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.)