

# medical sciences

Gathered last week at the annual convention of the American Medical Association in Atlantic City

## Transplant of uterus in monkeys

Organ transplants to date have centered on the vital organs. However Dr. James Scott and his colleagues at the University of Iowa Hospitals in Iowa City have developed surgical techniques to transplant a nonvital organ—the uterus—in the rhesus monkey.

Uteri and fallopian tubes were taken from four monkeys and reimplanted in the same animals. One monkey died from unknown causes; the other three remained healthy. However none of the three became pregnant when placed in a breeding situation, apparently because of changes in the fallopian tubes, including closure of some portions. If pregnancy could be made possible, Dr. Scott suggests, transplanting the uterus and tubes might be a means of solving certain sterility problems.

Yet even if conception and gestation could take place in a transplanted uterus and fallopian tubes, the ubiquitous risk of organ transplants—tissue rejection—remains. When Dr. Scott and his colleagues exchanged uteri and fallopian tubes from one monkey to another monkey in four more cases, the monkeys survived the surgery in good health, yet tissue examinations of the grafted organs revealed signs of rejection. Dr. Scott had hoped that the uterus might possess unusual immunological qualities because it represents “the only natural and completely successful grafting of tissue from one individual to another—that of pregnancy.” But apparently it doesn't.

## Interactions of vitamins C and B<sub>6</sub>

Little is known how the some 50-odd nutrients needed by man affect each other's requirements, so Dr. John Canham of the U.S. Army Medical Research and Nutrition Lab, Fitzsimons General Hospital, Denver, studied the interactions of vitamins C and B<sub>6</sub> and protein in prison volunteers.

Dr. Canham found that when subjects were placed on a vitamin B<sub>6</sub> deficient diet, blood levels of vitamin C dropped, and when vitamin B<sub>6</sub> was added to the diet, the vitamin C in the blood rose. Requirements for vitamin B<sub>6</sub> were also correlated with protein intake—the greater the protein intake, the greater the need for vitamin B<sub>6</sub> to help metabolize the protein.

## Smoking dogs and heart disease

Heavy cigarette smokers with heart disease are particularly prone to fatal heart attacks, and death is believed to be triggered by ventricular fibrillation (a rapid irregular, chaotic contraction of the muscle fibers of the ventricle). To learn more about the relationships, Dr. Samuel Bellet and his colleagues at Philadelphia General Hospital studied the effects of smoking on fibrillation, using dogs trained to smoke. Both normal dogs and dogs with simulated myocardial infarction (tied coronary arteries) were used.

On concluding a series of experiments that ran three years, they found a significant lowering of the fibrillation threshold of both normal and infarct dogs exposed to

cigarette smoking, but not in control dogs. It took only three cigarettes in 10 minutes of smoking for the dogs to have their thresholds lowered 30 to 40 percent below the normal, or two cigarettes in 15 minutes of smoking to lower their thresholds 20 to 25 percent. The fibrillation thresholds returned to normal about an hour-and-a-half after each smoking period.

The threshold lowering can be explained by nicotine stimulation of adrenalin and the catecholamines (adrenalin-like substances). These hormones are known to lower the fibrillation threshold. Injecting nicotine directly into the dogs' veins, Dr. Bellet found, did indeed stimulate adrenalin and the catecholamines.

Dr. Bellet and his colleagues believe their study results can be extrapolated to humans.

## Psyching out headaches

All too often physicians put patients on addicting barbituates or narcotics without seeking the underlying cause of headaches. This indictment was voiced by Dr. Seymour Diamond, a Chicago headache specialist, at an AMA family doctor session on the treatment of headaches. At least 90 percent of the headaches diagnosed in Dr. Diamond's clinics have a psychological cause—depression, anxiety, a disorder in mood, thought or behavior.

An additional eight percent of the headaches diagnosed at his clinics are vascular—either migraine or cluster. Emotional factors also play a significant role in these kinds of headaches. Migraines tend to run in families, and they affect women over men nine to one. Men have a corner on cluster headaches. Predispositions to this kind of headache are not inherited.

The remaining two percent of headaches at Dr. Diamond's clinics are due to serious organic conditions like brain tumor or a blood vessel disorder that could cause a stroke.

## The toddler and household poisons

There are a quarter-million tempting household products which a toddler can sink his teeth into and swallow. “No chemical agent,” says Dr. Howard Mofenson of the Nassau County (New York) Medical Center Poison Control Center, “is entirely safe, and none should be considered entirely harmful.” Some of the surprises he pulled from the Poison Control Center grab bag:

A month's supply of birth control pills will produce little harm other than nausea. Large amounts of suntan preparations, which contain ethyl alcohol, can make a toddler drunk. A one-year-old can consume 20 books of matches before experiencing adverse effects. Detergents are of low toxicity, except those for electric dishwashers; the latter can seriously damage respiratory tissue. Generally only red and orange crayons are harmful. Some 500 of the 300,000 plants in the United States are poisonous to humans and pose a special threat to toddlers. Plant poisons constitute 10 percent of the ingestions reported at the Poison Control Center.