MEDICINE

Oral Insulin May Prevent Diabetes

➤ PREVENTING active diabetes from developing in people known to be susceptible to it may be possible with Orinase, the new insulin-replacing drug that can be taken by mouth.

A large-scale study of the drug as a preventive had been started by Dr. Riley Thomas, Howard University Medical School, Washington, on pre-diabetics who are not yet ill with the disorder but who may become active diabetics in the future.

These people are susceptible to diabetes because either one or both of their parents were diabetics and have passed on the hereditary weakness.

About 25% or 35% of them do become active diabetics sooner or later, Dr. Thomas told SCIENCE SERVICE.

Under normal conditions, their insulin production is adequate, but if they eat too much of sugar-containing foods, the excess sugar cannot be handled by the body and begins to show up in the urine.

As these "spill-overs" continue to occur, the body is able to produce less and less insulin and the person then becomes an active diabetic who requires insulin injections.

Diabetes-susceptible persons can be spotted by the use of the glucose tolerance test, in which injections of a sugar solution are given. If the pancreas is not able tosupply the normal amount of insulin, excess sugar appears in the urine.

Orinase will probably be able to reverse the results of the glucose tolerance test in some of these individuals and will be given to them periodically, Dr. Thomas said.

The drug seems to revive the insulin-producing cells of the pancreas and enable them to produce more of the necessary insulin.

Follow-up studies done on these cases five, ten or more years from now will show whether the drug is effective in preventing active diabetes.

Science News Letter, November 9, 1957

METALLURGY

Mass Production of Man-Made Diamonds

➤ MAN-MADE diamonds, identical to the natural stones, will be in mass production for industrial users sometime next year, the General Electric Company's metallurgical products department has revealed. More than 100,000 carats of diamonds already have been produced in pilot plant operations, Kenneth R. Beardslee, general manager of the department, said.

Synthetic production of industrial grade diamonds is expected to free the United States from dependence on Belgian Congo and South African supplies, Mr. Beardslee said.

Diamonds produced in quantity at the GE laboratory have been shown to be identical to natural diamonds on the basis of optical, X-ray and chemical examinations and hardness tests, the company revealed. The largest of the synthetic diamonds are about the size of coarse grains of sand, and most of them are about the size of fine sand.

The man-made diamonds, produced from carbon under high pressure and high temperature in a duplication of the natural process, will be used in cutting tools grinding wheels and other industrial equipment.

The present cost of the ungraded diamonds is $4.25 a carat, about 40% higher than the cost of ungraded natural diamonds, John D. Kennedy, manager of the diamond section, said. He added that expanded production facilities are expected to bring the cost down.

General Electric scientists emphasize that the man-made diamonds are not imitations, but are the same diamonds nature produces except for size. Further research is expected to increase the size.

The synthetic diamonds are said to demonstrate all the variations of color, clarity and crystallinity found in naturally occurring diamonds.

Science News Letter, November 9, 1957

TECHNOLOGY

Foresees Windows That Light Up the Home

➤ SCIENTISTS at Westinghouse's Bloomfield, N. J., laboratory believe they will be able to produce daylight in the average home 24 hours a day with a product called electroluminescent windows.

The windows, a future step in the development of panels and murals that glow and give off light, will mean that a housewife can turn to her husband and say "Dear, it's getting dark, please turn on the windows."

According to Edward G. F. Arnott, director of research at the Westinghouse lamp division, the transparent windows will have to wait until the 1960's before their general use becomes practical.

By then, however, the process by which windows can be made to give off enough light to illuminate a home should be perfected.

Using electroluminescence, scientists have been able to coat sheets of glass with phosphors, capable of producing light. In this manner, they have already produced, for commercial use, electroluminescent panels and murals.

Now, they are experimenting with transparent phosphors that will enable them to sandwich a phosphor between two sheets of glass having an electrical conducting coating.

"During the day," Mr. Arnott says, "this glass would allow the daylight to come through and permit the viewer to look out, or in, in the customary manner. At night, however, electricity would be applied and the transparent phosphor would emit light."

Chameleon-like, or color-changing panels, no thicker than window glass, can be used to line and light an entire wall or ceiling, and give off light equivalent to that in a modern well-lighted office.

Science News Letter, November 9, 1957

IN SCIEN

EDUCATION

College Scholarships Double in Five Years

➤ COLLEGE STUDENTS now have about twice as many scholarships to try for as they had five years ago, the U. S. Department of Health, Education and Welfare reports.

In 1955-56 there were 237,000 scholarships available at U. S. colleges and universities, valued at $65,700,000. Five years before there was only $27,000,000 available.

Altogether, scholarships, loans and campus employment available to college students amounted to more than $144,000,000 in 1955-56.

Results of the survey, which is intended to help parents, young people and educators know where to find financial aid, are reported in two publications, "Financial Aid for College Students: Undergraduate," and "Financial Aid for College Students: Graduate." Copies may be obtained from the Superintendent of Documents, U. S. Government Printing Office, at $1.00 and 50 cents respectively.

Science News Letter, November 9, 1957

NUTRITION

Chewing Not Needed By Peanut Eaters

➤ A STUDY of salted-peanut eaters has shown that as many nuts are digested after very poor chewing as are digested after thorough grinding between teeth.

This and other studies have led nutritionists to believe that swallowing food without chewing it does not wreck the digestion as was once thought, it is reported in *Nutrition Reviews* (Oct.).

Fifty years ago, chewing and more chewing was considered essential. One nutritionist, Horace Fletcher, and his many followers believed that everything had to be chewed at least 32 times. The British Prime Minister Gladstone even attributed his success in life to the fact that he gave "every tooth a chance" and applied 32 bites to every mouthful.

Recent experiments on chewing and digestion have centered around the use of the "mesh bag." This is a tiny bag which contains either chewed or unchewed food, with small ball bearings added to tell one from another.

The bags are swallowed, allowed to pass through the digestive system, and then recovered. The amount of undigested residue is then measured to see whether the chewing did any good.

Some foods, including meats, digested just as well no matter what kind of chewing they got, while others, especially fried and roasted meats, did better with chewing.

Science News Letter, November 9, 1957

CE FIELDS

MEDICINE

"Smell Scale" Being Devised by Psychologist

➤ A "SMELL SCALE" is being devised by a University of California scientist.

Dr. F. Nowell Jones, professor of psychology at UCLA, believes our ability to smell can be measured as precisely as the ability to see and hear.

Subjects are asked to sniff a substance in a bottle at a given vapor pressure which was established as standard. Then as the amounts of the substance were varied, the subject was asked to make a subjective judgment as to the intensity of the odor.

These judgments were then compared to vapor pressures, or relative numbers of molecules, in the bottles. There was a close correlation between these judgments and physical measurements of vapor pressures.

From such data may come the means of regulating odors that are ventilation problems. Such a "smell scale" would indicate how much the physical intensity of an odor must be reduced to cut subjective odor below the unpleasant level.

This information might also be valuable to the food industry since taste is largely a function of smell, Dr. Jones notes. It could tell how much of a particular substance was needed to enhance the taste of a particular product.

What about "smelling aids" for the aged?

There is some indication that many old folks lose much of their sense of smell and appreciation for food just as their sight and hearing deteriorate. Dr. Jones thinks such a gadget might be possible but is probably not practical.

Science News Letter, November 9, 1957

MEDICINE

Doctors Alerted to Wandering Patients

➤ DOCTORS have been alerted to watch for a strange type of wandering patient who fakes startling symptoms to gain admission to one hospital after another.

A typical case of the so-called Munchausen's syndrome is described by Dr. John S. Chapman of the State University of Iowa College of Medicine, Iowa City, in the *Journal of the American Medical Association* (Oct. 26).

The patient was a 39-year-old merchant seaman and part-time professional wrestler who would burst into hospitals with blood splattered all over the front of his shirt, claiming to be in anguish from the pain in the left side of his chest.

None of the hospital's diagnostic studies showed a cause for the bleeding which, in Dr. Chapman's opinion, was faked and was produced by a variety of methods. The hospital staff, however, never found out exactly how the seaman did it.

The patient has been in at least 25 hospitals since 1943 and followed much the same pattern in all of them. He left unpaid bills amounting to about $2,000 at each of six or more hospitals.

This is the first reported American case of Munchausen's syndrome although the condition has been reported frequently in England, Dr. Chapman says.

The name was first applied, somewhat jokingly, by an English physician in 1951 because the wide travels and fanciful histories of these patients reminded him of the travels and adventures of fiction's Baron Munchausen.

Such patients may obtain pathological enjoyment from the dramatic role of the patient, or they may harbor a grudge against the medical profession and resort to this to get even. But if this is so, Dr. Chapman says, they have an innate trust of doctors since they allow surgical operations and other dangerous procedures to be performed.

However, by the time the Munchausen-type pattern has been established, the patient is a candidate for a mental institution, even if he has a true organic disease to explain his symptoms, the scientist concludes.

Science News Letter, November 9, 1957

PUBLIC HEALTH

New Test Spots Syphilis Fast

➤ A FAST TEST for spotting cases of syphilis within minutes after a blood sample is taken was reported by Public Health Service scientists in *Public Health Reports* (Sept.).

The new test, called the Rapid Plasma Reagin Test, promises to be most useful for on-the-spot venereal disease testing of such groups as migrant workers, immigrants and industrial groups.

With present tests, migrant workers have disappeared many times before the reports got back from the laboratory.

The main difference between the new test and older ones is that it uses blood plasma instead of blood serum.

Plasma can be obtained by merely spinning the blood sample in a centrifuge and then pouring off the plasma from the top. To get serum, however, the sample must be allowed to clot before the serum can be separated.

For the new plasma test, about two thimblefuls of blood are collected, spun, and then separated into whole blood and plasma. To the plasma is added a special antigen solution and then any reaction between the two is watched for under a microscope.

If the mixture begins to clump, the reaction is positive and the subject has syphilis.

The new test is even more sensitive than the commonly used VDRL or Venereal Disease Research Laboratory one, and it is just as specific for syphilis.

Authors of the report are Drs. Joseph Portnoy and Warfield Garson, Venereal Disease Experimental Laboratory, Chapel Hill, N. C., and Dr. C. A. Smith, Communicable Disease Center, Atlanta, Ga.

Science News Letter, November 9, 1957

MEDICINE

Knock-Knees in Children Are Usually Outgrown

➤ KNOCK-KNEES are very common among toddling infants but are usually outgrown and should not cause parents unnecessary concern, Dr. A. J. M. Morley of the Institute of Orthopaedics, London, reports in the *British Medical Journal* (Oct. 26).

Fortunately, knock-knees usually improve without treatment. Except for surgery, there is no effective treatment known for the condition, he says.

More than 1,000 examinations of normal children were made and revealed knock-knees in 22% of those between the ages of three and three and a half. At the seven-year level, however, only one to two percent of them still had the same amount of "knock."

The knock-knees were not related to flat feet, the age at which the child started to walk, the duration of breast feeding, or the amount of vitamin supplements the child received in the first 18 months, Dr. Morley reports.

But there was a weight relationship, with knock-kneed children being somewhat heavier, on the average, than normal children.

Knock-knees in children under seven can probably be safely ignored unless the abnormality is excessive or there is some underlying cause for it, such as rickets or a broken bone.

An underlying cause should be suspected if the knock-knee is of unequal amount in the two legs, the child is short for his age, or if there is a family history of severe knock-knee or other bone deformity, Dr. Morley advises.

Science News Letter, November 9, 1957

ENDOCRINOLOGY

Estrogenic Hormone Found in Clover

➤ "COUMESTROL," a new potentially valuable estrogenic hormone, has been isolated from clover, the U.S. Department of Agriculture has reported.

The hormone, a crystalline substance found in Ladino clover, is also present in alfalfa and strawberry clover. Although it is considerably less powerful in its effects on animals than the synthetic estrogen stilbestrol, coumestrol is reported to be much more active than other plant estrogens.

Estrogens, which regulate specific growth and reproductive activities, can have either good or bad effects on animals. Stilbestrol is used to promote faster weight gains in beef cattle and in poultry. However, too much feed with estrogenic activity may cause a decrease in animal fertility, USDA scientists report.

Synthetic estrogens are also valuable in human medicine.

The new hormone was discovered at the USDA's Western Research and Development Division, Albany, Calif.

Science News Letter, November 9, 1957