

MEDICINE

Virus in Human Cancer

Virus injections do not increase occurrence of cancer in hamsters but produce unique deformities including fragile bone structure, small size, flattened forehead, protruding eyes.

► FOR THE FIRST TIME a virus found in human cancer has produced a new and characteristic disease in laboratory animals. Researchers are one step closer to solution of the cancer problem with discovery of a virus associated with human cancers.

Dr. Helene W. Toolan of the Sloan-Kettering Institute, New York, has announced that studies she began with injections of hamsters two years ago have been continued and confirmed by associates.

When inoculated into newborn hamsters the virus produces an unusual deformity characterized by small size, flattened forehead or microcephalic domed head, protruding eyes and tongue, absent or abnormal teeth and fragile bone structure.

The virus has been found in all eight of the transplanted human cancers tested but not, so far, in the cancer tissue itself nor in the tissues of normal individuals.

Dr. Toolan in an interview emphasized the fact that although the virus has been found in association with human cancers it is not known yet whether or not it is a factor in the cause of cancer or has any connection with cancer development.

"By using hamsters," she said, "we have set up an indicator system—a way of testing."

The virus has an affinity for bone. It produces unique deformities in hamsters when they are inoculated within 48 hours after birth or when the embryos are injected from one to seven days before birth.

The virus injections have not been found to produce any increase in cancer occurrence in the hamsters, a large number of which are now more than two years old.

Passage of the virus from newborn hamster to newborn hamster increased the infectivity of the agent, and the animals died at progressively earlier stages.

The virus has been found in the tissues of rats bearing transplanted human cancers but not in the tissues of normal rodents or in transplantable cancers of rodents. It has not been found in human cancer cells from the same source growing in tissue culture in horse or calf sera. It has been found in tissue culture of spleen cells from infected hamsters grown in human serum, and therefore it is concluded by the investigators that horse and calf sera may neutralize the virus.

Research details appear in Proceedings of the National Academy of Sciences, Sept., 1960. Associated with Dr. Toolan were Drs. Gilbert Dalldorf, Marion Barclay, Satish Chandra and Alice E. Moore, all of Sloan-Kettering Institute for Cancer Research.

• Science News Letter, 78:227 October 8, 1960

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Cancer May Be Caused By Nickel in Cigarettes

► CIGARETTE SMOKERS and manufacturers of cigarettes have a new worry about

causing cancer. The possibility of heavy smokers getting cancer from long-time inhalation of the trace amounts of nickel in cigarette tobacco was suggested in Chicago at a joint meeting of the American Society of Clinical Pathologists and the College of American Pathologists.

Drs. F. William Sunderman and F. William Sunderman Jr. of the Jefferson Medical College of Philadelphia reported experiments with rats, a species notably resistant to the induction of pulmonary cancer.

The rats were subjected to 30-minute inhalations of nickel carbonyl in concentrations of four parts per million three times a week for one year. Two or more years after the first exposure, cancerous tumors were observed.

Estimates of the amount of nickel that might be inhaled by heavy smokers of cigarettes, the researchers say, are similar to that proved cancer-producing in rats.

The hazards of exposure of industrial workers to nickel carbonyl or nickel dust have been studied previously by the Jefferson Medical College laboratory staff. It is well established that workers who have been chronically exposed to inhalations of the nickel compounds have a high percentage of respiratory cancer.

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MEDICINE

People Will Live Longer Physician Predicts

► A GENERATION FROM NOW, doctors will be keeping grandpa literally young at heart.

By controlling the body's enzyme systems, physicians will help a patient stave off degeneration and aging of the heart, blood vessels and endocrine glands, and many will be going strong at 80 years of age.

This is predicted by Dr. Morris Fishbein, former editor of the Journal of the American Medical Association and today editor of Postgraduate Medicine, Medical World News, Excerpta Medica and lecturer at the University of Chicago School of Medicine. He expects that the next generation's physicians will see a population in which 20% are past age 65 and two percent are past 100.

The noun "cripple," he prophesied, will drop out of the language as new techniques in training the physically handicapped are perfected. Mental retardation, which now afflicts approximately three percent of the population, will tend to disappear as new processes of learning are applied to child training.

Speaking at the dedication of a new Irwin, Neisler and Co. research laboratory in Decatur, Ill., Dr. Fishbein said infectious diseases such as measles, scarlet fever, whooping cough, mumps, diphtheria, respiratory disorders and polio will be virtually eliminated from the American scene.

However, he warned, physicians will have to combat "flash epidemics" of imported infections so long as these diseases exist elsewhere in the world.

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FLAT-HEADED HAMSTER—Experimental hamsters inoculated with a virus from human cancer have a flattened forehead, protruding eyes and tongue.