Transcutaneous Vagus Nerve Stimulation Optimized Using Functional MRI

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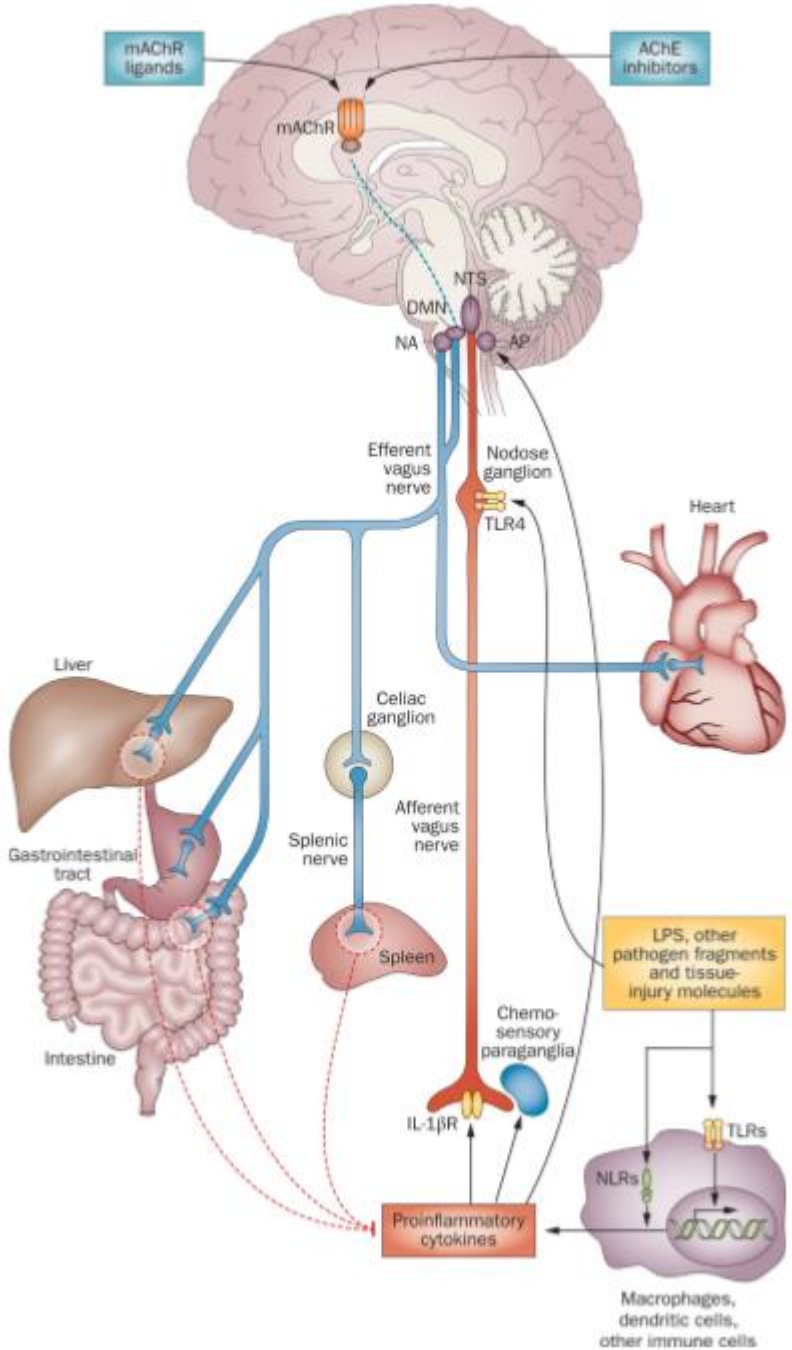
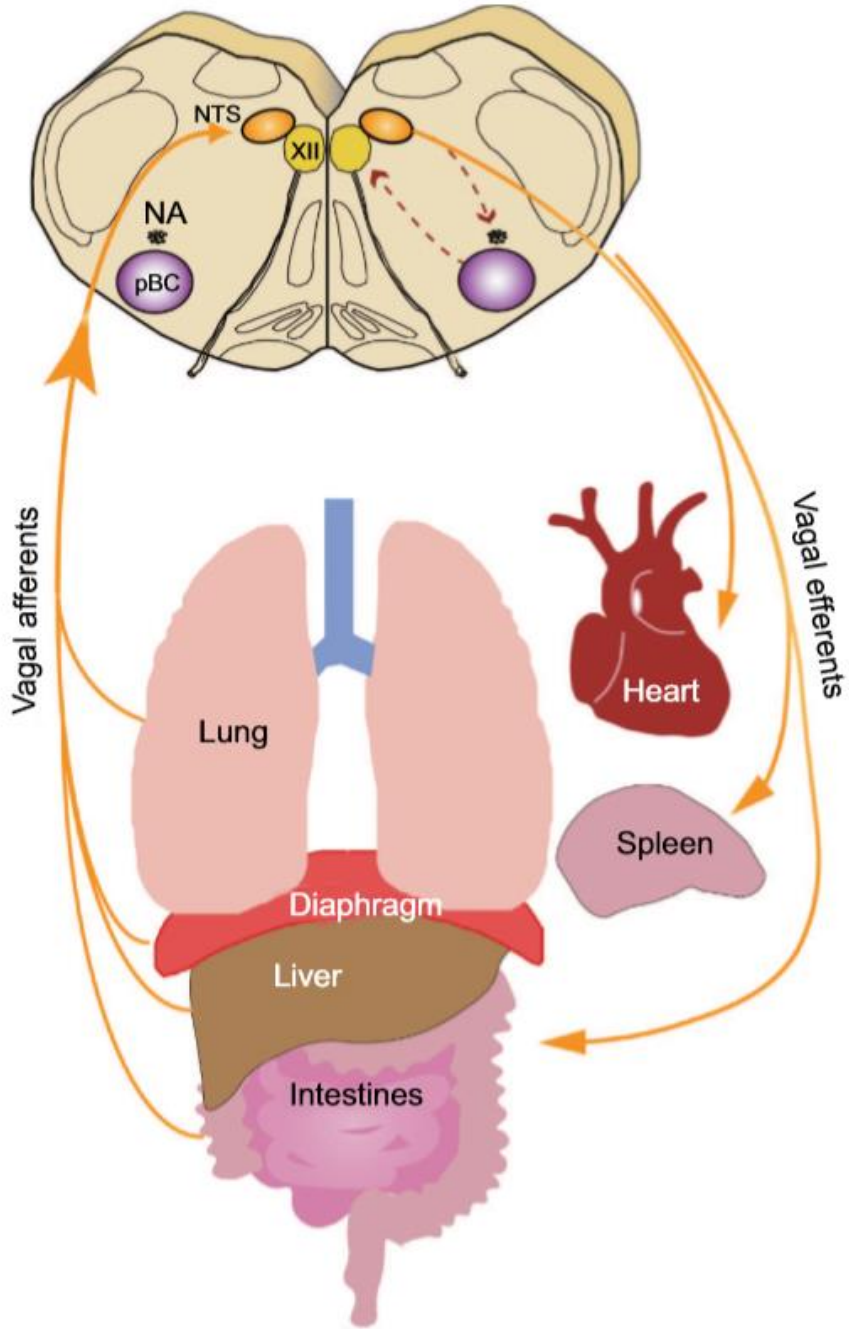
KEY POINTS

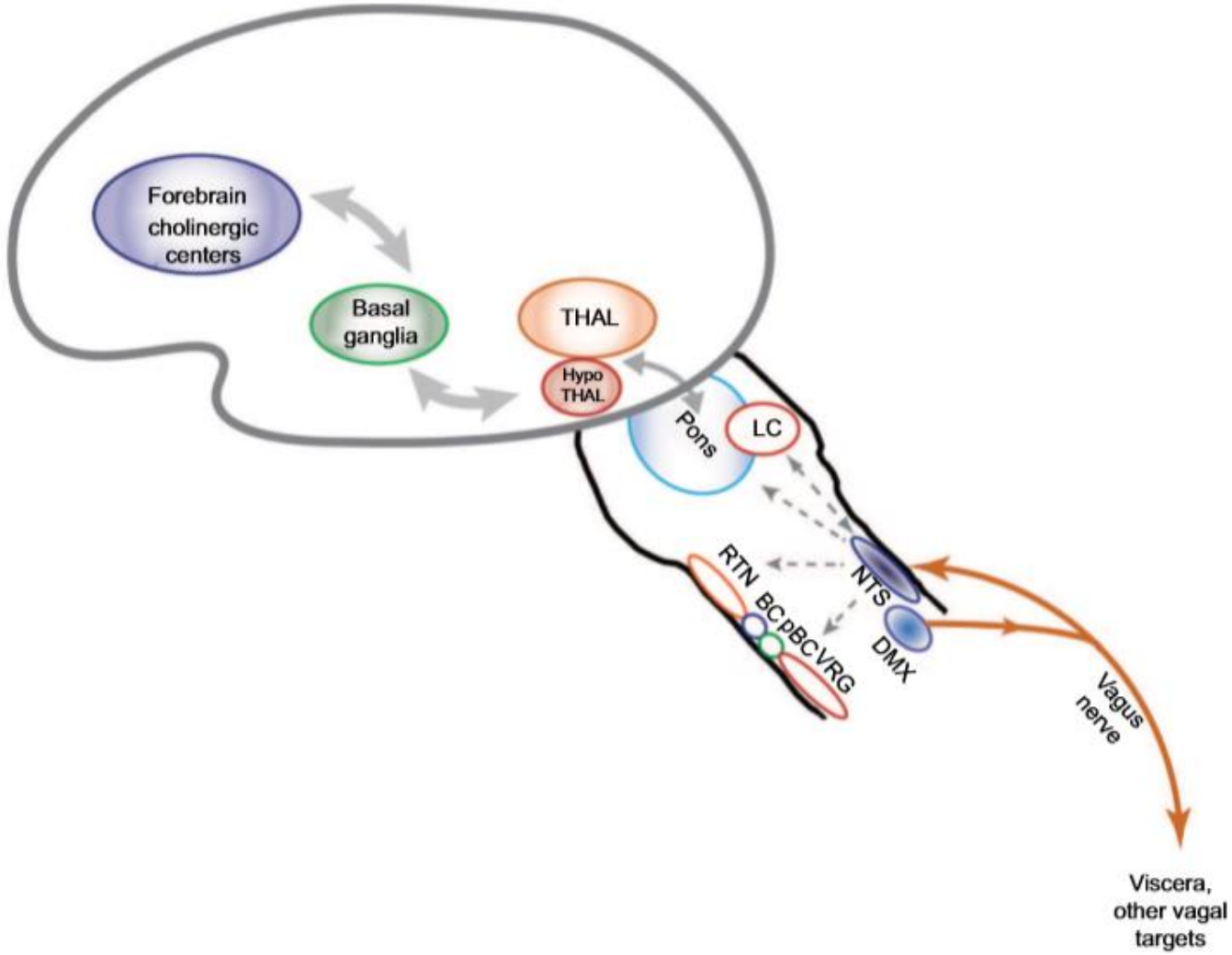
- The inflammatory reflex is a physiological mechanism through which the vagus nerve regulates immune function and inhibits excessive proinflammatory cytokine production
- Vagus nerve signalling has an important role in the regulation of feeding behavior and metabolic homeostasis
- Disruption of metabolic and immune regulation in obesity results in inflammation, which mediates insulin resistance and the development of type 2 diabetes mellitus as well as other debilitating and life-threatening conditions
- Activation of cholinergic signalling in the efferent arm of the inflammatory reflex alleviates obesity-associated inflammation and metabolic derangements
- The inflammatory reflex can potentially be exploited for treatment of the metabolic syndrome, type 2 diabetes mellitus and other obesity-driven disorders



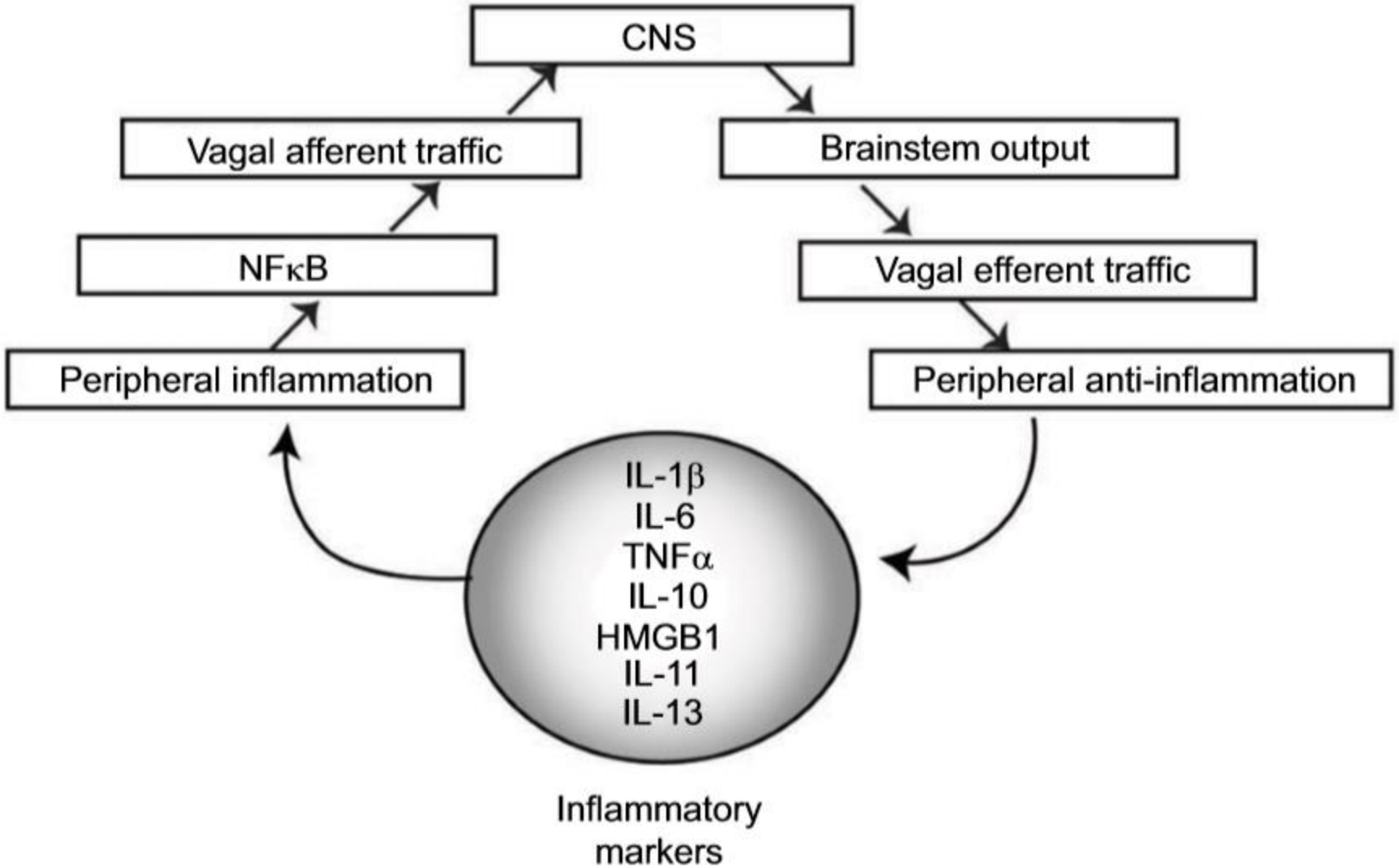
Pavlov VA, Tracey KJ, 2014



Johnson RL, Wilson CG, 2018

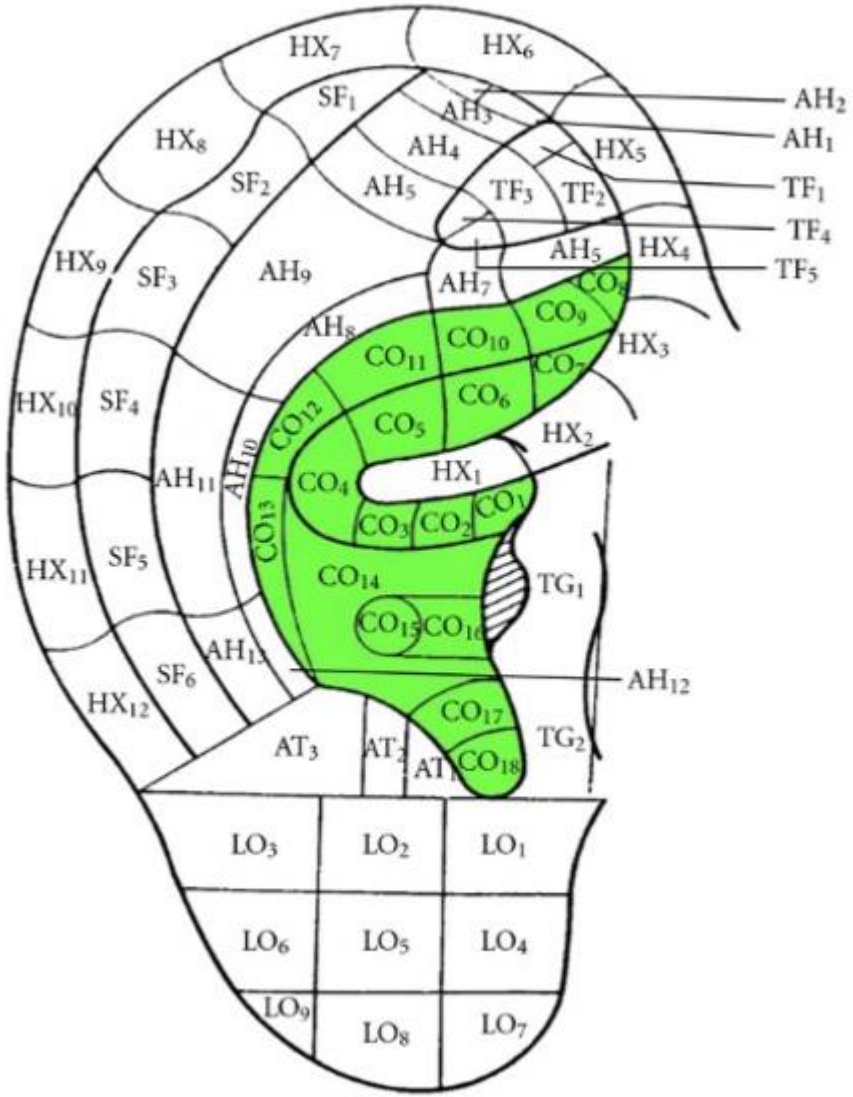


Johnson RL, Wilson CG, 2018



Johnson RL, Wilson CG, 2018

Yu et al, 2016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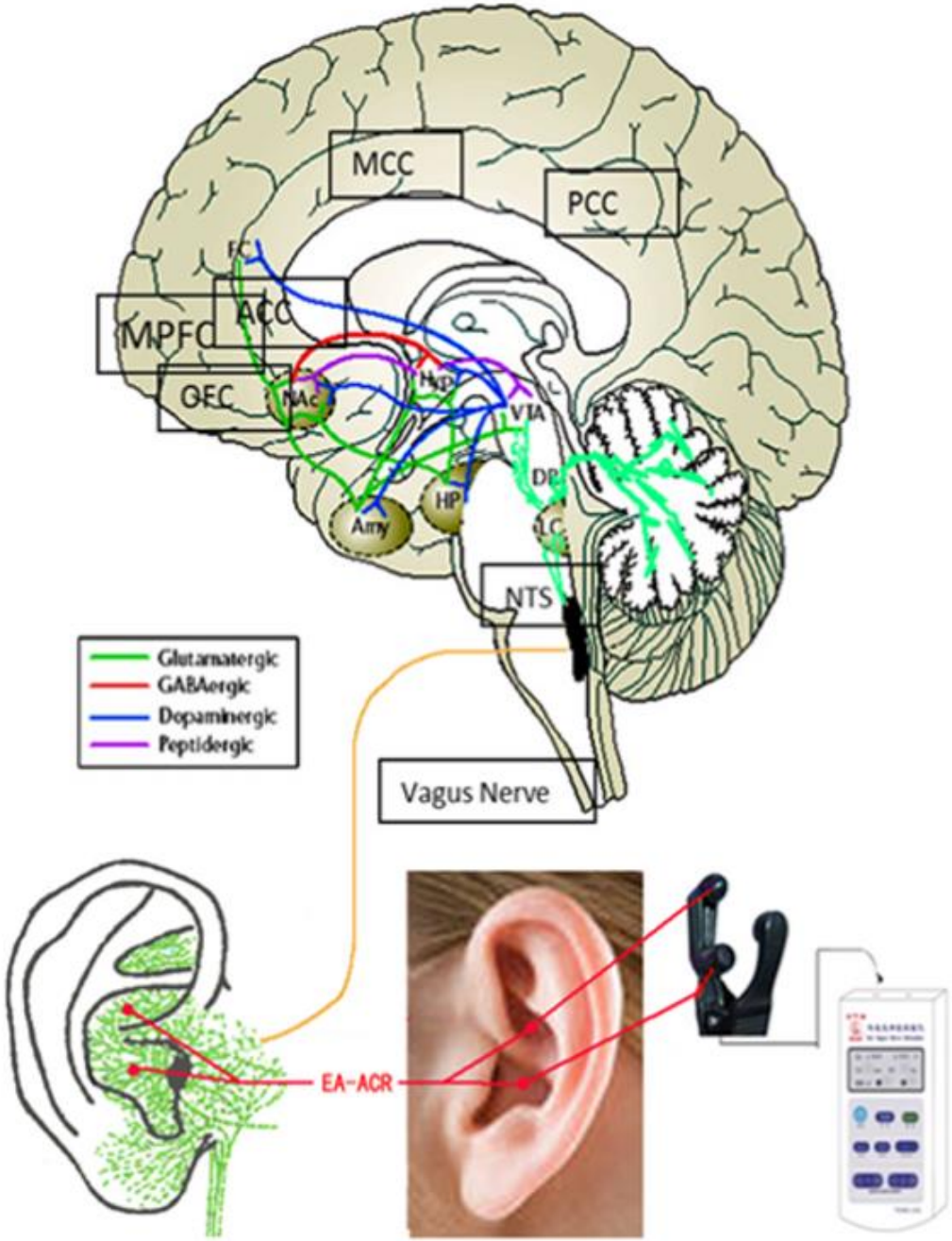
Yu et al, 2016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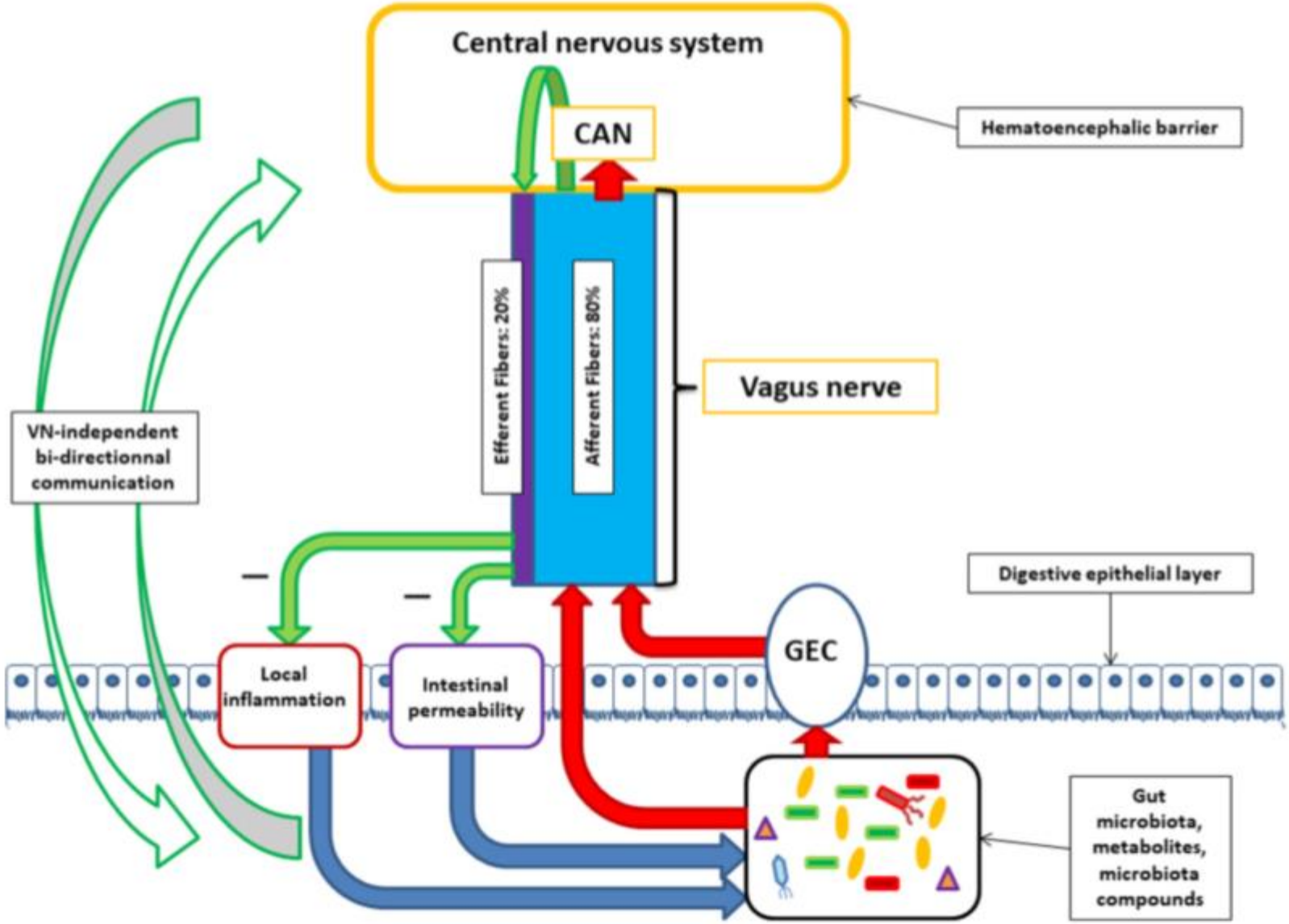
Dopaminergic
Peptidergic
Vagus Nerve
EA-ACR

Yu et al, 2016



Bonaz, Bazin & Pellissier, Feb 2018

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