

One hamburger, hold the hormones

An outbreak of fatigue, rapid heart rate, anxiety and weight loss in residents of Minnesota, South Dakota and Iowa last summer was caused not by a virus, as initially thought, but by the ingestion of bovine thyroid tissue. The June 1986 *MAYO CLINIC HEALTH LETTER* reports that more than 140 people became ill as a result of eating hamburger from a midwestern plant that included "gullet-trimmed" meat. Gullet trimming results in the inclusion of the animals' hormone-containing thyroid glands. Thyroid hormones regulate metabolism; the thyroid hormones in the hamburger boosted the people's metabolism to discomfiting levels. Their bodies eventually cleared the excess hormone, and they all felt fine in about a month, says Ian Hay of the Mayo Clinic in Rochester, Minn.

It won't be necessary to ban hamburgers from your summer barbecues to avoid what the researchers facetiously dub "hamburgotoxicosis." After the outbreak, the U.S. Department of Agriculture banned gullet trimming.

Healthy transmission of genital herpes

People with genital herpes can evidently transmit the infection even if they show no signs of it. In the June 12 *NEW ENGLAND JOURNAL OF MEDICINE*, James F. Rooney, Stephen E. Straus and their colleagues at the National Institute of Allergy and Infectious Diseases in Bethesda, Md., document the transmission of herpes by an asymptomatic man.

The man was taking part in a trial of weekend-only use of acyclovir, a drug that controls the replication of herpesvirus, and keeping careful records of his symptoms. He had sexual relations with a woman during a symptom-free period; the woman developed genital blisters five days later. Characterization of her virus indicated it was structurally identical to his.

The study, say the researchers, provides biochemical proof of asymptomatic transmission, which has been shown with epidemiologic data. Last year Gregory Mertz, then at the University of Washington in Seattle and now at the University of New Mexico in Albuquerque, reported on 66 people with new cases of genital herpes. Of the sources, 62 percent had had no evidence of oral or genital herpes in the three weeks prior to transmitting the disease; many of them did not even know they had herpes. Mary Guinan of the Centers for Disease Control in Atlanta, a coauthor of that study, estimates that only about a quarter of all people with genital herpes have symptoms.

Medicine capsules

- Analysis of the molecular structure of AIDS virus DNA shows it mutates up to a million times faster than the standard mutation rate for DNA from other organisms. The high rate of mutation, the researchers suggest, could be what allows the AIDS virus to escape attack by the immune system. Beatrice H. Hahn of the University of Alabama in Birmingham and colleagues report in the June 20 *SCIENCE* on a comparison of AIDS DNA taken over the course of one or two years from three people. Each person had been infected with only one AIDS virus, although one man had had sexual encounters with about 1,000 men between 1980 and 1985. The exclusivity of infection, the researchers suggest, implies that infection by one AIDS virus may protect against infection by another. Figuring out how that happens, they note, "could be important in developing methods for the treatment and prevention of AIDS."

- The rate of ectopic (extrauterine) pregnancies in the United States more than tripled from 1970 to 1983, according to the May 9 *MORBIDITY AND MORTALITY WEEKLY REPORT*. In 1970, there were 4.5 ectopic pregnancies for every 1,000 reported pregnancies; in 1983, there were 14 per 1,000. The increase is probably due to improved diagnostic technology and the increase in pelvic inflammatory disease, the report notes.

New way to watch cholesterol

People trying to lower their blood cholesterol now have a handy new tool: an index that describes the combined content of cholesterol and saturated fat in foods. The researchers at the Oregon Health Sciences University in Portland who designed this "cholesterol/saturated-fat index" (CSI) say it is more useful than separate measurements of cholesterol and saturated fat—both of which have been shown to raise blood cholesterol levels—because it allows a person to compare the total ill effect of various foods.

Separate indexes confuse the comparison, partly because cholesterol is measured in milligrams and saturated fat is measured in grams, says Sonja L. Connor, one of the Oregon medical researchers who describe their index in the May 31 *LANCET*. Adding to the confusion is the fact that some foods, such as liver and shellfish, are high in cholesterol but low in saturated fats, while others, such as chocolate and some oils, are high in fats but contain no cholesterol.

The CSI equation multiplies 1.01 times the grams of saturated fat in 3.5 ounces of a food and adds it to 0.05 times the milligrams of cholesterol. Poultry and shellfish, for example, have a CSI of 4, and fatty beef has a CSI of 18.

High levels of blood cholesterol have been shown to contribute to hardening of the arteries and heart disease.

Low-calorie allergy

Aspartame, the low-calorie sugar substitute marketed as NutraSweet and Equal, can cause skin hives and swelling of throat tissue, according to a medical researcher at Washington University in St. Louis. Anthony Kulczycki, an allergist and immunologist, says he has positively identified the aspartame allergy in six patients and is studying another 44 potential victims.

Kulczycki says he initially was skeptical that aspartame could cause an allergic reaction because it is such a small molecule. However, he found that after aspartame is eaten, its bonding with protein in the body can cause allergic reactions, which can be "very severe," he says. The throat of one of Kulczycki's patients swelled so badly that she needed emergency treatment, he says.

He says the hives or swelling can appear immediately after a person drinks a diet soda or hours later. People who suspect they are allergic to aspartame should avoid it for two weeks to see whether the symptoms disappear, Kulczycki says.

Vitamin C at work in the eye

Vitamin C delays molecular changes in the eye that lead to cataracts by slowing the wearing effects of light and oxygen, according to researchers at Tufts University's Laboratory for Nutrition and Cataract Research in Boston.

Cataracts are caused by the long-term action of light and oxygen on crystallins, the proteins in the eye's lens that transmit light, explains lab director Allen Taylor. This oxidation causes the proteins to precipitate out and clump together as cloudy cataracts. The lens contains enzymes that counteract the process, but they also begin to oxidize as the eye ages.

Because vitamin C, or ascorbic acid, is naturally plentiful in the eye—as much as 30 times more plentiful than in the blood—Taylor and his colleagues thought it might be there to work against cataracts. To find out, he treated cultured lens tissue with ultraviolet light to cause oxidation. He found that the more ascorbic acid present, the longer it took cataracts to form. Experiments on guinea pigs further showed that large amounts of vitamin C in the diet lead to a buildup of ascorbic acid in the eye.

Next, Taylor would like to figure out the optimum daily dose of vitamin C to combat cataracts in humans.