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Psychological traits and health

The idea that psychological characteristics (e.g., temperament) are associated with health outcomes dates back to Greek and Roman times, but scientific study began in the 1950s with the finding that “Type A” personality was related to coronary heart disease. Our work continues this tradition, utilizing nonhuman primate models of psychological traits (sociability/extraversion, anxious temperament, loneliness, neuroticism) to understand the mechanisms by which these traits affect health. Our studies have shown that how (and which) immune system genes are transcribed differ based on these traits, in ways that leave individuals at-risk for poor health outcomes like asthma.

Our focus is on studying naturally occurring variation in psychological traits to develop new animal models that can be used to better understand, and develop treatments for, human health concerns.

Naturally-occurring nonhuman primate models of psychosocial processes

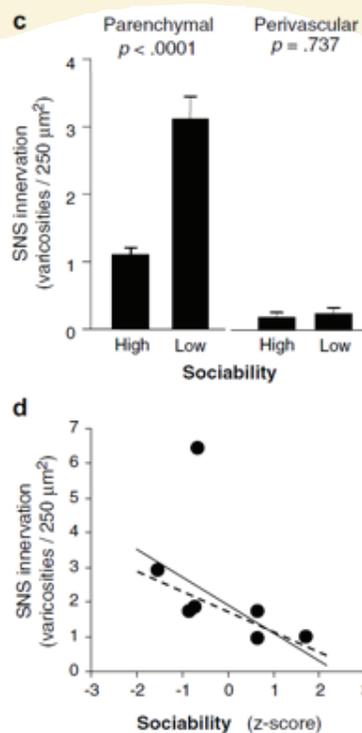
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Nonhuman primate personality and immunity: Mechanisms of health and disease

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Pp. 233-255 in: A. Weiss, J.E. King, & L. Murray (Eds.), *Personality and Temperament in Nonhuman Primates*. NY: Springer, 2011



One way in which psychological traits can affect health is through variation in the architecture of lymph nodes, which are tissues scattered throughout the body where the immune system fights pathogens. Lymph nodes not only have immune cells, but they also have fibers of the sympathetic nervous system (SNS), which regulate immune responses to viruses. The upper panel of this figure shows that animals that are low in Sociability have HIGHER densities of SNS nerves in lymph nodes, and the lower panel shows that this is a linear effect, depending on the degree of Sociability. We believe that these innervation differences in lymphoid tissue may help explain why people with fewer social connections are at increased risk of illness and death.