

Letter to the Editor**FIGHT OR FLIGHT THEORY OF SYMPATHETIC NERVOUS SYSTEM:
IS IT A MYTH?****Stany W. Lobo¹, Thejodhar Pulakunta², Sudarshan S³, Mangala Kumari⁴**¹*Department of Anatomical sciences, Liberty University School of Osteopathic Medicine, Lynchburg, Virginia, United States of America*²*Department of Medical Neuroscience, Dalhousie University, Halifax, Canada*³*Department of Anatomy, American University of Antigua College of Medicine, Antigua, Antigua and Barbuda*⁴*Center for Learning Anatomical Sciences, University of Southampton, United Kingdom*

Dear editor,

It is a common practice in medical schools to use metaphors to describe complicated functions. When explaining the functions of the sympathetic nervous system, the term "fight or flight" is commonly used. Even the standard textbooks used for neuroanatomy document this phrase when explaining the sympathetic nervous system¹⁻⁵. Considering the structure of the sympathetic nervous system, this description appears to be incorrect!

1. To fight or flight depending on the situation is a voluntary action and every voluntary action must begin from the cerebral cortex. The higher control of autonomic nervous system is hypothalamus, but not cerebral cortex.
2. Autonomic nervous system is a subdivision of the motor system and hence, it cannot comprehend the sensory information to take a decision.
3. Autonomic actions are slow processes, thus contradicting the fight or flight theory, which should be a quick action.
4. Anatomically, the sympathetic neurons are thin, which explains the action of autonomic nervous system to be a slow process.
5. Post ganglionic sympathetic neurons do not innervate skeletal muscles.
6. Sympathetic fibers run with the somatic fibers and hence, their action is completely

dependent on somatic fibers. It is the somatic nervous system which decides to "fight or flight" a situation.

Based on the above facts, it is not for the sympathetic nervous system to make the decision between fight or flight in any given situation, rather its role is assisting the execution of either one of the responses. The autonomic nervous system is designed to save life by maintaining the homeostasis of the body and not for fight or flight.

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