



The Effects of Sleep Deprivation on Performance in a Tactical Environment

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Agenda

- Advanced Individual Academic Development
- Introduction
- Method
- Results
- Discussion



Cadet Christie DeVany and Cadet Avery Barnett



Advanced Individual Academic Development (AIAD)

Naval Postgraduate School

Purposes of AIAD

- ❑ Assist in data analysis of the USMA Class of 2007 longitudinal sleep study.
- ❑ Design and implement a database to store data from the longitudinal sleep study.
- ❑ Design study to investigate the effects of sleep deprivation on performance in a tactical environment.
- ❑ Create a computer-based version of a graphical situation awareness assessment tool.





Advanced Individual Academic Development (AIAD)

Naval Postgraduate School

AIAD Accomplishments

- ❑ Longitudinal sleep study database created and implemented.
 - 7,401 records
 - Extensibility for future data-mining
- ❑ Created a tablet-PC version of a graphical situation awareness assessment tool.
- ❑ Completed the design of a study to investigate the effects of sleep deprivation on performance in a tactical environment.





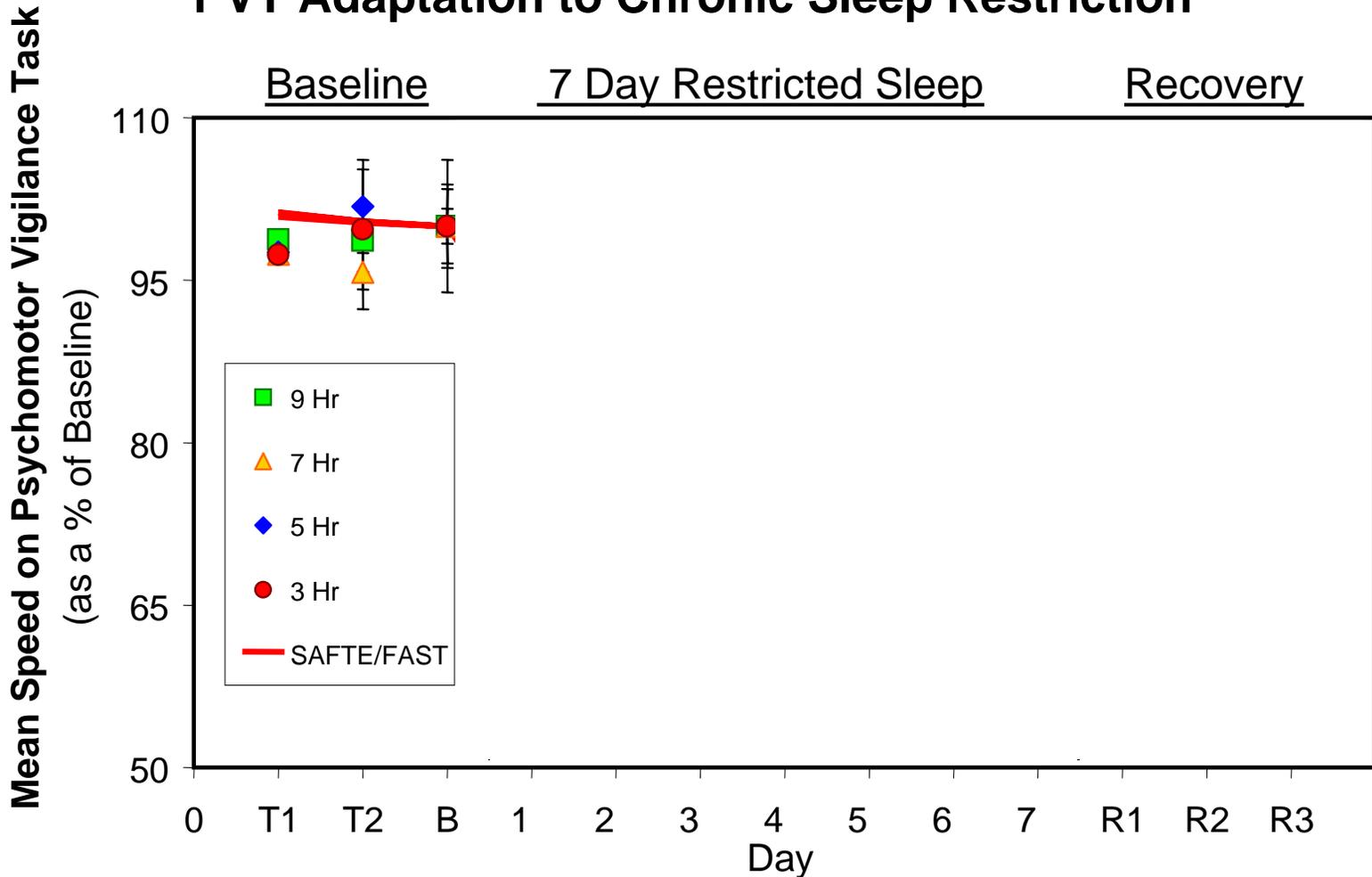
Investigation of the Effects of Sleep Deprivation on Performance in a Tactical Environment





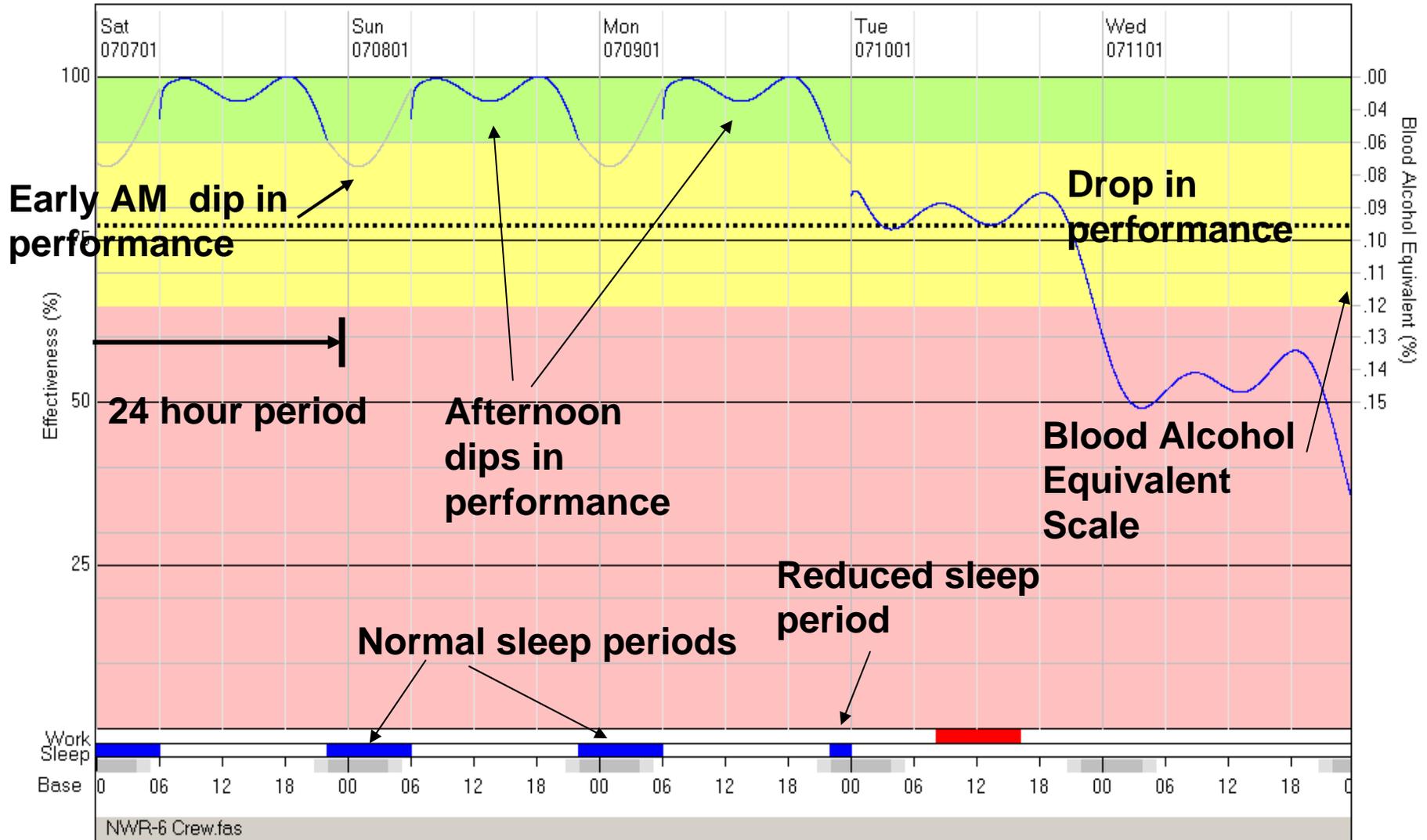
Introduction

WRAIR Restricted Sleep Study: PVT Adaptation to Chronic Sleep Restriction



Introduction

Fatigue Avoidance Scheduling Tool (FAST)





Method

Participants

- 40 members of a Cadet Field Training (CFT) platoon at USMA
- Platoon leader, platoon sergeant, squad leaders, and squad members

Apparatus

- Wrist activity monitors (Actiwatches™)
- PDAs loaded with PVT software



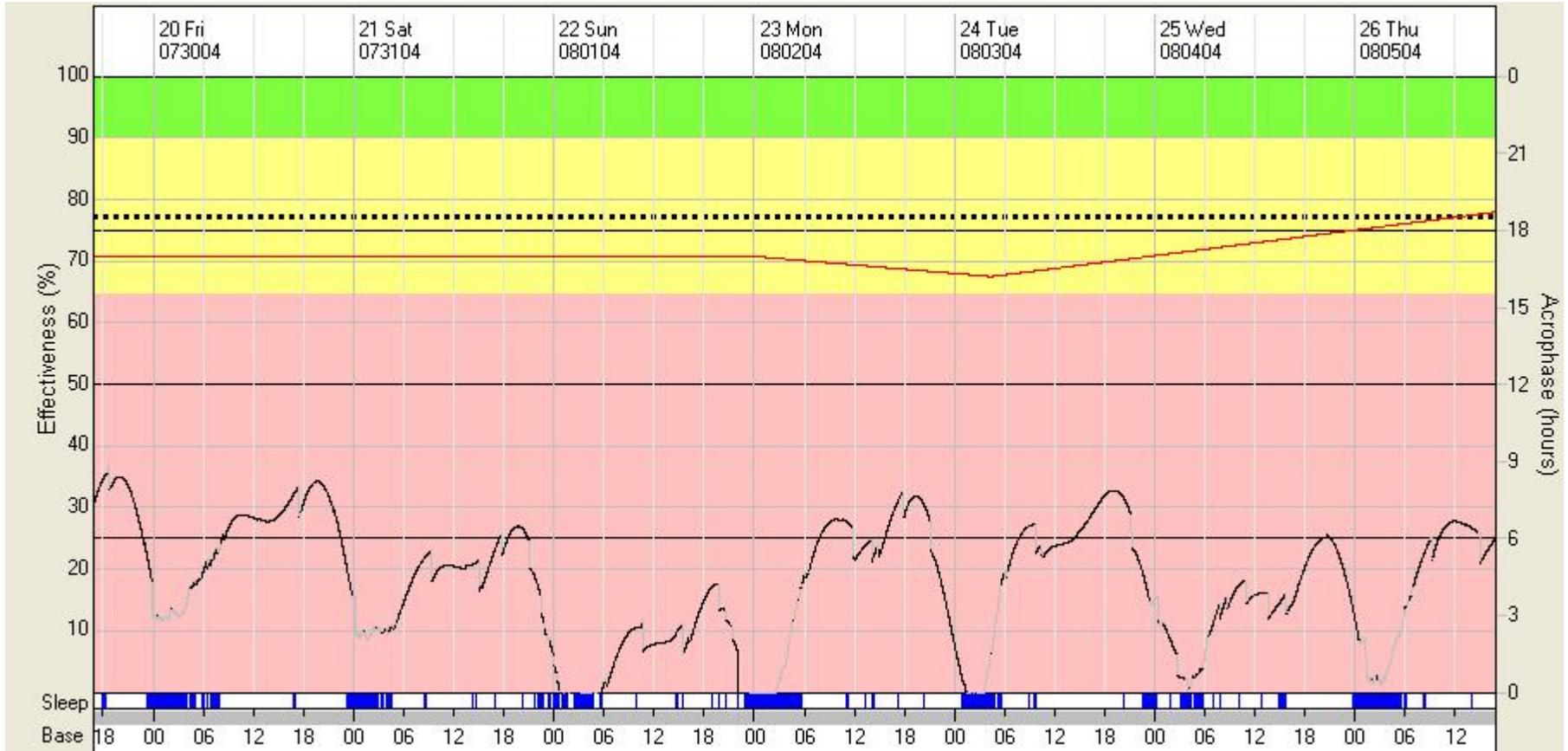
Procedure

- Issue activity monitors and PDAs to participants
- Administer PVT two times per day
- Collect data 1 week prior to, during, and 1 week after a field training exercise



Preliminary Results

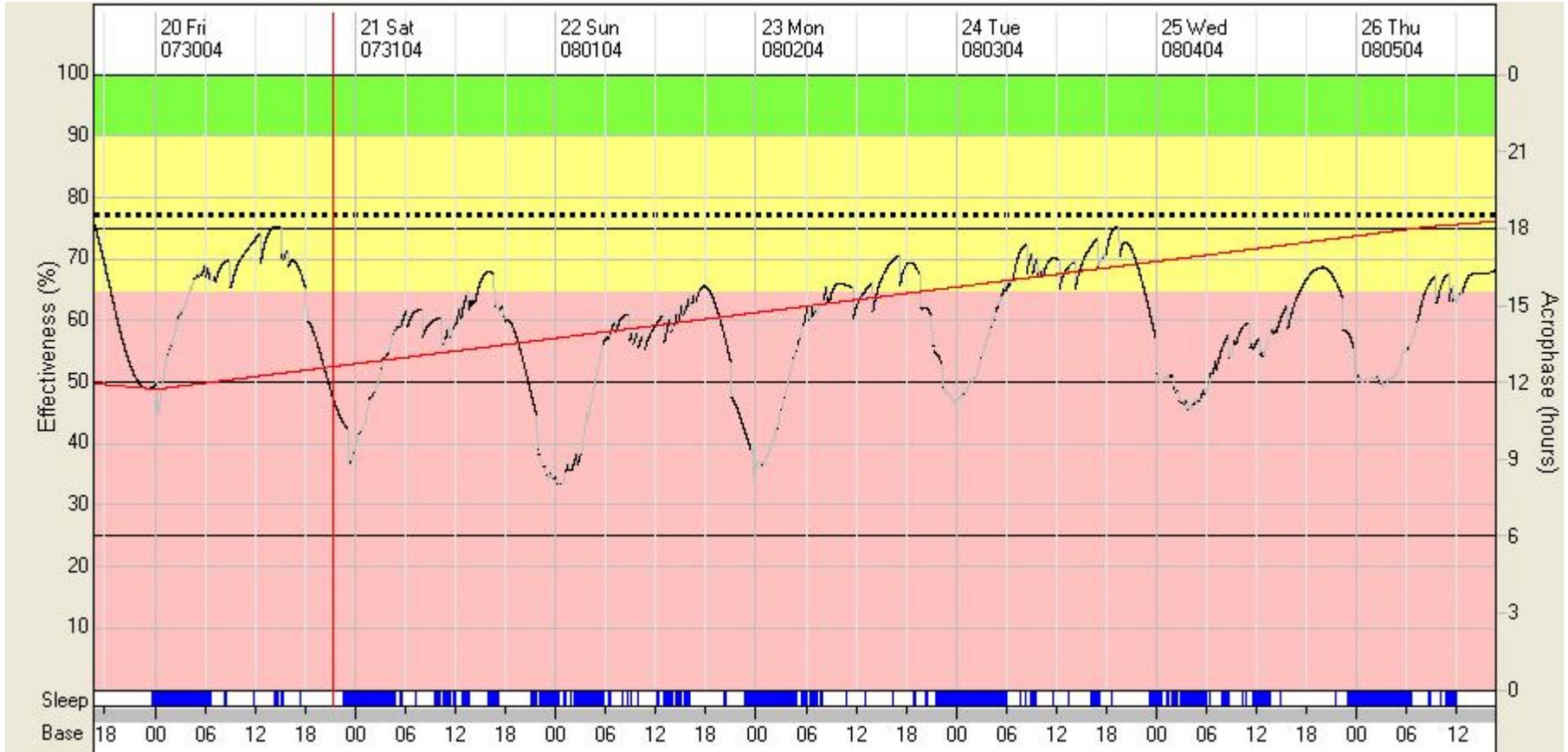
FAST Analysis (Platoon Leader)





Preliminary Results

FAST Analysis (Squad Member)





Discussion

- ❑ Additional data analysis will be conducted on sleep and PVT data
- ❑ Results will be compared with Belenky et al. (2003) laboratory study
- ❑ Ruggedized PDAs needed for future field research
- ❑ Additional researcher(s) needed to encourage compliance



Thank you to....

- ❑ ARL
- ❑ Dr. Nita Miller
- ❑ COL Shattuck



Questions?