

A direct approach to alcoholism

A substantial minority of people seeking medical care at urban clinics are alcoholics, and in many cases their condition may be missed by physicians who fail to ask one or two simple questions, according to a report in the Jan. 1 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

Based on responses to a standard 25-item alcoholism questionnaire, 20 percent of 232 patients visiting a university medical clinic from October 1985 through January 1986 were alcoholic, say Michele C. Cyr and Steven A. Wartman of Brown University in Providence, R.I. This is much higher than some earlier alcoholism appraisals among medical outpatients, but matches a recent report from a family practice center. It is estimated that 5 to 10 percent of the general population suffers from alcoholism, and rates for hospitalized medical patients range from 10 percent to 50 percent.

Although detailed alcoholism questionnaires are not routinely given to medical clinic patients, physicians are taught to ask questions such as "How much do you drink?" and "How often do you drink?" But the researchers found that only 22 of 47 alcoholics diagnosed by the questionnaire responded to the former question with the expected "alcoholic" response of four or more drinks per day. And in response to the latter query, only 16 of the 47 alcoholics said they imbibed daily.

The straightforward question "Have you ever had a drinking problem?" was, however, answered affirmatively by 33 of 47 alcoholics. Even better was a combination of this question with "When was your last drink?" A total of 43 alcoholics admitted to having a drinking problem or to drinking within the previous 24 hours or both.

These results are unexpected, say the investigators, since it is generally thought that alcoholics deny or downplay their drinking problems. Cyr and Wartman suggest that the two direct questions employed in the study can be used by physicians to identify those patients requiring closer examination for alcoholism.

The weighting game: A male version

A number of recent studies indicate that women, but not men, tend to see themselves as overweight even if they are not. Dissatisfaction with body weight among women is thought to be a major risk factor for developing eating disorders such as anorexia and bulimia.

Young men, however, are far from content with their weight, according to a survey of 226 college freshmen — 98 men and 128 women — in the November/December *PSYCHOSOMATIC MEDICINE*. While nearly nine out of 10 normal-weight 18-year-old women said they wanted to be thinner, normal-weight men expressed conflicting views; more than half wanted to lose weight and about one-third wanted to gain weight. The proportion of both men and women who expressed no desire for weight change was about 15 percent.

Men and women who wished to lose weight shared negative perceptions of their bodies, say Adam Drewnowski and Doris K. Yee of the University of Michigan in Ann Arbor. Both groups viewed themselves as overweight and were unhappy with the shape of their bodies. Men were more likely to use daily exercise for weight control, whereas women more often resorted to dieting anywhere from several days to several weeks per month.

It is unclear whether normal-weight males who want to be thinner and see themselves as overweight are at risk for eating disorders, say the researchers. This group reported dieting more than other males in the college sample, but still dieted much less than the women. Dieting, rather than dissatisfaction with body weight, may be a key risk factor for eating disorders, suggest Drewnowski and Yee.

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Surface maps of organic molecules

Imagine closing your eyes, then running your finger over a corrugated surface. Your finger would detect the surface's regular pattern of alternating ridges and grooves, and you could convert what your finger feels into an image in which, say, a white dot would correspond to each elevated point encountered by your finger and a black dot to any other point. By scanning the surface systematically, you would generate a black-and-white image of the surface. The atomic-force microscope applies a similar principle — but on an atomic or molecular scale (SN: 4/19/86, p.244).

Recently, a group of researchers at Stanford University and the University of California at Santa Barbara used an atomic-force microscope to reveal parallel rows of polymer molecules, lying side by side only 0.5 nanometer apart in a one-molecule-thick layer on the surface of a glass slide. "These results demonstrate that atomic-force microscope images can be obtained for an organic system," the researchers report in the Jan. 1 *SCIENCE*. Previous experiments had involved graphite surfaces and inorganic materials such as sodium chloride.

The atomic-force microscope is a descendant of the scanning tunneling microscope (SN: 10/25/86, p.262). It operates by maintaining a minute but steady force between its needle-like diamond tip and the surface being scanned. The force involved is about a millionth of that applied by a phonograph needle on a record and is small enough not to disturb or damage any surface molecules significantly. Because no electric current need flow between surface and needle, as it must for the scanning tunneling microscope, the atomic-force microscope works equally well with conducting and insulating materials.

"Our [atomic-force microscope] is not yet, however, useful for routine imaging of biological materials," the researchers say. Further improvements are needed in diamond-tip preparation and cleaning and protection against accidental breakage of the needle's delicate support system.

Other researchers are looking at the possibility of using atomic-force microscopes not only for detecting surface atoms and molecules but also for understanding the nature of electromagnetic, chemical and frictional forces on a microscopic scale. For example, a sharp ferromagnetic needle in place of a diamond tip could pick up the fine details of magnetic fields above a magnetized nickel film or near a magnetic recording head.

Coming in out of the cold

Physicist Roy D. Woodruff, who challenged Edward Teller's optimistic reports on progress in developing a nuclear-powered X-ray laser and then became a virtual outcast, has regained an important position at the Lawrence Livermore (Calif.) National Laboratory. Three years ago, when Woodruff was director of Livermore's nuclear weapons program, he complained that Teller and weapons scientist Lowell L. Wood were conveying "overly optimistic, technically incorrect" information about X-ray laser development to President Reagan and other high government officials (SN: 10/31/87, p.276). Because nothing was done to address his complaints, Woodruff says he was forced to resign his post "out of principle."

Woodruff was subsequently demoted to the position of staff scientist. He filed a grievance with the University of California, which operates the laboratory for the Department of Energy. The university ruled that Woodruff had been unfairly demoted and asked the laboratory to find him a suitable senior position. Last month, Woodruff was appointed to the newly created position of Livermore's director of weapons verification research. Woodruff's new post takes on added significance with the recent signing of a U.S.-Soviet Union treaty banning medium-range nuclear missiles in Europe.

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