MEDICINE

Suggest Cancer Preventive

A large decrease in incidence of most cancer forms is foreseen if most people reduced their caloric intake sufficiently to make their weight slightly below accepted optimum.

➤ CANCER could be drastically reduced if people were not such gluttons and if increasing income and food supply did not overfeed the average person.

This way to reduce the second most common cause of death is advocated in an authoritative publication of the Nutrition Foundation by Dr. Harold P. Rusch, University of Wisconsin professor of oncology, which is the study of tumor growth, and editor of the journal, *Cancer Research*.

The difficult part about applying this preventive measure is that people would have to be hungry most of the time, or as Dr. Rusch puts it:

"In the opinion of the writer, there is no doubt that a drastic reduction in the incidence of almost all forms of cancer would be achieved if the caloric intake were reduced sufficiently to decrease the weight of all people to slightly below the accepted optimum."

Unfortunately, the kind of diet Dr. Rusch prescribes is usually found only in the very poorest regions of the world, or for a short time in other areas right after a war.

The desire to eat is one of the first to be satisfied when more money and more food are at hand, Dr. Rusch reports, and the average person will not give up the joy of eating just to reduce his chances of getting a tumor, especially since it might not happen even if he becomes a glutton.

This is no new idea. A decade ago scientists were optimistic about stopping cancer with low-calory diets. In 1946, Dr. Rusch and a colleague, Dr. C. A. Baumann, reviewed the problem of diet and cancer in *Nutrition Reviews* (April, 1946). They believed then it was only a matter of time before laboratory results could be applied to humans.

A special panel on nutrition was set up by the National Research Council's Committee on Growth to help in financing studies along this line.

Times have changed, Dr. Rusch reports, and two years ago the panel was combined with another one on metabolism. Requests had dropped to the point where the undivided attention of a single panel was not needed.

The big drawback has been that laboratory results cannot always be duplicated in humans. There are not enough people willing to undergo the rigorous dieting to prove scientifically its value.

Other ways to get the same results have been tried over the last ten years, including vigorous exercise, low temperature, and giving drugs such as sodium fluoride and dinitrophenol, a dye-making compound.

They all worked in animals, but it was a different story in humans. Most people are not inclined to undergo that much exercise or temperature reduction, Dr. Rusch reported in *Nutrition Reviews* (Dec., 1956). The drugs proved too toxic for safe use in humans.

There still have not been any practical results in controlling cancer by dieting, but Dr. Rusch expects an increased interest in the problems of tumor nutrition in the next few years.

Now the emphasis has shifted from the growth of the whole tumor to the growth of the individual tumor cells.

This is of great importance because tumor cells may be found to require substances not needed for normal ones, Dr. Rusch believes. If so, the random selection now used to pick anti-cancer drugs can be replaced by a more direct approach.

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RADIO

Saturday, January 12, 1:45-2:00 p.m., EST

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Charles Williams, director of Industrial Hygiene Services, Liberty Mutual Insurance Company, Boston, will discuss "The Menace of Noise."

BIOCHEMISTRY

Chemical for Bleaching Blondes Fights Germs

➤ HYDROGEN PEROXIDE, familiar as a bleach for synthetic blondes and for other purposes, promises to become a germ-fighter that can step in when the antibiotics fail.

Dr. Herbert M. Cobe of Temple University, Philadelphia, reported to the American Association for the Advancement of Science meeting in New York that it has been possible to stabilize non-aqueous forms of hydrogen peroxide, and that his researches confirm its effectiveness as a bactericide.

Older medications should be reappraised, in Dr. Cobe's opinion, because of the sensitivity of patients to antibiotics and resistance of bacterial strains to the newer drugs.

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MEDICINE

Properdin Slows Cancer

➤ CANCER GROWTH may be controlled by properdin, a blood protein discovered two years ago, Dr. Peter A. Herbut and William H. Kraemer, Jefferson Medical College and Hospital, Philadelphia, report.

Properdin is known to take part in the destruction of bacteria and certain red cells, as well as in the neutralization of viruses. It is normally present in the blood serum of humans and many animals, but can be destroyed by irradiation.

Human cancer growths were transplanted in experimental rats to test the effect of properdin on the rats' natural immunity, the scientists report in *Cancer Research* (Dec., 1956). They found that when the amount of blood properdin was low, the cancers were able to take hold and grow in the animals.

The animals were divided into four groups. One group was left untreated, another group was given a heavy dose of radiation, and the other two groups received injections of zymosan, a chemical taken from yeast cell walls.

Zymosan combines very rapidly with properdin and, when injected into the body, quickly lowers the level of properdin in the blood.

After the cancers were transplanted, the number of "takes" were recorded, each take representing a breakdown of the rats' natural resistance permitting the cancer to grow in its new host.

Over half of the cancers transplanted in animals given multiple doses of properdin-reducing zymosan continued to grow.

The irradiated group also showed the effects of low properdin. Over three-fourths of this group were takes, in contrast to only 19 takes out of 160 in the untreated group.

Properdin levels may be controlled by lymphocytes, a type of white blood cell produced by the lymph glands, the scientists believe. These cells are found in much smaller numbers after irradiation has lowered the amount of properdin in the blood.

Science News Letter, January 5, 1957

DENTISTRY

Dizzy? Uneven Bite May Be to Blame

➤ UNEVEN dental bite was blamed for vertigo, with periodic headaches, equilibrium loss, dizziness, nausea and blackouts, by a physician-dentist team of Philadelphia, Dr. Herbert T. Kelly and Dr. David J. Goodfriend, at the American Association for the Advancement of Science meeting in New York.

A decade of research showed 96% of the sufferers from vertigo examined had teeth that do not properly support the lower or upper jaw, they reported.

This affects the area of the ear, disturbing the semicircular canals that control equilibrium.

Science News Letter, January 5, 1957