Weight Loss May Block Progression of Early-Stage Pancreatic Cancer

A study in obese mice suggests weight loss could slow cancer growth.

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If a recent study in mice is any guide, people with early-stage pancreatic cancer may be able to prevent progression of the malignancy by losing weight.

As described in the journal Cell, researchers at Yale University studied mice that had been genetically engineered to develop precancerous pancreatic lesions with a mutation in the KRAS gene, which is mutated in most pancreatic cancers in humans.

These mice were also engineered to become obese and to lose weight rapidly when they received a form of genetic manipulation or their food intake was limited.

Unlike normal-weight mice with KRAS mutations, the obese mice rapidly developed advanced pancreatic cancer. But in contrast with how the disease normally progresses in humans, the tumors in the animals did not present additional genetic mutations that would give rise to further growth.

“Just by making them obese, we could essentially simulate the effect of an additional mutation,” senior study author Mandar Muzumdar, MD, assistant professor of genetics at Yale School of Medicine and member of the Yale Cancer Biology Institute, said in a press release. “That suggested that there is a huge effect of obesity on cancer development in mice.”

“We found that if we made the mice lose weight prior to advanced cancer development, we could essentially block the progression to advanced cancer almost as if they were never obese,” Muzumdar continued. “If we made the mice lose weight after advanced cancers had developed, the mice still succumbed to the disease within the same time frame.”

The study authors believe that their findings suggest that it may be possible to block tumor progression in people with pancreatic cancer through weight loss or the use of new drugs that target the underlying pathways that fuel tumor growth.

“Our hope is that the underlying pathways and mechanisms we’re identifying in obesity also may

apply to those who develop pancreatic cancer in the absence of obesity," Muzumdar said.

To read a press release about the study, click here.

To read the study abstract, click here.

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