

MEDICINE

Football Players Warned Of Autumn Sun Danger

➤ FOOTBALL COACHES are being given eight suggestions to help prevent heat exhaustion and possible heat stroke among players during fall football practice.

The American Medical Association's Committee on Medical Aspects of Sports points out that the old idea that water should be withheld from athletes during training sessions has no scientific foundation.

Here are the committee's suggestions: Require a careful medical history and checkup prior to beginning of practice. Schedule workouts during cooler morning and early evening hours in hot weather. Adjust athletes to hot weather activity by carefully graduated practice schedules. Provide rest periods of 15 to 30 minutes during workouts of an hour or more in hot weather.

Supply white clothing, which is loose and comfortable, to permit heat escape, to reflect heat, and allow heat loss via sweat. Furnish extra salt and water in recommended amounts during hot weather.

Watch athletes carefully for signs of trouble, particularly the determined athlete who may not report discomfort. Remember that the temperature and humidity, not the sun, are the important factors. Heat exhaustion and heat stroke can occur in the shade.

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PUBLIC HEALTH

Mental Retardation Could Be Cut in Half

➤ ONE-HALF of the 126,000 mentally retarded children born in this country every year could be normal or at least could be cared for outside institutions, Dr. Stafford L. Warren, special assistant to President Kennedy for mental retardation, told a news conference.

"I prefer to approach this problem from the economic standpoint, rather than with the motivation of doing good," he said. "We can either spend something like \$10,000 per person on eliminating these cases through scientific means, or we can spend \$100,000 for a lifetime of care."

Through prenatal care and treatment of the newborn such as the child with phenylketonuria (PKU), much of today's mental retardation could be prevented, Dr. Warren stated.

Many of those who grow up mentally retarded can be helped to be self-supporting citizens, he added. Certainly they should not be confused with the mentally ill.

Many mentally retarded persons now being cared for in institutions for the mentally ill should be taken out and trained in the home and community.

In the average American community of 100,000, not less than 3,000 mentally retarded persons of all ages and degrees of retardation probably would be found. But communities can take care of these persons through education, vocational training, workshops and recreational centers, to name a few services.

Like normal persons, the mentally retarded who are physically healthy are living to an old age, which means either a useless life or one that could be productive, Dr. Warren said.

The defect in intelligence that mentally retarded persons have, as opposed to what is often merely an interlude of mental illness that affects those of normal intelligence, is a lifetime problem. Any overlap in the two conditions is usually temporary.

Governors of all 50 states are sending representatives to a meeting Sept. 19-20 of a State-Federal Conference on Mental Retardation to be held at Airlie House, Warrenton, Va.

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CHEMISTRY

Blue Metal Produced At Very High Pressure

➤ A NEW BLUE metal with several unusual properties has been produced by researchers at the University of California, Los Angeles, using high pressures and sudden changes in temperature.

Nobelist Dr. Willard F. Libby led the research team in producing the metal, indium telluride, for the first time in a stable form. Previously, this compound existed only in non-metallic form at very high pressures.

The California scientists succeeded in getting the substance into a stable form by using the same process they used to produce a somewhat similar metal, indium antimonide, last year.

However, unlike indium antimonide, which explodes unless kept at ultracold temperatures or ultrahigh pressures, the new metal is stable at ordinary pressures and at temperatures up to 240 degrees Fahrenheit.

Indium telluride in its metallic form is a soft, crumbly metal with a cubical crystal structure. At ordinary temperatures it is light blue, although it becomes dark blue when cooled down to 322 degrees below zero Fahrenheit.

At minus 456 degrees Fahrenheit, it becomes a superconductor, offering no resistance to electricity, it was reported in Science 141:713, 1963.

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AGRICULTURE

Celery Juice Studied For Key to Flavor

➤ CELERY JUICE concentrated millions of times is being used to study the flavor secrets of this popular vegetable.

Scientists at the U.S. Department of Agriculture have isolated the flavor-producing substances—ten drops extracted from five tons of celery—and have identified 38 of the 58 constituents. Of these, six are the key elements in producing the flavor, and four are unique to celery.

The purpose of this research is to find new uses and means of processing for celery, one of the top ten vegetable crops in the U.S. It has a farm value of \$52 million per year.

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IN SCIENCE

BOTANY

Tiny Fruit Trees Grown For 'Pick-'em-Yourself'

➤ A MINIATURE apple tree which can be picked clean without a ladder has been developed by scientists to meet the needs of a rising number of "pick-'em-yourself" shoppers."

"Pick-'em-yourself" fruit farms have become increasingly popular in many sections of the country during the past 10 years.

The reasons, owners say, are the high wages of professional pickers and Americans' renewed interest in staying physically fit through exercise in fresh air and sunshine.

Families will drive to such farms, pick up baskets and go out among the trees selecting exactly what they want. They pay for their harvests on the way out.

A problem with early pick-'em-yourself orchards was the bother and danger to pickers caused by high trees.

Horticulturists are well on their way to licking that problem, however, according to Dr. Almon S. Fish Jr., plant physiologist at North Carolina State College, Raleigh, who attended the American Institute of Biological Sciences meeting in Amherst, Mass.

Dr. Fish described how scientists have succeeded in grafting roots of short trees, such as the seven-foot East Malling, with shoots from popular apple trees, such as the Golden Delicious. The result has been stunted trees, bearing fruit as tasty as that on the big trees—sometimes tastier.

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GENERAL SCIENCE

Are Government Science Advisers Too Old?

➤ ARE THE SCIENTISTS advising the Government how to spend \$15 billion on research and development this year too old?

This question was raised by Dr. Dael Wolfe in an editorial in Science 141:677, 1963. The question is not answered explicitly. Dr. Wolfe is the executive officer of the American Association for the Advancement of Science.

His analysis shows that those who direct U. S. research are not predominantly holdovers from World War II days but that there has been a considerable turnover in membership on all advisory boards.

However, the editorial notes that members of the board advising the National Science Foundation average about 59 years of age, and members of the board advising the Department of Defense, 57. On the other hand, the President's Science Advisory Committee has the "better average" of 49.

(An independent check shows that 60.6 years is the average age of the 13 scientists on the board of directors of the AAAS.)

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CE FIELDS

GEOPHYSICS

Earth's Rotational Pole Fixed During Past

► THE AXIS about which the earth rotates has remained fixed, while the earth's magnetic pole has wandered thousands of miles during geologic history.

About 225 million years ago, the rotational pole was approximately where it is now, Dr. Francis G. Stehli of Western Reserve University, Cleveland, reported to the International Union of Geodesy and Geophysics in Berkeley, Calif.

His evidence for a fixed rotational pole is based on statistical studies of modern organisms and of fossils 225 million years old, from the Age of Reptiles. He found that temperatures then varied regularly from equator to pole exactly as they do today.

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MEDICINE

Antimalarial Drugs Cause Eye Trouble

► EYE DOCTORS are on the lookout for trouble among their patients who have been taking antimalarial drugs for relief of arthritis pain and other disease symptoms.

Aralen is the trade name for one of the common synthetic antimalarial drugs called chloroquine.

Corneal deposits and decreased corneal sensitivity were found in up to 68% of patients examined, Drs. Paul Henkind and Naomi Rothfield of New York University reported in the *New England Journal of Medicine* 269:433, 1963.

All patients attending one of the arthritis clinics at Bellevue Hospital, New York, were referred for ophthalmologic study whether or not they were taking antimalarial drugs, with 56 of them receiving such medication.

Twenty-seven of these patients reported symptoms such as difficulty with near work, particularly with reading and halos, especially when looking at bright lights at night.

Among these patients were five with systemic lupus erythematosus, a disease of the skin and mucous membrane. Most of them had had normal vision until they started chloroquine.

The researchers point out that varying degrees of eye damage may occur after patients receive antimalarial medications. They implicated all the commonly used synthetic preparations, which include not only chloroquine, but hydroxychloroquine, amodiaquin and quinacrine.

"The proved therapeutic value of these drugs must not be overlooked," they said. "Neither should their toxic or idiosyncratic reactions."

Long duration of high dosage treatment is a major factor in effects of chloroquine on the retina. Retinopathy, a noninflammatory degenerative disease of the retina, can occur in patients that have no apparent symptoms, the investigators found in this study. In this stage the trouble will disappear when the drug is stopped.

The study was supported by grants from the National Institute of Arthritis and Metabolic Diseases, Bethesda, Md.

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PSYCHOLOGY

Aid Means 'Charity' To Most West Germans

► AID TO DEVELOPING nations by West Germany is "a matter of charity" to most West Germans, Dr. Dieter Danckwortt told the 17th International Congress of Psychology meeting in Washington, D. C. They feel no involvement in development aid and shift all responsibility to the Government.

Dr. Danckwortt of the German Foundation for Developing Countries, Bonn, said public opinion surveys and interviews have indicated West Germans must learn to accept aid to developing nations as necessary.

In addition to the people's reluctance to get involved in foreign aid, studies showed:

1. Government and industry officials have conflicting attitudes toward aid to developing nations.
2. German students are not concerning themselves with the problems of developing nations.
3. Large parts of the world outside Western Europe are beyond the knowledge of most West Germans.

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MEDICINE

Hereditary Arthritis Attacks Finger Joints

► A PARTICULAR type of arthritis affecting the terminal joints of the fingers and involving other finger joints in many cases is the only arthritis that is hereditary, Dr. Robert M. Stecher of Western Reserve University, Cleveland, Ohio, said.

Dr. Stecher, also of the Metropolitan General Hospital in Cleveland, was referring to little hard knobs about the size of a small pea, which are often seen on women's fingers a little below the tip near the joint.

The name of this form of osteoarthritis, which affects joints rather than being rheumatoid, is Heberden's nodes. Injury can cause this condition, but when the terminal finger joints are enlarged without apparent cause, inheritance plays a part. Women are affected more than men, and one-half of their daughters are also affected.

For a man to be affected, Dr. Stecher explained, his mother must be affected and his father be a carrier. He spoke at the meeting of the American Academy of Physical Medicine and Rehabilitation, held in conjunction with the 41st annual session of the American Congress of Physical Medicine and Rehabilitation in Dallas, Texas.

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PSYCHOLOGY

Test Ban Is Termed Psychological Advance

► A RUSSIAN psychologist termed the test ban a psychological advance for mankind.

The psychological significance of the test ban is "constructive and positive," Prof. Alexey N. Leontiev believes. Prof. Leontiev, chairman of the psychology department at Moscow University and vice president of the Academy of Pedagogical Sciences, was attending the 17th International Congress of Psychology in Washington, D. C.

As a person also trained in biology, Prof. Leontiev said, he welcomes the test ban. Continued testing might have grave biological consequences.

Speaking first and foremost as a Soviet, Prof. Leontiev expressed satisfaction with the treaty. He said that in these times when war threatens all humanity, "the task of avoiding war is not just a task of governments but of all mankind."

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TECHNOLOGY

Camera Develops Films For Viewing in 70 Seconds

► A MOVIE CAMERA and viewing system that produces films ready for showing in only 70 seconds was shown at the Western Electronic Show in San Francisco.

Developed for use in filming trace patterns on TV-like devices, the new process is self-contained and automatic, the film developing as it is fed through the system after shooting.

Upon shooting, the processor-viewer part of the system peels off the glass-fiber backing containing the developing agent, and presents the film for viewing.

Analab Instrument Corporation of Cedar Grove, N. J., developed the system, valuable in scientific experiments where it is important to know whether data have been recorded before dismantling equipment. Eventually, a modified version may be made available for public use.

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PHYSIOLOGY

Bald-Headed Men Wear Hairdos of Future

► THE MAN OF TOMORROW will have no hair at all, Dr. William Montagna of the Brown University department of biology, Providence, R. I., believes.

Although some individuals have more hair than others, the human race is the least hairy of all the mammals and is getting to be more and more hairless as time goes by.

If man continues to evolve as he has, he will eventually be bald as an egg. What little hair he does have is a vestige of times gone by. The body's internal temperature controls do far better than a coating of hair.

So, do not pity a bald man—he is wearing the hairdo of the future.

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