BIOCHEMISTRY

Potassium vs. Sodium

A new heart disease treatment that is based on properly balancing the potassium level against the sodium level in the body has had successful results.

➤ SODIUM is the human heart's enemy while potassium is its friend, a noted Mexican physician said at a professional medical symposium.

Dr. Demetrio Sodi Pallares of the Institute of Cardiology in Mexico City made the comments while describing a dramatic new heart disease treatment in San Diego.

His treatment is based on the "friend and enemy" principle. It consists of increasing the amount of potassium—either by diet or by injection—and of decreasing the amount of sodium in the heart.

The treatment, developed in Mexico City, is now being used in many countries in the world. It is used in Cleveland and in the Veterans Administration Hospital in Los Angeles.

The treatment has been successful in a wide variety of heart diseases, including infarction, angina pectoris, heart failure, digitalis intoxication, myocarditis and arrhythmias.

Dr. Sodi said the functioning of heart cells depends on a difference between the sodium level outside the cells and the potassium level within them.

When too much sodium, one of the two elements in common table salt, gets into the tissues, the sodium level builds up in the cells and destroys the balance. This is called depolarizing.

The treatment Dr. Sodi described restores polarization to the heart cells.

The seriousness of the heart condition determines the precise treatment, Dr. Sodi reported. Some cases are treated merely by enriching the potassium content of the diet and decreasing salt.

But acute cases, such as a heart attack, he said, require injections of a solution of potassium, glucose and insulin using a catheter through the arm to a large vein leading into the heart. This procedure in difficult cases was continued for as long as two months.

Foods that contain the enemy, sodium, include ham, cheese, egg white, sausage, sea food, nuts and all canned food, Dr. Sodi reported. Foods rich in potassium, the heart's friend, are meats, oranges, grapes, tangerines, tomatoes, prunes and wine.

Dr. Sodi reported that the lack of potassium is a much more important cause of heart trouble than are the presence of widely publicized cholesterol and other fats.

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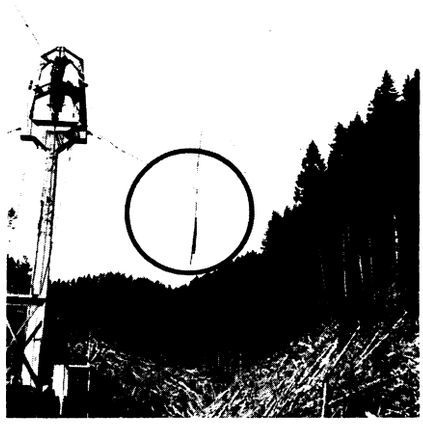

Goodyear

BALLOONS FOR LOGGING—Logs (circled) weighing more than a ton are moved quickly over the rugged terrain at Reedsport, Ore., by a helium-filled balloon. The use of balloons for logging, proposed as an alternative to building expensive logging roads, also helps prevent soil erosion conditions.

RADIOLOGY

Radiation Tolerance High

➤ HUMAN BEINGS may be able to tolerate a greater degree of radiation exposure than has been supposed, the British Radiological Protection Service at Sutton, near London, reported.

Standards of radiation are related to the activity of radium, mainly because experience with radium is more extensive than with other radioisotopes. Radium activity in the body is measured in two ways—by counters detecting radioactivity inside the body, and by the amount of radon, or radium emanation, breathed out.

The international standard of permissible dose levels has been based on the assumption that 70% of the radioactivity is breathed out as radon, leaving 30% in the body tissues.

According to exhaustive tests made by the British Radiological Protection Service, however, only 58% of the radioactivity is breathed out.

This means that it takes more radioactivity than had been supposed to produce dangerous biological consequences, and that the maximum permissible dose levels are probably too low. In any case, these tests confirm the extreme safety of the standard levels as now fixed.

Consequences of the discovery are not yet apparent in detail, but they do indicate that radioactivity could be used to a far greater extent—for example in many branches of research—especially in "labeling" compounds for tracing in the human body.

The British Radiological Protection Service belongs jointly to the Medical Research Council and the Ministry of Health, and acts as a central organization for control of ionizing radiations as well as a research center.

The Protection Service now issues about 400,000 film "badges" each year for use by persons exposed to radiation. Badges of this kind record excessive doses by film darkening, and then the badges are sent to the Protection Service for a report within an hour after arriving at Sutton.

The service can usually suggest reasons for the high dosage and suggest ways of reducing them.

Among those wearing the badges are medical missionaries in Africa, people in Hong Kong who apply luminous paint to clocks, and high altitude air pilots who check exposure to cosmic rays.

Badges of this kind are also worn in the United States.

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MEDICINE

Radioactive Strontium Absorption Prevented

➤ MAN may at last be able to protect himself from the dread effects of radioactive strontium, found in milk and water supplies.

The first successful experimental attempt ever to prevent the absorption of the deadly matter into the intestine—the only way it can work into the skeleton and cause bone cancer—was disclosed at the World Congress of Gastroenterology in Brussels.

Dr. Stanley C. Skoryna, Polish-born director of McGill University's Gastrointestinal Research Laboratories, Montreal, reported the extraordinary discovery after seven years of work. He said the hot strontium can be "bound" quite discriminately by a naturally occurring, nontoxic substance, acidic polyaccharide, derived from an unusual source: a certain species of brown seaweed.

Dr. Skoryna stated that the effectiveness of the agent had been conclusively demonstrated in controlled studies carried out in living rats, following injection, routine feeding and stomach tube administration.

Dr. Skoryna expects the development of a pill containing acidic polysaccharide to have special significance in preventing hazards to workers in nuclear research centers and atomic energy power plants from the inadvertent release of radioactive materials.

Pills could also be taken with food in fallout areas to bind the radioactive strontium and carry it out as waste, he added.

Radioactive strontium, which emits very short rays that are harmless to the skin can only enter the body by ingestion with food.

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