250 words and 1400 max characters (including spaces)

The dorsomedial hypothalamus (DMH) is a brain region involved in regulating appetite and body weight, and the stress response. Neurons in this region express receptors that respond to stress hormones. Little is known about how the relationship between stress and appetite affects DMH neurons. Since DMH neurons stimulate appetite, and appetite is generally suppressed during an acute stressor, we hypothesized that acute stress would inhibit transmission of the excitatory neurotransmitter glutamate. We used patch clamp electrophysiology to record from living DMH neurons of female rats who experienced a single 30-minute stress. We measured evoked current amplitude before and after a high frequency stimulation (HFS), to examine long lasting changes. Acute stress decreased evoked current amplitude HFS. Recordings obtained in the presence of an endocannabinoid-CB1 receptor blocker (AM251; 5 µM) showed no changes in these parameters after HFS, suggesting that the endocannabinoid system is required for the change in neuronal transmission seen under acute stress. As the global food system becomes increasingly saturated with processed and ultra-processed foods, obesity grows in parallel, with New Brunswick having one of the highest obesity levels in Canada. The mechanisms that respond to stress have not adapted to our high stress society and landscape of highly palatable foods. Women are particularly vulnerable to disordered eating behaviours when stressed, for which the neurophysiological basis is unclear. Yet, female research subjects remain underrepresented.