
INTRODUCTION. Bone loss following spaceflight is well documented, and if left untreated by rational countermeasures could limit manned space exploration. Many consider the loss of bone to occur over long periods, months to years, but the relationship between bone and blood calcium homeostasis allows us to study this problem within the first 48 hours of spaceflight. We hypothesized that the initial response of bone to unloading will be a release of calcium, through increased bone resorption, into the extracellular calcium fluid compartment including blood. If this is correct, the serum parathyroid hormone (PTH) level will decrease in an adaptive response, leading to other observed effects such as increased urinary calcium. We tested this hypothesis in the payload crew of the SLS-1 mission. METHODS. Serum samples were obtained from four crew (2 male, 2 female) on days L-15, 7, and medium impact, but 5 of the inflight incidents were rated at a "high" mission impact. A number of causes for the problems were identified, and aegasus mission impact to the mission (low, medium or high). RESULTS. Ten astronauts responded, but only nine responses were listed, and are discussed. CONCLUSIONS. The Debrief respondents provided useful and timely recommendations on preflight training and mission operations.

RESULTS OF AN INTERNATIONAL SPACE CRUISE DEBRIEF. P.A. Santy*, A.R. Hollenbeak*, P. Koper, and B. Narrod-Norden*. UTMB, Galveston, TX 77550; and Johnson Space Center and Biomedical Laboratory, Houston, TX 77058.

INTRODUCTION. In order to identify potential multicultural and multilingual problems for future International Space Station Freedom crews, a crew debrief questionnaire (called an "International Crew Debrief") was developed for U.S. astronauts who flew on Shuttle missions with one or more crewmembers from other countries. METHODS. From 1981-90, a total of 20 U.S. astronauts flew on International space missions. Debriefs were mailed to all twenty with instructions not to identify themselves or their specific mission. The debrief focused primarily on preflight training; and postflight incidents, micrometeorite, micrometeoroid, or space debris events that affected the crew or mission. Debrief respondents, but only nine responses were able to be scored; for a return rate of 45%, 42 incidents were reported: 9 in the preflight period; 26 inflight; and 7 in the postflight period. MOST OF THESE INCIDENTS WERE OF LOW OR MEDIUM IMPACT, BUT 5 OF THE INFLIGHT INCIDENTS WERE RATED AT A "HIGH" IMPACT LEVEL. A NUMBER OF CAUSES FOR THE PROBLEMS WERE IDENTIFIED, AND ARE DISCUSSED. CONCLUSIONS. The Debrief respondents should be determined in Hyper and/or Hypercholesterolemic workers when there are other associated factors (smoking, hypertension, diabetes) and/or safety related jobs (aircrew) in order to comply or not harder therapies to prevent cardio-vascular disease.


INTRODUCTION. The USSR experience, having been accumulated in LDSF medical support, has shown the necessity of the definite correction and specification of methodology of MCS design. METHODS. By use of systemic analysis, the total evaluation of the results of MCS in space has been performed. There have been analyzed the results of examination of 19 Soviet cosmonauts, who performed LDSF, lasting from 2 to 12 months. In 1986-90, another analogous estimation has been carried out in 566 experiments with volunteers during the modeling of such gravity environment. Results. The systemic analysis has shown, that in addition to 3 well-known methodological principles (i.e. pathogenesis, "MC by stages" and succession's ones), 4 new principles must be formulated and taken into account. They are the systemic-structural approach, the determination of the infrastructure of the basic physiologic mechanism of the total "image" of MCS, the search of "organ-targets." CONCLUSION. The realization of all these stated methodological principles leads to the significant improvement of the informative and diagnostic possibilities of on-board MCS in LDSF.