

Starve Tumors? How to Kill Cancer by Cutting Off Its Energy Supply

University of California researchers are revolutionizing what we thought we knew about how cancer spreads, opening new paths to cures.

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Cancer kills more than 500,000 Americans each year. But today, thanks to National Institutes of Health (NIH) funding, University of California, San Francisco researchers are revolutionizing what we thought we knew about how cancer spreads, opening new paths to cures.

What they discovered

For decades, cancer scientists focused mainly on the genetic mutations that put us at higher risk or fueled the disease by allowing cells to multiply unchecked or trick our natural defenses, for instance. But UCSF Urology Professor [Davide Ruggero](#), PhD, helped discover how to block a key protein, MYC, that drives the growth of 70% of all cancers. The breakthrough paves the way for new types of therapies, including at least four experimental drugs developed at UCSF to potentially treat brain cancer (glioblastoma), as well as breast, colorectal, and prostate cancers.

Why it matters

By pairing one of these drugs, which blocks the metabolism of fat, with a high-fat keto diet, Ruggero found that in laboratory studies he could “starve” pancreatic cancer, cutting off the cancer’s energy source, for example.

“Our findings open a point of vulnerability that we can treat with a medicine that we already know is safe in humans,” Ruggero says. “We now have firm evidence of one way in which diet might be used alongside pre-existing cancer therapies to precisely eliminate a cancer.”

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