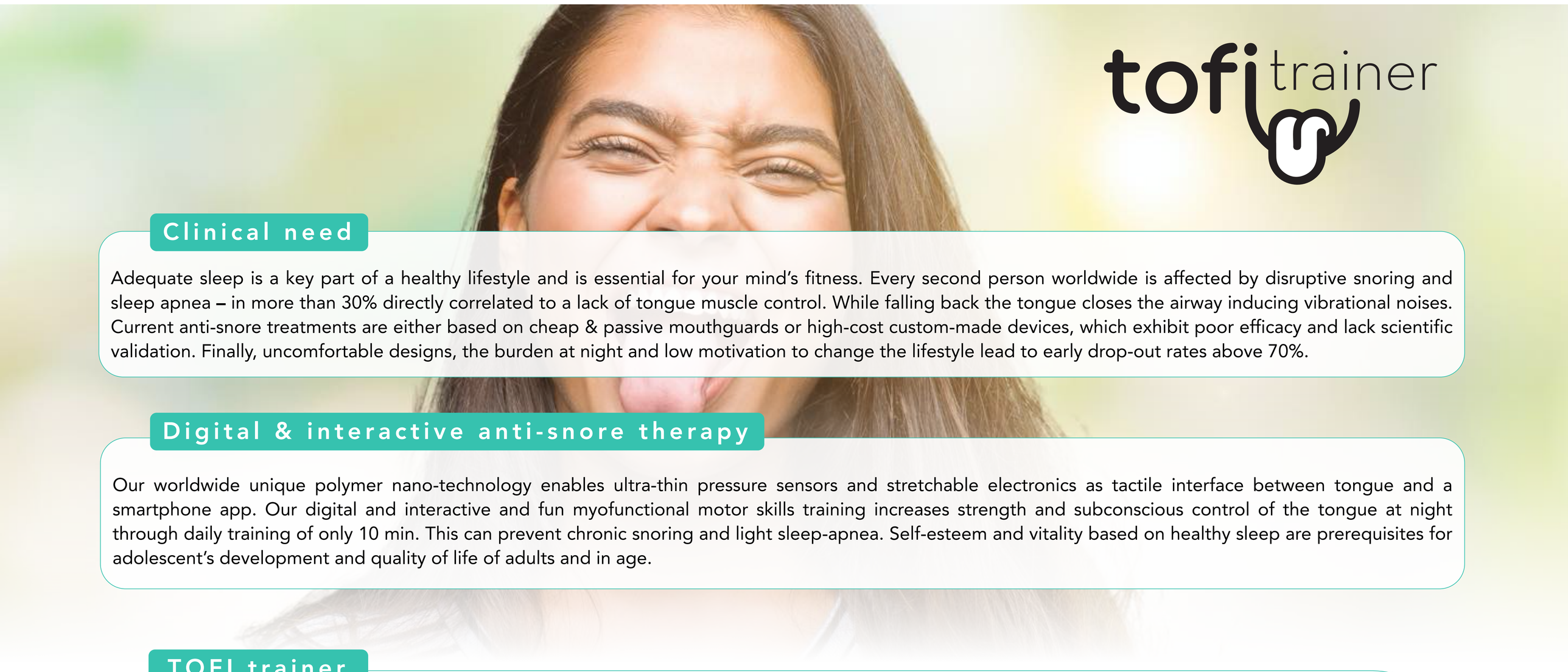

Clinical need

Adequate sleep is a key part of a healthy lifestyle and is essential for your mind's fitness. Every second person worldwide is affected by disruptive snoring and sleep apnea – in more than 30% directly correlated to a lack of tongue muscle control. While falling back the tongue closes the airway inducing vibrational noises. Current anti-snore treatments are either based on cheap & passive mouthguards or high-cost custom-made devices, which exhibit poor efficacy and lack scientific validation. Finally, uncomfortable designs, the burden at night and low motivation to change the lifestyle lead to early drop-out rates above 70%.

Digital & interactive anti-snore therapy

Our worldwide unique polymer nano-technology enables ultra-thin pressure sensors and stretchable electronics as tactile interface between tongue and a smartphone app. Our digital and interactive and fun myofunctional motor skills training increases strength and subconscious control of the tongue at night through daily training of only 10 min. This can prevent chronic snoring and light sleep-apnea. Self-esteem and vitality based on healthy sleep are prerequisites for adolescent's development and quality of life of adults and in age.

TOFI trainer

We propose a personalized tongue interface, which is sensitive to the tongue's position and force. This enables the patient to drive drive a motivational application with the tongue such as games or music - 10 min daily over a period of 6-8 weeks. Such interaction will keep the patient's motivation high and guarantee the successful execution of the therapy. The connected device collects the relevant data analytics to ensure patients compliance by online monitoring/review. The core sensor technology is patented under PCT/EP2019/055157 and the TOFI trainer under EP 19192661.7.

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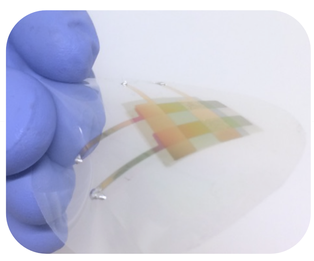

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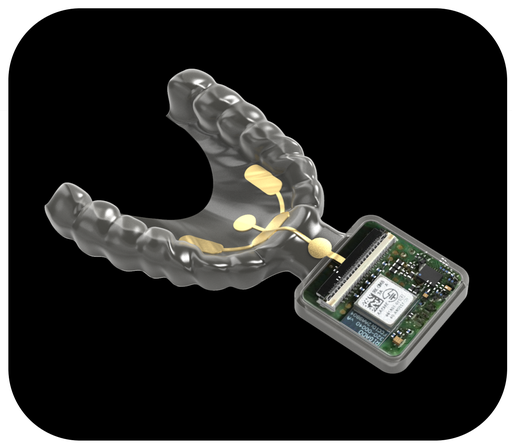
CLEAR ALIGNERS

HUMAN MACHINE INTERFACE

Ultra-thin
Pressure sensor

GAMIFICATION

Interactive
Tongue skills
Training



USPs

1. **Comfort:** Patient-centric design + No burden at night
2. Intuitive and fun patient-device interaction for **increased motivation & success**
3. **Active participation of the patient** to it's tongue's health
4. **Online monitoring** through the health care professionals

Application areas

The TOFI trainer is envisioned as multifunctional tool to treat a variety of dysfunction related to a low muscle tonus.:

1. **Anti-snore** therapy (market size >$ 1.1b/y (2018); CAGR 11% (2018-2023))
2. **Speech training** for children, singers, actors, politicians as well as for people suffering from degenerative diseases including Parkinson's or post-stroke trauma.
3. Implemented into current **orthodontic/dental treatments** to reduce tongue pressure on the front teeth preventing from open bites and stimulate nose breathing.
4. Wheelchair **remote control for paraplegic patients**
5. **Remote control applications** in operation theaters

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