# Article information:

Cervical transcutaneous vagal nerve stimulation (ctVNS) improves human cognitive performance under sleep deprivation stress. - Abstract - Europe PMC  
<https://europepmc.org/article/MED/34112935>

# Article summary:

1. Fatigue is a pervasive public health and safety issue, and common fatigue countermeasures such as caffeine or other chemical stimulants can be effective in limited circumstances.

2. Cervical transcutaneous vagal nerve stimulation (ctVNS) has been tested as a potential non-pharmacological fatigue countermeasure to mitigate the negative effects of fatigue on cognition and mood.

3. Results from this study showed that ctVNS improved objective arousal and multitasking for up to 24 hours post-stimulation, as well as subjective ratings of fatigue.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

This article provides an overview of the efficacy of cervical transcutaneous vagal nerve stimulation (ctVNS) as a potential non-pharmacological fatigue countermeasure to mitigate the negative effects of fatigue on cognition and mood. The authors provide evidence from their own research that ctVNS was able to improve objective arousal and multitasking for up to 24 hours post-stimulation, as well as subjective ratings of fatigue.

The article is generally reliable in its reporting, providing evidence from both animal and human studies that support the use of ctVNS as a potential non-pharmacological fatigue countermeasure. The authors also provide detailed descriptions of the methodology used in their study, which adds to the trustworthiness of their findings.

However, there are some points that could be further explored in order to increase the reliability of the article's claims. For example, while the authors provide evidence from animal studies that suggest ctVNS may be effective in improving cognitive performance under sleep deprivation stress, they do not discuss any potential risks associated with using this technique in humans. Additionally, while they mention tDCS as another possible method for activating the locus coeruleus–norepinephrine (LC–NE) system, they do not compare or contrast it with ctVNS in terms of effectiveness or safety. Furthermore, while they discuss various types of attention and arousal behaviors that have been shown to be improved by tDCS when compared to control conditions, they do not provide any evidence for how these same behaviors may be affected by ctVNS specifically.

In conclusion, this article provides an overview of cervical transcutaneous vagal nerve stimulation (ctVNS) as a potential non-pharmacological fatigue countermeasure to mitigate the negative effects of fatigue on cognition and mood. While it is generally reliable in its reporting and provides evidence

# Topics for further research:

* Risks associated with ctVNS
* Comparison of ctVNS and tDCS
* Attention and arousal behaviors affected by ctVNS
* Long-term effects of ctVNS
* Safety of ctVNS
* ctVNS and sleep deprivation

# Report location:

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