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Effect of conjugated linoleic acid on the body composition in two different rodent models fed with high-fat or low-fat diet.

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We compared the effects of dietary conjugated linoleic acid (CLA) on body composition in weanling hamsters and rats fed 20% fat (HF) or 5% fat (LF) diets for 8 weeks. In both species the HF groups appeared to gain more body weight and fat relative to the LF groups but the differences were not significant. In hamsters fed LF or HF, total body fat gain was significantly reduced by CLA-supplementation (0.5% or 1% of diet). Body weight gain was also reduced, but the differences were significant only in the HF group. Feed intake appeared not to be affected for any group. In rats fed HF or LF diet, total body fat was not reduced by CLA supplementation (1% of diet) but the lipid stored in specific fat pads was significantly reduced (for the LF-CLA group the retroperitoneal and omentum fat pads were significantly reduced; for the HF-CLA group the peritoneal fat pad was significantly reduced). Body weight gain and feed intake were not affected except for the LF-CLA group where feed intake was significantly reduced. These results indicate that body fat gain in both hamsters and rats is reduced by CLA feeding, and that hamsters are more responsive than rats in this regard. It is important now to determine the biochemical basis for these differences.