

Misfiring magic bullets

Vaccines, once hailed as "magic bullets" against disease, sometimes fly astray. In fact, shots of two common vaccines — DPT (diphtheria-pertussis-tetanus) and rubella — may in rare cases trigger serious health problems, according to a scientific panel assembled by the Institute of Medicine.

In reviewing existing data, the panel found a link between the pertussis component of the DPT vaccine and anaphylaxis, a life-threatening allergic reaction. And women who get rubella shots may develop crippling arthritis, the panel concludes in its July 3 report.

Before DPT vaccination began, 95 percent of people contracted pertussis (whooping cough) at some point in their lives. This respiratory infection remains a leading cause of infant deaths in developing countries. Rubella (German measles) usually causes only a mild fever and skin rash, but exposure to the virus during pregnancy can cause serious birth defects, including mental retardation, heart disease, deafness and diabetes.

The new report, commissioned by Congress as part of the 1986 National Childhood Vaccine Injury Act, examines more than 20 adverse health effects and their relationship, if any, to the two vaccines.

Evidence compiled on the pertussis vaccine "indicates a causal relation" not only with anaphylaxis but also with extended periods of inconsolable squalling in infants who have just received the injection, the panel reports. Evidence linking the vaccine with shock and with acute encephalopathy, a structural abnormality of the brain, was weaker but still "consistent with a causal relation." The panel had insufficient evidence to confirm or refute past charges that the pertussis vaccine can cause permanent neurologic damage.

Adverse reactions to DPT and rubella shots remain extremely rare, and should not scare people from getting vaccinated or having their children vaccinated, stresses pediatrician Mary L. Coady of Bryn Mawr (Pa.) Hospital, a member of the panel. She adds that a safer pertussis vaccine is undergoing clinical trials in the United States.

Treating the untreatable

Two drugs have recently challenged the notion that crippling spinal-cord injuries are untreatable. Tests conducted last year showed that high doses of the steroid methylprednisolone, administered within eight hours of spinal injury, could minimize paralysis in many patients (SN: 4/7/90, p.212). Researchers now report even more promising results from a small study of an experimental drug called GM-1 ganglioside.

At the University of Maryland Shock Trauma Center in Baltimore, neurosurgeon Fred H. Geisler and his colleagues studied 34 people with paralyzing spinal-cord injuries. Within three days of their injury, 16 of the patients began daily injections of GM-1 ganglioside for 18 to 32 days; the remainder received placebo injections. In nearly half of the treated patients, the drug apparently restored some motor skills to initially paralyzed muscles, the researchers report in the June 27 *NEW ENGLAND JOURNAL OF MEDICINE*. Moreover, immediate treatment was not crucial. Improvements showed up even in patients whose injections began three days after injury.

Geisler's team theorizes that GM-1 ganglioside — naturally present in cell membranes of the brain and spinal cord — helps protect against additional nerve-cell death after a spinal-cord injury, while also stimulating nerve-fiber growth and repair. The researchers caution that the drug does not fully heal the spinal cord, but they note a dramatic improvement in quality of life for some treated patients. Six who had been confined to wheelchairs can now walk with leg braces, they report, compared to one such case in the placebo group.

That's entertainment?

While critics blame television for a number of social ills, a new report adds a medical twist to the hazards associated with the tube. Neurologist Venkat Ramani of the Albany (N.Y.) Medical College has documented a case in which the voice of a popular television personality repeatedly triggered seizures in a 45-year-old woman.

A number of factors can precipitate epileptic seizures, including lack of sleep, emotional stress and blinking lights. Video games have been implicated in at least two cases, one of which involved a 13-year-old girl who had an epileptic attack while playing Nintendo.

In the July 11 *NEW ENGLAND JOURNAL OF MEDICINE*, Ramani describes a woman who suffered mild seizures — involving confusion, nausea and a feeling of pressure in her head — whenever she watched "Entertainment Tonight." Ramani videotaped that show, as well as several other programs with similar formats. When he replayed the shows in the laboratory, he discovered that the woman had seizures only while watching "Entertainment Tonight."

Systematic testing ruled out all but one of the cast members — co-host Mary Hart, whose voice pattern consistently caused the seizures. Ramani prescribed anticonvulsant drugs and advised the patient not to watch the program. In the two years since, she has remained "relatively seizure-free," he reports.

"Reflex epilepsy" triggered by a specific voice or light pattern remains relatively rare, notes Edward J. Hart (no relation to Mary), who reported the Nintendo case last year. Most epileptics suffer seizures at random and thus cannot avoid their seizure "triggers," says Hart, a neurologist at Franciscan Children's Hospital in Boston.

Calcium subdues menstrual blues

High doses of calcium may help alleviate the mood swings and physical discomforts many women experience before and during menstruation, according to a preliminary study.

Psychologist James G. Penland and his colleagues at the USDA's Agricultural Research Service in Grand Forks, N.D., studied 10 healthy women who experienced mild behavioral and physical symptoms the week before and during their menstrual periods. The researchers randomly assigned the women to either high (1,300 milligrams) or low (600 mg) daily doses of calcium, added to their food in liquid form. Halfway through the six-month study, the two groups switched dosages.

Nine out of 10 women reported a reduction in premenstrual mood problems — such as crying, irritability and depression — while on the high-calcium regimen, says Penland.

The extra calcium also seemed to allay the physical discomforts accompanying menstruation itself. For example, seven out of 10 women reported a reduction in cramps and backaches while on the high-calcium diet.

The U.S. recommended daily allowance for calcium is 800 mg for women age 25 and older, but Penland says many women consume much less than that. While volunteers in his study received liquid calcium supplements, he notes that women can boost their intake of this essential mineral by eating more dairy foods. (To reduce the risk of cardiovascular disease, most experts recommend low-fat dairy foods such as skim milk and nonfat yogurt.)

Last year, another research team suggested that women with premenstrual syndrome may have low blood levels of zinc (SN: 10/27/90, p.263). That work suggests trace amounts of zinc may help regulate key hormones, such as progesterone, that may play a role in menstrual troubles. Taken together, these two preliminary studies support the notion that such nutrients somehow fit into the complex puzzle of premenstrual syndrome, Penland says.