

TECHNOLOGY

Swallowed Safety Pins

► TWO NEW MEDICAL tools designed around powerful magnets are being tested on children and adults who accidentally swallow such objects as safety pins.

The devices, which were developed at the General Electric Research Laboratory, are being tried out by Dr. Arthur Q. Penta, director of the department of bronchoesophagology at St. Clare's and Ellis Hospitals in Schenectady, N. Y.

Most of the foreign objects swallowed make an uneventful exit from the body, but if they are long, sharp or jagged they can perforate the stomach and intestines.

Simple permanent magnets, used for years by physicians, cannot work in certain cases, such as removal of an open safety pin from a patient's stomach. The magnet might grasp the pin with the sharp point projecting up, thus endangering the delicate tissues that might be punctured during withdrawal.

Dr. Penta solved the problem with help from General Electric scientists who developed a "switchable" permanent magnet that could be turned off and on at will. Before the device is switched on, contact can be made on the spring of an open safety pin. The pin can then be turned around and removed blunt end first.

The second device is a "steerable" magnet that can reach previously inaccessible regions of the stomach. Both devices consist basically of a stainless steel cable enclosed in a plastic tube.

In the second instrument, however, a spring hinge is located near a permanent magnet at the top of the device. After the device has been placed in a patient's stomach, a physician can maneuver the magnet

upward simply by pushing down on the control cable. The magnet can then be rotated in any desired position.

The complete procedure, from insertion to removal of one of these instruments, takes only two or three minutes, without anesthesia or hospitalization.

Dr. Penta says a general practitioner, watching through a fluoroscope, would be able to use the instruments.

• Science News Letter, 85:21 Jan. 11, 1964

MEDICINE

Magnetic 'Pod' Performs Life-Saving Operations

► A MAGNETIC "POD" on a plastic "vine" can be planted in the body to help where nature has broken down.

The "Pod," a magnet the size of a pencil point encased in rubbery plastic, travels through the blood stream or other tubes and is guided by magnetic fields.

It helps restore and repair the body by performing such operations as dissolving blood clots by releasing a dose of a drug. After it has done its work, the "Pod" is pulled out by its plastic thread.

The "Pod," developed by Prof. Ephraim H. Frei and Shaul Leibinzohn of the Weizmann Institute, Rehovoth, Israel, will be used on humans in 1964.

Photographs of the scientists and blackboard diagram of the magnetic device appeared in SNL 85:6, Jan. 4, 1964. In part of the press run of that issue, this photograph was incorrectly captioned with that of the similarly appearing photograph below.

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Northrop Space Laboratories

BATHTUB CURVE—Dr. Dimitri Kececioglu (left), director of a five-day institute on reliability engineering at the University of Arizona, and Dr. Vincent J. Bracha, Northrop Space Laboratories, Hawthorne, Calif., show the bathtub curve which demonstrates the failure history over the operating life of parts and equipment.

STATISTICS

Family Planning Tricky With Calendar Method

► COUPLES USING the calendar method are likely to have trouble spacing their children out over long periods of time, according to the harsh verdict of statistics.

If couples want to have children two years apart, they are limited by laws of probability to having sex relations twice a month. If they want to have children four years apart they are confined to one sex act a month.

"It is not surprising," said Dr. Andre J. de Bethune, Boston College chemistry professor, and, incidentally himself the father of nine, "that the rhythm method has become a source of mental torture to many couples."

The odds are derived from calculations of what Dr. de Bethune calls the "monthly security factor," named after Pope Pius XII's stated desire that a "sufficiently secure foundation" be given to family planning methods in accordance with Catholic Church doctrine.

The odds take into account the mathematical probabilities for conception, the vagaries of the monthly cycle, the normal fertility period and human desires.

Complete security is assigned a value of one. The security level has to be kept in the high 90's for any long-term spacing to be successful.

"The vigilance demanded of a couple using the rhythm method alone, to attain and maintain such a high security level, can be quite taxing emotionally," Dr. de Bethune reported in Science, 142:1629, 1963.

"This vigilance requires a degree of personal and conjugal asceticism that can make severe demands on the emotional stability of two people united in marriage . . ."

The "monthly safety factor" can be kept high when it is based on 13 months of calendar checking, Dr. de Bethune noted, but many couples cannot get through those 13 months without conceiving a baby.

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ENTOMOLOGY

Campaign to Stamp Out Yellow Fever Mosquito

► A NEW CAMPAIGN to stamp out the yellow fever mosquito in the Western Hemisphere is underway.

This insect, *Aedes aegypti*, lives and breeds in nine southeastern states, the Caribbean area and Central and South America.

Yellow fever is present in Central and South America and constantly threatens to spread to the United States.

The last outbreak of yellow fever in this country was in 1905 when New Orleans and other ports were affected.

The *Aedes aegypti* also carries dengue.

The United States' part in the international eradication program will be carried out over a five year period by the U. S. Public Health Service with a \$3 million congressional appropriation for the fiscal year 1964.

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