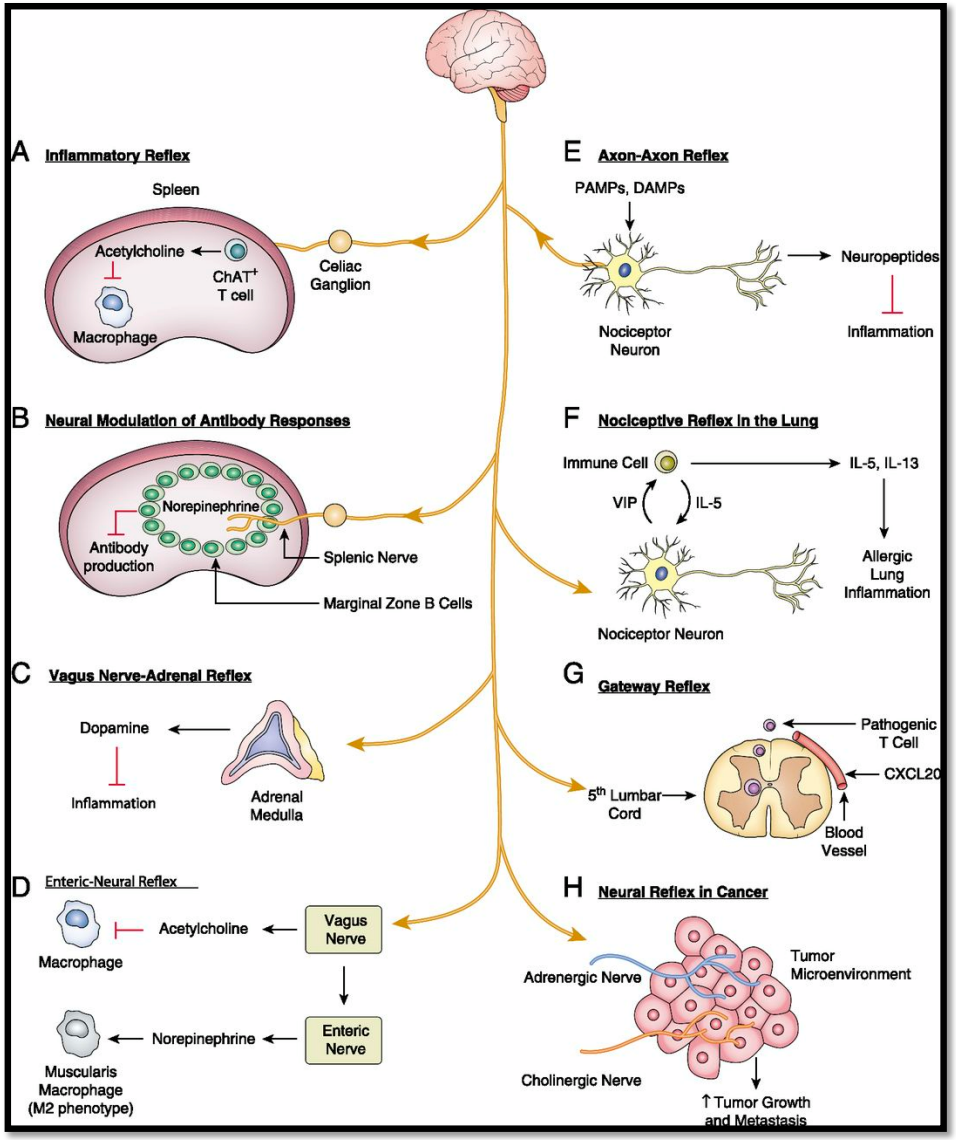
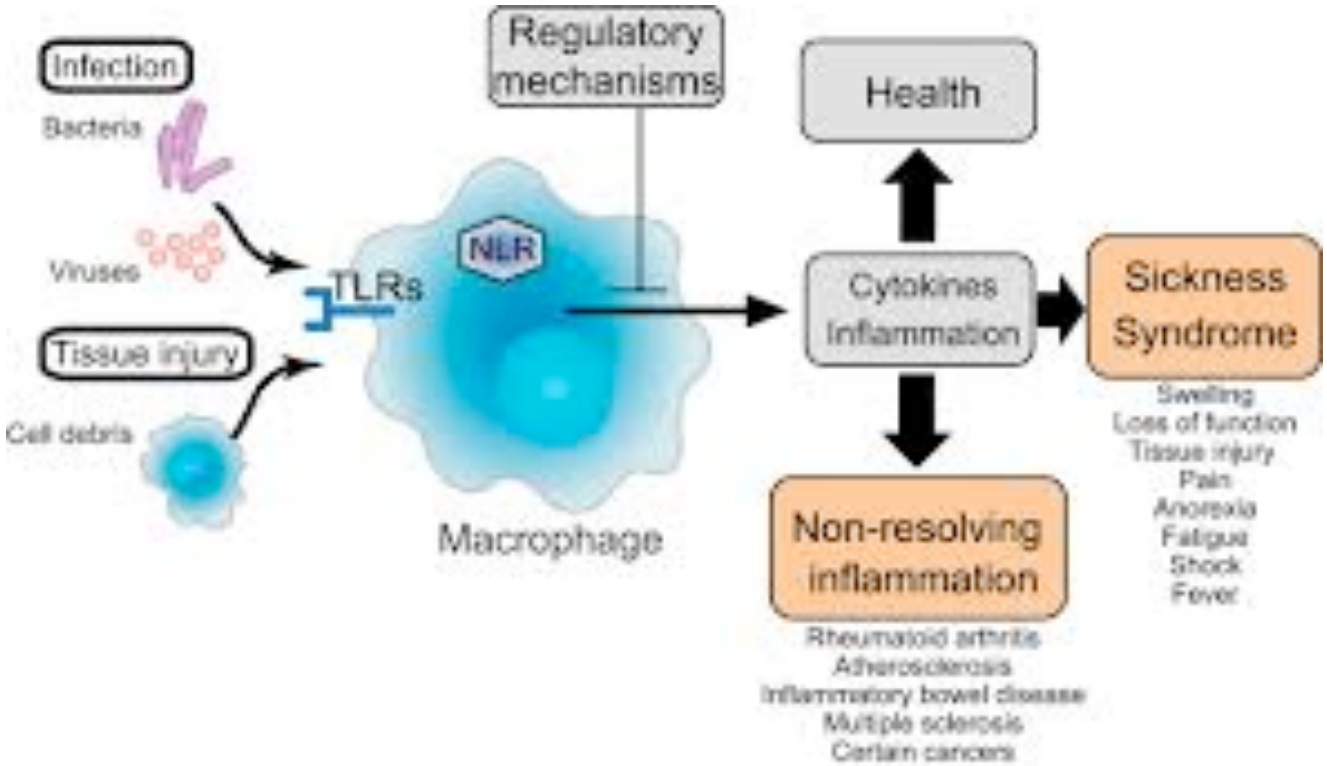
Vagus is just one of a number of neuro-immune reflexes that keep inflammation regulated

Kevin Tracy, MD

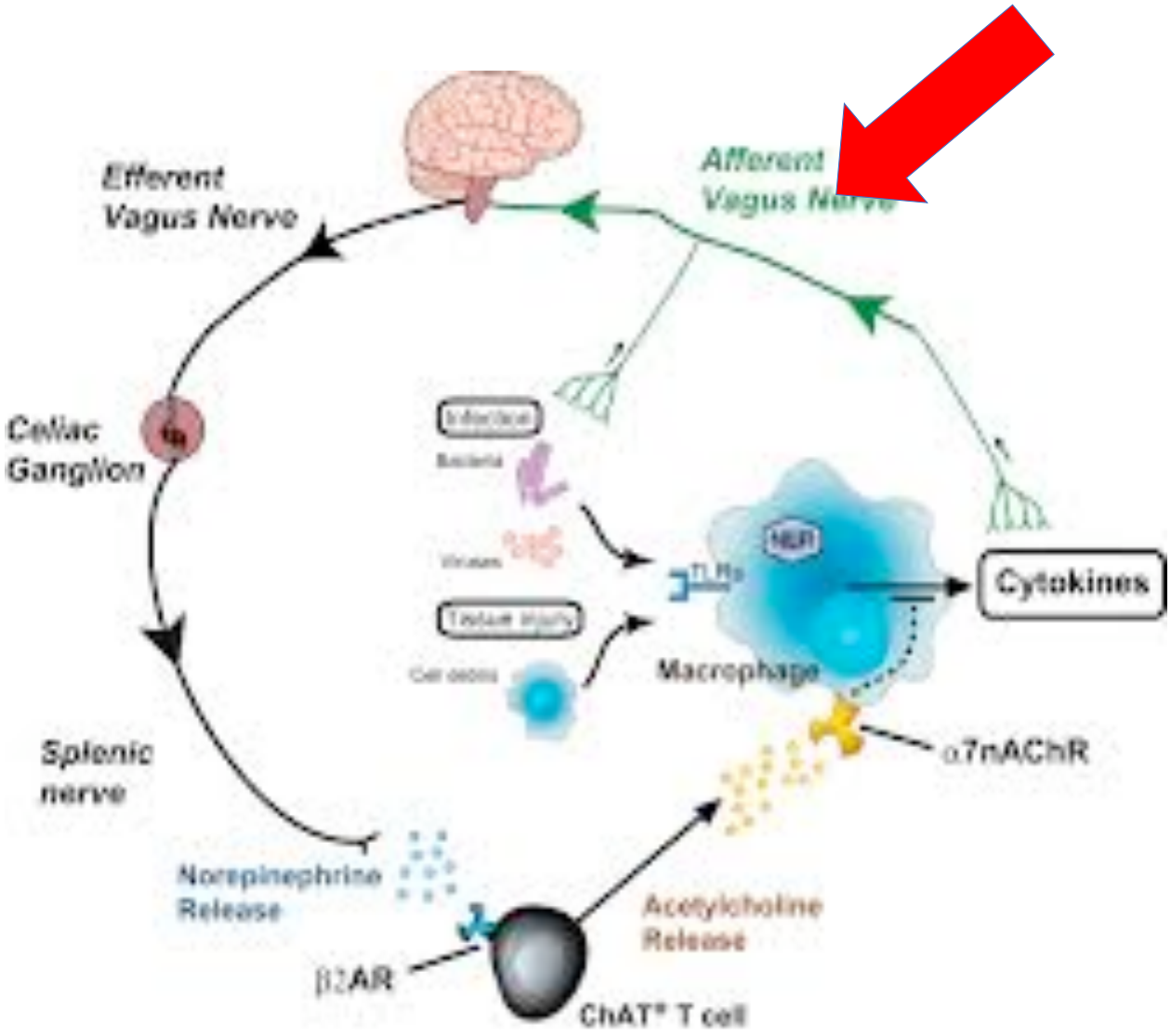


Infection or trauma increases central stress response. This SUPPRESSES the vagus so the vagus will stop suppressing the immune system, so the immune system can respond to injury and infection with inflammation.

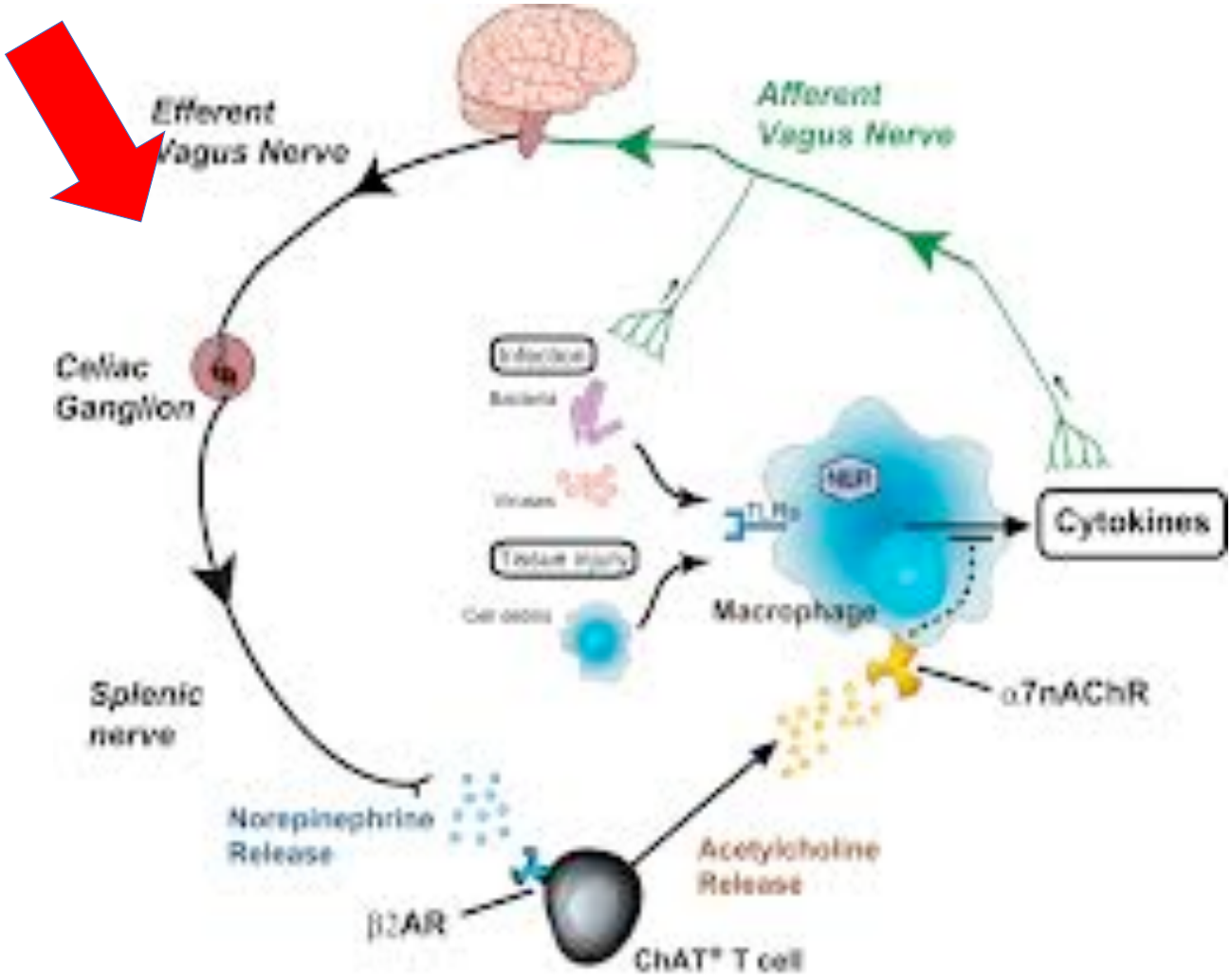


Signals from the AFFERENT vagus send information to the brain about infection and tissue injury

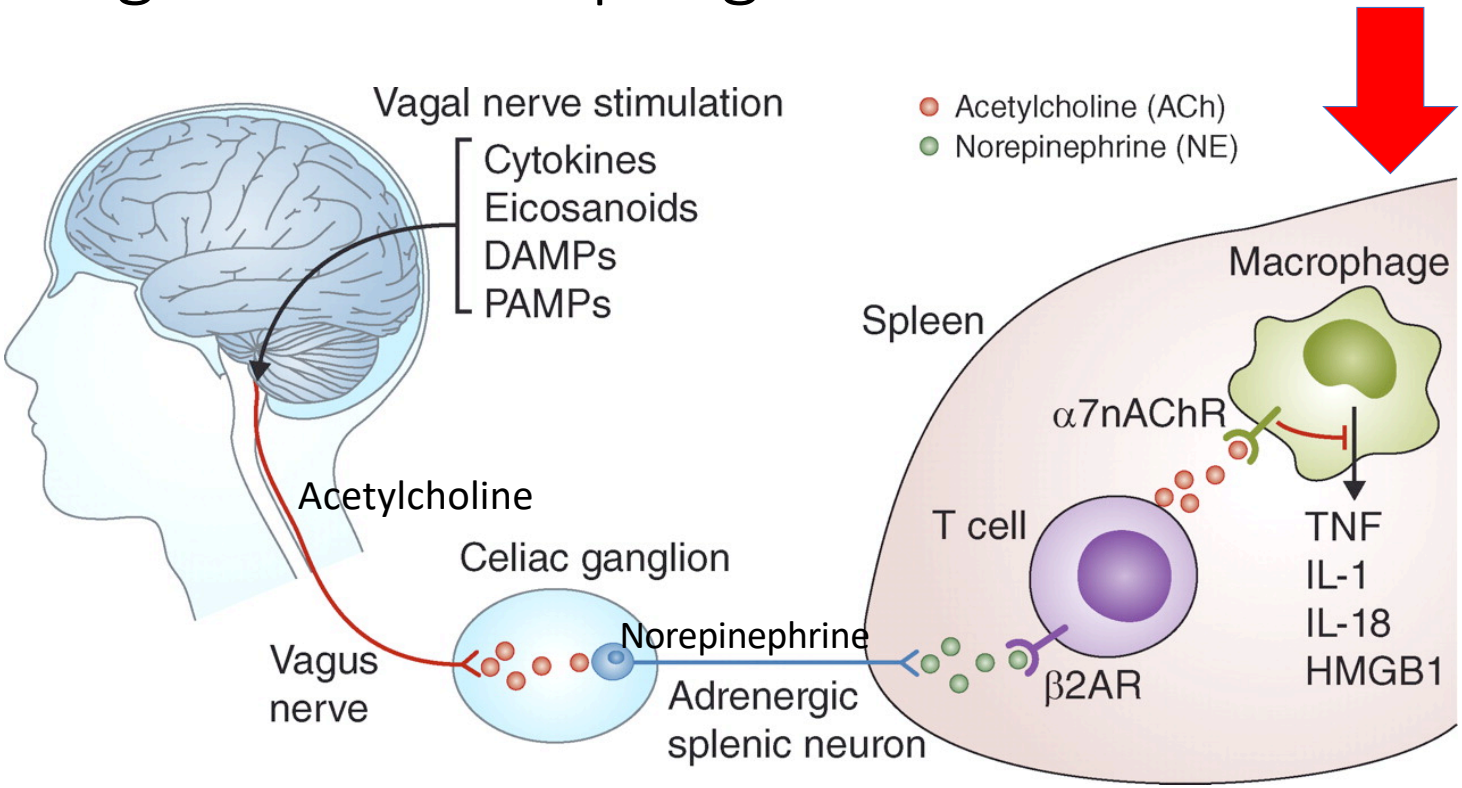
PAMPs-pathogen associated molecular patterns-Infection
DAMPs – damage associated molecular pattern -trauma



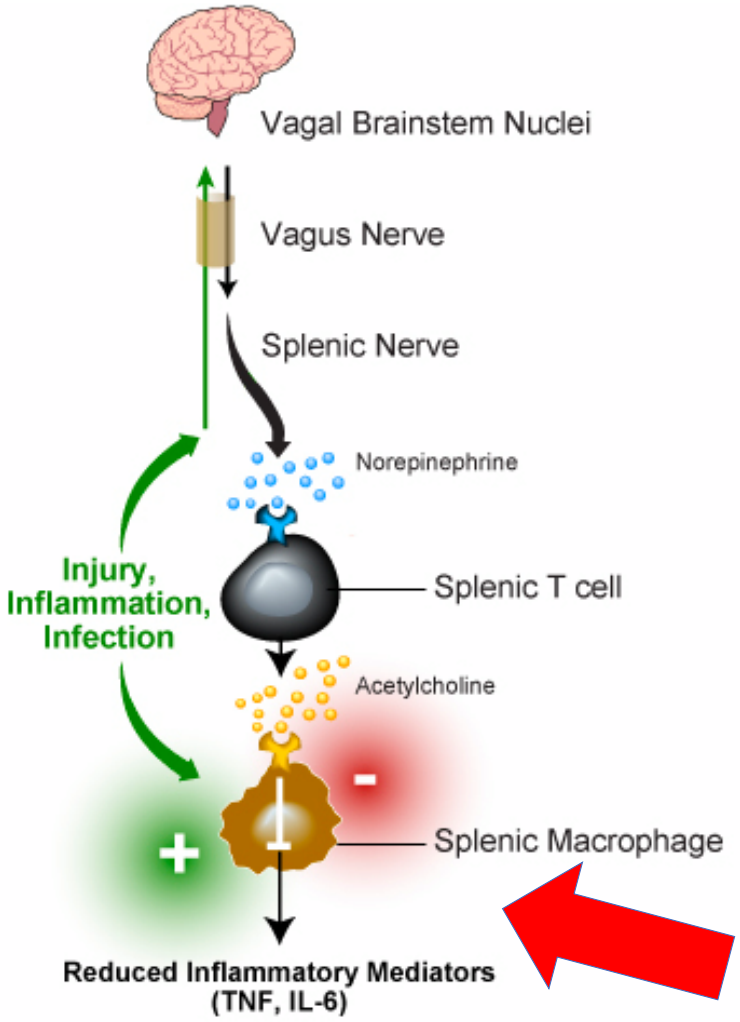
The brain then sends a stimulus down to the celiac ganglion via the EFFERENT vagus….
Acetylcholine is the vagus efferent neurotransmitter



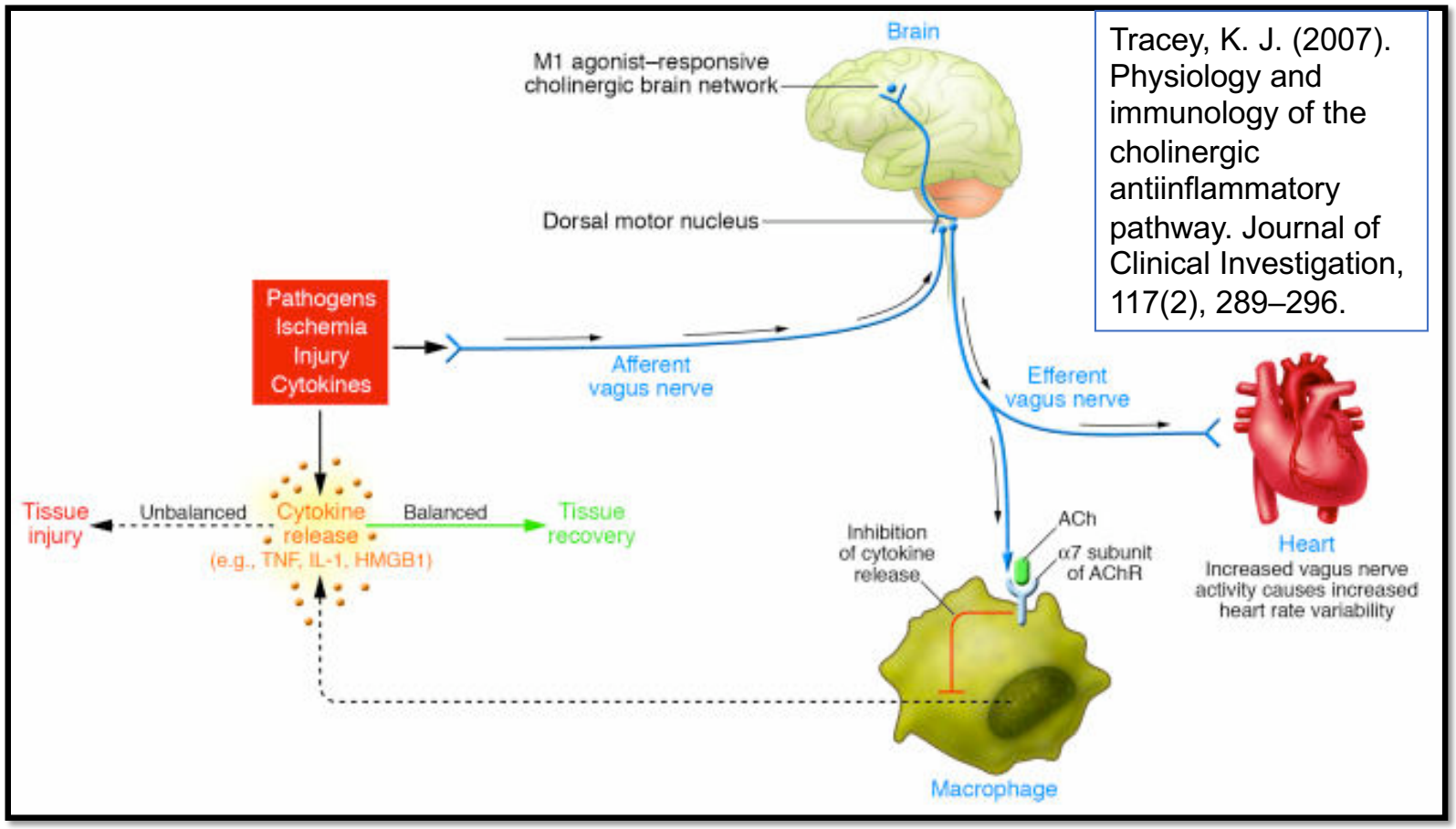
And from the celiac ganglion to T-cells in the spleen, which in turn signal to macrophages there….



…which results in reduction of cytokine production by those macrophages when vagus is ON and increases in cytokines when vagus is OFF during stress.



… that's how the vagus reduces inflammation.



Tracey, K. J. (2007). Physiology and immunology of the cholinergic antiinflammatory pathway. Journal of Clinical Investigation, 117(2), 289–296.

The Vagus ON = slows the heart, reduces inflammation and immune response, and improves digestion.
The Vagus is turned OFF during stress, threat and infection.