

Bladder cancers: One in four due to jobs

Male bootblacks, salespeople, broadcasters, gardeners, and produce graders or packers are among a host of workers running an increased, previously unrecognized risk of bladder cancer, according to a pair of government studies. Past studies have shown that smoking may account for half of male bladder cancers. Jobs now appear responsible for half the rest, the new studies reveal.

Striking roughly four times as many men as women in the United States, carcinoma of the urinary bladder is the fifth most common cancer in men.

Epidemiologists with the National Cancer Institute in Bethesda, Md., and the Walter Reed Army Institute of Research in Washington, D.C., polled 2,100 white and 126 nonwhite men with bladder cancer — from 10 geographically diverse areas — for data on every job they had held for six months or longer since age 12. The researchers compared these data with those collected from almost twice as many randomly selected men of the same races and about the same ages.

At least some of the observed associations between jobs and cancer are “virtually certain” to have resulted from chance, Debra T. Silverman and her coauthors note in the Oct. 4 *JOURNAL OF THE NATIONAL CANCER INSTITUTE*. For example, they say, though male clerical work has been linked with risk of the cancer in two other studies — and here in a threefold excess after 10 years of employment — scientists have “no credible biologic explanation” for such a link.

However, weighing the magnitude of apparent risk along with its statistical significance and several other factors, the researchers now conclude that “the strongest evidence of increased risk” in white men shows up in painters (exposed to many known and potential carcinogens), truck drivers (exposed to carcinogens in vehicular exhaust) and drill press operators (exposed to potentially toxic cutting- and lubricating-oil mists).

Painters, for example, initially face a risk 50 percent greater than that of men who have never painted, according to the new results. And painters employed 10 years or more run a risk 300 percent higher than nonpainters. Ironically, the scientists say, though nine other studies have suggested a similar association, the risk of bladder cancer among painters “has received little attention.”

Risks that stand out among nonwhites, whom the researchers studied separately, include employment at any time within the auto industry or as dry cleaners or clothes pressers. However, the researchers note, the overall “risk of occupational bladder cancer among white and non-white men is similar.”

— J. Raloff

Accounting made easy for gene mappers

Recent technological advances have triggered renewed optimism among scientists engaged in the gargantuan task of creating a map of up to 100,000 human genes. The nascent, international endeavor — expected to cost \$3 billion over a 15-year period — has survived its initial, two-year phase of “controlled chaos” and shows encouraging signs of scientific and political maturity, says Charles R. Cantor, director of the Human Genome Center at the Lawrence Berkeley (Calif.) Laboratory. He spoke this week at a gene-mapping conference in San Diego.

History's biggest biological research collaboration has been hindered in the United States by institutional turf battles, competing budgets and a lack of consensus regarding such basic choices as what computer languages researchers should use to store the mega-reams of data the project will generate. But a newly proposed, standardized method for storing and sharing details about the human genetic blueprint may simplify matters, geneticists say.

The plan, proposed by four prominent molecular biologists in an essay in the Sept. 29 *SCIENCE*, calls for scientists to use a sensitive, genetic technique, the polymerase chain reaction, to determine the exact molecular sequence of a

small portion of every gene studied. Two years ago, when researchers first plotted a U.S. gene-mapping strategy, they did not anticipate the availability of such high-resolution gene “name tags” so early in the project's course.

The new game plan generated mostly enthusiastic comments at the San Diego conference. In effect, it allows scientists to catalog their findings in the form of nucleic acid sequences stored in computer databases, which is far cheaper than the current practice of storing frozen cells in liquid nitrogen. Anyone wanting to experiment with a real genetic segment could construct one from scratch by feeding the stored recipe into a DNA synthesizer. Perhaps most important, the new system would allow various laboratories to continue using their favorite mapping methods, provided they record their final data in the standard format.

The application of the polymerase chain reaction and other new technologies to gene mapping has the genome project moving along faster than anyone had anticipated, scientists say. But nobody expects the project's price tag to drop, adds Cantor, since original estimates presupposed a 10- to 100-fold improvement in technological methods during the project's lifetime. — R. Weiss

Alcohol abuse grows among pregnant poor

Abusive drinking among low-income pregnant women treated at a large urban hospital doubled over the last decade, with the increase due mainly to a tripling in the percentage of white women reporting alcohol abuse, according to a study described in the October *OBSTETRICS AND GYNECOLOGY*.

Alcohol abuse, defined as the consumption of four or more alcoholic drinks daily, held steady among black and Hispanic women. But rates of illicit drug use — particularly cocaine — rose over the same time period for the entire sample of women, notes study director Bertis B. Little of the University of Texas Southwestern Medical Center in Dallas.

“Many of these women are using drugs because they're addicted, psychologically or physically,” he says.

Little and his co-workers surveyed alcohol abuse at Parkland Memorial Hospital in Dallas. Women in the study are from families making less than \$14,000 in 1987.

From 1977 to 1980, 38 of 5,602 pregnant women surveyed (0.7 percent of the sample) said they abused alcohol during pregnancy. In 1987, 14 of 1,032 pregnant women (1.4 percent of the sample) reported abusive drinking.

The most striking finding emerges in a comparison of ethnic groups. About 0.6 percent of black women and 0.3 percent of Hispanic women reported alcohol abuse initially and again in 1987. In contrast, 1.13 percent of white women in the initial sample abused alcohol, whereas 3.4 percent reported alcohol abuse in 1987.

The same researchers previously found that about 10 percent of pregnant blacks and whites seen at the Texas hospital in 1987 regularly use cocaine, Little says. The rate of cocaine use is much lower for Hispanic women, he notes, because many in the Dallas area are devout Catholics from Mexico who consume no alcohol or illicit drugs.

“There's been a poor job of educating low-income women about the dangers of drinking during pregnancy,” Little contends. For example, most women in the Dallas sample have not heard of fetal alcohol syndrome, a mix of physical, mental and behavioral abnormalities afflicting many babies born to mothers who drink heavily during pregnancy.

“I hope our study motivates the authorities to put warning labels on alcoholic beverages with a description of fetal alcohol syndrome,” Little says.

— B. Bower