

MEDICINE

Susceptibility to Colds is Tested by Use of Oxygen

American Chemical Society Learns of Physical Tests From Which Number of Colds Can Be Predicted

WITH autumn and winter seasons for colds just around the corner, new tests reported to the American Chemical Society promise to tell you whether you are a favored risk who will have only one cold during coming months or a victim of five or a half dozen colds, one after the other, with pneumonia waiting on the sidelines.

The new arithmetical rating test on cold susceptibility, devised by Dr. Arthur Locke of Western Pennsylvania Hospital, promises to go one step farther in the control of colds.

The common cold is recognized as being one of the most costly, in terms of dollars and cents value to the individual and his employer, of all afflictions of mankind.

The new cold susceptibility test is being used to find treatments which will increase cold resistance. Tests with animals have shown that if rabbits could eliminate injected pneumonia germs from their bodies faster than the organisms can grow they will survive the drastic treatment. When the body's mechanism for removing the germs was not working at its best the speed of elimination could not keep pace with the growth and the animals died.

Similarly, a pump can keep a leaky tub dry only when its elimination rate is faster than the seepage rate.

In man, Dr. Locke indicated, the factor decreasing the danger to colds and infection from pneumococci organisms is physical fitness, as determined by the ability of the body to consume oxygen per unit of body surface.

One hundred people went through hospital tests in which they rode a stationary bicycle for about two minutes, until they were breathless but not exhausted. The contestants were given ratings on a scale of from one to zero. Only three out of a hundred gained the top rating of unity for their ability to use 1,500 cubic centimeters of oxygen per minute for each square meter of their body surface. People who consumed 900 cubic centimeters were rated six-tenths and considered in good condition.

With such arithmetical ratings before them, Dr. Locke and his associates then studied the number of colds each of the 100 individuals had in the next seven months. Sixty-four per cent of the "good condition" people rated six-tenths or better had only one cold or less, while 80 per cent of those with ratings below five-tenths had four or more colds.

The parallel animal experiments where the pneumonia organisms were injected showed comparable survival rates.

Dr. Locke and his associates did not try it on their human test subjects but in animals it was found that decreased fitness followed: maintenance in overheated quarters, morphine poisoning, toxemia and starvation where the loss in weight each day amounted to two and one-half per cent of the total body weight.

By contrast, Dr. Locke found that the following aided the rabbits to attain better physical fitness and an accompany-

ing increased resistance to the pneumonia germs:

1. Removal to cooler quarters.
2. Injections of chemical solutions such as antuitrin, cortin, sodium chlorate and liver extract.

In summary the Pittsburgh cold research gives a method of rating one's cold susceptibility with an accuracy of 80 per cent and a hint, at least, into the possible methods whereby greater resistance can be achieved. In no sense can the work yet be considered a cure for the common cold, but it does offer future hopefulness that from such a line of attack a definite preventive step will be achieved.

Science News Letter, September 19, 1936

PHYSICS

West Coast Has New Atom Smasher Called "Rumbatron"

A NEW high efficiency radio oscillating circuit which should have equal use in television, in radiotherapy medical treatment, extremely high voltage X-rays and in experiments wherein the nuclei of atoms are shattered, has been developed at Stanford University by Dr. William Hansen. Patent rights have been assigned to the University.

The apparatus, known by members of the physics department as the "rumbatron," consists of a large copper-lined cylinder having a (Turn to page 183)



DR. HANSEN WITH THE RUMBATRON