Earthquake shakes up nightmare frequency

The October 1989 earthquake that rocked the San Francisco Bay area rattled the sleep of college students in the region for at least a month by churning up an unusually large number of nightmares, a new study finds. But students described most nightmares — even those incorporating a quake theme — as only slightly to moderately intense, in contrast to some clinical assumptions that exposure to a traumatic event sparks particularly vivid nightmares, report psychologist James M. Wood of the University of Arizona in Tucson and his colleagues.

The findings, described in the May JOURNAL OF ABNORMAL PSYCHOLOGY, come from the first controlled study of nightmares following a natural disaster. No data exist regarding nightmares following rape, other crimes or accidents, Wood adds. Several studies report frequent nightmares among combat veterans, based on their recall of nightmares experienced over the past several weeks or months, an approach that tends to underestimate nightmare frequency, Wood argues.

Wood's group had students fill out dream logs each morning for three weeks, beginning one to two weeks after the earthquake. The final sample consisted of 35 San Jose State University students, 56 Stanford University students and 97 University of Arizona students, who acted as controls. Both groups of California students rated their situation during the earthquake as slightly to moderately dangerous and cited moderate anxiety when the earthquake occurred.

During the study, three-quarters of the San Jose State students and two-thirds of the Stanford students reported at least one nightmare, compared with one-half of the Arizona students. The researchers defined nightmares as "frightening dreams with visual content and an elaborated story." California students reported an average of nearly three nightmares, Arizona students about half that number.

About 40 percent of the Bay area students reported one or more nightmares about an earthquake, compared with 5 percent of those in Arizona. However, ratings of nightmare intensity on a five-point scale did not differ across the three sites. California students' earthquake nightmares were no more emotionally intense than other frightening dreams.

Earthquake nightmares rarely replayed the actual earthquake experience, Wood says. One woman dreamed that another earthquake opened a trench in the road that then came into her house. She rated the dream as "not intense."

The findings suggest that the normal dreaming process incorporates recent stressful and threatening events into an increased number of nightmares of surprisingly modest emotional intensity, Wood asserts. Researchers do not know whether California students eventually returned to pre-quake nightmare levels or if some will have nightmares about the disaster for years to come, a phenomenon observed among Vietnam combat veterans and children rescued from kidnappers.

The paucity of nightmare research in the population at large makes any generalization from the current study speculative, Wood acknowledges. For instance, his team cannot rule out the possibility that California residents generally have more nightmares about earthquakes than do Arizona residents.

In a previous study, Wood and Arizona psychologist Richard R. Bootzin found that both anxious and calm college students report an annual average of 24 nightmares, about twice the number previously assumed (SN: 3/3/90, p.132). Another study recently completed by Wood and psychologist Marie-Anne Salvio of the Veterans Administration Medical Center in Palo Alto, Calif., yielded an annual average of 16 nightmares among 50 adults between 60 and 70 years old.

For now, Wood assumes a traumatic experience, a perception of continuing threat or both can lead to a persistently high rate of nightmares. Investigators should also examine whether the nightmares of people suffering from post-traumatic stress disorder typically prove as intense as clinicians often suppose, Wood adds. *— B. Bower*

Genital-wart virus linked to penile cancer

Two new scientific studies add to the evidence implicating a sexually transmitted "bug" in the development of penile cancer, a malignancy rare in the United States but more common in Brazil and other Latin American countries.

The organism in question is the human papillomavirus (HPV). Virologists have identified more than 60 different types of HPV, including some that cause harmless warts on the hands and feet. Other types, such as HPV-16 and HPV-18, cause nearly invisible "flat warts" of the genitals. These strains are associated with cervical cancer in women (SN: 6/8/91, p.362) but had not been clearly linked previously to penile cancer.

A study presented last week at the annual meeting of the American Urological Association, held in Washington, D.C., suggests that HPV-16 and HPV-18 may cause up to one-third of all U.S. penile cancers. The new study is the largest to look at HPV and cancer of the penis in the United States.

"HPV is associated with penile cancer," says lead investigator John S. Wiener of Duke University Medical Center in Durham, N.C. "It is the strongest data yet to prove that association," he says.

Wiener and his colleagues began their experiment by obtaining preserved samples of tumors taken from 29 men with cancer of the penis who had been treated at Duke and other medical institutions between 1970 and 1991. Using polymerase chain reaction, a powerful technique that multiplies trace amounts of genetic material, the researchers searched for viral DNA in the tumor specimens.

They discovered DNA characteristic of HPV-16 in eight of the 29 samples, or 28 percent. One man of the 29 had DNA from HPV-18 in his tumor. No sample contained both types of virus, Wiener reported at the meeting.

In six of the 29 cases, the Duke team analyzed tissue taken from the primary tumor as well as from lymph nodes to which the cancer had spread. Three of the six had HPV infection, and each of these three had HPV-16 in both the primary tumor and the cancerous lymph node tissue. That finding hints that the virus plays a role in the genesis of penile cancer and then tags along as bits of the original tumor break off and travel to other parts of the body, Wiener says.

Another research team took a more detailed look at HPV and the spread of penile cancer. Stephen K. Tyring, a virologist at the University of Texas Medical Branch at Galveston, and his colleagues examined tumor tissue taken from one man infected with HPV-16 whose penile cancer had spread to the lymph nodes. Tyring presented his team's data at the urology meeting.

When the Texas team looked at the primary tumor and lymph node tissue, they discovered that the viral DNA had inserted itself into the man's DNA. Furthermore, the viral DNA had been incorporated at exactly the same location in both the primary tumor and the lymph nodes. Those findings suggest the viral DNA probably makes changes in the patient's DNA that may lead to cancer, Tyring says.

Other researchers have made similar observations in studies of cervical cancer; however, this is the first time scientists have demonstrated that DNA from HPV has incorporated itself into a penile cancer patient's DNA.

HPV is not the only factor leading to cancer of the penis, which usually strikes men age 50 and older. The disease is more likely to strike men who become infected with HPV earlier in life. However, many men infected with HPV never get penile cancer, Tyring notes. Researchers know the cancer occurs more frequently in men who are not circumcised and in men who smoke cigarettes. It may be that HPV acts along with some other factor to cause malignant changes in the penis, Tyring speculates. *— K.A. Fackelmann*