

## Granted partial immunity from hepatitis?

As a viral disease that attacks the liver, hepatitis B can lead to cirrhosis, liver cancer or death, and is considered a serious health care problem worldwide. There are, however, vaccines available that cause antibody formation against the hepatitis B virus in 90 to 95 percent of those vaccinated. And scientists are developing more convenient, less expensive vaccines for broader use (SN: 7/18/87, p.39). But current vaccination procedures may not be enough, according to a recent study.

Scientists at the Medical College of Wisconsin in Milwaukee and the University of Wisconsin in Madison report in the February ANNALS OF INTERNAL MEDICINE that periodic boosters of hepatitis B vaccine may be needed to maintain sufficient immunity against the virus. Mary M. Horowitz and her coauthors, after finding certain factors may influence the duration of immunity in previously vaccinated individuals, tested the efficacy of a low-dose booster vaccine in a group of hospital employees.

Of the 245 individuals studied three years after their primary vaccination, 38 percent had antibody levels so low they may no longer be protected, say the scientists. Factors directly associated with these low levels were older age, smoking and greater body weight. After receiving a single booster dose of vaccine, 78 percent of the employees with low antibody levels developed high levels within one month.

Although scientists have known that various groups respond differently to hepatitis B vaccination, the current study showed a surprisingly high percentage who either had not responded well after the first vaccination, or had lost antibodies over time. "Our study doesn't prove they aren't protected," Horowitz told SCIENCE NEWS. "But it raises some doubt as to whether they are. . . You could make a case for routine post-vaccination screening [based on these results]." Another study—needed to confirm that immunity actually is lost—will be difficult, she says, because a large number of vaccinated individuals would have to be followed to see whether the incidence of infection increases during the years following vaccination.

Neither the Centers for Disease Control (CDC) nor the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) considers follow-up screening necessary at this time, a CDC official said in an interview. They instead concentrate on those most likely to become infected with the virus—including drug abusers, homosexual men and health care workers.

## Cancer statistics: Pluses and minuses

While scientists and the medical health profession continue to improve cancer treatments and prolong patients' lives, the number of new cancer cases keeps rising by about 1 percent each year, according to a report released last week by the National Cancer Institute in Bethesda, Md. Summarizing the latest (1985) data on cancer incidence and mortality, the annual report, unlike its predecessors, also includes a look at long-term cancer trends, starting in 1950.

Edward Sondik from the institute's Division of Cancer Prevention and Control said last week that the increases have been largely due to increases in lung cancer, still the leading cause of cancer deaths. But figures also indicate that new cases of lung cancer and deaths from the disease are decreasing or leveling off for many groups. Despite the good news regarding lung cancer, data based on all cancer sites combined show increases in both incidence (the number of new cases each year per 100,000 of a population) and mortality. During the 36-year period studied, incidence of all cancers increased 36 percent, while mortality increased 6.7 percent. Overall survival, based on 5-year survival beyond initial diagnosis, increased from 39 to 50 percent.

Most dramatic of the changing trends are those for cervical cancer, stomach cancer, melanoma and non-Hodgkin's lymphoma, says Sondik, who presented the report at the regular meeting of the National Cancer Advisory Board. Incidence of cervical cancer fell 77 percent, with mortality also dropping 73 percent—a sign of improved early detection methods, says Sondik. Stomach cancer's incidence and mortality also decreased by about 70 percent. On the other side, melanoma showed the greatest increase, with incidence more than doubling. Fortunately, says Sondik, mortality has not risen nearly so fast, because of better diagnosis. But for non-Hodgkin's lymphoma, both mortality and incidence rose about 120 percent.

## The Pill's effect on lipid levels

Lifestyle changes, such as stopping smoking or changing diet, may help prevent coronary artery disease, but some women on the Pill should add another change to the list, according to a report in the January OBSTETRICS AND GYNECOLOGY.

Women using oral contraceptives should take those that minimize the hormone progesterin's adverse effects on blood lipid levels, which are associated with coronary artery disease, says the study's principal author, Ronald T. Burkman, head of gynecology and obstetrics at Detroit's Henry Ford Hospital.

"Stopping smoking or changing diet is not easy, but changing the Pill you take can be done," says Burkman. Specifically, he says, different types of progesterin, with varying effects on blood lipid levels, are found among today's oral contraceptives. As for the hormone estrogen, which helps to counter progesterin's adverse effects, most contraceptives contain the same type.

"This [advice] is for preventing heart disease down the road because the actual risk for coronary artery disease is very rare among current users. It mainly occurs among older, smoking women," says Burkman, who was at Johns Hopkins University in Baltimore when the study was done.

Previous studies of higher-dose oral contraceptives—those containing high levels of both estrogen and progesterin—have similarly shown varying effects on blood lipid levels, depending on the type of progesterin used. But Burkman's is among the first prospective studies to examine the lower-dose oral contraceptives that are now available, says Robert H. Knopp, director of the Northwest Lipid Research Clinic at the University of Washington in Seattle.

In the study, Burkman and his colleagues randomly divided 266 women into four groups. The four groups were given oral contraceptives with different progesterin preparations. In all the groups, total cholesterol levels increased 5.9 to 9.1 percent after six months, and low-density lipoprotein cholesterol, which is the type that increases the risk of heart disease, increased 10 to 15.6 percent. But the differences from group to group were not significant.

Group differences were noticed, however, in levels of the "good" high-density lipoprotein (HDL) cholesterol and apolipoprotein A-1, both of which are believed to help reduce the risk of coronary artery disease.

The group taking a Pill with the progesterin ethynodiol diacetate showed the only increase in HDL cholesterol and the largest increase in apolipoprotein A-1 levels, while the group taking a Pill with levonorgestrel showed the largest decrease in HDL cholesterol and the smallest increase in apolipoprotein A-1 levels. It is not understood why these specific progesterins have these different effects, Burkman says.

The two other preparations studied, which contained different amounts of norethindrone, fell in the middle for the HDL cholesterol and apolipoprotein A-1 levels.