if upset-stomach sufferers can be trained to normalize their stomach contractions.

Robert Stern at Penn State in University Park recently studied normal subjects sitting still within a rotating cylinder lined in black and white stripes. The EGGs of the 14 who suffered motion sickness went from a normal level of three electrical discharges (initiating three contractions) per minute to between five and eight. The others did not, he and his colleagues reported in the November 1985 AVIATION, SPACE, AND ENVIRONMENTAL MEDICINE. The readings returned to normal about nine minutes after the cylinder stopped.

Stern, who began working with EGGs 25 years ago, says the cylinder procedure could be used to screen astronaut candidates. NASA has sponsored some of his research, and "unofficially," beginning attempts to use EGGs in space have been made, he told SCIENCE NEWS.

Stern has done what he terms "very promising" preliminary work on using EGGs to increase resistance to motion sickness. By removing a person from a motion-sickness-inducing environment as soon as the EGG looks irregular, which happens before the person feels ill, he hopes to break up the stimulus-response association and gradually increase the amount of time before the person gets nauseated. *— J. Silberner*

Knowing little about how things work

At a time when television broadcasts, newspapers, magazines, advertisements and political speeches are regularly sprinkled with technical terms, the U.S. public often has little idea what the terms mean. A recent probe of technological literacy conducted for the National Science Foundation (NSF) shows that only 31 percent of about 2,000 people surveyed by telephone have a clear understanding of radiation, 27 percent understand what gross national product (GNP) means and 24 percent understand what computer software is. Just one in five think they know how a telephone works.

The same poll, conducted late last year by Jon D. Miller, director of the public opinion laboratory at Northern Illinois University in DeKalb, shows that about two in five people believe that rocket launchings have affected the weather, that space vehicles from other civilizations have visited the earth and that lucky numbers exist. Overall, on a rough index of technological literacy, people from 18 to 24 years old — those most recently in high school — had a significantly *lower* rating than all other age groups except those over 65.

"It is clear that young Americans just emerging from their formal education are not as likely to be technologically literate as somewhat older adults," says Miller. He presented his preliminary survey results last week in Baltimore at a conference on technological literacy.

"The technologically literate person should understand how basic technologies work, which aspects are changeable and which are not, and some of the impacts and implications of major technologies," Miller says. "Increasingly the issues on the public agenda are going to be issues that involve some aspect of technology."

Ironically, these results come at a time when public interest in science is relatively high. In another recently published NSF survey, almost half of the respondents report great interest in new inventions and scientific discoveries. Young people, regardless of grade level, are particularly interested.

Nevertheless, "interest is not the same as literacy or competence," says Erich Bloch, NSF director. About three quarters of those interested in science and technology admit they don't know very much about either one, he adds.

"What we have," says Miller, "is a large number of people who believe in science, who have unrestrained faith in it, but who haven't the foggiest notion why it happens." The biggest problem is not hostility to science, but that people deal with it as if it were magic, he says. Moreover, people tend to confuse real or likely technologies and fictional ones.

"Our concern," says Rustum Roy, who chaired the meeting and directs the NSF-funded "Science through Science, Technology and Society" project at Pennsylvania State University in University Park, "is that we have not been able to educate 99 percent of the public to appreciate technological issues." A larger segment of the population should understand the choices and values inherent in today's and future technologies, he says. "We must insist that school systems teach it."

"What we're talking about is a redefinition of what's fundamental for learning," says Cecily C. Selby of New York University. Technology studies are generally not part of school curricula. Too much emphasis is put on the theoretical, she says, and too little on how things work.

However, notes F. James Rutherford, education officer for the American Association for the Advancement of Science, based in Washington, D.C., "It's not clear at all what we need to know collectively across the whole range of science, technology and social behavior . . . in order to lead rich, full lives."

"You don't have to be a scientist or a technician to vote," says Gov. Richard D. Lamm of Colorado. But, he adds, "we have to make sure that we are making our science and technology decisions correctly." *— I. Peterson*

This lake is a natural lab

Bye et al., EOS, Vol. 67, 1986 © AGU

It's a rare event when Lake Eyre South in Australia is inundated with a major flood; the lake's water usually escapes through one of the continent's largest inland drainage systems. So when J.A.T. Bye of the Flinders University of South Australia in Bedford Park and his colleagues went to study the lake in March 1984, two months after it experienced major flooding, it was a special scientific opportunity to learn more about the lake. Indeed, Bye's group was treated to a wonderful discovery: The lake acted as a huge natural laboratory for studying the flow of fluids. The swirling pattern near the island shown in this aerial view of the lake is one of several different kinds of fluid structures observed by the researchers.

Bye and his colleagues think the visibility of the fluid patterns springs from the two different kinds of solutions created in the lake as it floods. In some regions the salt crust of the lake bed is dissolved to form a saline solution, while in others a fine silt is stirred up. The two solutions don't mix very well, possibly because the silt clumps up in the salt water, and so the boundary between them remains fairly distinct. This enabled the researchers to see a variety of fluid phenomena as wind-induced currents pushed one kind of fluid into another over different kinds of lake bed surfaces.

The researchers note that, in experiments conducted on much smaller scales, they and others have been able to reproduce the major types of mixing patterns in the lake with remarkable fidelity.

When the researchers returned to the lake in July 1984, none of the striking flow structures were apparent, probably because the silt had settled and the salt crust had completely dissolved. Now Lake Eyre South is a dry salt marsh again, the researchers write in the Feb. 4 EOS. "Nature has closed the theater," they say, "and it may be some years before there is another performance."

— S. Weisburd