Space Health and Aging:

What do astronauts and older adults have in common?

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Synopsis

When humans fly in space, they must adapt from a physiological, psychological, and social perspective. Many of these adaptations have parallels with aging. These parallels will be explored by examining the different phases of spaceflight, and through examination of specific studies of International Space Station crew members as well as the results of bed-rest studies which show parallels to what happens to older adults when they are placed on bed-rest in hospitals or otherwise are mobility-restricted.

Speakers

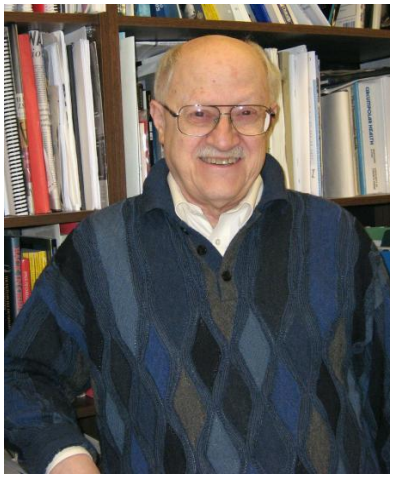
PERRY JOHNSON-GREEN
Senior Program Scientist, Health and Life Sciences, Canadian Space Agency

Dr. Johnson-Green is the Senior Program Scientist in Health and Life Sciences, a division of the Astronaut, Life Sciences, and Space Medicine section at the Canadian Space Agency. He obtained his Ph.D. from the University of Manitoba. Johnson-Green has a broad body of experience in research, including cellular neuroscience. Before joining the CSA, he was a member of the faculty of Acadia University. Dr. Johnson-Green coordinates the selection and scientific implementation of Canadian experiments on the International Space Station. He has shepherded the completion of 21 scientific studies on the International Space Station. He is one of the CSA representatives on the International Space Life Sciences Working Group, and represents the CSA on the Multilateral Human Research Panel for Exploration and the Human Research Multilateral Review Board (the Research Ethics Board of the International Space Station). He is currently working on a collaboration with the CIHR Institute of Aging that will use a bed-rest research model to assess the effectiveness of a novel exercise strategy for the aged and for astronauts.

ANDREW BLABER
Professor and Director, Aerospace Physiology Unit, Simon Fraser University

Dr. Blaber received his PhD in Kinesiology at the University of Waterloo (1994). He conducted his postdoctoral research with former astronaut Dr. Roberta Bondar and studied the relationship between brain blood flow control and fainting in astronauts. In 1997 he joined Simon Fraser University and is a professor, and director of the Aerospace Physiology Laboratory. Dr. Blaber works with the Canadian and European space agencies as well as NASA. His research focuses on an integrated approach to understanding blood pressure control and the problem of fainting and falls with aging, and in astronauts. He recently concluded a research project following participants in 60-days bed rest. He has now identified postural leg muscle-pump as an important component of blood pressure control in addition to the heart and blood vessels. This new *cardio-postural* model provides a more complete understanding fainting in humans.

PETER SUEDFELD
Dean Emeritus of Graduate Studies and Professor Emeritus of Psychology, University of British Columbia



Peter Suedfeld was born in Hungary. He received his PhD from Princeton University, and taught at several American institutions before joining The University of British Columbia. His research is primarily concerned with cognitive, motivational, and personality factors related to human reactions to challenge, stress, and trauma. He has studied the psychological aspects of reduced stimulation, persecution and genocide, decision-making under high stress, and life in isolated and confined environments including space and both polar regions. He is a Fellow of the Royal Society of Canada, the Royal Canadian Geographical Society, and the International Academy of Astronautics, as well as other scientific bodies. Among other scientific awards, he has received the Canadian Polar Medal and the Canadian Psychological Association's Gold Medal for Lifetime Achievement.

Discussant

GLORIA GUTMAN
Professor/Director Emerita, Gerontology Department, Gerontology Research Centre, Simon Fraser University

Dr. Gutman developed the Gerontology Research Centre (GRC) and Department at Simon Fraser University and chaired both until 2005. Currently she is a GRC Research Associate and holds the rank of Professor Emerita in the Department. Dr. Gutman has held many high profile roles during her career including two terms as President of the Canadian Association on Gerontology, President of the International Association of Gerontology and Geriatrics, President of the International Network for Prevention of Elder Abuse and currently, President of the North American chapter of the International Society for Gerontechnology and Vice-President of the International Longevity Centre –Canada. Her research interests are wide ranging including a set of studies examining ways in which hospitals might become more age-friendly. It was in this set of studies that she became aware of the parallels between what happens to astronauts when they are exposed to weightlessness and what happens to older adults when restricted to a hospital bed.

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