

SPACE MEDICINE BRANCH REPORT

NASA's Long-Term Study of Astronaut Health

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In 1960 the National Aeronautics and Space Administration (NASA) established the Life Sciences Program with one component being to monitor the health and safety of the astronauts. Thorough annual and periodic medical investigations served as one tool in monitoring their health. Over the decades these series of investigations and other special studies resulted in a database of clinical and physiologic information on the growing astronaut cadre. It was recognized that this database would be critical for examining not only the immediate effects, but also the potential long-term effects of spaceflight.

In 1981, following an intensive NASA-sponsored workshop on longitudinal studies, NASA officially established a protocol for conducting the Longitudinal Study of Astronaut Health (LSAH). This protocol was primarily a descriptive study of physiological processes, with the intention of being a hypothesis-generating study. This database has been used primarily to look for subtle sub-clinical physiological changes in the astronaut corp as compared to a control population. Retrospective studies have been done to examine the prevalence of specific physiological characteristics and the patterns of physiological variables among subgroups. These studies looked at the processes that may lead to disease and risk factors for disease, but not on the endpoints of disease.

The current LSAH operates under the auspices of the Medical Sciences Division at

the Johnson Space Center (JSC), using a variety of division resources including clinical biomedical laboratories, the Flight Medicine and Occupational Medicine Clinics, and other ancillary laboratories. A total of 195 astronauts have been selected. They are generally divided into two groups based on the years in which they were selected (73 from 1959-1969; 122 from 1978-1990) with 175 remaining as active or retired astronauts. All active and retired astronauts, as well as the control subject population, are examined through the Flight Medicine and Occupational Medicine Clinics. Non-active (retired, resigned, re-assigned) astronauts are invited back for annual medical examinations at NASA's expense with more than half currently returning. The study currently has over 2,600 person years of data on the astronaut population.

A revised protocol, in the final approval stages, will add new emphasis to the study to examine the incidence of chronic morbidity and total mortality associated with the occupational exposures encountered by astronauts as compared to the control population. The control population used will consist of 4:1 matched JSC civil servants examined in the same way as the astronauts. Secondary aims of the study include determining risks of illness and accidents which require medical care during space travel, planning of health care facilities for long-term missions with heterogeneous crews, descriptive analyses of the study population,

and serving as a data coordinating center for other internal and external agency investigators.

The LSAH has generated internal agency spin-offs related to health care. It has served as a tool for developing methods to transfer masses of paper clinical medical records into a computer database. Morbidity trend analyses have been useful for making changes and additions to the active preventive medicine program in the Flight Medicine Clinic at Johnson Space Center.

AsMA physician is shuttle crewmember

NASA recently announced crewmembers for 8 future Space Shuttle missions. An AsMA member, Ellen S. Baker, M.D., Houston, TX, will be a mission specialist onboard the STS-50 U.S. Microgravity Laboratory mission, scheduled for June 1992. The mission will include a collection of microgravity materials processing technology experiments and will last 13 days, the longest Shuttle mission to date.

A native of Fayetteville, NC, Dr. Baker received her B.A. in geology from the State University of New York at Buffalo and her M.D. degree from Cornell University. Selected in 1984, she flew as a crewmember on STS-34.

Nominations Sought for 1992 Awards

The Awards Committee of the Aerospace Medical Association, which is responsible for selecting the annual winners of special awards, has set a Dec. 16 deadline for receiving nominations for awards to be presented at the 1992 annual meeting of the Association in Miami Beach, FL.

The committee chair emphasizes, however, that the names of prospective award winners should be submitted as far in advance of the deadline as possible. Lots of time is needed to ensure review of all the names and selection of the winners.

Nominations can be made by any member of the Association.

The nominations must be submitted on forms available from AsMA Headquarters, and printed in the Journal.

Nomination form and 14 copies should be sent to:

Chair, Awards Committee
Aerospace Medical Association
320 South Henry St.
Alexandria, VA 22314-3524

Policies:

1. The nominee must be a current member of the Association, except that the Sidney D. Leverett, Jr., Environmental Science Award is open to nonmembers. Deceased members may be nominated.
2. The Chair of the Awards Committee does not vote and is not eligible for an award during his/her tenure.
3. Winners may receive only one award in any year and may receive additional awards after 7 years, except for the Sidney D. Leverett, Jr., Environmental Science Award.
4. Employees of a company sponsoring an award are eligible to receive the award.
5. Awards involving a published paper will be made only to the senior author.
6. Unsuccessful nominees for an annual award will be retained in the active file through three award cycles.