

A spinoff from test-tube procreation

Research conducted in conjunction with the United States' first-established *in vitro* fertilization program at the Eastern Virginia Medical School in Norfolk, Va., has revealed that the activity of a small molecule called oocyte maturation inhibitor, which is naturally present in women's ovaries, declines as an egg matures and becomes fertilizable. Thus the substance might actually be the factor that controls egg maturation.

The research was conducted by Cornelia P. Channing and Cheng-Quan Liu of the University of Maryland School of Medicine in Baltimore as well as by Georgeanna and Howard Jones, the physicians who head the Eastern Virginia Medical School *in vitro* fertilization program. As they report in the PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES (Vol. 80, No. 13), they measured levels of oocyte maturation inhibitor in fluid taken from the ovaries of 20 women who had eggs withdrawn from their ovaries to be fertilized in tissue culture — that is, by the *in vitro* fertilization method. The researchers found that ovarian fluid yielding eggs that were mature and fertilizable contained significantly less oocyte maturation inhibitor activity than did fluid yielding immature eggs.

The practical implications of this finding, Channing said in an interview, are that it could help diagnose female infertility programs stemming from inadequate egg maturation or fertilizability. Also, Channing said, as scientists better understand the factors controlling egg maturation, they can improve the *in vitro* fertilization success rate.

More on salt and high blood pressure

Although there is whopping evidence that a reduced salt intake can lower high blood pressure, evidence that a low salt diet can prevent high blood pressure from forming has been flimsy (SN: 4/9/83, p. 232). Now evidence bolstering the latter hypothesis is reported in the July 15 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION by Albert Hofman and colleagues at Erasmus University Medical School in Rotterdam, the Netherlands. They found that 231 healthy infants on a low salt diet had significantly lower blood pressure at the end of six months than did 245 healthy control infants.

Prostate cancer drug trial

Some months ago a pilot study suggested that prostate cancer could be countered by blocking the actions of the hypothalamic hormone luteinizing hormone-releasing hormone (SN: 3/27/82, p. 215). Now scientists at 18 U.S. medical centers are setting up a large clinical trial to confirm and extend these results.

Anyone with advanced prostate cancer who would like to participate in the trial should contact the Roswell Park Memorial Institute in Buffalo, N.Y. (716) 845-2317. Patients accepted into the trial will receive treatment at participating centers.

'Low-nicotine' cigarettes don't have less

WARNING: Researchers at San Francisco General Hospital Medical Center have determined that believing cigarette ads is hazardous to your health. Tobacco advertisements claim that low-yield cigarettes are lower in nicotine, and therefore safer, than high-yield brands, though at least one study shows that "light" cigarette smokers do not decrease their risk of lung cancer (10/2/82, p. 214). The tobacco industry bases its claims on smoking-machine assays, despite findings that machines do not smoke like people do (9/4/80, p. 217). Neal L. Benowitz and colleagues report in the July 21 NEW ENGLAND JOURNAL OF MEDICINE that "tobacco in low-yield cigarettes does not 'contain' less nicotine than higher-yield cigarettes and that smokers of these cigarettes do not consume less nicotine."

The radiofrequency environment

"For all practical purposes, there is nowhere in the world that you can go today where you're not being exposed to radio waves [including microwaves]," says Paul Gailey, a physicist with the Environmental Protection Agency's (EPA) Office of Radiation Programs in Las Vegas. Having monitored the ambient radiofrequency (RF) levels in 15 cities, EPA now estimates that 99 percent of the U.S. population encounters RF power densities of no more than 1 microwatt (10^{-6} W) or less, per square centimeter, in the human resonance frequencies (where the human body serves most effectively as a pickup antenna — primarily the FM-radio and VHF-television bands).

What of the remaining 1 percent of the population? Measurements Gailey made last year indicate some people could be exposed to power densities thousands of times higher than $1 \mu\text{W}/\text{cm}^2$. The field tests were conducted to see how well models he had developed predicted actual RF-field strengths associated with FM, AM and television broadcast equipment. And they confirmed not only that his models worked, but also that FM towers are the most likely source of high RF fields affecting the public.

Many FM antennas emit almost as much radiation straight down as they do out in their main beam, Gailey says. Moreover, he points out, FM stations — unlike TV — frequently use very short towers. So under the worst conditions — a high-powered station and low broadcast tower — it's possible to measure several milliwatts (10^{-3} W) per square centimeter beneath an FM tower. And though it's not common, he added, "Occasionally there will be a house there, or very close by."

Charles Hall, an economist at Lawrence Livermore Laboratory in California, is using Gailey's data to estimate the economic impacts which would accompany each of 18 different power-density ceilings — from $1 \mu\text{W}/\text{cm}^2$ to $10 \text{mW}/\text{cm}^2$ — under consideration by EPA for federally regulated radiofrequency transmitters (SN: 7/30/83, p. 70). Those comparisons, Gailey told SCIENCE NEWS, show that if the 10mW figure was selected, few FM stations would be affected. However, he said, "If we tried to implement the Soviet standard — $1 \mu\text{W}$ — you would end up having to modify or shut down a very high percentage of all the FMs in the country."

Post-TMI miscarriages may show stress

Women who were pregnant and living within five miles of the Three Mile Island nuclear plant when the accident occurred in March 1979 experienced no overall elevated rate of miscarriage, according to Marilyn Goldhaber and colleagues at the Pennsylvania Department of Health. However, they note in the July AMERICAN JOURNAL OF PUBLIC HEALTH, the 13th to 16th week of pregnancy accounted for an inordinate proportion (13) of the 27 confirmed miscarriages — demonstrating a rate two to four times higher than would have been expected (depending on whose baseline studies are used to represent the norm; four studies were presented in the report). A "particularly low" rate of miscarriage after the 16th week brought the overall rate back to normal. Speculate the authors, "It could be that some agent (emotional stress or trauma from the accident) caused 'doomed' fetuses, fetuses that would have eventually been lost, to abort earlier."

VDT's and eyestrain: Who's hurt more?

A year-long study of 21 people who used video display terminals at least 30 hours a week found that those with light-colored irises; minor, uncorrected refractive problems; low tear production and mild eye-muscle imbalances suffered most from eyestrain. The study, directed by ophthalmologist Dennis Arinella of the University of Massachusetts Medical Center in Worcester, was funded by computer-furniture maker Wright Line Inc.