AD________________

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TITLE: Effects of Bright Light Therapy of Sleep, Cognition, Brain Function, and Neurochemistry in Mild Traumatic Brain Injury

PRINCIPAL INVESTIGATOR: Dr. William Killgore

CONTRACTING ORGANIZATION: The McLean Hospital Corporation
Belmont, MA  02478

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The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.
Data collection is currently underway and preliminary findings from the first subjects to complete the study are encouraging. Overall, our preliminary data on cognition, emotion, subjective and objective sleep quality suggest that six weeks of morning Bright Blue Light therapy versus comparable Amber Light Placebo are supporting our initial hypotheses. Furthermore, initial comparisons using functional magnetic resonance imaging tasks also suggest that the Bright Blue Light condition was effective in altering brain responses during demanding attention and concentration tasks, whereas such changes were not evident in the Amber Light Placebo condition. While data are too limited to draw conclusions, these initial findings point toward some beneficial effects of the active treatment in reducing daytime sleepiness and sleep-related functional impairments, improving objective sleep quantity, and showing clinically significant improvements in several neuropsychological domains, as well as affecting functional brain responses.

**Subject Terms**

Bright Light, Mild Traumatic Brain Injury, functional Magnetic Resonance Imaging (fMRI) Diffusion Tensor Imaging (DTI)
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INTRODUCTION:
Given the large number of military personnel returning from combat operations in Iraq or Afghanistan with reported or suspected head injuries (Hoge et al., 2008), the outcome of the present study could have significant impact on the delivery of health care to returning military veterans. Other than cognitive-behavioral therapies and avoidance of re-injury, there are few alternative treatments for patients suffering from post-concussive symptoms secondary to a mild traumatic brain injury (mTBI). Alternative approaches to treatment, or adjunctive approaches that can be used to augment ongoing treatments, are clearly needed. Because sleep disruption is one of the primary complaints of individuals following mTBI, and sleep is critical to neurogenesis and neural plasticity, sleep enhancement seems to be an ideal candidate for direct intervention. If the sleep problems can be improved, it is more likely that other aspects of recovery will be accelerated. With sleep improvement, we expect that emotional difficulties will be reduced, ongoing adjunctive treatments will be enhanced, and brain functioning can be restored to the fullest extent possible. Furthermore, non-pharmacologic interventions are generally preferable and more cost effective than reliance upon prescription medications for sleep problems. Therefore, it is hypothesized that by using light therapy to entrain the circadian sleep-wake cycle, we may improve sleep in a sample of individuals with a recent history of concussion, and thereby increase the likelihood that they will recover more quickly, benefit more extensively from other forms of therapy, and build emotional and cognitive resilience. If effective, the proposed approach could be used in isolation or as an adjunct to ongoing therapy to reduce the impact of mTBI and post-concussive symptoms, thereby facilitating a more rapid recovery. Even if the proposed light therapy fails to prove effective at improving sleep or symptom profiles, the obtained cognitive and neuroimaging data, neurocognitive testing, and actigraphy data will prove invaluable in developing further insights into the relationship between mTBI, sleep, and brain function.

BODY:

Accomplishments According to Statement of Work (SOW)

The study is progressing as planned. Consistent with the Statement of Work for YEAR 1 the following tasks have been accomplished:

SOW 1. The PI will submit final protocol for human subjects use approval through the local IRB of McLean Hospital.

Accomplishments:

• The research protocol was written and submitted to the McLean Hospital IRB on 1 JUL 2010. After one revision, this proposal was approved by the local IRB on 25 AUG 2010. The protocol was then submitted to the USAMRMC for Human Use approval on 10 SEP 2010. After submission to the USAMRMC, further revision was required. Changes were submitted to both the USAMRMC and McLean IRB. The McLean Hospital IRB and the USAMRMC approved the study protocol for the use of human subjects as of 9 MAR 2011.

SOW 2. The PI will purchase or acquire the assessment tests and instruments (i.e., Checklists; PHQ, ANAM4, PAI, STAI, Morningness-Eveningness Scale).

Accomplishments:

• Study materials were procured or developed, including:
a. **Commercially Available Tests:** The following commercially available tests were purchased and received: Neurobehavioral Symptom Inventory; Mini International Neuropsychiatric Interview (MINI); PAI Personality Software System and PAI Professional Manual; Automated Neuropsychological Assessment Metrics TBI Battery.

b. **Self-Report/Paper-and-Pencil Tests/Scales:** The following instruments were obtained or developed: Barratt Impulsivity Scale-11, Connor-Davidson Resilience Scale, Invincibility Belief Index, Evaluation of Risks Scale, Morningness-Eveningness Questionnaire, Screen Time Questionnaire, Day of Scan Information Questionnaire, Functional Outcome of Sleep Questionnaire, Patient Health Questionnaire, Pittsburgh Sleep Quality Index, Rivermead Post-Concussion Symptoms Questionnaire, Beck Depression Inventory, Spielberger State-Trait Anxiety Inventory.

c. **Standard Operating Procedures (SOPs):** Comprehensive SOPs outlining administration procedures for all study-related tasks and administration procedures were developed, printed, and mounted into study binders for use during data collection.

**SOW 3.** The PI will acquire, develop, and/or program the computerized stimulation paradigms for use during functional neuroimaging (i.e., MSIT).

**Accomplishments:**

- The following computer tasks were programmed: Psychomotor Vigilance Test, Go/No Go; Tower of London; Balloon Analogue Risk Task; Multi-Source Interference Task; N-BACK; and Body Sway and Stability Test.
- Programming of all computerized functional MRI stimulation paradigms and assessment tasks using E-prime software was completed. Computer stimulation paradigms were tested in the scanner environment to ensure that they could be presented and seen by subjects in the scanner. MRI scan slots were reserved for the remainder of the year.
- The MRI scan protocol was programmed into the 3T Siemens scanner. Two development pilot scans were conducted successfully to ensure that all tasks were operational and that data could be successfully collected during the study.

**SOW 4.** The PI will acquire necessary equipment, including goLITE devices and actigraphs.

**Accomplishments:**

- Nine actigraphs were purchased from Philips Respironics Electronics. Four (4) Amber (placebo) and eight (8) blue (treatment) goLITE devices (12 devices in total) were acquired from Philips Respironics Electronics.

**SOW 5.** The PI will hire and train one half-time research assistant (RA) and one post-doctoral fellow to administer all tasks and carry out study specific procedures.

**Accomplishments:**
Two RAs were hired to work part-time on the present study and part-time on other studies in the lab. The new RAs began employment on 20 JUN 2011 and one post-doctoral fellow began employment on 24 AUG 2011. These 3 new employees underwent hospital orientation and safety training as required by hospital policies. Extensive training on laboratory procedures, CPR training, ethics and HIPAA training, materials purchasing, regulatory requirements, subject screening, psychiatric interviewing, database creation, MRI data acquisition, data processing, and data analysis was accomplished.

The two new RAs were trained by a licensed psychiatrist on the administration and scoring of the MINI. The RAs and post-doctoral fellow were trained by a sleep technician in applying electrodes for polysomnography. All three RAs and the post-doctoral fellow were trained by a sleep technician on administering the Modified Sleep Latency Test (MSLT). The RAs also underwent intensive training on administration and scoring of all other assessments and computerized tasks used in the study.

SOW 6. PI will develop advertisements and fliers for recruitment.

Accomplishments:

• Internet and flier advertisements were approved for use by the McLean IRB on 25 AUG 2010.

SOW 7. Advertisement and recruitment of participants will begin by the second quarter of Year 1.

Accomplishments:

• Quarter #3: Advertisements were posted on Craigslist, as fliers, and in the Metro newspaper, and active subject recruitment was initiated.
• Quarter #4: Advertisements continued to be posted as needed to keep enrollment rates steady. We have screened 23 potential subjects, four of whom we have scheduled and brought in for testing, and two subjects who are scheduled to come in for testing in the near future.

SOW 8. Initial data will be preprocessed and inspected for quality control.

Accomplishments:

• Preliminary functional neuroimaging data for both completed subjects have been preprocessed in SPM8. Data have been corrected for motion, realigned, normalized, and spatially smoothed. All imaging data have inspected for artifacts using the Artifact Detection Program (ART) and covariate regressor files have been created for scans showing excess variability in global signal intensity and motion. Self-report data have been scored, checked, and entered into statistical databases. Neuropsychological assessment data have been downloaded and entered into statistical databases. All data have been visually and graphically inspected to ensure that they were entered correctly.

SOW 9. Data collection will commence and approximately 26% of the subjects will be run by year-end.

Accomplishments:
• Data collection began during Quarter 4. The first subject completed the first study session on 10 OCT 2011. By the end of Quarter 4, two subjects were enrolled and completed the study, and two subjects are currently enrolled and in the process of completing data collection.

**Preliminary Research Findings**

While the current sample size is still too small to make valid conclusions that can be generalized to the larger populations, we report preliminary findings to demonstrate feasibility of the study and to show initial data trends. Complete data have now been collected from 2 participants, one who received the active Bright Blue Light Treatment and the other that received the Amber Placebo Treatment. Overall, the 6-week bright light intervention yielded clinically significant improvements in sleep, cognition and emotion relative to the 6-week amber light placebo intervention (see Figures 1 to 7).

**Subjective Sleepiness and Functional Outcomes of Sleep**: Six weeks of morning bright blue light therapy improved subjective sleep (see Figure 1). The average of seven Stanford Sleepiness Scale (SSS) ratings taken throughout each testing day showed an average decline of 1.70 (SD 0.95) between pre- and post-treatment assessments which was statistically significant ($t = -4.42, p < .01$). In contrast, following 6 weeks of morning Amber Light Placebo therapy, there was no change in daytime sleepiness on the SSS. Self-ratings on the Functional Outcome of Sleep Questionnaire (FOSQ) were also evaluated. Here higher scores indicate greater functional impairment due to sleep problems. Preliminary findings suggest that quality of life was less impaired by poor sleep quality relative to the pre-therapy assessment for the Bright Blue Light Treatment subject, but not for the Amber Placebo participant (who showed a worsening in quality of functional outcomes). Overall, our preliminary findings are encouraging and suggest that a 6-week morning bright light therapy may improve subjective sleep quality. Continued data collection will be necessary to establish the reliability of this effect.

**Actigraphic Sleep Measurement**: The improvement in subjective sleepiness and sleep quality following morning bright light therapy was also accompanied by improvements in several indices of the actigraphy data that were collected as an objective measure of sleep. Data were analyzed using the Actiware 5.0 program with a medium sensitivity threshold for movement. Automated rest period settings were adjusted via data from daily sleep diaries to provide a better approximation of rest
intervals throughout the study. For the present report, data were averaged from the baseline week (i.e., prior to initiation of treatment) and from the final week (i.e., week 6) of the treatment period. Pertinent results are depicted in Figure 2 (Bright Blue Light intervention) and Figure 3 (Amber Light Placebo). As evident in the figures, following six weeks of morning Bright Blue Light Therapy, the mean total minutes of sleep obtained during the sleep intervals (i.e., time in bed) increased by about an hour following treatment (Figure 2a). The mean duration of the sleep intervals (i.e., time in bed) also increased by approximately an hour following the active blue light treatment (Figure 2b). Overall sleep efficiency (i.e., sleep time/time in bed) (Figure 2c) increased by 11% for the active treatment condition. These improvements were larger than the standard error of measurement indicating clinically significant change. However, the mean awake minutes during sleep intervals remained unchanged (Figure 2d).

Figure 2: The effects of bright light therapy on sleep as measured with actigraphy

In contrast, following six weeks of morning Amber Light Placebo therapy, the mean duration of sleep during rest intervals (Figure 3a), the mean duration of sleep intervals themselves (Figure 3b) and the mean sleep efficiency (Figure 3c) remained unchanged (i.e., change exhibited was within the standard error of measurement). However, the mean number of minutes awake during sleep intervals (Figure 3d) reduced by approximately 10% indicating clinically significant change for that subject.
Effects on Neuropsychological Performance: Participants completed several batteries of neuropsychological tasks, including the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) and the Traumatic Brain Injury (TBI) module of the Automated Neuropsychological Assessment Metrics (ANAM®) computerized test battery. As evident in Figure 4, for the Bright Blue Light condition, Reliable Change Indices (RCI) indicated clinically significant improvement on three scales of the RBANS (Visuospatial/Constructional: RCI=2.88; Delayed Memory: RCI=2.77; Total RBANS: RCI=2.77) relative to the assessment prior to the 6-week intervention. None of the assessed cognitive abilities deteriorated. In contrast, RCI indicated clinically significant improvement of only one RBANS scores following the 6-week Amber Light Placebo intervention, while four scores showed clinically significant deterioration (see Figure 4). The criterion of significance was set at ±1.96 which provides significance at $\alpha = 0.05$. Please note that alternate version of the RBANS were used at the two assessments.
Similarly, clinically significant improvement was also demonstrated on subtests of the ANAM® (Figures 5 and 6). Clinically significant change was determined if the change following the intervention was greater than the standard error of measurement (SEM). Following 6 weeks of Bright Blue Light Therapy, mean response times on the ANAM Simple Reaction Time (SRT) were significantly faster relative to before the intervention. On the ANAM Matching to Sample (Match), the proportion of correct response increased, although mean response times also increased. This suggests that an improvement in response accuracy was at the expense of an increase in response speed for this participant. On Mathematical Processing (Math), response accuracy was maintained, while mean response times increased. Thus, simple response times were improved, whereas response times for more complex tasks were not.

Figure 4: RBANS scores following morning bright light and amber light placebo therapy

Figure 5: ANAM scores (response times in ms) following bright light and amber light placebo therapy
**Self-Reported Post-Concussive Symptoms:** Following 6 weeks of morning Bright Blue Light intervention, post-concussion symptoms (measured with the Rivermead Post Concussion Symptoms Questionnaire; RPQ) and depression severity (measured with the Beck Depression Inventory; BDI, and Patient Health Questionnaire; PHQ) reduced by at least 50% relative to the baseline assessment prior to the treatment (Figure 7). State and trait anxiety (measured with the Spielberger State Trait Anxiety Inventory; STAI) increased by less than 25% compared to the pre-intervention assessment. Surprisingly, a similar reduction of more than 50% in post-concussion symptoms (RPQ-3, RPQ-13) was measured following 6 weeks of morning Amber Light Placebo therapy. However, depression severity (PHQ) and trait anxiety (STAI State) remained unchanged, whereas state and trait anxiety (STAI) reduced by less than 25%. Overall, these preliminary results suggest that 6 weeks of morning bright light intervention reduce the symptom burden induced by mild TBI, but further data collection will be needed to assess the full nature and reliability of these effects relative to placebo.
Functional Neuroimaging Findings: Participants completed a series of functional and structural neuroimaging scans. Initial data have been preprocessed for both subjects. With the limited number of participants completed, it is not possible to provide group-wise statistical comparisons. However, preliminary findings for each participant are presented here.

Participants completed the Multi-Source Interference Task (MSIT) at baseline before undergoing treatment and again after 6 weeks of treatment with either Bright Blue Light treatment or Amber Placebo light treatment. The task requires the ability to sustain attention and concentration, shift mental set, and deal with conflicting sources of information. Data were analyzed in SPM8. As shown in Figure 7, a contrast between the pre- and post-treatment scans yielded significant increases in activation within the lateral prefrontal cortex for the Bright Blue Light treatment, but not for the Amber Placebo Light treatment. Each contrast was thresholded at p < .001 (uncorrected), k = 5.

Figure 7: Pre to post treatment changes in brain activation during the MSIT task for each condition

Change in brain activation shown from pre to post treatment on the MSIT Task. Six weeks of blue light treatment was associated with a significant change in prefrontal brain activation, while the amber placebo light was not.
Participants also completed a standard n-back working memory task. This task required them to maintain a letter in working memory and compare it to either the letter shown in the previous trial (1-back) or to the letter shown two trials previously (2-back). The control condition was to press a key each time the target letter X appeared on the screen (0-back). For this analysis, we contrasted activation in the brain from the 2-back versus the 0-back conditions and compared these results from pre-treatment to post-treatment for each condition. As evident in Figure 8, the Bright Blue Light treatment was associated with significant activation in the attention regulating regions of the right parietal cortex, whereas the Amber Placebo Light treatment was not. Each contrast was thresholded at p < .001 (uncorrected), k = 5.

Figure 8: Pre to post treatment changes in brain activation during the N-Back task for each condition

Change in brain activation shown from pre to post treatment on the N-back Task (specifically 2-back > 0-back contrast). Six weeks of blue light treatment was associated with a significant increase in right parietal lobe functioning and reduce medial prefrontal brain activation, while the amber placebo light was not.
KEY RESEARCH ACCOMPLISHMENTS:

- Protocols and materials for human subject use were written, submitted, and approved by the McLean Hospital IRB and by USAMRMC.
- All assessment instruments were purchased, acquired, or developed.
- Computerized stimulation paradigms were created for use during fMRI scanning.
- Two research assistants and one post-doctoral fellow were hired and trained on all study procedures.
- Advertising and recruitment are ongoing.
- Databases have been constructed and data entry is ongoing.
- 4 participants have been enrolled to date.
- 2 participants have completed scanning/study procedures.
- Preliminary results suggest that morning bright light therapy improves sleep, cognition and emotion relative to a morning amber light placebo therapy of equal duration and intensity.

REPORTABLE OUTCOMES:

- Submitted two grant proposals to CDMRP supported by preliminary findings from this research.

CONCLUSION:

The study is progressing forward, although the initiation of data collection was slowed temporarily due to minor delays in obtaining the placebo devices from the manufacturer. Data collection is currently underway and preliminary findings from the first subjects to complete the study are encouraging. Overall, our preliminary data on cognition, emotion, subjective and objective sleep quality suggest that six weeks of morning Bright Blue Light therapy versus comparable Amber Light Placebo are supporting our initial hypotheses. Furthermore, initial comparisons using functional magnetic resonance imaging tasks also suggest that the Bright Blue Light condition was effective in altering brain responses during demanding attention and concentration tasks, whereas such changes were not evident in the Amber Light Placebo condition. While data are too limited to draw conclusions, these initial findings point toward some beneficial effects of the active treatment in reducing daytime sleepiness and sleep-related functional impairments, improving objective sleep quantity, and showing clinically significant improvements in several neuropsychological domains, as well as affecting functional brain responses. We fully appreciate that these are preliminary results and that valid and reliable findings will require additional data collection. However, given the overall trend in the data pointing towards the beneficial effect of morning Bright Light therapy on sleep, cognition and emotion, we are encouraged and believe that this study has a high likelihood of yielding important findings.

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Appendix: Study Measures/Assessments

**Day 1 (Assessment Day)**
1. Neurobehavioral Symptom Inventory (NSI)
2. Personality Assessment Inventory (PAI)
3. Screen Time Questionnaire (STQ)
4. MINI International Neuropsychiatric Interview (MINI)

**Days 2 & 3 (Scan Days)**

*Pre-scan*
5. Multi-Source Interference Task Practice
6. N-back practice
7. Stanford Sleepiness Scale (SSS)

*Scan*
8. Multi-Source Interference Task
9. N-back
10. Diffusion Tensor MRI
11. Resting State MRI

*Post-scan*
12. Repeatable Battery for the Assessment of Neuropsychological Status
13. Automated Neuropsychological Assessment Metrics (ANAM4) TBI Battery
14. Psychomotor Vigilance Test (PVT)
15. Multiple Sleep Latency Test (MSLT)
16. Invincibility Belief Index (IBI)
17. Go/No Go
18. Body Sway and Stability (BS&S)
19. Day of Scan Information Questionnaire
20. Morningness-Eveningness Questionnaire (MEQ)
21. Functional Outcome of Sleep Questionnaire (FOSQ)
22. Evaluation of Risk (EVAR)
23. Patient Health Questionnaire (PHQ)
24. Pittsburgh Sleep Quality Index (PSQI)
25. Rivermead Post-Concussion Symptoms Questionnaire (RPCSQ)
26. Beck Depression Inventory (BDI)
27. Balloon Analogue Risk Task (BART)
28. Spielberger State-Trait Anxiety Inventory – STATE
29. Spielberger State-Trait Anxiety Inventory – TRAIT
30. Tower of London (ToL)

6-Week Intervention Period

1. Sleep Diary
BDI

SUBJECT ID#: _______________________________    DATE: ______/_____/______

INSTRUCTIONS: On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling in the PAST WEEK, INCLUDING TODAY! Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
   1 I feel sad.
   2 I am sad all the time and I can't snap out of it.
   3 I am so sad or unhappy that I can't stand it.

2. 0 I am not particularly discouraged about the future.
   1 I feel discouraged about the future.
   2 I feel I have nothing to look forward to.
   3 I feel that the future is hopeless and that things cannot improve.

3. 0 I do not feel like a failure.
   1 I feel I have failed more than the average person.
   2 As I look back on my life, all I can see is a lot of failures.
   3 I feel I am a complete failure as a person.

4. 0 I get as much satisfaction out of things as I used to.
   1 I don't enjoy things the way I used to.
   2 I don't get real satisfaction out of anything anymore.
   3 I am dissatisfied or bored with everything.

5. 0 I don't feel particularly guilty.
   1 I feel guilty a good part of the time.
   2 I feel quite guilty most of the time.
   3 I feel guilty all of the time.

6. 0 I don't feel I am being punished.
   1 I feel I may be punished.
   2 I expect to be punished.
   3 I feel I am being punished.

7. 0 I don't feel disappointed in myself.
   1 I am disappointed in myself.
   2 I am disgusted with myself.
   3 I hate myself.

8. 0 I don't feel I am any worse than anybody else.
   1 I am critical of myself for my weaknesses or mistakes.
   2 I blame myself all the time for my faults.
   3 I blame myself for everything bad that happens.

9. 0 I don't have any thoughts of killing myself.
   1 I have thoughts of killing myself, but I would not carry them out.
   2 I would like to kill myself.
   3 I would kill myself if I had the chance.
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<thead>
<tr>
<th>Question Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>10</td>
<td>I don't cry any more than usual.</td>
</tr>
<tr>
<td>1</td>
<td>I cry more now than I used to.</td>
</tr>
<tr>
<td>2</td>
<td>I cry all the time now.</td>
</tr>
<tr>
<td>3</td>
<td>I used to be able to cry, but now I can't cry even though I want to.</td>
</tr>
<tr>
<td>11</td>
<td>I am no more irritated now than I ever am.</td>
</tr>
<tr>
<td>1</td>
<td>I get annoyed or irritated more easily than I used to.</td>
</tr>
<tr>
<td>2</td>
<td>I feel irritated all the time now.</td>
</tr>
<tr>
<td>3</td>
<td>I don't get irritated at all by the things that used to irritate me.</td>
</tr>
<tr>
<td>12</td>
<td>I have not lost interest in other people.</td>
</tr>
<tr>
<td>1</td>
<td>I am less interested in other people than I used to be.</td>
</tr>
<tr>
<td>2</td>
<td>I have lost most of my interest in other people.</td>
</tr>
<tr>
<td>3</td>
<td>I have lost all of my interest in other people.</td>
</tr>
<tr>
<td>13</td>
<td>I make decisions about as well as ever.</td>
</tr>
<tr>
<td>1</td>
<td>I put off making decisions more than I used to.</td>
</tr>
<tr>
<td>2</td>
<td>I have greater difficulty in making decisions than before.</td>
</tr>
<tr>
<td>3</td>
<td>I can't make any decisions at all anymore.</td>
</tr>
<tr>
<td>14</td>
<td>I don't feel I look any worse than I used to.</td>
</tr>
<tr>
<td>1</td>
<td>I am worried that I am looking old or unattractive.</td>
</tr>
<tr>
<td>2</td>
<td>I feel that there are permanent changes in my appearance that make me look unattractive.</td>
</tr>
<tr>
<td>3</td>
<td>I believe that I look ugly.</td>
</tr>
<tr>
<td>15</td>
<td>I can work about as well as before.</td>
</tr>
<tr>
<td>1</td>
<td>It takes extra effort to get started at doing something.</td>
</tr>
<tr>
<td>2</td>
<td>I have to push myself very hard to do anything.</td>
</tr>
<tr>
<td>3</td>
<td>I can't do any work at all.</td>
</tr>
<tr>
<td>16</td>
<td>I can sleep as well as usual.</td>
</tr>
<tr>
<td>1</td>
<td>I don't sleep as well as I used to.</td>
</tr>
<tr>
<td>2</td>
<td>I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.</td>
</tr>
<tr>
<td>3</td>
<td>I wake up several hours earlier than I used to and cannot get back to sleep.</td>
</tr>
<tr>
<td>17</td>
<td>I don't get more tired than usual.</td>
</tr>
<tr>
<td>1</td>
<td>I get tired more easily than I used to.</td>
</tr>
<tr>
<td>2</td>
<td>I get tired from doing almost anything.</td>
</tr>
<tr>
<td>3</td>
<td>I am too tired to do anything.</td>
</tr>
<tr>
<td>18</td>
<td>My appetite is no worse than usual.</td>
</tr>
<tr>
<td>1</td>
<td>My appetite is not as good as it used to be.</td>
</tr>
<tr>
<td>2</td>
<td>My appetite is much worse now.</td>
</tr>
<tr>
<td>3</td>
<td>I have no appetite at all anymore.</td>
</tr>
<tr>
<td>19</td>
<td>I haven't lost much weight, if any, lately.</td>
</tr>
<tr>
<td>1</td>
<td>I have lost more than 5 pounds.</td>
</tr>
<tr>
<td>2</td>
<td>I have lost more than 10 pounds.</td>
</tr>
<tr>
<td>3</td>
<td>I have lost more than 15 pounds.</td>
</tr>
<tr>
<td></td>
<td>I am purposely trying to lose weight by eating less       YES ____  NO ____</td>
</tr>
<tr>
<td>20</td>
<td>I am no more worried about my health than usual.</td>
</tr>
<tr>
<td>1</td>
<td>I am worried about physical problems such as aches and pains, or upset stomach, or constipation.</td>
</tr>
<tr>
<td>2</td>
<td>I am very worried about physical problems and it's hard to think of much else.</td>
</tr>
<tr>
<td>3</td>
<td>I am so worried about my physical problems that I cannot think about anything else.</td>
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21. 0  I have not noticed any recent change in my interest in sex.
     1  I am less interested in sex than I used to be.
     2  I am much less interested in sex now.
     3  I have lost interest in sex completely.
1. Please mark the bubble which best describes your feelings **RIGHT NOW**.

I feel like gambling
- not at all ........................ very much

I am driving and the light turns yellow. I feel like
- stopping ........................ accelerating

The lights suddenly go out in an unfamiliar stairwell
- I don't move ........................ I proceed immediately

I feel like
- avoiding everyone ........................ taking on the world

I feel like diving from a diving board, which is
- very high ........................ very low

I like
- routine ........................ adventure

I seek
- the thrill of danger ........................ tranquillity

I am in a hurry
- I take a dangerous shortcut ........................ I take a safe detour

I am open to
- negotiation ........................ confrontation

I prefer to
- direct ........................ be supervised

I give priority to
- reason ........................ action

I like to listen to music
- at a loud volume ........................ very softly

I am sure of myself
- not at all ........................ completely

I prefer discussions, which are
- animated ........................ calm

A hostile situation
- weakens me ........................ reinforces me

A menacing dog approaches
- I confront it ........................ I run away
THANK YOU FOR COMPLETING THIS SURVEY!

Please provide any additional comments below or on the back of the survey, if needed.

Faced with a potentially dangerous event
I take my time [ ] [ ] [ ] [ ] instantaneously react [ ]

Seeing a person who is drowning, I first
[ ] [ ] [ ] [ ] call for help

I prefer work that is
well planned [ ] [ ] [ ] [ ] not planned [ ]

I am right
all the time [ ] [ ] [ ] [ ] never [ ]

I emphasize
precision [ ] [ ] [ ] [ ] speed [ ]

I like to drive
very fast [ ] [ ] [ ] [ ] very slow [ ]

I like to listen to music with a tempo that is
very slow [ ] [ ] [ ] [ ] very fast [ ]

I like to take risks
not at all [ ] [ ] [ ] [ ] a lot [ ]
Day of Scan Information Questionnaire

Subject #: _____________ Date: _______________

DATE OF BIRTH ________/______/______
day month year

AGE ........................................................... ___________ years
HEIGHT .................................................... ___________ ft/inches
WEIGHT ................................................... ___________ lbs
SEX ........................................................ Male Female

RIGHT or LEFT-HANDED? .................. RIGHT LEFT BOTH/NEITHER

How far did you go in school?
<9th; 9th; 10th; 11th; HS Grad; 2yr College; College Grad; Some Grad School; Masters, Doctorate

Do you have any problems with reading? NO YES _______________________________

What is your primary language (what do you speak at home most of the time)?

English Spanish Other _______________

CAFFEINE USE
Did you have any caffeine containing products today? If so, how much? ___________
On average, how many cups of caffeinated coffee do you drink per day? ___________
On average, how many cups of caffeinated tea do you drink per day? ___________
On average, how many cans of caffeinated soda do you drink per day? ___________
On average, how many caffeinated sports drinks do you drink per day? ___________ (brand)
Do you use any other caffeinated products, such as Vivarin? YES NO
If YES, WHAT? _______________ How much? __________ How often? ___________

PHYSICAL INFORMATION

If female, when was the start of your last menstrual period (be as precise as possible)?
Date of period: _______________ or about ________ days ago.

CONCUSSION INFORMATION

How many “concussions” have you had in your life? ___________
Did you lose consciousness or get “knocked out” each time? _______________
How long ago was your most recent concussion? ___________ Date it happened: ___________
Briefly describe the situation that led to your most recent concussion:

____________________________________________________________________________________
____________________________________________________________________________________
Did you “see stars” during your last concussion? **YES** **NO**
Did you lose consciousness during your last concussion? **YES** **NO**
   (If “YES”, for how long were you unconscious: __________
Did you notice that your sleep became worse following the concussion? **YES** **NO**
After your concussion, what sleep problems became more noticeable to you? (check all that apply)
   _____  I get sleepier during the day
   _____  I get drowsier than I used to when trying to concentrate or work
   _____  I fall asleep when I should not
   _____  It is harder to stay alert during the day
   _____  It is harder to fall asleep at night
   _____  I fall asleep much later than I used to
   _____  I fall asleep much earlier than I used to
   _____  I sleep later in the morning than I used to
   _____  I wake up much earlier in the morning than I used to
   _____  When I do sleep, it is fitful or less restful than it used to be
   _____  I wake up off and on throughout the night more than I used to
   _____  I have more nightmares than I used to

In the months **BEFORE** your concussion occurred:

**Before** your concussion, at what time did you normally go to bed at night on:
   Week nights (Sun-Thur)?  ________ AM    PM  (midnight = 12 AM; noon = 12 PM)
   weekends (Fri-Sat)?  ________ AM    PM

**Before** your concussion, what time did you typically awaken on:
   weekdays (Mon-Fri)?  ________ AM    PM
   weekends (Sat-Sun)?  ________ AM    PM

**Before** your concussion, how long did it typically take you to fall asleep at night?
   on week nights (Sun-Thur)?  ________ MIN    HRS
   on weekends (Fri-Sat)?  ________ MIN    HRS

**CURRENT SLEEP HABITS**

How much sleep did you get last night? ____________

**Since your concussion**, how much do you typically sleep on weeknights (Sun-Thur)? __________

**Since your concussion**, how much do you typically sleep on weekend nights (Fri-Sat)?_________

**Since your concussion**, at what time do you normally go to bed at night on:
   week nights (Sun-Thur)?  ________ AM    PM  (midnight = 12 AM; noon = 12 PM)
   weekends (Fri-Sat)?  ________ AM    PM

**Since your concussion**, what time do you typically awaken on:
   weekdays (Mon-Fri)?  ________ AM    PM
   weekends (Sat-Sun)?  ________ AM    PM
**Since your concussion**, how long does it typically take you to fall asleep at night?
- on week nights (Sun-Thur)? ________ MIN    HRS
- on weekends (Fri-Sat)? ________ MIN    HRS

**Since your concussion**, at what time of day do you feel sleepiest? ________ AM    PM
At what time of day do you feel most alert? ________ AM    PM

**Since your concussion**, how many hours do you need to sleep to feel your best? ________

“Since your concussion…”
“If I get less than ______ hours of sleep, I notice an impairment in my ability to function at work.”
“If I get more than ______ hours of sleep, I notice an impairment in my ability to function at work.”

Is daytime sleepiness currently a problem for you? ............YES    NO

Are you currently doing shift work, that is, working early morning, evening, or night shifts?...YES    NO

Do you ever have trouble falling asleep? .................................................................YES    NO
If yes, how often? ________ times per WEEK    MONTH    YEAR (circle one)
If yes, did this get start or get worse since your concussion? YES    NO

Do you ever have trouble staying asleep? .................................................................YES    NO
If yes, how often? ________ times per WEEK    MONTH    YEAR (circle one)
If yes, did this start or get worse since your concussion? YES    NO

Do you take more than two daytime naps per month? ...................................... YES    NO
If yes, about how many times per week do you nap? .................................
At what time of day do you normally take your nap? _____:____ AM/PM to _____:____ AM/PM
Do you consider yourself a light, normal, or heavy sleeper? ..........LIGHT    NORMAL    HEAVY
Have you been told or do you think that you snore excessively? YES    NO
Have you ever been diagnosed or treated for sleep apnea or sleep disordered breathing? YES    NO

I yawn often
- Never  1  2  3  4  5  6  7  8  9  10  Always yawning

When I see or hear someone else yawn, I will yawn too
- Never  1  2  3  4  5  6  7  8  9  10  Every time
RECENT RISK OF DOZING OFF (ESS)

How likely are to doze off or fall asleep in the following situations, in contrast to feeling just tired? This refers to your usual way of life in the last two weeks. Even if you have not done some of these things recently try to work out how they would have affected you. Use the following scale to choose the most appropriate number for each situation:

0 = would never doze  
1 = slight chance of dozing  
2 = moderate chance of dozing  
3 = high chance of dozing

<table>
<thead>
<tr>
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<tr>
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</tr>
<tr>
<td>In a car, while stopped for a few minutes in the traffic</td>
<td>0 1 2 3</td>
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</tbody>
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Second Day of Scan Information Questionnaire

Subject #: _____________ Date: _______________

**CAFFEINE USE**
Did you have any caffeine containing products today? If so, how much? __________
On average, how many cups of caffeinated coffee do you drink per day? __________
On average, how many cups of caffeinated tea do you drink per day? __________
On average, how many cans of caffeinated soda do you drink per day? __________
On average, how many caffeinated sports drinks do you drink per day? __________ (brand)
Do you use any other caffeinated products, such as Vivarin? YES NO
If YES, WHAT? ________________ How much?_________ How often?_____________

**PHYSICAL INFORMATION**
If female, when was the start of your last menstrual period (be as precise as possible)?
Date of period:______________ or about _________days ago.

**CURRENT SLEEP HABITS**
How much sleep did you get last night? __________

**In the past two weeks**, how much do you typically sleep on weeknights (Sun-Thur)? __________

**In the past two weeks**, how much do you typically sleep on weekend nights (Fri-Sat)? __________

**In the past two weeks**, at what time do you normally go to bed at night on:
- week nights (Sun-Thur)? ________ AM    PM (midnight = 12 AM; noon = 12 PM)
- weekends (Fri-Sat)? ________ AM    PM

**In the past two weeks**, what time do you typically awaken on:
- weekdays (Mon-Fri)? ________ AM    PM
- weekends (Sat-Sun)? ________ AM    PM

**In the past two weeks**, how long does it typically take you to fall asleep at night?
- on week nights (Sun-Thur)? ________ MIN   HRS
- on weekends (Fri-Sat)? ________ MIN   HRS

**In the past two weeks**, at what time of day do you feel sleepiest? ________ AM    PM
At what time of day do you feel most alert? ________ AM    PM

**In the past two weeks**, how many hours do you need to sleep to feel your best? __________

“In the past two weeks…”
“If I get less than ______ hours of sleep, I notice an impairment in my ability to function at work.”
“If I get more than ______ hours of sleep, I notice an impairment in my ability to function at work.”
In the past two weeks:

Is daytime sleepiness currently a problem for you? .............YES  NO

Are you currently doing shift work, that is, working early morning, evening, or night shifts?...YES  NO

Do you ever have trouble falling asleep? ...........................................................YES  NO
If yes, how often? ________ times per WEEK  MONTH  YEAR (circle one)

Do you ever have trouble staying asleep? ..........................................................YES  NO
If yes, how often? ________ times per WEEK  MONTH  YEAR (circle one)

Do you take more than two daytime naps per month? ...................... YES  NO
If yes, about how many times per week do you nap? .....................
At what time of day do you normally take your nap? ___:___ AM/PM  to  ___:___AM/PM

Do you consider yourself a light, normal, or heavy sleeper? ...........LIGHT  NORMAL  HEAVY

Have you been told or do you think that you snore excessively? YES  NO
Have you ever been diagnosed or treated for sleep apnea or sleep disordered breathing? YES  NO

I yawn often
Never  1  2  3  4  5  6  7  8  9  10  Always yawning

When I see or hear someone else yawn, I will yawn too
Never  1  2  3  4  5  6  7  8  9  10  Every time
**RECENT RISK OF DOZING OFF (ESS)**

How likely are to doze off or fall asleep in the following situations, in contrast to feeling just tired? This refers to your **usual way of life in the last two weeks**. Even if you have not done some of these things recently try to work out how they would have affected you. Use the following scale to choose the most appropriate number for each situation:

- 0 = would never doze
- 1 = slight chance of dozing
- 2 = moderate chance of dozing
- 3 = high chance of dozing

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Read the following scenarios. Each scenario presents a situation and asks a question about the chance or likelihood that you would experience a particular outcome. For each one, think about how likely that outcome would be for YOU in that situation. Do NOT worry about how most people would do in a particular situation—just think about the chance that a particular outcome would happen to YOU in that situation. Circle the percent chance that best represents the probability that the outcome would happen to YOU.

1. You arrive 25 minutes late for a big job interview. What is the probability that YOU will get the job?
   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

2. If you were to find yourself confronted by a vicious angry dog, what is the probability that YOU could get away unharmed?
   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

3. Regardless of your moral convictions, if you were to shoplift a pair of $50 sunglasses from a chain drug store, what is the probability that YOU could get away with it without being caught?
   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

4. While leaving a popular night club, you are attacked by a drunk man in his early 20s wielding a 10 inch knife. During the scuffle, your friend is stabbed, but not fatally. What is the chance that YOU will be killed during the attack?
   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

5. While on vacation, you meet up with a stranger asking for help. Although the story the stranger tells you is heart wrenching and he seems very sincere, you are aware that he may just be a con-artist trying to scam you. If the stranger truly is a con-artist, what is the probability YOU will end up being scammed out of some of your money?
   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

6. You awaken one morning realizing that you engaged in unprotected sex with someone you just met. Now that the alcohol has worn off, your partner remorsefully tells you that he/she has suffered for a long time with a very serious sexually transmitted disease. What is the chance that YOU will contract the sexually transmitted disease yourself after this contact?
   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
7. While on vacation in a far away country, your 3 traveling companions have all contracted a bad case of diarrhea after drinking the water. You realize that you just drank some of the same water about an hour ago. What is the likelihood that YOU will come down with diarrhea too?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

8. While on vacation in the woods, you decide to go hiking in an unfamiliar and thickly wooded area without a map or guide. What is the likelihood that YOU will get lost?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

9. You have been at a nightclub for 4 hours. During that time you have had 7 alcoholic beverages. You are feeling a little “buzzed” but you decide to drive yourself home anyway because it is only about 5 miles away. What is the probability that YOU will make it home without any negative incident?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

10. While playing golf one afternoon a thunderstorm comes up quickly. There is much wind and occasional lightning is hitting nearby. Because you are winning the game and only have two more holes to play, you decide to continue to the end. What is the likelihood that YOU will be struck by lightning before finishing the game?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

11. While at your job you discover that one of your superiors has been embezzling large amounts of money from your organization. You decide to inform higher management of his illegal behavior. What is the chance that YOUR future career at the company will be harmed by reporting him?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

12. Your company has a strict policy forbidding the removal of computer equipment from the work premises. However, you have a big project due that can only be completed if you “borrow” a company laptop computer over the weekend. What is the probability that YOU could secretly remove the computer for the weekend and return it to work on Monday without ever being caught?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

13. You are a foreigner living in a war-torn country that is filled with violence and frequent sniper attacks. Although it is dark outside and there are many hostile insurgents in the area, you decide to drive alone and unarmed down a 10 mile stretch of empty highway to spend the weekend in the next town. What is the probability that YOU will be killed while making the trip?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
14. While staying at a high rise hotel a bad fire breaks out several floors below yours. After hearing the fire alarm and smelling smoke, you quickly devise a plan of escape. What is the likelihood that YOU would be unable to figure out a way to escape and would die in the fire?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

15. A severe natural disaster has devastated your town, resulting in widespread panic, looting, and deadly violence. The escape routes leading from the town are blocked with gridlock traffic and street gangs are killing at random and using violent means to steal limited necessities and survive. What is the chance that YOU will be able to outmaneuver the looters and escape the town unharmed?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

16. You enter a competition in an arena in which you are particularly talented. What is the chance that YOU will ultimately win the competition?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

17. You are sightseeing off a tall bridge where many individuals have tried to commit suicide by jumping to their deaths in the water below. Approximately half of all jumpers have not survived the long drop into the bay. Unfortunately, you stumble and are accidentally knocked off of the bridge. What is the likelihood that YOU would die in the fall?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

18. Your biggest rival has challenged you in some way. What is the likelihood that YOU will ultimately defeat your rival at whatever he/she has challenged you with?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

19. A bad automobile accident has just occurred in front of you. In one of the cars, the driver is unconscious and bleeding. You smell gas and notice that smoke is starting to billow out from the car. Afraid that the car may explode at any moment, you work to pull the unconscious driver from the car. What is the chance that YOU will die in the process of saving the driver?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

20. While on vacation on a tropical island you decided to rent a small motor boat to do some sightseeing and fishing out along the island coast. After stopping the boat some distance from the shore you lay down to take a brief nap. Upon awakening you realize that you can no longer see the shore and notice that there is a fierce storm coming. What is the likelihood that YOU will die at sea?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
MEQ

SUBJECT: ___________________________ DATE: ______/______/______

1. Considering only your own “feeling best” rhythm, at what time would you get up if you were entirely free to plan your day?
   _____ 5:00 - 6:30 AM
   _____ 6:30 - 7:45 AM
   _____ 7:45 - 9:45 AM
   _____ 9:45 - 11:00 AM
   _____ 11:00 AM - 12:00 PM

2. Considering only your own “feeling best” rhythm, at what time would you go to bed if you were entirely free to plan your evening?
   _____ 8:00 - 9:00 PM
   _____ 9:00 - 10:15 PM
   _____ 10:15 PM - 12:30 AM
   _____ 12:30 - 1:45 AM
   _____ 1:45 - 3:00 AM

3. If there is a specific time at which you have to get up in the morning, to what extent are you dependent on being woken up by an alarm clock?
   _____ not at all dependent
   _____ slightly dependent
   _____ fairly dependent
   _____ very dependent

4. Assuming adequate environmental conditions, how easy do you find getting up in the mornings?
   _____ not at all easy
   _____ not very easy
   _____ fairly easy
   _____ very easy

5. How alert do you feel during the first half hour after having woken in the mornings?
   _____ not at all alert
   _____ slightly alert
   _____ fairly alert
   _____ very alert

6. How is your appetite during the first half-hour after having woken in the mornings?
   _____ very poor
   _____ fairly poor
   _____ fairly good
   _____ very good

7. During the first half-hour after having woken in the morning, how tired do you feel?
   _____ very tired
   _____ fairly tired
   _____ fairly refreshed
   _____ very refreshed
8. When you have no commitments the next day, at what time do you go to bed compared to your usual bedtime?

_____ seldom or never later
_____ less than one hour later
_____ 1-2 hours later
_____ more than two hours later

9. You have decided to engage in some physical exercise. A friend suggests that you do this one hour twice a week and the best time for him is between 7:00-8:00 AM. Bearing in mind nothing else but your own “feeling best” rhythm how do you think you would perform?

_____ would be in good form
_____ would be in reasonable for
_____ would find it difficult
_____ would find it very difficult

10. At what time in the evening do you feel tired and as a result in need of sleep?

_____ 8:00 - 9:00 PM
_____ 9:00 - 10:15 PM
_____ 10:15 PM - 12:45 AM
_____ 12:45 - 2:00 AM
_____ 2:00 - 3:00 AM

11. You wish to be at your peak performance for a test which you know is going to be mentally exhausting and lasting for two hours. You are entirely free to plan your day and considering only your own “feeling best” rhythm which ONE of the four testing times would you choose?

_____ 8:00 - 10:00 AM
_____ 11:00 AM - 1:00 PM
_____ 3:00 - 5:00 PM
_____ 7:00 - 9:00 PM

12. If you went to bed at 11:00 PM at what level of tiredness would you be?

_____ not at all tired
_____ a little tired
_____ fairly tired
_____ very tired

13. For some reason you have gone to bed several hours later than usual, but there is no need to get up at any particular time the next morning. Which ONE of the following events are you most likely to experience?

_____ will wake up at usual time and will NOT fall asleep
_____ will wake up at usual time and will doze thereafter
_____ will wake up at usual time but will fall asleep again
_____ will NOT wake up until later than usual

14. One night you have to remain awake between 4:00 - 6:00 AM in order to carry out a night watch. You have no commitments the next day. Which ONE of the following alternatives will suit you best?

_____ would NOT go to bed until watch was over
_____ would take a nap before and sleep after
_____ would take a good sleep before and nap after
_____ would take ALL sleep before watch
15. You have to do two hours of hard physical work. You are entirely free to plan your day and considering only your own “feeling best” rhythm which ONE of the following times would you choose?

_____ 8:00 - 10:00 AM  
_____ 11:00 AM - 1:00 PM  
_____ 3:00 - 5:00 PM  
_____ 7:00 - 9:00 PM

16. You have decided to engage in hard physical exercise. A friend suggests that you do this for one hour twice a week and the best time for him is between 10:00 - 11:00 PM. Bearing in mind nothing else but your own “feeling best” rhythm how well do you think you would perform?

_____ would be in good form  
_____ would be in reasonable form  
_____ would find it difficult  
_____ would find it very difficult

17. Suppose that you can choose your own work hours. Assume that you worked a FIVE-hour day (including breaks) and that your job was interesting and paid by results. During which time period would you want that five consecutive hours to END?

_____ 12:00 - 4:00 AM  
_____ 4:00 - 8:00 AM  
_____ 8:00 - 9:00 AM  
_____ 9:00 AM - 2:00 PM  
_____ 2:00 - 5:00 PM  
_____ 5:00 PM - 12:00 AM

18. At what time of the day do you think that you reach your “feeling best” peak?

_____ 12:00 - 5:00 AM  
_____ 5:00 - 8:00 AM  
_____ 8:00 - 10:00 AM  
_____ 10:00 AM - 5:00 PM  
_____ 5:00 - 10:00 PM  
_____ 10:00 PM - 12:00 AM

19. One hears about “morning” and “evening” types of people. Which ONE of these types do you consider yourself to be?

_____ definitely a “morning” person  
_____ rather more a “morning” than an “evening” type  
_____ rather more an “evening” than a “morning” type  
_____ definitely an “evening” type
MINI INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW

English Version 6.0.0

DSM-IV

USA: D. Sheehan\textsuperscript{1}, J. Janavs, K. Harnett-Sheehan, M. Sheehan, C. Gray.
\textsuperscript{1}University of South Florida College of Medicine- Tampa, USA

\textsuperscript{2}Centre Hospitalier Sainte-Anne – Paris, France

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DISCLAIMER

Our aim is to assist in the assessment and tracking of patients with greater efficiency and accuracy. Before action is taken on any data collected and processed by this program, it should be reviewed and interpreted by a licensed clinician.

This program is not designed or intended to be used in the place of a full medical and psychiatric evaluation by a qualified licensed physician — psychiatrist. It is intended only as a tool to facilitate accurate data collection and processing of symptoms elicited by trained personnel.

M.I.N.I. 6.0.0 (January 1, 2009)
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<th>TIME FRAME</th>
<th>MEETS CRITERIA</th>
<th>DSM-IV-TR</th>
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<th>PRIMARY DIAGNOSIS</th>
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<td></td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>☐ Low ☐ Moderate ☐ High</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C MANIC EPISODE</td>
<td>Current</td>
<td>☐</td>
<td>296.00-296.06</td>
<td>F30.x-F31.9</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Past</td>
<td>☐</td>
<td>296.80-296.89</td>
<td>F31.8-F31.9/F34.0</td>
<td>☐</td>
</tr>
<tr>
<td>HYPOMANIC EPISODE</td>
<td>Current</td>
<td>☐</td>
<td>296.80-296.89</td>
<td>F31.8</td>
<td>☐</td>
</tr>
<tr>
<td>BIPOLAR I DISORDER</td>
<td>Current</td>
<td>☐</td>
<td>296.0x-296.6x</td>
<td>F30.x-F31.9</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Past</td>
<td>☐</td>
<td>296.0x-296.6x</td>
<td>F30.x-F31.9</td>
<td>☐</td>
</tr>
<tr>
<td>BIPOLAR II DISORDER</td>
<td>Current</td>
<td>☐</td>
<td>296.89</td>
<td>F31.8</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Past</td>
<td>☐</td>
<td>296.89</td>
<td>F31.8</td>
<td>☐</td>
</tr>
<tr>
<td>BIPOLAR DISORDER NOS</td>
<td>Current</td>
<td>☐</td>
<td>296.80</td>
<td>F31.9</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Past</td>
<td>☐</td>
<td>296.80</td>
<td>F31.9</td>
<td>☐</td>
</tr>
<tr>
<td>D PANIC DISORDER</td>
<td>Current (Past Month)</td>
<td>☐</td>
<td>300.01/300.21</td>
<td>F40.01-F41.0</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Lifetime</td>
<td>☐</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E AGORAPHOBIA</td>
<td>Current</td>
<td>☐</td>
<td>300.22</td>
<td>F40.00</td>
<td>☐</td>
</tr>
<tr>
<td>F SOCIAL PHOBIA (Social Anxiety Disorder)</td>
<td>Current (Past Month)</td>
<td>☐</td>
<td>300.23</td>
<td>F40.1</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Generalized</td>
<td>☐</td>
<td>300.23</td>
<td>F40.1</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Non-Generalized</td>
<td>☐</td>
<td>300.23</td>
<td>F40.1</td>
<td>☐</td>
</tr>
<tr>
<td>G OBSESSIVE-COMPULSIVE DISORDER</td>
<td>Current (Past Month)</td>
<td>☐</td>
<td>300.3</td>
<td>F42.8</td>
<td>☐</td>
</tr>
<tr>
<td>H POSTTRAUMATIC STRESS DISORDER</td>
<td>Current (Past Month)</td>
<td>☐</td>
<td>309.81</td>
<td>F43.1</td>
<td>☐</td>
</tr>
<tr>
<td>I ALCOHOL DEPENDENCE</td>
<td>Past 12 Months</td>
<td>☐</td>
<td>303.9</td>
<td>F10.2x</td>
<td>☐</td>
</tr>
<tr>
<td>ALCOHOL ABUSE</td>
<td>Past 12 Months</td>
<td>☐</td>
<td>305.00</td>
<td>F10.1</td>
<td>☐</td>
</tr>
<tr>
<td>J SUBSTANCE DEPENDENCE (Non-alcohol)</td>
<td>Past 12 Months</td>
<td>☐</td>
<td>304.00-90/305.20-90</td>
<td>F11.1-F19.1</td>
<td>☐</td>
</tr>
<tr>
<td>SUBSTANCE ABUSE (Non-alcohol)</td>
<td>Past 12 Months</td>
<td>☐</td>
<td>304.00-90/305.20-90</td>
<td>F11.1-F19.1</td>
<td>☐</td>
</tr>
<tr>
<td>K PSYCHOTIC DISORDERS</td>
<td>Lifetime</td>
<td>☐</td>
<td>295.10-295.90/297.1</td>
<td>F20.xx-F29</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Current</td>
<td>☐</td>
<td>297.3/293.81/293.82/293.89/298.8/298.9</td>
<td>F20.xx-F29</td>
<td>☐</td>
</tr>
<tr>
<td>MOOD DISORDER WITH PSYCHOTIC FEATURES</td>
<td>Lifetime</td>
<td>☐</td>
<td>296.24/296.34/296.44</td>
<td>F32.3/F33.3</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Current</td>
<td>☐</td>
<td>296.24/296.34/296.44</td>
<td>F32.3/F33.3</td>
<td>☐</td>
</tr>
<tr>
<td>L ANOREXIA NERVOSA</td>
<td>Current (Past 3 Months)</td>
<td>☐</td>
<td>307.1</td>
<td>F50.0</td>
<td>☐</td>
</tr>
<tr>
<td>M BULIMIA NERVOSA</td>
<td>Current (Past 3 Months)</td>
<td>☐</td>
<td>307.51</td>
<td>F50.2</td>
<td>☐</td>
</tr>
<tr>
<td>ANOREXIA NERVOSA, BINGE EATING/PURGING TYPE</td>
<td>Current</td>
<td>☐</td>
<td>307.1</td>
<td>F50.0</td>
<td>☐</td>
</tr>
<tr>
<td>N GENERALIZED ANXIETY DISORDER</td>
<td>Current (Past 6 Months)</td>
<td>☐</td>
<td>300.02</td>
<td>F41.1</td>
<td>☐</td>
</tr>
<tr>
<td>O MEDICAL, ORGANIC, DRUG CAUSE RULED OUT</td>
<td>☐ No ☐ Yes ☐ Uncertain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P ANTISOCIAL PERSONALITY DISORDER</td>
<td>Lifetime</td>
<td>☐</td>
<td>301.7</td>
<td>F60.2</td>
<td>☐</td>
</tr>
</tbody>
</table>

IDENTIFY THE PRIMARY DIAGNOSIS BY CHECKING THE APPROPRIATE CHECK BOX.
(Which problem troubles you the most or dominates the others or came first in the natural history?)

---

The translation from DSM-IV-TR to ICD-10 coding is not always exact. For more information on this topic see Schulte-Markwort. Crosswalks ICD-10/DSM-IV-TR. Hogrefe & Huber Publishers 2006.
GENERAL INSTRUCTIONS

The M.I.N.I. was designed as a brief structured interview for the major Axis I psychiatric disorders in DSM-IV and ICD-10. Validation and reliability studies have been done comparing the M.I.N.I. to the SCID-P for DSM-III-R and the CIDI (a structured interview developed by the World Health Organization). The results of these studies show that the M.I.N.I. has similar reliability and validity properties, but can be administered in a much shorter period of time (mean 18.7 ± 11.6 minutes, median 15 minutes) than the above referenced instruments. It can be used by clinicians, after a brief training session. Lay interviewers require more extensive training.

INTERVIEW:
In order to keep the interview as brief as possible, inform the patient that you will conduct a clinical interview that is more structured than usual, with very precise questions about psychological problems which require a yes or no answer.

GENERAL FORMAT:
The M.I.N.I. is divided into modules identified by letters, each corresponding to a diagnostic category.
• At the beginning of each diagnostic module (except for psychotic disorders module), screening question(s) corresponding to the main criteria of the disorder are presented in a gray box.
• At the end of each module, diagnostic box(es) permit the clinician to indicate whether diagnostic criteria are met.

CONVENTIONS:
Sentences written in « normal font » should be read exactly as written to the patient in order to standardize the assessment of diagnostic criteria.

Sentences written in « CAPITALS » should not be read to the patient. They are instructions for the interviewer to assist in the scoring of the diagnostic algorithms.

Sentences written in « bold » indicate the time frame being investigated. The interviewer should read them as often as necessary. Only symptoms occurring during the time frame indicated should be considered in scoring the responses.

Answers with an arrow above them (➔) indicate that one of the criteria necessary for the diagnosis(es) is not met. In this case, the interviewer should go to the end of the module, circle « NO » in all the diagnostic boxes and move to the next module.

When terms are separated by a slash (/) the interviewer should read only those symptoms known to be present in the patient (for example, question G6).

Phrases in (parentheses) are clinical examples of the symptom. These may be read to the patient to clarify the question.

RATING INSTRUCTIONS:
All questions must be rated. The rating is done at the right of each question by circling either Yes or No. Clinical judgment by the rater should be used in coding the responses. Interviewers need to be sensitive to the diversity of cultural beliefs in their administration of questions and rating of responses. The rater should ask for examples when necessary, to ensure accurate coding. The patient should be encouraged to ask for clarification on any question that is not absolutely clear. The clinician should be sure that each dimension of the question is taken into account by the patient (for example, time frame, frequency, severity, and/or alternatives).
Symptoms better accounted for by an organic cause or by the use of alcohol or drugs should not be coded positive in the M.I.N.I. The M.I.N.I. Plus has questions that investigate these issues.

For any questions, suggestions, need for a training session or information about updates of the M.I.N.I., please contact:
David V Sheehan, M.D., M.B.A.
University of South Florida College of Medicine
3515 East Fletcher Ave, Tampa, FL USA 33613-4706
tel: +1 813 974 4544; fax: +1 813 974 4575
e-mail: dsheehan@health.usf.edu

Yves Lecrubier, M.D. / Christian Even, M.D.
Centre Hospitalier Sainte-Anne
Clinique des Maladies Mentales de l’Encéphale
100 rue de la Santé, 75674 Paris Cedex 14, France
tel: +33 (0) 1 53 80 49 41; fax: +33 (0) 1 45 65 88 54
e-mail: ylecrubier@noos.fr or even-sainteanne@orange.fr

M.I.N.I. 6.0.0 (January 1, 2009)
### A. MAJOR DEPRESSIVE EPISODE

(► MEANS: GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE)

<table>
<thead>
<tr>
<th>A1</th>
<th>a Were you <strong>ever</strong> depressed or down, most of the day, nearly every day, for two weeks?</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IF NO, CODE NO TO A1b: IF YES ASK:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>For the past two weeks, were you depressed or down, most of the day, nearly every day?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>A2</td>
<td>a Were you <strong>ever</strong> much less interested in most things or much less able to enjoy the things you used to enjoy, most of the time, for two weeks?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>b</td>
<td>In the past two weeks, were you much less interested in most things or much less able to enjoy the things you used to enjoy, most of the time?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>IS A1a OR A2a CODED YES?</td>
<td></td>
<td>NO</td>
<td>YES</td>
</tr>
</tbody>
</table>

A3 IF A1b OR A2b = YES: EXPLORE THE CURRENT AND THE MOST SYMPTOMATIC PAST EPISODE, OTHERWISE IF A1b AND A2b = NO: EXPLORE ONLY THE MOST SYMPTOMATIC PAST EPISODE

**Over that two week period, when you felt depressed or uninterested:**

| a | Was your appetite decreased or increased nearly every day? Did your weight decrease or increase without trying intentionally (i.e., by ±5% of body weight or ±8 lbs. or ±3.5 kgs., for a 160 lb./70 kg. person in a month)? | NO | YES |
| b | Did you have trouble sleeping nearly every night (difficulty falling asleep, waking up in the middle of the night, early morning wakening or sleeping excessively)? | NO | YES |
| c | Did you talk or move more slowly than normal or were you fidgety, restless or having trouble sitting still almost every day? | NO | YES |
| d | Did you feel tired or without energy almost every day? | NO | YES |
| e | Did you feel worthless or guilty almost every day? | NO | YES |
| f | Did you have difficulty concentrating or making decisions almost every day? | NO | YES |
| g | Did you repeatedly consider hurting yourself, feel suicidal, or wish that you were dead? Did you attempt suicide or plan a suicide? | NO | YES |

A4 Did these symptoms cause significant problems at home, at work, socially, at school or in some other important way?

A5 In between 2 episodes of depression, did you ever have an interval of at least 2 months, without any significant depression or any significant loss of interest?

**M.I.N.I. 6.0.0 (January 1, 2009)**
ARE 5 OR MORE ANSWERS (A1-A3) CODED YES AND IS A4 CODED YES FOR THAT TIME FRAME?

SPECIFY IF THE EPISODE IS CURRENT AND / OR PAST.

IF A5 IS CODED YES, CODE YES FOR RECURRENT.

A6 a How many episodes of depression did you have in your lifetime? _____

Between each episode there must be at least 2 months without any significant depression.
B. SUICIDALITY

In the past month did you:

B1 Suffer any accident? NO YES 0
   IF NO TO B1, SKIP TO B2; IF YES, ASK B1a:

B1a Plan or intend to hurt yourself in that accident either actively or passively (e.g. not avoiding a risk)? NO YES 0
   IF NO TO B1a, SKIP TO B2; IF YES, ASK B1b:

B1b Intend to die as a result of this accident? NO YES 0

B2 Feel hopeless? NO YES 1

B3 Think that you would be better off dead or wish you were dead? NO YES 1

B4 Want to harm yourself or to hurt or to injure yourself or have mental images of harming yourself? NO YES 2

B5 Think about suicide? NO YES 6
   IF NO TO B5, SKIP TO B7. OTHERWISE ASK:

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occasionally</td>
<td>Mild</td>
</tr>
<tr>
<td>Often</td>
<td>Moderate</td>
</tr>
<tr>
<td>Very often</td>
<td>Severe</td>
</tr>
</tbody>
</table>

Can you state that you will not act on these impulses during this treatment program? NO YES

B6 Feel unable to control these impulses? NO YES 8

B7 Have a suicide plan? NO YES 8

B8 Take any active steps to prepare to injure yourself or to prepare for a suicide attempt in which you expected or intended to die? NO YES 9

B9 Deliberately injure yourself without intending to kill yourself? NO YES 4

B10 Attempt suicide?
   IF NO SKIP TO B11:
   Hope to be rescued / survive YES 9
   Expected / intended to die

In your lifetime:

B11 Did you ever make a suicide attempt? NO YES 4
IS AT LEAST 1 OF THE ABOVE (EXCEPT B1) CODED YES?

IF YES, ADD THE TOTAL POINTS FOR THE ANSWERS (B1-B11) CHECKED ‘YES’ AND SPECIFY THE SUICIDALITY SCORE AS INDICATED IN THE DIAGNOSTIC BOX:

MAKE ANY ADDITIONAL COMMENTS ABOUT YOUR ASSESSMENT OF THIS PATIENT’S CURRENT AND NEAR FUTURE SUICIDALITY IN THE SPACE BELOW:
C. MANIC AND HYPOMANIC EPISODES

(◆ MEANS : GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN MANIC AND HYPOMANIC DIAGNOSTIC BOXES, AND MOVE TO NEXT MODULE)

Do you have any family history of manic depressive illness or bipolar disorder, or any family member who had mood swings treated with a medication like lithium, sodium valproate (Depakote) or lamotrigine (Lamictal)?

THIS QUESTION IS NOT A CRITERION FOR BIPOLAR DISORDER, BUT IS ASKED TO INCREASE THE CLINICIAN'S VIGILANCE ABOUT THE RISK FOR BIPOLAR DISORDER.

IF YES, PLEASE SPECIFY WHO: ____________________________

C1 a Have you ever had a period of time when you were feeling 'up' or 'high' or 'hyper' or so full of energy or full of yourself that you got into trouble, - or that other people thought you were not your usual self? (Do not consider times when you were intoxicated on drugs or alcohol.)

IF PATIENT IS PUZZLED OR UNCLEAR ABOUT WHAT YOU MEAN BY 'UP' OR 'HIGH' OR 'HYPER', CLARIFY AS FOLLOWS: By 'up' or 'high' or 'hyper' I mean: having elated mood; increased energy; needing less sleep; having rapid thoughts; being full of ideas; having an increase in productivity, motivation, creativity, or impulsive behavior; phoning or working excessively or spending more money.

IF NO, CODE NO TO C1b: IF YES ASK:

b Are you currently feeling 'up' or 'high' or 'hyper' or full of energy?

C2 a Have you ever been persistently irritable, for several days, so that you had arguments or verbal or physical fights, or shouted at people outside your family? Have you or others noticed that you have been more irritable or over reacted, compared to other people, even in situations that you felt were justified?

IF NO, CODE NO TO C2b: IF YES ASK:

b Are you currently feeling persistently irritable?

IS C1a OR C2a CODED YES?

<table>
<thead>
<tr>
<th></th>
<th>Current Episode</th>
<th>Past Episode</th>
</tr>
</thead>
<tbody>
<tr>
<td>a Feel that you could do things</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>others couldn't do, or that you</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>were an especially important</td>
<td></td>
<td></td>
</tr>
<tr>
<td>person? IF YES, ASK FOR EXAMPLES,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>THE EXAMPLES ARE CONSISTENT WITH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A DELUSIONAL IDEA.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b Need less sleep (for example,</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>feel rested after only a few</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>hours sleep)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c Talk too much without stopping,</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>or so fast that people had</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>difficulty understanding?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d Have racing thoughts?</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>

M.I.N.I. 6.0.0 (January 1, 2009)
e  Become easily distracted so that any little interruption could distract you?  NO  YES  NO  YES

f  Have a significant increase in your activity or drive, at work, at school, socially or sexually or did you become physically or mentally restless?  NO  YES  NO  YES

g  Want so much to engage in pleasurable activities that you ignored the risks or consequences (for example, spending sprees, reckless driving, or sexual indiscretions)?  NO  YES  NO  YES

C3 SUMMARY: WHEN RATING CURRENT EPISODE:
  if C1b is NO, are 4 or more C3 answers coded YES?
  if C1b is YES, are 3 or more C3 answers coded YES?

WHEN RATING PAST EPISODE:
  if C1a is NO, are 4 or more C3 answers coded YES?
  if C1a is YES, are 3 or more C3 answers coded YES?

CODE YES ONLY if the above 3 or 4 symptoms occurred during the same time period.

RULE: ELATION/EXPANSIVENESS REQUIRES ONLY THREE C3 SYMPTOMS, WHILE IRRITABLE MOOD ALONE REQUIRES 4 OF THE C3 SYMPTOMS.

C4  What is the longest time these symptoms lasted?
  a) 3 days or less  ☐  ☐
  b) 4 to 6 days  ☐  ☐
  c) 7 days or more  ☐  ☐

C5  Were you hospitalized for these problems?  NO  YES  NO  YES

IF YES, STOP HERE AND CIRCLE YES IN MANIC EPISODE FOR THAT TIME FRAME.

C6  Did these symptoms cause significant problems at home, at work, socially in your relationships with others, at school or in some other important way?  NO  YES  NO  YES

ARE C3 SUMMARY AND C5 AND C6 CODED YES AND EITHER C4a or b or c CODED YES?

OR

ARE C3 SUMMARY AND C4c AND C6 CODED YES AND IS C5 CODED NO?

SPECIFY IF THE EPISODE IS CURRENT AND / OR PAST.

ARE C3 SUMMARY AND C5 AND C6 CODED NO AND EITHER C4b OR C4c CODED YES?

OR

ARE C3 SUMMARY AND C4b AND C6 CODED YES AND IS C5 CODED NO?

SPECIFY IF THE EPISODE IS CURRENT AND / OR PAST.

<table>
<thead>
<tr>
<th>MANIC EPISODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT</td>
</tr>
<tr>
<td>PAST</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HYPOMANIC EPISODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT</td>
</tr>
<tr>
<td>PAST</td>
</tr>
</tbody>
</table>
ARE C3 SUMMARY AND C4a CODED YES AND IS C5 CODED NO?

NO YES

SPECIFY IF THE EPISODE IS CURRENT AND / OR PAST.

CURRENT ☐ PAST ☐

HYPOMANIC SYMPTOMS

C7

a) IF MANIC EPISODE IS POSITIVE FOR EITHER CURRENT OR PAST ASK:
   Did you have 2 or more manic episodes (C4c) in your lifetime (including the current episode if present)? NO YES

b) IF HYPOMANIC EPISODE IS POSITIVE FOR EITHER CURRENT OR PAST ASK:
   Did you have 2 or more hypomanic EPISODES (C4b) in your lifetime (including the current episode)? NO YES

c) IF PAST “HYPOMANIC SYMPTOMS” IS CODED POSITIVE ASK:
   Did you have 2 or more episodes of hypomanic SYMPTOMS (C4a) in your lifetime (including the current episode if present)? NO YES
### D. PANIC DISORDER

(MEANS: CIRCLE NO IN D5, D6 AND D7 AND SKIP TO E1)

<table>
<thead>
<tr>
<th>D1</th>
<th>Question</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Have you, on more than one occasion, had spells or attacks when you <strong>suddenly</strong> felt anxious, frightened, uncomfortable or uneasy, even in situations where most people would not feel that way?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Did the spells surge to a peak within 10 minutes of starting?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| D2 | At any time in the past, did any of those spells or attacks come on unexpectedly or occur in an unpredictable or unprovoked manner? |    |     |

| D3 | Have you ever had one such attack followed by a month or more of persistent concern about having another attack, or worries about the consequences of the attack - or did you make a significant change in your behavior because of the attacks (e.g., shopping only with a companion, not wanting to leave your house, visiting the emergency room repeatedly, or seeing your doctor more frequently because of the symptoms)? |    |     |

<table>
<thead>
<tr>
<th>D4</th>
<th><strong>During the worst attack that you can remember:</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Did you have skipping, racing or pounding of your heart?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>b</td>
<td>Did you have sweating or clammy hands?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>c</td>
<td>Were you trembling or shaking?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>d</td>
<td>Did you have shortness of breath or difficulty breathing?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>e</td>
<td>Did you have a choking sensation or a lump in your throat?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>f</td>
<td>Did you have chest pain, pressure or discomfort?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>g</td>
<td>Did you have nausea, stomach problems or sudden diarrhea?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>h</td>
<td>Did you feel dizzy, unsteady, lightheaded or faint?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>i</td>
<td>Did things around you feel strange, unreal, detached or unfamiliar, or did you feel outside of or detached from part or all of your body?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>j</td>
<td>Did you fear that you were losing control or going crazy?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>k</td>
<td>Did you fear that you were dying?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>l</td>
<td>Did you have tingling or numbness in parts of your body?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>m</td>
<td>Did you have hot flushes or chills?</td>
<td>NO</td>
<td>YES</td>
</tr>
</tbody>
</table>

| D5 | **ARE BOTH D3, AND 4 OR MORE D4 ANSWERS, CODED YES?** IF YES TO D5, SKIP TO D7. |    |     |

| D6 | **IF D5 = NO, ARE ANY D4 ANSWERS CODED YES? THEN SKIP TO E1.** |    |     |

M.I.N.I. 6.0.0 (January 1, 2009)
In the past month, did you have such attacks repeatedly (2 or more), and did you have persistent concern about having another attack, or worry about the consequences of the attacks, or did you change your behavior in any way because of the attacks?

NO  YES

E. AGORAPHOBIA

E1  Do you feel anxious or uneasy in places or situations where help might not be available or escape might be difficult, like being in a crowd, standing in a line (queue), when you are alone away from home or alone at home, or when crossing a bridge, or traveling in a bus, train or car or where you might have a panic attack or the panic-like symptoms we just spoke about?

NO  YES

IF E1 = NO, CIRCLE NO IN E2.

E2  Do you fear these situations so much that you avoid them, or suffer through them, or need a companion to face them?

NO  YES

IS E2 (CURRENT AGORAPHOBIA) CODED YES

and

IS D7 (CURRENT PANIC DISORDER) CODED YES?

IS E2 (CURRENT AGORAPHOBIA) CODED NO

and

IS D7 (CURRENT PANIC DISORDER) CODED YES?

IS E2 (CURRENT AGORAPHOBIA) CODED YES

and

IS D5 (PANIC DISORDER LIFETIME) CODED NO?

NO  YES

PANIC DISORDER with Agoraphobia CURRENT

NO  YES

PANIC DISORDER without Agoraphobia CURRENT

NO  YES

AGORAPHOBIA, CURRENT without history of Panic Disorder
F. SOCIAL PHOBIA (Social Anxiety Disorder)

(► MEANS : GO TO THE DIAGNOSTIC BOX, CIRCLE NO AND MOVE TO THE NEXT MODULE)

| F1 | In the past month, did you have persistent fear and significant anxiety at being watched, being the focus of attention, or of being humiliated or embarrassed? This includes things like speaking in public, eating in public or with others, writing while someone watches, or being in social situations. | NO YES |

| F2 | Is this social fear excessive or unreasonable and does it almost always make you anxious? | NO YES |

| F3 | Do you fear these social situations so much that you avoid them or suffer through them most of the time? | NO YES |

| F4 | Do these social fears disrupt your normal work, school or social functioning or cause you significant distress? | NO YES |

SUBTYPES

Do you fear and avoid 4 or more social situations?

If YES  Generalized social phobia (social anxiety disorder)

If NO  Non-generalized social phobia (social anxiety disorder)

EXAMPLES OF SUCH SOCIAL SITUATIONS TYPICALLY INCLUDE

- INITIATING OR MAINTAINING A CONVERSATION,
- PARTICIPATING IN SMALL GROUPS,
- DATING,
- SPEAKING TO AUTHORITY FIGURES,
- ATTENDING PARTIES,
- PUBLIC SPEAKING,
- EATING IN FRONT OF OTHERS,
- URINATING IN A PUBLIC WASHROOM, ETC.

NOTE TO INTERVIEWER: PLEASE ASSESS WHETHER THE SUBJECT’S FEARS ARE RESTRICTED TO NON-GENERALIZED (“ONLY 1 OR SEVERAL”) SOCIAL SITUATIONS OR EXTEND TO GENERALIZED (“MOST”) SOCIAL SITUATIONS. “MOST” SOCIAL SITUATIONS IS USUALLY OPERATIONLIZED TO MEAN 4 OR MORE SOCIAL SITUATIONS, ALTHOUGH THE DSM-IV DOES NOT EXPLICITLY STATE THIS.
G. OBSESSIVE-COMPULSIVE DISORDER

(_means: go to the diagnostic box, circle no and move to the next module)

G1 In the past month, have you been bothered by recurrent thoughts, impulses, or images that were unwanted, distasteful, inappropriate, intrusive, or distressing? -
(For example, the idea that you were dirty, contaminated or had germs, or fear of contaminating others, or fear of harming someone even though it disturbs or distresses you, or fear you would act on some impulse, or fear or superstitions that you would be responsible for things going wrong, or obsessions with sexual thoughts, images or impulses, or hoarding, collecting, or religious obsessions.)

_skip to G4_

G2 Did they keep coming back into your mind even when you tried to ignore or get rid of them?

_skip to G4_

G3 Do you think that these obsessions are the product of your own mind and that they are not imposed from the outside?

_skip to G4_

G4 In the past month, did you do something repeatedly without being able to resist doing it, like washing or cleaning excessively, counting or checking things over and over, or repeating, collecting, arranging things, or other superstitious rituals?

_is G3 or G4 coded yes?_

G5 At any point, did you recognize that either these obsessive thoughts or these compulsive behaviors were excessive or unreasonable?

G6 In the past month, did these obsessive thoughts and/or compulsive behaviors significantly interfere with your normal routine, your work or school, your usual social activities, or relationships, or did they take more than one hour a day?
### H. POSTTRAUMATIC STRESS DISORDER

(⇒ MEANS: GO TO THE DIAGNOSTIC BOX, CIRCLE NO, AND MOVE TO THE NEXT MODULE)

<table>
<thead>
<tr>
<th>H1</th>
<th>Have you ever experienced or witnessed or had to deal with an extremely traumatic event that included actual or threatened death or serious injury to you or someone else?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>⇒                                                                                                                                  NO</td>
</tr>
<tr>
<td>EXAMPLES OF TRAUMATIC EVENTS INCLUDE: SERIOUS ACCIDENTS, SEXUAL OR PHYSICAL ASSAULT, A TERRORIST ATTACK, BEING HELD HOSTAGE, KIDNAPPING, FIRE, DISCOVERING A BODY, WAR, OR NATURAL DISASTER, WITNESSING THE VIOLENT OR SUDDEN DEATH OF SOMEONE CLOSE TO YOU, OR A LIFE THREATENING ILLNESS.</td>
<td></td>
</tr>
<tr>
<td>H2</td>
<td>Did you respond with intense fear, helplessness or horror?                                                                             NO</td>
</tr>
<tr>
<td>H3</td>
<td>During the past month, have you re-experienced the event in a distressing way (such as in dreams, intense recollections, flashbacks or physical reactions) or did you have intense distress when you were reminded about the event or exposed to a similar event? NO</td>
</tr>
</tbody>
</table>

#### H4 In the past month:

| a | Have you avoided thinking about or talking about the event?                                                                       NO | YES |
| b | Have you avoided activities, places or people that remind you of the event?                                                        NO | YES |
| c | Have you had trouble recalling some important part of what happened?                                                            NO | YES |
| d | Have you become much less interested in hobbies or social activities?                                                            NO | YES |
| e | Have you felt detached or estranged from others?                                                                               NO | YES |
| f | Have you noticed that your feelings are numbed?                                                                                NO | YES |
| g | Have you felt that your life will be shortened or that you will die sooner than other people?                                   NO | YES |

ARE 3 OR MORE H4 ANSWERS CODED YES?

#### H5 In the past month:

| a | Have you had difficulty sleeping?                                                                                             NO | YES |
| b | Were you especially irritable or did you have outbursts of anger?                                                            NO | YES |
| c | Have you had difficulty concentrating?                                                                                       NO | YES |
| d | Were you nervous or constantly on your guard?                                                                               NO | YES |
| e | Were you easily startled?                                                                                                     NO | YES |

ARE 2 OR MORE H5 ANSWERS CODED YES?

#### H6 During the past month, have these problems significantly interfered with your work, school or social activities, or caused significant distress?

⇒ NO | YES
## I. ALCOHOL DEPENDENCE / ABUSE

(⇒ MEANS: GO TO DIAGNOSTIC BOXES, CIRCLE NO IN BOTH AND MOVE TO THE NEXT MODULE)

<table>
<thead>
<tr>
<th>I1</th>
<th>In the past 12 months, have you had 3 or more alcoholic drinks, - within a 3 hour period, - on 3 or more occasions?</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>I2</th>
<th>In the past 12 months:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Did you need to drink a lot more in order to get the same effect that you got when you first started drinking or did you get much less effect with continued use of the same amount?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>b</td>
<td>When you cut down on drinking did your hands shake, did you sweat or feel agitated? Did you drink to avoid these symptoms (for example, &quot;the shakes&quot;, sweating or agitation) or to avoid being hungover?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>IF YES TO ANY, CODE YES.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>During the times when you drank alcohol, did you end up drinking more than you planned when you started?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>d</td>
<td>Have you tried to reduce or stop drinking alcohol but failed?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>e</td>
<td>On the days that you drank, did you spend substantial time in obtaining alcohol, drinking, or in recovering from the effects of alcohol?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>f</td>
<td>Did you spend less time working, enjoying hobbies, or being with others because of your drinking?</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>g</td>
<td>If your drinking caused you health or mental problems, did you still keep on drinking?</td>
<td>NO</td>
<td>YES</td>
</tr>
</tbody>
</table>

ARE 3 OR MORE I2 ANSWERS CODED YES?

* IF YES, SKIP I3 QUESTIONS AND GO TO NEXT MODULE. “DEPENDENCE PREEMPTS ABUSE” IN DSM IV TR.

<table>
<thead>
<tr>
<th>I3</th>
<th>In the past 12 months:</th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| a  | Have you been intoxicated, high, or hungover more than once when you had other responsibilities at school, at work, or at home? Did this cause any problems?  
(CODE YES ONLY IF THIS CAUSED PROBLEMS.) | NO | YES |
| b  | Were you intoxicated more than once in any situation where you were physically at risk, for example, driving a car, riding a motorbike, using machinery, boating, etc.? | NO | YES |
| c  | Did you have legal problems more than once because of your drinking, for example, an arrest or disorderly conduct? | NO | YES |
| d  | If your drinking caused problems with your family or other people, did you still keep on drinking? | NO | YES |
ARE 1 OR MORE I3 ANSWERS CODED YES?

ALCOHOL ABUSE
CURRENT

NO YES

52 of 128
J. SUBSTANCE DEPENDENCE / ABUSE (NON-ALCOHOL)

(⇒ MEANS: GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE)

<table>
<thead>
<tr>
<th>J1</th>
<th>a In the past 12 months, did you take any of these drugs more than once, to get high, to feel elated, to get “a buzz” or to change your mood?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO YES</td>
</tr>
</tbody>
</table>

CIRCLE EACH DRUG TAKEN:

**Stimulants:** amphetamines, "speed", crystal meth, “crank”, "rush", Dexedrine, Ritalin, diet pills.

**Cocaine:** snorting, IV, freebase, crack, "speedball".

**Narcotics:** heroin, morphine, Dilaudid, opium, Demerol, methadone, Darvon, codeine, Percodan, Vicoden, OxyContin.

**Hallucinogens:** LSD ("acid"), mescaline, peyote, psilocybin, STP, "mushrooms", “ecstasy”, MDA, MDMA.

**Phencyclidine:** PCP ("Angel Dust", "PeaCe Pill", “Tranq”, “Hog”), or ketamine (“special K”).

**Inhalants:** "glue", ethyl chloride, "rush", nitrous oxide ("laughing gas"), amyl or butyl nitrate ("poppers").

**Cannabis:** marijuana, hashish ("hash"), THC, "pot", "grass", "weed", "reefer".

**Tranquilizers:** Quaalude, Seconal ("reds"), Valium, Xanax, Librium, Ativan, Dalmane, Halcion, barbiturates, Miltown, GHB, Roofinol, “Roofies”.

**Miscellaneous:** steroids, nonprescription sleep or diet pills. Cough Medicine? Any others?

**SPECIFY THE MOST USED DRUG(S):**

**WHICH DRUG(S) CAUSE THE BIGGEST PROBLEMS?:**

FIRST EXPLORE THE DRUG CAUSING THE BIGGEST PROBLEMS AND MOST LIKELY TO MEET DEPENDENCE / ABUSE CRITERIA.

IF MEETS CRITERIA FOR ABUSE OR DEPENDENCE, SKIP TO THE NEXT MODULE. OTHERWISE, EXPLORE THE NEXT MOST PROBLEMATIC DRUG.

<table>
<thead>
<tr>
<th>J2</th>
<th>Considering your use of (NAME THE DRUG / DRUG CLASS SELECTED), in the past 12 months:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>NO YES</td>
</tr>
<tr>
<td>b</td>
<td>NO YES</td>
</tr>
<tr>
<td>c</td>
<td>NO YES</td>
</tr>
<tr>
<td>d</td>
<td>NO YES</td>
</tr>
<tr>
<td>e</td>
<td>NO YES</td>
</tr>
<tr>
<td>f</td>
<td>NO YES</td>
</tr>
<tr>
<td>g</td>
<td>NO YES</td>
</tr>
</tbody>
</table>
**ARE 3 OR MORE J2 ANSWERS CODED YES?**

**SPECIFY DRUG(S): ________________________________

* IF YES, SKIP J3 QUESTIONS, MOVE TO NEXT DISORDER. “DEPENDENCE PREEMPTS ABUSE” IN DSM IV TR.

---

**CONSIDERING YOUR USE OF (NAME THE DRUG CLASS SELECTED), IN THE PAST 12 MONTHS:**

**J3**

<table>
<thead>
<tr>
<th>a</th>
<th>HAVE YOU BEEN INTOXICATED, HIGH, OR HANGOVER FROM (NAME OF DRUG / DRUG CLASS SELECTED) MORE THAN ONCE, WHEN YOU HAD OTHER RESPONSIBILITIES AT SCHOOL, AT WORK, OR AT HOME? DID THIS CAUSE ANY PROBLEM?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(CODE YES ONLY IF THIS CAUSED PROBLEMS.)</td>
</tr>
<tr>
<td></td>
<td>NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b</th>
<th>HAVE YOU BEEN HIGH OR INTOXICATED FROM (NAME OF DRUG / DRUG CLASS SELECTED) MORE THAN ONCE IN ANY SITUATION WHERE YOU WERE PHYSICALLY AT RISK (FOR EXAMPLE, DRIVING A CAR, RIDING A MOTORBIKE, USING MACHINERY, BOATING, ETC.)?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c</th>
<th>DID YOU HAVE LEGAL PROBLEMS MORE THAN ONCE BECAUSE OF YOUR DRUG USE, FOR EXAMPLE, AN ARREST OR DISORDERLY CONDUCT?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>d</th>
<th>IF (NAME OF DRUG / DRUG CLASS SELECTED) CAUSED PROBLEMS WITH YOUR FAMILY OR OTHER PEOPLE, DID YOU STILL KEEP ON USING IT?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO</td>
</tr>
</tbody>
</table>

**ARE 1 OR MORE J3 ANSWERS CODED YES?**

**SPECIFY DRUG(S): ________________________________

---

**NO | YES**

**SUBSTANCE DEPENDENCE CURRENT**
K. PSYCHOTIC DISORDERS AND MOOD DISORDER WITH PSYCHOTIC FEATURES

ASK FOR AN EXAMPLE OF EACH QUESTION ANSWERED POSITIVELY. CODE YES ONLY IF THE EXAMPLES CLEARLY SHOW A DISTORTION OF THOUGHT OR OF PERCEPTION OR IF THEY ARE NOT CULTURALLY APPROPRIATE. BEFORE CODING, INVESTIGATE WHETHER DELUSIONS QUALIFY AS "BIZARRE".

DELUSIONS ARE "BIZARRE" IF: CLEARLY IMPLAUSIBLE, ABSURD, NOT UNDERSTANDABLE, AND CANNOT DERIVE FROM ORDINARY LIFE EXPERIENCE.

HALLUCINATIONS ARE SCORED "BIZARRE" IF: A VOICE COMMENTS ON THE PERSON'S THOUGHTS OR BEHAVIOR, OR WHEN TWO OR MORE VOICES ARE CONVERSING WITH EACH OTHER.

THE PURPOSE OF THIS MODULE IS TO EXCLUDE PATIENTS WITH PSYCHOTIC DISORDERS. THIS MODULE NEEDS EXPERIENCE.

Now I am going to ask you about unusual experiences that some people have.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Bizarre</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>K1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Have you ever believed that people were spying on you, or that someone was plotting against you, or trying to hurt you?</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>K2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Have you ever believed that someone was reading your mind or could hear your thoughts, or that you could actually read someone's mind or hear what another person was thinking?</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>K3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Have you ever believed that someone or some force outside of yourself put thoughts in your mind that were not your own, or made you act in a way that was not your usual self? Have you ever felt that you were possessed?</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>K4</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Have you ever believed that you were being sent special messages through the TV, radio, newspapers, books or magazines or that a person you did not personally know was particularly interested in you?</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>K5</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Have your relatives or friends ever considered any of your beliefs odd or unusual?</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>K6</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a Have you ever heard things other people couldn’t hear, such as voices?</td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>b <strong>IF YES TO VOICE HALLUCINATION:</strong> Have you heard sounds / voices in the past month?</td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>c <strong>IF YES TO VOICE HALLUCINATION:</strong> Was the voice commenting on your thoughts or behavior or did you hear two or more voices talking to each other?</td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>d <strong>IF YES TO VOICE HALLUCINATION:</strong> Was the voice commenting on your thoughts or behavior or did you hear two or more voices talking to each other?</td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
</tbody>
</table>

M.I.N.I. 6.0.0 (January 1, 2009)
K7  a  Have you ever had visions when you were awake or have you ever seen things other people couldn’t see?
CLINICIAN: CHECK TO SEE IF THESE ARE CULTURALLY INAPPROPRIATE.

b  IF YES: have you seen these things in the past month?

CLINICIAN'S JUDGMENT

K8  b  IS THE PATIENT CURRENTLY EXHIBITING INCOHERENCE, DISORGANIZED SPEECH, OR MARKED LOOSENING OF ASSOCIATIONS?

K9  b  IS THE PATIENT CURRENTLY EXHIBITING DISORGANIZED OR CATATONIC BEHAVIOR?

K10  b  ARE NEGATIVE SYMPTOMS OF SCHIZOPHRENIA, E.G. SIGNIFICANT AFFECTIVE FLATTENING, POVERTY OF SPEECH (ALOGIA) OR AN INABILITY TO INITIATE OR PERSIST IN GOAL-DIRECTED ACTIVITIES (AVOLITION), PROMINENT DURING THE INTERVIEW?

K11  a  ARE 1 OR MORE « a » QUESTIONS FROM K1a TO K7a CODED YES OR YES BIZARRE AND IS EITHER:

  MAJOR DEPRESSIVE EPISODE, (CURRENT, RECURRENT OR PAST)
  OR
  MANIC OR HYPOMANIC EPISODE, (CURRENT OR PAST) CODED YES?

IF NO TO K11 a, CIRCLE NO IN BOTH 'MOOD DISORDER WITH PSYCHOTIC FEATURES' DIAGNOSTIC BOXES AND MOVE TO K13.

b  You told me earlier that you had period(s) when you felt (depressed/high/persistently irritable).

Were the beliefs and experiences you just described (SYMPTOMS CODED YES FROM K1a TO K7a) restricted exclusively to times when you were feeling depressed/high/irritable?

IF THE PATIENT EVER HAD A PERIOD OF AT LEAST 2 WEEKS OF HAVING THESE BELIEFS OR EXPERIENCES (PSYCHOTIC SYMPTOMS) WHEN THEY WERE NOT DEPRESSED/HIGH/IRRITABLE, CODE NO TO THIS DISORDER.

IF THE ANSWER IS NO TO THIS DISORDER, ALSO CIRCLE NO TO K12 AND MOVE TO K13

K12  a  ARE 1 OR MORE « b » QUESTIONS FROM K1b TO K7b CODED YES OR YES BIZARRE AND IS EITHER:

  MAJOR DEPRESSIVE EPISODE, (CURRENT)
  OR
  MANIC OR HYPOMANIC EPISODE, (CURRENT) CODED YES?

IF THE ANSWER IS YES TO THIS DISORDER (LIFETIME OR CURRENT), CIRCLE NO TO K13 AND K14 AND MOVE TO THE NEXT MODULE.
K13 ARE 1 OR MORE « b » QUESTIONS FROM K1b TO K6b, CODED YES BIZARRE?

OR

ARE 2 OR MORE « b » QUESTIONS FROM K1b TO K10b, CODED YES (RATHER THAN YES BIZARRE)?

AND DID AT LEAST TWO OF THE PSYCHOTIC SYMPTOMS OCCUR DURING THE SAME 1 MONTH PERIOD?

K14 IS K13 CODED YES

OR

ARE 1 OR MORE « a » QUESTIONS FROM K1a TO K6a, CODED YES BIZARRE?

OR

ARE 2 OR MORE « a » QUESTIONS FROM K1a TO K7a, CODED YES (RATHER THAN YES BIZARRE)

AND DID AT LEAST TWO OF THE PSYCHOTIC SYMPTOMS OCCUR DURING THE SAME 1 MONTH PERIOD?
L. ANOREXIA NERVOSA

(⇒ MEANS : GO TO THE DIAGNOSTIC BOX, CIRCLE NO, AND MOVE TO THE NEXT MODULE)

L1  a  How tall are you?  
    ft  in.  
    cm.  

b.  What was your lowest weight in the past 3 months?  
    lbs.  
    kgs.  

c  IS PATIENT’S WEIGHT EQUAL TO OR BELOW THE THRESHOLD CORRESPONDING TO HIS / HER HEIGHT? (SEE TABLE BELOW)  
    NO  YES

In the past 3 months:

L2  In spite of this low weight, have you tried not to gain weight?  
    NO  YES

L3  Have you intensely feared gaining weight or becoming fat, even though you were underweight?  
    NO  YES

L4  a  Have you considered yourself too big / fat or that part of your body was too big / fat?  
    NO  YES

    b  Has your body weight or shape greatly influenced how you felt about yourself?  
    NO  YES

    c  Have you thought that your current low body weight was normal or excessive?  
    NO  YES

L5  ARE 1 OR MORE ITEMS FROM L4 CODED YES?  
    NO  YES

L6  FOR WOMEN ONLY:  During the last 3 months, did you miss all your menstrual periods when they were expected to occur (when you were not pregnant)?  
    NO  YES

FOR WOMEN:  ARE L5 AND L6 CODED YES?

FOR MEN:  IS L5 CODED YES?

NO  YES

ANOREXIA NERVOSA
CURRENT

HEIGHT / WEIGHT TABLE CORRESPONDING TO A BMI THRESHOLD OF 17.5 KG/M²

<table>
<thead>
<tr>
<th>Height/Weight</th>
<th>4' 9</th>
<th>4'10</th>
<th>4'11</th>
<th>5' 0</th>
<th>5'01</th>
<th>5'02</th>
<th>5'03</th>
<th>5'04</th>
<th>5'05</th>
<th>5'06</th>
<th>5'07</th>
<th>5'08</th>
<th>5'09</th>
<th>5'10</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft/in</td>
<td>81</td>
<td>84</td>
<td>87</td>
<td>89</td>
<td>92</td>
<td>96</td>
<td>99</td>
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<td>105</td>
<td>108</td>
<td>112</td>
<td>115</td>
<td>118</td>
<td>122</td>
</tr>
<tr>
<td>lbs.</td>
<td>145</td>
<td>147</td>
<td>150</td>
<td>152</td>
<td>155</td>
<td>158</td>
<td>160</td>
<td>163</td>
<td>165</td>
<td>168</td>
<td>170</td>
<td>173</td>
<td>175</td>
<td>178</td>
</tr>
<tr>
<td>cm</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>45</td>
<td>46</td>
<td>48</td>
<td>49</td>
<td>51</td>
<td>52</td>
<td>54</td>
<td>55</td>
</tr>
<tr>
<td>kgs</td>
<td>58</td>
<td>59</td>
<td>60</td>
<td>62</td>
<td>64</td>
<td>66</td>
<td>68</td>
<td>70</td>
<td>72</td>
<td>74</td>
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<td>78</td>
<td>80</td>
<td>82</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Height/Weight</th>
<th>5'11</th>
<th>6'0</th>
<th>6'1</th>
<th>6'2</th>
<th>6'3</th>
</tr>
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<tr>
<td>ft/in</td>
<td>125</td>
<td>129</td>
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<td>136</td>
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<tr>
<td>lbs.</td>
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<td>183</td>
<td>185</td>
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<tr>
<td>cm</td>
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<td>59</td>
<td>60</td>
<td>62</td>
<td>64</td>
</tr>
<tr>
<td>kgs</td>
<td>58</td>
<td>59</td>
<td>60</td>
<td>62</td>
<td>64</td>
</tr>
</tbody>
</table>

The weight thresholds above are calculated using a body mass index (BMI) equal to or below 17.5 kg/m² for the patient’s height. This is the threshold guideline below which a person is deemed underweight by the DSM-IV and the ICD-10 Diagnostic Criteria for Research for Anorexia Nervosa.
# M. BULIMIA NERVOSA

(龄 MEANS: GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE)

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>In the past three months, did you have eating binges or times when you ate a very large amount of food within a 2-hour period?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2</td>
<td>In the last 3 months, did you have eating binges as often as twice a week?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3</td>
<td>During these binges, did you feel that your eating was out of control?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4</td>
<td>Did you do anything to compensate for, or to prevent a weight gain from these binges, like vomiting, fasting, exercising or taking laxatives, enemas, diuretics (fluid pills), or other medications?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M5</td>
<td>Does your body weight or shape greatly influence how you feel about yourself?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M6</td>
<td>DO THE PATIENT’S SYMPTOMS MEET CRITERIA FOR ANOREXIA NERVOSA?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M7</td>
<td>Do these binges occur only when you are under (___ lbs./kgs.)?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INTerviewer:** WRITE IN THE ABOVE PARENTHESIS THE THRESHOLD WEIGHT FOR THIS PATIENT’S HEIGHT FROM THE HEIGHT / WEIGHT TABLE IN THE ANOREXIA NERVOSA MODULE.

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>M8</td>
<td>IS M5 CODED YES AND IS EITHER M6 OR M7 CODED NO?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IS M7 CODED YES?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**BULIMIA NERVOSA CURRENT**

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IS M7 CODED YES?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ANOREXIA NERVOSA Binge Eating/Purging Type CURRENT**
N. GENERALIZED ANXIETY DISORDER
(● MEANS: GO TO THE DIAGNOSTIC BOX, CIRCLE NO, AND MOVE TO THE NEXT MODULE)

<table>
<thead>
<tr>
<th>N1</th>
<th>Question</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Were you excessively anxious or worried about several routine things, over the past 6 months?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Are these anxieties and worries present most days?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IN ENGLISH, IF THE PATIENT IS UNCLEAR ABOUT WHAT YOU MEAN, PROBE BY ASKING (Do others think that you are a “worry wart”) AND GET EXAMPLES.

| b    | ARE THE PATIENT’S ANXIETY AND WORRIES RESTRICTED EXCLUSIVELY TO, OR BETTER EXPLAINED BY, ANY DISORDER PRIOR TO THIS POINT?                                                                           |    |     |

N2 Do you find it difficult to control the worries?

N3 FOR THE FOLLOWING, CODE NO IF THE SYMPTOMS ARE CONFINED TO FEATURES OF ANY DISORDER EXPLORED PRIOR TO THIS POINT.

When you were anxious over the past 6 months, did you, most of the time:

| a    | Feel restless, keyed up or on edge?                                                                                                            | NO | YES |
| b    | Have muscle tension?                                                                                                                             |    |     |
| c    | Feel tired, weak or exhausted easily?                                                                                                           |    |     |
| d    | Have difficulty concentrating or find your mind going blank?                                                                                   |    |     |
| e    | Feel irritable?                                                                                                                               |    |     |
| f    | Have difficulty sleeping (difficulty falling asleep, waking up in the middle of the night, early morning wakening or sleeping excessively)?       |    |     |

ARE 3 OR MORE N3 ANSWERS CODED YES?

N4 Do these anxieties and worries disrupt your normal work, school or social functioning or cause you significant distress?

O. RULE OUT MEDICAL, ORGANIC OR DRUG CAUSES FOR ALL DISORDERS

IF THE PATIENT CODES POSITIVE FOR ANY CURRENT DISORDER ASK:

Just before these symptoms began:

| O1a  | Were you taking any drugs or medicines?                                                                                                           | No | Yes | Uncertain |
| O1b  | Did you have any medical illness?                                                                                                                 | No | Yes | Uncertain |

IN THE CLINICIAN’S JUDGMENT: ARE EITHER OF THESE LIKELY TO BE DIRECT CAUSES OF THE PATIENT’S DISORDER?
IF NECESSARY ASK ADDITIONAL OPEN-ENDED QUESTIONS.

O2 SUMMARY: HAS AN ORGANIC CAUSE BEEN RULED OUT?

[ ] No [ ] Yes [ ] Uncertain
P. ANTISOCIAL PERSONALITY DISORDER

(MEANS : GO TO THE DIAGNOSTIC BOX AND CIRCLE NO)

P1 Before you were 15 years old, did you:

a repeatedly skip school or run away from home overnight? NO YES

b repeatedly lie, cheat, "con" others, or steal? NO YES

c start fights or bully, threaten, or intimidate others? NO YES

d deliberately destroy things or start fires? NO YES

e deliberately hurt animals or people? NO YES

f force someone to have sex with you? NO YES

ARE 2 OR MORE P1 ANSWERS CODED YES? NO YES

DO NOT CODE YES TO THE BEHAVIORS BELOW IF THEY ARE EXCLUSIVELY POLITICALLY OR RELIGIOUSLY MOTIVATED.

P2 Since you were 15 years old, have you:

a repeatedly behaved in a way that others would consider irresponsible, like failing to pay for things you owed, deliberately being impulsive or deliberately not working to support yourself? NO YES

b done things that are illegal even if you didn't get caught (for example, destroying property, shoplifting, stealing, selling drugs, or committing a felony)? NO YES

c been in physical fights repeatedly (including physical fights with your spouse or children)? NO YES

d often lied or "conned" other people to get money or pleasure, or lied just for fun? NO YES

e exposed others to danger without caring? NO YES

f felt no guilt after hurting, mistreating, lying to, or stealing from others, or after damaging property? NO YES

ARE 3 OR MORE P2 QUESTIONS CODED YES? NO YES

ANTISOCIAL PERSONALITY DISORDER LIFETIME

THIS CONCLUDES THE INTERVIEW
REFERENCES


Scientific committee for the MINI 6.0.0:
A. Carlo Altamura, Milano, Italy
Cyril Hoschl, Praha, Czech Republic
George Papadimitriou, Athens, Greece
Hans Ågren, Göteborg, Sweden
Hans-Jürgen Möller, München, Germany
Hans-Ulrich Wittchen, Dresden, Germany
István Bitter, Budapest, Hungary
Jean-Pierre Lépine, Paris, France
Jules Angst, Zurich, Switzerland
Julio Bobes, Oviedo, Spain
Luciano Conti, Pisa, Italy
Mohamed Colon-Soto MD, Puerto Rico, United States
Michael Van Ameringen MD, Toronto, Canada
Rosario Hidalgo MD, Tampa, United States
Siegfried Kasper, Vienna, Austria
Thomas Schlæpfer, Bonn, Germany

Translations of the M.I.N.I. 4.4 or earlier versions

<table>
<thead>
<tr>
<th>Language</th>
<th>Translation</th>
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<tr>
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<td>R. Emsley, W. Maartens</td>
</tr>
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<td>Arabic</td>
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<tr>
<td>Bengali</td>
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<td>Braille (English)</td>
<td>P. Amorim</td>
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<td>M. Heikkinen, M. Lijeström, O. Tuominen</td>
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<td>French</td>
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<td>German</td>
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<td>I. Bonora, L. Conti, M. Piccinelli, M. Tansella, G. Cassano, Y. Lecrubier, P. Donda, E. Weiller</td>
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</table>

M.I.N.I. 4.6/5.0, M.I.N.I. Plus 4.6/5.0

and M.I.N.I. Screen 5.0:

<table>
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<th>Language</th>
<th>Translation</th>
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<tbody>
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M.I.N.I. 6.0.0 (January 1, 2009)
A validation study of this instrument was made possible, in part, by grants from SmithKline Beecham and the European Commission. The authors are grateful to Dr. Pauline Powers for her advice on the modules on Anorexia Nervosa and Bulimia.
MOOD DISORDERS: DIAGNOSTIC ALGORITHM

Consult Modules:
- A Major Depressive Episode
- C (Hypo) manic Episode
- K Psychotic Disorders

MODULE K:

1a IS K11b CODED YES?
   NO
   YES

1b IS K12a CODED YES?
   NO
   YES

MODULES A and C:

2a CIRCLE YES IF A DELUSIONAL IDEA IS IDENTIFIED IN A3e? YES YES

2b CIRCLE YES IF A DELUSIONAL IDEA IS IDENTIFIED IN C3a? YES YES

c Is a Major Depressive Episode coded YES (current or past)?
   and
   is Manic Episode coded NO (current and past)?
   and
   is Hypomanic Episode coded NO (current and past)?
   and
   is “Hypomanic Symptoms” coded NO (current and past)?

Specify:
- If the depressive episode is current or past or both
- With Psychotic Features Current: If 1b or 2a (current) = YES
  With Psychotic Features Past: If 1a or 2a (past) = YES

d Is a Manic Episode coded YES (current or past)?

Specify:
- If the Bipolar I Disorder is current or past or both
- With Single Manic Episode: If Manic episode (current or past) = YES
  and MDE (current and past) = NO
- With Psychotic Features Current: If 1b or 2a (current) or 2b (current) = YES
  With Psychotic Features Past: If 1a or 2a (past) or 2b (past) = YES
- If the most recent episode is manic, depressed, mixed or hypomanic or unspecified (all mutually exclusive)
- Unspecified if the Past Manic Episode is coded YES AND
  Current (C3 Summary AND C4a AND C6 AND O2) are coded YES

MAJOR DEPRESSIVE DISORDER

- current
- past

MDD

With Psychotic Features
- Current
- Past

BIPOLAR I DISORDER

- current
- past

Bipolar I Disorder
- Single Manic Episode

With Psychotic Features
- Current
- Past

Most Recent Episode
- Manic
- Depressed
- Mixed
- Hypomanic
- Unspecified

M.I.N.I. 6.0.0 (January 1, 2009)
e  Is Major Depressive Episode coded YES (current or past)?
   and
   Is Hypomanic Episode coded YES (current or past)?
   and
   Is Manic Episode coded NO (current and past)?

   Specify:
   • If the Bipolar Disorder is current or past or both
   • If the most recent mood episode is hypomanic or depressed (mutually exclusive)

f  Is MDE coded NO (current and past)
   and
   Is Manic Episode coded NO (current and past)?
   and is either:

   1) C7b coded YES for the appropriate time frame?
      or

   2) C3 Summary coded YES for the appropriate time frame?
      and
      C4a coded YES for the appropriate time frame?
      and
      C7c coded YES for the appropriate time frame?

   Specify if the Bipolar Disorder NOS is current or past or both
M.I.N.I. PLUS

The shaded modules below are additional modules available in the MINI PLUS beyond what is available in the standard MINI. The un-shaded modules below are in the standard MINI.

These MINI PLUS modules can be inserted into or used in place of the standard MINI modules, as dictated by the specific needs of any study.

<table>
<thead>
<tr>
<th>MODULES</th>
<th>TIME FRAME</th>
</tr>
</thead>
</table>
| A       | MAJOR DEPRESSIVE EPISODE | Current (2 weeks)  
Past  
Recurrent |
|         | MOOD DISORDER DUE TO A GENERAL MEDICAL CONDITION | Current  
Past |
|         | SUBSTANCE INDUCED MOOD DISORDER | Current  
Past |
|         | MDE WITH MELANCHOLIC FEATURES | Current (2 weeks) |
|         | MDE WITH ATYPICAL FEATURES | Current (2 weeks) |
|         | MDE WITH CATATONIC FEATURES | Current (2 weeks) |
| B       | DYSTHYMIA | Current (Past 2 years)  
Past |
| C       | SUICIDALITY | Current (Past Month)  
Risk: Low  
Medium  
High |
| D       | MANIC EPISODE | Current  
Past  
Past |
|         | HYPOMANIC EPISODE | Current |
|         | BIPOLAR I DISORDER | Current  
Past |
|         | BIPOLAR II DISORDER | Current  
Past |
|         | BIPOLAR DISORDER NOS | Current  
Past |
|         | MANIC EPISODE DUE TO A GENERAL MEDICAL CONDITION | Current  
Past |
|         | HYPOMANIC EPISODE DUE TO A GENERAL MEDICAL CONDITION | Current  
Past |
|         | SUBSTANCE INDUCED MANIC EPISODE | Current  
Past |
|         | SUBSTANCE INDUCED HYPOMANIC EPISODE | Current  
Past |
| E       | PANIC DISORDER | Current (Past Month)  
Lifetime |
|         | ANXIETY DISORDER WITH PANIC ATTACKS DUE TO A GENERAL MEDICAL CONDITION | Current |
|         | SUBSTANCE INDUCED ANXIETY DISORDER WITH PANIC ATTACKS | Current |
| F       | AGORAPHOBIA | Current |
| G       | SOCIAL PHOBIA (Social Anxiety Disorder) | Current (Past Month) |
| H       | SPECIFIC PHOBIA | Current |
| I       | OBSESSIVE-COMPULSIVE DISORDER | Current (Past Month) |
|         | OCD DUE TO A GENERAL MEDICAL CONDITION | Current |
|         | SUBSTANCE INDUCED OCD | Current |
| J       | POSTTRAUMATIC STRESS DISORDER | Current (Past Month) |
| K       | ALCOHOL DEPENDENCE | Past 12 Months  
Lifetime |
|         | ALCOHOL DEPENDENCE | Lifetime |
|         | ALCOHOL ABUSE | Past 12 Months |
|         | ALCOHOL ABUSE | Lifetime |
| L       | SUBSTANCE DEPENDENCE (Non-alcohol) | Past 12 Months |
|         | SUBSTANCE DEPENDENCE (Non-alcohol) | Lifetime |
|         | SUBSTANCE ABUSE (Non-alcohol) | Past 12 Months |
| M | PSYCHOTIC DISORDERS             |       |
|   | MOOD DISORDER WITH PSYCHOTIC FEATURES |       |
|   | SCHIZOPHRENIA                  |       |
|   | SCHIZOAFFECTIVE DISORDER       |       |
|   | SCHIZOPHRENIFORM DISORDER      |       |
|   | BRIEF PSYCHOTIC DISORDER       |       |
|   | DELUSIONAL DISORDER            |       |
|   | PSYCHOTIC DISORDER DUE TO A GENERAL MEDICAL CONDITION |       |
|   | SUBSTANCE INDUCED PSYCHOTIC DISORDER |       |
|   | PSYCHOTIC DISORDER NOS         |       |
|   | MOOD DISORDER WITH PSYCHOTIC FEATURES |       |
|   | MOOD DISORDER NOS              |       |
|   | MAJOR DEPRESSIVE DISORDER WITH PSYCHOTIC FEATURES |       |
|   | BIPOLAR I DISORDER WITH PSYCHOTIC FEATURES |       |
| N | ANOREXIA NERVOSA              | Current (Past 3 Months) |
| O | BULIMIA NERVOSA               | Current (Past 3 Months) |
|   | BULIMIA NERVOSA PURGING TYPE  |       |
|   | BULIMIA NERVOSA NONPURGING TYPE |       |
|   | ANOREXIA NERVOSA, BINGE EATING/PURGING TYPE |       |
|   | ANOREXIA NERVOSA, Restricting Type |       |
| P | GENERALIZED ANXIETY DISORDER  | Current (Past 6 Months) |
|   | GENERALIZED ANXIETY DISORDER DUE TO A GENERAL MEDICAL CONDITION | Current |
|   | SUBSTANCE INDUCED GAD         | Current |
| Q | ANTISOCIAL PERSONALITY DISORDER | Lifetime |
| R | SOMATIZATION DISORDER         | Lifetime |
| S | HYPOCHONDRIASIS               | Current |
| T | BODY DYSMORPHIC DISORDER      | Current |
| U | PAIN DISORDER                 | Current |
| V | CONDUCT DISORDER              | Past 12 Months |
| W | ATTENTION DEFICIT/HYPERACTIVITY DISORDER (Children/Adolescents) | Past 6 Months |
|   | ATTENTION DEFICIT/HYPERACTIVITY DISORDER (Adults) | Lifetime |
| X | ADJUSTMENT DISORDERS          | Current |
| Y | PREMENSTRUAL DYSPHORIC DISORDER | Current |
| Z | MIXED ANXIETY-DEPRESSIVE DISORDER | Current |
### BRIGHT LIGHT

**10-20 PSG electrode attachments**

<table>
<thead>
<tr>
<th>Measure</th>
<th>cm</th>
<th>Electrode</th>
<th>Distance</th>
<th>cm</th>
<th>Completed</th>
</tr>
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<tr>
<td>1 Nasion to Inion</td>
<td></td>
<td>CZ</td>
<td>midpoint</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>FP</td>
<td>10% from nasion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OZ</td>
<td>10% from inion</td>
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<td></td>
</tr>
<tr>
<td>2 Preaurical to preaurical</td>
<td></td>
<td>CZ</td>
<td>midpoint</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C3 &amp; C4</td>
<td>20% from midpoint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Head Circumference (through FP and OZ)</td>
<td></td>
<td>FP1 &amp; FP2</td>
<td>5% to each side of FP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>O1 &amp; O2</td>
<td>5% to each side of OZ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 FP1 to C3</td>
<td></td>
<td>F3</td>
<td>50% from C3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 FP2 to C4</td>
<td></td>
<td>F4</td>
<td>50% from C4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Reference</td>
<td></td>
<td>A1 &amp; A2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Chins (EMG)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Bio Calibrations**

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Code</th>
<th>Duration</th>
<th>MSLT 1</th>
<th>MSLT 2</th>
<th>MSLT 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Rest with eyes open</td>
<td>EO</td>
<td>1 min (2 epochs)</td>
<td>Completed</td>
<td>Completed</td>
<td>Completed</td>
</tr>
<tr>
<td>2 Rest with eyes closed</td>
<td>EC</td>
<td>1 min (2 epochs)</td>
<td>Completed</td>
<td>Completed</td>
<td>Completed</td>
</tr>
<tr>
<td>3 Look up and down</td>
<td>U/D</td>
<td>30 sec (1 epoch)</td>
<td>Completed</td>
<td>Completed</td>
<td>Completed</td>
</tr>
<tr>
<td>4 Look left and right</td>
<td>L/R</td>
<td>30 sec (1 epoch)</td>
<td>Completed</td>
<td>Completed</td>
<td>Completed</td>
</tr>
<tr>
<td>5 Blink 5 times</td>
<td>Blink</td>
<td>5 blinks (1 epoch)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Grit teeth</td>
<td>Teeth</td>
<td>30 sec (1 epoch)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Epoch</th>
<th>MSLT 1</th>
<th>MSLT 2</th>
<th>MSLT 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lights out epoch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wake time epoch</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix II: Symptom Checklist Included in VA’s National Traumatic Brain Injury Evaluation and Treatment Protocol

<table>
<thead>
<tr>
<th>NEUROBEHAVIORAL SYMPTOM INVENTORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please rate the following symptoms with regard to how much they have disturbed you SINCE YOUR INJURY.</td>
</tr>
<tr>
<td>0 = None - Rarely if ever present; not a problem at all</td>
</tr>
<tr>
<td>1 = Mild - Occasionally present, but it does not disrupt activities; I can usually continue what I'm doing; doesn't really concern me.</td>
</tr>
<tr>
<td>2 = Moderate - Often present, occasionally disrupts my activities; I can usually continue what I'm doing with some effort; I feel somewhat concerned.</td>
</tr>
<tr>
<td>3 = Severe - Frequently present and disrupts activities; I can only do things that are fairly simple or take little effort; I feel like I need help.</td>
</tr>
<tr>
<td>4 = Very Severe - Almost always present and I have been unable to perform at work, school or home due to this problem; I probably cannot function without help.</td>
</tr>
</tbody>
</table>

1. Feeling dizzy:
   - 0 = NONE
   - 1 = MILD
   - 2 = MODERATE
   - 3 = SEVERE
   - 4 = VERY SEVERE

2. Loss of balance:
   - 0 = NONE
   - 1 = MILD
   - 2 = MODERATE
   - 3 = SEVERE
   - 4 = VERY SEVERE

3. Poor coordination, clumsy:
   - 0 = NONE
   - 1 = MILD
   - 2 = MODERATE
   - 3 = SEVERE
   - 4 = VERY SEVERE

4. Headaches:
   - 0 = NONE
   - 1 = MILD
   - 2 = MODERATE
   - 3 = SEVERE
   - 4 = VERY SEVERE

5. Nausea:
   - 0 = NONE
   - 1 = MILD
   - 2 = MODERATE
   - 3 = SEVERE
   - 4 = VERY SEVERE

6. Vision problems, blurring, trouble seeing:
   - 0 = NONE
   - 1 = MILD
   - 2 = MODERATE
   - 3 = SEVERE
   - 4 = VERY SEVERE
Appendix II: Symptom Checklist Included in VA's National Traumatic Brain Injury Evaluation and Treatment Protocol

7. Sensitivity to light
   0 1 2 3 4
   NONE MILD MODERATE SEVERE VERY SEVERE

8. Hearing difficulty:
   0 1 2 3 4
   NONE MILD MODERATE SEVERE VERY SEVERE

9. Sensitivity to noise:
   0 1 2 3 4
   NONE MILD MODERATE SEVERE VERY SEVERE

10. Numbness or tingling on parts of my body:
    0 1 2 3 4
    NONE MILD MODERATE SEVERE VERY SEVERE

11. Change in taste and/or smell:
    0 1 2 3 4
    NONE MILD MODERATE SEVERE VERY SEVERE

12. Loss of appetite or increase appetite:
    0 1 2 3 4
    NONE MILD MODERATE SEVERE VERY SEVERE

13. Poor concentration, can't pay attention, easily distracted:
    0 1 2 3 4
    NONE MILD MODERATE SEVERE VERY SEVERE

14. Forgetfulness, can't remember things:
    0 1 2 3 4
    NONE MILD MODERATE SEVERE VERY SEVERE

15. Difficulty making decisions:
    0 1 2 3 4
    NONE MILD MODERATE SEVERE VERY SEVERE

16. Slowed thinking, difficulty getting organized, can't finish things:
    0 1 2 3 4
    NONE MILD MODERATE SEVERE VERY SEVERE

17. Fatigue, loss of energy, getting tired easily:
    0 1 2 3 4
    NONE MILD MODERATE SEVERE VERY SEVERE
18. Difficulty falling or staying asleep:
   - 0: NONE
   - 1: MILD
   - 2: MODERATE
   - 3: SEVERE
   - 4: VERY SEVERE

19. Feeling anxious or tense:
   - 0: NONE
   - 1: MILD
   - 2: MODERATE
   - 3: SEVERE
   - 4: VERY SEVERE

20. Feeling depressed or sad:
   - 0: NONE
   - 1: MILD
   - 2: MODERATE
   - 3: SEVERE
   - 4: VERY SEVERE

21. Irritability, easily annoyed:
   - 0: NONE
   - 1: MILD
   - 2: MODERATE
   - 3: SEVERE
   - 4: VERY SEVERE

22. Poor frustration tolerance, feeling easily overwhelmed by things:
   - 0: NONE
   - 1: MILD
   - 2: MODERATE
   - 3: SEVERE
   - 4: VERY SEVERE
# Patient Health Questionnaire (PHQ-9)

**NAME:** ______________________________________  

**DATE:** ______________________

Over the last 2 weeks, how often have you been bothered by any of the following problems?  
*(use "✓" to indicate your answer)*

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed. Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead, or of hurting yourself</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

(add columns)  

*(Healthcare professional: For interpretation of TOTAL, please refer to accompanying scoring card).*

**TOTAL:** ______________________

**10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?**

<table>
<thead>
<tr>
<th>Not difficult at all</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
</table>
PITTSBURGH SLEEP QUALITY INDEX

INSTRUCTIONS:
The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month. Please answer all questions.

1. During the past month, what time have you usually gone to bed at night?
   
   BED TIME __________

2. During the past month, how long (in minutes) has it usually taken you to fall asleep each night?
   
   NUMBER OF MINUTES __________

3. During the past month, what time have you usually gotten up in the morning?
   
   GETTING UP TIME __________

4. During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed.)
   
   HOURS OF SLEEP PER NIGHT __________

For each of the remaining questions, check the one best response. Please answer all questions.

5. During the past month, how often have you had trouble sleeping because you . . .

   a) Cannot get to sleep within 30 minutes

      Not during the past month_____ Less than once a week_____ Once or twice a week_____ Three or more times a week_____

   b) Wake up in the middle of the night or early morning

      Not during the past month_____ Less than once a week_____ Once or twice a week_____ Three or more times a week_____

   c) Have to get up to use the bathroom

      Not during the past month_____ Less than once a week_____ Once or twice a week_____ Three or more times a week_____
d) Cannot breathe comfortably
   Not during the past month _____ Less than once a week _____ Once or twice a week _____ Three or more times a week _____

e) Cough or snore loudly
   Not during the past month _____ Less than once a week _____ Once or twice a week _____ Three or more times a week _____

f) Feel too cold
   Not during the past month _____ Less than once a week _____ Once or twice a week _____ Three or more times a week _____

g) Feel too hot
   Not during the past month _____ Less than once a week _____ Once or twice a week _____ Three or more times a week _____

h) Had bad dreams
   Not during the past month _____ Less than once a week _____ Once or twice a week _____ Three or more times a week _____

i) Have pain
   Not during the past month _____ Less than once a week _____ Once or twice a week _____ Three or more times a week _____

j) Other reason(s), please describe
   ____________________________________________________________
   ____________________________________________________________

How often during the past month have you had trouble sleeping because of this?
   Not during the past month _____ Less than once a week _____ Once or twice a week _____ Three or more times a week _____

6. During the past month, how would you rate your sleep quality overall?
   Very good ___________
   Fairly good ___________
   Fairly bad ___________
   Very bad ___________
7. During the past month, how often have you taken medicine to help you sleep (prescribed or "over the counter")?

   Not during the past month _____  Less than once a week _____  Once or twice a week _____  Three or more times a week _____

8. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?

   Not during the past month _____  Less than once a week _____  Once or twice a week _____  Three or more times a week _____

9. During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?

   No problem at all __________
   Only a very slight problem __________
   Somewhat of a problem __________
   A very big problem __________

10. Do you have a bed partner or room mate?

    No bed partner or room mate __________
    Partner/room mate in other room __________
    Partner in same room, but not same bed __________
    Partner in same bed __________

If you have a room mate or bed partner, ask him/her how often in the past month you have had . . .

a) Loud snoring

   Not during the past month _____  Less than once a week _____  Once or twice a week _____  Three or more times a week _____

b) Long pauses between breaths while asleep

   Not during the past month _____  Less than once a week _____  Once or twice a week _____  Three or more times a week _____

c) Legs twitching or jerking while you sleep

   Not during the past month _____  Less than once a week _____  Once or twice a week _____  Three or more times a week _____
d) Episodes of disorientation or confusion during sleep

<table>
<thead>
<tr>
<th>Not during the past month</th>
<th>Less than once a week</th>
<th>Once or twice a week</th>
<th>Three or more times a week</th>
</tr>
</thead>
</table>

Not during the past month | Less than once a week | Once or twice a week | Three or more times a week |

Not during the past month | Less than once a week | Once or twice a week | Three or more times a week |

e) Other restlessness while you sleep; please describe ________________________________________________

___________________________________________________________________________

<table>
<thead>
<tr>
<th>Not during the past month</th>
<th>Less than once a week</th>
<th>Once or twice a week</th>
<th>Three or more times a week</th>
</tr>
</thead>
</table>

Not during the past month | Less than once a week | Once or twice a week | Three or more times a week |

Not during the past month | Less than once a week | Once or twice a week | Three or more times a week |

Not during the past month | Less than once a week | Once or twice a week | Three or more times a week |
After a head injury or accident some people experience symptoms that can cause worry or nuisance. We would like to know if you now suffer any of the symptoms given below. Because many of these symptoms occur normally, we would like you to compare yourself now with before the accident. For each symptom listed below please circle the number that most closely represents your answer.

0 = not experienced at all
1 = no more of a problem
2 = a mild problem
3 = a moderate problem
4 = a severe problem

Compared with **before** the accident, do you **now** (i.e., over the last 24 hours) suffer from:

<table>
<thead>
<tr>
<th>Symptom</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headaches</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Feelings of dizziness</td>
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<tr>
<td>Nausea and/or vomiting</td>
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<tr>
<td>Noise sensitivity (easily upset by loud noise)</td>
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<tr>
<td>Sleep disturbance</td>
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<tr>
<td>Fatigue, tiring more easily</td>
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<tr>
<td>Being irritable, easily angered</td>
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<tr>
<td>Feeling depressed or tearful</td>
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<tr>
<td>Feeling frustrated or impatient</td>
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<tr>
<td>Forgetfulness, poor memory</td>
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<tr>
<td>Poor concentration</td>
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<tr>
<td>Taking longer to think</td>
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<tr>
<td>Blurred vision</td>
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<tr>
<td>Light sensitivity (easily upset by bright light)</td>
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<tr>
<td>Double vision</td>
<td></td>
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<td></td>
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<tr>
<td>Restlessness</td>
<td></td>
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</tr>
</tbody>
</table>

Are you experiencing any other difficulties? Please specify, and rate as above.

1. 0 1 2 3 4
2. 0 1 2 3 4

**Administration only:**

<table>
<thead>
<tr>
<th>RPQ-3 (total for first three items)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>RPQ-13 (total for next 13 items)</th>
</tr>
</thead>
</table>

In a typical week, we would like to know how much and when you are using your TV and Computer. Please place a C (computer) and/or T (television) in each hour time slot to indicate use.

<table>
<thead>
<tr>
<th>Time</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>12AM</td>
<td></td>
<td></td>
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<td>1AM</td>
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<td>2AM</td>
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<tr>
<td>3AM</td>
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<td>4AM</td>
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<td>5AM</td>
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<td>6AM</td>
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<td>7AM</td>
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<td>11AM</td>
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<td>12PM</td>
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<td>4PM</td>
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<td>5PM</td>
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<td>6PM</td>
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<td>7PM</td>
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<td>10PM</td>
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<tr>
<td>11PM</td>
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</tr>
</tbody>
</table>
Daily Sleep Diary

Use this sleep diary every day to help you track the quantity and quality of your sleep. Reflecting on the previous day, please fill out this diary during your exposure to the lightbox. If you have any questions or concerns, please call (617)-855-2239.

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**DIRECTIONS:** A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel right now, THAT IS, AT this moment.

There are no right or wrong answers.
Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>Not at all</th>
<th>Somewhat so</th>
<th>Moderately so</th>
<th>Very much so</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>I feel calm</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I feel secure</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I am tense</td>
<td>3</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I feel regretful</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I feel at ease</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I feel upset</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7</td>
<td>I am presently worrying over possible misfortunes.</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>I feel rested</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I feel anxious</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I feel comfortable</td>
<td>4</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11</td>
<td>I feel self-confident</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>12</td>
<td>I feel nervous</td>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td>I am jittery</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>14</td>
<td>I feel &quot;high strung&quot;</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>15</td>
<td>I am relaxed</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I feel content</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I am worried</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I feel over-excited and &quot;rattled&quot;</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>19</td>
<td>I feel joyful</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>I feel pleasant</td>
<td>4</td>
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STAI Form T

RECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you generally feel.

There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

21. I feel pleasant. ........................................ 1 2 3 4

22. I tire quickly ........................................... 1 2 3 4

23. I feel like crying ........................................ 1 2 3 4

24. I wish I could be as happy as others seem to be. ....... 1 2 3 4

25. I am losing out on things because I can't make up my mind soon enough ........................................ 1 2 3 4

26. I feel rested. ........................................... 1 2 3 4

27. I am "calm, cool, and collected" ........................ 1 2 3 4

28. I feel that difficulties are piling up so that I cannot overcome them ........................................ 1 2 3 4

29. I worry too much over something that really doesn't matter ......................................................... 1 2 3 4

30. I am happy ............................................... 1 2 3 4

31. I am inclined to take things hard ........................ 1 2 3 4

32. I lack self-confidence ................................... 1 2 3 4

33. I feel secure ........................................... 1 2 3 4

34. I try to avoid facing a crisis or difficulty ............... 1 2 3 4

35. I feel blue. ........................................... 1 2 3 4

36. I am content ........................................... 1 2 3 4

37. Some unimportant thought runs through my mind and bothers me ........................................ 1 2 3 4

38. I take disappointments so keenly that I can't put them out of my mind ........................................ 1 2 3 4

39. I am a steady person .................................... 1 2 3 4

40. I get in a state of tension or turmoil as I think over my recent concerns and interests. ..................... 1 2 3 4
Please put an X next to the statement that best describes how you feel:

**Right now I am:**

☐ Feeling active, vital, alert or wide awake
☐ Functioning at high levels, but not at peak; able to concentrate
☐ Awake, but relaxed; responsive but not fully alert
☐ Somewhat foggy, let down
☐ Foggy; losing interest in remaining awake; slowed down
☐ Sleepy, woozy, fighting sleep; prefer to lie down
☐ No longer fighting sleep, sleep onset soon; having dream-like thoughts

❖ Asleep
Some people have difficulty performing everyday activities when they feel tired or sleepy. The purpose of this questionnaire is to find out if you generally have difficulty carrying out certain activities because you are too sleepy or tired. In this questionnaire, when the words “sleepy” or “tired” are used, it means the feeling that you can’t keep your eyes open, your head is droopy, that you want to “nod off”, or that you feel the urge to take a nap. These words do not refer to the tired or fatigued feeling you may have after you have exercised.

Please circle one answer for each question. Please try to be as accurate as possible.

0 – I don’t do this activity for other reasons
1 – No difficulty
2 – Yes, a little difficulty
3 – Yes, Moderate difficulty
4 – Yes, Extreme difficulty

1. Do you generally have difficulty concentrating on things you do because you are sleepy or tired?

2. Do you generally have difficulty remembering things because you are sleepy or tired?

3. Do you have difficulty finishing a meal because you become sleepy or tired?

4. Do you have difficulty working on a hobby (for example: sewing, collecting, gardening) because you are sleepy or tired?

5. Do you have difficulty doing work around the house (for example: cleaning house, doing laundry, taking out the trash, repair work) because you are sleepy or tired?

6. Do you have difficulty operating a motor vehicle for short distances (less than 100 miles) because you become sleepy or tired?

7. Do you have difficulty operating a motor vehicle for long distances (greater than 100 miles) because you become sleepy or tired?

8. Do you have difficulty getting things done because you are too sleepy or tired to drive or take public transportation?

9. Do you have difficulty take care of financial affairs and doing paperwork (for example: writing checks, paying bills, keeping financial records, filling out tax forms, etc.) because you are sleepy or tired?

10. Do you have difficulty performing employed or volunteer work because you are sleepy or tired?

11. Do you have difficulty maintaining a telephone conversation because you become sleepy or tired?
1 – No difficulty  
2 – Yes, a little difficulty  
3 – Yes, Moderate difficulty  
4 – Yes, Extreme difficulty

12. Do you have difficulty visiting with your family or friends in your home because you become sleepy or tired?  
0 1 2 3 4

13. Do you have difficulty visiting with your family or friends in their homes because you become sleepy or tired?  
0 1 2 3 4

14. Do you have difficulty doing things for your family or friends because you become sleepy or tired?  
0 1 2 3 4

15. Has your relationship with family, friends or work colleagues been affected because you are sleepy or tired?  
1 2 3 4

16. Do you have difficulty exercising or participating in a sporting activity because you are too sleepy or tired?  
0 1 2 3 4

17. Do you have difficulty watching a movie or videotape because you become sleepy or tired?  
0 1 2 3 4

18. Do you have difficulty enjoying the theater or a lecture because you become sleepy or tired?  
0 1 2 3 4

19. Do you have difficulty enjoying a concert because you become sleepy or tired?  
0 1 2 3 4

20. Do you have difficulty watching television because you are sleepy or tired?  
0 1 2 3 4

21. Do you have difficulty participating in religious services, meetings or a group club because you are sleepy or tired?  
0 1 2 3 4

22. Do you have difficulty being as active as you want to be in the evening because you are sleepy or tired?  
0 1 2 3 4

23. Do you have difficulty being as active as you want to be in the morning because you are sleepy or tired?  
0 1 2 3 4

24. Do you have difficulty being as active as you want to be in the afternoon because you are sleepy or tired?  
0 1 2 3 4

25. Do you have difficulty keeping a pace with others your own age because you are sleepy or tired?  
1 2 3 4

26. How would you rate yourself in your general level of activity?  
1 2 3 4  
1= Very low; 2= Low; 3= Medium; 4= High

27. Has your intimate or sexual relationship been affected because you are sleepy or tired?  
0 1 2 3 4

28. Has your desire for intimacy or sex been affected because you are sleepy or tired?  
0 1 2 3 4

29. Has your ability to become sexually aroused been affected because you are sleepy or tired?  
0 1 2 3 4

30. Has your ability to have an orgasm been affected because you are sleepy or tired?  
0 1 2 3 4
Automated Neuropsychological Assessment Metrics (ANAM4)
Body Sway and Stability Test
Balloon Analog Risk Task

Inflate Balloon by Pressing Key

- The BART presents participants with 30 virtual balloons.
- Each balloon can be inflated one increment for each key press.

Balloon Grows in Size and $$$ Value

- With each key press the size of the balloon increases.
- Each increment also increases the potential value of the balloon by 5 cents.
- The balloon can be “cashed in” at any time and the total accumulated value retained.

If Balloon Explodes, All $$$ is Lost

- Each balloon can explode at any time.
- If a balloon explodes, all of the potential money accumulated for that balloon will be lost.

Goal: Earn as Much Money as Possible

- The goal is to maximize winnings.
- Only 30 balloons are presented
Go/No-Go Task

Go

Go

Go

No Go
Tower of London Task

Your Tower

Goal
Multi-Source Interference Task (MSIT)
N-back task

interstimulus interval: 600 ms

presentation time: 1000 ms
**Personality Assessment Inventory™ (PAI®)**

Leslie C. Morey, PhD

**Purpose:** 22 nonoverlapping full scales provide a comprehensive assessment of adult psychopathology in ages 18 years and older

**Age Range:**
- Adult
- Elder Adult

**Admin:** Individual or group

**Time:** 50-60 minutes to administer; 15-20 minutes to score

**Qualification:** C

**Sample Reports:** N/A

**Related Products:**
- **PAI® Professional Report Service**
- **PAI® Software Portfolio**
- **Personality Assessment Inventory™-Adolescent**

Revised and updated materials help increase the accuracy of personality assessment.

With its newly revised Professional Manual, Profile Form Adults-Revised, and Critical Items Form-Revised, the PAI® continues to raise the standard for the assessment of adult psychopathology. This objective inventory of adult personality assesses psychopathological syndromes and provides information relevant for clinical diagnosis, treatment planning, and screening for psychopathology. Since its introduction, the PAI has been heralded as one of the most important innovations in the field of clinical assessment.

**PAI® Scales and Subscales**

The 344 PAI items constitute 22 nonoverlapping scales covering the constructs most relevant to a broad-based assessment of mental disorders: 4 validity scales, 11 clinical scales, 5 treatment scales, and 2 interpersonal scales. To facilitate interpretation and to cover the full range of complex clinical constructs, 10 scales contain conceptually derived subscales.

The PAI Clinical scales were developed to provide information about critical diagnostic features of 11 important clinical constructs. These 11 scales may be divided into three broad classes of disorders: those within the neurotic spectrum, those within the psychotic spectrum, and those associated with behavior disorder or impulse control problems.

The Treatment scales were developed to provide indicators of potential complications in treatment that would not necessarily be apparent from diagnostic information. These five scales include two indicators of potential for harm to self or others, two measures of the respondent's environmental circumstances, and one indicator of the respondent's motivation for treatment.

The Interpersonal scales were developed to provide an assessment of the respondent's interpersonal style along two dimensions: a warmly affiliative versus a cold rejecting style, and a dominating/controlling versus a meekly submissive style. These axes provide a useful way of conceptualizing many different mental disorders: persons at the extremes of these dimensions may present with a variety of disorders. A number of studies provide evidence that diagnostic groups differ on these dimensions.

The PAI includes a Borderline Features scale and an Antisocial Features scale. Both of these scales specifically assess character pathology. The Borderline Features scale is the only PAI scale that has four subscales, reflecting the factorial complexity of the construct. The Antisocial Features scale includes a total of three facets: one assessing antisocial behaviors, and the other two assessing antisocial traits.
Psychomotor Vigilance Test

Press the spacebar every time an “x” appears on the screen.
Curriculum Vitae

Date Prepared: October 3, 2011

Name: WILLIAM DALE (SCOTT) KILLGORE

Office Address: Neuroimaging Center
McLean Hospital
115 Mill Street
Belmont, MA 02478 United States

Home Address: 1 Saint Gerard Terrace
Unit #1
Cambridge, MA 02140 United States

Work Phone: (617) 855-3166
Work Email: killgore@mclean.harvard.edu
Work FAX: (617) 855-2770

Place of Birth: Anchorage, AK

Education
1985 A.A. (Liberal Arts), San Antonio College
1985 A.A.S (Radio-TV-Film), San Antonio College
1990 B.A. (Psychology), Summa cum laude with Distinction, University of New Mexico
1992 M.A. (Clinical Psychology), Texas Tech University
1996 PH.D. (Clinical Psychology), Texas Tech University

Postdoctoral Training
08/95-07/96 Predoctoral Fellow, Clinical Psychology, Yale School of Medicine
08/96-07/97 Postdoctoral Fellow, Clinical Neuropsychology, University of OK Health Sciences Center
08/97-07/99 Postdoctoral Fellow, Clinical Neuropsychology, University of Pennsylvania Medical School
07/99-09/00 Research Fellow, Neuroimaging, McLean Hospital/ Harvard Medical School

Faculty Academic Appointments
10/00-08/02 Instructor in Psychology in the Department of Psychiatry
Harvard Medical School, Boston, MA
09/02-07/07 Clinical Instructor in Psychology in the Department of Psychiatry
Harvard Medical School, Boston, MA
08/07-10/10 Instructor in Psychology in the Department of Psychiatry
Harvard Medical School, Boston, MA
04/08- Faculty Affiliate, Division of Sleep Medicine
Harvard Medical School, Boston, MA
10/10- Assistant Professor of Psychology in the Department of Psychiatry
Harvard Medical School, Boston, MA

**Appointments at Hospitals/Affiliated Institutions**

10/00-08/02 Assistant Research Psychologist, McLean Hospital, Belmont, MA
08/02-07/04 Research Psychologist, Department of Behavioral Biology, Walter Reed Army Institute of Research, Silver Spring, MD
09/02-04/05 Special Volunteer, National Institute on Deafness and Other Communication Disorders (NIDCD), National Institutes of Health (NIH), Bethesda, MD
09/02-07/07 Consultant in Psychology, McLean Hospital, Belmont, MA
08/04-10/07 Chief, Neurocognitive Performance Branch, Walter Reed Army Institute of Research, Silver Spring, MD
08/05-07/06 Neuropsychology Postdoctoral Program Training Supervisor, Walter Reed Hospital, Washington, DC
08/07- Research Psychologist, McLean Hospital, Belmont, MA
05/11- Co-Director, Social, Cognitive, and Affective Neuroscience Laboratory, McLean Hospital, Belmont, MA

**Other Professional Positions**

11/01-08/02 First Lieutenant, Medical Service Corps, United States Army Reserve (USAR)
08/02-07/05 Captain, Medical Service Corps, United States Army
08/05-10/07 Major, Medical Service Corps, United States Army
10/07- Major, Medical Service Corps, United States Army Reserve (USAR)
8/08- Consulting Psychologist, The Brain Institute, University of Utah

**Major Administrative Leadership Positions**

**Local**

1988-1989 Undergraduate Teaching Assistant-Introduction to Psychology 102, University of New Mexico
Responsibility: Responsible for instructing two independent discussion sections of a large introductory psychology course. Responsibilities included lecture preparation, leading discussion, writing and administering quizzes, grading reports, tests, and weekly assignments as well as proctoring major exams.

1990-1991 Graduate Teaching Assistant-General Psychology 1300, Texas Tech University
Responsibility: Complete instructional responsibility for two introductory level psychology courses per semester. Responsibilities included curriculum development, preparation and administration of lectures, test and report grading, supervision of computerized student testing, and assignment of final course grades.

1991-1992 Graduate Teaching Assistant-Psychology of Learning Laboratory 3317, Texas Tech
University
Responsibility: Instructional responsibility for two upper division level psychology laboratory courses per semester. Responsibilities included curriculum development, lesson writing, classroom lecture, experiment demonstrations, test and report grading for a writing intensive laboratory course.

Committee Service

Local
2003        Scientific Review Committee, Walter Reed Army Institute of Research (WRAIR), Silver Spring, MD
2005        Scientific Review Committee, Walter Reed Army Institute of Research (WRAIR), Silver Spring, MD

Regional
2005-2006   Undergraduate Honors Thesis Committee, Jessica Richards [Chairperson], University of Maryland, Baltimore County
2011        Scientific Review Committee, U.S. Army Institute of Environmental Medicine (USARIEM), Natick, MA

National
2011-       National Network of Depression Centers, Military Task Group

International
2005-2006   Doctoral Thesis Committee, Belinda J. Liddell, University of Sydney, Australia

Professional Societies
1995-1997   American Psychological Association, Member
1998-2000   National Academy of Neuropsychology, Member

Grant Review Activities

National
2004        University of Alabama, Clinical Nutrition Research Center (UAB CNRC) Pilot/Feasibility Study Program Review Committee
2006        U.S. Small Business Administration, Small Business Technology Transfer (STTR) Program Review Committee
2006        Cognitive Performance Assessment Program Area Steering Committee, U.S. Army Military Operational Medicine Research Program Funding Panel
2007        Cognitive Performance Assessment Program Area Steering Committee, U.S. Army Military Operational Medicine Research Program Funding Panel
2008        United States Army Medical Research and Materiel Command (USAMRMC) Congressionally Directed Medical Research Programs (CDMRP) Extramural Grant Review Panel
2009        NIH-CSR Brain Disorders and Clinical Neuroscience N02 Member Study Conflict Section Review Panel
2009        Sleep Physiology and Fatigue Interventions Program Area Steering Committee, U.S. Army Military Operational Medicine Research Program
2011 National Science Foundation (NSF) Grant Reviewer

**International**

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Organization/Committee, Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>Scotland, UK, UK</td>
<td>Biomedical and Therapeutic Research Committee, Grant Reviewer</td>
</tr>
<tr>
<td>2010</td>
<td>Canada</td>
<td>Social Sciences and Humanities Research Council of Canada, Grant Reviewer</td>
</tr>
<tr>
<td>2011</td>
<td>Israel</td>
<td>Israel Science Foundation (ISF), Grant Reviewer</td>
</tr>
</tbody>
</table>

**Editorial Activities**

<table>
<thead>
<tr>
<th>Year</th>
<th>Publication Title, Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-2011</td>
<td>Reviewer, Psychological Reports</td>
</tr>
<tr>
<td>2001-2011</td>
<td>Reviewer, Perceptual and Motor Skills</td>
</tr>
<tr>
<td>2002</td>
<td>Reviewer, American Journal of Psychiatry</td>
</tr>
<tr>
<td>2002-2009</td>
<td>Reviewer, Biological Psychiatry</td>
</tr>
<tr>
<td>2003</td>
<td>Reviewer, Clinical Neurology and Neurosurgery</td>
</tr>
<tr>
<td>2004</td>
<td>Reviewer, NeuroImage</td>
</tr>
<tr>
<td>2004-2006</td>
<td>Reviewer, Neuropsychologia</td>
</tr>
<tr>
<td>2004</td>
<td>Reviewer, Journal of Neuroscience</td>
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<tr>
<td>2004</td>
<td>Reviewer, Consciousness and Cognition</td>
</tr>
<tr>
<td>2005</td>
<td>Reviewer, Experimental Brain Research</td>
</tr>
<tr>
<td>2005</td>
<td>Reviewer, Schizophrenia Research</td>
</tr>
<tr>
<td>2005-2009</td>
<td>Reviewer, Archives of General Psychiatry</td>
</tr>
<tr>
<td>2005</td>
<td>Reviewer, Behavioral Brain Research</td>
</tr>
<tr>
<td>2005-2009</td>
<td>Reviewer, Human Brain Mapping</td>
</tr>
<tr>
<td>2005-2006</td>
<td>Reviewer, Psychiatry Research: Neuroimaging</td>
</tr>
<tr>
<td>2006</td>
<td>Reviewer, Journal of Abnormal Psychology</td>
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<td>2006</td>
<td>Reviewer, Psychopharmacology</td>
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<tr>
<td>2006</td>
<td>Reviewer, Developmental Science</td>
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<tr>
<td>2006</td>
<td>Reviewer, Acta Psychologica</td>
</tr>
<tr>
<td>2006</td>
<td>Reviewer, Neuroscience Letters</td>
</tr>
<tr>
<td>2006-2011</td>
<td>Reviewer, Journal of Sleep Research</td>
</tr>
<tr>
<td>2006-2007</td>
<td>Reviewer, Physiology and Behavior</td>
</tr>
<tr>
<td>2006-2011</td>
<td>Reviewer, SLEEP</td>
</tr>
<tr>
<td>2007</td>
<td>Reviewer, Journal of Clinical and Experimental Neuropsychology</td>
</tr>
<tr>
<td>2008</td>
<td>Reviewer, European Journal of Child and Adolescent Psychiatry</td>
</tr>
<tr>
<td>2008</td>
<td>Reviewer, Judgment and Decision Making</td>
</tr>
<tr>
<td>2008-2010</td>
<td>Reviewer, Aviation, Space, &amp; Environmental Medicine</td>
</tr>
<tr>
<td>2008</td>
<td>Reviewer, Journal of Psychophysiology</td>
</tr>
<tr>
<td>2008</td>
<td>Reviewer, Brazilian Journal of Medical and Biological Research</td>
</tr>
<tr>
<td>2008</td>
<td>Reviewer, The Harvard Undergraduate Research Journal</td>
</tr>
<tr>
<td>2008</td>
<td>Reviewer, Bipolar Disorders</td>
</tr>
<tr>
<td>2008-2010</td>
<td>Reviewer, Chronobiology International</td>
</tr>
<tr>
<td>2008</td>
<td>Reviewer, International Journal of Obesity</td>
</tr>
<tr>
<td>2009</td>
<td>Reviewer, European Journal of Neuroscience</td>
</tr>
</tbody>
</table>
2009 Reviewer, Psychophysiology
2009 Reviewer, Traumatology
2009 Reviewer, Clinical Medicine: Therapeutics
2009 Reviewer, Acta Pharmacologica Sinica
2009 Reviewer, Collegium Antropologicum
2009 Reviewer, Journal of Psychopharmacology
2009-2010 Reviewer, Obesity
2009 Reviewer, Scientific Research and Essays
2009 Reviewer, Child Development Perspectives
2009-2010 Reviewer, Personality and Individual Differences
2009-2010 Reviewer, Noise and Health
2009-2010 Reviewer, Sleep Medicine
2010 Reviewer, Nature and Science of Sleep
2010 Reviewer, Psychiatry and Clinical Neurosciences
2010 Reviewer, Learning and Individual Differences
2010 Reviewer, Cognitive, Affective, and Behavioral Neuroscience
2010 Reviewer, BMC Medical Research Methodology
2010-2011 Reviewer, Journal of Adolescence
2010 Reviewer, Brain Research
2011 Reviewer, Brain
2011 Reviewer, Social Cognitive and Affective Neuroscience
2011 Reviewer, Journal of Traumatic Stress
2011 Reviewer, Social Neuroscience
2011 Reviewer, Brain and Cognition
2011 Reviewer, Frontiers in Neuroscience
2011 Reviewer, Sleep Medicine Reviews

Other Editorial Roles
2009- Editorial Board Member International Journal of Eating Disorders

Honors and Prizes
1990 Outstanding Senior Honors Thesis in Psychology, University of New Mexico
1990-1995 Maxey Scholarship in Psychology, Texas Tech University
2001 Rennick Research Award, Co-Authored Paper, International Neuropsychological Society
2002 Honor Graduate, AMEDD Officer Basic Course, U.S. Army Medical Department Center and School
2002 Lynch Leadership Award Nominee, AMEDD Officer Basic Course, U.S. Army Medical Department Center and School
2003 Outstanding Research Presentation Award, 2003 Force Health Protection Conference, U.S. Army Center for Health Promotion and Preventive Medicine
2005 Edward L. Buescher Award for Excellence in Research by a Young Scientist, Walter Reed Army Institute of Research (WRAIR) Association
2009 Merit Poster Award, International Neuropsychological Society
2009 Outstanding Research Presentation Award, 2009 Force Health Protection Conference, U.S. Army Center for Health Promotion and Preventive Medicine
2010 Best Paper Award, Neuroscience, 27th U.S. Army Science Conference
2011 Blue Ribbon Finalist, 2011 Top Poster Award in Clinical and Translational Research, Society of Biological Psychiatry

Report of Funded and Unfunded Projects

Funding Information

Past

N.I.H., 1R03HD41542-01
P.I. ($79,000.)

U.S. Army Medical Research and Materiel Command (USAMRMC) Competitive Medical Research Proposal Program (CMRP),
P.I. (Total Award: $1,345,000.)

2004-2005 Sleep/wake Schedules in 3ID Aviation Brigade Soldiers.
Defense Advanced Research Projects Agency (DARPA)
P.I. (Total Award: $60,000.)

2005-2006 Functional Neuroimaging Studies of Neural Processing Changes with Sleep and Sleep Deprivation.
U.S. Army Medical Research and Materiel Command (USAMRMC)
Task Area C (Warfighter Judgment and Decision Making) Program Funding
P.I. (Total Award: $219,400.)

2006-2007 Establishing Normative Data Sets for a Series of Tasks to Measure the Cognitive Effects of Operationally Relevant Stressors.
U.S. Army Medical Research and Materiel Command (USAMRMC)
Task Area C (Warfighter Judgment and Decision Making) Program Funding,
P.I., (Total Award:$154,000.)

2006-2007 Military Operational Medicine Research Program (MOM-RP), Development of the Sleep History and Readiness Predictor (SHARP).
U.S. Army Medical Research and Materiel Command (USAMRMC)
P.I. (Total Award:$291,000.)

Current

2009-2012 The Neurobiological Basis and Potential Modification of Emotional Intelligence through
Affective Behavioral Training.
U.S. Army Medical Research and Materiel Command (USAMRMC),
P.I. (Total Award: $414,461.)

2011-2014 Effects of Bright Light Therapy on Sleep, Cognition, and Brain Function following Mild Traumatic Brain Injury.
U.S. Army Medical Research and Materiel Command (USAMRMC),
P.I. (Total Award: $754,040)

2012-2015 Internet Based Cognitive Behavioral Therapy Effects on Depressive Cognitions and Brain function.
U.S. Army Medical Research and Materiel Command (USAMRMC),
Co-PI (Total Award: $1,646,045)

**Report of Local Teaching and Training**

*Laboratory and Other Research Supervisory and Training Responsibilities*

2005-2006 1 Fellow for 250 hrs/year, Neuropsychology Postdoctoral Research Training Program Supervisor, Walter Reed Hospital

**Formally Supervised Trainees**

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-1999</td>
<td>David Glahn, Ph.D.</td>
<td>Associate Professor, Yale University School of Medicine</td>
</tr>
<tr>
<td>1997-1999</td>
<td>Daniel Casasanto, Ph.D.</td>
<td>Senior Scientist/Lecturer, Max Plank Institute for Psycholinguistics</td>
</tr>
<tr>
<td>2002-2005</td>
<td>Alexander Vo, Ph.D.</td>
<td>Associate Professor, UTMB, Executive Director of Telemedicine</td>
</tr>
<tr>
<td>2002-2007</td>
<td>Rebecca Reichardt, M.A.</td>
<td>Human Subjects Protection Scientist, USAMRMC</td>
</tr>
<tr>
<td>2003-2004</td>
<td>Stan Liu, M.D.</td>
<td>Medical Intern, Johns Hopkins Medical School</td>
</tr>
<tr>
<td>2003-2004</td>
<td>Neil Arora, B.A.</td>
<td>Student, Yale University</td>
</tr>
<tr>
<td>2003-2005</td>
<td>Nancy Grugle, Ph.D.</td>
<td>Assistant Professor, Cleveland State University</td>
</tr>
<tr>
<td>2003-2005</td>
<td>Joshua Bailey, B.A.</td>
<td>Seminary Student</td>
</tr>
<tr>
<td>2003-2006</td>
<td>Athena Kendall, M.A.</td>
<td>Lab Manager, Walter Reed Army Medical Center</td>
</tr>
<tr>
<td>2004-2005</td>
<td>Merica Shepherd, B.A.</td>
<td>Laboratory Coordinator</td>
</tr>
<tr>
<td>2004-2005</td>
<td>Cynthia Hawes, B.A.</td>
<td>Research Program Coordinator</td>
</tr>
<tr>
<td>2004-2006</td>
<td>Christopher Li, B.A.</td>
<td>Graduate Student</td>
</tr>
<tr>
<td>2004-2007</td>
<td>Jessica Richards, B.A.</td>
<td>Ph.D. Student, University of Maryland College Park</td>
</tr>
<tr>
<td>2004-2007</td>
<td>Erica Lipizzi, B.A.</td>
<td>Graduate Student, Emory University</td>
</tr>
<tr>
<td>2004-2007</td>
<td>Brian Leavitt, B.S.</td>
<td>Research Technician, Walter Reed Army Institute of Research</td>
</tr>
<tr>
<td>2004-2007</td>
<td>Rachel Newman, B.S.</td>
<td>Senior Laboratory Manager, Walter Reed</td>
</tr>
<tr>
<td>2004-2007</td>
<td>Alexandra Krugler, B.S.</td>
<td>Medical Student, Louisiana State University</td>
</tr>
<tr>
<td>2005-2006</td>
<td>Nathan Huck, PH.D.</td>
<td>Clinical Neuropsychologist, Walter Reed Army Institute of Research</td>
</tr>
</tbody>
</table>
### Research Positions (2005-2011)

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-2006</td>
<td>Ellen Kahn-Greene, Ph.D.</td>
<td>Post-Doctoral Fellow, Boston VA</td>
</tr>
<tr>
<td>2005-2006</td>
<td>Alison Muckle, B.A.</td>
<td>Research Technician</td>
</tr>
<tr>
<td>2005-2006</td>
<td>Christina Murray, B.S.</td>
<td>Medical Student, Drexel University</td>
</tr>
<tr>
<td>2005-2007</td>
<td>Gautham Ganesan</td>
<td>Medical Student, UC Irvine</td>
</tr>
<tr>
<td>2005-2007</td>
<td>Dante Picchioni, Ph.D.</td>
<td>Research Psychologist, Walter Reed Army Institute of Research</td>
</tr>
<tr>
<td>2006-2007</td>
<td>Tracy Rupp, Ph.D.</td>
<td>Research Psychologist, Walter Reed Army Institute of Research</td>
</tr>
<tr>
<td>2006-2007</td>
<td>Kacie Smith, B.A.</td>
<td>Study Manager, Walter Reed Army Institute of Research</td>
</tr>
<tr>
<td>2006-2007</td>
<td>Shane Smith, B.S.</td>
<td>Medical Student, University of the West Indies</td>
</tr>
<tr>
<td>2006-2007</td>
<td>Shanelle McNair</td>
<td>Research Technician, Walter Reed Army Institute of Research</td>
</tr>
<tr>
<td>2006-2007</td>
<td>George Watlington</td>
<td>Research Technician, Walter Reed Army Institute of Research</td>
</tr>
<tr>
<td>2008</td>
<td>Grady O’Brien</td>
<td>Undergraduate Student</td>
</tr>
<tr>
<td>2008-2009</td>
<td>Alex Post</td>
<td>Undergraduate Student</td>
</tr>
<tr>
<td>2008-2009</td>
<td>Lauren Price, B.A.</td>
<td>Senior Clinical Research Assistant, McLean Hospital</td>
</tr>
<tr>
<td>2009-</td>
<td>Zachary Schwab, B.S.</td>
<td>Research Assistant, McLean Hospital</td>
</tr>
<tr>
<td>2009-</td>
<td>Melissa Weiner, B.S.</td>
<td>Graduate Student, Yale School of Public Health</td>
</tr>
<tr>
<td>2010-</td>
<td>Norah Simpson, Ph.D.</td>
<td>Post-Doctoral Fellow, Beth Israel Deaconess/Harvard Medical School</td>
</tr>
<tr>
<td>2010-</td>
<td>Vincent Capaldi, M.D.</td>
<td>Medical Resident, Walter Reed Army Medical Ctr.</td>
</tr>
<tr>
<td>2010-</td>
<td>Deepa Acharya, Ph.D.</td>
<td>Clinical Neuropsychologist, McLean Hospital/Harvard Medical School</td>
</tr>
<tr>
<td>2010-</td>
<td>Christina Song</td>
<td>Undergraduate Student, Smith College</td>
</tr>
<tr>
<td>2011-</td>
<td>Jill Kizielewicz</td>
<td>Undergraduate Student, Hamilton College</td>
</tr>
<tr>
<td>2011-</td>
<td>Sophie DelDonno, B.A.</td>
<td>Research Assistant, McLean Hospital</td>
</tr>
<tr>
<td>2011-</td>
<td>Maia Kipman, B.A.</td>
<td>Research Assistant, McLean Hospital</td>
</tr>
<tr>
<td>2011-</td>
<td>Michael Covell, B.A.</td>
<td>Research Assistant, McLean Hospital</td>
</tr>
<tr>
<td>2011</td>
<td>Mareen Weber, Ph.D.</td>
<td>Post-Doctoral Fellow, Harvard Medical School</td>
</tr>
</tbody>
</table>

### Local Invited Presentations

2000 The Neurobiology of Emotion in Children, McLean Hospital  
Lecturer: 30 participants, 2 hours contact time per year, 10 hours prep time per year.  
*Invited Lecture*

2001 The Neurobiology of Emotion in Children and Adolescents, McLean Hospital  
Lecturer: 60 participants, 2 hours contact time per year, 10 hours prep time per year.  
*Invited Lecture*

2005 Briefing to the Chairman of the Congressional Committee on Strategies to Protect the Health of Deployed U.S. Forces, John H. Moxley, on the Optimization of Judgment and Decision Making Capacities in Soldiers Following Sleep Deprivation, Walter Reed Army Institute of Research, Washington, DC*Invited Lecture*

2006 Lecture on Optimization of Judgment and Decision Making Capacities in Soldiers Following Sleep Deprivation, Brain Imaging Center, McLean Hospital, Belmont MA [Invited Lecture]


2010 Lecture on Patterns of Cortico-Limbic Activation Across Anxiety Disorders, Center for Anxiety, Depression, and Stress, McLean Hospital, Belmont, MA [Invited Lecture]

2010 Lecture on Cortico-Limbic Activation Among Anxiety Disorders, Neuroimaging Center, McLean Hospital, Belmont, MA [Invited Lecture]

2011 Lecture on Shared and Differential Patterns of Cortico-Limbic Activation Across Anxiety Disorders, McLean Research Day Brief Communications, McLean Hospital, Belmont, MA [Invited Lecture]

Report of Regional, National and International Invited Teaching and Presentations

Invited Presentations and Courses

Regional

2001 Using Functional MRI to Study the Developing Brain, Judge Baker Children's Center Lecturer: 8 participants, 2 hours contact time per year, 10 hours prep time per year [Invited Seminar]

2002 Cortico-Limbic Activation in Adolescence and Adulthood, Youth Advocacy Project, Cape Cod, MA Lecturer: 45 participants, 2 hours contact time per year, 10 hours prep time per year [Invited Lecture]


2007 Lecture on Cerebral Responses During Visual Processing of Food, U.S. Army Institute of Environmental Medicine, Natick, MA [Invited Lecture]

2008  Lecture on Sleep Deprivation, Executive Function, and Resilience to Sleep Loss; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2008  Lecture on the Role of Research Psychology in the Army; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2008  Lecture on Combat Stress Control: Basic Battlemind Training; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2009  Lecture entitled Evaluate a Casualty, Prevent Shock, and Prevent Cold Weather injuries; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2009  Lecture on Combat Exposure and Sleep Deprivation Effects on Risky Decision-Making; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2009  Lecture on the Sleep History and Readiness Predictor (SHARP); 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2009  Lecture on The Use of Actigraphy for Measuring Sleep in Combat and Military Training; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2010  Lecture entitled Casualty Evaluation; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2010  Lecture entitled Combat Stress and Risk-Taking Behavior Following Deployment; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2010  Lecture entitled Historical Perspectives on Combat Medicine at the Battle of Gettysburg; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2010  Lecture entitled Sleep Loss, Stimulants, and Decision-Making; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2010  Lecture entitled PTSD: New Insights from Brain Imaging; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2011  Lecture entitled Effects of bright light therapy on sleep, cognition and brain function after mild traumatic brain injury; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA [Invited Lecture]

2011  Lecture entitled Laboratory Sciences and Research Psychology in the Army; 105th IMA
<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Lecture entitled Tools for Assessing Sleep in Military Settings; 105&lt;sup&gt;th&lt;/sup&gt; IMA Detachment, U.S. Army Reserve Center, Boston, MA</td>
<td>[Invited Lecture]</td>
</tr>
<tr>
<td>2011</td>
<td>Lecture entitled The Brain Basis of Emotional Trauma and Practical Issues in Supporting Victims of Trauma, U.S. Department of Justice, United States Attorneys Office, Serving Victims of Crime Training Program, Holyoke, MA</td>
<td>[Invited Lecture]</td>
</tr>
<tr>
<td>2011</td>
<td>Lecture entitled The Brain Altering Effects of Traumatic Experiences; 105&lt;sup&gt;th&lt;/sup&gt; Reinforcement Training Unit (RTU), U.S. Army Reserve Center, Boston, MA</td>
<td>[Invited Lecture]</td>
</tr>
<tr>
<td>2000</td>
<td>Lecture on the Neurobiology of Emotional Development in Children, 9th Annual Parents as Teachers Born to Learn Conference, St. Louis, MO</td>
<td>[Invited Lecture]</td>
</tr>
<tr>
<td>2005</td>
<td>Lecture on The Sleep History and Readiness Predictor: Presented to the Medical Research and Materiel Command, Ft. Detrick, MD</td>
<td>[Invited Lecture]</td>
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<tr>
<td>2006</td>
<td>Lecture on The Sleep History and Readiness Predictor: Presented at the Bi-Annual 71F Research Psychology Short Course, Ft. Rucker, AL, U.S. Army Medical Research and Materiel Command</td>
<td>[Invited Lecture]</td>
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<tr>
<td>2008</td>
<td>Lecture on the Validation of Actigraphy and the SHARP as Methods of Measuring Sleep and Performance in Soldiers, U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL</td>
<td>[Seminar]</td>
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</table>
2009 Lecture on Sleep Deprivation, Executive Function, and Resilience to Sleep Loss: Walter Reed Army Institute of Research AIBS Review, Washington DC [Invited Lecture]

2009 Lecture Entitled: Influences of Combat Exposure and Sleep Deprivation on Risky Decision-Making, Evans U.S. Army Hospital, Fort Carson, CO [Invited Lecture]

2009 Lecture on Making Bad Choices: The Effects of Combat Exposure and Sleep Deprivation on Risky Decision-Making, 4th Army, Division West, Quarterly Safety Briefing to the Commanding General and Staff, Fort Carson, CO [Invited Lecture]

2009 Symposium on Sleep Deprivation, Judgment, and Decision-Making, 23rd Annual Meeting of the Associated Professional Sleep Societies, Seattle, WA [Invited Lecture]

2009 Symposium Session Moderator: Workshop on Components of Cognition and Fatigue: From Laboratory Experiments to Mathematical Modeling and Operational Applications, Washington State University, Spokane, WA [Invited Speaker]

2009 Lecture on Comparative Studies of Stimulant Action as Countermeasures for Higher Order Cognition and Executive Function Impairment that Results from Disrupted Sleep Patterns, Presented at the NIDA-ODS Symposium entitled: Caffeine: Is the Next Problem Already Brewing, Rockville, MD [Invited Lecture]

2010 Oral Platform Presentation: Sleep deprivation selectively impairs emotional aspects of cognitive functioning, 27th Army Science Conference, Orlando, FL.

2010 Oral Platform Presentation: Exaggerated amygdala responses to masked fearful faces are specific to PTSD versus simple phobia, 27th Army Science Conference, Orlando, FL.

2011 Lecture Entitled: The effects of emotional intelligence on judgment and decision making, Military Operational Medicine Research Program Task Area C, R & A Briefing, Walter Reed Army Institute of Research, Silver Spring, MD [Invited Lecture]

2011 Lecture Entitled: Effects of bright light therapy on sleep, cognition, brain function, and neurochemistry following mild traumatic brain injury, Military Operational Medicine Research Program Task Area C, R & A Briefing, Walter Reed Army Institute of Research, Silver Spring, MD [Invited Lecture]

International

1999 Oral Platform Presentation: Functional MRI lateralization during memory encoding predicts seizure outcome following anterior temporal lobectomy, 27th Annual Meeting of
the International Neuropsychological Society, Boston, MA.

2001 Oral Platform Presentation: Sex differences in functional activation of the amygdala during the perception of happy faces, 29th Annual Meeting of the International Neuropsychological Society, Chicago, IL.

2002 Oral Platform Presentation: Developmental changes in the lateralized activation of the prefrontal cortex and amygdala during the processing of facial affect, 30th Annual Meeting of the International Neuropsychological Society, Toronto, Ontario, Canada.


2008 Lecture on Sleep Deprivation, Executive Function, & Resilience to Sleep Loss, First Franco-American Workshop on War Traumatism, IMNSSA, Toulon, France [Invited Lecture]

Report of Clinical Activities and Innovations

Current Licensure and Certification
2001- Clinical Psychologist, New Hampshire

Practice Activities
1991-1995 Psychology, Clinical, Psychology Clinic, Texas Tech University, Lubbock, TX
Clinical Activity Description: Provided psychotherapy and other supervised psychological services for a broad spectrum of client problems. Duties included regular therapy contacts with four to eight clients per week for approximately four years. Clients ranged in age from preschool through middle age. Clinical responsibilities included intake evaluations, formal testing and assessment, case formulation and treatment plan development, and delivery of a wide range of psychotherapy services including crisis intervention, behavior modification, short-term cognitive restructuring, and long-term psychotherapy.
Patient Load: 6/week

1993-1995 Psychology, Neuropsychology, Methodist Hospital Rehabilitation Institute, Lubbock, TX
Clinical Activity Description: A two year placement consisting of two days per week within a large rehabilitation unit of a major regional medical center. Responsibilities included administration, scoring, and writing of neuropsychological assessments/reports, primarily emphasizing the Halstead-Reitan Neuropsychological Battery. Assessment services were provided on both inpatient and outpatient basis.
Patient Load: 2/week

1995-1996  Psychology, Neuropsychology, Yale University School of Medicine, Connecticut Mental Health Center
Clinical Activity Description: Neuropsychological and psychodiagnostic assessment of chronic and severe mentally ill patients. Duties included patient interviewing, test administration, scoring, interpretation, and report writing. Assessment and consultation services were provided for both the inpatient and outpatient units.
Patient Load: 2/week

1995-1996  Psychology, Clinical, Yale University School of Medicine, West Haven Mental Health Clinic
Clinical Activity Description: Provided short-term, long-term, and group psychotherapy services, consultation, and psychological assessments for adults, children, and families. Duties also included co-leading a regular outpatient group devoted to treatment of moderate to severe personality disorders.
Patient Load: 12/week

1996-1997  Psychology, Neuropsychology, University of Oklahoma Health Sciences Center
Clinical Activity Description: Full-time placement in the Neuropsychological Assessment Laboratory, which meets INS/Division 40 guidelines for post-doctoral training in clinical neuropsychology. Responsibilities included comprehensive neuropsychological assessment and consultation services, including test administration, scoring, interpretation, and report writing. Regular outpatient psychotherapy was also provided for approximately two patients per week.
Patient Load: 4/week

1997-1999  Psychology, Neuropsychology, University of Pennsylvania Medical Center
Clinical Activity Description: Full-time two-year placement in the Department of Neurology, which meets INS/Division 40 guidelines for post-doctoral training in clinical neuropsychology. Responsibilities included neuropsychological assessment, consultation, and psychotherapy services for the Departments of Neurology and Neurosurgery.
Patient Load: 3/week

Report of Education of Patients and Service to the Community

Recognition

Report of Scholarship
Publications
Peer reviewed publications in print or other media

A) Research Investigations:


78. Killgore, WD, Castro, CA, & Hoge, CW. Preliminary Normative Data for the Evaluation of Risks Scale—Bubble Sheet Version (EVAR-B) for Large Scale Surveys of Returning Combat Veterans. Military Medicine, 175, 725-731.


81. Rupp, TL, Killgore, WD, & Balkin, TJ. Socializing by day may affect performance by night: Vulnerability to sleep deprivation is differentially mediated by social exposure in extraverts vs. introverts. Sleep, 33, 1475-1485, 2010.

82. Rosso, IM, Makris, N, Britton, JC, Price, LM, Gold, AL, Zai, D, Bruyere, J, Deckersbach, T,
Killgore, WD, & Rauch, SL. Anxiety sensitivity correlates with two indices of right anterior insula structure in specific animal phobia. Depression and Anxiety, 27, 1104-1110, 2010.


85. Capaldi, VF, Guerrero, ML, & Killgore, WD. Sleep disruption among returning combat veterans from Iraq and Afghanistan. Military Medicine, 176, 879-888, 2011.

86. Killgore, WD, Capaldi, VF, & Guerrero, ML. Nocturnal polysomnographic correlates of daytime sleepiness. Psychological Reports (in press)


B) Other Peer Reviewed Publications


Non-peer reviewed scientific or medical publications/materials in print or other media

Reviews/Chapters/Editorials


**Published U.S. Government Technical Reports**


**Professional educational materials or reports, in print or other media**

1. **Killgore, WD, & Bailey, JD.** Sleep History And Readiness Predictor (SHARP). Silver Spring, MD: Walter Reed Army Institute of Research; 2006. Computer program for predicting cognitive status based on actigraphically recorded sleep history. Patent Pending.

**Thesis**

1. **Killgore, WD.** Senior Honors Thesis: Perceived intensity of lateral facial asymmetry of spontaneous vs. posed emotional expressions. Albuquerque, NM: University of New Mexico;1990. *(Outstanding Psychology Senior Honors Thesis, UNM-1990).*


**Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings**
1. Estrada, A, **Killgore, WD**, Rouse, T, Balkin, TJ, & Wildzunas, RM. Total sleep time measured by actigraphy predicts academic performance during military training [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A134.

2. **Killgore, WD**, Lipizzi, EL, Smith, KL, Killgore, DB, Rupp, TL, Kamimori, GH, & Balkin, TJ. Nonverbal intelligence is inversely related to the ability to resist sleep loss [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A134.


4. Reid, CT, Smith, K, **Killgore, WD**, Rupp, TL, & Balkin, TJ. Higher intelligence is associated with less subjective sleepiness during sleep restriction [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A375.


7. Lipizzi, EL, **Killgore, WD**, Rupp, TL, & Balkin, TJ. Risk-taking behavior is elevated during recovery from sleep restriction [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A376.


20. **Killgore, WD,** Killgore, DB, Kamimori, GH, & Balkin, TJ. When being smart is a liability: More intelligent individuals may be less resistant to sleep deprivation. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.


30. Killgore, DB, **Killgore, WD, Grugle, NL, & Balkin, TJ.** Executive functions predict the ability to sustain psychomotor vigilance during sleep loss. Abstract presented at the 23rd Annual Meeting of the Associated Professional Sleep Societies, Seattle, Washington, June 7-
31. **Killgore, WD, & Yurgelun-Todd, DA.** Trouble falling asleep is associated with reduced activation of dorsolateral prefrontal cortex during a simple attention task. Abstract presented at the 23rd Annual Meeting of the Associated Professional Sleep Societies, Seattle, Washington, June 7-12, 2009.


42. **Killgore, WD, Post, A, & Yurgelun-Todd, DA.** Sex differences in cortico-limbic responses to images of high calorie food. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

43. **Killgore, WD & Yurgelun-Todd, DA.** Self-reported insomnia is associated with increased activation within the default-mode network during a simple attention task. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.


49. **Rupp, TL, Killgore, WD, & Balkin, TJ.** Vulnerability to sleep deprivation is differentially mediated by social exposure in extraverts vs. introverts. Oral presentation at the “Data Blitz” section at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

50. **Rupp, TL, Killgore, WD, & Balkin, TJ.** Extraverts may be more vulnerable than introverts to sleep deprivation on some measures of risk-taking and executive functioning. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

51. **Rupp, TL, Killgore, WD, & Balkin, TJ.** Vulnerability to sleep deprivation is differentially


2011.


**Narrative Report (limit to 500 words)**

My research has emphasized the study of higher order cognition and executive functions and how these cognitive abilities are influenced and guided by subtle affective processes. My early work focused on the perception, experience, and expression of normal and pathological affect, including perceptual asymmetries that occur during visual perception of emotional faces and the clues that these asymmetries provide about the neurobiological substrates of affective processing. In the mid to late 1990s, this work...
focused primarily on the interaction between mood-induced shifts in hemispheric arousal and sex differences in cerebral laterality. These processes were investigated at several levels, ranging from visual-hemifield biases to functional neuroimaging studies of subcortical structures involved in memory and emotion. Over the past 8 years, my research has utilized functional and structural magnetic resonance imaging to study the interaction of affective processes and cognition within limbic networks of the medial temporal lobes and prefrontal cortex. This line of research has led to the refinement of a developmental model of prefrontal cortical-limbic maturation that explains how these processes contribute to the way adolescents perceive emotionally and motivationally relevant stimuli such as affective faces and visual images of food. As a result of the Iraq War, I took an extended leave of absence to serve in the Active Duty Army as the Chief of the Neurocognitive Performance Branch at the Walter Reed Army Institute of Research from 2002-2007. During that time, I extended the scope of my affective processing research to also examine the effects of stressors such as prolonged sleep deprivation, chronic sleep restriction, nutritional deprivation, and the use of stimulant countermeasures on the cognitive-affective systems within the brain. This line of investigation suggests that sleep deprivation alters the metabolic activity within the medial prefrontal cortex, resulting in subtle but profound effects on specific aspects of cognition. These sleep-loss related prefrontal decrements impair the ability to use affective processes to guide judgment and decision-making, particularly in high-risk or morally relevant situations. My recent investigations also suggest that while commonly used stimulants such as caffeine, modafinil, and dextroamphetamine are highly effective at reversing sleep-loss induced deficits in alertness and vigilance, they have virtually no restorative effect on the cognitive-affective decision-making systems of the brain. Having left military service to return to McLean Hospital full time in the summer of 2007, I am now focusing on extending my previous work to identify the extent to which these cognitive-affective decision-making systems and their neurobiological substrates are impaired or altered in patients suffering from affective psychosis and post-traumatic stress.

My recent teaching activities have primarily involved daily supervision and training of student research assistants and occasional seminar presentations. Over the past 5 years, I have closely and regularly mentored more than 25 students at the undergraduate, graduate, and post-doctoral level. This involvement has included one-on-one supervision and training in basic research methods, neuropsychological assessment, statistical analysis, and manuscript preparation. Nearly all of my advisees have served as co-authors on abstracts, posters, talks, and published manuscripts based on my research program.