

Fat reduction did not reduce incidence of colon and liver tumors in mouse studies

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Losing weight may not protect against colon and liver cancer, even though obesity is associated with increased risk of certain types of gastrointestinal malignancy. Researchers from the University of South Carolina found the incidence of tumors in the colon remained unchanged after weight loss in mouse studies. The paper, published in the American Journal of Gastrointestinal and Liver Physiology, was chosen as an APSselect article for November.

The researchers studied [obese mice](#) ("obese") and obese mice that lost weight ("lean") compared with a control group. All of the mice were fed a high-fat diet. The obese and lean groups were exposed to a carcinogen and studied to observe whether losing weight provided protection against the development of [colon polyps](#) or cancer.

The unexpected results: losing weight did not protect the lean group's colon health. "There were no significant differences in the polyp number (adenoma), polyp size, or grade of dysplasia" in the obese and lean groups, wrote the research team.

In addition, scientists found an increase in the markers for the growth of cancerous cells and liver inflammation in both groups exposed to the carcinogen. Larger numbers of T cells were activated in the lean group too, which may relate to repairing damage from the inflammation in the liver. These findings suggest that "excess fat reduction did not protect mice from colon cancer progression and liver dysplastic lesion... even though these mice had improved blood glucose and leptin," according to

the researchers.

Further study is needed in this area, according to the research team, but the results may have implications for humans as well. "Our results suggest that intentional body [weight loss](#) by diet manipulation does not provide any beneficial effects on colon tumorigenesis and it may in fact aggravate liver capacity of repair."

The article, "Weight loss following diet-induced obesity does not alter colon tumorigenesis in the AOM mouse model," is published in the *American Journal of Gastrointestinal and Liver Physiology*.

More information: Kandy T. Velázquez et al. Weight loss following diet-induced obesity does not alter colon tumorigenesis in the AOM mouse model, *American Journal of Physiology - Gastrointestinal and Liver Physiology* (2016). [DOI: 10.1152/ajpgi.00207.2016](https://doi.org/10.1152/ajpgi.00207.2016)

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