

For fats, longer may not be better

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Researchers have uncovered why some dietary fats, specifically long-chain fats, such as oleic acid (found in olive oil), are more prone to induce inflammation. Long-chain fats, it turns out, promote increased intestinal absorption of pro-inflammatory bacterial molecules called lipopolysaccharides (LPS). This study appears in the January issue of *JLR*.

While dietary fats that have short chains (such as those found in milk and cheese products) can be absorbed directly into the bloodstream from the intestines, long-chain fats need to be first packaged by the intestinal cells into particles known as chylomicrons (large complexes similar to HDL and LDL particles). Erik Eckhardt and colleagues at the University of Kentucky wondered whether some unwanted LPS particles, routinely shed by the bacteria that inhabit the human gut, might also be sneaking in the chylomicrons.

Their hypothesis turned out to be correct; when they treated cultured human intestinal cells with oleic acid they observed significant secretion of LPS together with the chylomicron particles, a phenomenon that was not observed when the cells were treated with short-chain butyric acid. Similar findings were found in mouse studies; high amounts of dietary oleic acid, but not butyric acid, promoted significant absorption of LPS into the blood and lymph nodes and subsequent expression of inflammatory genes.

Eckhardt and colleagues believe these findings may pave the way for future therapies for Crohn's disease and other inflammatory bowel

disorders. In addition, they note that this study once again highlights the importance of the diverse bacteria that call our intestines home.

Paper: "Chylomicrons promote intestinal absorption of lipopolysaccharides" by Sarbani Ghoshal, Jassir Witta, Jian Zhong, Willem de Villiers and Erik Eckhardt,
www.jlr.org/cgi/content/full/50/1/90

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