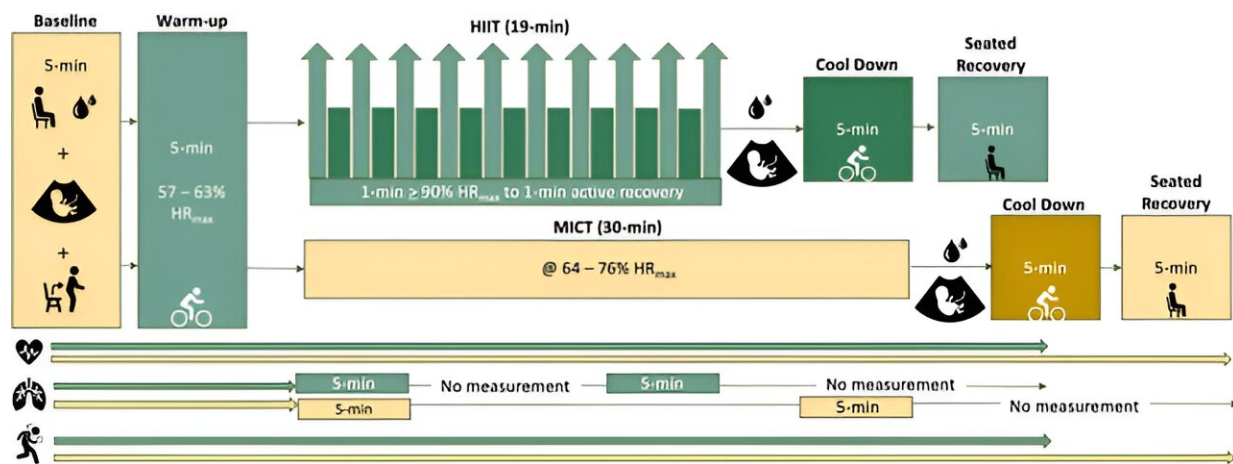


High-intensity interval training safe for pregnant women and their babies, study suggests

August 9 2023, by Oumar Salifou



Credit: *Sports Medicine* (2023). DOI: 10.1007/s40279-023-01858-5

High-intensity interval training during pregnancy appears to be well tolerated by expecting mothers and their babies, according to recent research out of the University of Alberta that runs counter to traditional exercise recommendations for pregnant women.

The study, published in the journal *Sports Medicine* and led by Jenna Wowdzia, a master's student at the Program for Pregnancy and Postpartum Health, compared maternal and fetal cardiovascular responses to high-intensity interval [training](#) as well as moderate-intensity

continuous training.

"There continues to be an abundance of advice columns and online high-intensity interval workouts being suggested to pregnant populations in the absence of scientific evidence," explains Wowdzia.

"Although high-intensity interval training has shown positive health benefits in non-pregnant populations, more research is needed to determine if similar benefits can be achieved during pregnancy."

High-intensity interval training is a top fitness trend, notes Margie Davenport, a pregnancy researcher in the Faculty of Kinesiology, Sport, and Recreation and Christenson Professor in Active Healthy Living.

"What was novel about this study is that we were looking at how the baby responded to high-intensity exercise," says Davenport, who is also a member of the Women and Children's Health Research Institute.

"We looked at responses in terms of the fetus's heart rate and also the [blood flow](#) that was going to the fetus, so we can see if they were getting enough blood flow, oxygen and nutrients."

The researchers also used a broad spectrum of measures including breathing, maternal heart rate, change in glucose, lactate production and blood pressure.

For the study, high-intensity intervals were performed through 10 one-minute bouts of cycling above 90% of an individual's [heart rate](#) maximum followed by one minute of active recovery.

This form of training was then compared to a more traditional form of maternal exercise, moderate-intensity continuous cycling, which was performed for 30 minutes.

Davenport led the development of the 2019 Canadian Guideline for Physical Activity During Pregnancy for the Society of Obstetricians and Gynecologists of Canada and Canadian Society for Exercise Physiology.

To develop the guideline, Davenport surveyed all available literature to look at whether exercise during pregnancy is safe and beneficial for both mother and baby.

"With those systematic reviews and with those guidelines we actually found really impactful information," says Davenport. "Engaging in [physical activity](#) and exercise during pregnancy is associated with a 40% reduction in the risk of developing major pregnancy complications such as [gestational diabetes](#), pre-eclampsia and gestational hypertension, and there is no negative impact on the baby."

Early small-scale studies that suggested longer-duration progressive exercise to maximal levels had some potential adverse effects led to a broad recommendation not to exceed 90% of maximal [exercise](#) at any point during [pregnancy](#), says Davenport.

"This certainly opens up the area in terms of future research to be able to really look at this [high-intensity exercise](#)," she notes.

"Without that research, we really can't change or evolve guidelines. This is the first key step to be able to re-envision what those physical activity guidelines look like."

Future research should acknowledge the diverse methods of performing [high-intensity interval training](#), including manipulating the intensities, durations, and mode of equipment intervals can be performed, says Wowdzia.

More information: Jenna B. Wowdzia et al, Maternal and Fetal

Cardiovascular Responses to Acute High-Intensity Interval and Moderate-Intensity Continuous Training Exercise During Pregnancy: A Randomized Crossover Trial, *Sports Medicine* (2023). [DOI: 10.1007/s40279-023-01858-5](https://doi.org/10.1007/s40279-023-01858-5)

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