

trast to a 5 percent increase among teenage boys.

If the shows had mainly quickened the pace of suicides among teenagers who were already about to kill themselves, say the researchers, suicide rates would have dropped steeply after the observation period, but they did not. Seasonal variations in suicide, they add, were corrected for in the results.

In the second study, Madelyn S. Gould and David Shaffer of Columbia University in New York City followed suicide rates in the greater New York area two weeks before and after four made-for-television movies on suicide, in 1984 and 1985. An excess of six suicides, compared with the number predicted, occurred after three of the broadcasts. Projected nationwide, this corresponds to about 80 extra suicides linked to the movies among 10- to 19-year-olds.

The one movie not linked to an increase, says Gould, focused on reactions of surviving family members and included educational information about preventing suicide.

In an accompanying editorial, Harvard Medical School psychiatrist Leon Eisenberg says the studies indicate that "it is timely to ask whether there are measures that should be undertaken to limit media coverage of suicide." He notes, though,

that suicide rates are importantly affected by individual risk factors, such as depression, alcohol and drug addiction and social withdrawal, and by other triggering events, including unwanted pregnancy, family crisis and loss of or rejection by an important person.

"I'm prepared to believe that cases of imitative suicide occur after television programs," comments Stanford University sociologist James N. Baron, "but it's difficult to establish that link statistically." For instance, he points out that the two new studies are unable to identify whether the teenagers who killed themselves actually saw the television shows in question. Other studies, says Baron, find varying effects of media coverage on subsequent suicide rates.

It is curious, adds sociologist Steven Stack of Auburn (Ala.) University, that the television programs in the San Diego researchers' study contain few instances of *teenage* suicide. Psychological studies, he says, indicate that people imitate the actions of others most similar to themselves. The effects of programs about teenage suicides may need to be studied separately, holds Stack, and compared with the impact of other types of suicide coverage, such as that focusing on the elderly or on celebrities.

— B. Bower

## U.S. DPT vaccine trials look good

The combination vaccine against diphtheria, pertussis and tetanus (DPT) protects children against these killers, but the pertussis part of the triad has created its own victims — a small proportion of vaccinated children who develop permanent neurological impairment. The first details of U.S. trials of a new pertussis formulation developed in Japan have just been released. They indicate that the new vaccine, which has already done well in Japan and Sweden, may be safer.

The current vaccine is made of whole, killed cells of *Bordetella pertussis* bacteria. Side effects range from a few days of pain, swelling and fever to, in rare instances, lasting brain damage. The Japanese vaccine uses two partially purified proteins from the bacteria.

Two studies in the September AMERICAN JOURNAL OF DISEASES OF CHILDREN describe the use of the Japanese vaccine in U.S. children. At the University of California at Los Angeles, researchers compared reactions among 18- to 24-month-old children receiving their fourth DPT booster. Forty children got the new vaccine and 20 got the current one. The new vaccine caused significantly fewer side effects. For example, while 85 percent of the children receiving the current vaccine developed a

fever, only 5 percent of the others did. The injection site was tender in all of the current-vaccine recipients, compared with 22.5 percent of the new-vaccine recipients.

In the second study, done at Vanderbilt University in Nashville, Tenn., 20 children aged 4 to 6 years and 20 toddlers aged 18 to 24 months were given DPT boosters made with the two proteins, and an equal number got the currently used shots. As in the UCLA study, the new and old vaccines boosted pertussis antibodies in approximately equal measures, and side effects with the new vaccine were significantly rarer than with the old one.

The studies, both groups note, are not definitive. Both were too small to indicate whether the more severe neurological complications are less likely with the new vaccine, and all subjects had received previous vaccinations without adverse reaction. Comments Alan Hinman, an immunization expert at the Centers for Disease Control (CDC) in Atlanta, "The results are encouraging but we're particularly interested in seeing results of vaccination in children younger than those in these studies." Hinman and a CDC colleague have estimated that 51 U.S. children a year suffer permanent brain damage from the current vaccine. — J. Silberman

## Booze before birth: Caution is the word

Some children born to alcoholic mothers suffer an array of mental and motor deficits collectively known as "fetal alcohol effects." Using animal models, researchers are uncovering the fetal defects that may underlie such debilitations.

When pregnant rats are fed ethanol-loaded diets, their fetuses undergo abnormal brain development, according to a report in the Sept. 19 SCIENCE. During normal brain development, a delicate schedule of neuron proliferation and migration ensures the systematic construction of extremely organized brain structures such as the six-layered cerebral cortex. In the study, prenatal exposure to high ethanol levels seemed to upset this schedule in at least three ways.

First, the period of neuron generation started one day later and lasted two days longer in rat fetuses exposed to ethanol, compared with unexposed fetuses. The pregnant rats were fed an amount of ethanol equivalent to what a woman would consume if she drank more than a gallon of beer every day during her pregnancy.

Second, the number of cells generated on particular days of the gestation period differed in the exposed and unexposed groups, although the total numbers of neurons were comparable. On most days, fewer cortical neurons proliferated in the ethanol-exposed fetuses than in fetuses from the control group. There was, however, "an anomalous late surge in the generation of neurons in rats exposed to ethanol," reports Michael Miller of the University of Medicine and Dentistry of New Jersey in Piscataway.

Finally, the distribution of neurons generated during this late surge was highly abnormal. Cortical neurons arise in a zone around a fluid-filled cavity called the ventricle, and migrate from there to their specific cortical destinations. Miller observed that many of these late-surge neurons migrated to the "wrong" place.

What does a rat study say about the effects of alcohol on human fetuses? Miller says it suggests that similar developmental defects in the brains of human fetuses probably underlie the symptoms in children with fetal alcohol effects. Researchers agree that heavy drinking should be avoided during pregnancy, when fetuses have precise developmental schedules to stick to. But "precise safe levels cannot be extrapolated from animal research," comments Lyn Weiner, director of the Fetal Alcohol Education Program at the Boston University School of Medicine. Caution is advised, says Weiner, "but the danger of small amounts of alcohol has been exaggerated."

— I. Amato