PUBLIC HEALTH

Exercise Cuts Cholesterol

Cholesterol, the substance blamed for causing heart problems, was reduced in a group of men subjected to hard endurance and strength exercises, William E. Small reports.

➤ PRESIDENT KENNEDY'S physical fitness program was underscored by a report of drastic serum cholesterol reduction in a group of men subjected to hard endurance and strength exercises.

The study was undertaken on 42 middle-aged white-collar workers whose average cholesterol levels were far above normal. After a year of strenuous exercises, the average levels dropped below the average for the population, providing significant indication of the benefit obtained from the program.

Cholesterol is a waxy fat in the blood stream which has been accused of causing coronary heart problems.

Dr. Lawrence A. Golding, head of the physiology laboratory at Kent State University, Kent, Ohio, explained the rigorous program:

"The men who came into the program were tested at the beginning and found to have an average serum cholesterol level of 261. The group met as a class Monday through Friday during the noon hour, beginning with a small work load and gradually building in intensity."

When the program began, Dr. Golding said, the men could only do a few sit-ups and push-ups. Now they are doing 35 or more of each.

Although their appearances have not greatly changed, their physical endurance and strength has increased to the point where they can run more than a mile, and then do calisthenics and speed swimming, all in less than 45 minutes without complaint.

The real significance, however, was the great drop in cholesterol levels of the group as a whole and the even greater changes in individual members. (The changes, he said, were in direct proportion to attendance.)

The average drop of the level in the group was from 261 to 195, with individuals going from nearly 300 to around 150.

Physical fitness, Dr. Golding explained, is much more than strength such as is found in laborers. It is the building up of endurance, lung power and muscle tissue.

The men were put on no dietary restrictions and, in fact, reported an increase in caloric intake soon after the onset of the program.

Dr. Golding presented his findings at the Federation of American Societies for Experimental Biology meeting in Atlantic City, N. J.

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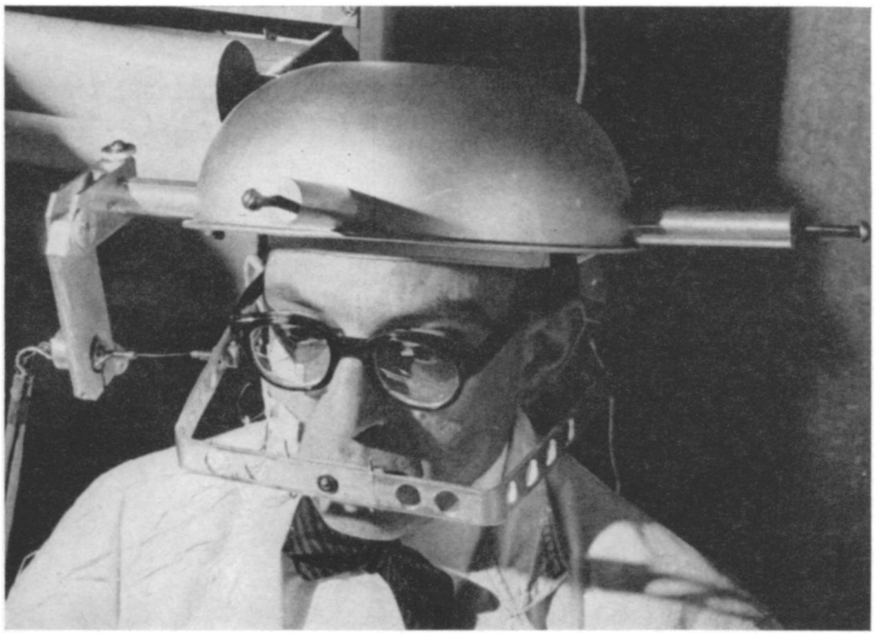
Blood Freezing Process

➤ HUMAN RED BLOOD CELLS can now be stored for unlimited time for almost immediate use with a new freezing process.



NO JAWING HERE—Dr. Frederick Liebman of the New York University Dental Center tries on his special apparatus that registers jaw and muscle movements. He is studying dental problems caused by unsatisfactory contact between the teeth of the upper and lower jaw.

Protected by a protein from human serum, the red cells of blood can be frozen with liquid nitrogen at 320 degrees below zero Fahrenheit and thawed for use with little damage, biologists were told.

Five researchers from Linde Company, Division of Union Carbide Corporation, Tonawanda, N. Y., did the research under a contract with the U. S. Navy. They found that the blood cells, when suspended in an albumin solution three times as strong as that found in normal human serum, could be frozen and thawed without destroying more than five to ten percent of the cells.

They reported at the Federation of American Societies for Experimental Biology meeting, Atlantic City, N. J., that the cells survived reasonably well in circulation after undergoing the process.

Quantities of blood up to one pint can be frozen in a mechanized and automatic blood processing unit developed by bio-engineers at the laboratories in Tonawanda, they said.

Blood banking methods have not permitted the storage of transfusable human blood longer than 21 days, they explained.

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Dehydration in the Arctic

➤ DEHYDRATION is the greatest danger to humans stranded in the Arctic even though there is plenty of water in the form of snow.

Dehydration is even worse than freezing or starving and makes a man weak and more susceptible to cold and frostbite, two Stanford University physiologists reported at the Federation of American Societies for Experimental Biology meeting in Atlantic City, N. J. The causes of this dehydration are still to be discovered.

Physiological changes were measured in six men exposed to survival situations similar to those encountered by a pilot who crashed in the Arctic. The men were sent out on a frozen Alaskan river separately, dressed only in a pilot's suit, and left without food for five days.

Although the men did not undergo the mental anguish of a truly lost pilot, they did undergo the physical rigors which would be encountered.

Two of the six men tested were arctic survival instructors with much arctic experience. Although the temperatures ranged from zero to 30 degrees below zero Fahrenheit, the other four subjects, native Californians, performed as well in the cold.

All the men lost energy equal to that of a moderately hard day's work of a farmer, but the weight loss was much greater than expected. Many facts pointed to dehydration even though the men drank all of the melted-snow water they desired.

The Stanford team, Dr. Terence A. Rogers and James A. Setliff, suggested to the biologists that the physiological repercussions of dehydration and a resulting decrease in blood volume are the most immediate hazards to a survivor in the Arctic.

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