Bridging the Gap: The Role of the Fitness Professional in the Commercial Spaceflight Industry

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Summary

With the emergence of the commercial spaceflight industry, the general public will have the opportunity to experience the thrill of human spaceflight; a thrill that until now has been reserved only for highly trained and qualified government and military professional astronauts. While the notion of the commercial spaceflight tourist is an exciting one, this "new breed" of space explorer also brings with it unique health challenges and considerations, the likes of which the aerospace medical community has never had to consider.

Recent research[1] on this subject reveals that the Federal Aviation Administration has yet to define the medical requirements for commercial spaceflight, opting instead to leave the medical requirements as a matter of concern for the commercial spaceflight carriers and aerospace medical professionals or primary care providers.

Problem

In 2008, approximately 107 million Americans, nearly 1 out of every 2 adults age 18 or older, suffered from 1 of 6 reported chronic diseases[2]

- Cardiovascular Disease (CVD)
- Arthritis
- Diabetes
- Asthma
- Cancer
- Chronic Obstructive Pulmonary Disease (COPD)

In addition to the health challenges listed above, the global epidemic of overweight and obesity, and the associated prevalence of hypertension, presents the commercial spaceflight industry and its service providers with additional public health challenges that must be considered as spaceflight tourism attracts individuals with varied health and fitness statuses.

Compared to professional government and military astronauts, the commercial spaceflight tourist presents many new challenges and opportunities for the aerospace medical community and related ancillary service providers, including fitness professionals.

Considering the unique physiological demands of human spaceflight, and the evident lack of understanding of the effects of these demands on various health conditions, it is clear that a knowledge gap exists in both the aerospace medical community and the fitness industry.

Discussion

With the dawn of commercial spaceflight tourism, the aerospace medical community and primary care providers will be faced with making "fit for flight" decisions for individuals with wide and varied health histories. While it is thought that suborbital spaceflight will be safe for individuals with well-managed health conditions, there still remains many unknowns. It is likely that aerospace medical professionals and primary care providers will refer patient/client-tourists to well-qualified fitness professionals for a general health and fitness or disease-management program prior to spaceflight. The referral to a fitness professional will assist in maximizing the spaceflight experience for the tourist while mitigating health-related complications that could arise from a poorly managed health condition or poor physical fitness.

Conclusion

As a member of the aerospace medical team, the fitness professional must become well-versed in the effects of spaceflight on human physiology; knowledge, skills, and abilities which are not currently addressed in any fitness industry professional certification on the market. The LAUNCH Spaceflight Fitness Specialist (SFS) credential will be the first professional fitness certification of its kind and will prepare the fitness professional to become an instrumental member of the commercial spaceflight aerospace medicine team.

References

[1]Grenon SM, Saary J, Gray G, Vanderploeg JM, Hughes-Fulford M. Can I take a space flight? Considerations for doctors. BMJ 2013; 345:e8124

[2]Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System (BRFSS) prevalence and trends data [Internet]. Atlanta: CDC; 2008. Available from:http://apps.nccd.cdc.gov/brfss/page.asp?cat=AC&yr=2007&state=US#AC