

You Are What You Don't Eat

Oregon researchers are unruffled by waves of criticism that hit them this week when they released findings suggesting a link between hypertension and diets deficient in calcium, potassium, vitamins A and C, and—most controversial—salt.

David McCarron, Cynthia Morris, and others at Oregon Health Sciences University in Portland analyzed 1977 data from the National Center for Health Statistics' Health and Nutrition Examination Survey (HANES 1). They looked for relationships between high blood pressure (estimated to afflict 37 million people in the U.S.) and 17 nutrients in 10,372 people ages 18 to 74.

"Significant decreases in the consumption of calcium, potassium, vitamin A... and C were the nutritional factors that distinguished hypertensives from normotensive subjects," says the report published in the June 22 *SCIENCE*. Lower calcium intake was the most significant factor among hypertensives. They also found a weak correlation between hypertension and *low* salt in the diet. No causation is claimed, but the group urges more studies on nutrition links to high blood pressure, even if it bucks "common wisdom" of dietary excesses, rather than deficiencies, as leading to increased systolic pressure, Morris says.

Prior studies have suggested ties between calcium, potassium and hypertension, but this is the first to correlate vitamin deficiencies, Morris told *SCIENCE NEWS*. Lower vitamin intake among hypertensives may reflect the close diet association of vitamin A with calcium, and C with potassium, she adds. Because dairy foods are a major source of calcium and potassium, the Oregon report says lower dairy food consumption is "most closely related" to high blood pressure. Not everyone agrees.

Gerald Payne, chief of preventative cardiology at the National Heart, Lung and Blood Institute, calls the report "important." But salt findings are "overdone" and unreliable, he adds. Other criticisms were the unveiling of the study (two firms orchestrated a press conference and television spots); the salt correlations (it is tricky to assess cooking and table salt use); the authors' advocacy of an increase in diary food intake at the risk of heart disease; and McCarron's National Dairy Council funding (about 5 percent of his \$600,000 1983 budget).

How salt influences hypertension was questioned recently (SN: 12/10/83, p. 372), and whether less salt can prevent high blood pressure is disputed (SN: 4/9/83, p. 233).

American Heart Association President Antonio Gotto says salt intakes must be cut, and no one should increase dairy foods based on the "unverified hypothesis" of this report. Morris says, "As for controversy... anyone can replicate our analysis." No dairy council money was used for this specific study, she adds.

—A. Rowand

The (Anti-Cancer?) Pill

Estrogen therapy has long been tagged to risks of uterine cancer among the millions of women who turn to this hormone for relief from the symptoms and aftermath of menopause. Three 1976 studies found that estrogen users, while enjoying alleviation of hot flashes, faced a fivefold to fourteenfold increased cancer risk.

A recent study confirms a risk, but data also indicate a possibility for reversing the odds: If birth control pills are used *prior* to menopause, menopausal estrogen replacement therapy could cut the chance of endometrial cancer by more than half.

"Oral contraceptive use may minimize the risk of endometrial cancer associated with estrogen therapy. It's biologically plausible... it must be considered suggestive," says Nancy Lee of the Centers for Disease Control in Atlanta. Lee presented her findings last week at the National Institutes of Health seminar on Aging, Reproduction and the Climacteric, in Bethesda, Md.

"It's fairly well known that oral contraceptive use protects [pre-menopausal] women from endometrial and ovarian cancer. We wondered if it might decrease the cancer risk associated with menopausal estrogen," says Lee.

First, she compared 130 post-menopausal women with endometrial cancer to about 500 females without the disease, looking for patterns of therapeutic estrogen use. There was a threefold higher incidence of cancer among estrogen users, Lee says.

Next, she divided the women with cancer into two groups: those who had used estrogens and those who had not. Then she further divided these groups according to whether they had ever used oral contraceptives.

For women who had used estrogens, but never contraceptives, the risk of endometrial cancer was about 3.6 times greater than for women who had used neither, Lee says. That risk dropped to 1.5 times higher among women who had used both contraceptives and estrogens, compared again to women who had used neither.

But after dividing the women into four groups, the data base was small, so Lee says confirmation follow-ups are needed to ensure results that are valid, and not just a fluke of the figures.

Lee also found a "vague, maybe" higher risk of ovarian and breast cancer among women using estrogen therapy, and adds that oral contraceptives might offer protection for ovarian cancer, too.

"If it [estrogen] is a risk factor for ovarian cancer, oral contraceptives may minimize that risk," she says. "These are preliminary, tentative findings. We're going to continue to revise the data."

—A. Rowand

Herpesvirus suspect in nearly a third of miscarriages

Genital herpes is vexing, but rarely dangerous to adults. However, the herpes simplex virus (HSV) that causes the disease can kill embryos. HSV apparently infects the endometrium (the womb's lining) and crosses the placenta to damage or destroy the embryo, and may account for up to 30 percent of all miscarriages, according to a report that appeared in the June 15 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

Pathologists James A. Robb and Kurt Benirschke of the University of California at San Diego have found HSV protein, which shows viral infection has occurred, in 43 percent of the endometrial or placental tis-

sues, or both, collected from 139 first-trimester spontaneous and induced abortions. And 50 cases of apparent HSV infection were found in endometrial tissue from 200 non-pregnant women. Not all of these infections cause miscarriages, Robb stresses; the 30 percent of spontaneous abortions he and Benirschke blame on the virus is a "rough, ballpark figure," drawn from the apparent increased rate of miscarriage tied to the infection.

So far, the researchers haven't seen intact virus particles in these tissues, but antibodies against HSV can pinpoint the protein residue of infection. Whether such residue explains the miscarriages is argu-

able. "I'm not trying to minimize the importance of these observations," says Fred Rapp, chairman of microbiology at The Pennsylvania State University in University Park, "but the relationship of those [viral] remnants to abortions is a leap of faith."

That leap may not be unwarranted: There are herpesviruses similar to HSV that cause abortions in horses, Rapp says, and Thomas Becker of the sexually transmitted disease section at the Centers for Disease Control in Atlanta notes that first infection with genital herpes early in pregnancy is thought to occasionally cause miscarriage.

—G. Morse