

MEDICINE

# B Vitamins May Have Bearing On Human Cancer Problem

## Sores of Mouth and Tongue Often Seen With Cancer Cleared Up in Some Cases By Huge Doses of Yeast

REPORTS hinting strongly that the B vitamins have a bearing on the cancer problem were presented by Dr. Jules Abels, Memorial Hospital, New York City, at the meeting of the American Association for Cancer Research in Boston.

Sores of the mouth and tongue, of the kind often seen with cancer of the mouth and tongue and sometimes called forerunners of cancer, cleared up in some cases when patients were given large doses of brewers' yeast, Dr. Abels reported. Some of the results were spectacular, but in other cases improvement was not so marked. Huge doses of yeast, from two to four ounces daily, were required to effect the improvement. Dr. Abels said the patients were "a bunch of martyrs to take it."

Whether it was the B vitamins or some other substance in the yeast that caused the improvement was not stated. About half the patients who developed the mouth and tongue sores had either been eating poor diets, lacking in vitamins, or had some stomach or liver ailment which would interfere with absorption or use of the vitamins if they did eat enough of them.

Leukemia, the cancer-like blood disease, also has some relation to one of the B vitamins, thiamin. The white blood cells, of which there are far too many in leukemia, cannot utilize thiamin as normal white blood cells can, Dr. Abels has discovered.

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## Test for Vitamin Need

A SIMPLE test for determining who needs vitamins and who is already getting enough of them was announced by Dr. V. A. Najjar and Dr. L. Emmett Holt, Jr., of Johns Hopkins University, at the meeting of the Federation of American Societies for Experimental Biology. The test is made after a twelve-hour overnight fast.

If, during the thirteenth hour, the person tested is still excreting vitamins

via the kidneys, he probably has a good surplus and does not need any more than his diet has been furnishing. If he is not excreting them thirteen hours after dinner, he probably needs to take more vitamins. The test so far has been limited to three of the B vitamins — thiamin, riboflavin and nicotinic acid.

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## Fat Linked With Cancer

THE DAY when a diet to prevent cancer may be evolved seems a little closer as a result of reports to the American Association for Cancer Research.

Three types of diets: 1. a weight-

reducing diet; 2. diets in which a special food chemical is omitted; 3. diets in which certain food chemicals are carefully balanced, are the possibilities seen, although most of them relate to laboratory animals and much of the evidence is still conflicting.

The case for a reducing diet as a cancer preventive was presented by Dr. Albert Tannenbaum, Michael Reese Hospital, Chicago. Human insurance statistics, he noted in a previous study, showed that apparently persons of average weight or less are not as likely to have cancer as those who are overweight.

Turning to the laboratory for further light on this finding, Dr. Tannenbaum put mice on reducing diets. The diets contained all the vitamins, minerals and other essential food elements, but were short on starches and sugars in order to reduce the number of calories. The mice on the reducing diets consumed on the average about two-thirds the amount of food taken by a control group of mice allowed to eat all they wanted.

"Invariably in the underfed groups, tumors (cancers) developed in markedly



THREE OF A KIND

*Triplet fawns are somewhat of a rarity among deer, the usual rule being that a doe produces a single offspring at her first parturition, and twins every year thereafter. These three fine youngsters were the "family" of Dolly, a pet doe on the Wichita National Forest, in Oklahoma.*

fewer mice; moreover, those tumors appeared at a later time than in the corresponding control group," Dr. Tannenbaum reported.

The reducing diet need not be started at a very early age in order to prevent cancer, the mice experiments suggest. It will be effective if started at any time before the cancers begin to appear.

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## Reduce Cystine in Diet

**A** DIET in which only one food chemical, cystine, is reduced to a very small amount will prevent the development in mice and rats of both cancer and the rapidly fatal, malignant blood disease, leukemia, Dr. Julius White, U. S. National Cancer Institute, reported.

Cystine is one of the amino acids, building blocks of protein long known to be essential to growth and for which scientists are now discovering other significance. Cystine differs from most other amino acids in containing sulfur.

On a low-cystine diet, liver tumors from the dye, butter yellow, develop in 70% instead of 95% of rats; leukemia induced by painting the skin with a coal tar chemical develops in 10% in-

stead of over 90% of brown mice; virgin female mice fail to develop any spontaneous breast cancers after 18 months, although ordinarily and when fed a high cystine diet, such cancers develop in 96% of the animals within 10 or 11 months.

These striking results in cancer prevention are due solely to lack of cystine and are probably not due to the growth-stunting effect of lack of this chemical, Dr. White declared.

There is no experimental evidence to indicate that this cancer- and leukemia-preventing effect of low cystine diets applies to humans, Dr. White stated. The experiments, however, show that it is not unreasonable to expect that the growth of cancer can be influenced by various types of dietary substances.

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## Two-Way Action

**C**YSTINE, choline, and certain other food chemicals alone or in combination may both prevent cancer and promote its development, according to circumstances, Dr. Dean Burk, National Cancer Institute, declared.

For chemicals with this two-way action, Dr. Burk and associates, Miss Juliet

M. Spangler and Dr. Richard J. Winzler, have coined the term "amphicarcinogen."

Whether an amphicarcinogen will act for or against cancer apparently depends on the amount of it in the diet, or in the body, in proportion to the amount of some other chemical. This amphicarcinogen idea suggests that dietary control of cancer, if it is possible at all, will very likely develop along lines of careful balance of various chemicals in food.

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### ENGINEERING

## Avert Threat to Health From Scarcity of Cork

**T**HE threat to the health of both civilians and soldiers through food spoilage for lack of cork from Portugal and Spain for cold storage insulation will be averted by a new product made of materials found plentifully at home, it was announced by the Owens-Corning Fiberglas Corporation.

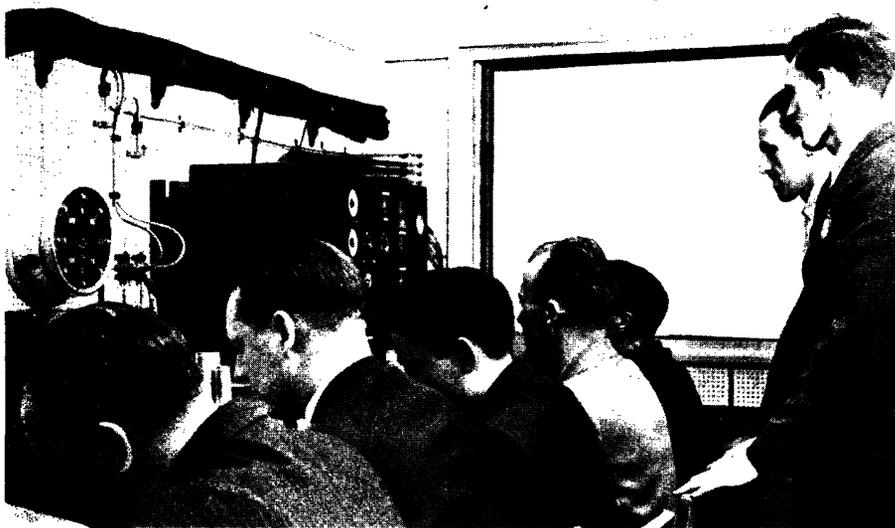
The new product is made of glass mineral wool, heavily coated with a durable asphalt that has a high melting point. The heat-insulating power of this product is equal to that of the best materials used for cold storage insulation. It is strong, moisture- and fire-resistant, odorless, immune to rot, fungus growth and vermin. It is also light, an important factor when used for roof insulation, since it permits a saving in the steel supporting structures, thus saving steel for the war program.

The need of insulating materials for the protection of perishable foods has never before been so great as now, with an army of several million men and a tremendous shifting population of war workers to feed, in addition to the usual civilian demands.

Low temperature insulation is needed not only for cold storage plants, of which many more will be built, but in the preparation and transportation by land and sea of perishable foods, and in the manufacture of frozen foods which are an important part of our modern diet.

Cold storage and roof insulation are required in military cantonments, in army ordnance factories, in chemical and steel plants, in factories producing airplanes, tanks and armored cars. Many chemical processes require accurate temperature control and therefore good heat insulation.

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**"FLIGHT CREW" ON GROUND**

*These men are at the instrument panel of the test "plane" shown on the front cover of this week's SCIENCE NEWS LETTER. At Boeing's engine test laboratory this airplane engine, mounted on a section of airplane wing and fastened to a house that can be swung around with changing winds, shows performance under conditions of greatest strain—warm-up and takeoff. Ordinarily the test is run with engine headed into the wind as it usually is at takeoff, but tests are also made with cross-winds which cool some cylinders of a radial motor more than others.*