WINTA, OKLA.
JOURNAL
D. 3,655

SEP 1 1 1979

# Toxic substances may cause decline in sperm density

WASHINGTON (UPI) — Sperm density appears to be declining in American men and a Florida State University chemist suggested today toxic substances in the environment may be to blame.

Dr. Ralph Dougherty emphasized the sperm data are not conclusive and his research findings, apparently the first of their kind, are preliminary and require further study.

"I believe the data provide a presumption that we ought to look into the problem," he said in remarks prepared for a news conference preceding his report to a national meeting of the American Chemical Society. "We ought to investigate the causes of the apparent decline."

Dougherty said his study of semen samples from 132 volunteer donors at Florida State showed a correlation between toxic industrial compounds called PCBs, or polychlorinated biphenyls, in the seminal fluid and decreased sperm density.

PCBs are used primarily in the manufacture of electrical transformers and capacitors. PCB production has been curtailed sharply since the environmental danger became apparent several years ago.

Although there has been no published research linking PCBs with decreased sperm density in humans, animal studies have shown the chemicals can cause reproductive problems.

In addition to PCBs, Dougherty said the semen of the Florida State students studied was contaminated by pentachlorophenol, hexachlorobenzene and compounds resulting from metabolism of DDT. Other unidentified compounds also were found.

He said toxic substances act on sperm density by decreasing the rate of cell division. It takes at least eight cell divisions to produce a single sperm, he said, so substances which inhibit cell division can have a dramatic effect on sperm density.

Dougherty, whose research is supported by the National Institute of Environmental Health Sciences, said most chemicals that affect cell division also can cause cancer in animals.

He said there have been several reports in the scientific literature in Europe and Japan as well as the United States suggesting — but not proving — that sperm density has decreased during the last 30 years.

A 1929 study found a distribution maximum of 160 million sperm per milliliter of fluid, he said, while a 1973 study found the greatest number of donors had a density of 60 million per milliliter.

In the Florida state study conducted during the past year, more students — 23 percent — had a density of 20 million than any other density. Many specialists, Dougherty said, consider such a density to be evidence of sterility.

Dougherty said plans are now in the works to study other groups, particularly workers in factories where PCBs have been used.

MONS 008962