

Fat tissue regulates uterine blood flow in pregnant mice

Oluwatobiloba Osikoya

Hijab Ahmed

Sareh Panahi

Stephane Bourque

Styliani Gouloupoulou

Video Byte

Keywords: adipose tissue, blood flow, pregnancy, vasoconstriction, vasodilation, uterus, artery, rat, perivascular adipose tissue, PVAT, uterine arteries, The Journal of Physiology, The Physiological Society, Osikoya, University of North Texas Health Science Center, fat, blood vessels, cellular processes, in vivo, fat tissue

Posted Date: September 20th, 2019

DOI: <https://doi.org/10.21203/rs.2.15126/v1>

License:   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Increased blood flow to the uterus during pregnancy is essential to the health of both mother and baby. But the cellular processes that promote blood flow during pregnancy aren't fully understood. Now, researchers have discovered that fat surrounding blood vessels in the uterus plays a key role. In pregnant rats, uterine blood flow was up to 3 times higher than in non-pregnant rats. But blood flow plummeted when fat tissue was removed from the uterus of pregnant rats. Interestingly, tests on isolated vessels demonstrated that fat tissue-shrinking factors could be at play, which seems counterintuitive because narrow vessels generally mean low blood flow. One explanation is that isolating tissue from its natural surroundings could produce changes not observed in a live animal. Future studies will explore this apparent contradiction and hopefully reveal the role of fat tissue in human pregnancy. Osikoya et al. "Uterine Perivascular Adipose Tissue Is A Novel Mediator of Uterine Artery Blood Flow and Reactivity in Rat Pregnancy" J Physiol (2019)