

MEDICINE

Blood, Plasma, Rubber Armor Anti-Shock Weapons in Raids

Practical Hints for Defense-Minded Physicians
Provided in Report to American Heart Association

RUBBER armor for protection of persons exposed to air raids, use of whole blood or blood plasma for shock due to air raid or similar injuries, and a new rule for first aiders on treating shock are practical hints for defense-minded physicians and laymen in the report of Dr. Alfred Blalock, Vanderbilt University, to the American Heart Association in Cleveland.

The rubber armor idea comes from British experiments, quoted Dr. Blalock. "The explosion of a bomb," he pointed out, "may cause death even though the individual is not struck by shrapnel or debris."

In such cases, the British workers found, the most outstanding injury is hemorrhage from both lungs. The pressure wave of the blast from high explosives bruises the lungs by its impact on the body wall. This can be prevented or diminished if "the body is clothed in a suitable material which is able to take up and disperse the pressure wave."

Thick layers of rubber, the British found, protected the animals in their experiments from the blast injury.

Recent discovery that brain concussion results not from the intensity of the blow on the head but from sudden acceleration resulting from the blow may help to explain the effects of blast, Dr. Blalock suggested. If the head is kept from moving when the blow is struck, he said, the phenomenon fails to occur.

Local loss of blood and fluid, at the injured spot, are, in Dr. Blalock's opin-

ion, the "most important and most frequently encountered of the initiating factors which result in a decline of the blood volume and in traumatic (injury) shock," although he believes other factors may cause shock in some cases.

The fluid loss theory is the most hopeful from the standpoint of treatment, and recent air raid experiences in Bristol, England, show the effectiveness of treating shock according to this theory. Dr. Blalock quoted the case report of a patient badly wounded and in desperate condition of shock who was given three pints of blood plasma and four pints of whole blood within a few hours. The wound was cleaned up and within 24 hours his general condition was "good" and blood pressure about normal.

"The single most important therapeutic procedure in the treatment of traumatic shock consists of the intravenous introduction of whole blood or plasma or serum," Dr. Blalock declared.

For the first aider, there is a warning hint not to use hot water bottles or other means to raise the temperature of the extremities of persons in shock. The hands and feet are cold at least in part, he pointed out, because some of their blood has been diverted to more vital structures, such as the brain, heart and adrenal glands. The internal temperature may not be depressed. The condition of patients in shock may become worse, Dr. Blalock warned, if intensive efforts are made to elevate the skin temperature.

Science News Letter, June 7, 1941

● Earth Trembles

Information collected by Science Service from seismological observatories resulted in the location by U. S. Coast and Geodetic Survey of the following preliminary epicenter:

Friday, May 16, 9:24.7 p.m., EST

In Queen Charlotte, New Hebrides region, 1500 miles west of Samoa. Latitude, 12.9 degrees south. Longitude, 166 degrees east.

For stations cooperating with Science Service, the Coast and Geodetic Survey, and the Jesuit Seismological Association in reporting earthquakes recorded on their seismographs, see SNL, Feb. 22.

MEDICINE

Discovery Links Diet With Blood Cancer

AFUNDAMENTAL discovery showing a relation between diet and cancer of the blood, or leukemia in mice and also between diet and arteriosclerosis, or hardening of the arteries, in the same laboratory animals was announced, at the meeting of the National Advisory Cancer Council, by Dr. Carl Voegtlin, director of the National Cancer Institute.

No direct evidence that cancer or leukemia in humans is due to diet has yet been obtained, Dr. Voegtlin cautioned, but he stated that the discovery "indicates that diet has a lot to do with experimental cancer."

The discovery was made by Dr. G. B. Mider and Dr. Julius White, of the National Cancer Institute. They found that when a cancer-causing chemical, methylcholanthrene, was painted on the skin of mice fed a diet rich in sulfur containing amino acids, the animals developed leukemia, the malignant and fatal disease often called cancer of the blood. When, however, the cancer-causing chemical was painted on the skins of mice fed a diet low in sulfur containing amino acids, the animals de-

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