MEDICINE

Alcohol Absorption Varies

➤ NEITHER THE SIZE of the tipler nor the amount consumed determines the degree of intoxication.

It is the rates of absorption and elimination of alcohol in the bloodstream that determine whether the drinker is "tipsy" or not, three investigators report to a Committee on Medicolegal Problems in the *Journal of the American Medical Association* (Nov. 8).

Furthermore, that sobering-up period that occurs when a policeman or doctor appears quickly vanishes and the intoxication returns, Dr. Herman A. Heise of Milwaukee, Wis., Dr. Clarence W. Muehlberger of Lansing, Mich., and Ralph F. Turner of East Lansing, Mich., point out.

The fast sobering period is caused by an abundant secretion of epinephrine from the suprarenal glands located above the kidneys. It temporarily counteracts the effect of alcohol but not the percentage in body fluid. When the emergency has passed, intoxication returns without additional alcohol.

Actually, alcohol affects persons in a surprisingly uniform manner if the amount of alcohol accumulated in the body fluids is measured, not the amount consumed.

The threshold for measurable effects of alcohol usually occurs at a blood alcohol level of approximately 0.02% to 0.03% (indicating the accumulation of 0.4 ounce to 0.6 ounce of pure alcohol in a 150-pound person). In addition, the fatal dose of alcohol, a blood accumulation of 12 ounces, applies to anyone. At that level, the alcohol interferes with the basic nerve functions and death ensues.

This information has been accumulated in order to establish recommendations from the American Medical Association and the National Safety Council. The scientists conclude that: persons with a concentration of alcohol of less than 0.05% by weight in blood or its equivalent in urine, saliva or breath should not be prosecuted for driving while under the influence of alcohol; alcoholic influence is usually present in that percentage between 0.05% and 0.15%. This is a wide range and the committees recommended that courts of law consider behavior of the individual and circumstances leading to the arrest before making a decision; at 0.15% or over, there is definite evidence that the person is under the influence of alcohol.

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ASTRONAUTICS

Study Space Men

Plans for space travel need to include studies of the effects of space on man, ranging from his food needs to radiation and man's mental reactions to space life.

➤ CREW MEMBERS of manned space craft may be required to develop an appetite for slugs and snails.

These tempting delicacies would offer a more varied menu on long space flights that employ the use of a closed algal cycle for oxygen and food supplies, Dr. Robert G. Tischer, bacteriologist at Mississippi State University, said at the Second International Symposium on the Physics and Medicine of the Upper Atmosphere and Space held at San Antonio, Tex.

A space crew that depends upon a growing algae system for food will not necessarily welcome the prospects of eating the algae directly. Therefore, by placing an algae-eating animal such as a goat, daphnia, slug, snail or other animal within the space craft, the crew can obtain animal protein food in a form more familiar and desirable, the biologist explained.

Research in the field of such closed feeding systems must provide crewmen with a diet that is not only practical but possible, two U. S. Air Force Space Medicine scientists added. It is reasonable to presume that men will need more than algae cake or chemical porridges for space flight rations, Drs. George R. Steinkamp and Willard R. Hawkins of the School of Aviation Medicine at Randolph Air Force Base pointed out.

A truly long space flight such as a trip to Mars would take from two and one-half to three years. A steady diet of algae for that length of time would be undesirable.

Crew Minds Dulled

➤ THE "ALL work and no play" maxim holds true even in space flight.

For the detachment, confinement and sensory deprivation that will be experienced by man in space flight will affect his psychological processes. Dr. George T. Hauty, psychologist in the space medicine division of the School of Aviation Medicine, Randolph Air Force Base, reported at the symposium.

Experiments with men confined within an artificial space cabin for seven days revealed that when they were required to do a simple task the greater portion of the time, they exhibited symptoms of hallucinations and became "muddled."

Isolation, in which man is separated from his accustomed environment, produced anxiety, fear and/or indifference, Dr. Hauty explained.

The space crew will face the problem of fatigue due to simple tasks that are performed in a small space. Researchers have found that men confined in such small spaces do not adjust to the extreme turnabout of the normal day-night cycle. The men could not banish their feeling of fatigue and this led to a decline in ability to perform simple tasks.

The main problem of fatigue that overcomes the man in space flight is not the traditional "dragged out feeling" from hauling 1,000 pounds for 30 miles on foot. Rather, it stems from the association with a loss or lack of sleep or long concentration on a monotonous job.

This leads to bad judgment, slower decision time, a decline in alertness and vigilance, increased variability of reliability, and degradation of attitudes and feelings, Dr. Hauty pointed out.

Increased Radiation

➤ PILOTS AND CREWMEN on today's and tomorrow's high-flying commercial jets will receive somewhat increased but not intolerable doses of radiation, two scientists said at the Space Symposium.

The flight altitude of these planes is about 35,000 feet, Drs. Hermann J. Schaefer, U. S. Naval School of Aviation Medicine, Pensacola, and Abner Golden, department of pathology, Emory University Medical School, Emory, Ga., pointed out.

Commercial airline pilots who fly the upper limit of 1,000 hours a year would receive a yearly exposure of 250 millirad, they said. The yearly dose at sea level from natural background radiation ranges from 100 to 200 millirad, depending on location. It is lowest over the ocean and highest over igneous rock.

In other words, the additional exposure for a commercial jet pilot amounts to about twice the natural dose.

However, the scientists asserted, this amount is still within the maximum permissible dosage.

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PHARMACOLOGY

Retarded Boys Improved by Drug

➤ IMPRESSIVE physical and mental changes in sexually immature, mentally retarded boys following treatment with a new drug has been reported.

The drug, called Follutein, or Squibb Chorionic Gonadotropin, was administered to 32 mentally defective in-patients who were nine to 16 years of age, Drs. M. Reiss and H. H. Berman of the Willowbrook State School, Staten Island, reported to the Eastern State Psychiatric Association meeting in New York.

Treatment was continued for at least three months. Advances in physical development with Follutein in this study included increase in the size of the genitals. Weight and height increased and the standard I.Q. score of the treated boys improved 15% during the three months of therapy.

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