

medical sciences

DRUG METABOLISM

Phenobarbital effect on pill studied

By increasing the metabolism of estrogen, phenobarbital decreases the potency of oral contraceptives on the rat uterus. Studies will be made to find out whether or not the pill's effectiveness in humans might be decreased by a combination of the drugs.

Dr. Wayne Levin of the Wellcome Research Laboratories, Tuckahoe, N.Y., heads a team of researchers reporting in the July issue of *ENDOCRINOLOGY*.

"So far we have studied the effect on the weight of the rat uterus," Dr. Levin says. "Little is actually known of the mode of action of the contraceptive pill on humans—whether the pituitary gland or ovaries are involved. Also, the amount of estrogen in the pill has been quite large, so increased metabolism would not decrease its effect. If smaller amounts of estrogen continue to be used to lower the side effects, there is a possibility that stimulation of an enzyme inducer on estrogen metabolism might conceivably decrease the effect of the pill."

Officials of the Food and Drug Administration are planning to recommend Government grants to study the problem. So far, they say there has been no report of decreased effectiveness of oral contraceptives when they are used with phenobarbital.

DIABETIC BLINDNESS

Gland removal helps sight

About 70 percent of diabetics eventually show some evidence of diseased retina, and many become blind. News of improved vision through removal of one set of the salivary glands in three diabetics is therefore encouraging.

Dr. Zbigniew Z. Godlowski, a Chicago endocrinologist, says removal of the submaxillary glands has stopped massive retinal hemorrhages in these patients, and within three months has improved their vision from near blindness to just short of normal. He does not know why.

At present, diabetic retinopathy is being treated by removal of the pituitary gland, which is assumed to work because human growth hormone has an anti-insulin effect.

But Dr. Godlowski points out in the Aug. 2 issue of *MEDICAL WORLD NEWS* that pituitary surgery causes atrophy of the submaxillary glands, and he believes this is why it works in some cases.

"If so," he asks, "why not just remove the submaxillary glands?"

POSITIVE PRESSURE

Space suit adapted for heart patients

When an ambulance picks up a heart attack victim in future years he may be placed in a pressure suit.

The National Heart Institute at Bethesda, Md., has awarded a research contract to develop a suit to reduce the workload on a patient's heart. Hamilton Standard, a division of United Aircraft Corp. at Windsor Locks, Conn., will develop the suit in a 12-month program in cooperation with the University of Texas Southwestern Medical School at Dallas.

The circulatory assist suit, divided into pressure zones by cuffs inside the garment's arms and legs, would compress and release blood in the arteries of the legs and arms in time with the heart.

A timing device, triggered by an electrode attached to the patient's chest, would synchronize the cuff pulsating pressures with the heart's beat. The pressure would be applied to the cuffs in sequence when the heart is at rest and released when the beat begins.

VACCINE

Breakthrough seen against syphilis

A vaccine against syphilis may be several years away, but a beginning has been made by Mexican and United States health officials. They have succeeded in infecting three chimpanzees in Mexico with the nonvenereal disease pinta, which is caused by *Treponema carateum*. Syphilis is caused by *Treponema pallidum*, and patients with pinta appear to have immunity to the venereal infection.

Dr. U. S. Grant Kuhn III, who is coordinator of the treponemal unit of the Communicable Disease Center's Venereal Disease Research Laboratory in Atlanta, Ga., and Dr. Gerardo Varela, director of the Mexican Institute of Health and Tropical Diseases, are collaborating on research that will include attempted test-tube cultivation of the *T. carateum*.

Primates that have contracted pinta will be exposed to *T. pallidum* to see if they are immune to syphilis, and attempts will be made to transfer pinta to other laboratory animals.

Pinta is a skin disease caused by skin contacts. To infect the chimps, persons with pinta held their skin lesions directly to scraped skin surfaces of the animals. Like syphilis, the disease can be cured by penicillin.

AUTOTRANSPLANT

Toe to hand transplant

Transplantation of a lesser toe—usually the second one—for finger replacement can be fairly successful, especially with children, a Houston plastic surgeon says in the July 29 issue of the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

Dr. Bromley S. Freeman of Baylor University College of Medicine has used the technique in 16 patients. He reconstructed 12 thumbs and four index fingers.

Because of the prolonged period in which the patient must be kept in a cast joining his hand to his foot, Dr. Freeman does not recommend the procedure for adults.

Three to five weeks must be spent in the hand-to-foot position, and there is a possibility of arthritic changes in the larger joints and spine of older persons.

Digital transplantation has been tried off and on since 1890. It was largely abandoned in the 1940's because of poor results.

Dr. Freeman believes, however, that it was not so much the technique that was poor as it was the fact that surgeons expected too much.

"You can't expect a toe to grow to the size of a thumb or index finger or acquire the dexterity of a natural digit," he says.

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