The dorsomedial hypothalamus (DMH) regulates appetite and projects to the paraventricular nucleus, where CRH is produced and released. DMH neurons express glucocorticoid receptors, and this area of the brain is involved in sympathetic responses to stress. While these roles of the DMH are defined, very little is known about the relationship between stress and appetite, and how it affects communication and excitability in the DMH.

Since DMH neurons stimulate appetite, and appetite is generally suppressed during an acute stressor, we hypothesized that acute stress would inhibit excitatory synaptic transmission (a measure of neuronal communication) and action potentials (a measure of neuronal excitability) in the DMH. We used whole-cell patch clamp electrophysiology to record from living DMH neurons from young, female Sparge-Dawley rats who experienced a single 30-minute restraint stressor. We measured evoked current amplitude and action potential (AP) parameters before and after a high frequency stimulation (HFS), to access long lasting changes.

Acute stress decreased evoked current amplitudes, AP amplitude, and AP frequency at excitatory (glutamate synapses) after HFS. Recordings obtained in the presence of an endocannabinoid-CB1 receptor blocker (1-(2,4-Dichlorophenyl)-5-(4-iodophenyl)-4-methyl-N-(1-piperidyl)pyrazole-3-carboxamide; AM251; 5 µM) showed no change in evoked current amplitudes, AP amplitude, or AP frequency after HFS, suggesting that the endocannabinoid system is required for the change in communication and excitability seen under acute stress.

As the global food system becomes increasingly saturated with processed and ultra-processed foods, the obesity epidemic 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 high calorie, 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.

Abstracts for the 2025 Health Research Symposium must not exceed **300 words in total**. All abstracts shall:

* Describe a project that aligns with one or more of the four Canadian Institutes of Health **Research pillars: biomedical research, clinical research, health systems and services research, or population health research.**
* Include the following sections: **Background, Objective/hypothesis, Methods, Results, and Discussion**. In order to be considered for a presentation, the research project must have either preliminary or final results available to present.
* Include Equity Diversity and Inclusion considerations, with **special emphasis on sex and gender considerations**, if appropriate, in the Methods section.

Abstracts for the 2025 Health Research Symposium shall be assessed by a Committee of Reviewers, composed of representatives from among the health research community in New Brunswick. All abstract submissions will be assessed according to the following criteria:

* Quality of writing
* Novelty of the research
* Impact of the research on the advancement of knowledge in the research area, the health system, or the population of New Brunswick
* Quality of the methodology
* Alignment with the theme of the Symposium: Powering Discovery Together