Heart disease: Let them eat fish

If fish had the ability, they might be blushing from all the plaudits heaped on them by researchers this week.

Two reports in the May 9 NEW ENGLAND JOURNAL OF MEDICINE (NEJM) say that oil from fish can prevent heart disease. The studies back up earlier findings that Greenland Eskimos, who eat a lot of fish, have a low risk of heart disease despite a high-fat, high-cholesterol diet. A third NEJM article suggests that the oil may work its magic through an anti-inflammatory effect. And according to work presented at the American Federation for Clinical Research (AFCR) meeting this week in Washington, D.C., fish oil may also alleviate migraine headaches and rheumatoid arthritis.

In 1960, Dutch researchers from the University of Leiden asked 852 men and their wives what the men were eating, then kept track of the men for the next 20 years. Though the researchers found no relationship between fish consumption and such established heart disease risk factors as blood cholesterol level and blood pressure, they found the more fish a man ate, the less likely he was to die of heart disease.

The death rate from heart disease was more than 50 percent lower among men who ate at least 30 grams (1 ounce) of fish per day compared with men who ate no fish. Just one or two fish dishes a week, the researchers say, "may be of value in the prevention of coronary heart disease," and they suggest that dietary guidelines include this recommendation.

The probable key is the action of fatty acids in fish oil (also found in leafy vegetables and soy, walnut and rapeseed oils) called omega-3. These fatty acids alter metabolic pathways in the body, discouraging the formation of heart-attack-causing blood clots. What remains to be studied, notes John A. Glomset of the University of Washington in Seattle in an accompanying editorial, "is whether the consumption of fish also correlated, perhaps unfavorably, with mortality from cancer and other diseases."

The second NEJM report came from the Oregon Health Sciences University in Portland. Twenty people with high triglyceride levels — a factor in heart disease — rotated among diets containing fish oil, polyunsaturated vegetable oil or low-fat foods. The fish oil, which is a type of polyunsaturated fat, significantly lowered both cholesterol and triglyceride levels, leading the researchers to conclude that fish oils and fish may be useful treatments for high triglyceride levels. Omega-3 fatty acids reduce the synthesis of a molecule that carries triglycerides and cholesterol through the blood, and increase cholesterol excretion, they say.

Harvard University researchers studied the effect of fish oil on the immune system. In seven healthy men they supplemented the usual diets with fish oil, and found the men produced less active white blood cells, in a way "desensitizing" the normal inflammatory response. This inflammatory response has been linked to atherosclerosis. Glomset, one of the originators of the theory, notes that limiting it may limit atherosclerosis.

Moving from the heart to the head, University of Cincinnati researchers reported at the AFCR meeting that fish oil ingestion led to a reduction in migraine intensity compared with placebo in six of eight subjects. Omega-3 fatty acids reduce two factors associated with migraines — serotonin, which acts on cerebral blood vessels, and platelet aggregation — and they relax blood vessels, but exactly how they work remains to be determined, says University of Cincinnati researcher Charles Glueck.

If brain and heart, why not joints? Albany (N.Y.) Medical College researchers reported that 23 people on fish oil had less morning stiffness than 21 people on placebo — suggesting, they say, that more studies are warranted. — *J. Silberner*

Of scientists, spies and censorship . . .

While the public debate over the freedom of worldwide scientific exchange has taken on a curious, congenial complexion of its own, it is apparent that much of the actual flow of scientific data and ideas between the United States and other, particularly Eastern Bloc, countries remains under the tight control of the Department of Defense (DOD).

"I'm enthusiastic about selling consumer goods to the Soviet Union," says Richard N. Perle, assistant secretary of defense for international security policy. "Enriching the lives of Soviet citizens has a useful narcotic effect." Perle's enthusiasm withers, however, when those goods include such objects as microelectronics production equipment, computer-driven machine tools, computers for manufacturing and advanced communications systems. And his goodwill absolutely disappears when the subject of resuming scientific exchanges with the Soviets is brought up.

There is "danger," Perle said last week at a round-table discussion, in the National Academy of Sciences' recent proposal to institute a new, cooperative science exchange program with the Soviets. The Academy halted a similar program in 1980 in protest of the treatment of Soviet physicist Andrei D. Sakharov. "Soviet scientists are employees of the state," Perle said. "They are on an intelligence mission."

Perle's views contrasted and, in some cases, meshed with those of other members of the panel convened in Washington, D.C., by the Scientists' Institute for Public Information, the American Association for the Advancement of Science and the Association of American Universities. His remarks also came on the heels of an open technical meeting in which DOD stepped in at the last minute and blocked the presentation of a number of unclassified papers that it believed would threaten national security if disclosed (SN: 4/20/85, p. 247). In 1982, the Defense Department had blocked 100 papers from being presented at a similar meeting in San Diego (SN: 9/4/82, p. 148).

Neither Perle nor the other panelists appeared sure exactly how the recent incident had occurred. But they generally concurred that information that might threaten national security should be censored. "You don't bargain away technology," said William J. Perry, former under secretary of defense for research and engineering in the Carter administration. "The process by which we manufacture is our major secret."

Admiral Bobby R. Inman, currently president of the Microelectronics and Computer Technology Corp. in Austin, Tex., noted that whereas the United States had a 10-year lead in technology over the Soviet Union in 1971, that gap shrank to two years by 1981. "If you persuaded me that we were learning from it, then exchanges with the Soviets might be acceptable," said Inman, who added that the "pool of U.S. talent [in technology] has been declining."

Donald Kennedy, president of Stanford University and cochairman of the DOD-university group that has been discussing academic research freedom, said that unless research has been labeled classified it should not be subject to controls or censorship. Indeed, it was Stanford's policy of not conducting any classified research that led to the day's only sharp exchange, between Perle and Kennedy. When Perle asked him to justify this policy, Kennedy replied, "Our scientists think the kind of science they do requires free exchange." Asked Perle: "Will Stanford prohibit a researcher who wants to from doing classified research? And how do you square that with academic freedom?" Kennedy then explained that a classified project might exclude other faculty members who might normally collaborate.

On the question of U.S.-USSR exchanges, Kennedy said that science should be "preserved as an international enterprise, with openness and access. The temptation to resolve by regulation what cannot be resolved by good sense is an instinct of government."

— *J. Greenberg*