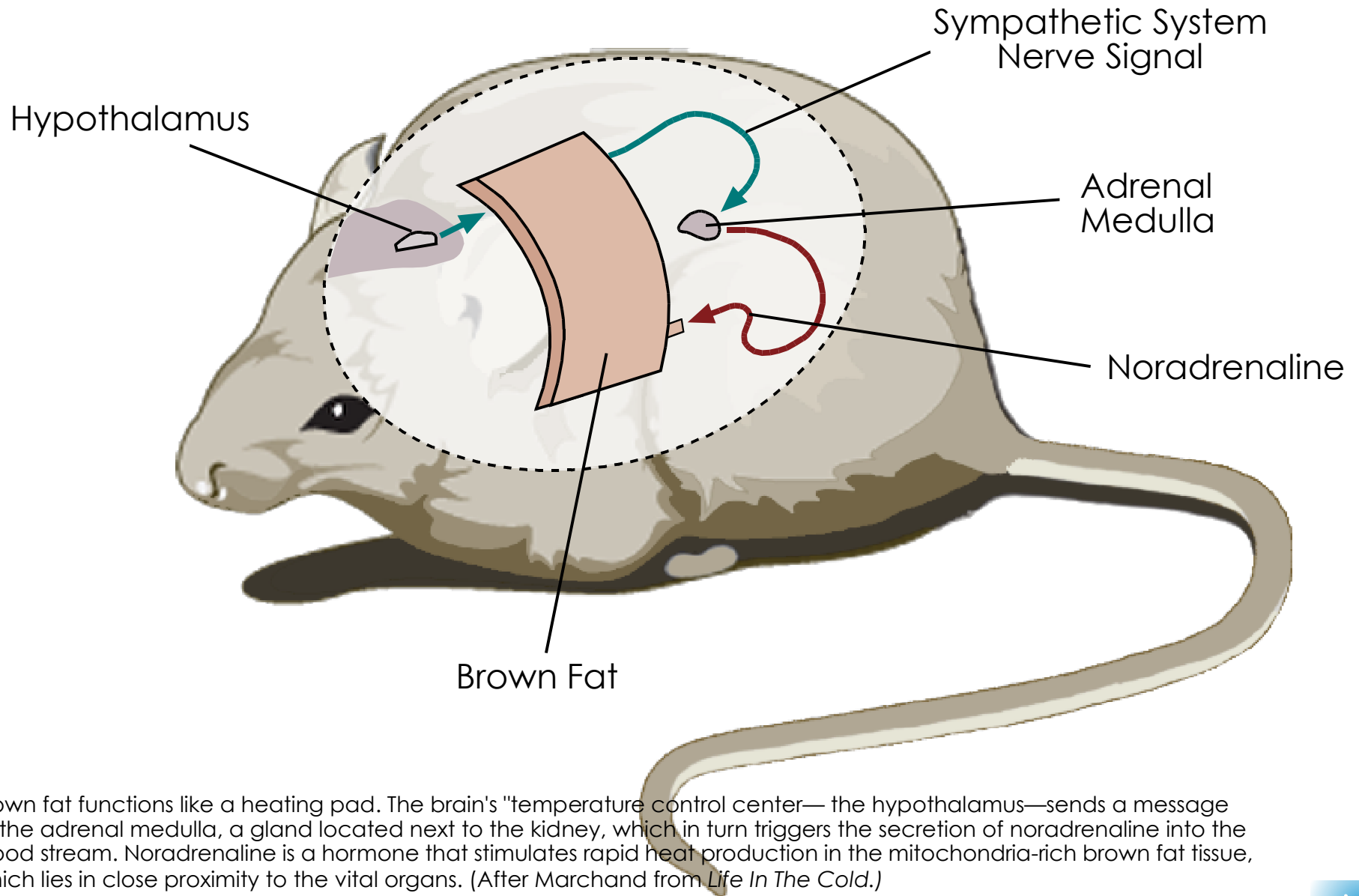




Physiological Adaptations for Winter Survival: Heat On Demand From Brown Fat



Brown fat functions like a heating pad. The brain's "temperature control center"—the hypothalamus—sends a message to the adrenal medulla, a gland located next to the kidney, which in turn triggers the secretion of noradrenaline into the blood stream. Noradrenaline is a hormone that stimulates rapid heat production in the mitochondria-rich brown fat tissue, which lies in close proximity to the vital organs. (After Marchand from *Life In The Cold*.)