Proposal for assessment of new health technologies

Important information – read this first!

- Submitted proposals for national health technologies (HTAs) will be published in full. If the proposer thinks there is information necessary for filling out the form, that should not be made public, please contact the secretariat (Nye Metoder) before submission.

  The proposer is aware that the form will be published in its entirety (tick): ☒

- Proposer has filled out point 19 below «Interests and, if any, conflicts of interest» (tick): ☒
- This form serves the purpose to submit proposals for health technology assessment (HTA) at the national level in Nye Metoder - the national system for managed introduction of new health technologies within the specialist health service in Norway. The form does not apply to proposals for research projects. A health technology assessment is a type of evidence review, and for this to be possible, documentation is required, e.g. from completed clinical trials. Lack of documentation may be one of the reasons why the Commissioning Forum (Bestillerforum RHF) does not assign a health technology assessment.
- If the proposal concerns a medical device, the proposer is familiar with the document «Guidance criteria for management of medical devices in the National System for Managed Introduction of New Health Technologies within the Specialist Health Service in Norway» (link) (tick): ☒

Contact information:

Name of the proposer (organization / institution / company / manufacturer)**:**

Electromedical Products International, Inc.

Name of proposal contact:

Dr. Josh Briley, PhD, BCMAS, FAIS

Telephone number:

817-458-3295

E-mail address:

josh@epii.com

Date and locality:

8 August 2023, Mineral Wells, Texas USA

1. Proposer's title on the proposal: *
   *This may be changed during the course of the process"

Clinical Education Director

2. Brief description of the health technology proposed to be considered:

The Alpha-Stim AID utilizes cranial electrotherapy stimulation (CES) for the treatment of anxiety, insomnia, depression, and pain applied via earclip electrodes attached to the ears. Output for treatment sessions range from 100 uA to 500 uA depending on the level the patient is able to comfortably tolerate at a fixed frequency of 0.5 Hz.

Cranial electrotherapy stimulation (CES) is a form of non-invasive brain stimulation that treats psychiatric disorders such as anxiety, insomnia, and depression, and the relief of pain. Alpha-Stim CES applies a patented, repeated, 10-second waveform using low-amplitude current to the head via earclip electrodes. Research suggests that Alpha-Stim CES has a global effect on the central nervous system, including brainwave changes, and modulates large-scale brain network activity patterns, like those seen in anxiety, in two synergistic ways: 1) by stimulating cranial nerves including, but not limited to, the vagus nerve and 2) by directly modulating cortical oscillations in the temporal lobe, which is part of the default mode network. There is evidence of similar modulations throughout the brain. Ultimately, these two ways of stimulating the brain normalize the pathological signaling in the default mode network observed in many psychiatric disorders, providing rapid, effective, and lasting symptom relief without the side effects of medication.

3. Brief description of current standard of care (SOC) (Which health technology (ies) are currently used. What is the status of the technology (ies)? Whether it provides curative treatment, life extension, etc.)
Will the proposed technology replace or be a supplement to today's SOC?

Currently, medications are the standard of care for anxiety, insomnia, depression, and pain. However, medications can have negative side effects that negatively impact a patient's quality of life and may interfere with patients' compliance. More patients are seeking alternatives to medication treatments.

Alpha-Stim is a handheld neuromodulation device that can be used by the patient at home without the side effects of medication. Research and clinical experience demonstrate Alpha-Stim can safely and effectively treat anxiety, insomnia, depression, and pain, either as a replacement for medications or as an adjunct to medications. When used as an adjunct to medications, relief is experienced more quickly without additional side effects.

4. This proposal concerns:

	Yes	No
A brand new and innovative health technology	☐	☒
Anew application, or a new indication for an established method	☐	☒
A comparison between several methods	☐	☒
A technology that is already in use	☒	☐
If yes – technology used in clinical practice	☒	☐
If yes – technology used in research/clinical trials	☒	☐
A re-evaluation of technology used in clinical practice	☐	☒

The technology is relevant for disinvestment ☐ ☒

Alpha-Stim is available for use in Norway to treat anxiety, insomnia, depression, and pain. Alpha-Stim works by utilizing a low-amplitude rhythmic current to transmit a patented waveform, thus stimulating the cranial nerves, including the vagus and vestibulocochlear nerves and directly modulating cortical oscillations in the temporal lobe. These two ways of stimulating the brain normalize the pathological signaling in the default mode network observed in many psychiatric disorders, providing rapid, effective, safe, and lasting symptom relief without the side effects of medication.

5. This health technology involves (Multiple ticks are possible)

Pharmaceutical ☐

Medical device/IVD medical device that is CE-marked* ☒

Alpha-Stim is CE-Marked for anxiety, insomnia, depression, and pain.

Medical device/IVD medical device that is not CE-marked ☐

Procedure ☐

Screening ☐

Highly specialized services / national offers ☐

Organization of the health services ☐

Other (describe) ☐

N/A Alpha-Stim is already marketed in Norway.

6. Application of the technology:

Prevention	☐
Assessment and diagnostics	☐
Treatment	☒
Rehabilitation	☐
Specialist health care	☒
Primary health care	☒

Alpha-Stim is designed to be used by patients at home to treat anxiety, insomnia, depression, and pain. Health care providers, including general practitioners, psychiatrists, psychologists, and others, may also utilize Alpha-Stim in clinic for treating patients

7. Responsibility for funding

	Yes	No
Is the specialized health service responsible for financing the technology today?	☐	☒
May the specialized health service become responsible for funding the health technology?	☐	☒

Reimbursement via "Helfo" may be applied for at a later stage.

8. Is the technology mentioned in the national guidelines or action programs prepared by the Norwegian Directorate of Health?

Yes	No
☐	☒

Alpha-Stim is not yet mentioned in the guidelines by the Norwegian Directorate of Health.

9. Does the technology involve the use of radiation (ionizing/ non- ionizing)?

Yes	No
☐	☒

N/A – there is no radiation involved with Alpha-Stim treatments.

10. Which discipline(s) does the health technology apply to, and which patients are affected? (Could the health technology also affect other groups (e.g. health personnel or relatives)?)

Alpha-Stim can be utilized by any provider licensed to diagnose and treat anxiety, insomnia, depression, or pain. In the EU, Alpha-Stim can be purchased by patients without a prescription.

11. Which aspects are relevant to the assessment? (Multiple ticks are possible)

Clinical efficacy	☒

Safety/adverse effects	☒
Costs/resource use	☐
Cost-effectiveness	☒
Organizational consequences	☐
Ethical	☐
Legal	☐

12. Please suggest the main scope/objective for the health technology assessment, as well as secondary scopes/objectives (in compliance with question 10). For those familiar with "PICO" (Patient, Intervention, Comparator, Outcome) – please include tentative suggestions for PICO.

Alpha-Stim can be safely and effectively used by patients with anxiety, insomnia, depression, or pain in a provider's clinic or at home. Recommended use is at least once daily for three to six weeks, then taper down to every other day for a few weeks. A minimum of once or twice a week for maintenance is recommended, though some patients use Alpha-Stim daily with no long-term adverse reaction. Alpha-Stim may be utilized as a stand-alone treatment for these indications or as an adjunct to improve the effectiveness of standard treatment approaches.

13. Please give a brief explanation of why it is important that the health technology assessment proposed should be conducted.

Alpha-Stim is a safe, effective, drug-free alternative for patients who are looking for alternatives to medication for anxiety, insomnia, depression, and pain.

14. Please comment on the technology that is proposed to be assessed with regard to the following points:

The severity of the disease/condition the health technology targets

Alpha-Stim is effective in treating anxiety, insomnia, depression, and pain from mild to severe.

Expected effect

Relief of pain and anxiety generally occur in the first treatment session. Insomnia generally improves after first treatment, but may take up to six weeks. Depression may take three to six weeks of daily treatment to see benefit.

Safety

Side effects from Alpha-Stim treatment are rare, mild, and self-limiting. The most commonly reported side effects are headaches, dizziness, or skin irritation at the site of the electrodes. In the past 10 years, the rate of reported side effects is 0.08%. In over 40 years on the market, there has never been a report of a significant adverse effect reported to EPI nor to any regulatory agency worldwide.

Total number of patients in Norway the health technology is applicable to

Adults aged 22 and above needing treatment for anxiety, insomnia, depression, and/or pain.

Consequences for resource use in the public health service

Based on studies conducted in the UK, incorporating Alpha-Stim into the treatment pathway for anxiety, insomnia, and depression provided a saving of £540.88 per patient.

Need for revision of existing national guidelines or preparation of new guidelines

Based on studies conducted in the UK, incorporating Alpha-Stim into the treatment pathway for anxiety, insomnia, and depression is both cost effective and results in positive outcomes for patients.

15. Please provide references to documentation of the health technology's effect and safety (i.e. previous technology assessments). (Up to 10 key references can be provided, please do not send attachments in this step of the process):

1. Morriss, R., Xydopoulos, G., Craven, M., Price, L., & Fordham, R. (2019). Clinical effectiveness and cost minimisation model of Alpha-Stim cranial electrotherapy stimulation in treatment seeking patients with moderate to severe generalised anxiety disorder. Journal of Affective Disorders, 253, 426-437.
2. Barclay, T.H. & Barclay, R.D. (2014). A clinical trial of cranial electrotherapy stimulation for anxiety and comorbid depression. Journal of Affective Disorders, 164:171-177. Presented at the American Psychological Association National Conference, Honolulu, HI, July (2013).
3. Khyatee, S., Sarker, A., & Aggarwal, R. (2019). Impact of Cranial Electrotherapy Stimulation Based Analysis of Heart Rate Variability in Insomnia. In: Prateek M., Sharma D., Tiwari R., Sharma R., Kumar K., Kumar N. (eds) Next Generation Computing Technologies on Computational Intelligence. NGCT 2018. Communications in Computer and Information Science, Vol 922. Springer, Singapore.
4. Ahn, H., Galle, K., Mathis, K.B., Miao, H., Montero-Hernandez, S., Jackson, N., Ju, H.H., McCrackin, H., Goodwin, C., Hargraves, A. & Jain, B. (2020). Feasibility and efficacy of remotely supervised cranial electrical stimulation for pain in older adults with knee osteoarthritis: A randomized controlled pilot study. Journal of Clinical Neuroscience, 77, pp. 128-133.
5. Price, L., Briley, J., Haltiwanger, S. & Hitching, R., (2021). A Meta-Analysis of Cranial Electrotherapy Stimulation in the Treatment of Depression. Journal of Psychiatric Research, 135, 119-134.
6. Price, L.R., Briley, J., & Hitching, R. (2020). A Meta-Analyses of Cranial Electrotherapy Stimulation in the Treatment of Insomnia. Ann Psychiatry Mental Health. 83: 1157.
7. Feusner, J.D., Madsen, S., Moody, T.D., Bohon, C., et al. (2012). Effects of cranial electrotherapy stimulation on resting state brain activity. Brain and Behavior, 23: 211-2((20.
8. Wang M, Feng T, Jiang H, Zhu J, Feng W, Chhatbar PY, Zhang J and Zhang S (2022) In vivo Measurements of Electric Fields During Cranial Electrical Stimulation in the Human Brain. Front. Hum. Neurosci. 16:829745. doi: 10.3389/fnhum.2022.829745
9. Heffernan, M. (1997). The effect of variable microcurrents on EEG spectrum and pain control. Canadian Journal of Clinical Medicine, 410: 4-11.
10. Wei Y., Yang Z., Pan H., Zhao S-J., Fang J-Z. (2014). Clinical Efficacy of Assisted Cranial Electrotherapy Stimulation Treatment on Depression. Neural Injury and Functional Reconstruction, July 2014, 9(4) 317.

16. Please provide the name of the marketing authorization holder/manufacturer/supplier of the health technology (if applicable/available):

Electromedical Products International, Inc

17. Marketing Authorization Status (MA) or CE-marking: When is MA or CE- marking expected? If possible, provide the time of planned marketing:

N/A – Alpha-Stim is CE-Marked for anxiety, insomnia, depression, and pain.

18. Additional relevant information (up to 300 words.)

Alpha-Stim is backed by over 40 years of clinical experience and over 100 clinical studies demonstrating safety and effectiveness in treating anxiety, insomnia, depression, and pain, regardless of patient population.

19. Interests and potential conflicts of interests

Please describe the proposer's relationships or activities that may affect, be influenced by, or be perceived by others to be important for further management of the health technology that is proposed assessed. (E.g. proposer has financial interests in the matter. Proposer has or has had assignments in connection with the technology or to other actors with interest in the technology)

Dr. Josh Briley is an employee of Electromedical Products International, Inc.