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NEWS FROM HARVARD MEDICAL, DENTAL, & PUBLIC HEALTH SCHOOLS

RESEARCH BRIEFS

Modified Mice Make Omega-3 Fatty Acids

By adding a worm gene to mice, researchers at Massachusetts General Hospital have created the first mammals that can synthesize heart-healthy omega-3 fatty acids. Their results offer a potential new strategy for producing meat, milk, and eggs that are high in the beneficial fats and establish a model for studying the biological effects of omega-3 fats.

Kang and his colleagues plan to use the *fat-1* mice to nail down the physiological role of omega-3 fatty acids in diseases like athero- sclerosis, neurodegeneration, diabetes, and cancer.

The scarcity of omega-3's in the Western diet has been blamed for a host of health problems ranging from heart disease to neurodegenerative disorders to cancer. While our ancestors probably ate nearly equal amounts of omega-3 and omega-6 fats, most Westerners today consume 15 to 30 times more of the pro-inflammatory omega-6's from vegetable oils and processed food than they do the healthy omega-3's from sources like fish and nuts.

Since worms, plants, and bacteria can convert omega-6 fatty acids to omega-3, **Jing Kang,** HMS associate professor of medicine at MGH, attempted to produce a mammal with the same capability. Using a gene from C. elegans, he engineered mice that express the FAT-1 converting enzyme in most tissues. Normal mice raised on a low-omega-3 diet have 95 percent omega-6 fatty acids. In the animals carrying the *fat-1* gene, omega-6 levels dropped and omega-3 levels increased so that instead of a 20- to 50-fold excess of omega-6, the animals had almost equal amounts of the two fats in all tissues, including muscle and milk. The animals appeared normal and passed *fat-1* on to their offspring.

Before Kang's work appeared in the Feb. 6 *Nature*, he did not imagine the mice would be featured in news reports from Australia to Europe, but consumers were fascinated by the idea that introducing *fat-1* into cows or chickens might result in hamburgers, hot dogs, and eggs that would rival fish for omega-3 content. Closer to home, Kang and his colleagues plan to use the *fat-1* mice to nail down the physiological role of omega-3 fatty acids in diseases like atherosclerosis, neurodegeneration, diabetes, and cancer. Kang and MGH have filed a patent application related to this work.

--Pat McCaffrey

Majority of Doctors Favor National Health Insurance

With 41 million Americans uninsured, health care is likely to be a pivotal issue in the 2004 presidential campaign. Though previous attempts to launch a national health insurance system have foundered, a new study suggests that there is much support for such a system from the people who provide that care--physicians.

A survey by HMS researchers of more than 900 Massachusetts doctors found that two thirds thought patients would be better served by single-payer national health insurance than by systems based on managed care or fee-for-service. Yet only half the doctors, who were randomly sampled from a variety of specialties, were aware that a majority of their colleagues support a single-payer system. This misunderstanding could have serious ramifications. "The perception that physicians oppose national health insurance often serves

to reinforce political barriers to health care reform," said **Danny McCormick,** an HMS instructor in medicine at Cambridge Hospital and lead author of the study, which appears in the Feb. 9 *Annals of Internal Medicine.*

Support for a single-payer system was reflected in the physicians' response to a variety of questions in the survey. Eighty-nine percent agreed that it was the responsibility of society, through its government, to provide everyone with good medical care regardless of ability to pay. Two thirds said they would give up 10 percent of their income for a substantial reduction in paperwork, and more than 55 percent said they favored salaried compensation to managed