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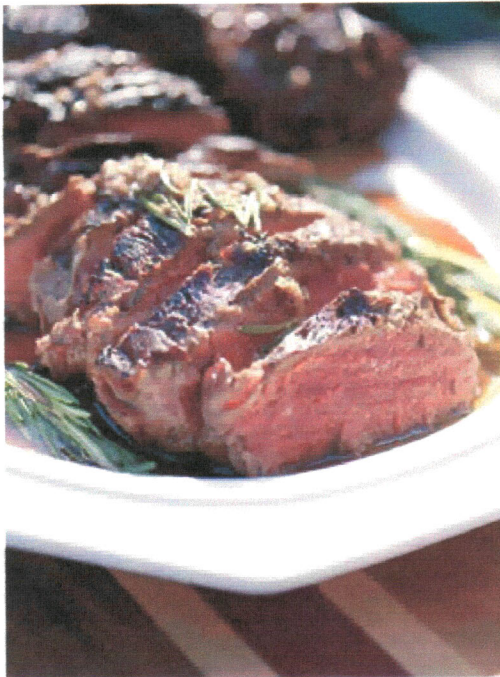
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Of Mice and Meat

Although heart-healthy hamburgers won't be on the menu of your local greasy spoon anytime soon, a research team now reports a development that may constitute a step in that direction. They've engineered mice to make omega-3 fatty acids, compounds that lower the risk of atherosclerosis and other diseases. The team says that one day the technique could be applied to livestock, perhaps reducing the risk of pesky heart attacks that comes from eating steak.



Tastes great, less killing. In the future, genetically modified cattle might produce heart-healthy steaks.

CREDIT: BENJAMIN FINK/BRAND X

ratio, compared to a 20-to-1 ratio in the normal mice, the team reports in the 5 February *Nature*

According to Artemis Simopoulos at the Center for Genetics, Nutrition and Health in Washington, D.C., the one-to-one ratio is ideal for human nutrition. Cows and chickens with this omega make-up would be healthier to eat than standard livestock.

Humans, like most animals, get omega fatty acids from their food. But nutritionists say most people in affluent countries don't get enough omega-3 acids, the most beneficial kind. The primary sources of omega-3 acids are fish, seaweed, and dark green leafy vegetables—foods that tend to get passed up in favor of a nice juicy T-bone. Cold-water fish such as salmon are particularly rich in omega-3's because they feed on plankton that manufacture the fatty acids, but the most sophisticated animal that can make its own omega-3's is the worm *Caenorhabditis elegans*.

Guessing that worm burgers would never catch on, Jing Kang and colleagues at Harvard Medical School in Boston inserted the worm gene for an enzyme that turns omega-6 fatty acids into omega-3's in mice. The resulting transgenic rodents did indeed crank out more omega-3's. Raised alongside unaltered mice and fed the same diet rich in omega-6's, the transgenic mice maintained a one-to-one omega-6 to omega-3 fatty acid

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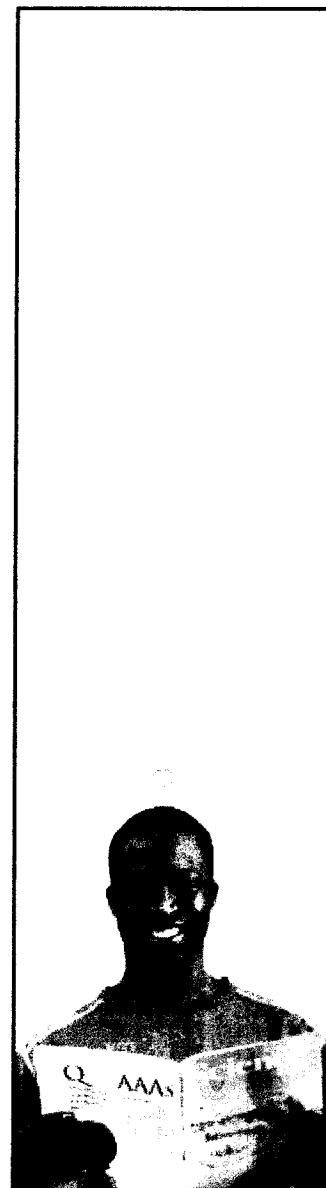
Bill Muir, an animal genetics researcher at Purdue University in West Lafayette, Indiana, cautions that studies should be done to see whether there's any long-term impact on the mice's health, but says, "my guess is that omega-3's are good for us, [so] they're probably good for the mice." Nutritional benefits aside, would livestock altered to make their own omega-3 fatty acids taste any different? Jing Kang doesn't think so. "No ... at least our mice don't smell like fish."

—KIM KRIEGER

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