

STANDARD MEASURES DURING SPACEFLIGHT

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The key goal of the *Spaceflight Standard Measures* project is to ensure that a set of measures, representing the Human Research Program's key risks and acquired with minimal impact on time and resources, is consistently captured from crewmembers through the end of the International Space Station (ISS) Program.

Data collected under the *Spaceflight Standard Measures* project include assessments of sleep/wake cycles, cognition, immune status and function, general blood and urine chemistry (urine is collected only before flight and after landing), microbiome composition (gastrointestinal tract, saliva, and body surface), cardiovascular structure and function (carotid intima-media thickness, orthostatic responses), sensorimotor function, and team processes. Data is collected once or twice before the flight (180 and 90 days before launch), twice during the 6-month missions (flight day 30 and 30 days before return to Earth) with the exception of actigraphy, which is recorded continuously during the mission, and during two-week periods before and after the mission.

In this presentation, we will review the data collected to date on twelve ISS crew members. These data are placed in the NASA Life Sciences Data Archive and are available for occupational surveillance (using non-identifiable data) Institutional Review Board-approved data sharing requests, and retrospective data requests. This data repository enables high-level monitoring of the effectiveness of countermeasures and meaningful interpretation of health and performance outcomes for various mission durations. The knowledge gained from this project informs and supports future hypothesis-driven research that will enable the success of planetary missions.