

PHYSIOLOGY

Activity of Pituitary Gland Basis of Test for Pregnancy

Discovery that Excess Amount of Hormone Passes Into Blood Shortly After Conception May Save Lives in Future

THE FACT that the pituitary gland empties an excessive amount of its hormone into the blood within a few days after conception is the basis for a test for pregnancy which has recently been proved accurate by the following investigators: Dr. M. H. Friedman of the University of Pennsylvania, Dr. H. L. Reinhart and Dr. Ernest Scott of Ohio State University; Dr. P. F. Schneider of Northwestern University; and Dr. T. B. Magath and Dr. L. M. Randall of The Mayo Clinic.

The test, known as the Aschheim-Zondek test because it was devised by Dr. S. Aschheim and Dr. B. Zondek, of Germany, is of extreme medical importance and may be a life-saving measure for the patient.

More Than Body Needs

With the overproduction that is characteristic of natural processes having to do with reproduction, more of the pituitary gland's hormone is made at the time than the body needs. All of it is carried about the body in the blood stream and as the blood passes through the kidneys the excess amount of the hormone is filtered out and passes from the body in the secretion of the kidneys. If some of this secretion is injected into non-pregnant female experimental animals, a detectable change in the ovaries of the animals takes place.

There are some diseases which may make women incapable of standing the added strain of pregnancy. If, in such a case, there is a possibility that conception has taken place, it is of first importance that the fact be known as soon as possible. The Aschheim-Zondek test gives this information earlier than any other method.

The test is also valuable for distinguishing at an early stage between pregnancy and tumors or growths which may be dangerous and require immediate removal.

There are a number of other uses of the test which, conscientiously applied, rob the function of reproduction, which occupies so essential a place in our lives, of some of its dangers.

This search for a test of pregnancy has continued for 4,000 years. Drs. Aschheim and Zondek discovered a curious record of a pregnancy test in an Egyptian papyrus.

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HYGIENE

Industrial Hygiene Urged To Lengthen Adult Life

EFFORTS to add years to the span of life of the adult population require the aid of industrial hygiene and medicine, it appears from a report by Dr. R. L. Thompson, U. S. Public Health Service, to the American Public Health Association.

So far, the span of life has been increased in childhood, but the adult life span has not grown much longer. This is because the efforts of preventive medicine and public health have been

largely directed toward those diseases of infancy and childhood.

In order to lengthen the adult's span of life, the problem must first be attacked in those groups having excessive and unnecessarily high rates of sickness and death, such as workers in hazardous occupations, Dr. Thompson pointed out.

Comparison of the death rates for the industrial population with those for the general population gives every justification for the expenditure of time and money in the field of industrial hygiene and medicine, Dr. Thompson stated. He described the changes in this field since the time, only fifteen years ago, when the industrial physician was called "finger wrapper."

Both employers and employees have now an entirely different attitude toward the industrial physician. The physical examination is no longer used by industry to exclude workers, but to fit them to the right occupation and to watch the effect of the occupation on their health. Medical schools also have recognized the importance of this field of medicine and all of them now include some instruction in it, while some schools of public health offer complete courses for the industrial physician, and engineer.

"There is no other field which offers greater opportunities," was the conclusion reached by Dr. Thompson.

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MATHEMATICS

Famous Old Theorem Solved After Lapse of 300 Years

THE proof to one of the world's most famous unproved theorems has just been announced at the recent meeting of the American Mathematical Association. Prof. H. S. Vandiver of the University of Texas has an answer which the world's best brains have tried to get for almost three hundred years.

In the middle of the seventeenth century Pierre de Fermat casually jotted down on the margin of a book he was reading, that it was impossible to find three integers such that if two of them were raised to an integral power larger than two and added, then the sum would be the third integer raised to that very same power.

The case of course is not true when two is the power, and three, four, and five, the other integers. Three squared is nine, four squared sixteen, and their

sum twenty-five. This sum is equal also to the square of five.

What has challenged mathematicians ever since, is the fact that Fermat wrote in addition, that he had a simple, elegant proof, but that it was too long to put down on the margin. He died and left no solution.

Most mathematicians have at one time or another tried their hand at it. It was proved true in certain special instances, but never as a general case. At the same time, however, no one ever proved it was not true.

Prof. Vandiver's calculations have now shown that the theorem is true whenever the product of the three integers has no factor in common with the power integer.

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