

Study debunks hormonal misconception of exercise

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Women are not only underrepresented in exercise-related studies, but may be receiving incomplete information about physical activity because of a now-debunked belief that hormonal fluctuations linked to menstrual

cycles can lead to inconsistent study results.

Released today, a new Western-led study shows that [exercise](#)-related benefits to brain health and cognition are realized independently of a woman's [menstrual cycle](#).

"Hormonal variations in the menstrual cycle did not play a role in determining the cognitive benefit women receive from a single-bout of aerobic exercise," explained Kennedy Dirk, BA'19 (Kinesiology). "No matter which phase of the menstrual cycle a female participant is experiencing at the time should not be a limiting factor in determining their inclusion in exercise neuroscience research."

Dirk, a former member of the Western Mustangs women's ice hockey team, is now Tobacco Reduction Zone Coordinator at Alberta Health Services.

The study responds, in part, to data showing the majority of exercise neuroscience studies—64 percent, in fact—have not included female participants due to this faulty belief.

For the study, normally menstruating [women](#) completed 20-minute, single bouts of aerobic exercise on a stationary bike at a moderate intensity during two distinct phases of their menstrual cycle (early-follicular and mid-luteal). Following the aerobic activity, participants were tasked with completing cognitive tests and the results showed that a post-exercise improvement in executive function—a component of cognition—was equivalent in both phases of the menstrual cycle.

"This research is in line with results from more general literature showing there is not sufficient evidence indicating that the different phases of the menstrual cycle influence [cognitive](#) processing," said Kinesiology professor Matthew Heath. "Moreover, our work extends to

previous studies that demonstrate the different phases of the menstrual cycle do not influence exercise-related benefits to brain health."

Dirk, Health and Kinesiology professor Glen Belfry published the study, "Exercise and Executive Function during Follicular and Luteal Menstrual Cycle Phases," in *Medicine & Science in Sports & Exercise*.

More information: Kennedy Laine Dirk et al. Exercise and Executive Function during Follicular and Luteal Menstrual Cycle Phases, *Medicine & Science in Sports & Exercise* (2019). [DOI: 10.1249/MSS.00000000000002192](https://doi.org/10.1249/MSS.00000000000002192)

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