

2B-Alert FOR OPERATIONAL FATIGUE MANAGEMENT



Mission Preparation:

Leading up to the mission, Soldiers enter their sleep/wake schedule and caffeine intake history into the 2B-Alert web or mobile application. This allows the application to learn the individual Soldier's sleep/wake patterns.

During Mission:

The always changing and increasingly complex MDO environment will decrease opportunities for obtaining adequate sleep and increase Soldier fatigue during critical mission performance periods. 2B-Alert tracks Soldier sleep and overlays that sleep/wake pattern onto mission performance.

Operational Fatigue Management:

Soldiers use 2B-Alert's caffeine optimization and tactical nap parameters to take naps at the right time (when mission allows) and use caffeine (coffee, energy drinks, caffeine gum) at the right time and dose to support sustained operations.

Result:

Soldiers who are cognitively ready, lethal and prepared to win our nation's wars.

2B-Alert FOR OPERATIONAL FATIGUE MANAGEMENT

2B-Alert is a decision tool designed to help enhance cognitive performance in operational settings. The tool uses established sleep/wake patterns to predict caffeine effectiveness, tactical nap effectiveness, and performance. In addition, it can provide caffeine dosing schedules for time periods where performance is most critical. Sleep optimization prediction has been developed and will be integrated into the application in the future. *2B-Alert* is currently undergoing further development and field-based beta testing for its transition for use as a mobile application for the military.



Tactical Operations Centers (TOCs) serve as main hubs for command and control operations at theater level.

2B-Alert's performance prediction and fatigue management capabilities may help Commanders and their staff plan, monitor, and direct the tactical operations of assigned forces in military operations.

When on mission, Soldiers are expected to be ready and lethal at all times. This requires them to perform at their highest level and under the less than ideal conditions of the harsh operational environment.

Use of *2B-Alert* may serve as a tool that provides individualized recommendations for fatigue management to Soldiers to enhance performance during the times where it is most critical.

DEVELOPMENT AND INTERNAL TESTING:

WRAIR
Walter Reed Army Institute of Research

BHSAI
BIOTECHNOLOGY HPC SOFTWARE APPLICATIONS INSTITUTE



WRAIR has partnered with the Biotechnology High Performance Computing Software Applications Institute (BHSAI) and the U.S. Army Medical Materiel Development Activity (USAMMDA) to develop the currently used internal version of *2B-Alert* into a forward facing mobile application for wider use by military operational units.

TWO-PRONGED FIELD VALIDATION EFFORT:

GARRISON-BASED FIELD VALIDATION

The WRAIR Operational Research Team, Research Transition Office, Telemedicine & Advanced Technology Research Center-Biotechnology High Performance Computing Software Applications Institute, and U.S. Army Medical Materiel Development Activity will partner with operational units to deploy and test *2B-Alert* during diverse day to day military operations.

OPERATIONAL ENVIRONMENT FIELD VALIDATION

The WRAIR Operational Research Team, Research Transition Office, Telemedicine & Advanced Technology Research Center-Biotechnology High Performance Computing Software Applications Institute, and U.S. Army Medical Materiel Development Activity will partner with operational units to predict performance and provide tactical fatigue management strategies during an immersive, controlled, operational training exercise.



BHSAI

WRAIR
Walter Reed Army Institute of Research