

Researcher finds exercise can reduce artery stiffness associated with heart failure

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Craig Emter is a professor in the MU College of Veterinary Medicine. Credit: MU

Generally, exercise is considered good for you. However, physicians and medical doctors previously prescribed bedrest to people with heart failure, fearing exercise could potentially lead to additional health problems.

Now, research from the University of Missouri has found exercise can improve the health of blood vessels in the heart for people with heart failure. The finding is based on a study looking at swine, which have very similar blood vessels and heart muscles—both structurally and functionally—as humans.

Craig Emter, associate professor in the College of Veterinary Medicine, studied three different groups of swine with heart failure: one group was inactive; a second group exercised using intervals with a higher level of intensity for short periods of time intermixed with periods of lower intensity; and the third group exercised with a constant lower level of intensity. Emter found that regardless of exercise intensity or duration, any level of exercise resulted in improved health of blood vessels in the heart.

"People with heart failure cannot do everything that a healthy individual can, so the question becomes how much exercise can they handle and what type of impact will it have on their health," Emter said. "We found that regardless of intensity level, some type of physical activity was good for heart health compared to no exercise at all."

Emter explained stiff blood vessels can block or impair [blood flow](#) to the heart and can lead to a variety of cardiovascular issues. The research findings can be useful for [human medicine](#) as well.

"We now have a better understanding of how blood flows in the heart, the stiffness of blood vessels and the impact that exercise has on heart health," Emter said. "Understanding the underlying science of the heart

allows us to help improve the health of people with [heart failure](#)."

The study, "Chronic [exercise](#) training prevents [coronary artery](#) stiffening in aortic-banded miniswine: role of perivascular adipose-derived advanced glycation end products" was published in the *Journal of Applied Physiology*.

More information: An Ouyang et al, Chronic exercise training prevents coronary artery stiffening in aortic-banded miniswine: role of perivascular adipose-derived advanced glycation end products, *Journal of Applied Physiology* (2019). [DOI: 10.1152/jappphysiol.00146.2019](https://doi.org/10.1152/jappphysiol.00146.2019)

Provided by University of Missouri

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