

Aerospace Medicine and Human Performance

Volume 92, Number 1

January 2022

EDITORIAL

Future Directions

F. Bonato

1

PRESIDENT'S PAGE

MMXXII

J. R. DeVoll

3

RESEARCH ARTICLES

Predictive Biomathematical Modeling Compared to Objective Sleep During COVID-19 Humanitarian Flights

J. K. Devine, C. R. Garcia, A. S. Simoes, M. R. Guelere, B. de Godoy, D. S. Silva, P. C. Pacheco, J. Choynowski, and S. R. Hursh

4

Repeated Ischemic Preconditioning Effects on Physiological Responses to Hypoxic Exercise

K. Chopra, O. Jeffries, J. Tallent, S. Hedderman, L. Kilduff, A. Gray, and M. Waldron

13

Total Flight Hours and Other Factors Associated with Hyperuricemia in Civilian Pilots

S. C. Tisera, A. Agustina, and D. S. Soemarko

22

Migraine History and Outcomes in Military Pilots and Flight Surgeons

R. R. Hesselbrock and J. T. Haynes

26

REVIEW ARTICLE

Optimization of Exercise Countermeasures to Spaceflight Using Blood Flow Restriction

L. Hughes, K. J. Hackney, and S. D. Patterson

32

SHORT COMMUNICATIONS



Intra-Individual Test-Retest Variation Regarding Venous Gas Bubble Formation During High Altitude Exposures

R. Ånell, Mikael Grönkvist, O. Eiken, A. Elia, and M. Gennser

46

Understanding Sleepiness and Fatigue in Cabin Crew Using COVID-19 to Dissociate Causative Factors

C. C-Y. Wen, C. L. Nicholas, M. E. Howard, J. Trinder, and A. S. Jordan

50

TECHNICAL NOTE

6 Inter- and Intra-Rater Level of Agreement in Ultrasonic Video Grading of Venous Gas Emboli

A. Elia, R. Ånell, O. Eiken, M. Grönkvist, M. Gennser

54

FEATURES

58 **Aerospace Medicine Clinic**—*C. N Crain and R. L. Holmes*

61 **Focus on Aerospace Medicine History: The Skylab Metabolic Rate Experiments: How We Conducted the M-1717 Biomedical Project**—*J. Rummell and C. Sawin*

66 **This Month in Aerospace Medicine History: January**—*W. W. Dalitsch III*

ASSOCIATION NEWS

68 **2022 Annual Scientific Meeting Registration**

68 **FAA News**