

Life support Challenges for Human Space Exploration (10)
Supporting Crews for Exploration Missions (2)

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CREW STRESS, WORKLOAD AND PSYCHOLOGY IN MOON-MARS SIMULATIONS:
NON-INVASIVE BIOMARKERS

Abstract

Human spaceflights can be defined as an extreme environment because of the high level of constraints linked to numerous unfamiliar conditions. Stress is most prevalent psychosocial problem which can be measured by using non-invasive technologies. Consequently, stress management ranks among the most promising health and safety promoters. This study was only one subset of data collected during the 100B ILEWG EuroMoonMars Expedition at the Mars Desert Research Station (MDRS), Utah in 2011. The aim of this study was to find out stress, workload (group and work environment scale) and salivary stress biomarkers during Moon-Mars analogous missions. Salivary cortisol and salivary amylase levels were significantly increased in both groups at end day followed by mid of mission and before starting the mission. We found significant positive correlation between salivary cortisol salivary amylase and stress respectively. So, further study is required to evaluate the efficiency of salivary stress biomarkers in detection of stress in astronauts in isolated environments during long mission.

Key words: Salivary biomarkers, cortisol, amylase, Mars Desert Research Station.