

MEDICINE

Can Pick Infants Who Will Have Hay Fever or Asthma

Researches Toward Prevention and New Treatments of Malady Affecting Half the Families Are Reported

OVER three-fourths of the babies who are going to have hay fever or asthma when they grow older can be spotted before they are four months old, Dr. Norman Ward Clein of Seattle, told members of the Association for the Study of Allergy at their meeting in San Francisco.

Before this age three main types of symptoms develop which show that the infant is allergic and due to have hay fever, or asthma, or hives from something he eats, when he gets older. These symptoms, Dr. Clein said, are: 1. rash or eczema; 2. vomiting; 3. stomach and intestinal distress including severe colic, gas and diarrhea. Sometimes even asthma, the runny nose of hay fever or hives, develop during the babies' first few months of life.

Nearly three-fourths of the allergic infants Dr. Clein studied had parents who were allergic. Some babies were definitely sensitized or made allergic from their mothers' milk.

"Babies nursing from allergic mothers," Dr. Clein said, "have approximately five times as much chance of developing allergic symptoms as those from a non-allergic mother."

It is important to recognize the first allergic symptom, Dr. Clein pointed out, so that dietary or other measures may be taken to prevent one of the major allergic conditions from developing or at least to prevent its becoming a serious trouble.

Half the Families Affected

In very nearly one-half the families of the country there is at least one person who suffers from hay fever, asthma or some other kind of allergic disease, if figures based on a survey of a city of 35,000 population are representative of the whole nation. The survey was reported by Dr. W. C. Service of Colorado Springs, Colo.

Sampling was based on economic distribution to get a representative group of the general population of the nation. The number of families surveyed was 1,000, comprising over 3,000 individuals.

Hay fever or other allergic disease was found in 44.9 per cent. of these families, leaving just over half, 55.1 per cent., in the non-allergic group. About one-fifth, 19.68 per cent., of the individuals in the general population had some form of allergic ailment, while about four-fifths, 80.32 per cent., were non-allergic. (If you are surprised that the percentage is lower in the case of individuals than for families, get out your pencil and figure it yourself, remembering that there were over 3,000 persons in the 1,000 families.)

Hay fever led the other allergic diseases in point of frequency. Of the other allergies, a slightly greater percentage had asthma than eczema, migraine headaches, hives or gastro-intestinal allergy.

Inheritance was a factor in nearly one-third of the cases. The condition was inherited from the mother's side more than four times as often as from the father's.

X-Ray Treatment

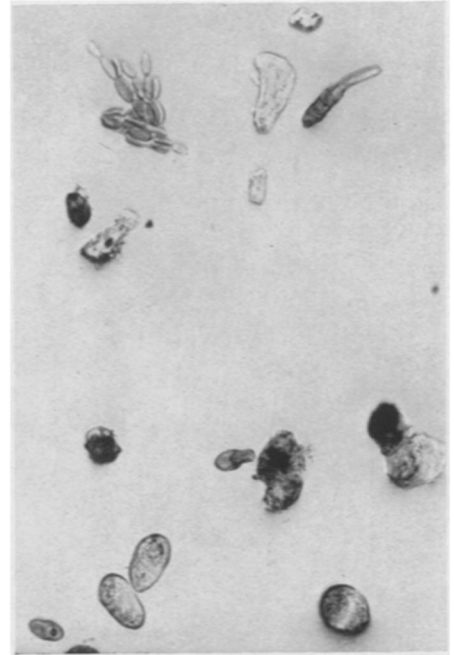
Patients suffering with asthma that could not be relieved by other treatment have been benefitted by X-rays, Drs. C. K. Maytum and E. T. Leddy of the Mayo Clinic reported. The X-ray treatment seems to help the patient through the severe paroxysms of asthma until more specific treatment begins to take effect.

20 Gallons of Adrenalin

Imagine taking 20 gallons of adrenalin or epinephrin, the potent stuff of which hypodermic doses have revived many a failing life.

This secretion of the two little glands over the kidneys besides being used in the dramatic, life-saving episodes you read about, is the mainstay of many an asthmatic, who takes it daily over long periods in order to ease his constant struggle for breath.

The question of how much of this potent stuff can be safely taken is answered by the experience of two patients each of whom has taken a total of over 20 gallons. Reporting these cases



NOW, "FUNGUS FEVER"

Spores of parasitic fungi, like the ones shown in this photomicrograph, are among the newest culprits found guilty of causing sneezes, smarting eyes, and other symptoms of hay fever. At the San Francisco meetings, O. C. Durham, chief botanist of the Abbott Laboratories, North Chicago, Ill., presented evidence for the prosecution.

Drs. Robert W. Lamson of Los Angeles and Harry L. Huber of Chicago said that no harmful effects that could be traced to the epinephrin were found in these patients, even in careful post-mortem examination of one of the patients.

In Train Operators

Having hay fever or asthma is bad enough under any conditions but having it when you are a conductor or other railroad train operator makes it even worse because moving trains stir up considerable dust and pollens and the problem is further complicated by the various types of pollens encountered in the 150 miles usually traveled on a single run.

The problem has been successfully met for employes of the Southern Pacific Railroad it appears from the report of Dr. Edward Matzger of San Francisco.

Accurate information as to the kinds of plants and the dates of pollination in the regions traveled by the railroad's allergic personnel were obtained in a special botanical study under the direc-

tion of Dr. LeRoy Abrams, professor of botany at Stanford University. With this information, the railroad's physicians were able to make accurate diagnoses and give specific treatments for each patient.

The results of this method of attacking the problem show, Dr. Matzger declared, that seasonal hay fever and asthma are preventable diseases.

Guinea Pig Studies

Hope that better methods of treating asthma may be developed appeared in the announcement by Dr. Bret Ratner of New York University College of Medicine that he had been able to induce asthma in guinea pigs.

This means that now for the first time asthma can be studied in the lower animals with dry dust antigens, which are comparable to the substances that produce asthma in humans. By this method, Dr. Ratner said, it will be possible to study various measures for the alleviation or eradication of this very frequent and incapacitating malady.

The guinea pigs were placed in a special experimental chamber containing asthma-causing dusts and after a certain period of time became sensitized to the dusts, so that at any time afterwards when they breathed these dusts, they had typical asthmatic attacks, just as a man sensitive to dust gets an asthma attack from breathing this dust.

In the early stages of becoming sensitized to dusts, many of the guinea pigs show the effects only in their noses and throats, but as sensitization goes on other organs are involved. This compares with early signs of allergy in children, Dr. Ratner pointed out, in whom repeated attacks of sneezing and so-called colds, which are actually allergic in character, later on become more widespread and these same children develop true allergy.

Deformities of Teeth

Deformities of teeth and jaws and a serious form of bronchial disease, bronchiectasis, are among the conditions now ascribed to hay fever, asthma or other allergic conditions.

The new idea of bronchiectasis being due to an allergy makes it possible not only to treat this condition successfully but even to prevent it, Drs. Samuel H. Watson and Charles S. Kibler of Tucson, Ariz., pointed out. This disease, in which one or more bronchi are dilated, is characterized by a bad breath, paroxysms of coughing and expectoration of pus and mucus.

The Tucson physicians believe that

90 per cent. of the bronchiectasis they see occurs in allergic persons and that the bronchiectasis and its accompanying sinusitis are secondary to allergic bronchitis and rhinitis—asthma and hay fever to you. If the allergic condition can be diagnosed and treated early, these doctors believe the bronchiectasis and sinusitis can be prevented.

Any dentist will tell you that mouth-breathing may pull the dental arch out of shape. Drs. T. Wingate Todd, Milton B. Cohen and B. Holly Broadbent—the latter a dentist—of Cleveland, told the allergists that marked deformity of the jaws is most often seen in children

who have had active allergy of the hay fever or asthma type in very early life.

Perhaps mouth-breathing on account of the asthma or hay fever played a part. The Cleveland doctors pointed out, however, that any disturbance in the orderly progress or growth of the face can cause malformations of the jaw. Disturbances leading to such deformity may be caused by well recognized ailments but they may also be caused by mild, frequently unrecognized disorders, for example a case of hay fever so mild that it just seems as if the child were always having a slight head cold.

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PHYSICS—GEOLOGY

Lead Atoms May Yield Clues To Very Old Earth's History

Further Study of Variation of Isotopes May Show That Ordinary Type of Metal Holds Chemical History

THE METAL lead, already used in scientific estimates of the age of the earth, may also yield important clues to the earth's history back farther than ever before into the ages following the earth's birth from the sun, recent experiments at Harvard University indicate.

Studies made by Dr. Alfred O. Nier, national research fellow in the Harvard physics laboratories, indicate that atoms of the metal may hold locked within them at least a partial record of chemical and physical developments when the earth was young.

His studies concern the ordinary variety of lead. A second type of lead, derived as the end product of the decomposition of uranium, a radioactive element, has already won wide fame as a measure of the earth's age.

Essentially Dr. Nier's discovery is that the relative proportions of the isotopes of this metal, ordinary lead, vary considerably from sample to sample. Isotopes are atoms of the same element which differ in weight. Ordinary lead, for example, has four isotopes, weighing 204, 206, 207, and 208 atomic units. According to Dr. Nier's experiments, the relative abundance of these isotopes may vary as much as 15 per cent. Scientists have heretofore believed that the isotopes of lead had a certain, fixed ratio.

This peculiar isotope distribution dates back millions of years and was probably caused, the Harvard scientist believes, by the early contamination of ordinary lead in its primitive forms by the lead formed from the radioactive elements, thorium and uranium.

Further study of this variation and its significance may indicate that the ordinary lead atom carries within it a partial record of physical and chemical developments when the earth was young. They also expect to secure important new clues to the mechanism of the formation of lead ores.

Key instrument in the research is a special mass spectrometer, believed to be the most delicate "atom sifter" known to science. Not only can the apparatus detect the presence of rare isotopic forms, heretofore a fairly difficult procedure, but it can also yield the most accurate measurements ever made of the abundance of different isotopes present in an element.

Dr. Nier has also studied 16 other elements as the start of a comprehensive research program which will eventually put every one of the ninety-odd known elements through his spectrometer. His studies are also providing a check on the use of the other type of lead in the "radioactive clock" estimates of the earth's age.

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