Many girls in the U.S. are entering puberty much earlier than normal, according to a recent study reported in the journal PEDIATRICS. As it happens, a very recent preliminary report indicates that PCBs and DDE (a breakdown product of the pesticide DDT) may indeed be associated with early sexual development in girls. Both DDE[7] and PCBs[8] are known to mimic, or interfere with, sex hormones.

According to the British journal NEW SCIENTIST, Dr. Walter Rogan described preliminary data at a conference on environmental estrogens in July in Arlington, Va.[9] Rogan is acting clinical director at the U.S. National Institute of Environmental Health Sciences (NIEHS) in Research Triangle, North Carolina.

According to NEW SCIENTIST, between 1979 and 1982 Rogan and his colleagues measured PCBs and DDE in blood and breast milk of hundreds of pregnant women in North Carolina. They also measured the chemicals in fetal blood collected from umbilical cords after birth. They then monitored the physical growth and maturity of 600 of the children of these women. According to NEW SCIENTIST, girls with the highest prenatal exposures to the chemicals entered puberty 11 months earlier than girls with lower exposures. For boys, exposures to the chemicals before birth made no apparent difference in sexual development.

Rogan minimizes the importance of his data, but others say his findings are significant because few studies have ever looked at chemical effects on the offspring of exposed women, and the women Rogan studied were exposed to PCBs and DDE from normal diet and environmental sources, not from industrial accidents of other abnormally high exposures.

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As is there other evidence that estrogen-mimicking chemicals could speed up the sexual maturation of mammals? At least three laboratory studies seem relevant here:

** Female rats were fed a diet that contained a phytoestrogen (a naturally-occurring plant that mimics estrogen). The ovulation of their offspring was prematurely terminated—a sign that their sexual development had been speeded up by their mother's diet.[10]

** Exposing immature female mice to high levels of methoxychlor stimulated them to early sexual maturity.[11] Methoxychlor is currently used in this country as a substitute for DDT which was banned in the 1970s, partly because of its estrogenic properties. The estrogenic properties of methoxychlor have become well-established in recent years, but its use continues.

** Rats treated once with certain PCBs on the second or third day of life exhibited a permanent alteration in sexual development. Specifically, young female rats treated once with Monsanto's Arochlor 1221 (a PCB) achieved sexual maturity in 28 days whereas untreated controls reached sexual maturity in 42 days.[12]

The authors of the PEDIATRICS study wrote. "This study strongly suggests that earlier puberty is a real phenomenon, and this has important clinical, educational, and social implications."

As the authors of the pediatrics study hint, the clinical implications may be serious. The arrival of puberty is driven by naturally-occurring estrogenic hormones coursing through the blood stream. There is now considerable evidence that breast cancer is promoted by the presence of these same naturally-occurring estrogens. Women who go through puberty early have a longer-than-normal exposure to these estrogens and therefore may be in greater danger of getting breast cancer.[13,14]

Breast cancer now kills 46,000 American women each year and the number is steadily rising; the reasons for the rise are poorly understood but there is widespread agreement that estrogen plays a role in the disease.[15] In recent years, researchers have hypothesized that environmental chemicals that mimic estrogens may also promote breast cancer.[16]

The social implications of early-onset puberty are obvious: young...
children with mature bodies must cope with feelings, urges and differences from their peers that most children are not well-equipped to handle. For many children, early pubescence may be a significant burden to bear.

--Peter Montague (National Writers Union, UAW Local 1981/AFL-CIO)


 Descriptor terms: child development; estrogens; hormone disrupters; endocrine disrupters; hormones; dde; pcbs; african-americans; studies; pediatrics; ddt; walter rogan; methoxychlor; phytoestrogens; arochlor 1221; breast cancer;