

# Western diet exacerbates sepsis

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High fat diets cause a dramatic immune system overreaction to sepsis, a condition of systemic bacterial infection. An experimental study in mice, published in the open access journal *BMC Physiology*, has shown that a diet high in saturated fat, sugars and cholesterol greatly exaggerates the inflammatory response to sepsis.

Chantal Rivera, PhD Associate Professor of Molecular and Cellular Physiology at Louisiana State University Health Sciences Center-Shreveport, said that "Mortality due to sepsis in morbidly obese subjects is estimated to be 7 times more prevalent compared to mortality in lean individuals. Morbidity in obese patients is also more severe. Results from our recent studies suggest that this adverse outcome may be caused by consuming a high-fat diet, which predisposes the immune system to react more strongly to infection".

Dr. Rivera lead a team of researchers to carry out the surgical induction of sepsis in mice that had been fed normal chow or western diet for 3 weeks. Mice on the [western diet](#), which was enriched in saturated fat, showed exacerbated inflammation that was found to be mediated by signaling via the toll-like receptor 4 (TLR-4) pathway. According to Dr Rivera, "These results suggest that targeting the TLR signaling pathway as a therapeutic approach to the medical management of [sepsis](#) may be especially beneficial in obese patients".

**More information:** Western diet enhances hepatic inflammation in mice exposed to cecal ligation and puncture, Chantal A Rivera, LaTausha Gaskin, Georg Singer, Jeff Houghton and Monique Allman,

*BMC Physiology* (in press),

Provided by BioMed Central

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