

Vasectomy may turn off more than sperm

In 1971, 750,000 vasectomies were performed on American men. The main drawback of the procedure, most people believe, is that once a man's sperm duct is cut it may not be possible to hook it up again at a later date. Arthur M. Sackler, a psychiatrist at New York Medical College and A. Stanley Weltman and his team at Long Island University report in the Jan. 19 *SCIENCE* that there may be other dangers.

They studied the effects of vasectomy on rats for 28 weeks. At week 17 the vasectomized rats showed a significant decrease in male hormones compared with control rats. At week 28, 17 of the 31 vasectomized rats had smaller testes than they had had previously, compared with only three of the controls. Most of the vasectomized animals also had cysts in their sperm ducts. The cysts consisted of dense suspensions of sperm. No cysts were found in the controls.

"These findings," the investigators conclude, "suggest the need for caution and extensive investigations in man before recommending vasectomy as a simple, innocuous, 'physiologic' means to ensure conception control."

Provirus gives oncogene the thumb

There are now two major theories for human cancer. The oncogene theory holds that DNA already present in the cell switches it into a cancer cell (SN: 7/29/72, p. 68). The provirus theory holds that a virus introduces genetic information into a host cell, which makes it cancerous (SN: 11/6/71, p. 317). W. G. Baxt and Sol Spiegelman of Columbia University, supporters of the provirus theory, decided to see which is correct. If the same genetic information is found in both normal and cancer cells, they reasoned, then the oncogene theory is right. If normal cells and cancer cells contain somewhat different information, the provirus theory is right.

Not long ago they had found RNA cancer virus material—the 70S RNA molecule and the reverse transcriptase enzyme—in human leukemia cells (SN: 12/2/72, p. 357). So they used the 70S RNA and the enzyme to make DNA in the laboratory. Then they crossed the synthesized DNA with DNA from human leukemia cells and with DNA from normal human white blood cells. They report in the December *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES* that they found certain chemical sequences in cancer-cell DNA that they did not find in normal-cell DNA. ". . . That we cannot detect those sequences in the DNA of normal leukocytes," they conclude, "argues against the . . . oncogene theory. . . ."

A leg up the evolutionary ladder

Biologists and anthropologists have long wondered why man came to using two legs instead of four. One of the more popular arguments has been that he adapted a two-leg form in order to save energy for covering long distances. Two Harvard investigators now have evidence against this theory.

C. Richard Taylor and V. J. Rowntree trained chimpanzees and capuchin monkeys to run on a treadmill on either two or four legs. Meanwhile the investigators measured the primates' oxygen intake. They report in the Jan. 12 *SCIENCE* that both the chimps and the monkeys expended the same amount of energy whether running on two or four legs.

The polygraph and the psychiatrist

The polygraph, or lie detector, monitors heartbeat rate and amplitude, breathing pattern and rate and galvanic skin response. Changes in these areas indicate an emotional reaction and are considered to be at least 70 percent accurate in detecting lies. During psychotherapy an analyst determines areas of patient stress by noting physiological reactions such as blushing, perspiring or trembling. Stanley Abrams of the Permanente Clinic in Portland, Ore., says in the January *AMERICAN JOURNAL OF PSYCHIATRY* that the polygraph can be useful to analysts as a stress detector.

Twenty of his patients were examined with the polygraph. Each was given a total of 40 stimulus words alternating between assumed neutral words (window, book) and words thought to be relevant to each individual (sex, hate). The amount of stress indicated by reaction to the relevant words helps set up a hierarchy of stress useful later in the treatment process. But, says Abrams, patients also respond to some of the supposedly neutral words. When this happens, he says, it opens up the door to new material (some of it repressed) that can be dealt with in therapy.

Depression in the menopause

Menopause or change of life is a time feared by some women because of misconceptions about the causes and effects of the menopause. For instance, the decades between ages 40 and 59, the time when a great number of menopausal periods occur, are also when 40 percent of the first episodes of manic-depressive illness occur. For this reason, depression and menopause have often been associated. George Winokur of the Iowa College of Medicine in Iowa City attacks this reasoning. In the January *AMERICAN JOURNAL OF PSYCHIATRY* Winokur says it is possible that depressive episodes around the time of menopause may simply be chance occurrences.

Winokur studied 71 women who had suffered a depressive illness before or after the menopause to determine if they were at greater risk for depression during the menopause than at other times during the life span. He found the difference to be insignificant: There was a 7.1 percent risk of developing an affective disorder during the menopause and a 6.0 percent risk during other times.

Another bad trip

Suicide has often been linked with bad LSD trips but homicide in association with LSD use has been reported only four times in the medical literature. In the Jan. 22 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* Arthur Klepfisz and John Racy of the University of Rochester review these four cases and report a fifth.

A 22-year-old male student committed a serious assault while under the influence of LSD and marijuana. He claimed amnesia and a psychiatric examination revealed no evidence of psychosis. Three days later the same student was arrested for the fatal shooting of a girlfriend and found unfit to stand trial for reasons of insanity. Again he admitted being under the influence of marijuana and LSD. Klepfisz and Racy ask: Who is likely to have a bad trip? When should such a person be released from psychiatric care? And, what are the legal responsibilities of such a person?