NASA Spaceflight Human-System Standard Maintenance: An Evolving Strategy to Keep NASA Agency-Level Standards Current Through Partnerships with the Scientific Community

2024 Human Research Program

Investigators' Workshop

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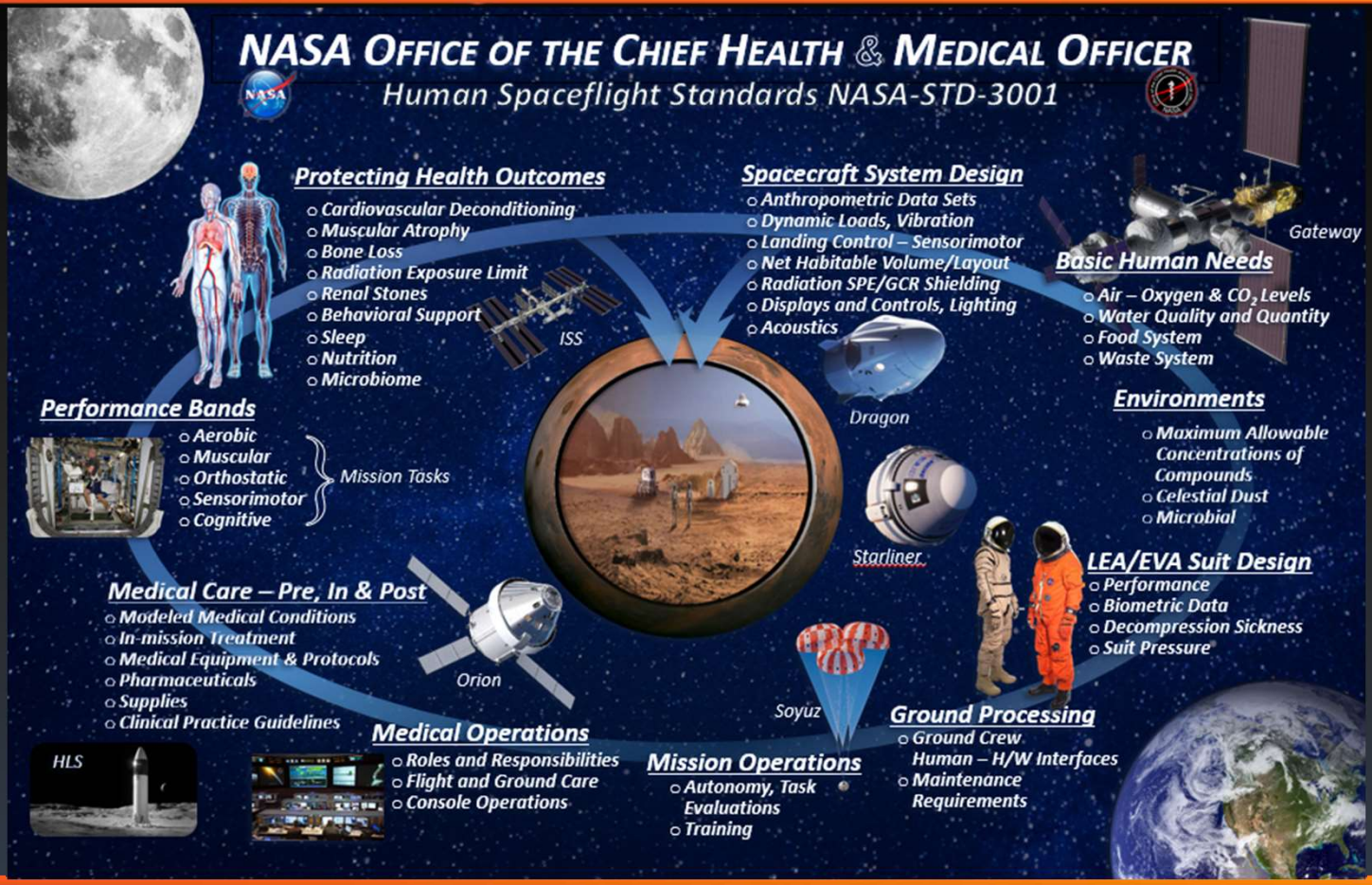

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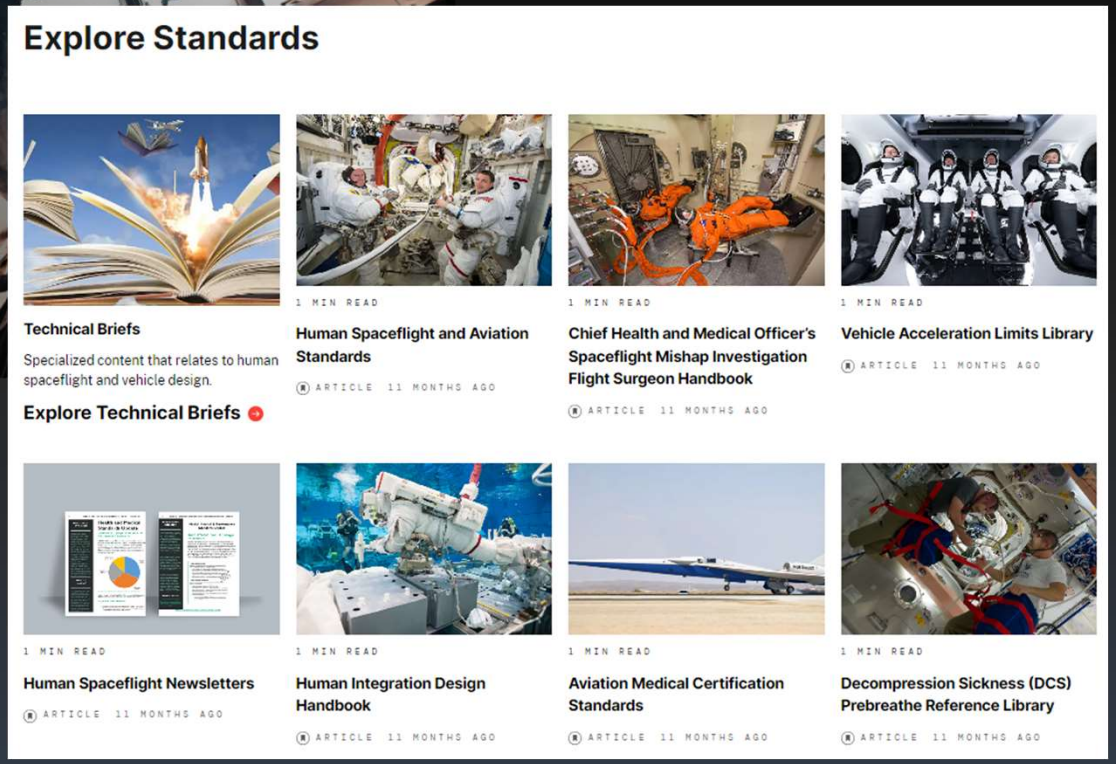
OCHMO Standards Website



Technical Briefs

- Human Physiology and Behavioral Health
- Vehicle Design
- Medical Care
- Mishaps

https://www.nasa.gov/ochmo/health-operations-and-oversight/hsa-standards/

Process

- Gap in Knowledge Identified
- Pre-Coordination and Priority Assessment
- Knowledge Gathering and SME Engagement
- Working Group Effort
- Refinement of Language and Document Updates

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Types of Activities and Required Data to Update Standards and Enable Programs

- *Hydrogen Sulfide (H_2S) Exposure Limits*
- Exploration Atmospheres and Prebreathe Testing*
- Crew Survivability Analysis
- Food Equipment and Production Regulations
- Physical Characteristics and Capabilities Data Sets
- *Immune and Hematology*
- Suited CO_2 Washout Testing*
- Acceleration and Dynamic Loads
- Venous Thromboembolism (VTE)
- Medical Kits and Supportive Clinical Practice Guidelines
- Crew Recovery
- Crew Mortality and Death on Orbit
- AR/VR guidelines & Human and Robotic Teaming

Hydrogen Sulfide (H_2S) Exposure Limits

- Lunar surface volatiles and habitable space accumulation
- Development for Spacecraft Maximum Allowable Concentrations (SMACs) for H_2S for durations of exposure for spaceflight (1-hour, 24-hours, 7-days, 30-days, 180-days, and 1000-days*)
- Passive dosimetry technology should be considered for long-term monitoring at these low concentrations

Immune

- Latent virus reactivation monitoring, especially during deep space missions
- Skin swabs (as needed) for in-flight analysis to assist with diagnosis of any unexpected dermatitis events
- Routine monitoring (as needed) to assist in diagnosing infectious disease

Questions?

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