

SEPTEMBER 1997

Smoking and hypoxia (Aeromedical Laboratory, Japan Air Self-Defense Force, Tachikawa, Tokyo, and Department of Pharmacology, National Defense Medical College, Tokorozawa, Saitama): “Background: Increased levels of carboxyhemoglobin (COHb) in smokers are blamed for inducing pre-hypoxic tendency classified as anemic hypoxia. If COHb can be simply converted to altitude, there should be significant differences between smokers and nonsmokers with respect to hypoxia tolerance. However, the studies of the effects of carbon monoxide and/or smoking habit on the physiological functions at altitude do not have consistent conclusions, and many pilots still have smoking habits. This study was designed to assess whether there is a definite significant difference for time of useful consciousness (TUC), subjective symptoms, or performance degradation between nonsmokers and smokers. Methods: During the hypoxia experience of routine physiological training, TUC and 12 typical subjective symptoms were examined at the chamber altitude of 25,000 ft (7620 m) in 589 nonsmokers and 582 smokers in Study 1. The time until the deterioration of handwriting was assessed by 6 physiological training observers in 51 nonsmokers and 70 smokers in Study 2. The results were compared between the groups. Results: Smokers revealed significantly fewer subjective symptoms in 5 out of 12 symptoms. There were no significant differences in TUC and the rate of handwriting deterioration between the groups. Conclusions: Paradoxically, smokers are slightly resistant to hypoxia with respect to emerging subjective symptoms. However, bluntness to hypoxia could postpone the detection of the possible hypoxic occurrence in pilots.”⁴

SEPTEMBER 1972

Managing sinus barotrauma (Naval Aerospace Medical Institute, Pensacola, FL, USA): “In a retrospective study of the occurrence of sinus barotrauma in personnel undergoing training in altitude chambers over a 10-year period, the overall incidence rate was found to be 1.16%. Of these 1.21% occurred at simulated altitudes of 30,000 feet and 1.14% at 43,000 feet. Clinical findings on 29 persons found to suffer sinus barotrauma during a recent 6-month study at the Naval Aerospace Medical Institute are presented. Radiological studies on 18 of the 29 showed significant pathological changes. Symptoms of frontal sinusitis were seen in 25 and of maxillary sinusitis in 4. Radiographic evaluation facilitates the diagnosis, and the use of hypobaric test procedures is of value in determining the time-course for restoration to full flight status in patients with paranasal sinus pathology...”

“If radiographic evaluation at the 6-week follow-up examination in the asymptomatic patient indicates failure of resolution, further restriction of flying is considered mandatory, and further evaluation is made at 2-week intervals until a final aeromedical determination as out-lined above can be made or a course of therapy, which may include surgical intervention, is initiated prior to a recommendation for permanent suspension from flight status.”²

SEPTEMBER 1947

Preparing for nuclear war (U.S. Army Air Forces): “Some progress toward achieving a general preparedness for the threat of an atomic war is being made within the military structure; short familiarization courses in the fields of atomic energy, radiation biology, and the vital subject of radiological safety are presently being conducted for a selected few in the army, navy and air force. However, the international problems of atomic energy control, the security restrictions on the subject matter it-self, and the delays in the establishment of guiding policies authorizing the defense structure of our nation to develop the pressingly necessary implements and doctrines for our defense against this all-powerful weapon – these, to mention but a few factors, tend seriously to slow down a national survival program which only the most uninformed and unimaginative could possibly regard as of minor consequence. It is your problem as well as ours in the military. It is a challenge to every American! Will we be ready?”³

Growth of the Association (annual Business Meeting of the Association): “Mr. President [Admiral Adams], in the year we secured 241 new members. At the present time there are some 1,200 paid-up members. So during the year we accomplished a net gain of 20 per cent which, during such a postwar year, apparently is pretty good. At the same time we secured members from Brazil, Peru, Colombia, England, South Africa and Canada. Dr. Lederer, through the *Journal of the AMA*, secured very good publicity for the Association and gained a number of members. The Army, through their publications, did likewise, and our Navy through the publication of the School of Aviation Medicine, namely, ‘Contact,’ spread the word throughout the Navy.”¹ [Editor’s note: This report was given by CAPT Louis Iverson, MC, USN (1890–1949), who was the senior most of the first five Naval Flight Surgeons who graduated from the Army’s School of Aviation Medicine at Mitchel Field, NY, USA, on April 29, 1922. Although not senior in rank, he was the Navy’s longest serving flight surgeon at the time of this report.]

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This column is prepared each month by Walter Dalitsch III, M.D., M.P.H. Most of the articles mentioned here were printed over the years in the official journal of the Aerospace Medical Association. These and other articles are available for download from Mira LibrarySmart via <https://submissions.miracl.com/asmaarchive/Login.aspx>.

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