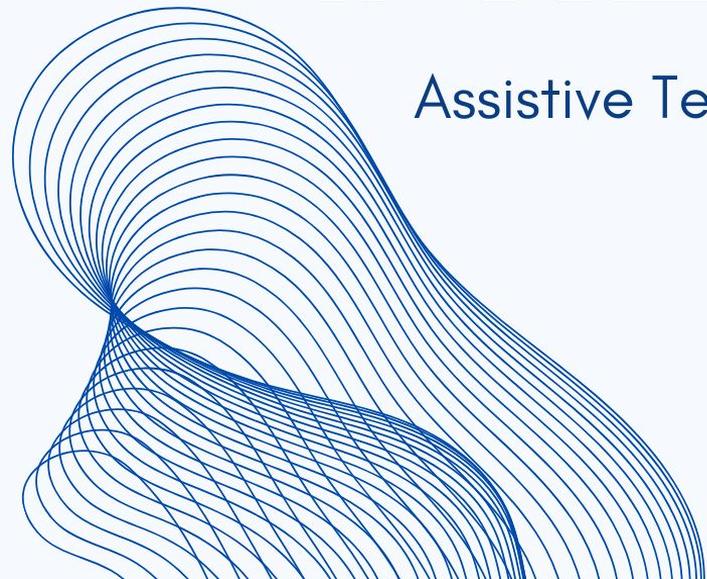




#112 - CAPABLE



Assistive Technology: Integrating e-TNS into daily life



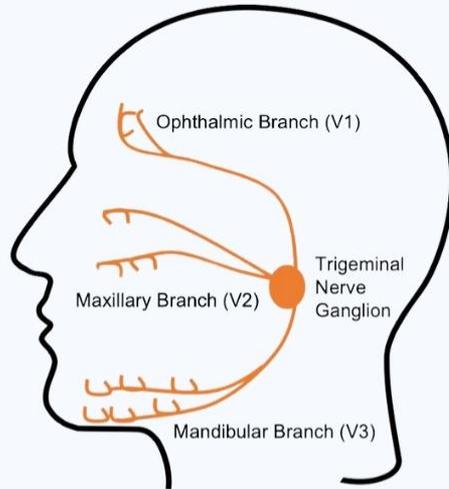
HEADACHE DISORDERS

Globally, headache disorders affect approximately **40%** of the population, or **3.1 billion** people in 2021

Daily persistent headaches & migraines post-infection, is there a non-pharmacological solution?



TRIGEMINAL NERVE STIMULATION (E-TNS)



- **Non-invasive**
- **Mild electrical stimulation to reduce pain signals**
- **No risk / No side effects**

Acute migraine therapy with external trigeminal neurostimulation (ACME): A randomized controlled trial

[Denise E Chou](#)^{1,8}, [Marianna Shnayderman Yugrakh](#)¹, [Dana Winegarner](#)², [Vernon Rowe](#)², [Deena Kuruville](#)³, [J Schoenen](#)⁴

Conclusion

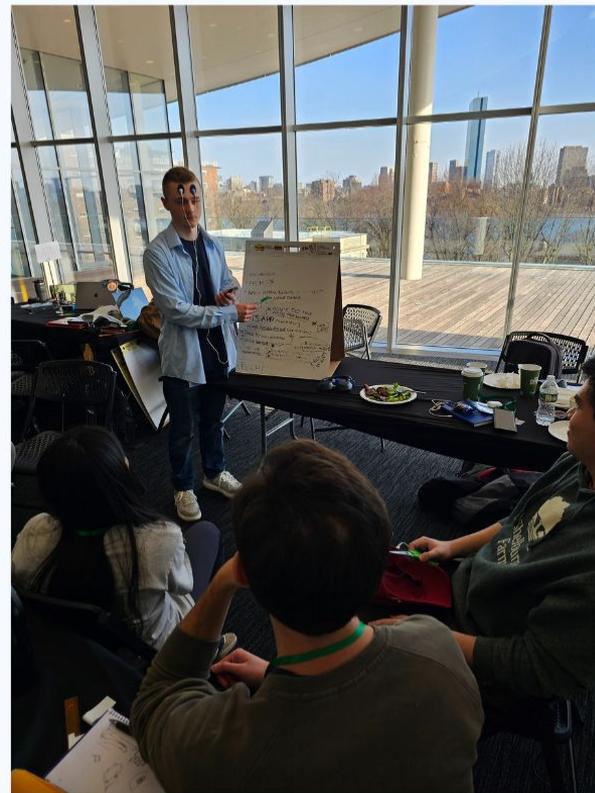
One-hour treatment with external trigeminal nerve stimulation resulted in significant headache pain relief compared to sham stimulation and was well tolerated, suggesting it may be a safe and effective acute treatment for migraine attacks.

Phase 3 randomized, double-blind, sham-controlled Trial of e-TNS for the Acute treatment of Migraine (TEAM)

[Deena E Kuruville](#)¹, [Joseph I Mann](#)², [Stewart J Tepper](#)³, [Amaal J Starling](#)⁴, [Gregory Panza](#)⁵, [Michael A L Johnson](#)⁶

respectively). No serious adverse events were reported. Treatment with 2-h e-TNS is a safe and effective, non-invasive, and non-pharmacological alternative for the acute treatment of migraine attacks in an at-home setting. Trial registration Clinicaltrials.gov Identifier: [NCT03465904](#). Registered 14/03/2018. <https://www.clinicaltrials.gov/ct2/show/record/NCT03465904> .

LIMITATION



THIS IS THE SOLUTION:

CAPABLE



Defining features:

- **Trigeminal nerve stimulation (e-TNS)**
- **Real-time data collection**
- **Biosensors**
- **External Sensors**



COMPONENTS

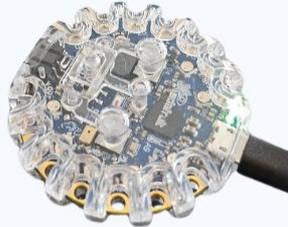
CAPABLE



CAP
0 \$



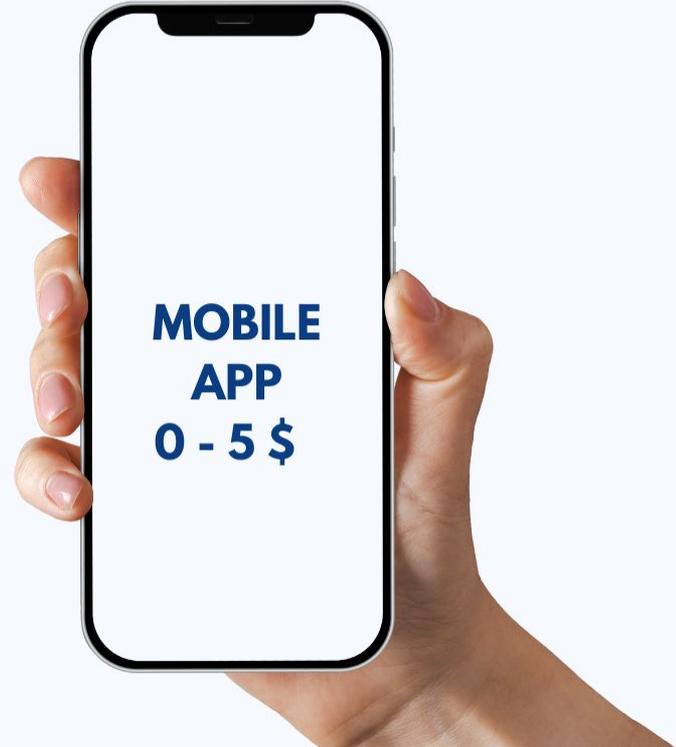
ELECTRODES
3 \$



LOW COST
INTEGRATED CIRCUIT
25 \$

TOTAL PRODUCTION COST

< 40 \$



MOBILE
APP
0 - 5 \$

BUSINESS MODEL

- **Open-source, community driven business model, similar - Arduino**
- **Progression - in depth analytics as a service**
- **Stakeholders:**
 - **Headwear brands**
 - **Healthcare providers**
 - **Patients**

CAPABLE

Price = \$50

Global Market



Unit: Patients

Competitive Landscape

AFFORDABILITY

Is it in the range of \$10-\$50

ACCESSIBILITY

Are you able to use it without complex instructions?

WEARABILITY

Are you able to wear it comfortably for everyday use?

SCALABILITY

Are you able to expand into a larger customer base

HEADACHE - TARGETED

Is it targeted specifically to assist with migraines?

TENS MACHINE



CEFALY



NERIVIO



CAPable





Geethika Atmakuri
Pre-med undergrad



Ronan Donovan
Software Developer



Marc Thirathada
Physiotherapist

Thank you!



Jaime Martin Lobo
Industrial Engineer



Eliot Behr
Harvard Medical Student



Peter Tremain
Mechanical Engineer

