Joan Arehart-Treichel

Smith: Nerves respond to drugs.

They found that nervous tissue responses to the drugs varied considerably among the fraternal twins, but not among the identical twins. "So it begins to look," Smith says, "as if inherited characteristics are important in two ways to drug metabolism. They determine how quickly you break down a drug, and at the same time may also determine how your tissues respond to the drug."

Elliot Vesell of Pennsylvania College of Medicine and a long-time investigator into varying drug responses agrees with him. "There are probably a lot of genetic effects going on at the level of the interactions of drugs and nerve receptor sites," Vesell says. "We don't know about these, and we have not been able to test them. So they remain a sort of black box or mystery at present."

But there are some clues to how nerves might interact with drugs. One is the sense of taste, a nerve response. Taste sensitivity has been correlated with drug sensitivity. Taste sensitivity to the drug quinine, for example, can be 10,000 times more acute in one person than another.

Smith has preliminary evidence that taste sensitivity to drugs is genetically determined, just as responses of enzymes, heart tissue and eye tissue to drugs are genetically determined. Might taste-drug tests predict how a person's tissues might respond to a drug? "Maybe," Smith says, "but it's more likely such tests will give us better understanding of how a drug works."

All these efforts, pharmacologists believe, should lead to better drug treatment. Says Smith: "We have left the days where you give a drug and hope it will have the right effect." □

Portrait of a teenage suicide

Youth is not usually considered a time of despair, but surprisingly, teenage suicides have nearly doubled in Los Angeles County during the past year. Joseph D. Teicher, director of Child-Adolescent Psychiatric Services at the Los Angeles County-University of Southern California Medical Center, says the adolescent who attempts suicide concludes that it is the only solution after all other attempts to cope with his problems have failed. Problems with parents, poverty, peers, broken romance and pregnancy, explains Teicher, are usually involved in teenage suicide.

Teicher's studies reveal that the five years preceding the suicide attempt are marked by personal, medical, social and family difficulties. The most prevalent among the problems, however, involves the loss of important relationships early in life, leaving the youth alone in attempts to cope with the stresses and anxieties of growing up. In 72 percent of the attempts studied, one or both natural parents were absent from the home due to divorce, separation or death. Of those living with stepparents, 84 percent felt they were contending with an unwanted stepparent. In most of these cases, family conflicts were viewed as extreme.

Other factors preceding suicide attempts were changing schools, siblings leaving home and financial difficulties. Fifty percent of the suicide attempters' families had a net annual income of $3,600 or less. Half of these had a net income of $2,700 or less.

These circumstances, along with the normal problems of adolescence, overwhelm the suicidal youth, says Teicher. Moodiness, despair and rebelliousness further alienate the youth from those who might offer help. The need for a close relationship becomes intense and, in many cases, teenage romance offers this possibility. When the romance fails, the adolescent is often left with no friends, and the pregnancy that may result from the relationship further alienates the young woman from school, friends and family.

Treatment must be not only with the young person, Teicher emphasizes, but with the parents, the schools and community. "It behooves all of us," he says, "who are engaged in dealing with the young to be aware of critical events in the life pattern of the adolescent, and to be alert to the onset of finalized despair which leads to the tragedy of suicide." □

'Serious shortcomings' in classroom laser safety

Exposure to a laser beam, even from a low-powered laser, can damage human tissues in many ways, and can even cause blindness. So far, although several Government and industry groups have been working on safety standards for manufacture and use of lasers, a body of national, enforceable standards has not been adopted (SN: 2/5/72, p. 94). Few serious injuries have been reported to date, but that, according to a new survey by the Food and Drug Administration, can be attributed to nothing but dumb luck.

In cooperation with state health agencies FDA's bureau of radiological health conducted a seven-state survey of laser use in high-school and college science classes. A total of 288 lasers were surveyed in Colorado, Florida, Illinois, Montana, Oklahoma, Pennsylvania and Washington. The survey results, released this week, reveal what FDA calls "serious shortcomings" in classroom safety practices.

In many cases laser beams were directed toward students or areas through which students might pass. A few instructors even exposed students to laser beams deliberately. Lasers were often used in locations where the beam might bounce off a reflecting surface and strike a student. Seventy-two percent of the lasers were operated without displaying signs to warn passersby.

Though most lasers used in classrooms are low powered, a laser with a power output of as little as two milliwatts has been reported to have produced a burn on the human eye. Two milliwatts is well within the range of most of the lasers surveyed.

The FDA is developing laser safety performance standards for newly manuactured equipment. The proposed standards will be published within the next few months. They would not apply to lasers already in use. The FDA has no jurisdiction over lasers now being used in schools and colleges, but state health officials and local school boards do. FDA has sent preliminary survey results and a list of recommended safety practices to radiation control agencies in all 50 states, the District of Columbia, Puerto Rico and the Virgin Islands. Among the recommended precautions: (1) Avoid direct laser viewing; (2) Remove objects with reflective surfaces from laser beam paths; (3) Block the beam when it is not needed; (4) Prepare and test laser demonstrations beforehand when students are not present; (5) Use key-locked switches to prevent use of lasers by unauthorized persons; and, (6) Don't leave operable lasers accessible and unattended. □