

# Monounsaturated fatty acids may improve adipose dysfunction

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(HealthDay)—Monounsaturated fatty acids (MUFAs) may reduce inflammation and improve insulin sensitivity in adipose tissue, according to research published online Jan. 27 in *Diabetes*.

Orla M. Finucane, Ph.D., of the Conway Institute of Biomedical and Biomolecular Sciences & Institute of Food & Health in Dublin, and colleagues fed mice a high-fat diet (HFD) with saturated fatty acids (SFAs) or MUFAs. The researchers compared the effects of different [fatty acids](#) on [adipose tissue](#) biology and insulin sensitivity.

The researchers found that, compared with SFA-HFD fed mice, MUFA-HFD fed mice showed improved insulin sensitivity coincident with reduced pro-IL-1 $\beta$  priming, attenuated adipose IL-1 $\beta$  secretion, and sustained adipose AMPK activation. In addition, MUFA-HFD fed mice showed hyperplastic adipose with enhanced adipogenic potential of

stromal vascular fraction and improved [insulin sensitivity](#). Switching from SFA-HFD to MUFA-HFD did not reverse insulin resistance, but fasting plasma insulin levels were improved. An in vitro study showed that MUFA oleic acid impedes adenosine triphosphate-induced IL-1 $\beta$  secretion from lipopolysaccharide and SFA primed cells in an AMPK-dependent manner.

"These novel findings suggest that dietary MUFA can attenuate IL-1 $\beta$  mediated insulin resistance and adipose dysfunction despite obesity via preservation of AMPK activity," the authors write.

**More information:** [Abstract](#)  
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