SANS Risk Approach Plan

Risk Characterization / Formulation

SANS-101: Determine the relationship between fluid shifts (intravascular, interstitial, CSF) and ocular manifestations in astronauts during spaceflight.

SANS-102: Determine the relationship between fluid shifts-induced ocular changes and fluid shifts in the CNS, including whether elevated intracranial pressure or brain edema play a role.

SANS-103: Determine whether ground-based induced fluid shifts lead to ocular and brain structural and functional changes.

SANS-104: Determine whether ocular manifestations can be induced by fluid shifts in animal models and whether this model can be used for more detailed mechanistic insights.

SANS-201: Determine if altered atmospheric conditions (e.g., elevated ambient CO₂, hypoxia from exploration atmosphere) has a contributing role in the development of ocular manifestations.

SANS-202: Determine if genetic/metabolic/anatomic dispositions and biomarkers have a contributing role in the development of ocular manifestations.

SANS-203: Determine if radiation has a contributing role in the development of ocular manifestations.

SANS-204: Determine if sleep/glymphatics has a contributing role in the development of ocular manifestations.

CM Development / Evaluation

SANS-301: Validate/optimize integrated countermeasures in the spaceflight environment.

CM Integration/Validation

SANS-304: Identify and evaluate candidate countermeasure(s) in a space flight analog.

SANS-403: Test candidate countermeasure(s) in a space flight environment.

SANS-501: Validate/optimize integrated countermeasures in the spaceflight environment.

Note: Milestone (●) and Gap Closures (●) are Program reviews with defined entry/exit criteria.

Legend:
- Analog
- ISS
- Artemis Enabling
- Artemis Utilization
- Cross Element Integration
- External Partnerships
- TRISH
- Anticipated PRR Color Change

SANS Standards for maintaining inflight health to OCHMO
SANS Standards for Long Term Health to OCHMO