Orexin is a multifunctional excitatory neuropeptide known for its roles in sleep/wake regulation, arousal, energy balance, and stress response. Although well-studied in the context of acute stress and metabolism, the effects of chronic stress on orexin expression remain less clearly defined. In this study, I investigated how repeated restraint stress influences orexin expression in the hypothalamus of mice. Mice were exposed to a standardized daily restraint protocol over five days, after which body composition metrics such as BMI, total body water, and fat mass were measured. Stressed mice exhibited a decrease in BMI, suggesting a physiological shift likely tied to neuroendocrine changes. To examine potential alterations in orexin signaling, brains were collected, cryosectioned, and stained using immunohistochemistry to visualize orexin neurons. Given literature showing both activation and suppression of orexin under prolonged stress conditions, I hypothesize that the observed reduction in BMI reflects a downregulation of orexin expression, a possible adaptive response to sustained HPA axis activation. This work contributes to a growing understanding of how orexin may interact with chronic stress and impact metabolic systems.