

PHYSIOLOGY

Cold Baths Cut Colds

➤ **RUSSIAN CHILDREN**, six and seven years old, have been toughened up with cold water baths.

The scientist who experimented with the "hardening" process for pre-school children (Russian children begin regular school at age seven), recommends its general use throughout the Soviet Union at any time of year under any circumstances. The only factor that should be considered, O. T. Tarasova of the department of school hygiene at the V. I. Lenin Pedagogic Institute in Moscow says, is the particular type of higher nervous activity of each individual child.

In the experiments, 110 children, six to seven years old, in three kindergartens in Moscow received the cold water baths. Sixty other children did not and served as controls.

The children under observation were subjected to daily bathing up to their waists in water that was 91.4 degrees Fahrenheit at first and then gradually lowered to 57.2 degrees Fahrenheit. The experiment lasted for three and one-half months.

The children's reaction to the "hardening" was measured by taking their temperature under both naked and covered skin conditions; pulse; blood pressure; blood picture; and by studying the reduction of the frequency of colds.

From the study, the Soviet scientist concludes that:

1. The response to the cold baths depended not only on the water temperature and the duration of its application, but also on the particular type of higher nervous activity of the child.

2. Adaptability, conditioned reflex action and functional changes which the children exhibited differed according to whether the children belonged to the robust, even-tempered type; or to the robust, excitable type; or to the weak type.

3. Increased bodily resistance of the children was noted as a result of daily bathing; the frequency of colds was markedly reduced and in cases of chill the illness ran a smooth and short course without complications.

The author recommends the application of cold water baths in children of pre-school age at any time of year and under any conditions, with attention paid to the particular type of higher nervous activity of each individual child.

The Soviet method for hardening its youngsters is reported in the *Abstracts of Soviet Medicine* (Vol. 1, No. 2, 1957, Part B) published by the Excerpta Medica Foundation in Amsterdam, The Netherlands.

Science News Letter, December 7, 1957

MEDICINE

Carcinogen Helps Cure

➤ **A WOMAN** dying of advanced breast cancer has been dramatically helped by injections of a chemical used in the past to cause cancer, rather than cure it.

The cancer-causing chemical, 3-methylcholanthrene or MC, was injected into six women, all in the advanced stages of breast cancer, by Drs. Charles Huggins and Jack D. McCarthy, University of Chicago, as a "last ditch" attempt to halt the rapidly spreading disease.

The treatment was most successful in one woman who had previously undergone several surgical operations for cancer and at the time of the MC injections was breathing only with great difficulty because the cancer had spread to her lungs.

After more than a month of daily injections, cancerous lumps on the skin began shrinking and her lungs cleared. Six months later the cancer appeared to be gone completely and the woman was back home doing her housework.

Results were not so dramatic in the other five cases, although in four of them the cancers were arrested temporarily and cancer colonies in the lymph nodes, skin, bone, lungs and brain shrank up. Two of the original six have died.

The effect of the MC injections is a medical paradox. The chemical is universally used to induce cancers in laboratory animals but some scientists have found that it, and other related chemicals, sometimes

slows down or stops certain transplanted growths in animals.

X-rays are another example of this medical mystery. Although they frequently cure cancer in humans, they are powerful causers of cancer when given in excessive amounts.

In the six human cases, the MC caused a lowering of hemoglobin and blood proteins as well as a temporary anemia, but these conditions improved at the end of treatment.

None of the patients developed new cancers, a hopeful sign that the chemical, in the dosages used, may not cause cancer in humans. However, the scientists continue to regard it as a potentially dangerous drug which should be used only in certain cancer patients when all other measures have failed.

They published their findings in *Cancer Research* (Nov.).

Science News Letter, December 7, 1957

BIOCHEMISTRY

Identify Chemicals in Blood That Kill Germs

➤ **HOW THE** body's white blood cells fight off invasions by disease bacteria is being probed by identifying the chemicals that give the cells their ability to kill.

One recently discovered substance that destroys intestinal bacteria is known as

phagocytin, Dr. James G. Hirsch, Rockefeller Institute for Medical Research, reported.

This substance is found in the specialized cells possessed by all higher forms of life and known as phagocytes.

Phagocytes, Dr. Hirsch told the National Academy of Sciences meeting in New York, move freely about the body and can ingest foreign matter from their surroundings.

Besides the phagocytes, both an acid environment and the protein lysozyme are known to kill bacterial invasions. Extremely small amounts of phagocytin are enough to kill promptly the various types of microbes that are usually found in the intestinal tract.

Scientists at the Institute are now working on purifying phagocytin.

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