

Radiation Like 'Pep Pill'

➤ **RADIATION** in very low doses acts like amphetamines or "pep pills" on the animal nervous system, an Indiana physiologist has found.

There is some indication that the same is true for humans, but evidence is not conclusive.

Using doses as low as one roentgen per minute for less than 10 minutes, Dr. Charles D. Barnes, of Indiana University, Bloomington, discovered he could arouse sleeping animals, accelerate their heart rates and in general, augment the typical stimulating effect of amphetamines. The effect of barbiturates, on the other hand, was countered by the radiation.

Astronauts in space might receive one roentgen per minute during a solar storm. Otherwise even this low dose is not a common occurrence.

Dr. Barnes told **SCIENCE SERVICE** that in itself such radiation is not dangerous. However, in conjunction with stimulants, it could be.

In the rats and cats he tested, Dr. Barnes found that the radiation re-

duced the lethal dose of amphetamines by a third.

Although any radiation adds to the cumulative store that living creatures carry with them throughout life, the doses Dr. Barnes used did no damage to the nervous system. The animals were only affected while they directly experienced the radiation.

Hundreds of roentgens are needed to bring about lasting changes. In humans a lethal dose is 800 to 1,000 roentgens; in rats it is 600 to 700.

To account for the stimulant effect, Dr. Barnes theorized that the radiation was bothering the gastro-intestinal tract. Possibly the animals interpreted it as a stomach ache, he said. They certainly found radiation unpleasant, because they avoided it whenever they could. But when Dr. Barnes cut the splanchnic nerve leading to the small intestine, the animals lost their sensitivity.

Cutting the olfactory nerve gives the same result. Apparently animals can "smell" radiation and do not like it.

MEDICINE

Alcohol Impairs Ability

➤ **EVEN** a single alcoholic drink may seriously impair one's ability to pay attention to more than one thing at a time.

Dr. Herbert Moskowitz of the University of California at Los Angeles Neuropsychiatric Institute undertook a study to determine precisely what alcohol in moderate doses does to an individual. He found that no effect on vision, hearing or time perception was demonstrated.

Next, he investigated alcohol's effects on information handling by the brain. Subjects were first told to identify a tone hidden in noise coming through one ear phone but to ignore a voice reading numbers simultaneously over the other ear phone. Then they were asked to repeat the numbers while ignoring the tone.

Alcohol had little or no effect on the ability to do either task.

When subjects were asked to identify the tone while repeating the numbers, however, there was a significant effect.

Although sober, the subjects averaged only 78% on the numbers-tone test.

When the subjects consumed carefully measured amounts of alcohol—one ounce of vodka for every 40 pounds of body weight—they fell below this mark by 16%.

For a 160-pound man, this would amount to four ounces, or four drinks.

The legal measure of intoxication, .15% blood alcohol, is reached by approximately four two-ounce drinks.

"Very few people realize how limited the brain's capacity is to handle a lot of information at any one time," Dr. Moskowitz said. "Alcohol apparently interferes with the brain's ability to do more than one thing."

In driving, people are seriously impaired long before the .15 blood alcohol is reached, according to results of the study.

Dr. Moskowitz said that many people underestimate the complications of driving, in which the brain must pay attention to many things at once.

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