

Smoking: Harm to your children

Smoking has been strongly linked with lung cancer, heart disease, emphysema, weakened immune responses, increased risk of giving birth to low-weight infants and gum disease. If those risks aren't enough to make you stop smoking, perhaps this one will be. London researchers report in the Nov. 2 LANCET that parents' cigarette smoke can make their children more susceptible to pneumonia and bronchitis.

J. R. T. Calley of the London School of Hygiene and Tropical Medicine, and his colleagues, studied the incidence of pneumonia and bronchitis in 2,205 infants over the first five years of life. Their parents' smoking habits were recorded annually. Cigarette smoke generated by parents' smoking doubled the risk of an attack of pneumonia or bronchitis during the first year of life. In contrast, there did not appear to be any crucial effect of smoking on one- to five-year-olds.

This evidence, the investigators conclude, "provides convincing reasons for warning parents who smoke of the risks this entails for their children. . . . Attacks of pneumonia and bronchitis, particularly in the first year of life, can still result in infant death despite prompt and vigorous treatment." Children who survive respiratory illness in the first year of life, they say, have also been found to be subject to chronic respiratory disease later in life.

Biochemistry of Lesch-Nyhan

The Lesch-Nyhan syndrome is a serious chromosomal disorder. The syndrome leads to severe mental retardation and attempts at self-mutilation. One of the biochemical bases for the syndrome is known. It is a defect in an enzyme that metabolizes uric acid. Now research reported in the Dec. 6 SCIENCE sheds more light on the biochemistry and pathology of the syndrome.

Stanley Rockson and his physician-biochemist team at Duke University Medical Center studied 10 children with the syndrome. They found that the children had a defect in the enzyme that metabolizes uric acid. But the children also had another enzyme that is much more active than in healthy children. This is the enzyme that metabolizes dopamine. Dopamine is one of the chemicals that transmits messages between nerves. The children also had inadequate constriction of blood vessels, which may have been due to an abnormal release of dopamine interacting with the nerves constricting the vessels.

These abnormalities, the North Carolina investigators conclude, might well contribute to the tragic brain damage and behavior of Lesch-Nyhan victims.

Females are better swimmers

Although people vary in swimming proficiency, women tend to be better swimmers because they expend less energy.

David R. Pendergast and Donald W. Rennie, physiologists with the State University of New York at Buffalo have found that as far as energy expenditure is concerned, men are about one-quarter efficient while walking or running. But they are only 2 to 10 percent efficient as swimmers. However, women are a third more efficient at swimming than men because they use less energy.

One reason women are more efficient swimmers is that they have more fatty tissue in their breasts and legs than men do. The greater fat tissue makes them buoyant and gives them ample benefit from their kicks. Men's legs being positioned lower in the water, do less propelling.

376

Dreaming and depression

Why do people dream? Researchers are not quite sure, but evidence suggests that dreams provide a sort of exercise that keeps the brain (and eyes) in good working condition. In some experiments, for instance, people deprived of dream time showed signs of mental deterioration, including hallucinations associated with schizophrenia. Gerald Vogel of Emory University takes a different view of dreams. He says that deprivation of dreams may actually improve the condition of certain mentally disturbed people.

REM or rapid eye movement during sleep usually indicates dreaming. At the Georgia Mental Health Institute's sleep laboratory, Vogel observed 4,200 sleep nights of 80 volunteer patients suffering from depression. Before going to sleep, each of the patients was wired with electrodes connected to monitoring equipment. Half of the patients (the experimentals) were awakened when they reached REM sleep. The other half (the controls) were awakened during non-REM sleep. Based on a series of tests for depression given three times a week, the experimentals improved significantly more than the controls. Later in the experiment, the controls were awakened during REM sleep. They too improved significantly.

Creative daydreaming

Daydreams, pleasant excursions into a mental never-never land, are a poorly understood experience. Unlike fantasies, daydreams are usually unconsciously produced interruptions of ongoing thoughts and awareness. Standard Freudian interpretation suggests that daydreams represent repressed desires—often of a sexual or aggressive nature. Other theories suggest that daydreaming is more common among elderly people who have relatively few activities to occupy their minds. Research conducted by Leonard M. Giambra challenges some of the commonly held beliefs about daydreams. His findings are in the December PSYCHOLOGY TODAY.

Giambra questioned 375 men, ranging in age from 17 to 91. He found that almost all men daydream, but that daydreaming usually decreases with age from a few times a day for the younger men to about once a week for the older men. And sex is not the most common theme of daydreams (except in the 17-to-23 age group). Giambra found that most reveries are about current concerns, interests and problems. The fact that problem solving heads the list of daydreams, he says, supports the idea that daydreams may act as a method by which information can be organized and reorganized creatively.

Talking to Lana

Lana is making great strides. Two years ago, she started learning to use the symbols on a computer key board to talk to her keepers. Lana quickly mastered about 40 words (SN: 6/2/73, p. 360). Now, at the age of four, Lana the chimpanzee is able to use about 75 word symbols, and she is asking to learn more. She has begun to ask her trainers the names of various objects. Lana's ability to learn a language suggests that the mental ability of chimpanzees may have been underestimated. Researchers at the Yerkes Regional Primate Research Center in Atlanta, where Lana is being trained, say that the methods used to teach Lana may eventually be used to help mentally disturbed or retarded children who have trouble learning to communicate.

Science News, Vol. 106