

Medical Association (JAMA). The study, conducted by a research group led by Karen Lasser of the Cambridge Hospital and Harvard Medical School, Cambridge, Massachusetts, suggests that people with mental illness account for nearly one half of the United States tobacco market.

The study used population-based data from a national survey mandated by US Congress to determine the prevalence of psychiatric disorders. The researchers questioned a sample of 4411 non-institutionalized people, who had participated in the survey, regarding their use of tobacco and also submitted them to a standard psychiatric diagnostic interview to determine prevalence of mental illnesses, as defined by international diagnostic criteria.

Of those who had ever had mental illness in their lifetimes 34.8% were current smokers, vs 22.5% of those who had never been mentally ill, and 55.3% had smoked at some time in their lives, vs 39.1% of people without mental illness, the study found. Extrapolating their results to the US population, the researchers estimated that persons with a recent diagnosable mental disorder consumed nearly half the cigarettes smoked in the United States.

In discussing their results, the Harvard researchers point out that tobacco manufacturers clearly target their market strategies to psychologically vulnerable persons, according to internal tobacco industry documents. Market researchers at the RJ Reynolds Company, for example, speak of smokers who smoke for "mood enhancement" and "anxiety relief".

A study published by another US research group in an earlier November issue of *JAMA*, found a significantly higher proportion of anxiety disorders among adolescents who were heavy smokers — at least 20 cigarettes a day — than among adolescents who smoked less or did not smoke at all. Among the nearly 700 youths followed up for the prospective study, those who smoked heavily had a nearly sixfold risk of generalized anxiety disorder, sevenfold risk of agoraphobia and sixteenfold risk of panic disorder. Heavy smoking in adolescence was associated with an almost elevenfold risk of anxiety disorders in early

adulthood. The study was conducted by Jeffrey Johnson and his colleagues at Columbia University and the New York State Psychiatric Institute, the Mount Sinai Medical Center in New York, and the National Institute of Mental Health in Bethesda, Maryland. ■

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In Brief

A tomato a day keeps death away (for some people)

Children eating tomatoes had a significantly lower mortality rate than children who did not, in a prospective study of nearly 29 000 Sudanese children under 5 years of age. The Harvard School of Public Health team conducting the study visited the homes of the children on 4 occasions at 6-monthly intervals. Children reported by their mothers on 3 of these occasions to have eaten tomatoes had an 83% reduction in mortality compared with children not reported to have eaten tomatoes. Tomatoes also showed a dose-related reduction in diarrhoea-related deaths. Adjusting for confounding factors, including vitamin A intake, only slightly weakened the link with tomato consumption. "What is important," said Dr Fawzi, who headed the study team, "is not so much the magnitude of the mortality reduction — the 38–91% confidence interval was quite large — but that a dietary approach, in this case tomato consumption, can have an extremely important impact on mortality and morbidity in children". He believes the effect of the tomatoes could be due, among other things, to their high content in immunostimulatory antioxidants. The study was published in the October 2000 issue of the *Journal of Nutrition*. ■

A fly that vaccinates the host it feeds on

A US research team headed by David Sacks of the National Institute of Allergy and Infectious Diseases in Bethesda, Maryland, reported last November in *Science* what could become a revolutionary approach to

vaccination against vector-borne infections. They found that exposing mice to the bites of uninfected sandflies protected them against leishmaniasis, a disease that can be as disfiguring and disabling as leprosy, and that can only be transmitted to humans by sandflies. Something still unidentified in sandfly saliva seems to produce a delayed-type hypersensitivity response that prevents *Leishmania* parasites from causing disease, the researchers postulate. When that something is identified, it may, they believe, become the basis for a vaccine against leishmaniasis, and a similar approach might be used to vaccinate against other diseases carried by insect vectors, including malaria. ■

Laugh to your heart's content!

People who don't laugh a lot may be at greater risk of heart disease than those who do, according to a US study by cardiologists at the University of Maryland Medical Center in Baltimore, Maryland. The study, presented at the American Heart Association meeting in New Orleans last November, found that among an otherwise matched sample of 300 people responding to a questionnaire about their "laughing habits", the 150 participants with a history of heart disease were 40% less likely to laugh at a variety of situations described in the questionnaire than the 150 with no history of heart disease. Who gets the last laugh on the issue is anyone's guess. ■