Psychological stress stemming from a host of issues such as relationships, traumatic experiences, life changes and loss can negatively impact mental and physical wellness, increasing the risk of behavioral health conditions such as depression, post-traumatic stress disorder, and substance use disorders. This in turn may have a direct impact on force readiness.

To address this critical issue, MITRE has developed the Technology Assisted Stress Control (TASC™) application, which is a high-tech/high-touch, data-driven approach that can be used to proactively support unit-level changes to improve individual wellness and unit readiness over the long term. Most importantly, service members receive the right help they need, when they need it.

**High-Tech.** MITRE’s Technology Assisted Stress Control (TASC™) is an application that works with off-the-shelf smartwatches to build individualized models that identify and predict perceived stress. With real-time monitoring through the watch’s sensors, the TASC™ algorithm continuously collects physiological data, ecological momentary assessments of perceived stress levels and stress triggers, includes a journaling function, and provides pre-programmed interventions when needed.
Through web-based and mobile platforms, TASC™ provides users with a visualization of their stress and sleep scores that can also be shared with healthcare providers to track health progress between visits and unit commanders to provide a snapshot of a unit’s overall mental wellness.

**High-Touch.** Based on the wearer’s level of stress, sleep disturbance, and self-reported mood, the TASC™ app displays custom messages ranging from encouragement to maintain healthy behaviors to feedback on poor sleep quality. The app also provides practical strategies to mitigate psychological stress (e.g., a breathing exercise) based on the wearer’s stress, sleep, and mood. When concerning trends of psychological stress are detected, prompts are displayed to either contact support persons (for moderate stress) or a crisis line (for high stress).

**Outcomes**

The TASC™ app can support mental well-being among service members by:

- Empowering them with data to monitor stress levels and manage their unique triggers.
- Allowing for an appropriate intervention based on the level of psychological stress.
- Using customized individual, healthcare provider and commander dashboards to deliver data-driven interventions at the individual and command levels.
- Providing a framework and technology that can be used for other evidence-based treatments such as cognitive behavioral therapies (e.g., stress inoculation training), mindfulness, and self-monitoring.

**Next Steps**

MITRE seeks to partner with government sponsors to further refine and customize the prototype, and to test the effectiveness of the TASC™ application in a larger-scale research project. TASC™ includes a Fast Healthcare Interoperable Resource (FHIR) Application Programming Interface (API) to allow for interoperability with DoD and VA electronic health records and other third-party health applications. It also leverages the Apple HealthKit that allows for health and fitness data to be pulled from other smartwatches.

MITRE can transfer the technology to a government sponsor free of charge. For information about MITRE’s TASC™ App, contact Dr. Linda Desens, ldesens@mitre.org or Lionel Levine, llevine@mitre.org.

MITRE’s mission-driven teams are dedicated to solving problems for a safer world. Through our public-private partnerships and federally funded R&D centers, we work across government and in partnership with industry to tackle challenges to the safety, stability, and well-being of our nation.