

The pill and mental sharpness

Research reported since the 1960's suggests that estrogen fluctuations during a woman's menstrual cycle can affect the ability of her brain to respond to sensory stimuli. Specifically, her sensitivity to sensory inputs should be sharpest around days 14 to 20, when her estrogen levels are highest; her sensitivity should be the least sharp around day 26, when her estrogen levels are lowest.

If this evidence is valid, then what effect do oral contraceptives have on a woman's mental acuity since they prevent the normal upswing of estrogen at the time of ovulation? Stephen Wong of Queen's University in Kingston, Ontario, and John E. Tong of the University of Guelph studied brain responses to sensory stimuli in two groups of women—one not on the pill, and one on it.

As they report in *PERCEPTUAL AND MOTOR SKILLS* (vol. 39, p. 103), the women not on oral contraceptives indeed showed greatest mental discrimination around day 15, and the least around day 26. The pill users failed to show these cyclical changes in mental discrimination, apparently because the medications had abolished their usual estrogen fluctuations. In addition, the women using oral contraceptives showed overall less mental sharpness than did women not using them, suggesting that the synthetic hormones were causing a depressant effect.

A born fighter

We all know them—those tiresome individuals who will pick a fight over the smallest incident. Research reported in the latest *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES* (vol. 71 no. 8) suggests that fighting tendencies may be genetically determined.

Past studies have linked certain nerve transmitters in the brain with aggressive behavior. So Roland D. Ciaranello, Ann Lipsky and Julius Axelrod of the National Institute of Mental Health conducted studies to see whether the observed differences in fighting behavior were genetically determined and whether the behavioral differences were related to the biochemical differences.

They studied two strains of mice. They found that three enzymes that make brain nerve transmitters were twice as prevalent in one strain as in the other strain. The strain that had twice as much enzyme material would fight intruder mice, but the other strain would not. They then crossed the two strains and found that the offspring were intermediate in their enzyme levels and behaved like non-fighters. So they conclude that fighting behavior was determined by a single recessive gene.

Crowded households may be good

Although human psychological disorders are more frequent where there is great population density (see p. 282), they are less likely to occur where there is household crowding, John Collette, a University of Utah sociologist, has found. The greater the number in the household, the less evidence there is of psychological disorder, alcoholism and the use of antidepressants, tranquilizers, sleeping pills and other mood-modifying drugs.

Collette also has indications that heart disease, hypertension, asthma and ulcers are not triggered by population density or household crowding, a finding that runs counter to many assumptions. He emphasizes, however, that further analyses will have to be completed before a final conclusion can be drawn.

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Immunization against leukemia

Immunology looms as an ever-more-powerful weapon against cancer. RNA from animal lymphocytes can transfer immunity against cancer to human cells (SN: 5/25/72, p. 341). The bacterium BCG is being successfully used to prime the immune defenses of cancer patients (SN: 6/23/73, p. 408). Vaccines made of cancer viruses have protected primates against cancer (SN: 6/29/74, p. 413). A chemical from human lymphocytes known as "transfer factor" is emerging as a promising treatment for breast cancer, bone cancer, Hodgkin's disease and nasopharyngeal carcinoma (SN: 8/24/74, p. 139).

Now very small inoculations of leukemia cells have been successful in bringing about spontaneous regression of leukemia in animals. Ludwik Gross and Yolande Dreyfuss of the Veterans Administration Hospital, Bronx, N.Y., report their findings in the September *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES*.

These findings are exciting because a permanent, spontaneous recovery from leukemia has never been documented in people and only rarely reported in animals. However, the technique doesn't always bring about tumor remission, and sometimes leads to more tumors. So it's not ready for application in leukemia patients.

Young smokers aren't spared

Young smokers blissfully puff away on cigarette after cigarette, assuming that the ravages of smoking, such as emphysema and lung cancer, won't strike them—at least for many years to come. Research reported in the Oct. 10 *NEW ENGLAND JOURNAL OF MEDICINE* now shows for the first time that the lungs of young smokers are already being damaged.

Dennis E. Niewoehner and his pathology team at Saint Luke's Hospital in Cleveland studied 20 nonsmokers and 19 smokers, average age 25 years. They found that all the smokers had pathologic changes in their peripheral airways, and that the characteristic damage was respiratory bronchiolitis. Only five of the nonsmokers had similar abnormalities.

"These lesions," the investigators conclude, "may be . . . the precursor of more severe anatomic lesions. The absence of noteworthy tissue destruction or fibrosis at this stage of the disease suggests that these lesions are still largely reversible, and emphasizes the importance of smoking prevention and control programs in the younger population."

Hodgkin's: Contagious or genetic?

There are conflicting opinions over whether one kind of cancer—Hodgkin's disease—may be transmitted from one person to another (SN: 9/29/74, p. 206; 12/8/73, p. 358). Some of the proponents for contagious Hodgkin's—N. J. Vianna, Adele K. Polan, J. N. P. Davies and P. Wolfgang of Albany Medical College in Albany, N.Y.—present new evidence for their hypothesis in the Oct. 12 *LANCET*.

They evaluated cases of Hodgkin's among 46 first-degree blood relatives living together or apart. They found that the time intervals between diagnoses for relatives living in the same household were shorter than for those living apart, suggesting that environmental exposure might be more crucial than genetic factors in the transmission of Hodgkin's.

However, they weren't able to find any husband-wife pairs with Hodgkin's, suggesting that environmental exposure alone is not enough to contract Hodgkin's.

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