

AUGUST 1995

Don't chew and fly, if I recall correctly (Menoufia University, Shibin El-Koum, Egypt): "Khat... is a plant whose leaves contain cathinone, a natural amphetamine. Its leaves are chewed for their effect of central nervous system stimulation and sympathomimesis... We examined 25 regular (daily) khat chewing flight attendants (RC), 39 social (occasional) khat-chewing flight attendants (SC), and 24 non-khat-chewing aircrew members (NC) who presented for FAA medical examinations, using electroencephalographic (EEG) frequency analysis and 4 psychometric tests measuring perceptual-visual memory and decision-speed... Memory function test scores were significantly lower in khat chewers than NC's, and in RC's than SC's. They correlated significantly negatively with both duration and quantity of khat abuse in both khat-chewing groups. While EEG analysis revealed a statistically significant shift towards fast frequency bands in RC's compared to SC's or NC's, it did not significantly correlate with, or influence, any of the tested memory functions... The results suggest an adverse effect of khat chewing on perceptual-visual memory and decision-speed regardless of EEG frequency changes."²

AUGUST 1970

Saving a life with the anti-G suit (Ames Research Center, NASA, Moffett Field, CA, and Stanford University Medical Center, Stanford, CA): "An Anti-G Suit was used to control bleeding in a patient in whom surgery and other attempts to achieve hemostasis were unsuccessful. The patient, a 25-year-old multipara, slowly exsanguinating following a routine tubal ligation, responded dramatically when exposed to 30 mm. Hg pressure for 10 hours in an Air Force Anti-G Garment Cutaway CSU-3/P. Previous unsuccessful attempts to control bleeding included vaginal packing, abdominal hysterectomy, bilateral hypogastric artery ligation, and the administration of 46 pints of whole blood and 64 pints of plasma."³

Aeromedical evac of respiratory failure patients (USAF Medical Center, Scott AFB, IL): "Effective means of treating respiratory failure are now available. It has become imperative that these new techniques and equipment be adapted to the transport of respiratory failure patients by air. Considerable experience has been gained in this regard over the last two years at the Air Force aeromedical evacuation center. The techniques employed have been individualized to the patient, some being managed with low flow oxygen and others with pressure or volume cycled respirators. The importance of following the patient's status with arterial blood gases as well as with the cardiac monitor in flight is to be stressed."¹

AUGUST 1945

Boyle's breezer (Mayo Foundation, Rochester, MN): "A medical officer, a physiologist, temporarily attached to the Mayo Aero Medical Unit, twenty-eight years of age, who was in good general health, noticed painful flatulence on some occasions when he ascended to a simulated altitude of 30,000 feet or above; in one instance the distention was so great that the subject seemed to be on the verge of collapse..."

"Abdominal manipulation during ascent will help toward the eructation of gas (with or without vomiting) or toward the passage of flatus; tight belts or girdles should be loosened or removed. Most individuals if they realize the cause of their distress can successfully relieve their distention. Stewardesses can be helpful in explaining to passengers who have abdominal distress the cause and methods of relief."⁵

Debunking the Schneider Index (Stanford University, CA): "In 1920 the Schneider Index, a cardiovascular rating as a measure of physical fatigue and efficiency, was first described. Originally employed as an adjunct to the flight examination, the test has been widely used as a research tool in the study of physical fitness, fatigue, circulatory neuroses and other problems in fields quite unrelated to aviation. With its official use in Army and Navy aviation it is little wonder that an extensive literature has accumulated, dealing with the value of the test in the selection of candidates for aviation training, and as an aid in the detection of pilot fatigue and physical deterioration..."

"The results of 325 Schneider tests on healthy young men, aged 18 to 28, are presented statistically in support of certain conclusions concerning the reliability and validity of the Index in rating the cardiovascular fitness of normal individuals..."

"The outstanding finding is that, judged from test-retest comparisons, both the components of the Index and the Index score itself are of low reliability..."

"Correlations between a maximal treadmill criterion of exercise tolerance and the Schneider Index, and each of its components, are without statistical significance."⁴

[Note: Common use of the Schneider Index discontinued shortly after this article was published. Despite this, the standing and recumbent blood pressure and pulse sections remained on U.S. military physical examination forms for several decades thereafter.]

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