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The modulation effect of transcutaneous auricular vagus nerve stimulation on depression and its underlying mechanisms

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The vagus nerve (VN) is involved in the regulation of multiple systems and plays an important role in maintaining homeostasis. Non-invasive vagus nerve stimulation has recently drawn the attention of clinicians and investigators. In my talk, we will first introduce the treatment effect of transcutaneous auricular vagus nerve stimulation (taVNS) on patients with depression, particularly on the symptoms it can relieve as indicated by subscores of the 24-item Hamilton Depression Scale. Then, I will focus on

the brain mechanisms of tVNS, especially on the modulation effect of tVNS on activity / connectivity of key brain regions involved in depression and mood regulation, including the hypothalamus, anterior insula, hippocampus, amygdala, ventral striatum, ACC, and prefrontal cortex. Finally, I will summarize the current challenges and lay out the future directions of taVNS treatment of depression.

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