

Mental Health in Space

Problem: Astronauts on long –duration space missions will have increasing potential for feelings of isolation, trouble sleeping, and mental health issues caused by environmental and physiological changes.

Creative Solution

- Create a way to help mitigate problems associated with potential mental health issues in space especially on long duration space flight. (This would also be called a countermeasure).
 - Look at sleep issues in space.
 - Look at isolation issues in space.
 - Look at technology we have today that might help with mental health.

Sleep issues

- ❑ Astronauts see 16 sunsets and 16 sunrises
 - ❑ Circadian Rhythm is off
- ❑ Primary lighting on Station is Blue light with certain wavelength
 - ❑ Affects the hormone Melatonin
- ❑ Radiation hits to optic nerve and the crewmember sees flashes of light
- ❑ Sleep deprivation can cause issues with alertness, motor speed, and anxiety, as well as a host of other issues



Isolation Issues



- ❖ Crew members often feel isolated from the rest of world
 - ❖ They miss nature (sounds, colors, smells, touch)
 - ❖ They miss family – long duration missions may make contact more difficult
 - ❖ They miss social aspects from home



Technology Assistance?



- Many technology items we have today could assist with mental health
 - VR technology
 - Cognitive training
 - Motion sensing wearables
 - Smart wearables
 - Biometric devices

