

MEDICINE

Enzyme High in Dystrophy

Excessive amounts of the enzyme creatine phosphokinase mark muscular dystrophy, particularly in its early stages, and thus help doctors in detecting the disease.

► AN ENZYME that helps in detecting the muscle-wasting disease called muscular dystrophy was reported at a conference at the New York Academy of Sciences.

Excessive amounts of the enzyme creatine phosphokinase in the blood serum are found in the victims of the disease, usually boys, and in their mothers who are carriers, Dr. A. T. Milhorat and his colleagues at the Institute for Muscle Disease, Inc., New York, reported.

The researchers found very large amounts of the enzyme early in the course of Duchenne's muscular dystrophy. However, as the disease progressed, they discovered, the quantity of the enzyme gradually decreased until in the advanced stages it became almost normal in amount.

Muscular dystrophy in its commonest form usually begins in childhood, progressing slowly until the age of 20 when most victims are bedridden.

The mothers of affected boys, although they show no sign of the ailment, can transmit it to their sons, and can also pass on the trait to their daughters. Women who have this recessive trait are carriers.

Because the apparently healthy daughters of known carriers of this kind of muscular dystrophy have a 50-50 chance of being carriers themselves, a good test for the trait would help them know with greater certainty their chances of having a child with the muscular disorder.

Dr. Milhorat and his team of co-workers

found that the creatine phosphokinase in the blood serum of known carriers helps to release energy for muscle contractions by splitting apart the creatine, after which creatine phosphate is put together again.

In carriers, the researchers found a wider variation in the thickness of the muscle fibers than is found in normal muscle. They also discovered that some muscle fibers, randomly distributed and not in bundles, had undergone degeneration.

Several other scientists reported that tests for creatine phosphokinase are at present the best ways of detecting healthy carriers of muscular dystrophy.

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MEDICINE

Identical Viruses Found In African, U.S. Cancers

► VIRUS PARTICLES identical in structure to those of a common African childhood cancer have been found in one 27-year-old U.S. female.

Both the African and U.S. virus particles are of a shape and size characteristic of a herpes virus. However, this does not necessarily mean that the particles cause cancer, scientists at the National Cancer Institute, Bethesda, Md., warned.

Studies of tissue cultures of tumor cells taken from the U.S. lymphoma patient and from Africans having the childhood cancer, revealed the identical structure of the virus particles from the two sources. The particles occur in the nucleus, or cytoplasm, of approximately one of 300 cells in the culture.

The identity was reported in the Journal of the National Cancer Institute, November, 1965, by Drs. Gregory O'Connor and Alan Rabson of NCI.

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PUBLIC HEALTH

Mice Swim in Drug Study

► BY MAKING MICE SWIM, despite their dislike of water, a scientist is striving to find out more about the relationship between exercise and corticosteroid drugs, which are closely related to the naturally occurring hormones of the adrenal glands.

These drugs are beneficial in a number of diseases, but apparently cause a wasting and diminishing, or atrophy, of muscles in humans as a side effect.

A biomedical engineer, Jack Pyenson, has designed a "mouse-swimmer," an experi-

mental swimming pool scaled down to mouse size. He works with Dr. Georgina Faludi, senior instructor in endocrinology and metabolic diseases at Hahnemann Medical College and Hospital, Philadelphia.

Mr. Pyenson's mouse-swimmer consists of a stainless steel tank designed to contain six cylindrical clear plastic mouse cages supported by cables. Under thermostatic control, the water automatically fills the tank once an hour. When the proper level of water is attained, the mouse cages are automatically lowered into the water, remaining for 10 minutes while the mice swim.

At the end of 10 minutes the cages automatically lift out of the water and a fan blows warm air over the mice to dry them.

Mr. Pyenson reported the experiment in Philadelphia at the Animal Care Panel, and Dr. Faludi reported her work at a meeting of the New York Academy of Sciences.

Mice do not ordinarily like to exercise. They will not walk a treadmill without an electrical prod connected to it, and this naturally produces pain. There also is a danger that if the mouse stops walking while the mill is moving, the animal may be injured.

Mr. Pyenson's problem, therefore, was to devise a method of exercising the mice painlessly. Thus, the natural output of the corticosteroids produced by pain would be controlled. Most animals will swim instinctively to survive in water, and mice are no exception.

Previous studies have been done on animals, but without a regular exercise routine. If exercise cannot solve the problem, it could mean that investigators will have to change the basic structure of corticosteroid drugs to get rid of the side effects.

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Kansas State University

SOLAR AIR HEATERS—Air is drawn into these solar heaters in position on the Kansas State University agronomy farm, Manhattan, where it is warmed before being blown into grain bins. The heaters may be of particular use in developing countries where there is a shortage of fossil fuel.