

MEDICINE

Quiet After Heart Attack

Many deaths of young men suddenly hit by blocking of coronary arteries could be prevented if victims were not moved during the crucial hours following the attack.

► MANY, PERHAPS two-thirds, of sudden deaths from heart disease in young men could be prevented if the patient is kept very, very quiet for the first four hours after a heart attack.

Research suggesting this was reported by D. s. Elmer Milch, Richard W. Egan, Ting Wei Hsia, Arthur A. Anderson and Walter Zimdahl of Buffalo, N. Y., General Hospital and the University of Buffalo School of Medicine at the meeting of the American Medical Association in Chicago.

Rushing the patient to the hospital, even in an ambulance, immediately after a heart attack is a mistake, these men think.

Too often the patient, in such cases, is dead by the time he reaches the hospital or dies within a half hour after getting there. Keep the patient at home, or resting in his office if the attack came while he was there. Use morphine or other sedatives to keep him quiet, and give oxygen if necessary, these doctors advise.

In fact they think many heart patients can be treated just as well at home as in the hospital. But the important thing, they stressed, is not to move the patient too soon. When he is moved, the hospital

should be notified in advance so that the patient can be taken directly to his bed and not kept waiting for the usual admission procedures. And the patient's doctor should be at the hospital when the patient arrives, to supervise the handling and treatment.

The evidence which backed up this advice came from dogs. When these animals were anesthetized and prepared for study of the effects of blocking of the coronary arteries, which is the condition that causes sudden heart deaths in many young men, the slightest outside stimulus, such as brushing against the operating table, caused heart fibrillation and death.

Following this discovery, the scientists tried various means of reducing these effects of outside stimuli. When the sympathetic nerves in the chest were cut, so that the stimuli were blocked from reaching the heart, the death rate during the first half hour was cut from 42% to 14%. The Buffalo doctors do not advise this operation for victims of heart attacks but consider it good evidence for the importance of keeping the patient absolutely quiet during the first crucial hours after the attack.

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METEOROLOGY

Machine Predicts Weather

► A SIGNIFICANT advance in weather forecasting and in understanding the vast forces that decide our weather is being made with the aid of the fastest and latest of electronic computers, just unveiled at the Institute for Advanced Study at Princeton, N. J.

This advance has come about through the use of the machine in the system of numerical forecasting. A human being with a desk calculator, working 30 days a month eight hours a day, would take 24 months to complete one 24-hour weather forecast, doing the same calculations now given to the machine. The ENIAC, a larger but slower machine, doing the same calculations, takes 48 hours.

The new computer has successfully completed one 24-hour forecast in three hours, with the machine working at half speed. At top speed, and with many of the experimental calculations eliminated, it is expected that the machine can complete a 24-hour forecast in 48 minutes.

The machine took six years to design and construct. Dr. John von Neumann of the

Institute was at the head of the staff which did the job, and is now top man of the calculator division of the Institute. Dr. Jule G. Charney, one of the nation's top meteorologists, carried out the forecasting problems.

Present forecasts are made for the general weather pattern at approximately 18,000 feet altitude over Canada, the United States, about one-third of the Atlantic and the Caribbean. The calculator successfully completed the computations for one 24-hour and one 12-hour forecast, together with several other unrelated problems, before it was unveiled.

Forecasts made so far, Dr. Charney told SCIENCE SERVICE, point to the need for making a three-dimensional numerical forecast—one taking into account the weather patterns at perhaps eight levels, instead of only at 18,000 feet.

The two-dimensional, or one-level, forecasts indicate that it is necessary to find out the relative importance, in weather changes, of the process by which potential energy, derived from the sun, is changed into the

energy of motion. Clues to this will be found by using the machine on three-dimensional forecasts.

With the computer, Dr. Charney can use a great mass of information about the weather, far more than any individual forecaster can hold in his head. The machine has a memory bank, consisting of 40 cathode ray tubes, which holds formulas representing weather conditions at 361 grid points over North America, and which also holds the orders given to the machine as to what to do with this information.

This information is coded into "language" the machine can understand. Then it executes about 1,660,500 orders—such as "add this set of figures"—to predict the weather pattern one hour from now. Next it automatically predicts the second hour's weather pattern, and continues until it reaches 24 hours from now.

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PLANT PATHOLOGY

Electrical Diagnosis Spots Healthy Potatoes

► ELECTRICAL DIAGNOSIS may tell the difference between healthy and virus-infected potatoes.

This is indicated by experiments carried out by scientists of the Commonwealth Scientific and Industrial Research Organization in Canberra, Australia. The electrical diagnosis was made by sticking two metal pins into the potatoes and determining the impedance between them.

In most cases significant differences were found between the healthy and virus-infected potatoes. Experiments are continuing to determine how the impedance and phase angle change with maturity of the potatoes. The work was done by C. G. Greenham, D. O. Norris, R. D. Brock and A. M. Thompson of the organization and reported in the British scientific journal NATURE (June 7).

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MARINE BIOLOGY

Rare Snake Mackerel Snagged by Hook and Line

► A RARE snake mackerel, more than three feet long, has been caught on a hook and line, possibly the first ever so snagged, the Woods Hole Oceanographic Institution, Woods Hole, Mass., has reported.

The snake mackerel was hooked by Frank J. Mather, III, from the research vessel *Atlantis* during an oceanographic investigation between West Africa and Brazil last winter.

Two of the snakelike members of the mackerel tribe jumped aboard the raft *Kon-Tiki* near the equator in the Pacific Ocean. These three are believed to be the only specimens of this fish ever seen alive.

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