

PHYSIOLOGY

Dogs' Brains Isolated

► THE BRAINS of 20 mongrel dogs have been kept alive outside their bodies for as long as seven hours by University of Wisconsin, Madison, scientists.

This is the first completely successful report of dog-brain isolation, Dr. Morris B. Glover, one of three scientists who did the research, told SCIENCE SERVICE.

An isolated brain eventually can be used to test the effect of anticancer drugs, Dr. Glover said, but the present research was aimed at determining brain metabolism without interference of the vascular system. So far it has not been discovered whether loss of brain activity is due to the absence of substances produced in the course of metabolism or to the presence of products of metabolism. More research is being done to find out.

Monkey-brain isolation was reported by SCIENCE SERVICE in September 1963, but the Madison scientists believe there are several advantages in using dogs. (See SNL, 84:195 Sept. 28, 1963.)

One is the ready availability of large quantities of compatible donor blood from dogs. Another is the ease of surgery on the

larger animal. The cost of dogs as experimental animals also is much cheaper than that for monkeys.

The operations were made painless on all 20 animals used. They all received 60 milligrams of morphine 45 minutes before administration of sodium pentobarbital. A cuffed endotracheal tube was inserted and the animal was ventilated with compressed air from a positive pressure respirator. During muscle sectioning a relaxant was used.

The isolated brains were maintained mechanically by glucose, by donor blood, heat exchanger, oxygen, carbon dioxide, a venous pump and a thermistor to regulate temperature. Electroencephalographic electrodes were inserted for checking electric currents set up in the cerebral cortex by brain action.

Electrocortical activity seems to follow blood glucose levels, the scientists said in a report in *Nature*, 206:94, 1965, but a point is reached when additional glucose will not increase the activity.

Dr. David D. Gilboe and William W. Cotanch reported the study with Dr. Glover.

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PSYCHIATRY

Dog Response Like Man's

► THE DIFFERENT WAYS in which dogs respond to psychological stress correspond to certain differences in people, a psychiatrist told the New York Academy of Sciences meeting in New York.

Dr. Samuel A. Corson, Psychiatric Institute and Hospital, Ohio State University, Columbus, has found that some dogs will respond to psychological stress by constantly releasing the hormone vasopressin into their blood stream. Vasopressin, released by the pituitary gland located in the base of the skull, causes constriction of certain small arteries.

Other dogs, "in response to the same stimuli, will show no evidence of vasopressin release or only a temporary secretion of this hormone in the first few conditioning sessions," the psychiatrist said.

These differences, he said, may help to explain why the blood pressure of some persons goes up and stays up during prolonged psychologic stress, while the blood pressure of others remains constant under stress.

Other relationships between psychological stress, derangements of the nervous system and ductless glands, as well as cancer, are also being studied.

Sarcoma 180, a type of cancer, grew more slowly in the thighs of mice that had severed spinal cords than in normal mice, Dr. Charles Forman, New Rochelle Hospital, New Rochelle, N.Y., reported.

This indicates, he told the conference, that there is a link between the nervous system and cancer growth.

Another cancer, the Walker carcinosar-

coma, grew more slowly in rats that had their pineal body removed than in normal rats. The pineal body is a small gland in the brain whose function is not clearly known.

This indicates another link between the nervous system and cancer, Dr. Forman said.

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MEDICINE

Birth Control Pill Found Safe for 11,711 Women

► WOMEN have used certain birth control pills for as long as three and a half years without developing new side effects, physicians from Planned Parenthood-World Population reported.

In a study group of 11,711 women, the progesterone-estrogen tablet taken as directed was "100% effective" and was associated with "diminishing side effects in continued use," the physicians told the American College of Obstetrics and Gynecologists meeting in San Francisco.

The study, based on medical examinations conducted at 38 Planned Parenthood centers across the United States, is the largest yet undertaken to evaluate extended use of the "pill."

No unplanned pregnancies occurred among women enrolled in the study, the doctors reported, confirming the continued effectiveness of the medication.

Drs. Alan F. Guttmacher, president, and Gordon W. Perkin, associate medical director of Planned Parenthood, disclosed that

the combined oral contraceptive experience of these 11,711 women on Enovid (5 mg.) was in excess of 29,000 years.

The incidence of thrombophlebitis, the formation of blood clots in a vein, in the women being studied seemed to approximate that of the normal population.

While on the medication, pre-existing pain from menstruation was relieved in three out of four women. The physicians emphasized that the data do not reflect "what is to be expected in patients who have used the medication less than two years."

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PSYCHIATRY

Pills for Depression More Effective on Men

► PILLS for treating depressive illness seem to have a better effect on men than on women, the Clinical Psychiatry Committee of the British Medical Research Council reported.

However, women seem to respond better to shock therapy.

In a study of 250 patients suffering from depressive illness, doctors found that the drug, imipramine, and shock therapy were more effective treatments than either another drug, phenelzine, or placebos.

After 12 weeks, 77% of the men treated only with imipramine were discharged. Treatment with shock therapy alone brought a poor response—38% discharge—"no better than phenelzine and the placebo," the physicians reported.

The women also responded poorly to the placebos and phenelzine. However, 61% of them on only shock therapy treatment and 41% on only imipramine had favorable outcomes.

Although shock therapy was a more effective treatment than imipramine during the first four weeks of the trial, after six months the slower-acting drug was found to be equally effective.

Initially, one of the four treatments—imipramine, phenelzine, shock therapy or placebo—was randomly assigned to each patient for a minimum period of four weeks while he was a hospital patient. After this time, if he did not respond to the treatment given, one of the others was tried.

Over the six-month period, 61% of the patients were given an additional or alternative treatment, and by the end, 80% of the patients had been discharged from all treatment.

The 55 physicians participating in this study did not know the kinds of drugs being tested. However, they were told that, if necessary, a treatment other than the one prescribed could be used.

Responses to the drugs could not be identified with any specific characteristics of the patient such as age or history of previous illness.

The study, carried out with the aid of a research grant from the Medical Research Council given to Dr. R. H. Cawley, senior lecturer and first assistant, department of psychiatry, Birmingham University, was reported in the *British Medical Journal*, April 3, 1965.

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