

Oscillations at odds in the heart

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Researchers in Germany show that a classical biological oscillator, the glycolytic oscillator, may increase damage to the heart during acute loss of oxygen (anoxia), and as may occur during ischemia. The study appears online March 15 in the *Journal of General Physiology*.

Oscillations are important in many biological processes, and life could not exist without them. They play roles in the cell cycle, the [heart beat](#), circadian rhythms, and fertility cycles, to name a few. Although oscillations are vital for normal physiological functions, uncontrolled or irregular oscillations can have harmful effects. This may be true of glycolytic oscillations that occur during anoxia and ischemia in the heart.

Glycolytic oscillations have been studied in the past, but only in artificially induced conditions. Klaus Benndorf and his team from the University of Jena were able to create more clinically relevant conditions by using a technique that allowed a single isolated patch-clamped [heart muscle](#) cell to be imaged with [fluorescent dyes](#) during severe anoxia.

According to James Weiss and Jun-Hai Yang (UCLA) in a Commentary accompanying the paper, the next step will be to determine whether such metabolic oscillations can be detected during acute ischemia in the intact heart, and if so, whether they play a role in hastening [cell death](#).

More information: Ganitkevich, V., V. Mattea, and K. Benndorf. 2010. *J. Gen. Physiol.* [doi:10.1085/jgp.200910322](https://doi.org/10.1085/jgp.200910322). Weiss, J.N., and J.-H. Yang. 2010. *J. Gen. Physiol.* [doi:10.1085/jgp.201010422](https://doi.org/10.1085/jgp.201010422)

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