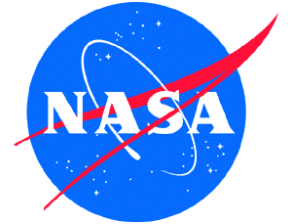


NASA INFORMATION

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
281/483-5111



Human Behavior & Performance

As tiny babies, we sleep and wake up in fits. As children and adolescents, our sleep and waking follow a more regular pattern. In our older years, we find ourselves rising with the sun again.

Most of us have to look inward --- to a biological clock. This clock is part of our genetic make-up, and we share it with all living things. We are biologically programmed to follow a circadian, or 24-hour, rhythm that's linked to sunlight and darkness.

Inside our bodies, levels of the bodies natural chemicals, *such as melatonin*, rise and fall during this cycle. Feelings of alertness and sleepiness shift with them. But sometimes for astronauts, their biological clocks have problems adjusting in space. They encounter sleep and circadian rhythm problems that could possible lead to errors in critical tasks or breakdown in crew communication.

An accumulated stress level from living and working in an isolated, confined and closed environment could compromise crew health and safety as well as mission objectives. Of concern to the flight surgeons that monitor the crew are poor psychological adaptation and behavioral illness such as depression, anxiety, trauma or other neuropsychiatric dysfunction.

At the Johnson Space Center, scientists are working to develop methods to unobtrusively monitor levels of stress, coping strategies, performance and sleep. These methods include developing criteria for crew screening and performance. Techniques are also being used to ensure sleep quality and real-time workload planning. Guidelines for diagnosing and treating in-flight behavioral illnesses are also a high priority for members of the behavioral health and performance team.