

Working women take one benefit to heart

Compared with their stay-at-home peers, employed women have higher blood levels of high-density lipoprotein (HDL) cholesterol, the "good" cholesterol associated with lower heart attack risk. Scientists have long warned that employed women take on the same heart disease risks — such as increased stress — that males have faced for years. Yet the coronary heart disease mortality among women in most Western nations has fallen during the last decade despite their increased participation in the work force. Research reported this week by a team of West German scientists hints that increased HDL cholesterol may help protect female workers from heart disease.

Ursula Haertel, Ulrich Keil and their colleagues at the GSF Medis-Institut in Munich studied 2,000 women aged 25 to 64 who live in or around Augsburg, a city 50 kilometers north of Munich. They found that 48 percent of the women worked outside the home. These female workers had mean HDL blood values of 64 milligrams per deciliter (mg/dl), an amount 2.5 to 3.6 mg/dl higher than the homemakers' HDL values. Total blood cholesterol values were the same for the two groups, Haertel reported at the International Conference on Preventive Cardiology, held in Washington, D.C., by the American Heart Association.

The HDL increase is small but significant, comments Basil Rifkind at the National Heart, Lung, and Blood Institute in Bethesda, Md. U.S. researchers have shown that each 1 mg/dl drop in HDL blood values corresponds to a 3 percent rise in heart disease incidence. These statistics suggest West German homemakers get heart disease at a higher rate than their employed counterparts, but the research team has yet to prove that connection. Preliminary data collected during a three-year period suggest that women who quit their jobs to raise a family experience a 3 mg/dl drop in their HDL blood values, Haertel says.

The biological mechanism leading to higher HDL values in employed women remains a mystery. Scientists have shown that alcohol use and exercise can raise blood HDL values, but the West German researchers controlled for such factors in their study. Haertel suggests that women who juggle a career and a family have a higher activity level, which may trigger a rise in HDL levels. But that mechanism remains pure speculation at this point, she cautions.

Further research is needed to confirm the coronary benefits of employment. Haertel and her colleagues plan to study the same women for a decade, tracking heart attacks, employment changes and cholesterol values. — *K.A. Fackelmann*

Test diagnoses AIDS in newborns

Scientists have discovered they can use a sensitive genetic test to detect the AIDS virus, HIV, in newborn babies and that the test provides a reliable indication of which infants born to infected mothers will develop full-blown AIDS. If larger studies confirm these findings, early detection in children should enable physicians to begin earlier treatment, which researchers say is likely to be more effective in ameliorating AIDS symptoms. And by identifying which babies of HIV-positive mothers are infected, the test might spare uninfected children the toxic effects of AIDS drugs, says study coauthor Chin-Yih Ou of the Centers for Disease Control in Atlanta.

Moreover, suggest Ou and his colleagues in the June 22 *NEW ENGLAND JOURNAL OF MEDICINE*, the genetic test might help scientists uncover clues to how babies acquire the virus from their mothers — information that could even-

tually lead to preventive therapies.

At present, physicians cannot be certain that an infant is infected with HIV until symptoms appear, usually at about 1 year of age, Ou says. Current tests cannot detect the virus in newborns, and antibody screening fails because of maternal antibodies, which can persist for up to 15 months after birth.

The researchers used a method known as the polymerase chain reaction — which involves amplifying tiny amounts of DNA — on blood samples obtained during the first month of life from babies of HIV-infected mothers. They detected HIV DNA in five of seven infants who later developed full-blown AIDS and in one of eight who later displayed symptoms suggesting HIV infection. In contrast, they did not find the virus in blood from any of the nine infants who remained healthy at 16 months of age. — *I. Wickelgren*

More questions plague nuclear waste dump

Safety concerns and unanswered questions once again threaten plans to open the first U.S. underground repository for nuclear waste.

Located in a salt formation near Carlsbad, N.M., the \$700 million Waste Isolation Pilot Plant (WIPP) is intended to hold materials contaminated with plutonium and other long-lived radioactive elements from the nation's nuclear weapons plants. The Department of Energy, which runs the facility, had planned to start storing drums in WIPP's underground rooms last September as part of a five-year test to show that the plant will meet EPA standards. Under criticism that the plant was not ready, the department revised its schedule and targeted this September to begin waste loading (SN: 9/24/88, p.199).

Earlier this month, the department issued its draft plan outlining WIPP's test-phase activities. At a hearing last week, witnesses told Congress that the draft, now under revision, failed to resolve important strategy and safety issues. Later in the week, the department announced WIPP would not open until October.

According to its ever-shifting plan, the Energy Department proposes to load as many as 25,000 drums in WIPP over the next three years, but only 3,700 are destined for experiments concerning safety regulations. Most drums will be stored for practice, says Lokesh Chaturvedi of the independent Environmental Evaluation Group in Albuquerque, N.M.

Chaturvedi says the department should load only the number of drums necessary for experiments, because test

results may require workers to remove and reprocess the waste — a costly and potentially dangerous operation. At the very least, workers will have to shuffle drums underground.

The proposed experiments will focus on gas generated by the waste. Work in recent months has suggested the gas could be a more serious problem than expected. At worst, it could build pressure and enlarge cracks in the salt, giving the waste an exit route toward a nearby aquifer or to the surface.

To explore this effect, the department will perform three types of experiments: one in labs, another in sealed bins and a third in closed WIPP rooms. The bin tests are planned for inside WIPP, but these could occur anywhere and the department has yet to justify hauling waste and bins underground, contends Keith O. Fultz of the General Accounting Office.

Moreover, many of the experiments will not start until after the Energy Department issues its draft report on compliance with EPA standards. This, says Fultz, raises questions about the purpose of the experiments. He also notes that criminal investigations of operations at the department's Rocky Flats plant in Colorado (see story, p. 391) may affect WIPP. The Colorado facility produces much of the waste to be stored in WIPP.

The department must answer these criticisms before Congress will authorize it to proceed with WIPP. Speaking at the hearing, Rep. Mike Synar (D-Okla.) said, "I have become very concerned about the Department of Energy's approach to this project as deadline after deadline passes." — *R. Monastersky*