

PHYSIOLOGY

Scientist Discovers Way To Predict Your Life Span

Age At Which Hardening Lens of Eyes Makes Difficult Accommodation For Reading Betrays Normal Lifetime

ONE of the dreams of science, discovery of a way to predict how long an individual will live—if not claimed by murder or other untimely death—was announced to the National Academy of Sciences.

A key to an individual's normal span of life, long or short, is carried with him, heretofore unrecognized, in his own eye, Dr. Felix Bernstein of Columbia University revealed.

The aging process of the human body, he reported, can be measured easily by taking note of the change when the lens of the eye becomes less elastic, some time during middle life. Most persons become aware of the change at the age of 45 or 50, when the hardening lens can no longer make sufficient accommodation for reading. If this aging process, called presbyopia or "old-sightedness," occurs early, the individual's normal span of life is comparatively short. If it occurs late in middle age, the individual can expect to see a venerable old age, unless some infection or accident cuts short his natural lifetime.

Dr. Bernstein told how he has reached his conclusions after systematic investigation of this means of measuring the aging process, carried on both in Germany and this country.

5,000 Cases

"Data on 5,000 cases of presbyopia," he said, "gathered from the University clinics of Goettingen and Leipzig by two students from my Institute in Goettingen and from two private oculists, and followed individually from the first tests until death, proved that presbyopia is correlated with the duration of life in such a way that the early presbyopes die early and the late presbyopes die late."

Brainstroke and heartstroke were the causes of death in the persons who proved the significance of the eye change. These accounted for about half the 5,000. The rest of the patients died of cancer, pneumonia, or other diseases, and for these the research workers could find little or

no correlation between the time the eye lens hardened and duration of life.

Reporting a further experiment under a grant from the Rockefeller Foundation given to the Biological Laboratory at Cold Spring Harbor, N. Y., Dr. Bernstein concluded:

"This shows conclusively that the physiological aging measured by the range of accommodation is strictly hereditary. Our former conclusion that the natural length of life may become predictable if a proper measure of the physiological aging has become available, is strongly backed by these findings."

Stressing the significance of the discovery for heredity, Dr. Bernstein said:

"These implications of natural span of life are especially important in regard to the fact that the natural causes of death come more in the foreground the more the infectious diseases are brought under

control. The span of life in the future will be determined much more by that which Francis Galton called 'the treasure of inheritance' than by conditions which lie in the environment."

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MEDICINE

Rheumatism Benefited By Big Vitamin D Doses

RICKETS-preventing vitamin D is of great benefit in the treatment of arthritis or rheumatism, as it is sometimes called, Dr. C. I. Reed of the University of Illinois College of Medicine told members of the American Physiological Society.

Seventy out of one hundred arthritis patients treated this way by himself and associates, Drs. M. L. Hathaway and H. C. Struck, were definitely helped and some apparently cured.

The vitamin was given in the form of concentrated viosterol and enormous doses were used. While three thousand units is the standard dose for rickets treatment, Dr. Reed used one million units and in some cases three million to treat the arthritis patients. All kinds of arthritis except that due to gonorrhea were helped.



HOW LONGEVITY IS PREDICTED FROM THE EYES

With this simple apparatus, Dr. Felix Bernstein (center) of Columbia University has discovered how to tell whether a person is likely to live long or not. Miss Daisy Kinstein (left) is adjusting the instrument which tests the accommodation of the eyes for seeing near and far objects. Miss Kinstein and E. A. Roure (right) are assistants to Dr. Bernstein.

The use of vitamin D for arthritis came about accidentally. Dr. Reed had been using large doses of the vitamin to treat hay fever and asthma patients in accordance with a theory that deficiency of calcium or lime is a factor in these ailments. Vitamin D helps the body to get the full benefit of the lime in the food. One of the hay fever patients, who had suffered from arthritis for 23 years, told Dr. Reed that since getting the vitamin D for her hay fever, her arthritis had improved. She had less pain and the

swelling in her finger joints had gone down so that for the first time in several years she was able to take her wedding ring off. Dr. Reed himself had been an arthritis sufferer for some years so he took large doses of vitamin D, as much as three million units, and found his own arthritis was soon cured. Since then he has been using it regularly for arthritis patients. It seems to help them though as yet Dr. Reed has no explanation for how it works.

Science News Letter, April 27, 1935

PHYSIOLOGY

Finds New Sensory Cells at Root of Nerves From Face

HITHERTO unknown nerve cells, probably of the kind that convey sensations, have been discovered by Dr. Gustavus A. Peters of the Indiana University School of Medicine.

They are located in the roots of the trigeminal nerve that conveys sensation from the face to the brain. It is this nerve that is affected in tic douloureux, a form of trigeminal neuralgia, in which the patient suffers attacks of excruciating pain.

Dr. Peters reported his discovery at the meeting of the American Association of Anatomists. The presence of these newly-found cells, he believes, explains why sensation and pain sometimes return after operation for the relief of tic douloureux.

Alcohol injected into the nerve may

give relief from the pain in this disease temporarily. Surgical operation in which the nerve is severed gives complete relief of the pain and usually results in loss of sensation on that side of the face.

In some cases return of sensation on the operated side has been reported. Dr. Peters believes these hitherto unknown nerve cells at the root of the trigeminal nerve provide the explanation. If these cells lie next to the part of the nerve cut by the surgeon, they may cause the cut ends of the nerve to grow together again and provide a pathway for sensation once more.

Dr. Peters found these nerve cells in the central roots of the facial nerve in dogs, cats, rabbits, guinea pigs, oxen, pigs and humans.

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PSYCHOLOGY

"Pinheaded" Boy Has Normal Intelligence

A NINE-year-old boy whose head is smaller than that of a normal baby a year old, but whose intelligence is not deficient, was reported to scientists gathered in Princeton, N. J. for the meeting of the New York Branch of the American Psychological Association by Dr. Wilbert S. Ray of the New Jersey State Hospital.

The child, whose name is withheld by his physician to spare him embarrassment, is not a midget. He is small for his

age, however, his height and weight being about average for a six-year-old. His head is only four and three-quarters inches wide and less than six inches long, (12.1 by 14.9 centimeters) about the size of your breakfast grapefruit. The circumference of his head is less than 17 inches, which has been considered average for a four-months-old infant.

This "pinheaded" boy with normal intelligence must have scant room for his brain, for the cubic capacity of his head

is only 886.9 cubic centimeters, although 945 cubic centimeters is considered average for infants on their first birthday.

Despite difficult home conditions, this boy is not feeble-minded. Although slightly behind his age in intelligence, he is doing well in school and is picking up in mental age as he grows older.

His father is dead, and his mother is feeble-minded. The mother's head is small, but not extremely so as is the boy's. Of eleven brothers and sisters, six are dead. One is in a reformatory, another is a delinquent, but the other three are average citizens of the community with inferior but not sub-normal intelligence.

Science News Letter, April 27, 1935

MEDICINE

Rabbits Help to Test Draughts as Cause of Colds

FIRST steps in an investigation of whether being chilled lowers a person's resistance to such ailments as colds and pneumonia were reported by Dr. Arthur Locke of the West Penn Hospital, Pittsburgh, to the American Association of Immunologists.

The length of time it takes a rabbit to warm up after being thoroughly chilled is an index to one of the animals' four defenses against the invasion of pneumonia germs, Dr. Locke found. He stated that no human application can yet be made of his work but that the research was undertaken to get information on the effect of chilling and exposure on human resistance to disease. When it is finished it may give scientific backing to the old idea that sitting in a draught will bring on a cold.

Rabbits that took longer than 41 minutes to warm up after an icy bath that reduced their temperature to 96 degrees Fahrenheit could not resist pneumonia germs introduced into their bodies. Neither could they survive the attack of pneumonia that followed. The warming time, as Dr. Locke calls it, not only indicates the animal's resistance to invasion by these germs but also tells whether it will be able to withstand the disease.

The warming time is an index of only one of the animal's means of defending itself against infection, Dr. Locke said. He sees resistance to disease as being four-fold.

The first line of defense is the mechanical barrier of healthy, whole skin and mucous membranes. The second defense