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14. ABSTRACT

Mild traumatic brain injury (mTBI) is one of the major health problems facing military servicemembers returning from deployments. 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 light treatment being tested in 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.

15. SUBJECT TERMS
TBI, traumatic brain injury, concussion, DTI, white matter, brain imaging, light therapy, neuropsychological performance, neurocognitive performance, sleep

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INTRODUCTION:

Traumatic brain injury (TBI) is a leading cause of morbidity and disability among military personnel, with mild traumatic brain injury (mTBI), or concussion, being among the most common injuries (Hoge et al., 2008). In fact, recent data published by the Defense and Veterans Brain Injury Center (DVBIC) suggests that 82% of TBI cases in the military are mTBI. Fortunately, most of the post-concussive symptoms (PCS) produced by mTBI will resolve within days to weeks after the injury (McCrea et al., 2003). However, for a significant proportion of individuals who sustain a mTBI, persistent PCS may continue for years after their injury and lead to difficulties with work productivity, sleep, physical functioning, and social relationships (Satz et al., 1999). Of these, sleep disruption may be particularly problematic. In fact, sleep disruption is one of the most common complaints in patients with mTBI (Baumann, Werth, Stocker, Ludwig, & Bassetti, 2007; Castriotta et al., 2007; Makley et al., 2008; Parcell, Ponsford, Redman, & Rajaratnam, 2008; Rao et al., 2008; Verma, Anand, & Verma, 2007; Williams, Lazic, & Ogilvie, 2008), with as many as 40 to 65% of patients with mTBI complaining of insomnia (Beetar, Guilmette, & Sparadeo, 1996; Dikmen, McLean, & Temkin, 1986; Orff, Ayalon, & Drummond, 2009). Unfortunately, with the exception of cognitive behavioral therapy, few effective treatments exist to help those with persistent PCS. 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 can be accelerated. Furthermore, non-pharmacologic interventions are generally preferable and more cost effective than reliance upon prescription medications for sleep problems. A potentially effective treatment for the sleep problems common to patients with mTBI is the selective application of bright light. Exposure to bright light, particularly in the blue wavelengths (BL), has been shown to stimulate melanopsin photosensitive ganglion receptors in the retina, which project directly to the suprachiasmatic nucleus of the hypothalamus, a brain structure that regulates sleep-wake cycles (Brainard et al., 2008; Phipps-Nelson, Redman, Schlangen, & Rajaratnam, 2009; Revell & Skene, 2007; Smith, Revell, & Eastman, 2008). Targeted stimulation with morning BL leads to regular entrainment of the circadian rhythm, thereby improving sleep and daytime alertness (Lack, Gradisar, Van Someren, Wright, & Lushington, 2008; Lack & Wright, 2007; Skene, 2003). A recent report confirmed that BL treatment reduced fatigue in patients who experienced mTBI (Ponsford et al., 2012), but no study has directly examined the underlying structural and functional neural plasticity associated with this treatment and its effects on sleep following mTBI. We have recently completed data collection for a pilot study that showed that 6-weeks of daily morning exposure to blue wavelength light (see Figure 1) was more effective that an amber placebo light at improving sleep in people with recent mTBIs.

Accordingly, the current present study involves: 1) an extension of the earlier pilot work in order to ultimately double the initial sample size for both groups to a total of 30 participants each (total N = 60 across the currently active and proposed studies); 2) the addition of a follow-up actigraphic monitoring period for six weeks following the end of treatment for each participant in order to determine the longevity and durability of the treatment effects; and 3) addition of a second smaller arm of the study to examine the acute effects of a single 30-minute exposure to blue-wavelength light versus amber placebo light in a sample of 30 healthy control participants in order to identify the brain regions

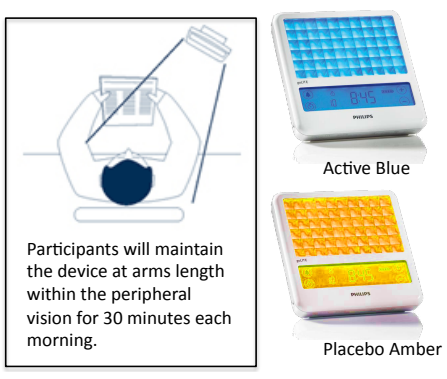


Figure 1. The blue (active) and amber (placebo) light devices.

most affected by blue versus amber light exposure. This *Effect Localization Arm* of the study will provide an independent sample from which to derive focal anatomical regions of interest (ROIs) for in-depth analysis of treatment-associated changes in brain activation and connectivity in the mTBI treatment portion of the study.

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:

Major Task 1. Prepare Regulatory Documents and Research Protocol for both arms of study.

Accomplishments:

- Consistent with the SOW, we have, through several iterations, refined the eligibility criteria, exclusion criteria, and screening procedures, finalized the consent form and human subjects protocol, and submitted these for local IRB approval. The most recent approval of these amendments was on 8/7/15 and did not require HRPO approval, as it was a minor amendment.

Major Task 2. Acquire necessary materials and equipment for EFFECT LOCALIZATION ARM.

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: 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.

Major Task 3. Hire and Train Study Staff.

Accomplishments:

- We have successfully completed the hiring and training of research staff for both the Treatment Arm and Effect Localization Arms of the study. After first hiring 1 postdoctoral fellow, 1 lab manager, and 5 full time Research Assistants (shared effort across several other studies), two additional research technicians and two additional postdoctoral fellows were hired and subsequently trained on study protocols. New research assistant staff members performed reiterative practice of administering assessments and questionnaires involved in the treatment and effect localization arm of the study to obtain high proficiency and reliability. Furthermore, study staff utilized a similar training method to become fully trained in use of the polysomnography (PSG) equipment.
- New Research Assistants were trained by a licensed psychiatrist on the administration and scoring of the MINI. The Research Assistants and post-doctoral fellow were trained by a sleep technician in applying electrodes for polysomnography. All Research Assistants and the post-doctoral fellow were trained by a sleep technician on administering the Modified Sleep Latency Test (MSLT). The Research Assistants also underwent intensive training on administration and scoring of all other assessments and computerized tasks used in the study.
- All personnel were also required to complete additional trainings in the second quarter. These trainings included comprehensive instruction in 1) handling and reporting adverse events, 2) triaging participants who are assessed as being at-risk for suicide, and 3) properly administering TBI interview and assessments pertaining to treatment arm of study. Trainings pertaining to adverse event reporting required attendance at a seminar hosted by our departmental IRB Regulatory Coordinator. Attendance at an informational session and hands-on practice session with the Co-PI were required for suicide triage training.

<u>Major Task 4.</u> Acquire, develop, and/or program the computerized stimulation paradigms for use during functional neuroimaging (i.e., MSIT) for the effect localization arm and treatment arm.

Accomplishments:

- The following computer tasks were programmed: Anticipation Task, Psychomotor Vigilance Test, Go/No Go; Tower of London; Balloon Analogue Risk Task; Multi-Source Interference Task; N-BACK.
- 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.

<u>Major Tasks 5.</u> Acquire necessary equipment, including goLITE devices, polysomography materials, EEG headsets, and actiwatches for the EFFECT LOCALIZATION ARM and TREATMENT ARM.

Accomplishments:

- We have acquired all necessary materials and equipment for the Effect Localization Arm Treatment Arm including the goLITE devices, Spectrum Pro Actiwatches, laptop computers, WattsUp Pro power usage monitors, and assessment tests. Furthermore, an automated system of sleep diary emails has been created to improve efficiency and accuracy of sleep data. The Actiwatches, goLITE devices, WattsUp meters, and automated sleep diary emails have been extensively tested for functionality by all research staff. Sixteen (16) new actiwatches were purchased from Philips Respironics Electronics. 20 Amber (placebo) and 20 blue (treatment) goLITE devices (40 devices in total) were acquired from Philips Respironics Electronics. Fifteen (15) WattsUp Pro ES Power Usage Meters were also purchased from Watts Up.
- The Actiwatches have been received and extensively tested for functionality by all research staff. Three of sixteen new Actiwatches were discovered to be nonfunctional during this process and are being returned to the manufacturer for repair or replacement.
- Two EEG headsets (Emotiv EPOC+) were acquired, both of which were funded by a separate intermural grant from the University of Arizona.
- Finally, the PSG equipment, on loan from another lab, has also been acquired and set up. All research staff has undergone extensive training to successfully administer modified sleep latency tests (MSLTs) and basic polysomnography.

Major Task 6. Collect Data for Effect Localization Arm

Accomplishments:

Recruitment

- We are ahead of the SOW schedule with regard to collecting data for the Effect Localization Arm. Our recruitment for consisted of flyering on the University of Arizona campus and utilizing online social media tools such as Facebook.

Enrollment

- We first completed data collection for 33 participants, which represents 100% of the total data collection originally planned in our SOW. Unfortunately, problems with regard to participants incorrectly answering items during the screening process yielded a higher number of unusable datasets than planned. Accordingly, we requested a modest increase in enrollment to allow for collection of six (6) additional datasets to replace those we found to be unusable. To these ends, we requested the appropriate enrollment increase from the local IRB and, upon receiving approval, have successfully enrolled and concluded data collection for all individuals enrolled in the effect localization arm of the study.
- Data collection for the Effect Localization Arm of the study is complete.

Data Analysis

- We conducted pre-processing and quality control inspection of fMRI, DTI, and MRI neuroimaging data for all subjects in the Effect Localization Arm. We performed statistical analyses of fMRI data using SPM8 to identify regions particularly responsive to acute blue light (t-test comparing placebo vs. active treatment). In particular, we have been investigating differences in functional brain activation in response to a working memory task between the blue and amber light conditions. Also, we conducted further analyses on differences in functional brain responses during “certain” anticipation of positive pictures and “uncertain” anticipation of negative or positive pictures. Study staff has conducted MATLAB scripting and pre-processing in preparation for final analysis of electroencephalographic (EEG) data collected during light exposure sessions. Other biological and behavioral data have also been

analyzed, including: melatonin levels, actigraphy, heart rate variability (HRV), neuropsychological assessments, and questionnaires.

Major Task 7. Collect Data for TREATMENT ARM

Accomplishments:

Recruitment

- We have established relationships with several medical facilities across the city of Tucson including Banner University Medical Center, Tucson Medical Center, Southern Arizona VA Health Care System, Western Neurosurgery, Green Valley Physicians office, La Cholla Physicians Office, and sixteen (16) physical/sport therapy offices. We have further made contact with local traumatic brain injury support groups, visited local brain injury rehabilitation centers, made social media announcements, flyered across the University of Arizona Campus and downtown Tucson areas, and used the Banner University Medical Center television announcements. We have additionally established relationships with club sports teams at the University including ice hockey, soccer, rugby, and lacrosse. Finally, we have begun the process of developing collaborative referral systems with the Tucson Police Department, along with Banner University Medical Center ER and Trauma centers. Over the course of our advertising, we have distributed recruitment materials to over 73 locations across Tucson and nearby cities. We have also started participant phone recruitment and have thus far screened 178 mild TBI participants (97 males and 81 females), 8 of which were deemed eligible, all of which have been scheduled for their screening visits. Two of these 8 individuals were deemed ineligible subsequent to their enrollment, due to failure to provide head injury documentation.
- One major challenge has been obtaining head injury documentation for eligible participants, which we require in order for them to become fully enrolled subjects. We have addressed this issue by recently incorporating a generic electronic template form that can be signed by injury witnesses (e.g. coaches, physical therapists/ athletic trainers, or medical professionals).

Preliminary Findings from the EFFECT LOCALIZATION ARM:

Neuroimaging findings

N-back task

- Consistent long-term exposure to blue enriched white light has been associated with increases in self-reported alertness, concentration, work performance and decreases in fatigue and sleepiness. The aim of this study was to investigate whether a short single exposure to blue light would lead to measurable changes in functional brain responses during a working memory task. Thirty-five healthy 18-32 year olds (15 females, mean age = 21.79) were randomized to receive a 30-minute exposure to either blue (active) (n=14) or amber (placebo) light (n=15), immediately followed by a

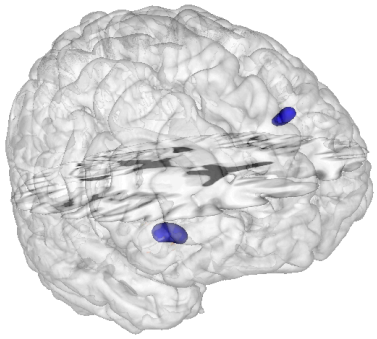


Figure 2. Brain responses within the left DLPFC (MNI: x = -50, y = 14, z = 22) and right VLPFC (MNI: x = 34, y = 20, z = -6) were significantly greater in the blue versus the placebo light group during the two back> zero back condition.

working memory task (N-Back task) during functional magnetic resonance imaging (fMRI). In contrast to placebo, participants in the blue light group showed significantly greater activation within the dorsolateral prefrontal cortex (DLPFC) and the ventrolateral prefrontal cortex (VLPFC) with increases in working memory load (two back>zero back) (see Figure 2). Participants in the blue group responded faster during the one- ($t(33) = -2.26$, p=.03) and two-back conditions ($t(33) = -1.98$, $p = .05$) than participants in the placebo group, and showed enhanced throughput (i.e., responded correctly to more items per second) during the one-back ($t(33) = -2.57$, p =.01), and two-back conditions ($t(33) = -1.92$, p =.06). In addition, with increases in activation within the VLPFC, participants showed faster reaction times ($r = -.35$, $p = .04$) and more efficient responding ($r = .40$, $p = .01$) during the two-back condition (see Figure 3). The results suggest that a short single exposure to blue light is sufficient to produce measurable changes within the DLPFC and VLPFC, brain areas recruited during heavy cognitive load. This may explain why previous studies have reported increases in subjective alertness and performance after long-term blue light exposure.

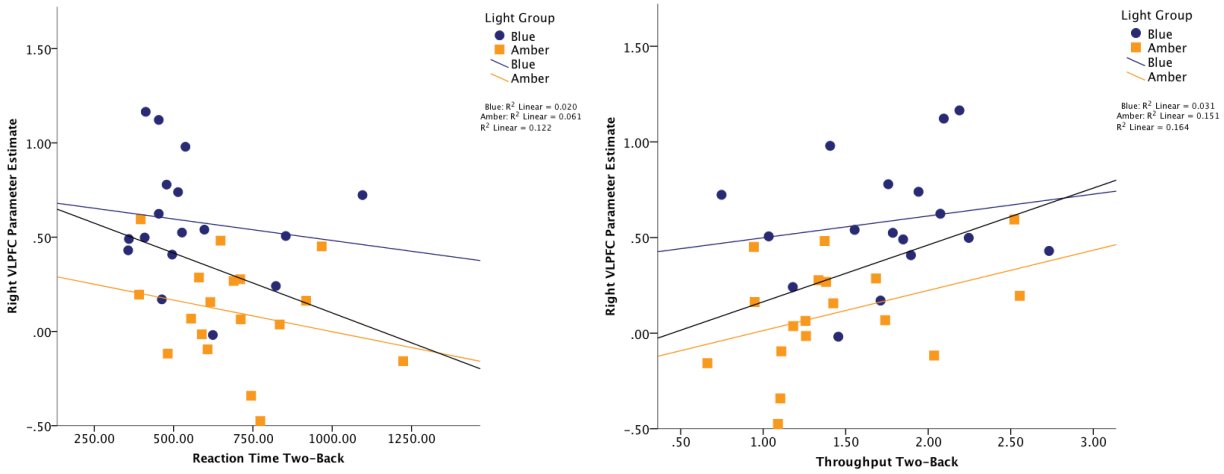


Figure 3. The scatterplots illustrate the association between the first extracted cluster eigenvariate of the right VLPFC and reaction time during the two-back condition (a), and throughput during the two-back condition (b).

Change in Melatonin Concentration and Neuroanatomical Activation

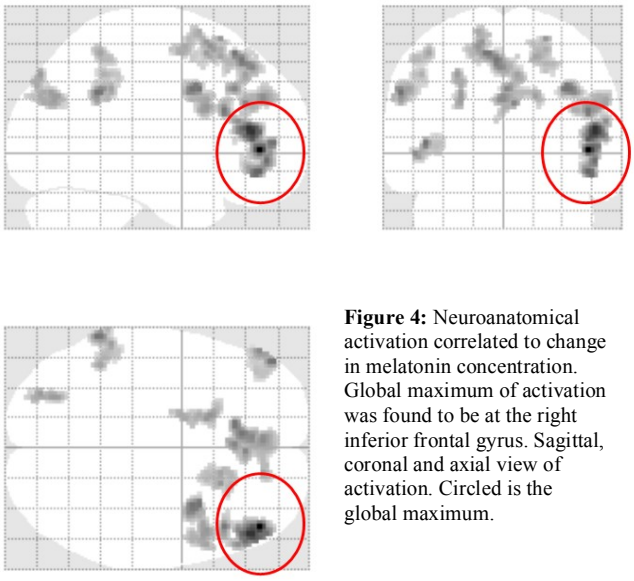


Figure 4: Neuroanatomical activation correlated to change in melatonin concentration. Global maximum of activation was found to be at the right inferior frontal gyrus. Sagittal, coronal and axial view of activation. Circled is the global maximum.

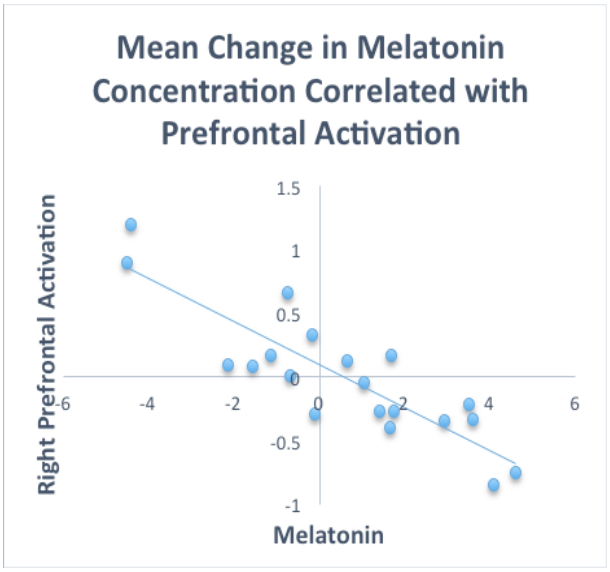


Figure 5: Graph illustrating the correlation and change in mean melatonin at the global maximum.

- Melatonin collections at Time 2 and Time 3 were averaged for all participants to obtain the mean change in melatonin concentration during the time in the scanner. These values were then tested for association with brain activation using the two-back > zero-back contrast from the NBACK. No regions showed any positive correlation between the average melatonin concentration and activation. On the other hand, there was significant negative association between melatonin concentration and activation in several brain areas, including bilateral prefrontal cortex and dorsal anterior cingulate gyrus. The most significantly correlated regions was the right inferior frontal gyrus (K= 714 voxels, T = 7.41, p<.001 (uncorrected), MNI: x = 46, y = 42, z = 0). The areas with the highest and most significant association are illustrated in Figure 4 and 5, with circles around the global maximum. The negative correlation between activation and change in mean melatonin is illustrated in Figure 6, suggesting that higher melatonin concentrations were significantly associated with lower brain activation in dorsolateral prefrontal control regions.

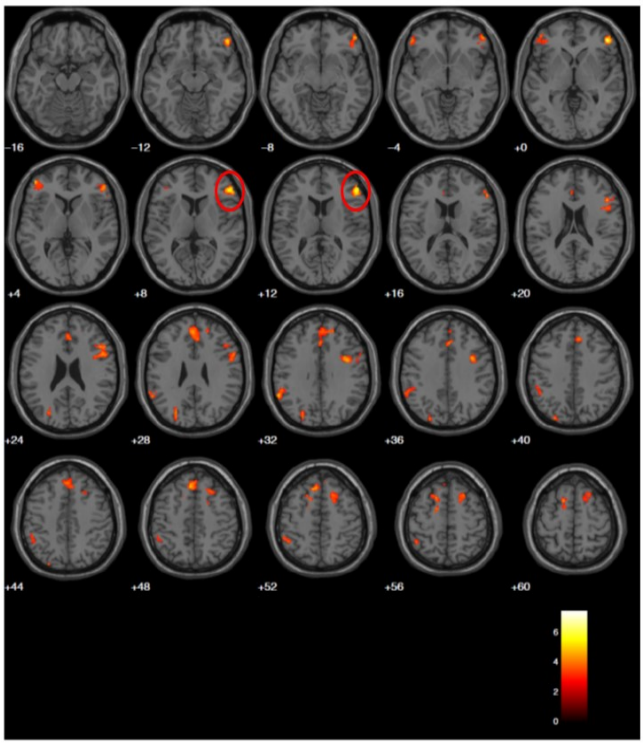


Figure 6: Axial slices at 4mm illustrating activation associated with melatonin concentration change. Global maximum illustrated in slices +8 and +12. (MNI: 46, 42, 00)

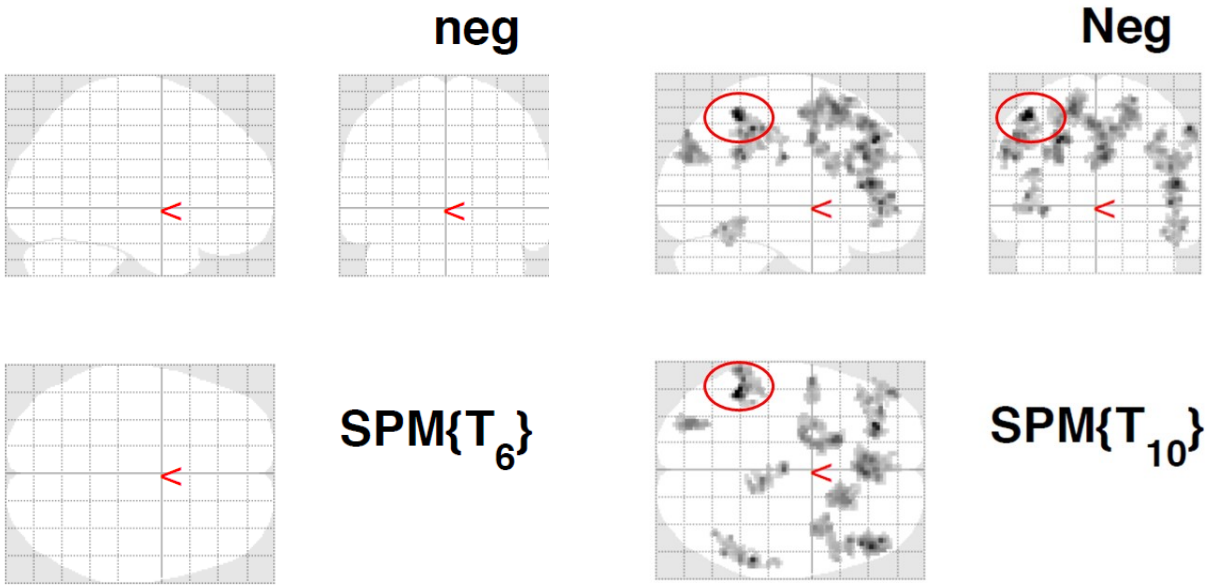
- 

Figure 7: Left: Amber light group test for association between melatonin change and activation. Image illustrates t h e lack of significant areas. Right: Three directional view illustrating blue group brain activation. Circled area is the global maximum (MNI: x = -46, y = -50, z = 54).

se correlations separately according to their respective light exposure groups to determine if one group contributed more to this correlation than another. In both groups, there were no positive correlations between mean change in melatonin concentration and neuroanatomical activation, just as reported previously for the entire sample. With regard to negative correlations, the amber light group also revealed no significant negative association with melatonin as seen in Figure 7.

- The blue light group, however, did show a significant negative correlation between melatonin concentration change and neuroanatomical activation in widespread frontal and parietal cortical regions. The global maximum of this analysis was found in the left inferior parietal cortex (K= 371 voxels, T = 9.57, p<.000 (uncorrected), MNI: x = -46, y = -50, z = 54). There were also several large clusters of negatively correlated activation near the right inferior frontal gyrus, just as was seen when evaluating melatonin across both groups.

Anticipation task

- Blue wavelength light has been used as an effective treatment for some types of mood disorders, including depression and seasonal affective disorder. The neurobiological mechanism behind this effect, however, remains unclear. One possible explanation for this effect may be that blue light influences the functioning within the emotion-regulating

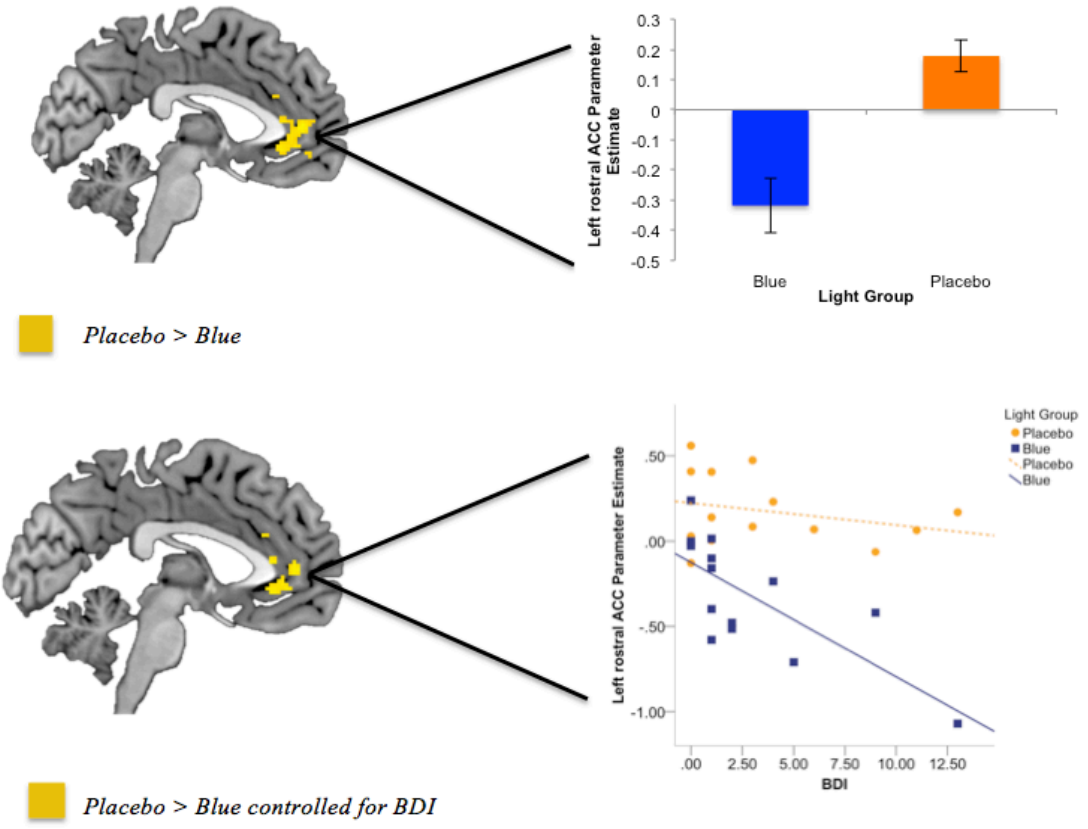


Figure 8. Brain responses within the left rostral ACC (MNI: x=-6, y=4-, z=10) were significantly greater in the placebo (amber) versus blue light group during anticipation. The bar graph illustrates the difference in the first extracted unadjusted cluster eigenvariate between the two groups. In addition, when controlling for BDI scores, the scatterplot illustrates the relationship between BDI scores and the first extracted cluster eigenvariate sorted by light group. There was a significant relationship between BDI scores and rostral ACC activation within the blue light group only.

neurocircuitry when processing emotional stimuli. We hypothesized that acute exposure to blue wavelength light would directly affect the functioning of the ventromedial prefrontal cortex, amygdala, insula, and anterior cingulate cortex (ACC) during an emotional anticipation task. Twenty-nine healthy adults were randomized to receive a thirty-minute exposure to either blue (active) or amber (placebo) light, immediately followed by an emotional anticipation task during functional magnetic resonance imaging (fMRI). Participants also reported on their depressive symptoms using the Beck Depression Inventory (BDI-II). Figure 8 shows that after analyzing differences in functional brain responses during certain anticipation of positive pictures and uncertain anticipation of negative or positive pictures, results showed that participants who were exposed to blue versus amber light showed reduced activation within three regions of the anterior cingulate cortex (ACC), a region hyperresponsive during anticipation of negative stimuli in individuals with depression, during uncertain anticipation of negative or positive pictures in comparison to certain anticipation of positive pictures (68 voxels, $p = .003$, $t = 4.46$, $x = -6$, $y = 40$, $z = 10$ and 78 voxels, $p = .003$, cluster-level FDR corrected $t = 4.35$, $x = 0$, $y = 38$, $z = -2$; 29 voxels, $p = .03$, cluster-level FDR corrected, $t = 4.57$, $x = -6$, $y = 34$, $z = 26$). When controlling for Beck Depression Inventory (BDI) scores in the analysis, the difference between the amber versus the blue light group was particularly pronounced for a large cluster within the rostral ACC (278 voxels, $p<.001$, cluster-level FDR corrected, $t = 5.10$, $x = -6$, $y = 42$, $z = 10$) and to a lesser extent, the dorsal ACC (30 voxels, $p = .04$, cluster-level FDR corrected, $t = 4.46$, $x = -6$, $y = 34$, $z = 26$). In order to explore the effects of BDI scores on activation within the rostral ACC, we extracted the activation for the cluster eigenvariate and compared the slopes of the blue versus amber light group depending on their BDI scores. The slopes between the amber ($b = -.015$, $SE = .012$) and blue group ($b = -.054$, $SE = .014$) for the association between BDI scores and activation for the left rostral ACC cluster eigenvariate were significantly different ($p = .04$) .The results show a correlation between BDI scores and rostral ACC activation for the blue light group, but not the placebo light group. The findings suggest that blue light may lead to suppression of emotional brain responses during anticipation of uncertain outcomes. The fact that this effect was most pronounced among individuals with greater depressive symptoms may point to one potential neurobiological mechanism by which light exposure improves mood.

- **Electroencephelographic (EEG) Findings**

  Resting State EEG

- Preliminary repeated-measures ANOVA of resting-state EEG data has revealed greater Left-Right hemispheric alpha frequency asymmetry in the Blue versus Amber Light Conditions ($p = .05$) after twenty minutes of continuous light exposure, but not at 10 minutes during the exposure. Since this analysis was only conducted on 15 participants so far of the 25 participants with usable EEG datasets, further analysis will be necessary to elucidate the precise nature of these relationships and their overall significance in the context of the light treatment's underlying mechanisms of action.

CONCLUSION:

The study is progressing extremely well. Although the initiation of data collection was slowed temporarily due to delays in obtaining the several study materials including the new Actiwatch Pro series actigraphs, various paper assessments, and polysomnographic MSLT equipment from the

manufacturers, all needed materials for the entire duration of the study have now been acquired. Data collection was completed ahead of schedule for the Effect Localization Arm, and is currently well underway for the Treatment Arm. Our preliminary findings from the Effect Localization Arm suggest that, as hypothesized, blue light exposure produces observable changes within the brain during a single exposure to morning Bright Blue Light versus comparable Amber Light Placebo. Furthermore, initial comparisons using fMRI tasks also suggest that the Bright Blue Light condition was effective in altering brain responses associated with working memory function specifically, whereas such changes were not evident in the Amber Light Placebo condition. Importantly, prefrontal activation during this task is also related to melatonin suppression. Overall, the regional activations we identified will serve as preliminary regions of interest for the neuroimaging components of the Treatment Arm. Finally, we have demonstrated that exposure to Blue Light, but not Amber Light, is associated with significant effects on affective responding—specifically, blue light may regulate activation within brain regions that are usually hyper-responsive during anticipation of uncertain threat cues in individuals with higher levels of depressive mood. These data have been written up and submitted for presentation at the International Neuropsychological Society Meeting, scheduled for February 3-6, 2016. Regarding the Treatment Arm, our recruitment is on track and continuing as planned. Given the effectiveness of our advertising and recruitment efforts thus far, we anticipate both meeting and exceeding our anticipated recruitment goals during the next quarter, as well as reporting on preliminary Treatment-Arm findings.

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APPENDICES: **Page**

Bright Light Therapy for Treatment of Sleep Problems Following Mild TBI

Study Tasks and Assessments

Questionnaires and Clinical Interviews

Mini-International Neuropsychiatric Interview (MINI)
Patient health questionnaire (PHQ)
Rivermead Post-Concussion Symptoms Questionnaire (RPCSQ)
VA National Traumatic Brain Injury Neurobehavioral Symptom Inventory (NSI)
Screen Time Questionnaire (STQ)

Personality and Mood Scales

Personality Assessment Inventory (PAI)
Beck Depression Inventory (BDI)
Spielberger State-Trait Anxiety Inventory (STAI)

Risk Taking Scales

Evaluation of Risks Scale (EVAR)
Invincibility Beliefs Index (IBI)

Sleepiness Scales

Day of Scan Questionnaire
Morningness-Eveningness Questionnaire (MEQ)
Stanford Sleepiness Scale (SSS)
Pittsburgh Sleep Quality Index (PSQI)
Functional Outcome of Sleep Questionnaire (FOSQ)

Neuropsychological Tasks

ANAM4 Battery
Repeatable Battery for the Assessment of Neuropsychological Status (RBANS)
Psychomotor Vigilance Test (PVT)
Balloon Analog Risk Task (BART)
Go/No-Go Task (GNG)
Tower of London (TOL)
Wechsler Abbreviated Scale of Intelligence II (WASI II)
California Verbal Learning Test (CVLT)

FMRI Tasks

Multi-Source Interference Task (MSIT)
N-Back Task

M.I.N.I.

MINI INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW

English Version 6.0.0

DSM-IV

USA: **D. Sheehan[1], J. Janavs, K. Harnett-Sheehan, M. Sheehan, C. Gray.**
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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)

		Patient Number:	
		Time Interview Began:	
Interviewer's Name:		***Time Interview Ended:***	
Date of Interview:		***Total Time:***	

	MODULES	TIME FRAME	MEETS CRITERIA	DSM-IV-TR	ICD-10	PRIMARY DIAGNOSIS
A	MAJOR DEPRESSIVE EPISODE	Current (2 weeks)	☐	296.20-296.26 Single	F32.x	☐
		Past	☐	296.20-296.26 Single	F32.x	☐
		Recurrent	☐	296.30-296.36 Recurrent	F33.x	☐
B	SUICIDALITY	Current (Past Month) ☐ Low ☐ Moderate ☐ High	☐			
C	MANIC EPISODE	Current	☐	296.00-296.06	F30.x-F31.9	☐
		Past	☐			
	HYPOMANIC EPISODE	Current	☐	296.80-296.89	F31.8-F31.9/F34.0	☐
		Past	☐			
	BIPOLAR I DISORDER	Current	☐	296.0x-296.6x	F30.x-F31.9	☐
		Past	☐	296.0x-296.6x	F30.x-F31.9	☐
	BIPOLAR II DISORDER	Current	☐	296.89	F31.8	☐
		Past	☐	296.89	F31.8	☐
	BIPOLAR DISORDER NOS	Current	☐	296.80	F31.9	☐
		Past	☐	296.80	F31.9	☐
D	PANIC DISORDER	Current (Past Month)	☐	300.01/300.21	F40.01-F41.0	☐
		Lifetime	☐			
E	AGORAPHOBIA	Current	☐	300.22	F40.00	☐
F	SOCIAL PHOBIA (Social Anxiety Disorder)	Current (Past Month)				
		Generalized	☐	300.23	F40.1	☐
		Non-Generalized	☐	300.23	F40.1	☐
G	OBSESSIVE-COMPULSIVE DISORDER	Current (Past Month)	☐	300.3	F42.8	☐
H	POSTTRAUMATIC STRESS DISORDER	Current (Past Month)	☐	309.81	F43.1	☐
I	ALCOHOL DEPENDENCE	Past 12 Months	☐	303.9	F10.2x	☐
	ALCOHOL ABUSE	Past 12 Months	☐	305.00	F10.1	☐
J	SUBSTANCE DEPENDENCE (Non-alcohol)	Past 12 Months	☐	304.00-.90/305.20-.90	F11.1-F19.1	☐
	SUBSTANCE ABUSE (Non-alcohol)	Past 12 Months	☐	304.00-.90/305.20-.90	F11.1-F19.1	☐
K	PSYCHOTIC DISORDERS	Lifetime	☐	295.10-295.90/297.1/	F20.xx-F29	☐
		Current	☐	297.3/293.81/293.82/ 293.89/298.8/298.9		
	MOOD DISORDER WITH	Lifetime	☐	296.24/296.34/296.44	F32.3/F33.3/	☐
	PSYCHOTIC FEATURES	Current	☐	296.24/296.34/296.44	F30.2/F31.2/F31.5 F31.8/F31.9/F39	☐
L	ANOREXIA NERVOSA	Current (Past 3 Months)	☐	307.1	F50.0	☐
M	BULIMIA NERVOSA	Current (Past 3 Months)	☐	307.51	F50.2	☐
	ANOREXIA NERVOSA, BINGE EATING/PURGING TYPE	Current	☐	307.1	F50.0	☐
N	GENERALIZED ANXIETY DISORDER	Current (Past 6 Months)	☐	300.02	F41.1	☐
O	MEDICAL, ORGANIC, DRUG CAUSE RULED OUT		☐ No	☐ Yes ☐Uncertain		
P	ANTISOCIAL PERSONALITY DISORDER	Lifetime	☐	301.7	F60.2	☐

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:

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A. MAJOR DEPRESSIVE EPISODE

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

A1	a	Were you ever depressed or down, most of the day, nearly every day, for two weeks?	NO	YES
		IF NO, CODE NO TO **A1b**: IF **YES** ASK:		
	b	For the past two weeks, were you depressed or down, most of the day, nearly every day?	NO	YES
A2	a	Were you ever 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?	NO	YES
		IF NO, CODE NO TO **A2b**: IF **YES** ASK:		
	b	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?	NO	YES
		➡ IS **A1a** OR **A2a** CODED **YES**?	NO	YES

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:

		Past 2 Weeks		Past Episode	
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)? IF **YES** TO EITHER, CODE **YES**.	NO	YES	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	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	NO	YES
d	Did you feel tired or without energy almost every day?	NO	YES	NO	YES
e	Did you feel worthless or guilty almost every day?	NO	YES	NO	YES
	IF **YES**, ASK FOR EXAMPLES. THE EXAMPLES ARE CONSISTENT WITH A DELUSIONAL IDEA. Current Episode ❒ No ❒ Yes; Past Episode ❒ No ❒ Yes				
f	Did you have difficulty concentrating or making decisions almost every day?	NO	YES	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? IF **YES TO EITHER, CODE YES.**	NO	YES	NO	YES
A4	Did these symptoms cause significant problems at home, at work, socially, at school or in some other important way?	NO	YES	NO	YES

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? NO YES

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.

NO	**YES**
MAJOR DEPRESSIVE EPISODE	
CURRENT	❒
PAST	❒
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

				Points
	In the past month did you:			
B1	Suffer any accident? IF NO TO B1, SKIP TO B2; IF YES, ASK B1a:	NO	YES	0
B1a	Plan or intend to hurt yourself in that accident either actively or passively (e.g. not avoiding a risk)? IF NO TO B1a, SKIP TO B2: IF YES, ASK B1b:	NO	YES	0
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? IF NO TO B5, SKIP TO B7. OTHERWISE ASK:	NO	YES	6

Frequency		Intensity	
Occasionally	❒	Mild	❒
Often	❒	Moderate	❒
Very often	❒	Severe	❒

	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 ❒ Expected / intended to die ❒	NO	YES	9
	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:

NO **YES**

SUICIDALITY CURRENT

1-8 points	Low	❒
9-16 points	Moderate	❒
≥ 17 points	High	❒

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)? NO YES

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.) NO YES

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? NO YES

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? NO YES

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

b Are you currently feeling persistently irritable? NO YES

➡

IS **C1a** OR **C2a** CODED **YES**? NO YES

C3 IF **C1b** OR **C2b** = **YES**: EXPLORE THE **CURRENT** AND THE MOST SYMPTOMATIC **PAST** EPISODE, OTHERWISE
IF **C1b** AND **C2b** = **NO**: EXPLORE ONLY THE MOST SYMPTOMATIC **PAST** EPISODE

During the times when you felt high, full of energy, or irritable did you:

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

		Current Episode		Past Episode	
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: NO YES NO YES

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.

NO **YES**

MANIC EPISODE

CURRENT ❒
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.

NO **YES**

HYPOMANIC EPISODE

CURRENT ❒
PAST ❒

ARE **C3** SUMMARY AND **C4a** CODED **YES** AND IS **C5** CODED **NO**? **NO** **YES**

HYPOMANIC SYMPTOMS

SPECIFY IF THE EPISODE IS CURRENT AND / OR PAST.

CURRENT ❒
PAST ❒

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)

D1	a	Have you, on more than one occasion, had spells or attacks when you **suddenly** felt anxious, frightened, uncomfortable or uneasy, even in situations where most people would not feel that way?	➡ NO	YES
	b	Did the spells surge to a peak within 10 minutes of starting?	➡ NO	YES
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?	➡ NO	YES
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)?	NO	YES
D4		**During the worst attack that you can remember:**		
	a	Did you have skipping, racing or pounding of your heart?	NO	YES
	b	Did you have sweating or clammy hands?	NO	YES
	c	Were you trembling or shaking?	NO	YES
	d	Did you have shortness of breath or difficulty breathing?	NO	YES
	e	Did you have a choking sensation or a lump in your throat?	NO	YES
	f	Did you have chest pain, pressure or discomfort?	NO	YES
	g	Did you have nausea, stomach problems or sudden diarrhea?	NO	YES
	h	Did you feel dizzy, unsteady, lightheaded or faint?	NO	YES
	i	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?	NO	YES
	j	Did you fear that you were losing control or going crazy?	NO	YES
	k	Did you fear that you were dying?	NO	YES
	l	Did you have tingling or numbness in parts of your body?	NO	YES
	m	Did you have hot flushes or chills?	NO	YES
D5		ARE BOTH **D3,** AND **4** OR MORE **D4** ANSWERS, CODED **YES**? IF YES TO D5, SKIP TO D7.	NO	YES *PANIC DISORDER LIFETIME*
D6		IF **D5** = **NO,** ARE ANY D4 ANSWERS CODED **YES**? THEN SKIP TO **E1.**	NO	YES *LIMITED SYMPTOM ATTACKS LIFETIME*

D7 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

PANIC DISORDER CURRENT

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

AGORAPHOBIA CURRENT

IS **E2** (CURRENT AGORAPHOBIA) CODED **YES**

and

IS **D7** (CURRENT PANIC DISORDER) CODED **YES**?

NO **YES**

PANIC DISORDER with Agoraphobia CURRENT

IS **E2** (CURRENT AGORAPHOBIA) CODED **NO**

and

IS **D7** (CURRENT PANIC DISORDER) CODED **YES**?

NO **YES**

PANIC DISORDER without Agoraphobia CURRENT

IS **E2** (CURRENT AGORAPHOBIA) CODED **YES**

and

IS **D5** (PANIC DISORDER LIFETIME) CODED **NO**?

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?		

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 OPERATIONALIZED TO MEAN 4 OR MORE SOCIAL SITUATIONS, ALTHOUGH THE DSM-IV DOES NOT EXPLICITLY STATE THIS.

NO **YES**

SOCIAL PHOBIA
(Social Anxiety Disorder)
CURRENT

GENERALIZED ❒

NON-GENERALIZED ❒

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 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.)

(DO NOT INCLUDE SIMPLY EXCESSIVE WORRIES ABOUT REAL LIFE PROBLEMS. DO NOT INCLUDE OBSESSIONS DIRECTLY RELATED TO EATING DISORDERS, SEXUAL DEVIATIONS, PATHOLOGICAL GAMBLING, OR ALCOHOL OR DRUG ABUSE BECAUSE THE PATIENT MAY DERIVE PLEASURE FROM THE ACTIVITY AND MAY WANT TO RESIST IT ONLY BECAUSE OF ITS NEGATIVE CONSEQUENCES.)

NO YES
↓
SKIP TO **G4**

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

NO YES
↓
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?

NO YES
obsessions

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?

NO YES
compulsions

➡

IS **G3** OR **G4** CODED **YES**?

NO YES

➡

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

NO YES

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?

NO **YES**

O.C.D. CURRENT

H. POSTTRAUMATIC STRESS DISORDER

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

H1	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? 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.	➡ NO	YES
H2	Did you respond with intense fear, helplessness or horror?	➡ NO	YES
H3	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	YES

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**?	➡ NO	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**?	➡ NO	YES

H6	During the past month, have these problems significantly interfered with your work, school or social activities, or caused significant distress?	**NO** **YES** ***POSTTRAUMATIC STRESS DISORDER CURRENT***

I. ALCOHOL DEPENDENCE / ABUSE

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

		➡	
I1	**In the past 12 months**, have you had 3 or more alcoholic drinks, - within a 3 hour period, - on 3 or more occasions?	NO	YES

I2 **In the past 12 months**:

a	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?	NO	YES
b	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, "the shakes", sweating or agitation) or to avoid being hungover? IF **YES** TO ANY, CODE **YES**.	NO	YES
c	During the times when you drank alcohol, did you end up drinking more than you planned when you started?	NO	YES
d	Have you tried to reduce or stop drinking alcohol but failed?	NO	YES
e	On the days that you drank, did you spend substantial time in obtaining alcohol, drinking, or in recovering from the effects of alcohol?	NO	YES
f	Did you spend less time working, enjoying hobbies, or being with others because of your drinking?	NO	YES
g	If your drinking caused you health or mental problems, did you still keep on drinking?	NO	YES

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.

NO	YES*

ALCOHOL DEPENDENCE
CURRENT

I3 **In the past 12 months:**

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**?

NO	YES
	ALCOHOL ABUSE **CURRENT**

J. SUBSTANCE DEPENDENCE / ABUSE (NON-ALCOHOL)

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

Now I am going to show you / read to you a list of street drugs or medicines.

			➡	
J1	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?	NO	YES

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.

J2 **Considering your use of (NAME THE DRUG / DRUG CLASS SELECTED), in the past 12 months:**

	a	Have you found that you needed to use much more (NAME OF DRUG / DRUG CLASS SELECTED) to get the same effect that you did when you first started taking it?	NO	YES
	b	When you reduced or stopped using (NAME OF DRUG / DRUG CLASS SELECTED), did you have withdrawal symptoms (aches, shaking, fever, weakness, diarrhea, nausea, sweating, heart pounding, difficulty sleeping, or feeling agitated, anxious, irritable, or depressed)? Did you use any drug(s) to keep yourself from getting sick (withdrawal symptoms) or so that you would feel better?	NO	YES
		IF **YES** TO EITHER, CODE **YES**.		
	c	Have you often found that when you used (NAME OF DRUG / DRUG CLASS SELECTED), you ended up taking more than you thought you would?	NO	YES
	d	Have you tried to reduce or stop taking (NAME OF DRUG / DRUG CLASS SELECTED) but failed?	NO	YES
	e	On the days that you used (NAME OF DRUG / DRUG CLASS SELECTED), did you spend substantial time (>2 HOURS), obtaining, using or in recovering from the drug, or thinking about the drug?	NO	YES
	f	Did you spend less time working, enjoying hobbies, or being with family or friends because of your drug use?	NO	YES
	g	If (NAME OF DRUG / DRUG CLASS SELECTED) caused you health or mental problems, did you still keep on using it?	NO	YES

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.

NO	**YES ***

SUBSTANCE DEPENDENCE
CURRENT

Considering your use of (NAME THE DRUG CLASS SELECTED), in the past 12 months:

J3	a	Have you been intoxicated, high, or hungover 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? (CODE **YES** ONLY IF THIS CAUSED PROBLEMS.)	NO	YES
	b	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.)?	NO	YES
	c	Did you have legal problems more than once because of your drug use, for example, an arrest or disorderly conduct?	NO	YES
	d	If (NAME OF DRUG / DRUG CLASS SELECTED) caused problems with your family or other people, did you still keep on using it?	NO	YES

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

SPECIFY DRUG(S): _____

NO	**YES**

SUBSTANCE ABUSE
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.			BIZARRE
K1	a	Have you ever believed that people were spying on you, or that someone was plotting against you, or trying to hurt you? **NOTE**: ASK FOR EXAMPLES TO RULE OUT ACTUAL STALKING.	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES →**K6**
K2	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?	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES →**K6**
K3	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? CLINICIAN: ASK FOR EXAMPLES AND DISCOUNT ANY THAT ARE NOT PSYCHOTIC.	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES →**K6**
K4	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?	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES →**K6**
K5	a	Have your relatives or friends ever considered any of your beliefs odd or unusual? INTERVIEWER**:** ASK FOR EXAMPLES. ONLY CODE **YES** IF THE EXAMPLES ARE **CLEARLY** DELUSIONAL IDEAS NOT EXPLORED IN QUESTIONS K1 TO K4, FOR EXAMPLE, SOMATIC OR RELIGIOUS DELUSIONS OR DELUSIONS OF GRANDIOSITY, JEALOUSY, GUILT, RUIN OR DESTITUTION, ETC.	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do they currently consider your beliefs strange?	NO	YES	YES
K6	a	Have you ever heard things other people couldn't hear, such as voices?	NO	YES	
		IF YES TO VOICE HALLUCINATION: Was the voice commenting on your thoughts or behavior or did you hear two or more voices talking to each other?	NO		YES
	b	**IF YES OR YES BIZARRE TO K6a:** have you heard sounds / voices in the past month?	NO	YES	
		IF YES TO VOICE HALLUCINATION: Was the voice commenting on your thoughts or behavior or did you hear two or more voices talking to each other?	NO		YES →**K8b**

K7 a Have you ever had visions when you were awake or have you ever seen things other people couldn't see? NO YES

CLINICIAN: CHECK TO SEE IF THESE ARE CULTURALLY INAPPROPRIATE.

b **IF YES:** have you seen these things in the past month? NO YES

CLINICIAN'S JUDGMENT

K8 b IS THE PATIENT CURRENTLY EXHIBITING INCOHERENCE, DISORGANIZED SPEECH, OR MARKED LOOSENING OF ASSOCIATIONS? NO YES

K9 b IS THE PATIENT CURRENTLY EXHIBITING DISORGANIZED OR CATATONIC BEHAVIOR? NO YES

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? NO YES

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**? NO YES
↳ **K13**

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 **K1**a TO **K7**a) 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

NO **YES**

MOOD DISORDER WITH *PSYCHOTIC FEATURES*

LIFETIME

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.

NO **YES**

MOOD DISORDER WITH *PSYCHOTIC FEATURES*

CURRENT

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?

NO **YES**

PSYCHOTIC DISORDER
CURRENT

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?

NO **YES**

PSYCHOTIC DISORDER
LIFETIME

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/M^2

Height/Weight														
ft/in	4'9	4'10	4'11	5'0	5'1	5'2	5'3	5'4	5'5	5'6	5'7	5'8	5'9	5'10
lbs.	81	84	87	89	92	96	99	102	105	108	112	115	118	122
cm	145	147	150	152	155	158	160	163	165	168	170	173	175	178
kgs	37	38	39	41	42	43	45	46	48	49	51	52	54	55

Height/Weight					
ft/in	5'11	6'0	6'1	6'2	6'3
lbs.	125	129	132	136	140
cm	180	183	185	188	191
kgs	57	59	60	62	64

The weight thresholds above are calculated using a body mass index (BMI) equal to or below 17.5 kg/m^2 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

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

M1	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?	➡ NO	YES
M2	In the last 3 months, did you have eating binges as often as twice a week?	➡ NO	YES
M3	During these binges, did you feel that your eating was out of control?	➡ NO	YES
M4	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?	➡ NO	YES
M5	Does your body weight or shape greatly influence how you feel about yourself?	➡ NO	YES
M6	DO THE PATIENT'S SYMPTOMS MEET CRITERIA FOR ANOREXIA NERVOSA?	NO	YES ↓ Skip to M8
M7	Do these binges occur only when you are under (____lbs./kgs.)? INTERVIEWER: WRITE IN THE ABOVE PARENTHESIS THE THRESHOLD WEIGHT FOR THIS PATIENT'S HEIGHT FROM THE HEIGHT / WEIGHT TABLE IN THE ANOREXIA NERVOSA MODULE.	NO	YES

M8 IS **M5** CODED **YES** AND IS EITHER **M6** OR **M7** CODED **NO**?

NO **YES**

BULIMIA NERVOSA
CURRENT

IS **M7** CODED **YES**?

NO **YES**

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)

N1	a	Were you excessively anxious or worried about several routine things, over the past 6 months? 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.	➡ NO	YES
	b	Are these anxieties and worries present most days?	➡ NO	YES
		ARE THE PATIENT'S ANXIETY AND WORRIES RESTRICTED EXCLUSIVELY TO, OR BETTER EXPLAINED BY, ANY DISORDER PRIOR TO THIS POINT?	NO	➡ YES
N2		Do you find it difficult to control the worries?	➡ NO	YES
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?	NO	YES
	c	Feel tired, weak or exhausted easily?	NO	YES
	d	Have difficulty concentrating or find your mind going blank?	NO	YES
	e	Feel irritable?	NO	YES
	f	Have difficulty sleeping (difficulty falling asleep, waking up in the middle of the night, early morning wakening or sleeping excessively)?	NO	YES
		ARE **3** OR MORE **N3** ANSWERS CODED **YES?**	➡ NO	YES
N4		Do these anxieties and worries disrupt your normal work, school or social functioning or cause you significant distress?	**NO**	**YES**

GENERALIZED ANXIETY DISORDER
CURRENT

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

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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:

		Current	Past
2	a CIRCLE YES IF A DELUSIONAL IDEA IS IDENTIFIED IN **A3e**?	YES	YES
	b 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

MAJOR DEPRESSIVE DISORDER

	current	past
MDD	❑	❑

With Psychotic Features

Current	❑
Past	❑

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

BIPOLAR I DISORDER

	current	past
Bipolar I Disorder	❑	❑
Single Manic Episode	❑	❑

With Psychotic Features

Current	❑
Past	❑

Most Recent Episode

Manic	❑
Depressed	❑
Mixed	❑
Hypomanic	❑
Unspecified	❑

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)

BIPOLAR II DISORDER

	current	past
Bipolar II Disorder	❑	❑

Most Recent Episode

Hypomanic	❑
Depressed	❑

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

BIPOLAR DISORDER NOS

	current	past
Bipolar Disorder NOS	❑	❑

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.

	MODULES	TIME FRAME
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
	HYPOMANIC EPISODE	Current Past
	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
	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	Lifetime
		Current
	MOOD DISORDER WITH PSYCHOTIC FEATURES	Current
	SCHIZOPHRENIA	Current
		Lifetime
	SCHIZOAFFECTIVE DISORDER	Current
		Lifetime
	SCHIZOPHRENIFORM DISORDER	Current
		Lifetime
	BRIEF PSYCHOTIC DISORDER	Current
		Lifetime
	DELUSIONAL DISORDER	Current
		Lifetime
	PSYCHOTIC DISORDER DUE TO A GENERAL MEDICAL CONDITION	Current
		Lifetime
	SUBSTANCE INDUCED PSYCHOTIC DISORDER	Current
		Lifetime
	PSYCHOTIC DISORDER NOS	Current
		Lifetime
	MOOD DISORDER WITH PSYCHOTIC FEATURES	Lifetime
	MOOD DISORDER NOS	Lifetime
	MAJOR DEPRESSIVE DISORDER WITH PSYCHOTIC FEATURES	Current
		Past
	BIPOLAR I DISORDER WITH PSYCHOTIC FEATURES	Current
		Past
N	ANOREXIA NERVOSA	Current (Past 3 Months)
O	BULIMIA NERVOSA	Current (Past 3 Months)
	BULIMIA NERVOSA PURGING TYPE	Current
	BULIMIA NERVOSA NONPURGING TYPE	Current
	ANOREXIA NERVOSA, BINGE EATING/PURGING TYPE	Current
	ANOREXIA NERVOSA, RESTRICTING TYPE	Current
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
		Current
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
		Current
X	ADJUSTMENT DISORDERS	Current
Y	PREMENSTRUAL DYSPHORIC DISORDER	Current
Z	MIXED ANXIETY-DEPRESSIVE DISORDER	Current

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

SUBJECT #:_____ **DATE:**_____

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

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

- Not difficult at all _____
- Somewhat difficult _____
- Very difficult _____
- Extremely difficult _____

PHQ-9 Patient Depression Questionnaire

For initial diagnosis:

1. Patient completes PHQ-9 Quick Depression Assessment.
2. If there are at least 4 ✓s in the shaded section (including Questions #1 and #2), consider a depressive disorder. Add score to determine severity.

Consider Major Depressive Disorder

- if there are at least 5 ✓s in the shaded section (one of which corresponds to Question #1 or #2)

Consider Other Depressive Disorder

- if there are 2-4 ✓s in the shaded section (one of which corresponds to Question #1 or #2)

Note: Since the questionnaire relies on patient self-report, all responses should be verified by the clinician, and a definitive diagnosis is made on clinical grounds taking into account how well the patient understood the questionnaire, as well as other relevant information from the patient.
Diagnoses of Major Depressive Disorder or Other Depressive Disorder also require impairment of social, occupational, or other important areas of functioning (Question #10) and ruling out normal bereavement, a history of a Manic Episode (Bipolar Disorder), and a physical disorder, medication, or other drug as the biological cause of the depressive symptoms.

To monitor severity over time for newly diagnosed patients or patients in current treatment for depression:

1. Patients may complete questionnaires at baseline and at regular intervals (eg, every 2 weeks) at home and bring them in at their next appointment for scoring or they may complete the questionnaire during each scheduled appointment.
2. Add up ✓s by column. For every ✓: Several days = 1 More than half the days = 2 Nearly every day = 3
3. Add together column scores to get a TOTAL score.
4. Refer to the accompanying **PHQ-9 Scoring Box** to interpret the TOTAL score.
5. Results may be included in patient files to assist you in setting up a treatment goal, determining degree of response, as well as guiding treatment intervention.

Scoring: add up all checked boxes on PHQ-9

For every ✓ Not at all = 0; Several days = 1;
More than half the days = 2; Nearly every day = 3

Interpretation of Total Score

Total Score	Depression Severity
1-4	Minimal depression
5-9	Mild depression
10-14	Moderate depression
15-19	Moderately severe depression
20-27	Severe depression

A2662B 10-04-2005

Rivermead Post Concussion Symptoms Questionnaire

Modified (Rpq-3 And Rpq-13)[42] Printed With Permission: Modified Scoring System From Eyres 2005 [28]

Subject ID: Date:

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:

	not experienced	no more of a problem	mild problem	moderate problem	severe problem
Headaches	0	1	2	3	4
Feelings of dizziness	0	1	2	3	4
Nausea and/or vomiting	0	1	2	3	4
Noise sensitivity (easily upset by loud noise)	0	1	2	3	4
Sleep disturbance	0	1	2	3	4
Fatigue, tiring more easily	0	1	2	3	4
Being irritable, easily angered	0	1	2	3	4
Feeling depressed or tearful	0	1	2	3	4
Feeling frustrated or impatient	0	1	2	3	4
Forgetfulness, poor memory	0	1	2	3	4
Poor concentration	0	1	2	3	4
Taking longer to think	0	1	2	3	4
Blurred vision	0	1	2	3	4
Light sensitivity (easily upset by bright light)	0	1	2	3	4
Double vision	0	1	2	3	4
Restlessness	0	1	2	3	4
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:

RPQ-3 *(total for first three items)*	
RPQ-13 *(total for next 13 items)*	

http://www.maa.nsw.gov.au/default.aspx?MenuID=148

Rivermead Post Concussion Symptoms Questionnaire (cont.)

Modified (Rpq-3 And Rpq-13)[42] Printed With Permission: Modified Scoring System From Eyres 2005 [28]

Administration only

Individual item scores reflect the presence and severity of post concussive symptoms. Post concussive symptoms, as measured by the RPQ, may arise for different reasons subsequent to (although not necessarily directly because of) a traumatic brain injury. The symptoms overlap with broader conditions, such as pain, fatigue and mental health conditions such as depression[72].

The questionnaire can be repeated to monitor a patient's progress over time. There may be changes in the severity of symptoms, or the range of symptoms. Typical recovery is reflected in a reduction of symptoms and their severity within three months.

Scoring

The scoring system has been modified from Eyres, 2005[24].

The items are scored in two groups. The first group (RPQ-3) consists of the first three items (headaches, feelings of dizziness and nausea) and the second group (RPQ-13) comprises the next 13 items. The total score for RPQ-3 items is potentially 0–12 and is associated with early symptom clusters of post concussive symptoms. If there is a higher score on the RPQ-3, earlier reassessment and closer monitoring is recommended.

The RPQ-13 score is potentially 0–52, where higher scores reflect greater severity of post concussive symptoms. The RPQ-13 items are associated with a later cluster of symptoms, although the RPQ-3 symptoms of headaches, dizziness and nausea may also be present. The later cluster of symptoms is associated with having a greater impact on participation, psychosocial functioning and lifestyle. Symptoms are likely to resolve within three months. A gradual resumption of usual activities is recommended during this period, appropriate to symptoms. If the symptoms do not resolve within three months, consideration of referral for specialist assessment or treatment services is recommended.

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Appendix II: Symptom Checklist Included in VA's National Traumatic Brain Injury Evaluation and Treatment Protocol

NEUROBEHAVIORAL SYMPTOM INVENTORY

Please rate the following symptoms with regard to how much they have disturbed you *SINCE YOUR INJURY*.

0 = None- Rarely if ever present; not a problem at all

1 = Mild- Occasionally present, but it does not disrupt activities; I can usually continue what I'm doing; doesn't really concern me.

2 = Moderate- Often present, occasionally disrupts my activities; I can usually continue what I'm doing with some effort; I feel somewhat concerned.

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.

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.

1. Feeling dizzy:

0	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

2. Loss of balance:

0	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

3. Poor coordination, clumsy:

0	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

4. Headaches:

0	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

5. Nausea:

0	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

6. Vision problems, blurring, trouble seeing:

0	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

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	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

19. Feeling anxious or tense:

0	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

20. Feeling depressed or sad:

0	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

21. Irritability, easily annoyed:

0	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

22. Poor frustration tolerance, feeling easily overwhelmed by things:

0	1	2	3	4
NONE	MILD	MODERATE	SEVERE	VERY SEVERE

Subject Number: _____ Date:_____

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.

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
12AM							
1AM							
2AM							
3AM							
4AM							
5AM							
6AM							
7AM							
8AM							
9AM							
10AM							
11AM							
12PM							
1PM							
2PM							
3PM							
4PM							
5PM							
6PM							
7PM							
8PM							
9PM							
10PM							
11PM							

Personality Assessment Inventory (PAI)

Personality Assessment Inventory™ (PAI®)

Leslie C. Morey, PhD

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

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

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.

Beck Depression Inventory (BDI-II)

Participant ID

_____

Beck Depression Inventory (BDI-II)

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

◯ I do not feel sad. (0)
◯ I feel sad much of the time. (1)
◯ I am sad all the time. (2)
◯ I am so sad or unhappy that I can't stand it. (3)

2. Pessimism

◯ I am not discouraged about my future. (0)
◯ I feel more discouraged about my future than I used to be. (1)
◯ I do not expect things to work out for me. (2)
◯ I feel my future is hopeless and will only get worse. (3)

3. Past Failure

◯ I do not feel like a failure. (0)
◯ I have failed more than I should have. (1)
◯ As I look back, I see a lot of failures. (2)
◯ I feel I am a total failure as a person. (3)

4. Loss of Pleasure

◯ I get as much pleasure as I ever did from the things I enjoy. (0)
◯ I don't enjoy things as much as I used to. (1)
◯ I get very little pleasure from the things I used to enjoy. (2)
◯ I can't get any pleasure from the things I used to enjoy. (3)

5. Guilty Feelings

◯ I don't feel particularly guilty. (0)
◯ I feel guilty over many things I have done or should have done. (1)
◯ I feel quite guilty most of the time. (2)
◯ I feel guilty all of the time. (3)

6. Punishment Feelings

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

7. Self-Dislike

◯ I feel the same about myself as ever. (0)
◯ I have lost confidence in myself. (1)
◯ I am disappointed in myself. (2)
◯ I dislike myself. (3)

8. Self-Criticalness

◯ I don't criticize or blame myself more than usual. (0)
◯ I am more critical of myself than I used to be. (1)
◯ I criticize myself for all of my faults. (2)
◯ I blame myself for everything bad that happens. (3)

9. Suicidal Thoughts or Wishes

◯ I don't have any thoughts of killing myself. (0)
◯ I have thoughts of killing myself, but I would not carry them out. (1)
◯ I would like to kill myself. (2)
◯ I would kill myself if I had the chance. (3)

10. Crying

◯ I don't cry anymore than I used to. (0)
◯ I cry more than I used to. (1)
◯ I cry over every little things. (2)
◯ I feel like crying, but I can't. (3)

11. Agitation

◯ I am no more restless or wound up than usual. (0)
◯ I feel more restless or wound up than usual. (1)
◯ I feel so restless or agitated that it's hard to stay still. (2)
◯ I am so restless or agitated that I have to keep moving or doing something. (3)

12. Loss of Interest

◯ I have not lost interest in other people or activities. (0)
◯ I am less interested in other people or things than before. (1)
◯ I have lost most of my interest in other people or things. (2)
◯ It's hard to get interested in anything. (3)

13. Indecisiveness

◯ I make decisions about as well as ever. (0)
◯ I find it more difficult to make decisions than usual. (1)
◯ I have much greater difficulty in making decisions than I used to. (2)
◯ I have trouble making any decisions. (3)

14. Worthlessness

◯ I do not feel I am worthless. (0)
◯ I don't consider myself as worthwhile and useful as I used to. (1)
◯ I feel more worthless as compared to other people. (2)
◯ I feel utterly worthless. (3)

15. Loss of Energy

◯ I have as much energy as ever. (0)
◯ I have less energy than I used to have. (1)
◯ I don't have enough energy to do very much. (2)
◯ I don't have enough energy to do anything. (3)

16. Changes in Sleep Pattern.

◯ I have not experienced any change in my sleeping pattern. (0)
◯ I sleep somewhat more than usual. (1a)
◯ I sleep somewhat less than usual. (1b)
◯ I sleep a lot more than usual. (2a)
◯ I sleep a lot less than usual. (2b)
◯ I sleep most of the day. (3a)
◯ I wake up 1-2 hours early and can't get back to sleep. (3b)

17. Irritability

◯ I am no more irritable than usual. (0)
◯ I am more irritable than usual. (1)
◯ I am much more irritable than usual. (2)
◯ I am irritable all the time. (3)

18. Changes in Appetite

◯ I have not experienced any change in my appetite. (0)
◯ My appetite is somewhat less than usual. (1a)
◯ My appetite is somewhat more than usual. (1b)
◯ My appetite is much less than before. (2a)
◯ My appetite is much greater than usual. (2b)
◯ I have no appetite at all. (3a)
◯ I crave food all the time. (3b)

19. Concentration Difficulty

◯ I can concentrate as well as ever. (0)
◯ I can't concentrate as well as usual. (1)
◯ It's hard to keep my mind on anything for very long. (2)
◯ I find I can't concentrate on anything. (3)

20. Tiredness or Fatigue

◯ I am no more tired or fatigued than usual. (0)
◯ I get more tired or fatigued more easily than usual. (1)
◯ I am too tired or fatigued to do a lot of the things I used to do. (2)
◯ I am too tired or fatigued to do most of the things I used to do. (3)

21. Loss of Interest in Sex

◯ I have not noticed any recent change in my interest in sex. (0)
◯ I am less interested in sex than I used to be. (1)
◯ I am much less interested in sex now. (2)
◯ I have lost interest in sex completely. (3)

Subject #_____ Date:_____

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.

	Not at all	Somewhat	Moderately so	Very much so
1. I feel calm.	1	2	3	4
2. I feel secure.	1	2	3	4
3. I am tense	1	2	3	4
4. I feel regretful	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes.	1	2	3	4
8. I feel rested.	1	2	3	4
9. I feel anxious	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident.	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel "high strung"	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel over-excited and "rattled".	1	2	3	4
19. I feel joyful.	1	2	3	4
20. I feel pleasant.	1	2	3	4

STAI Form T

Subject # _____ DATE _____

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 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.

	Almost never	Sometimes	Often	Almost always
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 crises 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

VIII. Preferences

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

Faced with a potentially dangerous event

I take my time ○○○○○○○○○○○○○○○○○○○○○○○○○ I instantly react

Seeing a person who is drowning, I first

dive in ○○○○○○○○○○○○○○○○○○○○○○○○○ 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

THANK YOU FOR COMPLETING THIS SURVEY!

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

Subject: _____ Date:_____

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%

Day of Scan Information Questionnaire (DSIQ)

Day of Scan Information Questionnaire (DSIQ)

Subject ID _____

Date _____

Age _____
(Years)

Height _____
(Feet/Inches)

Weight _____
(Pounds)

Sex

◯ Male
◯ Female

Handedness

◯ Right
◯ Left
◯ Both/Neither

What is the highest grade or level of school that you have completed or the highest degree you have obtained?

◯ < 9th
◯ 9th
◯ 10th
◯ 11th
◯ HS Grad
◯ 2yr College
◯ College Grad
◯ Some Grad School
◯ Masters
◯ Doctorate

With what ethnicity do you identify?

◯ White
◯ Hispanic/Latino
◯ Black/African-American
◯ Native-American/American Indian
◯ Asian/Pacific Islander
◯ Other

Do you have any problems with reading?

◯ No ◯ Yes

If yes, please explain

_____

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

◯ English ◯ Spanish ◯ Other

If other, please specify

_____

Caffeine Use

Did you have any caffeine containing products today?

◯ Yes ◯ No

If yes, 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?

_____

If you drink caffeinated sports drinks, what brand do you drink?

_____

Do you use any other caffeinated products, such as Vivarin?

◯ Yes ◯ No

If yes, what?

_____

How much?

_____

How often?

_____

Nicotine Use

Do you smoke cigarettes?

◯ Yes ◯ No

If YES, about how many cigarettes do you smoke per day?

_____

How long have you been smoking?

_____
(____ years ____ months)

Have you tried to quit?

◯ Yes ◯ No

If YES, how many times?

_____

If NO, did you ever smoke cigarettes in the past?

◯ Yes ◯ No

If YES, how many cigarettes did you smoke per day?

_____

When did you start smoking? _____

When did you quit? _____

Do you use smokeless tobacco, such as dip or chew?

◯ Yes ◯ No

If YES, about how much do you use per day?

_____

If NO, did you ever use smokeless tobacco in the past?

◯ Yes ◯ No

If YES, how much did you use per day?

_____

When did you start using? _____

When did you quit? _____

Do you use any other nicotine-containing products?

◯ Yes ◯ No

If YES, what?

_____

How much?

_____

How often?

_____

Other

Do you take diet pills?

◯ Yes ◯ No

If YES, what brand?

_____

How much?

_____

How often?

_____

Are you currently taking any medications, vitamins, or supplements?

◯ Yes ◯ No

If YES, please list:

_____
(Name: ____ Dosage (per day): ____ (e.g. Ibuprofen, 200 mg))

If YES, please list:

_____
(Name: ____ Dosage (per day): ____)

If YES, please list:

_____
(Name: ____ Dosage (per day): ____)

If YES, please list:

_____
(Name: ____ Dosage (per day): ____)

How many times per month do you drink (alcohol)?

_____

On those occasions, what is the average number of drinks you consume?

_____

On those occasions, what is the largest number of drinks you consume?

_____

How many times in the past year have you used marijuana?

_____

Have you ever used marijuana at other times in your life?

◯ Yes ◯ No

If YES, at what age did you begin smoking marijuana?

_____

On approximately how many occasions have you used marijuana?

_____

Do you use any other street drugs currently or in the past year?

◯ Yes ◯ No

If yes, what?

_____

How much?

_____

How often?

_____

Physical Information

If female, when was 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?

_____
(Minutes)

Did you notice that your sleep became worse following the concussion?

◯ Yes ◯ No

After your concussion, what sleep problems became more noticeable to you (Select all that apply)?

	Yes	No
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, at what time did you normally go to bed at night on weeknights (Sun-Thurs)?

_____
(In standard time HH:MM)

AM or PM?

◯ AM ◯ PM

In the months BEFORE your concussion, at what time did you normally go to bed at night on weekends (Fri-Sat)?

_____
(In standard time HH:MM)

AM or PM?

◯ AM ◯ PM

In the months BEFORE your concussion, what time did you typically awaken on weekdays (Mon-Fri)?

_____
(In standard time HH:MM)

AM or PM?

◯ AM
◯ PM

In the months BEFORE your concussion, what time did you typically awaken on weekends (Sat-Sun)?

_____
(In standard time HH:MM)

AM or PM?

◯ AM ◯ PM

In the months BEFORE your concussion, how long did it typically take you to fall asleep at night on weeknights (Sun-Thurs)?

_____
(HH:MM)

In the months BEFORE your concussion, how long did it typically take you to fall asleep at night on weekends (Fri-Sat)?

_____
(HH:MM)

Current Sleep Habits

How much sleep did you get last night?

_____
(HH:MM (e.g. 07:30 for 7 hours 30 minutes of sleep))

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

_____
(HH:MM)

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

_____
(HH:MM)

Since your concussion, at what time do you normally go to bed at night on weeknights (Sun-Thurs)?

_____
(In standard time HH:MM)

AM or PM?

◯ AM
◯ PM

Since your concussion, at what time do you normally go to bed at night on weekends (Fri-Sat)?

_____
(In standard time HH:MM)

AM or PM?

◯ AM
◯ PM

Since your concussion, at what time do you typically awaken on weekdays (Mon-Fri)?

_____
(In standard time HH:MM)

AM or PM?

◯ AM
◯ PM

Since your concussion, at what time do you typically awaken on weekends (Sat-Sun)?

_____
(In standard time HH:MM)

AM or PM?

◯ AM
◯ PM

Since your concussion, how long does it typically take to fall asleep at night on weeknights (Sun-Thurs)?

_____
(HH:MM (e.g. 00:15 for 15 minutes))

Since your concussion, how long does it typically take you to fall asleep at night on weekends (Fri-Sat)?

_____
(HH:MM)

Since your concussion, at what time of day do you feel sleepiest?

_____
(In standard time HH:MM)

AM or PM?

◯ AM
◯ PM

Since your concussion, at what time of day do you feel most alert?

_____
(In standard time HH:MM)

AM or PM?

◯ AM ◯ PM

Since your concussion, how much time do you need to sleep per night to feel your best?

_____
(HH:MM)

Since your concussion: "If I get less than _____ hours/minutes of sleep, I notice an impairment in my ability to function at work."

_____
(HH:MM)

Since your concussion: "If I get more than _____ hours/minutes of sleep, I notice an impairment in my ability to function at work."

_____
(HH:MM)

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 per week, month, or year?

_____
((Designate time period in the next question))

If yes, how often per time period?

◯ Week
◯ Month
◯ Year

If yes, did this start or get worse since your concussion?

◯ Yes ◯ No

Do you ever have trouble staying asleep?

◯ Yes ◯ No

If yes, how often per week, month, or year?

_____
((Designate time period in the next question))

If yes, how often per time period?

◯ Week
◯ Month
◯ Year

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 begin your nap?

_____
(HH:MM)

AM or PM?

◯ AM
◯ PM

At what time of day do you normally wake up from your nap?

_____
(HH:MM)

AM or PM?

◯ AM
◯ PM

Do you consider yourself a light, normal, or heavy sleeper?

◯ Light
◯ Normal
◯ Heavy

Have you ever been diagnosed or treated for sleep apnea or sleep disordered breathing?

◯ Yes ◯ No

I yawn often

◯ 1 (Never) ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7 ◯ 8 ◯ 9 ◯ 10 (Always yawning)

When I see or hear someone else yawn, I will yawn too

◯ 1 (Never)
◯ 2
◯ 3
◯ 4
◯ 5
◯ 6
◯ 7
◯ 8
◯ 9
◯ 10 (Every time)

Recent Risk of Dozing Off (ESS)

How likely are you to doze off or fall asleep in the following situations, in contrast to just feeling 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

	Would never doze (0)	Slight chance of dozing (1)	Moderate chance of dozing (2)	High chance of dozing (3)
1. Sitting and reading	◯	◯	◯	◯
2. Watching TV	◯	◯	◯	◯
3. Sitting, inactive in a public place (e.g. a theater or meeting)	◯	◯	◯	◯
4. As a passenger in a car for an hour without a break	◯	◯	◯	◯
5. Lying down to rest in the afternoon when circumstances permit	◯	◯	◯	◯
6. Sitting and talking to someone	◯	◯	◯	◯
7. Sitting quietly after a lunch without alcohol	◯	◯	◯	◯

8. In a car, while stopped for a few minutes in traffic	○	○	○	○

Source: Johns MW. A new method for measuring daytime sleepiness: The Epworth Sleepiness Scale. Sleep 1991; 14(6): 540-5.

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

Subject: _____ Date: _____ Time: ____:____

SSS #1

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

Session (1 or 2) _____ ID# _____ Date _____ Time _____ AM PM

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

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_____

_____

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

Buysse DJ, Reynolds CF, Monk TH, Berman SR, Kupfer DJ: Psychiatry Research, 28:193-213, 1989.

FOSQ

Study ID _____ Date_____

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?	0	1	2	3	4
2. Do you generally have difficulty remembering things because you are sleepy or tired?	0	1	2	3	4
3. Do you have difficulty finishing a meal because you become sleepy or tired?	0	1	2	3	4
4. Do you have difficulty working on a hobby (for example: sewing, collecting, gardening) because you are sleepy or tired?	0	1	2	3	4
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?	0	1	2	3	4
6. Do you have difficulty operating a motor vehicle for short distances (less than 100 miles) because you become sleepy or tired?	0	1	2	3	4
7. Do you have difficulty operating a motor vehicle for long distances (greater than 100 miles) because you become sleepy or tired?	0	1	2	3	4
8. Do you have difficulty getting things done because you are too sleepy or tired to drive or take public transportation?	0	1	2	3	4
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?	0	1	2	3	4
10. Do you have difficulty performing employed or volunteer work because you are sleepy or tired?	0	1	2	3	4
11. Do you have difficulty maintaining a telephone conversation because you become sleepy or tired?	0	1	2	3	4

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

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?	0	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?	0	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

RBANS™

Repeatable Battery for the Assessment of Neuropsychological Status

Christopher Randolph

Record Form A

Subject #_____ Age____ Sex____ Education Level _____

Examiner_____ Date of Testing_____ Ethnicity_____

Observations: _____

_____

_____

	Immediate Memory	Visuospatial/ Constructional	Language	Attention	Delayed Memory		Total Scale	
Index Score								
Confidence Interval ____%								
Percentile								
Index Score						Percentile Rank		Total Scale Index Score
160						>99.9		160
155						>99.9		155
150						>99.9		150
145						99.9		145
140						99.6		140
135						99		135
130						98		130
125						95		125
120						91		120
115						84		115
110						75		110
105						63		105
100						50		100
95						37		95
90						25		90
85						16		85
80						9		80
75						5		75
70						2		70
65						1		65
60						0.4		60
55						0.1		55
50						<0.1		50
45						<0.1		45
40						<0.1		40

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ANAM4™

Automated Neuropsychological Assessment Metrics

Quick Start Guide

Scope of This Document

This is a quick start reference to familiarize a first-time user with the basic concepts and operations of the ANAM4™ software.

Disclaimer

The ANAM4™ testing system does not constitute the practice of medicine or the provision of professional health care advice. The information provided by ANAM4™ software is of a general nature and does not represent medical advice, a diagnosis, or prescription for treatment. You are advised to seek the advice of a qualified medical professional or researcher for interpretation of test results. C-SHOP and the University of Oklahoma are not responsible for any decisions made based on information obtained using ANAM4™ software. Your qualified medical professional has the sole responsibility for establishing diagnosis and suggesting appropriate treatment.

Further Reading

For additional information regarding ANAM4™ or ANAM4™ data files, please refer to the ANAM4™ User Guide.

Revision 3, March 2007

Table of Contents

Requirements

Hardware Requirements

The ANAM4™ system is designed for use on personal computer systems. Minimum hardware requirements include the following:

- **Processor speed:** Pentium 90 MHz microprocessor.
- **Memory:** 32 MB RAM.
- **Storage:** The core ANAM4™ test system requires a minimum of approximately 25MB. Due to data storage requirements and to ensure optimal performance, at least 150MB of free space is highly recommended. A full ANAM4™ installation including ancillary modules (ADEPT™/APR™) requires approximately 50MB of space (130MB if the .NET Framework v2.0 is not already present). Due to data storage requirements and to ensure optimal performance, at least 300MB of free space prior to installation is highly recommended.
- **Response device:** Most standard input devices are supported, including a serial mouse, USB mouse and keyboard, and PS/2 mouse and keyboard. When using laptop computers, most internal keyboards and pointing devices will be adequate for most ANAM4 test modules, but the use of external input devices is highly recommended where practical.

Software Requirements

- **Operating system:** Windows 95/98/2000, NT4.0, or XP. To date, ANAM4™ has not been fully tested on Windows ME or Windows Vista.
- **Windows updates:** Application of all Windows updates. Updates are available at: http://update.microsoft.com
- **Flash animation:** For operating systems older than Windows XP, Adobe Flash Player is required to view the opening logo screen. Flash may be acquired via free download: http://www.adobe.com/go/getflashplayer

  Note: When installing Flash Player via the website, uncheck the accompanying Yahoo toolbar before clicking "Install Now" unless you desire the toolbar.

1 Installing and Running ANAM4™

The ANAM4™ test system consists of a library of tests designed for a broad spectrum of clinical and research applications. This library of computer-based tests was constructed to meet the need for precise measurement of cognitive processing efficiency in a variety of psychological assessment contexts that include neuropsychology, readiness to perform, neurotoxicology, pharmacology, and human factors research.

ANAM4™ will be automatically installed from the installation CD. If the installation does not begin automatically, click Start > Run on the task bar. Type your CD drive letter followed by :\Setup (e.g., D:\Setup or E:\Setup). Finally, click **OK** to proceed with the installation.

The default installation directory is C:\Program Files\C-SHOP\ANAM4.

Upon installation, a desktop icon for ANAM4™ will be created. 

To run ANAM4™, double-click on the ANAM4™ icon located on your desktop, the AnamMenu.exe file located in the C:\Program Files\C-SHOP\ANAM4 directory, or the ANAM4 program listed in start->Programs->ANAM4.

2 Starting ANAM4™

Starting ANAM4™

1. Double-click the ANAM4 icon on your desktop.

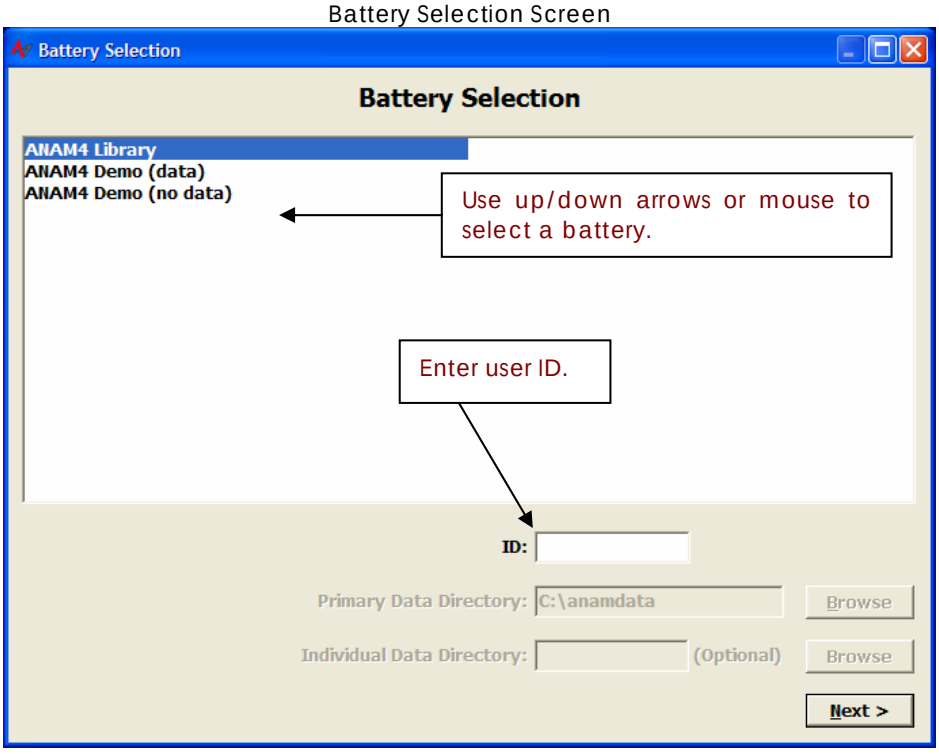
ANAM4 Splash Screen

Selecting a Battery and Entering the User ID

The *Battery Selection* screen allows the user to choose a battery, specify an ID number, and specify data directories.

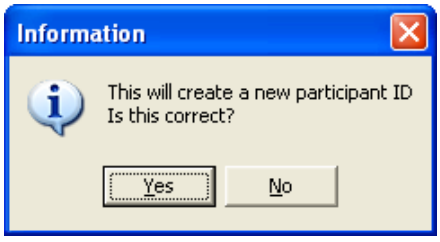
1. Use the up/down cursor keys or mouse to select the desired ANAM4™ battery.

Battery Selection Screen



2. Enter a user ID. The user ID can be any alphanumeric character string.

Note: If a test ID is entered that has never been used on this computer, you will be asked to verify that you are creating a new participant ID. If this is correct, click **Yes**. If the session is a repeat administration for this person (thus, the participant ID has been used previously), you will not receive this prompt.



Changing Data Directories (Folders)

The default data storage directory is C:\anamdata. All data files will be stored in this directory unless specified otherwise.

To change the Primary Data Directory or Individual Data Directory:

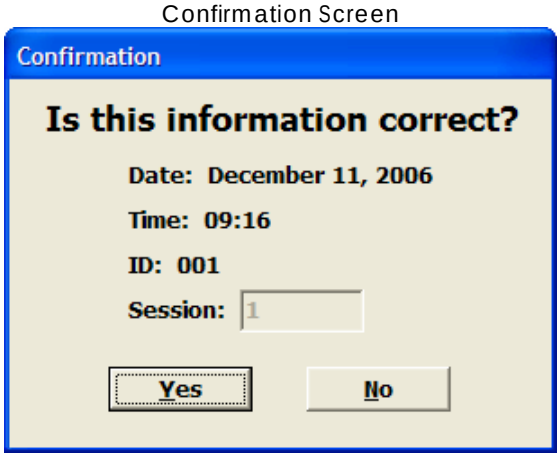
1. Press <**Alt**><**F1**>. This will unlock the *Primary Data Directory* and *Individual Data Directory* fields for modification.
2. Type the path location of the directory for data storage or click **Browse**. If you select Browse, navigate to the directory where you would like to store the ANAM data files.

After confirming all information on the *Battery Selection* screen, Press **Enter** or click **Next** to continue.

Confirming Date, Time, ID, and Session Number

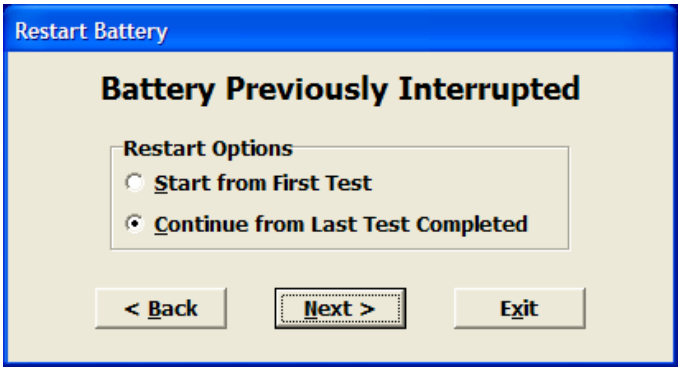
1. Confirm that the Date and Time on your computer are accurately set. If not, click on **No**, close the *Battery Selection* screen that reappears by clicking on the red close button at the upper right corner, correct the Date/Time setting, and restart ANAM4™.
2. Confirm that the correct Session number is about to be run. If you are certain that it needs to be changed, press <**Alt**><**F1**> to unlock the field and enter the desired session number.

Confirmation Screen



Restarting a Previously Cancelled Battery

1. If the specified Session was previously canceled before completion, you may see the following screen asking if you wish to *Start from First Test* or *Continue from Last Test Completed*. You are also allowed to go back to the *Battery Selection* screen.

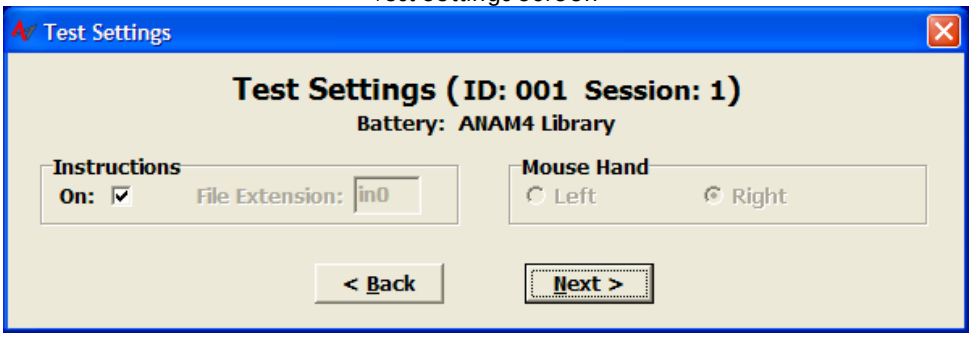


2. Once you have selected the desired option, click on **Next** to continue.

Selecting Test Settings

The *Test Settings* screen allows the user to customize the ANAM4™ test session.

Test Settings Screen

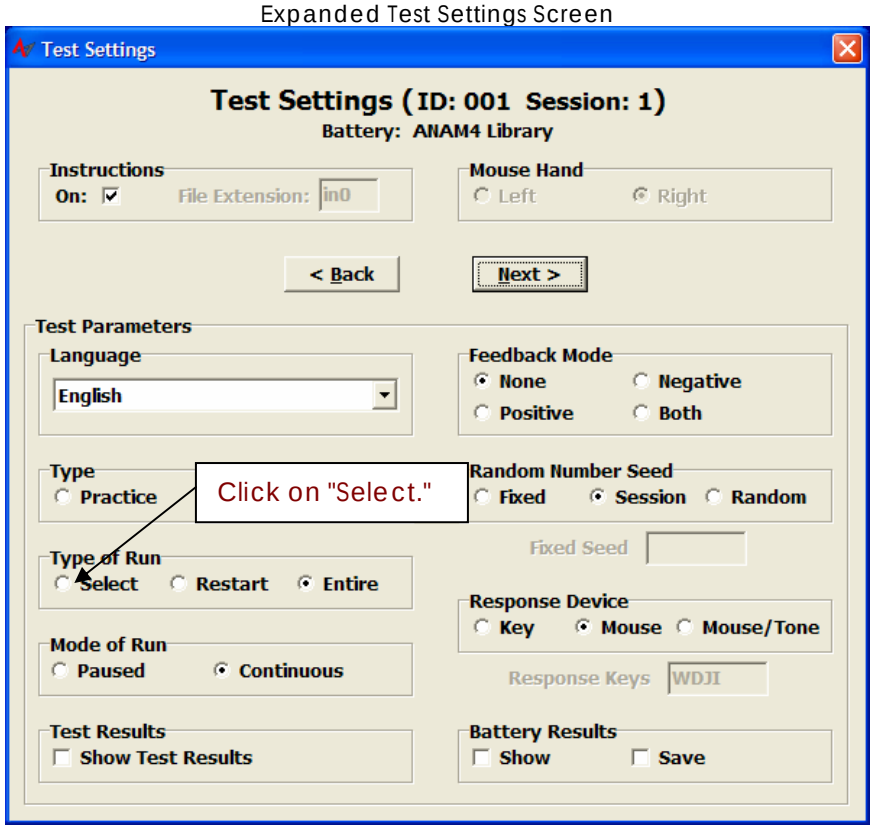


Note: After using the battery a few times for a particular person, you may wish to turn off instructions by deselecting the "Instructions" box. Make sure it is checked **On** the first time through.

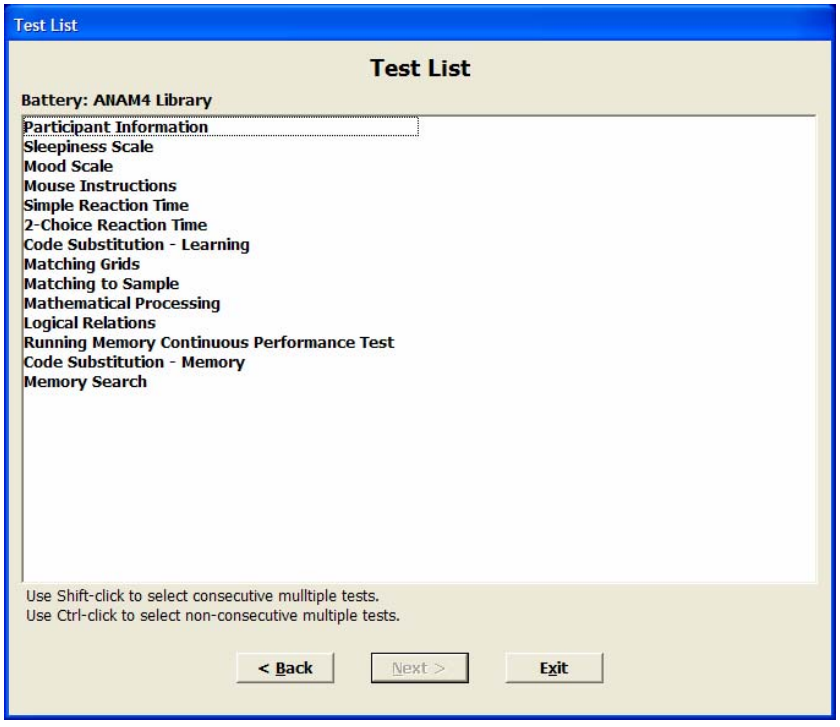
1. If you have a participant who uses the computer mouse with the left hand and you wish to obtain responses using the left hand, press <**Alt**><**F1**> to unlock the Mouse Hand setting and select **Left**.
2. If the Test Settings are correct, press **Enter** or click on **Next** to begin the testing.

1. If you wish to select a single test or subset of tests, press <**Alt**><**F2**> and then click on **Select** under Type of Run.

Expanded Test Settings Screen



2. Press **Enter** or click on **Next** to continue. The list of tests within the battery will appear on the next screen.



3. After selecting the desired test or set of tests using the instructions at the bottom of the screen, press **Enter** or click on **Next** to continue.

Proceeding through the Battery

1. Tests will proceed in sequence.

   Note: If instructions are On, the typical sequence for each test is one or more pages of instructions, a screen with the test name, the test itself, and (if selected from the *Test Settings* screen) a feedback screen summarizing individual Test Results.

2. If you wish to abort from any test (end the test without collecting data), press <**Alt**><**F1**> at any time following the instructions screen(s).

   Note: The <**Alt**><**F1**> exit function works ONLY after the display of test instructions is complete.

3. After the test aborts, you will see the above window. If you wish to cancel the rest of the battery, click **Yes**. If you wish to continue with the remaining tests, click **No**.
4. At the conclusion of the battery, you will see a "Thank You" message informing you that the Test Battery is complete.

ANAM4™ Data

Four types of data files are generated following test administration through the ANAM4™ test system as follows:

- Summary Data Files in Text Format (CSV) – summary statistics computed across all items/trials of a given test (without variable labels)
- Raw Data Files in Text Format (CSV) – individual item/trial information (without variable labels)
- Summary Data Files in XML Format – summary statistics computed across all items/trials of a given test (with variable labels)
- Raw Data Files in XML Format – Individual item/trial information (with variable labels).

File Naming

Data filenames are coded in the following manner. The first letter represents the type of file as follows:

- **S** for summary data in text format
- **R** for raw data in text format
- **X** for summary data in XML format
- **Z** for raw data in XML format.

The next sequence of characters corresponds to the participant ID code (of variable length). The ID code is followed by a P or T designating a Practice or Test session, respectively. The final portion of the filename indicates the session number. A three-letter file extension is used to identify the specific test. A list of test extensions can be found in **Chapter 4**.

> Example: ***S32545T01.SRT*** is a summary data file for participant 32545 for Test Session number 1 of the Simple Reaction Time test.

ANAM4™ Data Directories

The default *Primary Data Directory* is C:\anamdata. Data from all completed tests will be saved in this directory. By default, no *Individual Data Directory* is specified. For information on changing the *Primary Data Directory* or *Individual Data Directory*, see **Chapter 2**.

ANAM4™ Tests

ANAM4™ Test Names, Modules, and Extensions

Test Name	Module Name (.exe)	Extension
2-Choice Reaction Time	2choice	.2ch
4-Choice Reaction Time	4choice	.4ch
Code Substitution		
Learning	codesub	.cds
Immediate	codesub	.cdi
Delayed	codesub	.cdd
Demographics	demog	.sub
Digit Reaction Time	digitrt	.drt
Dual Task (Tracking / Memory)	dualtask	.dtn
Grammatical Reasoning	gram	.grm
Logical Relations	logical	.lrs
Manikin	manikin	.mkn
Matching Grids	matching	.mtg
Matching to Sample	mat2samp	.m2s
Mathematical Processing	math	.mth
Memory Search	stern	.stn
Mental State Exam	mse	.mse
Mood Scale	mood	.moo
Procedural Reaction Time	procrt	.pro
Pursuit Tracking	pursuit	.pur
Reaction Time	react	.rct
Relative Judgment	reljudg	.rlj
Running Memory CPT	runcpt	.cpt
Simple Reaction Time	simplert	.srt
Sleepiness Scale	sleepsc	.slp
Spatial Processing - Simultaneous	dspat	.spd
Spatial Processing - Delayed	spat	.spa
Standard CPT	stdcpt	.scp
Stroop Test	stroop	.str
Switching	switch	.swt
Symbolic Reaction Time	symbolrt	.sym
Tapping	tapping	.tpl, .tpr
Tower Puzzle	tower	.atp
Unstable Tracking	track	.trk
Visual Vigilance	visvig	.vis

For More Information

ANAM4™ User Manual
www.c-shop.ou.edu/literature/manual.pdf

Quick Start Guide for the ADEPT™ Software
www.c-shop.ou.edu/literature/ADEPTquickstart.pdf

Quick Start Guide for the APR™ Software
www.c-shop.ou.edu/literature/APRquickstart.pdf

ANAM4™ Technical Literature
www.c-shop.ou.edu

Technical Support
www.c-shop.ou.edu

Center for the Study of Human Operator Performance
University of Oklahoma
3200 Marshall Ave, Suite 260
Norman OK 73072 USA
www.c-shop.ou.edu

1 List Learning

Trial 1

Say *I am going to read you a list of words. I want you to listen carefully and, when I finish, repeat back as many words as you can. You don't have to say them in the same order that I do—just repeat back as many words as you can remember, in any order. Okay?*

Trials 2–4

Say *I am going to read the list again. When I finish, repeat back as many words as you can, even if you have already said them before. Okay?*

Record responses in order.

Scoring: 1 point for each word correctly recalled on each trial.

List	Trial 1	Trial 2	Trial 3	Trial 4
Market				
Package				
Elbow				
Apple				
Story				
Carpet				
Bubble				
Highway				
Saddle				
Powder				

Number Correct		+		+		+		=	
	Total Trial 1		Total Trial 2		Total Trial 3		Total Trial 4		Total Score Range=0–40

2 Story Memory

Trial 1

Say ***I am going to read you a short story. I'd like you to listen carefully and, when I finish, repeat back as much of the story as you can remember. Try and use the same wording, if you can. Okay?***

Read the story below, then say ***Now repeat back as much of that story as you can.***

Trial 2

Say ***I am going to read that same story again. When I finish, I want you to again repeat back as much of the story as you can remember. Try to repeat it as exactly as you can.***

Read the story below, then say ***Now repeat back as much of that story as you can.***

Scoring: 1 point for *verbatim* recall of bold, italic words or alternatives, shown below in color within parentheses. Record intrusions or variations in the Responses column.

Story	Responses	Trial 1 Score (0 or 1)	Trial 2 Score (0 or 1)	Item Score (0–2)
1. On ***Tuesday,***				
2. ***May***				
3. ***Fourth,***				
4. in ***Cleveland,*** Ohio,				
5. a ***3 alarm***				
6. ***fire*** broke out.				
7. ***Two***				
8. ***hotels***				
9. and a ***restaurant***				
10. were ***destroyed***				
11. before the ***firefighters (firemen)***				
12. were able to ***extinguish it (put it out).***				
			Total Score (Trial 1 + Trial 2) Range=0–24	

3 Figure Copy

Time Limit: 4 minutes

Fold this page back and present the Figure Copy Drawing Page along with the stimulus. Ask the examinee to make an exact copy of the figure. Tell the examinee that he or she is being timed, but that the score is based *only* on the exactness of his or her copy.

Scoring: 1 point for correctness and completeness (drawing), and 1 point for proper placement. See Appendix 1 in Stimulus Booklet A for complete scoring criteria and scoring examples.

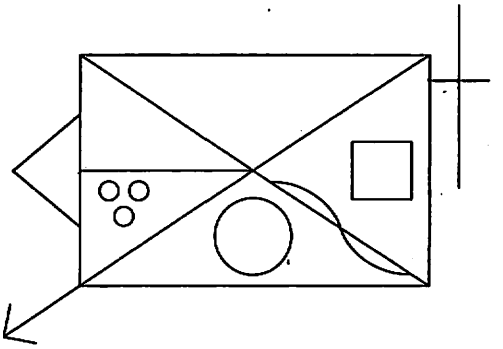


Figure Copy Criteria

(Fold back for use.)

Item	Drawing (0 or 1)	Placement (0 or 1)	Score (0, 1, or 2)	Scoring Criteria
1. rectangle				**Drawing:** lines are unbroken and straight; angles 90 degrees; top/bottom lines 25% longer than sides **Placement:** not rotated more than 15 degrees
2. diagonal cross				**Drawing:** lines are unbroken and straight and should approximately bisect each other **Placement:** ends of lines should meet corners of the rectangle without significant overlap or measurable distance between the ends of the lines and the corners
3. horizontal line				**Drawing:** line is unbroken and straight; should not exceed 1/2 the length of the rectangle **Placement:** should bisect left side of the rectangle at approximately a right angle and intersect the diagonal cross
4. circle				**Drawing:** round, unbroken and closed; diameter should be approximately 1/4–1/3 height of rectangle **Placement:** placed in appropriate segment; not touching any other part of figure
5. 3 small circles				**Drawing:** round, unbroken and closed; equal size; triangular arrangement; not touching each other **Placement:** in appropriate segment; not touching figure; triangle formed not rotated more than 15 degrees
6. square				**Drawing:** must be closed; 90 degree angles; lines straight and unbroken; height is 1/4–1/3 height of rectangle **Placement:** in appropriate segment; not touching any other part of figure; not rotated more than 15 degrees
7. curving line				**Drawing:** 2 curved segments are approximately equal in length and symmetrical; correct direction of curves **Placement:** ends of line touch diagonal; do not touch corner of rectangle or intersection of diagonal lines
8. outside cross				**Drawing:** vertical line of the outside cross is parallel to side of rectangle; >1/2 the height of rectangle; horizontal line crosses vertical at 90 degree angle and is between 20–50% of length of vertical line **Placement:** horizontal line of outside cross touches rectangle higher than 2/3 the height of rectangle, but below top; does not penetrate the rectangle
9. triangle				**Drawing:** angle formed by 2 sides of triangle is between 60–100 degrees; sides are straight, unbroken and meet in a point; distance on vertical side of rectangle subsumed by triangle is approximately 50% of the height of vertical side **Placement:** roughly centered on the left vertical side of the rectangle
10. arrow				**Drawing:** straight and unbroken; lines forming arrow are approximately equal in length and not more than 1/3 length of staff **Placement:** must protrude from appropriate corner of rectangle such that staff appears to be continuation of diagonal cross
			Total Score Range=0–20	

Figure Copy Drawing Page

(Fold back for use.)

4 Line Orientation

Time Limit: 20 seconds/item

Present the sample item, and say ***These two lines down here*** (indicate) ***match two of the lines on top. Can you tell me the numbers, or point to the lines that they match?*** Correct any errors and make sure the examinee understands the task. Continue with Items 1–10.

Scoring: 1 point for each line correctly identified.

Item	Responses	Correct Responses	Score (0, 1, or 2)
Sample		1, 7	
1.		10, 12	
2.		4, 11	
3.		6, 9	
4.		8, 13	
5.		2, 4	

Item	Responses	Correct Responses	Score (0, 1, or 2)
6.		1, 6	
7.		3, 10	
8.		5, 8	
9.		1, 3	
10.		11, 13	
		Total Score Range=0–20	

5 Picture Naming

Time Limit: 20 seconds/item

Ask the examinee to name each picture. Give the semantic cue only if the picture is obviously misperceived.

Scoring: 1 point for each item that is correctly named spontaneously or following semantic cue.

Item	Semantic Cue	Responses	Score (0 or 1)
1. chair	a piece of furniture		
2. pencil	used for writing		
3. well	you get water from it		
4. giraffe	an animal		
5. sailboat	used on the water (if "boat," query "what kind")		
6. cannon	a weapon, used in war		
7. pliers	a tool		
8. trumpet	a musical instrument ("cornet" okay)		
9. clothespin	used to hold laundry on a line		
10. kite	it's flown in the air		
		Total Score Range=0–10	

6 Semantic Fluency

Time Limit: 60 seconds

Say ***Now I'd like you to tell me the names of all of the different kinds of fruits and vegetables that you can think of. I'll give you one minute to come up with as many as you can. Ready?***

Scoring: 1 point for each correct response.

1. _____	11. _____	21. _____	31. _____
2. _____	12. _____	22. _____	32. _____
3. _____	13. _____	23. _____	33. _____
4. _____	14. _____	24. _____	34. _____
5. _____	15. _____	25. _____	35. _____
6. _____	16. _____	26. _____	36. _____
7. _____	17. _____	27. _____	37. _____
8. _____	18. _____	28. _____	38. _____
9. _____	19. _____	29. _____	39. _____
10. _____	20. _____	30. _____	40. _____

Total Score
Range=0–40 ☐

7 Digit Span

Say ***I am going to say some numbers, and I want you to repeat them after me. Okay?***
Read the numbers at the rate of 1 per second. Only read the second string in each set if the first string was failed. Discontinue after failure of both strings in any set.

Scoring: 2 points for the first string correct, 1 point for the second string correct, and 0 points for both strings failed.

Item	First String	String Score (0 or 2)	Second String	String Score (0 or 1)	Item Score (0–2)
1.	4—9		5—3		
2.	8—3—5		2—4—1		
3.	7—2—4—6		1—6—3—8		
4.	5—3—9—2—4		3—8—4—9—1		
5.	6—4—2—9—3—5		9—1—5—3—7—6		
6.	2—8—5—1—9—3—7		5—3—1—7—4—9—2		
7.	8—3—7—9—5—2—4—1		9—5—1—4—2—7—3—8		
8.	1—5—9—2—3—8—7—4—6		5—1—9—7—6—2—3—6—5		

Total Score
Range=0–16 ☐

8 Coding

Time Limit: 90 seconds

Say ***Look at these boxes*** (indicate key). ***For each one of these marks there is a number that goes with it. Down here there are marks, but no numbers. I want you to fill in the number that goes with each mark.***

Demonstrate the first three. Say ***Now I would like you to fill in the rest of these boxes up to the double lines*** (indicate) ***for practice.*** Correct any errors as they are made. Make sure that the examinee understands the task and has correctly completed the sample items before you begin timing.

Say ***Now I would like you to continue to fill in the numbers that match the marks. Go as quickly as you can without skipping any. When you reach the end of the line, go on to the next one. Ready? Go ahead.***

Redirect the examinee to the task if he or she becomes distracted. If the examinee is unable to comprehend the task, the subtest score is 0.

Scoring: 1 point for each item correctly coded within 90 seconds (*do not* score the sample items).

Note: Familiarize yourself with these instructions before administering this subtest.

Total Score Range=0–89	

9 List Recall

Say ***Do you remember the list of words that I read to you in the beginning? Tell me as many of those words as you can remember now.***

Scoring: 1 point for each word correctly recalled.

List (Do not read.)	Response	Score (0 or 1)
Market		
Package		
Elbow		
Apple		
Story		
Carpet		
Bubble		
Highway		
Saddle		
Powder		
	Total Score Range=0–10	

10 List Recognition

Say ***I'm going to read you some words. Some of these words were on that list, and some of them weren't. I want you to tell me which words were on the list.*** For each word, ask ***Was _____ on the list?***

Scoring: 1 point for each word correctly identified. Circle the letter corresponding to examinee's response (y = yes, n = no); bold, capitalized (**Y, N**) letter indicates correct response.

List	Circle One	List	Circle One	List	Circle One	List	Circle One
1. **Apple**	**Y** n	6. sailor	y **N**	11. **Bubble**	**Y** n	16. **Saddle**	**Y** n
2. honey	y **N**	7. velvet	y **N**	12. prairie	y **N**	17. **Powder**	**Y** n
3. **Market**	**Y** n	8. **Carpet**	**Y** n	13. **Highway**	**Y** n	18. angel	y **N**
4. **Story**	**Y** n	9. valley	y **N**	14. oyster	y **N**	19. **Package**	**Y** n
5. fabric	y **N**	10. **Elbow**	**Y** n	15. student	y **N**	20. meadow	y **N**

Total Score Range=0–20

11 Story Recall

Say: ***Do you remember that story about a fire that I read to you earlier? Tell me as many details from the story as you can remember now.***

Scoring: 1 point for each verbatim recall of bold, italic words or alternatives, shown below in color within parentheses. Record intrusions or variations in the Responses column.

Story (Do not read.)	Responses	Item Score (0 or 1)
1. On ***Tuesday,***		
2. ***May***		
3. ***Fourth,***		
4. in ***Cleveland,*** Ohio,		
5. a ***3 alarm***		
6. ***fire*** broke out.		
7. ***Two***		
8. ***hotels***		
9. and a ***restaurant***		
10. were ***destroyed***		
11. before the ***firefighters (firemen)***		
12. were able to ***extinguish it (put it out).***		
	Total Score Range=0–12	

12 Figure Recall

Say ***Do you remember that figure that I had you copy? I want you to draw as much of it as you can remember now. If you remember a part, but you're not sure where it goes, put it anywhere. Try to draw as much of it as you can.***

Now, present the Figure Recall Drawing Page.

Scoring: 1 point for correctness and completeness (drawing), and 1 point for proper placement. See Appendix 1 in Stimulus Booklet.A for complete scoring criteria and scoring examples.

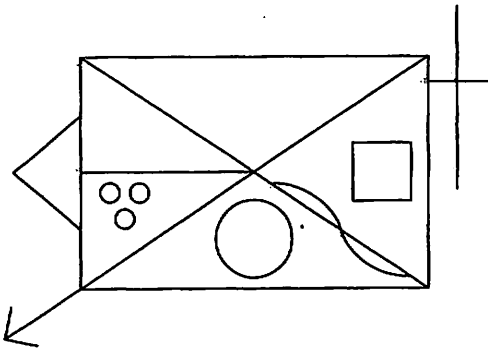


Figure Recall Criteria

(Fold back for use.)

Item	Drawing (0 or 1)	Placement (0 or 1)	Score (0, 1, or 2)	Scoring Criteria
1. rectangle				**Drawing:** lines are unbroken and straight; angles 90 degrees; top/bottom lines 25% longer than sides **Placement:** not rotated more than 15 degrees
2. diagonal cross				**Drawing:** lines are unbroken and straight and should approximately bisect each other **Placement:** ends of lines should meet corners of the rectangle without significant overlap or measurable distance between the ends of the lines and the corners
3. horizontal line				**Drawing:** line is unbroken and straight; should not exceed 1/2 the length of the rectangle **Placement:** should bisect left side of the rectangle at approximately a right angle and intersect the diagonal cross
4. circle				**Drawing:** round, unbroken and closed; diameter should be approximately 1/4–1/3 height of rectangle **Placement:** placed in appropriate segment; not touching any other part of figure
5. 3 small circles				**Drawing:** round, unbroken and closed; equal size; triangular arrangement; not touching each other **Placement:** in appropriate segment; not touching figure; triangle formed not rotated more than 15 degrees
6. square				**Drawing:** must be closed; 90 degree angles; lines straight and unbroken; height is 1/4–1/3 height of rectangle **Placement:** in appropriate segment; not touching any other part of figure; not rotated more than 15 degrees
7. curving line				**Drawing:** 2 curved segments are approximately equal in length and symmetrical; correct direction of curves **Placement:** ends of line touch diagonal; do not touch corner of rectangle or intersection of diagonal lines
8. outside cross				**Drawing:** vertical line of the outside cross is parallel to side of rectangle; >1/2 the height of rectangle; horizontal line crosses vertical at 90 degree angle and is between 20–50% of length of vertical line **Placement:** horizontal line of outside cross touches rectangle higher than 2/3 the height of rectangle, but below top; does not penetrate the rectangle
9. triangle				**Drawing:** angle formed by 2 sides of triangle is between 60–100 degrees; sides are straight, unbroken and meet in a point; distance on vertical side of rectangle subsumed by triangle is approximately 50% of the height of vertical side **Placement:** roughly centered on the left vertical side of the rectangle
10. arrow				**Drawing:** straight and unbroken; lines forming arrow are approximately equal in length and not more than 1/3 length of staff **Placement:** must protrude from appropriate corner of rectangle such that staff appears to be continuation of diagonal cross
		Total Score Range=0–20		

Figure Recall Drawing Page

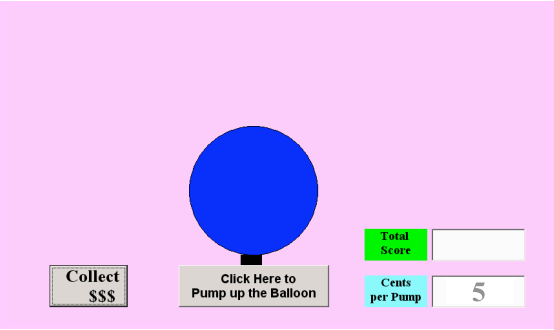
(Fold back for use.)

Psychomotor Vigilance Test

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

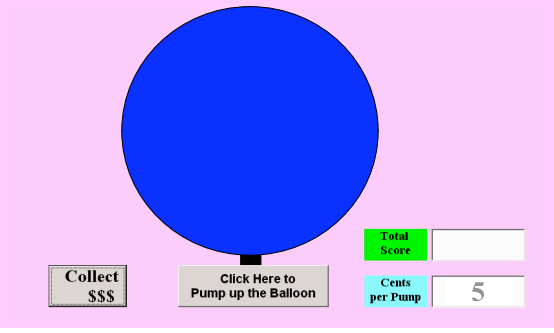
Balloon Analog Risk Task

Inflate Balloon by Pressing Key



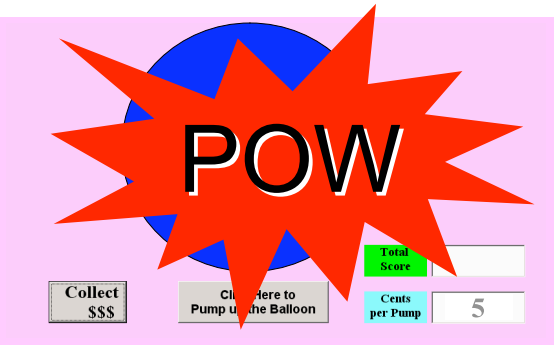
- The BART presents participants with 30 virtual balloons.
- Each balloon can be inflated one increment for each key press.

Balloon Grows in Size and $$$ Value



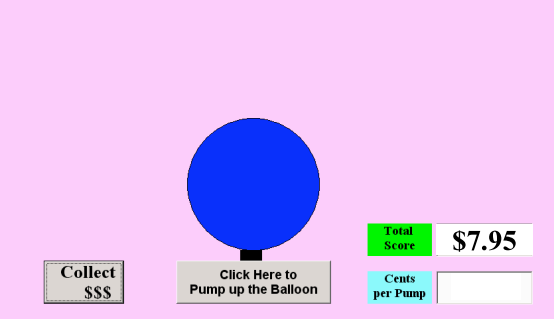
- With each key press the size of the balloon increases.
- Each increment also increases the potential value of the balloon by 5 cents.
- The balloon can be "cashed in" at any time and the total accumulated value retained.

If Balloon Explodes, All $$$ is Lost



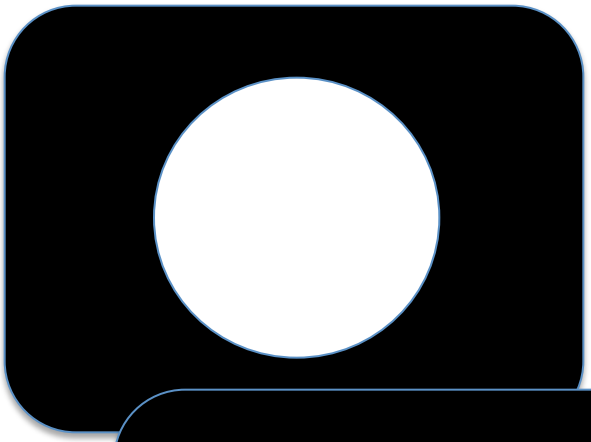
- Each balloon can explode at any time.
- If a balloon explodes, all of the potential money accumulated *for that balloon* will be lost.

Goal: Earn as Much Money as Possible

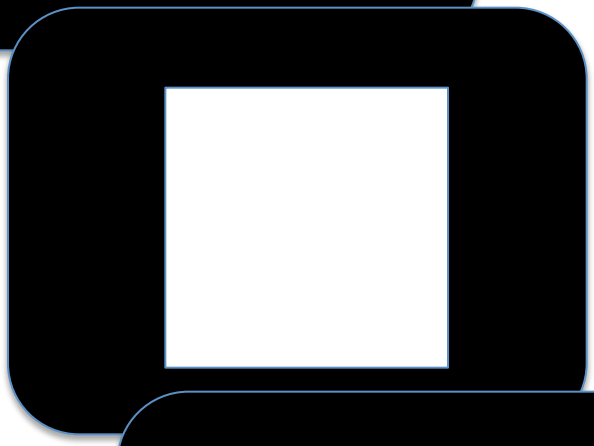


- The goal is to maximize winnings.
- Only 30 balloons are presented

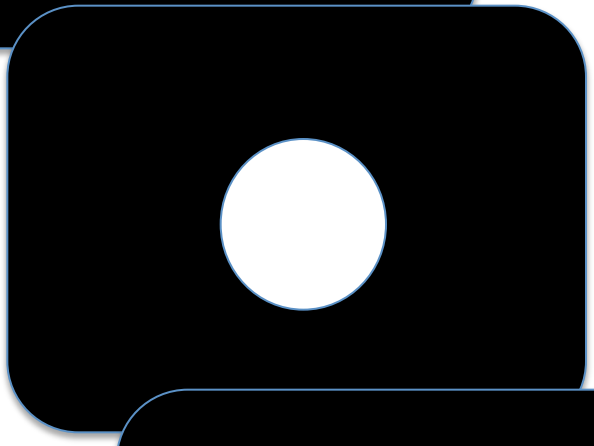
Go/No-Go Task



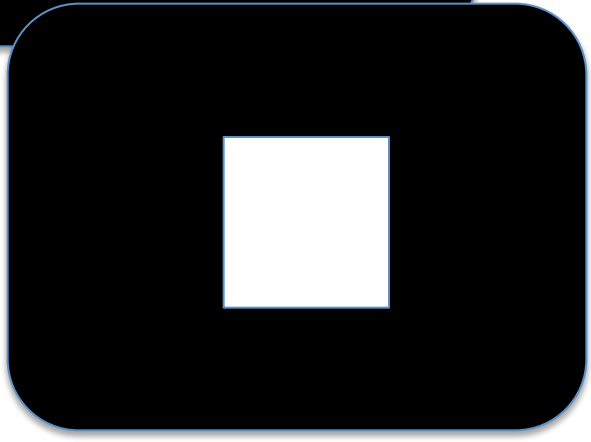
Go



Go



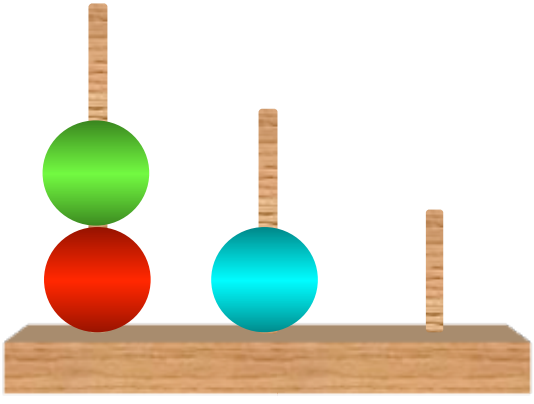
Go



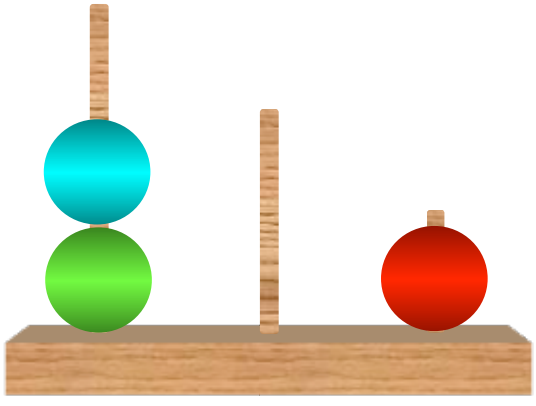
No Go

Tower of London Task

Your Tower



Goal



WASI-II Record Form

WECHSLER ABBREVIATED SCALE OF INTELLIGENCE™ — SECOND EDITION

Calculation of Examinee's Age

	Year	Month	Day
Test Date			
Test Age			

ID:

Sex: ☐ F ☐ M Handedness: ☐ R ☐ L

Address/School/Testing Site:

Highest Education/Grade:

Examiner Name:

Total Raw Score to *T* Score Conversion

Subtest	Raw Score	Verbal Comp.	Perc. Rsng.	Full Scale–4	Full Scale–2
Block Design					
Vocabulary					
Matrix Reasoning					
Similarities					
Sum of *T* Scores					

Examinee Visual/Hearing Aids During Testing

Check type of aid examinee needed:	Used	Not Used
☐ Glasses	☐	☐
☐ Prescription Lenses	☐	☐
☐ Assisted Listening Device	☐	☐
☐ Other:	☐	☐

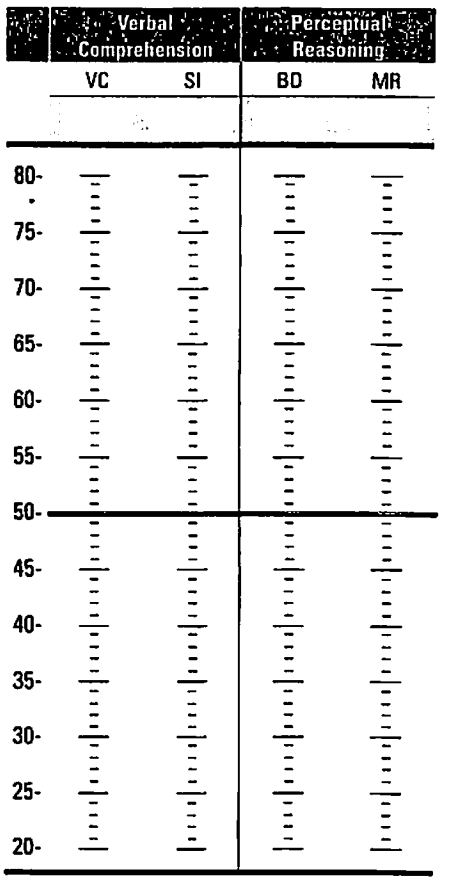
Sum of *T* Scores to Composite Score Conversion

Scale	Sum of *T* Scores	Composite Score	Percentile Rank	Confidence Interval 90% or 95%
Verbal Comp.		VCI			–
Perc. Rsng.		PRI			–
Full Scale–4		FSIQ–4			–
Full Scale–2		FSIQ–2			–

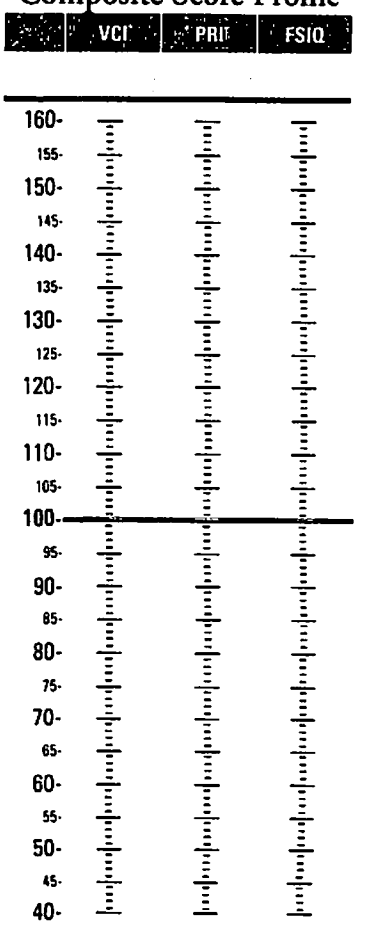
Ranges of Expected Scores

Scores	Confidence Level 90%	68%
FSIQ–4		
WISC-IV FSIQ	–	–
WAIS-IV FSIQ	–	–

Subtest *T* Score Profile



Composite Score Profile



PEARSON

PsychCorp

Product Number 0158981596

1. Block Design

(Time limit: See item)

Start
Ages 6–8: Item 1
Ages 9–90: Item 3

Reverse
Ages 9–90: Does not obtain a perfect score on *either* Item 3 or Item 4, administer the preceding items in **reverse** order until two consecutive perfect scores are obtained.

Discontinue
After 2 consecutive scores of 0.

Stop
Ages 6–8: After Item 11.

Record & Score
Items 1–4: Score 0, 1, or 2 points.
Items 5–13: Score 0, 4, 5, 6, or 7 points.

	Design	Presentation Method	Time Limit	Completion Time		Constructed Design		Score			
6–8	1. Examinee / Examiner	Model and Picture	30"	Trial 1	Trial 2	Trial 1	Trial 2	0	1	2	
	2.	Model and Picture	30"	Trial 1	Trial 2	Trial 1	Trial 2	0	1	2	
9–90	3.	Model and Picture	45"	Trial 1	Trial 2	Trial 1	Trial 2	0	1	2	
	4.	Model and Picture	45"	Trial 1	Trial 2	Trial 1	Trial 2	0	1	2	
	5.	Picture	60"					0	21–60: 4	16–20: 5	11–15: 6	1–10: 7
	6.	Picture	60"					0	21–60: 4	16–20: 5	11–15: 6	1–10: 7
	7.	Picture	60"					0	21–60: 4	16–20: 5	11–15: 6	1–10: 7
	8.	Picture	60"					0	21–60: 4	16–20: 5	11–15: 6	1–10: 7
	9.	Picture	120"					0	71–120: 4	46–70: 5	31–45: 6	1–30: 7
	10.	Picture	120"					0	61–120: 4	46–60: 5	36–45: 6	1–35: 7
	11.	Picture	120"					0	61–120: 4	46–60: 5	36–45: 6	1–35: 7
6–8 STOP	12.	Picture	120"					0	61–120: 4	46–60: 5	36–45: 6	1–35: 7
	13.	Picture	120"					0	101–120: 4	81–100: 5	56–80: 6	1–55: 7

Maximum Raw Score
Ages 6–8: 57
Ages 9–90: 71

Block Design Total Raw Score ____

Start
Ages 6–90:
Item 4

Reverse
Ages 6–90: Does not obtain a perfect score on *either* Item 4 or Item 5, administer the preceding items in reverse order until two consecutive perfect scores are obtained.

Discontinue
After 3 consecutive scores of 0.

Stop
Age 6:
After Item 22.
Ages 7–11:
After Item 25.
Ages 12–14:
After Item 28.

Record & Score
Items 1–3: Score 0 or 1 point.
Items 4–5: Score 0 or 2 points.
Items 6–31: Score 0, 1, or 2 points.
See the Manual for sample responses.

Item	Response	Score
1. Fish		0 1
2. Shovel		0 1
3. Shell		0 1
6–90 †4. Shirt		0 2
5. Car		0 2
6. Lamp		0 1 2
7. Bird		0 1 2
8. Tongue		0 1 2
9. Pet		0 1 2
10. Lunch		0 1 2
11. Bell		0 1 2
12. Calendar		0 1 2
13. Alligator		0 1 2
14. Dance		0 1 2

†If the examinee provides a 2-point response that requires feedback or gives an incorrect (0 point) response, provide corrective feedback as instructed in the Manual.

continue

2. Vocabulary *(continued)*

Discontinue after 3 consecutive scores of 0.

	Item	Response	Score
	15. Summer		0 1 2
	16. Reveal		0 1 2
	17. Decade		0 1 2
	18. Entertain		0 1 2
	19. Tradition		0 1 2
	20. Enthusiastic		0 1 2
	21. Improvise		0 1 2
	22. Haste		0 1 2
6 STOP	23. Trend		0 1 2
	24. Impulse		0 1 2
	25. Ruminate		0 1 2
7–11 STOP	26. Mollify		0 1 2
	27. Extirpate		0 1 2
	28. Panacea		0 1 2
12–14 STOP			

continue

2. Vocabulary *(continued)*

Discontinue after **3** consecutive scores of 0.

Item	Response	Score
29. Perfunctory		0 1 2
30. Insipid		0 1 2
31. Pavid		0 1 2

Maximum Raw Score
Age 6: 41
Ages 7–11: 47
Ages 12–14: 53
Ages 15–90: 59

Vocabulary Total Raw Score ____

3. Matrix Reasoning

Start
Ages 6–8: Sample Items A & B, then Item 1
Ages 9–90: Sample Items A & B, then Item 4

Reverse
Ages 9–90: Does not obtain a perfect score on *either* Item 4 or Item 5, administer the preceding items in **reverse** order until two consecutive perfect scores are obtained.

Discontinue
After **3** consecutive scores of 0.

Stop
Ages 6–8: After Item 24.

Record & Score
Score **0** or **1** point.
Correct responses are in **color**.

	Item	Response					Score	
6–90	SA.	1	**2**	3	4	5		
	SB.	1	2	**3**	4	5		
6–8	1.	1	**2**	3	4	5	0	1
	2.	**1**	2	3	4	5	0	1
	3.	1	2	**3**	4	5	0	1
9–90	4.	**1**	2	3	4	5	0	1
	5.	1	2	3	4	**5**	0	1
	6.	**1**	2	3	4	5	0	1
	7.	1	2	**3**	4	5	0	1
	8.	1	2	**3**	4	5	0	1
	9.	1	2	3	**4**	5	0	1
	10.	1	**2**	3	4	5	0	1
	11.	1	2	**3**	4	5	0	1
	12.	1	2	3	**4**	5	0	1
	13.	**1**	2	3	4	5	0	1
	14.	1	2	3	**4**	5	0	1
	15.	1	**2**	3	4	5	0	1
	16.	1	2	3	4	**5**	0	1
	17.	1	2	3	**4**	5	0	1
	18.	1	**2**	3	4	5	0	1
	19.	1	2	3	**4**	5	0	1
	20.	1	**2**	3	4	5	0	1
	21.	1	2	**3**	4	5	0	1
	22.	1	2	**3**	4	5	0	1
	23.	**1**	2	3	4	5	0	1
6–8 STOP	24.	1	2	3	**4**	5	0	1
	25.	1	2	3	**4**	5	0	1
	26.	1	**2**	3	4	5	0	1
	27.	1	2	3	4	**5**	0	1
	28.	1	2	3	4	**5**	0	1
	29.	**1**	2	3	4	5	0	1
	30.	1	**2**	3	4	5	0	1

Maximum Raw Score
Ages 6–8: 24
Ages 9–90: 30

Matrix Reasoning Total Raw Score ____

4. Similarities

Start
Ages 6–8: Item 1
Ages 9–90: Item 4

Reverse
Ages 9–90: Does not obtain a perfect score on *either* Item 4 or Item 5, administer the preceding items in **reverse** order until two consecutive perfect scores are obtained.

Discontinue
After **3** consecutive scores of 0.

Stop
Ages 6–8: After Item 22.

Record & Score
Items 1–3: Score **0** or **1** point. Correct responses are in **color**.
Items 4–5: Score **0** or **2** points.
Items 6–24: Score **0**, **1**, or **2** points. See Manual for sample responses.

	Picture Item	Response	Score
6–8	†1.	1 2 **3** 4 5	0 1

Picture Item	Response	Score
2.	1 2 3 **4** 5	0 1

Picture Item	Response	Score
3.	1 **2** 3 4 5	0 1

	Verbal Items	Response	Score
9–90	§† 4. Green–Blue		0 2
	§† 5. Square–Triangle		0 2
	6. Cow–Bear		0 1 2
	7. Shirt–Jacket		0 1 2
	8. Pen–Crayon		0 1 2
	9. Hat–Umbrella		0 1 2
	10. Airplane–Bus		0 1 2
	11. Door–Window		0 1 2
	12. Child–Adult		0 1 2

§If the examinee provides a response that suggests he or she does not understand the task, provide the specified prompt in the Manual.

†If the examinee provides a 2-point response that requires feedback or provides an incorrect (0 point) response, provide corrective feedback as instructed in the Manual.

continue

4. Similarities *(continued)*

Discontinue after **3** consecutive scores of 0.

Verbal Items	Response	Score
13. Shoulder–Ankle		0 1 2
14. Love–Hate		0 1 2
15. Smooth–Rough		0 1 2
16. Hand–Flag		0 1 2
17. Wall–Line		0 1 2
18. Heat–Wind		0 1 2
19. More–Less		0 1 2
20. Shadow–Echo		0 1 2
21. Tradition–Habit		0 1 2
22. Peace–War		0 1 2
6–8 STOP 23. Time–Progress		0 1 2
24. Memory–Practice		0 1 2

Maximum Raw Score
Ages 6–8: 41
Ages 9–90: 45

Similarities Total Raw Score ____

WASI®-II

WECHSLER ABBREVIATED SCALE OF INTELLIGENCE®— SECOND EDITION

Examinee Name: _____ Age: _____

Parent/Guardian Name: _____

Examiner Name: _____

Record Form

Behavioral Observations

Referral source/Reason for referral/Presenting complaint(s)

Physical appearance

Language (e.g., first/native language, other language, English fluency, expressive and receptive language ability, articulation)

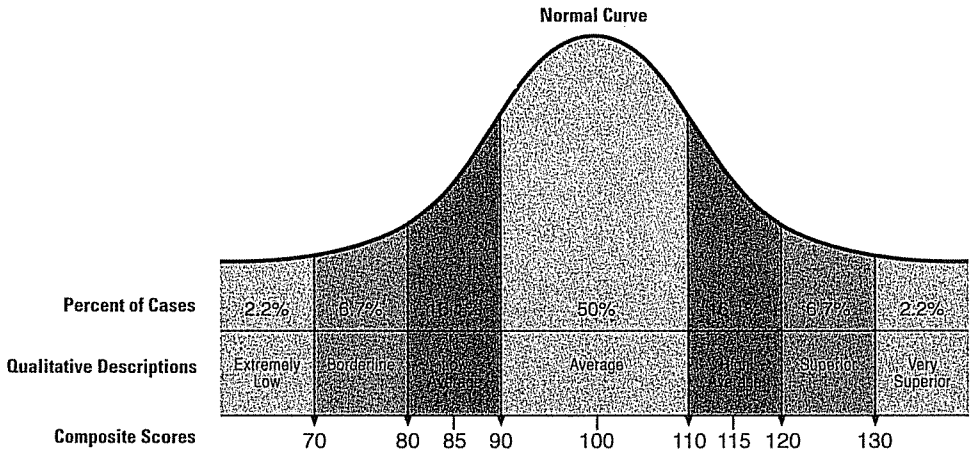
Attention and concentration

Attitude toward testing (e.g., rapport, eager to speak, working habits, interest, motivation, reaction to success/failure)

Affect/Mood

Unusual behaviors/Verbalizations (e.g., perseverations, stereotypic movements, bizarre and atypical verbalizations)

Other notes



PEARSON

Pearson Executive Office 5601 Green Valley Drive Bloomington, MN 55437

800.627.7271 www.PsychCorp.com

CVLT-II
California Verbal Learning Test®
Second Edition • Adult Version

California Verbal Learning Test–Second Edition

Dean C. Delis Joel H. Kramer Edith Kaplan Beth A. Ober

Standard Form

ID#: _____ Examiner: _____

	Year	Month	Day
Date Tested			
Age at Testing			

Sex: ☐ F ☐ M Race/Ethnicity: _____ Education (years): _____

Handedness: ☐ R ☐ L ☐ Ambidextrous Hearing adequate? ☐ Y ☐ N Hearing aid? ☐ Y ☐ N

First language: _____ Preferred language: _____ Effort appear adequate? ☐ Y ☐ ? ☐ N

Affect and mood: _____ Physical appearance: _____

Other behaviors: _____

Major complaints: _____

Diagnostic history: _____

_____

Current medications: _____

	Raw Score	Standard Score		Raw Score	Standard Score
Trial 1 Free Recall **Correct**			Long-Delay Free Recall **Correct**		
Trial 2 Free Recall **Correct**			Long-Delay Cued Recall **Correct**		
Trial 3 Free Recall **Correct**			Free-Recall **Intrusions** (Immediate & Delayed, All Types)		
Trial 4 Free Recall **Correct**			Cued-Recall **Intrusions** (All Types)		
Trial 5 Free Recall **Correct**			Total **Intrusions** (All Recall Trials, All Types)		
Trials 1–5 Free Recall Total **Correct**		(*T* score)	Total **Repetitions** (All Recall Trials)		
List B Free Recall **Correct**			Long-Delay Yes/No Recognition **Hits**		
Short-Delay Free Recall **Correct**			Long-Delay Yes/No Recognition **False-Positives**		
Short-Delay Cued Recall **Correct**			Long-Delay Forced-Choice Recognition **Accuracy** (# hits _____ /16) × 100	%	

PEARSON

PsychCorp

Product Number 0154035742

List A Immediate Free Recall Trial 1

I'm going to read a list of words to you. Listen carefully, because when I'm through, I want you to tell me as many of the words as you can. You can say them in any order, just say as many of them as you can. Are you ready?

Read List A at an even pace, taking slightly longer than one second per word, so the entire list takes 18 to 20 seconds. Then say: **Go ahead.**

Trial 2

I'm going to read the same list again. Like before, tell me as many of the words as you can, in any order. Be sure to also say words from the list that you told me the first time.

Trials 3 and 4

I'm going to read the same list again. Like before, tell me as many of the words as you can, in any order, including words from the list you've said before.

Trial 5

I'm going to read the same list one more time. Like before, tell me as many of the words as you can, in any order, including words from the list you've said before.

Record all responses verbatim, in the order recalled. Prompt only once (e.g., Anything else?) at the end of each free and cued recall trial (i.e., after 15 seconds with no response or when the examinee says he/she cannot remember more words).

List A
truck
spinach
giraffe
bookcase
onion
motorcycle
cabinet
zebra
subway
lamp
celery
cow
desk
boat
squirrel
cabbage

	Trial 1	Resp Type	Trial 2	Resp Type	Trial 3	Resp Type	Trial 4	Resp Type	Trial 5	Resp Type
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
Total Correct		C		C		C		C		C
Total Repetitions		R		R		R		R		R
Total Intrusions		I		I		I		I		I

List B Immediate Free Recall

Now I'm going to read a second list of words to you. When I'm through, I want you to tell me as many words from this second list as you can, in any order. Don't tell me words from the first list, just this second list.

Read List B at an even pace, taking slightly longer than one second per word, so the entire list takes 18 to 20 seconds. Then say: **Go ahead.**

List A Short-Delay Free Recall

Now I want you to tell me all the words you can from the *first* list, the one I read to you several times. Don't tell me words from the second list, just the first list. Go ahead.

List A Short-Delay Cued Recall

Tell me all the words from the first list that are furniture.
Tell me all the words from the first list that are vegetables.
Tell me all the words from the first list that are ways of traveling.
Tell me all the words from the first list that are animals.

Record all responses verbatim, in the order recalled. Prompt only once (e.g., Anything else?) at the end of each free and cued recall trial (i.e., after 15 seconds with no response or when the examinee says he/she cannot remember more words).

List B

violin
cucumber
elephant
closet
turnip
guitar
basement
sheep
clarinet
garage
corn
rabbit
patio
saxophone
tiger
radishes

Trial B

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Total Correct C ☐
Total Repetitions R ☐
Total Intrusions I ☐

List A

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Total Correct C ☐
Total Repetitions R ☐
Total Intrusions I ☐

Furniture

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		

Vegetables

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		

Ways of Traveling

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		

Animals

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		

Total Correct C ☐
Total Repetitions R ☐
Total Intrusions I ☐

There should be approximately a ***20-minute delay*** *between the completion of Short-Delay Cued Recall and the start of Long-Delay Free Recall. Do not inform the examinee that there will be later CVLT–II trials.*

List A Long-Delay Free Recall

I read two different lists of words to you earlier: a first list that I read to you several times, and a second list that I read to you once. Tell me all the words you can that were from the *first* list. Don't tell me words from the second list, just the first list. Go ahead.

List A

		Resp Type
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Total Correct C ☐

Total Repetitions R ☐

Total Intrusions I ☐

List A Long-Delay Cued Recall

Tell me all the words from the first list that are furniture.
Tell me all the words from the first list that are vegetables.
Tell me all the words from the first list that are ways of traveling.
Tell me all the words from the first list that are animals.

	Furniture	Resp Type	Vegetables	Resp Type	Ways of Traveling	Resp Type	Animals	Resp Type
1								
2								
3								
4								
5								
6								
7								
8								

Total Correct C ☐ Total Repetitions R ☐ Total Intrusions I ☐

List A Long-Delay Yes/No Recognition

Now I'm going to read more words to you. After I read each one, say "Yes" if that word was from the first list, or say "No" if it was not from the first list.

If the examinee responds "I don't know" during Yes/No Recognition, say, "Tell me whether you think _____ was on the first list."

	Response	Item Type		Response	Item Type		Response	Item Type		Response	Item Type
wallet	Y N	UN	violin	Y N	BN	dog	Y N	PR	turnip	Y N	BS
boat	**Y** N	T	**cow**	**Y** N	T	**bookcase**	**Y** N	T	**cabinet**	**Y** N	T
saxophone	Y N	BN	fork	Y N	UN	matches	Y N	UN	**onion**	**Y** N	T
cucumber	Y N	BS	bus	Y N	PR	**spinach**	**Y** N	T	lion	Y N	PR
giraffe	**Y** N	T	**celery**	**Y** N	T	clarinet	Y N	BN	camera	Y N	UN
carrot	Y N	PR	**lamp**	**Y** N	T	**truck**	**Y** N	T	guitar	Y N	BN
patio	Y N	BN	radishes	Y N	BS	rabbit	Y N	BS	**subway**	**Y** N	T
cabbage	**Y** N	T	table	Y N	PR	chair	Y N	PR	tiger	Y N	BS
desk	**Y** N	T	rose	Y N	UN	corn	Y N	BS	coffee	Y N	UN
bracelet	Y N	UN	**motorcycle**	**Y** N	T	seashell	Y N	UN	**zebra**	**Y** N	T
car	Y N	PR	sheep	Y N	BS	garage	Y N	BN	lettuce	Y N	PR
elephant	Y N	BS	basement	Y N	BN	**squirrel**	**Y** N	T	closet	Y N	BN

T = Target
Distractor Types: BS = List B Shared; BN = List B Non-Shared; PR = Prototypical; UN = Unrelated

Total Hits ☐

Total False-Positives ☐

*There should be approximately a **10-minute delay** between the completion of Yes/No Recognition and the start of Forced-Choice Recognition. Do not inform the examinee that there will be a later CVLT–II trial.*

List A Long-Delay Forced-Choice Recognition (Optional)

Earlier, I read some lists of words to you, remember? Now I am going to read some words two at a time. After I read both words, say which of the words was from the *first* list, the one I read to you several times. It may be difficult to remember which one to pick, but even if it's hard for you, just try your best. Ready?

Was *boat* or *flag* on the first list?

Was ____ or ____ on the first list?

Circle the examinee's responses.

If the examinee says "I don't know," say, "I know it may be difficult, but just take your best guess."

			Score (1 or 0)	Dist. type
boat	or	flag		C
cake	or	**desk**		C
majority	or	**cow**		A
celery	or	aspirin		C
bookcase	or	silence		A
blender	or	**truck**		C
onion	or	logic		A
baseball	or	**zebra**		C
instruction	or	**cabinet**		A
squirrel	or	direction		A
blanket	or	**cabbage**		C
subway	or	technique		A
height	or	**spinach**		A
giraffe	or	towel		C
subject	or	**motorcycle**		A
lamp	or	sprinkler		C

Distractor types: C = concrete; A = abstract Total Hits ____

Total Accuracy: (_____ /16) × 100 = _____ %

Notes: _____

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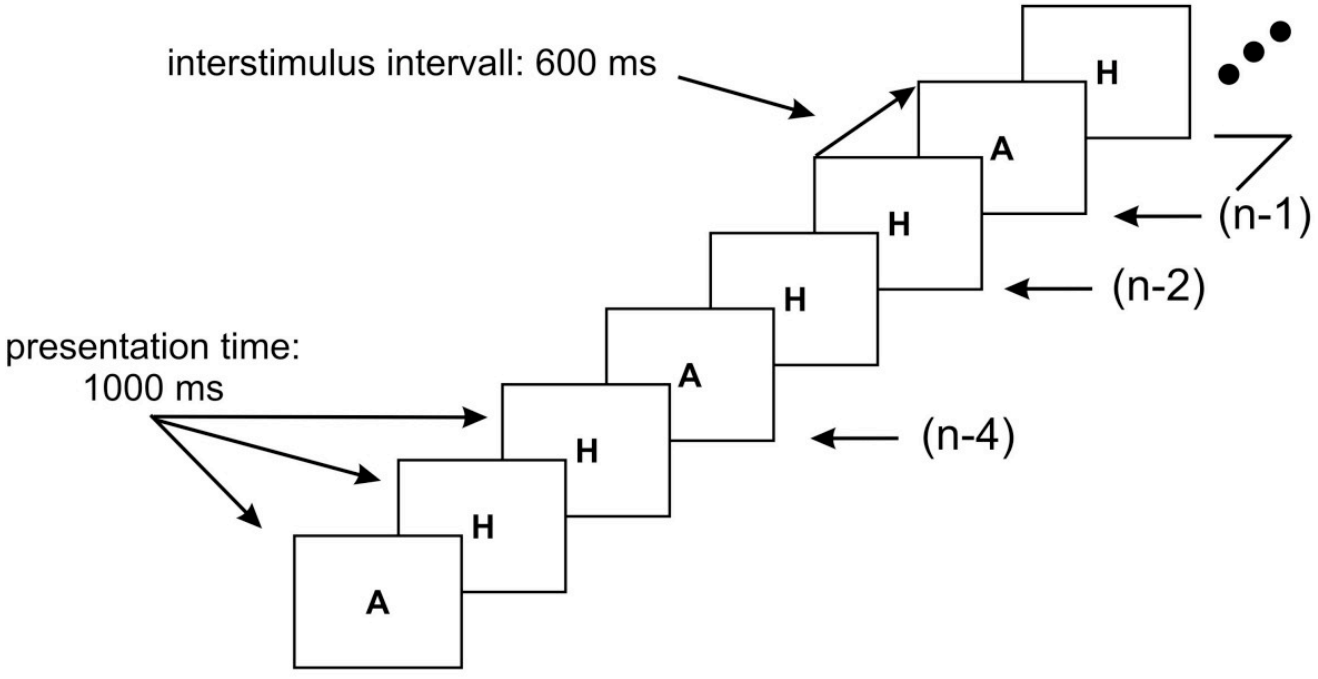
24 A B C D E

Multi-Source Interference Task (MSIT)

N-back task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presentation time:
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Curriculum Vitae

Date Prepared: **October 4, 2014**

Name: WILLIAM DALE (SCOTT) KILLGORE

Office Address: Suite 7303B
Department of Psychiatry
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1501 North Campbell Ave.
PO Box 245002
Tucson, AZ 85724 United States

Work

Email: killgore@mclean.harvard.edu

Killgore@psychiatry.arizona.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
09/13-05/14	Certificate in Applied Biostatistics, 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
10/10-10/12	Assistant Professor of Psychology in the Department of Psychiatry Harvard Medical School, Boston, MA
10/12-	Associate Professor of Psychology in the Department of Psychiatry Harvard Medical School

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
08/07-	Research Psychologist, 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
10/07-07/12	Major, Medical Service Corps, United States Army Reserve (USAR)
10/07-3/10	Chief Psychologist, GovSource, Inc., U.S. Department of Defense Government Contractor
08/08-	Consulting Psychologist, The Brain Institute, University of Utah
07/12-	Lieutenant Colonel, Medical Service Corps, United States Army Reserve (USAR)

Major Administrative Leadership Positions

Local

1988-1989	Undergraduate Teaching Assistant-Introduction to Psychology 102, University of New Mexico
1990-1991	Graduate Teaching Assistant-General Psychology 1300, Texas Tech University
1991-1992	Graduate Teaching Assistant-Psychology of Learning Laboratory 3317, Texas Tech University
2004-2007	Chief, Neurocognitive Performance Branch, Walter Reed Army Institute of Research, Silver Spring, MD
2005-2006	Neuropsychology Postdoctoral Program Training Supervisor, Walter Reed Hospital, Washington, DC
2011-	Co-Director, Social, Cognitive, and Affective Neuroscience Laboratory, McLean Hospital, Belmont, MA

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
2012-	McLean Hospital Research Committee, McLean Hospital, Belmont, MA

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
2012-	American Academy of Sleep Medicine, Member
2014-	Organization for Human Brain Mapping, 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
2012	National Science Foundation (NSF) Grant Reviewer

International

2009	Scotland, UK, Biomedical and Therapeutic Research Committee, Grant Reviewer
2010	Canada, Social Sciences and Humanities Research Council of Canada, Grant Reviewer
2011	Israel, Israel Science Foundation (ISF), Grant Reviewer
2013	Israel, Israel Science Foundation (ISF), Grant Reviewer

Editorial Activities

2001-2012	Reviewer, Psychological Reports
2001-2012	Reviewer, Perceptual and Motor Skills
2002	Reviewer, American Journal of Psychiatry
2002-2013	Reviewer, Biological Psychiatry
2003	Reviewer, Clinical Neurology and Neurosurgery
2004, 2013	Reviewer, NeuroImage
2004-2006	Reviewer, Neuropsychologia
2004	Reviewer, Journal of Neuroscience
2004	Reviewer, Consciousness and Cognition
2005	Reviewer, Experimental Brain Research
2005	Reviewer, Schizophrenia Research
2005-2012	Reviewer, Archives of General Psychiatry
2005	Reviewer, Behavioral Brain Research
2005-2009	Reviewer, Human Brain Mapping
2005-2013	Reviewer, Psychiatry Research: Neuroimaging
2006	Reviewer, Journal of Abnormal Psychology
2006	Reviewer, Psychopharmacology
2006	Reviewer, Developmental Science
2006	Reviewer, Acta Psychologica
2006	Reviewer, Neuroscience Letters
2006-2014	Reviewer, Journal of Sleep Research
2006-2013	Reviewer, Physiology and Behavior
2006-2014	Reviewer, SLEEP
2007	Reviewer, Journal of Clinical and Experimental Neuropsychology
2008	Reviewer, European Journal of Child and Adolescent Psychiatry
2008	Reviewer, Judgment and Decision Making
2008-2010	Reviewer, Aviation, Space, & Environmental Medicine
2008	Reviewer, Journal of Psychophysiology
2008	Reviewer, Brazilian Journal of Medical and Biological Research
2008	Reviewer, The Harvard Undergraduate Research Journal
2008	Reviewer, Bipolar Disorders
2008-2013	Reviewer, Chronobiology International
2008	Reviewer, International Journal of Obesity
2009	Reviewer, European Journal of Neuroscience
2009-2014	Reviewer, International Journal of Eating Disorders
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
2009-2014	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
2010-2012	Reviewer, Brain Research
2011	Reviewer, Brain
2011	Reviewer, Social Cognitive and Affective Neuroscience
2011	Reviewer, Journal of Traumatic Stress
2011	Reviewer, Social Neuroscience
2011-2014	Reviewer, Brain and Cognition
2011	Reviewer, Frontiers in Neuroscience
2011-2012	Reviewer, Sleep Medicine Reviews
2012	Reviewer, Journal of Experimental Psychology: General
2012	Reviewer, Ergonomics
2012	Reviewer, Behavioral Sleep Medicine
2012	Reviewer, Neuropsychology
2012	Reviewer, Emotion
2012	Reviewer, JAMA
2012	Reviewer, BMC Neuroscience
2012	Reviewer, Cognition and Emotion
2012	Reviewer, Journal of Behavioral Decision Making
2012	Reviewer, Psychosomatic Medicine
2012-2014	Reviewer, PLoS One
2012	Reviewer, American Journal of Critical Care
2012-2014	Reviewer, Journal of Sleep Disorders: Treatment and Care
2013	Reviewer, Experimental Psychology
2013	Reviewer, Clinical Interventions in Aging
2013	Reviewer, Frontiers in Psychology
2013	Reviewer, Brain Structure and Function
2013	Reviewer, Appetite
2013	Reviewer, JAMA Psychiatry
2014	Reviewer, Acta Psychologica
2014	Reviewer, Neurology
2014	Reviewer, Applied Neuropsychology: Child

Other Editorial Roles

2009-	Editorial Board Member	International Journal of Eating Disorders
2012-	Editor	Datasets in Neuroscience

2012-	Editor	Datasets in Medicine
2012-	Editor	Journal of Sleep Disorders: Treatment and Care

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-Author, 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	Published paper included in *Best of Sleep Medicine 2011*
2011	Blue Ribbon Finalist, 2011 Top Poster Award in Clinical and Translational Research, Society of Biological Psychiatry
2012	Defense Advance Research Projects Agency (DARPA) Young Faculty Award in Neuroscience
2014	Blue Ribbon Finalist, 2014 Top Poster Award in Basic Neuroscience, Society of Biological Psychiatry
2014	Harvard Medical School Excellence in Mentoring Award Nominee
2014	AASM Young Investigator Award, Honorable Mention, Co-Author, American Academy of Sleep Medicine

Report of Funded and Unfunded Projects

Funding Information

Past

2001-2003	fMRI of Unconscious Affect Processing in Adolescence. N.I.H., 1R03HD41542-01 P.I.: Killgore ($79,000.)
2003-2006	The Effects of Sleep-Loss and Stimulant Countermeasures on Judgment and Decision Making. U.S. Army Medical Research and Materiel Command (USAMRMC) Competitive Medical Research Proposal Program (CMRP), P.I.: Killgore (Total Award: $1,345,000.)

2004-2005 Sleep/wake Schedules in 3ID Aviation Brigade Soldiers.
Defense Advanced Research Projects Agency (DARPA)
P.I.: Killgore (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.: Killgore (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.: Killgore (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.: Killgore (Total Award:$291,000.)

Current

2009-2014 The Neurobiological Basis and Potential Modification of Emotional Intelligence through Affective Behavioral Training.
U.S. Army Medical Research and Materiel Command (USAMRMC),
P.I.: Killgore (Total Award: $551,961.)
Major Goal: To identify the neurobiological basis of cognitive and emotional intelligence using functional and structural magnetic resonance imaging.

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.: Killgore (Total Award: $941,924)
Major Goal: To evaluate the effectiveness of morning exposure to bright light as a treatment for improving in sleep patterns among individuals with post-concussive syndrome. Effects of improved sleep on recovery due to this treatment will be evaluated using neurocognitive testing as well as functional and structural neuroimaging.

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: Killgore (Total Award: $1,646,045)
Major Goal: To evaluate the effectiveness of an internet-based cognitive behavioral therapy treatment program on improving depressive symptoms, coping and resilience skills, cognitive processing and functional brain activation patterns within the prefrontal cortex.

2012-2014 Multimodal Neuroimaging to Predict Cognitive Resilience Against Sleep Loss
Defense Advance Research Projects Agency (DARPA) Young Faculty Award in Neuroscience
P.I.: Killgore (Total Award: $445,531)
Major Goal: To combine several neuroimaging techniques, including functional and structural magnetic resonance imaging, diffusion tensor imaging, and magnetic resonance spectroscopy to predict individual resilience to 24 hours of sleep deprivation.

2012-2016 A Model for Predicting Cognitive and Emotional Health from Structural and Functional Neurocircuitry following Traumatic Brain Injury
Congressionally Directed Medical Research Program (CDMRP), Psychological Health/Traumatic Brain Injury (PH/TBI) Research Program: Applied Neurotrauma Research Award.
P.I.: Killgore (Total Award: $2,272,098)
Major Goal: To evaluate the relation between axonal damage and neurocognitive performance in patients with traumatic brain injury at multiple points over the recovery trajectory, in order to predict recovery.

2012-2014 Neural Mechanisms of Fear Extinction Across Anxiety Disorders
NIH NIMH
Site Subcontract PI: Killgore (Subcontract Award: $505,065)
Major Goal: To examine the neurocircuitry involved in fear conditioning, extinction, and extinction recall across several major anxiety disorders.

2014-2017 Bright Light Therapy for Treatment of Sleep Problems following Mild TBI.
Psychological Health and Traumatic Brain Injury Research Program (PH/TBI RP) Traumatic Brain Injury Research Award-Clinical Trial.
P.I.: Killgore (Total Award: $1,853,921)
Major Goal: To verify the effectiveness of morning exposure to bright light as a treatment for improving in sleep patterns, neurocognitive performance, brain function, and brain structure among individuals with a recent mild traumatic brain injury.

2014-2018 A Non-pharmacologic Method for Enhancing Sleep in PTSD
P.I.: Killgore (Total Award: $3,821,415)
Major Goal: To evaluate the effectiveness of blue light exposure to modify sleep in PTSD and its effects on fear conditioning/extinction, symptom expression, and brain functioning.

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

2011- 2 Fellows for 2080 hrs/year, Harvard Research Fellow Supervisor, McLean Hospital

Formally Supervised Trainees

1997-1999 David Glahn, Ph.D. Associate Professor, Yale University School of Medicine
Provided mentorship in clinical neuropsychological assessment and research at the University of Pennsylvania Hospital, which resulted in the development of a new psychometric test, 1 co-authored published conference abstract, and 1 co-authored published journal article.

1997-1999 Daniel Casasanto, Ph.D. Assistant Professor, University of Chicago
Supervised this trainee while at the University of Pennsylvania Hospital, which resulted in the development of a new psychometric test, 9 co-authored published conference abstracts, and 5 co-authored published journal articles.

2002-2005 Alexander Vo, Ph.D. Associate Professor, UTMB; Vice President, Electronically Mediated Services, Colorado Access
Served as one of his research mentors at the Walter Reed Army Institute of Research, which resulted in 3 co-authored published conference abstracts, and 3 co-authored published journal articles.

2002-2007 Rebecca Reichardt, M.A. Human Subjects Protection Scientist, USAMRMC
Supervised her research training in my lab at the Walter Reed Army Institute of Research, which resulted in 10 co-authored published conference abstracts, and 2 co-authored published journal articles.

2003-2004 Stan Liu, M.D. Medical Intern, Johns Hopkins Medical School
Supervised his research training in my lab at the Walter Reed Army Institute of Research, which primarily involved training in neuropsychological assessment and sleep research methods.

2003-2004 Neil Arora, B.A. Student, Yale University
Supervised his research project in my lab at the Walter Reed Army Institute of Research and NIH, which primarily involved training in brain imaging analysis and led to 2 co-authored published conference abstracts.

2003-2005 Nancy Grugle, Ph.D. Assistant Professor, Cleveland State University
Supervised her Doctoral Dissertation research project in my lab at the Walter Reed Army Institute of Research, which resulted in 23 co-authored published conference abstracts, and 10 co-authored published journal articles.

2003-2005 Joshua Bailey, B.A. Seminary Student
Supervised his computer programing development and research in my lab at the Walter Reed Army Institute of Research, which resulted in 1 co-authored published conference abstract, and 1 co-authored computer analysis package submitted for U.S. patent.

2003-2006 Athena Kendall, M.A. Lab Manager, Walter Reed Army Medical Center
Supervised part of her masters degree research project and other research work in my lab at the Walter Reed Army Institute of Research, which resulted in 4 co-authored published conference abstracts, and 4 co-authored published journal articles.

2003-2006 Lisa Day, M.S.W. Clinical Social Worker, Washington D.C.
Supervised her research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 3 co-authored published conference abstracts, and 1 co-authored published journal article.

2004-2005 Merica Shepherd, B.A. Laboratory Coordinator
Supervised her research training in my lab at the Walter Reed Army Institute of Research, which primarily involved training in neuropsychological assessment and sleep research methods.

2004-2005 Cynthia Hawes, B.A. Research Program Coordinator
Supervised her research training in my lab at the Walter Reed Army Institute of Research, which primarily involved training in neuropsychological assessment and sleep research methods.

2004-2006 Christopher Li, B.A. Graduate Student
Supervised his research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 3 co-authored published conference abstracts, and 1 co-authored published journal article.

2004-2007 Jessica Richards, M.S. Ph.D. Student, University of Maryland College Park
Served as Chair of her Senior Honors Thesis Committee and supervised her research work in my lab at the Walter Reed Army Institute of Research, which resulted in 8 co-authored published conference abstracts, a senior honors thesis, and 2 co-authored published journal articles.

2004-2007 Erica Lipizzi, M.A. Graduate Student, Emory University
Supervised her research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 16 co-authored published conference abstracts, and 12 co-authored published journal articles.

2004-2007 Brian Leavitt, B.S. Research Technician, Walter Reed Army Institute of Research
Supervised his research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 4 co-authored published conference abstracts, and 1 co-authored published journal article.

2004-2007 Rachel Newman, M.S. Senior Laboratory Manager, Walter Reed
Supervised her research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 6 co-authored published conference abstracts, and 1 co-authored published journal article.

2004-2007 Alexandra Krugler, B.S. Medical Student, Louisiana State University
Supervised her research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 5 co-authored published conference abstracts, and 1 co-authored published journal article.

2005 Amy Conrad, PH.D. Clinical Psychologist, Washington D.C.
Supervised her research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 4 co-authored published conference abstracts, and 1 co-authored published journal article.

2005-2006 Nathan Huck, PH.D. Clinical Neuropsychologist, Walter Reed Army Institute of Research
Served as his post-doctoral research training supervisor at the Walter Reed Army Institute of Research, which resulted in 1 co-authored published conference abstract and 1 co-authored published journal article.

2005-2006 Ellen Kahn-Greene, Ph.D. Post-Doctoral Fellow, Boston VA
Supervised her research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 7 co-authored published conference abstracts and 5 co-authored published journal articles.

2005-2006 Alison Muckle, B.A. Research Technician
Supervised her research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 1 co-authored published conference abstract and 1 co-authored published journal article.

2005-2006 Christina Murray, B.S. Medical Student, Drexel University
Supervised her research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 2 co-authored published conference abstracts.

2005-2007 Gautham Ganesan, M.D. Medical Student, UC Irvine
Supervised his research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 1 co-authored published conference abstract and 1 co-authored published journal article.

2005-2007 Dante Picchioni, Ph.D. Research Psychologist, Walter Reed Army Institute of Research
Supervised part of his post-doctoral brain imaging research training at the Walter Reed Army Institute of Research, which resulted in 1 co-authored published conference abstract and 1 co-authored published journal article.

2006-2007 Tracy Rupp, Ph.D. Research Psychologist, Walter Reed Army Institute of Research
Supervised part of her post-doctoral sleep research training at the Walter Reed Army Institute of Research, which resulted in 17 co-authored conference abstracts and 2 co-authored published journal articles.

2006-2007 Kacie Smith, B.A. Study Manager, Walter Reed Army Institute of Research
Supervised her research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 7 co-authored published conference abstracts.

2006-2007 Shane Smith, B.S. Medical Student, University of the West Indies
Served as his research mentor at the Walter Reed Army Institute of Research, which primarily involved training in neuropsychological assessment and sleep research methods.

2006-2007 Shanelle McNair Research Technician, Walter Reed Army Institute of Research
Supervised her research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 1 co-authored published article.

2006-2007 George Watlington Research Technician, Walter Reed Army Institute of Research
Supervised his research training and work in my lab at the Walter Reed Army Institute of Research, which resulted in 1 co-authored published article.

2008 Grady O'Brien Undergraduate Student
Served as his summer volunteer research mentor at McLean Hospital, which resulted in 1 oral research presentation

2008-2009 Alex Post Undergraduate Student, Carnegie Mellon University
Served as his summer volunteer research mentor at McLean Hospital, which resulted in 2 oral research presentations and 1 co-authored published abstract.

2008-2009 Lauren Price, B.A. Senior Clinical Research Assistant, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital, which resulted in 11 co-authored published conference abstracts and 4 co-authored published articles.

2009-2013 Zachary Schwab, B.S. Medical Student, University of Kansas
Supervised his research training and work in my lab at the McLean Hospital, which resulted in 79 co-authored published conference abstracts and 15 co-authored published articles.

2009-2011 Melissa Weiner, B.S. Graduate Student, Yale School of Public Health
Supervised her research training and work in my lab at the McLean Hospital, which resulted in 35 co-authored published conference abstracts and 7 co-authored published articles.

2010-2011 Norah Simpson, Ph.D. Post-Doctoral Fellow, Beth Israel Deaconess/Harvard Medical School
Served as a research mentor on her federal K-Award grant application.

2010-2012 Vincent Capaldi, M.D. Medical Resident, Walter Reed Army Medical Ctr.
Served as his post-doctoral research mentor, which resulted in 1 co-authored published conference abstract and 2 co-authored published articles.

2010-2011 Christina Song Undergraduate Student, Smith College
Served as her summer volunteer research mentor at McLean Hospital, which resulted in 1 co-authored published abstract.

2011 Jill Kizielewicz Undergraduate Student, Hamilton College
Served as her summer volunteer research mentor at McLean Hospital, which resulted in 1 co-authored published abstract.

2011-2013 Sophie DelDonno, B.A. Doctoral Student, University of Illinois, Chicago
Supervised her research training and work in my lab at the McLean Hospital, which resulted in 34 co-authored published conference abstracts and 9 co-authored published articles.

2011- Maia Kipman, B.A. Research Assistant, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital, which resulted in 42 co-authored published conference abstracts and 10 co-authored published articles.

2011 Michael Covell, B.A. Graduate Student, Baruch College
Served as one of his research mentors at McLean Hospital, which resulted in 4 co-authored published conference abstracts, and 1 co-authored published article.

2011- Mareen Weber, Ph.D. Instructor, Harvard Medical School
Supervised her post-doctoral research training and work in my lab at the McLean Hospital, which has resulted in 49 co-authored published conference abstracts, 15 co-authored published articles, 1co-authored book chapter, 1 travel award, five federal grant submissions, and 2 successfully funded grants.

2012- Julia Cohen, Ph.D. Post-Doctoral Fellow, Harvard Medical School
Served as one of her research mentors at McLean Hospital, which resulted in 6 co-authored published conference abstracts and 1 peer-reviewed publication.

2012- Christian Webb, Ph.D. Post-Doctoral Fellow, Harvard Medical School
Currently supervising his post-doctoral research training and work in my lab at the McLean Hospital, which has resulted in 9 co-authored published conference abstracts and 6 peer-reviewed publications.

2012- Hannah Gogel, B.S. Research Assistant, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital, which resulted in 21 co-authored published conference abstracts and 4 co-authored published articles.

2012- Olga Tkachenko, A.B. Research Assistant, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital, which resulted in 23 co-authored published conference abstracts and 4 co-authored published articles.

2012- Lilly Preer, B.A. Research Assistant, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital, which resulted in 22 co-authored published conference abstracts and 3 co-authored published articles.

2012-2013 Elizabeth Mundy, Ph.D Postdoctoral Fellow, Harvard Medical School
Supervised her post-doctoral research training and work in my lab at the McLean Hospital, which resulted in 3 co-authored published conference abstracts and 2 co-authored published articles.

2012- John S. Bark, B.A. Lab Volunteer, McLean Hospital
Supervised his research training and work in my lab at the McLean Hospital, which resulted in 5 co-authored published conference abstracts, and 2 co-authored published articles.

2013- Shreya Divatia, B.S. Research Assistant, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital, which resulted in 9 co-authored published conference abstracts.

2013- Lauren Demers, B.A. Research Assistant, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital, which resulted in 10 co-authored published conference abstracts.

2013- Jiaolong Cui, Ph.D Postdoctoral Fellow, Harvard Medical School
Supervised his post-doctoral research training and work in my lab at the McLean Hospital, which resulted in 9 co-authored published conference abstracts.

2013- Allison Jorgensen Lab Volunteer, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital, which resulted in 2 co-authored published conference abstracts.

2013 Leslie Amrein Lab Volunteer, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital.

2013 Alexa Curhan Lab Volunteer, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital.

2013-2014 Kate Manganello High School Lab Volunteer, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital.

2013-2014 Mia Kaminsky High School Lab Volunteer, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital.

2013-2014 Jennifer Buchholz Research Assistant, McLean Hospital
Supervised her research training and work in my lab at the McLean Hospital.

2014 Joseph Dagher, Ph.D. Assistant Professor, University of Arizona
Mentored his K-Award and CECS grant applications.

2014 Ryan Smith, B.S. PhD Candidate, University of Arizona
Mentored his F32- grant application.

2014 John Vanuk, B.A. Research Assistant, University of Arizona
Supervised his research training in my lab.

2014 Sarah Markowski Research Assistant, University of Arizona
Supervised her research training in my lab.

2014 Derek Pisner, B.S. Research Assistant, University of Arizona
Supervised his research training in my lab.

2014 Bradley Shane, B.S. Research Assistant, University of Arizona
Supervised his research training in my lab.

2014 Andrew Fridman, B.A. Research Assistant, University of Arizona
Supervised his research training in my lab.

2014 Anna Alkozei, Ph.D. Postdoctoral Fellow, University of Arizona
Supervised her post-doctoral research training and work in my lab.

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]

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]*

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]*

2005 Lecture on Functional Neuroimaging, Cognitive Assessment, and the Enhancement of Soldier Performance, 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]*

2006 Briefing to the Chairman of the Cognitive Performance Assessment Program Area Steering Committee, U.S. Army Military Operational Medicine Research Program, entitled Optimization of Judgment and Decision Making Capacities in Soldiers Following Sleep Deprivation, Walter Reed Army Institute of Research *[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]*

2012 Briefing to GEN (Ret) George Casey Jr., former Chief of Staff of the U.S. Army, entitled Research for the Soldier. McLean Hospital, Belmont, MA. *[Invited Lecture]*

2014 Lecture entitled Sleep Loss, Brain Function, and Cognitive Performance, presented to the Psychiatric Genetics and Translational Research Seminar, Massachusetts General Hospital/Harvard Medical School, Boston, MA *[Invited Lecture]*

Report of Regional, National and International Invited Teaching and Presentations

Invited Presentations and Courses

Regional

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]

2006 Lecture on Norming a Battery of Tasks to Measure the Cognitive Effects of Operationally Relevant Stressors, Cognitive Performance Assessment Program Area Steering Committee, U.S. Army Military Operational Medicine Research Program, Washington, DC*[Invited Lecture]*

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

2007 Briefing on the Measurement of Sleep-Wake Cycles and Cognitive Performance in Combat Aviators, U.S. Department of Defense, Defense Advanced Research Projects Agency (DARPA), Washington, DC

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 Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2011 Lecture entitled Tools for Assessing Sleep in Military Settings; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2011 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 *[Invited Lecture]*

2011 Lecture entitled The Brain Altering Effects of Traumatic Experiences; 105th Reinforcement Training Unit (RTU), U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2012 Lecture entitled Sleep Loss, Caffeine, and Military Performance; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2012 Lecture entitled Using Light Therapy to Treat Sleep Disturbance Following Concussion; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2013 Lecture entitled Brain Responses to Food: What you See Could Make you Fat; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2013 Lecture entitled Predicting Resilience Against Sleep Loss; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

2014 Lecture entitled Get Some Shut-Eye or Get Fat: Sleep Loss Affects Brain Responses to Food; 105th IMA Detachment, U.S. Army Reserve Center, Boston, MA *[Invited Lecture]*

National

2000 Lecture on the Neurobiology of Emotional Development in Children, 9th Annual Parents as Teachers Born to Learn Conference, St. Louis, MO *[Invited Lecture]*

2002 Lecture on the Changes in the Lateralized Structure and Function of the Brain during Adolescent Development, Walter Reed Army Institute of Research, Washington, DC*[Invited Lecture]*

2004 Lecture on Sleep Deprivation, Cognition, and Stimulant Countermeasures: Seminar Presented at the Bi-Annual 71F Research Psychology Short Course, Ft. Detrick, MD, U.S. Army Medical Research and Materiel Command *[Invited Lecture]*

2004 Lecture on the Regional Cerebral Blood Flow Correlates of Electroencephalographic Activity During Stage 2 and Slow Wave Sleep: An H215O PET Study: Presented at the Bi-Annual 71F Research Psychology Short Course, Ft. Detrick, MD, U.S. Army Medical Research and Materiel Command*[Invited Lecture]*

2004 Oral Platform Presentation: Regional cerebral metabolic correlates of electroencephalographic activity during stage-2 and slow-wave sleep: An H215O PET Study, 18th Associated Professional Sleep Societies Annual Meeting, Philadelphia, PA.

2005 Lecture on The Sleep History and Readiness Predictor: Presented to the Medical Research and Materiel Command, Ft. Detrick, MD*[Invited Lecture]*

2006 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*[Invited Lecture]*

2007 Lecture on the Effects of Fatigue and Pharmacological Countermeasures on Judgment and Decision-Making, U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL *[Invited Lecture]*

2008 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*[Seminar]*

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 Entitled: Sleep Deprivation, Judgment, and Decision-Making, 23rd Annual Meeting of the Associated Professional Sleep Societies, Seattle, WA *[Invited Symposium]*

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]*

2012 Oral Symposium Presentation: Shared and distinctive patterns of cortico-limbic activation across anxiety disorders, 32nd Annual Conference of the Anxiety Disorders Association of America, Arlington, VA. *[Invited Symposium]*

2012 Lecture Entitled: Effects of bright light therapy on sleep, cognition, brain function, and neurochemistry following mild traumatic brain injury, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2013 Lecture entitled Brain responses to visual images of food: Could your eyes be the gateway to excess? Presented to the NIH Nutrition Coordinating Committee and the Assistant Surgeon General of the United States, Bethesda, MD *[Invited Lecture]*

2013 Lecture Entitled: Update on the Effects of Bright light therapy on sleep, cognition, brain function, and neurochemistry following mild traumatic brain injury, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD *[Invited Lecture]*

2013 Lecture Entitled: Internet Based Cognitive Behavioral Therapy: Effects on Depressive Cognitions and Brain Function, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD [*Invited Lecture*]

2013 Symposium Entitled: Predicting Resilience Against Sleep Loss, United States Military Academy at West Point, West Point, NY [*Invited Symposium*].

2014 Symposium Entitled: Operating Under the Influence: The Effects of Sleep Loss and Stimulants on Decision-Making and Performance, Invited Faculty Presenter at the 34th Annual Cardiothoracic Surgery Symposium (CREF), San Diego, CA [*Invited Symposium*].

2014 Symposium Entitled: The Effects of Sleep Loss on Food Preference, SLEEP 2014, Minneapolis, MN *[Invited Symposium]*

2014 Lecture Entitled: Internet Based Cognitive Behavioral Therapy: Effects on Depressive Cognitions and Brain Function, Military Operational Medicine Research Program In Progress Review (IPR) Briefing, U.S. Army Medical Research and Materiel Command, Fort Detrick, 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.

2002 Oral Platform Presentation: Gray and white matter volume during adolescence correlates with cognitive performance: A morphometric MRI study, 30th Annual Meeting of the International Neuropsychological Society, Toronto, Ontario, Canada.

2007 Symposium on Cortical and Limbic Activation in Response to Visual Images of Low and High-Caloric Foods, 6th Annual Meeting of the International Society for Behavioral Nutrition and Physical Activity (ISBNPA), Oslo, Norway *[Invited Lecture]*

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

2012 Oral Platform Presentation: Shared and unique patterns of cortico-limbic activation across anxiety disorders. 40th Meeting of the International Neuropsychological Society, Montreal, Canada.

Report of Clinical Activities and Innovations

Current Licensure and Certification

2001- Clinical Psychologist, New Hampshire

Practice Activities

1991- Psychology, Clinical, Psychology Clinic, Texas Tech University, Lubbock, TX
1995 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- Psychology, Neuropsychology, Methodist Hospital Rehabilitation Institute, Lubbock, TX
1995 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

2003-2007 Who's Who in America, Marquis Who's Who
2004-2005 Who's Who in Medicine and Healthcare, Marquis Who's Who

Report of Scholarship

Publications

Peer reviewed publications in print or other media

A) Research Investigations:

1. **Killgore WD**. The Affect Grid: a moderately valid, nonspecific measure of pleasure and arousal. Psychol Rep. 83(2):639-42, 1998.

2. **Killgore WD**. Empirically derived factor indices for the Beck Depression Inventory. Psychol Rep. 84(3 Pt 1):1005-13, 1999.

3. **Killgore WD**. Affective valence and arousal in self-rated depression and anxiety. Percept Mot Skills. 89(1):301-4, 1999.

4. **Killgore WD**, Adams RL. Prediction of Boston Naming Test performance from vocabulary scores: preliminary guidelines for interpretation. Percept Mot Skills. 89(1):327-37, 1999.

5. **Killgore WD**, Gangestad SW. Sex differences in asymmetrically perceiving the intensity of facial expressions. Percept Mot Skills. 89(1):311-4, 1999.

6. **Killgore WD**. The visual analogue mood scale: can a single-item scale accurately classify depressive mood state? Psychol Rep. 85(3 Pt 2):1238-43, 1999.

7. **Killgore WD**, DellaPietra L, Casasanto DJ. Hemispheric laterality and self-rated personality traits. Percept Mot Skills. 89(3 Pt 1):994-6, 1999.

8. **Killgore WD**, Glosser G, Casasanto DJ, French JA, Alsop DC, Detre JA. Functional MRI and the Wada test provide complementary information for predicting post-operative seizure control. Seizure. 8(8):450-5, 1999.

9. **Killgore WD**. Evidence for a third factor on the Positive and Negative Affect Schedule in a college student sample. Percept Mot Skills. 90(1):147-52, 2000.

10. **Killgore WD**, Dellapietra L. Item response biases on the logical memory delayed recognition subtest of the Wechsler Memory Scale-III. Psychol Rep. 86(3 Pt 1):851-7, 2000.

11. **Killgore WD**, Casasanto DJ, Yurgelun-Todd DA, Maldjian JA, Detre JA. Functional activation of the left amygdala and hippocampus during associative encoding. Neuroreport. 11(10):2259-63, 2000.

12. Yurgelun-Todd DA, Gruber SA, Kanayama G, **Killgore WD**, Baird AA, Young AD. fMRI during affect discrimination in bipolar affective disorder. Bipolar Disord. 2(3 Pt 2):237-48, 2000.

13. **Killgore WD**. Sex differences in identifying the facial affect of normal and mirror-reversed faces. Percept Mot Skills. 91(2):525-30, 2000.

14. **Killgore WD**, DellaPietra L. Using the WMS-III to detect malingering: empirical validation of the rarely missed index (RMI). J Clin Exp Neuropsychol. 22(6):761-71, 2000.

15. Maldjian JA, Detre JA, **Killgore WD**, Judy K, Alsop D, Grossman M, Glosser G. Neuropsychologic performance after resection of an activation cluster involved in cognitive memory function. AJR Am J Roentgenol. 176(2):541-4, 2001.

16. **Killgore WD**, Oki M, Yurgelun-Todd DA. Sex-specific developmental changes in amygdala responses to affective faces. Neuroreport. 12(2):427-33, 2001.

17. **Killgore WD**, Yurgelun-Todd DA. Sex differences in amygdala activation during the perception of facial affect. Neuroreport. 12(11):2543-7, 2001.

18. Casasanto DJ, **Killgore WD**, Maldjian JA, Glosser G, Alsop DC, Cooke AM, Grossman M, Detre JA. Neural correlates of successful and unsuccessful verbal memory encoding. Brain Lang. 80(3):287-95, 2002.

19. **Killgore WD**. Laterality of lesions and trait-anxiety on working memory performance. Percept Mot Skills. 94(2):551-8, 2002.

20. **Killgore WD**, Cupp DW. Mood and sex of participant in perception of happy faces. Percept Mot Skills. 95(1):279-88, 2002.

21. Yurgelun-Todd DA, **Killgore WD**, Young AD. Sex differences in cerebral tissue volume and cognitive performance during adolescence. Psychol Rep. 91(3 Pt 1):743-57, 2002.

22. Yurgelun-Todd DA, **Killgore WD**, Cintron CB. Cognitive correlates of medial temporal lobe development across adolescence: a magnetic resonance imaging study. Percept Mot Skills. 96(1):3-17, 2003.

23. **Killgore WD**, Young AD, Femia LA, Bogorodzki P, Rogowska J, Yurgelun-Todd DA. Cortical and limbic activation during viewing of high- versus low-calorie foods. Neuroimage. 19(4):1381-94, 2003.

24. **Killgore WD**, Yurgelun-Todd DA. Activation of the amygdala and anterior cingulate during nonconscious processing of sad versus happy faces. Neuroimage. 21(4):1215-23, 2004.

25. **Killgore WD**, Yurgelun-Todd DA. Sex-related developmental differences in the lateralized activation of the prefrontal cortex and amygdala during perception of facial affect. Percept Mot Skills. 99(2):371-91, 2004.

26. **Killgore WD**, Glahn DC, Casasanto DJ. Development and Validation of the Design Organization Test (DOT): a rapid screening instrument for assessing visuospatial ability. J Clin Exp Neuropsychol. 27(4):449-59, 2005.

27. **Killgore WD**, Yurgelun-Todd DA. Body mass predicts orbitofrontal activity during visual presentations of high-calorie foods. Neuroreport. 16(8):859-63, 2005.

28. Wesensten NJ, **Killgore WD**, Balkin TJ. Performance and alertness effects of caffeine, dextroamphetamine, and modafinil during sleep deprivation. J Sleep Res. 14(3):255-66, 2005.

29. **Killgore WD**, Yurgelun-Todd DA. Social anxiety predicts amygdala activation in adolescents viewing fearful faces. Neuroreport. 16(15):1671-5, 2005.

30. **Killgore WD**, Yurgelun-Todd DA. Developmental changes in the functional brain responses of adolescents to images of high and low-calorie foods. Dev Psychobiol. 47(4):377-97, 2005.

31. Kahn-Greene ET, Lipizzi EL, Conrad AK, Kamimori GH, **Killgore WD**. Sleep deprivation adversely affects interpersonal responses to frustration. Pers Individ Dif. 41(8):1433-1443, 2006.

32. McBride SA, Balkin TJ, Kamimori GH, **Killgore WD**. Olfactory decrements as a function of two nights of sleep deprivation. J Sens Stud. 24(4):456-63, 2006.

33. **Killgore WD**, Yurgelun-Todd DA. Ventromedial prefrontal activity correlates with depressed mood in adolescent children. Neuroreport. 17(2):167-71, 2006.

34. **Killgore WD**, Vo AH, Castro CA, Hoge CW. Assessing risk propensity in American soldiers: preliminary reliability and validity of the Evaluation of Risks (EVAR) scale--English version. Mil Med. 171(3):233-9, 2006.

35. **Killgore WD**, Balkin TJ, Wesensten NJ. Impaired decision making following 49 h of sleep deprivation. J Sleep Res. 15(1):7-13, 2006.

36. **Killgore WD**, Stetz MC, Castro CA, Hoge CW. The effects of prior combat experience on the expression of somatic and affective symptoms in deploying soldiers. J Psychosom Res. 60(4):379-85, 2006.

37. **Killgore WD**, McBride SA, Killgore DB, Balkin TJ. The effects of caffeine, dextroamphetamine, and modafinil on humor appreciation during sleep deprivation. Sleep. 29(6):841-7, 2006.

38. **Killgore WD**, McBride SA. Odor identification accuracy declines following 24 h of sleep deprivation. J Sleep Res. 15(2):111-6, 2006.

39. **Killgore WD**, Yurgelun-Todd DA. Affect modulates appetite-related brain activity to images of food. Int J Eat Disord. 39(5):357-63, 2006.

40. Kendall AP, Kautz MA, Russo MB, **Killgore WD**. Effects of sleep deprivation on lateral visual attention. Int J Neurosci. 116(10):1125-38, 2006.

41. Yurgelun-Todd DA, **Killgore WD**. Fear-related activity in the prefrontal cortex increases with age during adolescence: a preliminary fMRI study. Neurosci Lett. 406(3):194-9, 2006.

42. **Killgore WD**, Killgore DB, Ganesan G, Krugler AL, Kamimori GH. Trait-anger enhances effects of caffeine on psychomotor vigilance performance. Percept Mot Skills. 103(3):883-6, 2006.

43. **Killgore WD**, Yurgelun-Todd DA. Unconscious processing of facial affect in children and adolescents. Soc Neurosci. 2(1):28-47, 2007.

44. **Killgore WD**, Yurgelun-Todd DA. The right-hemisphere and valence hypotheses: could they both be right (and sometimes left)?. Soc Cogn Affect Neurosci. 2(3):240-50, 2007.

45. **Killgore WD**, Killgore DB. Morningness-eveningness correlates with verbal ability in women but not men. Percept Mot Skills. 104(1):335-8, 2007.

46. **Killgore WD**, Killgore DB, Day LM, Li C, Kamimori GH, Balkin TJ. The effects of 53 hours of sleep deprivation on moral judgment. Sleep. 30(3):345-52, 2007.

47. Rosso IM, **Killgore WD**, Cintron CM, Gruber SA, Tohen M, Yurgelun-Todd DA. Reduced amygdala volumes in first-episode bipolar disorder and correlation with cerebral white matter. Biol Psychiatry. 61(6):743-9, 2007.

48. Kahn-Greene ET, Killgore DB, Kamimori GH, Balkin TJ, **Killgore WD**. The effects of sleep deprivation on symptoms of psychopathology in healthy adults. Sleep Med. 8(3):215-21, 2007.

49. **Killgore WD**. Effects of sleep deprivation and morningness-eveningness traits on risk-taking. Psychol Rep. 100(2):613-26, 2007.

50. **Killgore WD**, Gruber SA, Yurgelun-Todd DA. Depressed mood and lateralized prefrontal activity during a Stroop task in adolescent children. Neurosci Lett. 416(1):43-8, 2007.

51. **Killgore WD**, Yurgelun-Todd DA. Positive affect modulates activity in the visual cortex to images of high calorie foods. Int J Neurosci. 117(5):643-53, 2007.

52. Vo AH, Satori R, Jabbari B, Green J, **Killgore WD**, Labutta R, Campbell WW. Botulinum toxin type-a in the prevention of migraine: a double-blind controlled trial. Aviat Space Environ Med. 78(5 Suppl):B113-8, 2007.

53. **Killgore WD**, Yurgelun-Todd DA. Neural correlates of emotional intelligence in adolescent children. Cogn Affect Behav Neurosci. 7(2):140-51, 2007.

54. **Killgore WD**, Kendall AP, Richards JM, McBride SA. Lack of degradation in visuospatial perception of line orientation after one night of sleep loss. Percept Mot Skills. 105(1):276-86, 2007.

55. **Killgore WD**, Lipizzi EL, Kamimori GH, Balkin TJ. Caffeine effects on risky decision making after 75 hours of sleep deprivation. Aviat Space Environ Med. 78(10):957-62, 2007.

56. **Killgore WD**, Richards JM, Killgore DB, Kamimori GH, Balkin TJ. The trait of Introversion-Extraversion predicts vulnerability to sleep deprivation. J Sleep Res. 16(4):354-63, 2007.

57. **Killgore WD**, Kahn-Green ET, Killgore DB, Kamimori GH, Balkin TJ. Effects of acute caffeine withdrawal on Short Category Test performance in sleep-deprived individuals. Percept Mot Skills. 105(3 pt.2):1265-74, 2007.

58. **Killgore WD**, Killgore DB, McBride SA, Kamimori GH, Balkin TJ. Odor identification ability predicts changes in symptoms of psychopathology following 56 hours of sleep deprivation. J Sensory Stud. 23(1):35-51, 2008.

59. **Killgore WD**, Rupp TL, Grugle NL, Reichardt RM, Lipizzi EL, Balkin TJ. Effects of dextroamphetamine, caffeine and modafinil on psychomotor vigilance test performance after 44 h of continuous wakefulness. J Sleep Res. 17(3):309-21, 2008.

60. Huck NO, McBride SA, Kendall AP, Grugle NL, **Killgore WD**. The effects of modafinil, caffeine, and dextroamphetamine on judgments of simple versus complex emotional expressions following sleep deprivation. Int. J Neuroscience. 118(4):487-502, 2008.

61. **Killgore WD**, Kahn-Greene ET, Lipizzi EL, Newman RA, Kamimori GH, Balkin TJ. Sleep deprivation reduces perceived emotional intelligence and constructive thinking skills. Sleep Med. 9(5):517-26, 2008

62. **Killgore WD**, Grugle NL, Killgore DB, Leavitt BP, Watlington GI, McNair S, Balkin TJ. Restoration of risk-propensity during sleep deprivation: caffeine, dextroamphetamine, and modafinil. Aviat Space Environ Med. 79(9):867-74, 2008.

63. **Killgore WD**, Muckle AE, Grugle NL, Killgore DB, Balkin TJ. Sex differences in cognitive estimation during sleep deprivation: effects of stimulant countermeasures. Int J Neurosci. 118(11):1547-57, 2008.

64. **Killgore WD**, Cotting DI, Thomas JL, Cox AL, McGurk D, Vo AH, Castro CA, Hoge CW. Post-combat invincibility: violent combat experiences are associated with increased risk-taking propensity following deployment. J Psychiatr Res. 42(13):1112-21, 2008.

65. **Killgore WD**, Gruber SA, Yurgelun-Todd DA. Abnormal corticostriatal activity during fear perception in bipolar disorder. Neuroreport. 19(15):1523-7, 2008.

66. **Killgore WD**, McBride SA, Killgore DB, Balkin TJ, Kamimori GH. Baseline odor identification ability predicts degradation of psychomotor vigilance during 77 hours of sleep deprivation. Int. J Neurosci. 118(9):1207-1225, 2008.

67. **Killgore WD**, Rosso HM, Gruber SA, Yurgelun-Todd DA. Amygdala volume and verbal memory performance in schizophrenia and bipolar disorder. Cogn Behav Neur. 22(1):28-37, 2009.

68. **Killgore WD**, Kahn-Greene ET, Grugle NL, Killgore DB, Balkin TJ. Sustaining executive functions during sleep deprivation: A comparison of caffeine, dextroamphetamine, and modafinil. Sleep. 32(2):205-16, 2009.

69. **Killgore WD**, Grugle NL, Reichardt RM, Killgore DB, Balkin TJ. Executive functions and the ability to sustain vigilance during sleep loss. Aviat Space Environ Med. 80(2):81-7, 2009.

70. Picchioni, D, **Killgore, WD,** Braun, AR, & Balkin, TJ. Positron emission tomography correlates of EEG microarchitecture waveforms during non-REM sleep. Int J Neurosci. 119: 2074-2099, 2009.

71. **Killgore, WD**, Lipizzi, EL, Grugle, NL, Killgore, DB, & Balkin, TJ. Handedness correlates with actigraphically measured sleep in a controlled environment. Percept Mot Skills. 109: 395-400, 2009.

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48. **Killgore, WDS,** McBride, SA, Killgore, DB, & Balkin, TJ. Stimulant countermeasures and risk propensity across 2 nights of sleep deprivation [abstract]. Abstract presented at the Associated Professional Sleep Societies 19th Annual Meeting, Denver, CO, June 18-23, 2005. SLEEP, 28 (Supplement), A136.

49. McBride, SA, Balkin, TJ, & **Killgore, WDS.** The effects of 24 hours of sleep deprivation on odor identification accuracy [abstract]. Abstract presented at the Associated Professional Sleep Societies 19th Annual Meeting, Denver, CO, June 18-23, 2005. SLEEP, 28 (Supplement), A137.

50. Picchioni, D, **Killgore, WDS,** Braun, AR, & Balkin, TJ. PET correlates of EEG activity during non-REM sleep. Poster presentation at the annual UCLA/Websciences Sleep Training Workshop, Lake Arrowhead, CA, September, 2005.

51. **Killgore, WDS,** Killgore, DB, McBride, SA, & Balkin, TJ. Sustained verbal fluency following sleep deprivation and recovery sleep: The effects of caffeine, modafinil, and dextroamphetamine. Poster presented at the 34th Meeting of the International Neuropsychological Society, Boston, MA, February 1-4, 2006.

52. **Killgore, WDS,** Balkin, TJ, & Wesensten, NJ. Decision-making is impaired following 2-days of sleep deprivation. Poster presented at the 34th Meeting of the International Neuropsychological Society, Boston, MA, February 1-4, 2006.

53. **Killgore, WDS,** & Yurgelun-Todd, DA. Neural correlates of emotional intelligence in adolescent children. Poster presented at the 34th Meeting of the International Neuropsychological Society, Boston, MA, February 1-4, 2006.

54. **Killgore, WDS,** & Yurgelun-Todd, DA. Social anxiety predicts amygdala activation in adolescents viewing fearful faces. Poster presented at the 34th Meeting of the International Neuropsychological Society, Boston, MA, February 1-4, 2006.

55. McBride, SA & **Killgore, WDS.** Sleepy people smell worse: Olfactory deficits following extended wakefulness. Paper presented at the Workshop on Trace Gas Detection Using Artificial, Biological, and Computational Olfaction. Monell Chemical Senses Center, Philadelphia, PA, March 29-31, 2006.

56. **Killgore, WDS,** Day LM, Li, C, Kamimori, GH, Balkin, TJ, & Killgore DB. Moral reasoning is affected by sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A137.

57. **Killgore, WDS,** Killgore DB, Kahn-Green, E, Conrad, A, Balkin, TJ, & Kamimori, G. H. Introversion-Extroversion predicts resilience to sleep loss [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A137.

58. Newman, R, Kamimori, GH, **Killgore, WDS.** Sleep deprivation diminishes constructive thinking [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A136-137.

59. Huck, NO, Kendall, AP, McBride, SA, **Killgore, WDS.** The perception of facial emotion is enhanced by psychostimulants following two nights of sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A136.

60. O'Sullivan, M, Reichardt, RM, Krugler, AL, Killgore, DB, & **Killgore, WDS.** Premorbid intelligence correlates with duration and quality of recovery sleep following sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A372.

61. McBride, SA, **Killgore, WDS,** Kahn-Green, E, Conrad, A, & Kamimori, GH. Caffeine administered to maintain overnight alertness does not disrupt performance during the daytime withdrawal period [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A136.

62. McBride, SA, Killgore DB, Balkin, TJ, Kamimori, GH, & **Killgore, WDS.** Sleepy people smell worse: Olfactory decrements as a function of sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A135.

63. Day, LM, Li, C, Killgore, DB, Kamimori, GH, & **Killgore, WDS.** Emotional intelligence moderates the effect of sleep deprivation on moral reasoning [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A135.

64. Murray, CJ, Killgore, DB, Kamimori, GH, & **Killgore, WDS.** Individual differences in stress management capacity predict responsiveness to caffeine during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A43.

65. Murray, CJ, Newman, R, O'Sullivan, M, Killgore, DB, Balkin, TJ, & **Killgore, WDS.** Caffeine, dextroamphetamine, and modafinil fail to restore Stroop performance during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A370-371.

66. Richards, J, Killgore, DB, & **Killgore, WDS.** The effect of 44 hours of sleep deprivation on mood using the Visual Analog Mood Scales [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A132.

67. Richards, J, & **Killgore, WDS.** The effect of caffeine, dextroamphetamine, and modafinil on alertness and mood during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A43.

68. Lipizzi, EL, Leavitt, BP, Killgore, DB, Kamimori, GH, & **Killgore, WDS.** Decision making capabilities decline with increasing duration of wakefulness [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A131.

69. Lipizzi, EL, Killgore, DB, Kahn-Green, E, Kamimori, GH, & **Killgore, WDS.** Emotional intelligence scores decline during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A131.

70. Kahn-Green, E, Day, L, Conrad, A, Leavitt, BP, Killgore, DB, & **Killgore, WDS.** Short-term vs. long-term planning abilities: Differential effects of stimulants on executive function in sleep deprived individuals [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A370.

71. Kahn-Green, E, Conrad, A, Killgore, DB, Kamimori, GH, & **Killgore, WDS.** Tired and frustrated: Using a projective technique for assessing responses to stress during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A130.

72. Killgore, DB, Kahn-Green, E, Balkin, TJ, Kamimori, GH, & **Killgore, WDS.** 56 hours of wakefulness is associated with a sub-clinical increase in symptoms of psychopathology [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A130.

73. Killgore, DB, McBride, SA, Balkin, TJ, Leavitt, BP, & **Killgore, WDS.** Modafinil improves humor appreciation during sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A42.

74. Reichardt, RM, Killgore, DB, Lipizzi, EL, Li, CJ, Krugler, AL, & **Killgore, WDS.** The effects of stimulants on recovery sleep and post-recovery verbal performance following 61-hours of sleep deprivation [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A42.

75. Bailey, JD, Richards, J, & **Killgore, WDS.** Prediction of mood fluctuations during sleep deprivation with the SAFTE Model [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A60.

76. Kendall, AP, McBride, S. A, & **Killgore, WDS.** Visuospatial perception of line orientation is resistant to one night of sleep loss [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A369.

77. Kendall, AP, McBride, SA, Kamimori, GH, & **Killgore, WDS.** The interaction of coping skills and stimulants on sustaining vigilance: Poor coping may keep yoiu up at night [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A129.

78. Muckle, A, Killgore, DB, & **Killgore, WDS.** Gender differences in the effects of stimulant medications on the ability to estimate unknown quantities when sleep deprived [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A369.

79. Krugler, AL, **Killgore, WDS,** & Kamimori, G. H. Trait anger predicts resistance to sleep loss [abstract]. Abstract presented at the 20th Meeting of the Associated Professional Sleep Societies, Salt Lake City, UT, June 17-22, 2006. SLEEP, 29 (Supplement), A129.

80. **Killgore, WDS,** Cotting, DI, Vo, A. H, Castro, CA, & Hoge, CW. The invincibility syndrome: Combat experiences predict risk-taking propensity following redeployment [abstract]. Abstract presented at the 9th Annual Force Health Protection Conference, Albuquerque, NM, August 6-11, 2006.

81. **Killgore, WDS,** Wesensten, NJ, & Balkin, TJ. Stimulants improve tactical but not strategic planning during prolonged wakefulness [abstract]. Abstract presented at the 9th Annual Force Health Protection Conference, Albuquerque, NM, August 6-11, 2006.

82. **Killgore, WDS,** Balkin, TJ, Wesensten, NJ, & Kamimori, G. H. The effects of sleep loss and caffeine on decision-making [abstract]. Abstract presented at the 9th Annual Force Health Protection Conference, Albuquerque, NM, August 6-11, 2006.

83. **Killgore, WDS,** Balkin, TJ, & Kamimori, GH. Sleep loss can impair moral judgment [abstract]. Abstract presented at the 9th Annual Force Health Protection Conference, Albuquerque, NM, August 6-11, 2006.

84. **Killgore, WDS,** Lipizzi, EL, Reichardt, RM, Kamimori, GH, & Balkin, TJ. Can stimulants reverse the effects of sleep deprivation on risky decision-making [abstract]? Abstract presented at the 25th Army Science Conference, Orlando, FL, November 27-30, 2006.

85. **Killgore, WDS,** Killgore, DB, Kamimori, GH, & Balkin, TJ. Sleep deprivation impairs the emotional intelligence and moral judgment capacities of Soldiers [abstract]. Abstract presented at the 25th Army Science Conference, Orlando, FL, November 27-30, 2006.

86. **Killgore, WDS,** Cotting, DI, Vo, AH, Castro, C.A, & Hoge, CW. The post-combat invincibility syndrome: Combat experiences increase risk-taking propensity following deployment [abstract]. Abstract presented at the 25th Army Science Conference, Orlando, FL, November 27-30, 2006.

87. Adam, GE, Szelenyi, ER, **Killgore, WD,** & Lieberman, HR. A double-blind study of two days of caloric deprivation: Effects on judgment and decision-making. Oral paper presentation at the Annual Scientific Meeting of the Aerospace Medical Association, New Orleans, LA, May, 2007.

88. Killgore, DB, Kahn-Greene, ET, Kamimori, GH, & **Killgore, WD.** The effects of acute caffeine withdrawal on short category test performance in sleep deprived individuals [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A43.

89. Richards, JM, Lipizzi, EL, Kamimori, GH, & **Killgore, WD.** Extroversion predicts change in attentional lapses during sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A137.

90. Lipizzi, EL, Richards, JM, Balkin, TJ, Grugle, NL, & **Killgore, WD.** Morningness-Eveningness and Intelligence [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A345.

91. Lipizzi, EL, Richards, Balkin, TJ, Grugle, NL, & **Killgore WD.** Morningness-Eveningness affects risk-taking propensity during sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A136.

92. McBride, SA, Ganesan, G, Kamimori, GH, & **Killgore, WD.** Odor identification ability predicts vulnerability to attentional lapses during 77 hours of sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A135.

93. Smith, KL, McBride, S. A, Kamimori, GH, & **Killgore, WD.** Individual differences in odor discrimination predict mood dysregulation following 56 hours of sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A136.

94. McBride, SA, Leavitt, BP, Kamimori, GH, & **Killgore, WD.** Odor identification accuracy predicts resistance to sleep loss. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A137.

95. Killgore, DB, McBride, SA, Balkin, TJ, Grugle, NL. & **Killgore, WD.** Changes in odor discrimination predict executive function deficits following 45 hours of wakefulness [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A136.

96. Rupp, TL, Killgore, DB, Balkin, TJ, Grugle, NL, & **Killgore, WD.** The effects of modafinil, dextroamphetamine, and caffeine on verbal and nonverbal fluency in sleep deprived individuals [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A43.

97. Newman, RA, Krugler, AL, Kamimori, GH, & **Killgore, WD.** Changes in state and trait anger following 56 hours of sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A138.

98. Rupp, TL, Grugle, NL, Krugler, AL, Balkin, TJ, & **Killgore, WD.** Caffeine, dextroamphetamine, and modafinil improve PVT performance after sleep deprivation and recovery sleep [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A44.

99. **Killgore, WD,** Lipizzi, EL, Balkin, TJ, Grugle, NL, & Killgore, DB. The effects of sleep deprivation and stimulants on self-reported sensation seeking propensity [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A42.

100. **Killgore, WD,** Richards, JM, Balkin, TJ, Grugle, NL, & Killgore DB. The effects of sleep deprivation and stimulants on risky behavior [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A41.

101. Newman, RA, Smith, KL, Balkin, TJ, Grugle, NL, & **Killgore, WD.** The effects of caffeine, dextroamphetamine, and modafinil on executive functioning following 45 hours of sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A45.

102. Richards, JM, Lipizzi, EL, Balkin, TJ, Grugle, NL, & **Killgore, WD.** Objective alertness predicts mood changes during 44 hours of sleep deprivation [abstract]. Abstract presented at the 21st Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 9-14, 2007. SLEEP, 30 (Supplement), A56.

103. **Killgore, WD,** & Yurgelun-Todd, DA. Cortical and Limbic Activation in Response to Visual Images of Low and High-Caloric Food [abstract]. Oral symposium presented at the 6th Annual Conference of the Society of Behavioral Nutrition and Physical Activity (ISBNPA), Oslo, Norway, June 20-23, 2007. Proceedings of the ISBNPA, 2007, 75.

104. 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.

105. **Killgore, WD,** Lipizzi, EL, Smith, KL, Killgore, DB, Rupp, TL, Kamimori, GH, & Balkin, T. J. 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.

106. **Killgore, WD,** Lipizzi, EL, Killgore, DB, Rupp, TL, Kamimori, GH, & Balkin, TJ. Emotional intelligence predicts declines in emotion-based decision-making following sleep deprivation [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A134.

107. 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.

108. Newman, R, **Killgore, WD,** Rupp, T. L, & Balkin, TJ. Better baseline olfactory discrimination is associated with worse PVT and MWT performance with sleep restriction and recovery [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A375.

109. Smith, KL, Reid, CT, **Killgore, WD,** Rupp, TL, & Balkin, TJ. Personality factors associated with performance and sleepiness during sleep restriction and recovery [abstract]. Abstract presented at the 22nd Meeting of the Associated Professional Sleep Societies, Baltimore, MD, June 7-12, 2008. SLEEP, 31 (Supplement), A376.

110. 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.

111. Lipizzi, EL, Rupp, TL, **Killgore, WD,** & Balkin, TJ. Sleep restriction increases risk-taking behavior [abstract]. Poster presented at the 11th Annual Force Health Protection Conference, Albuquerque, NM, August, 9-15, 2008.

112. **Killgore, WD,** Estrada, A, Balkin, TJ, & Wildzunas, RM. Sleep duration during army training predicts course performance [abstract]. Poster presented at the 6th Annual Force Health Protection Conference, Albuquerque, NM, August, 11-17, 2008.

113. **Killgore, WD,** Lipizzi, EL, Smith, KL, Killgore, DB, Rupp, TL, Kamimori, GH, & Balkin, TJ. Higher cognitive ability is associated with reduced relative resistance to sleep loss [abstract]. Poster presented at the 6th Annual Force Health Protection Conference, Albuquerque, NM, August, 11-17, 2008.

114. **Killgore, WD,** Rupp, TL, Grugle, NL, Lipizzi, EL, & Balkin, TJ. Maintaining alertness during sustained operations: Which stimulant is most effective after 44 hours without sleep [abstract]? Poster presented at the 6th Annual Force Health Protection Conference, Albuquerque, NM, August, 11-17, 2008.

115. **Killgore, WD,** Newman, RA, Lipizzi, EL, Kamimori, GH, & Balkin, TJ. Sleep deprivation increases feelings of anger but reduces verbal and physical aggression in Soldiers [abstract]. Poster presented at the 6th Annual Force Health Protection Conference, Albuquerque, NM, August, 11-17, 2008.

116. Kelley, AM, Dretsch, M, **Killgore, WD,** & Athy, JR. Risky behaviors and attitudes about risk in Soldiers. Abstract presented at the 29th Annual Meeting of the Society for Judgment and Decision Making, Chicago, IL, November, 2008.

117. **Killgore, WD,** Ross, AJ, Silveri, MM, Gruber, SA, Kamiya, T, Kawada, Y, Renshaw, PF, & Yurgelun-Todd, DA. Citicoline affects appetite and cortico-limbic responses to images of high calorie foods. Abstract presented at the Society for Neuroscience, Washington DC, November 19, 2008.

118. Britton, JC, Stewart, SE, Price, LM, **Killgore, WD,** Gold, AL, Jenike, MA, & Rauch, SL. Reduced amygdalar activation in response to emotional faces in pediatric Obsessive-Compulsive Disorder. Abstract presented at the Annual meeting of the American College of Neuropsychopharmacology, Scottsdale, AZ, December 7-11, 2008.

119. **Killgore, WD,** Balkin, TJ, Estrada, A, & Wildzunas, RM. Sleep and performance measures in soldiers undergoing military relevant training. Abstract presented at the 26th Army Science Conference, Orlando, FL, December 1-4, 2008.

120. **Killgore, WD** & Yurgelun-Todd, DA. Cerebral correlates of amygdala responses during non-conscious perception of affective faces in adolescent children. Abstract presented at the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

121. **Killgore, WD,** Killgore, DB, Grugle, NL, & Balkin, TJ. Odor identification ability predicts executive function deficits following sleep deprivation. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

122. **Killgore, WD,** Rupp, TL, Killgore, DB, Grugle, NL, and Balkin, TJ. Differential effects of stimulant medications on verbal and nonverbal fluency during sleep deprivation. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

123. **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.

124. **Killgore, WD,** Britton, JC, Price, LM, Gold, AL, Deckersbach, T, & Rauch, SL. Introversion is associated with greater amygdala and insula activation during viewing of masked affective stimuli. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

125. **Killgore, WD,** Britton, JC, Price, LM, Gold, AL, Deckersbach, T, & Rauch, SL. Amygdala responses of specific animal phobics do not differ from healthy controls during masked fearful face perception. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009.

126. **Killgore, WD,** Britton, JC, Price, LM, Gold, AL, Deckersbach, T, & Rauch, SL. Small animal phobics show sustained amygdala activation in response to masked happy facial expressions. Abstract presented the 37th Annual Meeting of the International Neuropsychological Society, Atlanta, GA, February 11-14, 2009. ***[*Merit Poster Award]***

127. Price, LM, **Killgore, WD,** Britton, JC, Kaufman, ML, Gold, AL, Deckersbach, T, & Rauch, SL. Anxiety sensitivity correlates with insula activation in response to masked fearful faces in specific animal phobics and healthy subjects. Abstract presented at the Annual Conference of the Anxiety Disorders Association of America, Santa Ana Pueblo, New Mexico, March 12-15, 2009.

128. **Killgore, WD,** Britton, JC, Price, LM, Gold, AL, Deckersbach, T, & Rauch, SL. Neuroticism is inversely correlated with amygdala and insula activation during masked presentations of affective stimuli. Abstract presented at the Annual Conference of the Anxiety Disorders Association of America, Santa Ana Pueblo, New Mexico, March 12-15, 2009.

129. **Killgore, WD,** Kelley, AM, & Balkin, TJ. Development and validation of a scale to measure the perception of invincibility. Abstract presented at the Annual Conference of the Anxiety Disorders Association of America, Santa Ana Pueblo, New Mexico, March 12-15, 2009.

130. Kelly, AM, **Killgore WD,** Athy, J, & Dretsch, M. Risk propensity, risk perception, risk aversion, and sensation seeking in U.S. Army soldiers. Abstract presented at the 80th Annual Scientific Meeting of the Aerospace Medical Association, Los Angeles, CA, May 3-7, 2009.

131. Britton, JC, Stewart, SE, Price, LM, **Killgore, WD,** Jenike, MA, & Rauch, SL. The neural correlates of negative priming in pediatric obsessive-compulsive disorder (OCD). Abstract presented at the 64th Annual Scientific Meeting of the Society of Biological Psychiatry, Vancouver, Canada, May 14-16, 2009.

132. **Killgore, WD,** Killgore, DB, Kamimori, GH, & Balkin, TJ. Caffeine protects against increased risk-taking behavior during severe sleep deprivation. Abstract presented at the 23rd Annual Meeting of the Associated Professional Sleep Societies, Seattle, Washington, June 7-12, 2009.

133. 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 7-12, 2009.

134. **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.

135. **Killgore, WD,** Kelley, AM, & Balkin, TJ. A new scale for measuring the perception of invincibility. Abstract presented at the 12th Annual Force Health Protection Conference, Albuquerque, New Mexico, August 14-21, 2009.

136. **Killgore, WD,** Killgore, DB, Grugle, NL, & Balkin, TJ. Executive functions contribute to the ability to resist sleep loss. Abstract presented at the 12th Annual Force Health Protection Conference, Albuquerque, New Mexico, August 14-21, 2009.

137. **Killgore, WD,** Killgore, DB, Kamimori, GH, & Balkin, TJ. Caffeine reduces risk-taking behavior during severe sleep deprivation. Abstract presented at the 12th Annual Force Health Protection Conference, Albuquerque, New Mexico, August 14-21, 2009. ***[*Best Paper: Research]***

138. **Killgore, WD,** Castro, CA, & Hoge, CW. Normative data for the Evaluation of Risks Scale—Bubble Sheet Version (EVAR-B) for large scale surveys of returning combat veterans. Abstract presented at the 12th Annual Force Health Protection Conference, Albuquerque, New Mexico, August 14-21, 2009.

139. **Killgore, WD,** Castro, CA, & Hoge, CW. Combat exposure and post-deployment risky behavior. Abstract presented at the 12th Annual Force Health Protection Conference, Albuquerque, New Mexico, August 14-21, 2009.

140. **Killgore, WD**, Price, LM, Britton, JC, Simon, N, Pollack, MH, Weiner, MR, Schwab, ZJ, Rosso, IM, & Rauch, SL. Paralimbic responses to masked emotional faces in PTSD: Disorder and valence specificity. Abstract presented at the Annual McLean Hospital Research Day, January 29, 2010.

141. **Killgore, WD**, Killgore, DB, Kamimori, GH, & Balkin, TJ. Caffeine minimizes behavioral risk-taking during 75 hours of sleep deprivation. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

142. **Killgore, WD** & Balkin, TJ. Vulnerability to sleep loss is affected by baseline executive function capacity. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

143. **Killgore, WD**, Smith, KL, Reichardt, RM., Killgore, DB, & Balkin, TJ. Intellectual capacity is related to REM sleep following sleep deprivation. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

144. **Killgore, WD** & Yurgelun-Todd, DA. Cerebral correlates of amygdala responses to masked fear, anger, and happiness in adolescent and pre-adolescent children. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

145. **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.

146. **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.

147. **Killgore, WD**, Price, LM, Britton, JC, Gold, AL, Deckersbach, T, & Rauch, SL. Neural correlates of anxiety sensitivity factors during presentation of masked fearful faces. Abstract presented at the 38th Annual Meeting of the International Neuropsychological Society, Acapulco, Mexico, February 3-6, 2010.

148. **Killgore, WD**, Grugle, NL, Conrad, TA, & Balkin, TJ. Baseline executive function abilities predict risky behavior following sleep deprivation. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

149. **Killgore, WD**, Grugle, NL, & Balkin, TJ. Judgment of objective vigilance performance is affected by sleep deprivation and stimulants. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

150. Killgore, DB, **Killgore, WD**, Grugle, NL, & Balkin, TJ. Resistance to sleep loss and its relationship to decision making during sleep deprivation. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

151. Killgore DB, **Killgore, WD**, Grugle, NL, & Balkin, TJ. Subjective sleepiness and objective performance: Differential effects of stimulants during sleep deprivation. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

152. 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.

153. 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.

154. Rupp, TL, **Killgore, WD**, & Balkin, TJ. Vulnerability to sleep deprivation is differentially mediated by social exposure in extraverts vs. introverts. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

155. Capaldi, VF, Guerrero, ML, & **Killgore, WD**. Sleep disorders among OIF and OEF Soldiers. Abstract presented at the 24th Annual Meeting of the Associated Professional Sleep Societies, San Antonio, Texas, June 5-9, 2010.

156. **Killgore, WD**, Killgore, DB, Kamimori, GH, & Balkin, TJ. Caffeine reduces behavioral risk-taking during sleep deprivation. Abstract presented at the 65th Annual Meeting of the Society for Biological Psychiatry, New Orleans, Louisiana, May 20-22, 2010.

157. **Killgore, WD**, Price, LM, Britton, JC, Simon, N, Pollack, MH, Weiner, MR, Schwab, ZJ, Rosso, IM, & Rauch, SL. Paralimbic responses to masked emotional faces in PTSD: Disorder and valence specificity. Abstract presented at the 65th Annual Meeting of the Society for Biological Psychiatry, New Orleans, Louisiana, May 20-22, 2010.

158. Rosso, IM, Makris, N, Britton, JC, Price, LM, Gold, AL, Deckersbach, T, **Killgore, WD**, & Rauch SL. Anxiety sensitivity correlates with insular cortex volume and thickness in specific animal phobia. Abstract presented at the 65th Annual Meeting of the Society for Biological Psychiatry, New Orleans, Louisiana, May 20-22, 2010.

159. Rupp, TL, **Killgore, WD**, & Balkin, TJ. Vulnerability to sleep deprivation is mediated by social exposure in extraverts versus introverts. Oral platform presentation at the 20th Congress of the European Sleep Research Society, Lisbon, Portugal, September 14-18, 2010.

160. **Killgore, WD**, Estrada, A, & Balkin, TJ. A tool for monitoring soldier fatigue and predicting cognitive readiness: The Sleep History and Readiness Predictor (SHARP). Abstract presented at the 27th Army Science Conference, Orlando, FL, November 29-December 2, 2010.

161. **Killgore, WD**, Kamimori, GH, & Balkin, TJ. Caffeinated gum minimizes risk-taking in soldiers during prolonged sleep deprivation. Abstract presented at the 27th Army Science Conference, Orlando, FL, November 29-December 2, 2010.

162. **Killgore, WD**, Britton, JC, Schwab, ZJ, Weiner, MR, Rosso, IM, & Rauch, SL. Exaggerated amygdala responses to masked fearful faces are specific to PTSD versus simple phobia. Oral platform presentation at the 27th Army Science Conference, Orlando, FL, November 29-December 2, 2010. ***[*Winner Best Paper in Neuroscience]***

163. **Killgore, WD**, Kamimori, GH, & Balkin, TJ. Sleep deprivation selectively impairs emotional aspects of cognitive functioning. Oral platform presentation at the 27th Army Science Conference, Orlando, FL, November 29-December 2, 2010.

164. Rupp, TL, **Killgore, WD**, & Balkin, TJ. Evaluation of personality and social exposure as individual difference factors influencing response to sleep deprivation. Oral platform presentation at the 27th Army Science Conference, Orlando, FL, November 29-December 2, 2010.

165. **Killgore, WD**, Britton, JC, Rosso, IM, Schwab, ZJ, Weiner, MR, & Rauch, SL. Shared and differential patterns of amygdalo-cortical activation across anxiety disorders. Abstract presented at the 49th Annual Meeting of the American College of Neuropsychopharmacology, Miami Beach, FL, December 5-9, 2010.

166. Rosso, IM, **Killgore, WD**, Britton, JC, Weiner, MR, Schwab, ZJ, & Rauch, SL. Neural correlates of PTSD symptom dimensions during emotional processing: A functional magnetic resonance imaging study. Abstract presented at the 49th Annual Meeting of the American College of Neuropsychopharmacology, Miami Beach, FL, December 5-9, 2010.

167. **Killgore, WD,** Rosso, IM, Britton, JC, Schwab, ZJ, Weiner, MR, & Rauch, SL. Cortico-limbic activation differentiates among anxiety disorders with and without a generalized threat response. Abstract presented at the McLean Hospital Research Day, January 13, 2011.

168. Weiner, MR, Schwab, ZJ, Rauch, SL, & **Killgore WD**. Personality factors predict brain responses to images of high-calorie foods. Abstract presented at the McLean Hospital Research Day, January 13, 2011.

169. Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD.** Emotional and cognitive intelligence: Support for the neural efficiency hypothesis. Abstract presented at the McLean Hospital Research Day, January 13, 2011.

170. Crowley, DJ, Covell, MJ, **Killgore, WD**, Schwab, ZJ, Weiner, MR, Acharya, D, Rosso, IM, & Silveri, MM. Differential influence of facial expression on inhibitory capacity in adolescents versus adults. Abstract presented at the McLean Hospital Research Day, January 13, 2011.

171. **Killgore, WD**, Britton, JC, Rosso, IM, Schwab, ZJ, Weiner, MR, & Rauch, SL. Similarities and differences in cortico-limbic responses to masked affect probes across anxiety disorders. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

172. Rosso, IM, **Killgore, WD**, Britton, JC, Weiner, MR, Schwab, ZJ, & Rauch, SL. Hyperarousal and reexperiencing symptoms of post-traumatic stress disorder are differentially associated with limbic-prefrontal brain responses to threatening stimuli. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

173. Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD**. Neural correlates of cognitive and emotional intelligence in adults. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

174. Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD**. Cognitive and emotional intelligences: Are they distinct or related constructs? Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

175. Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD**. Discrepancy scores between cognitive and emotional intelligence predict neural responses to affective stimuli. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

176. **Killgore, WD**, Schwab, ZJ, Weiner, MR, & Rauch, SL. Smart people go with their gut: Emotional intelligence correlates with non-conscious insular responses to facial trustworthiness. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

177. **Killgore, WD**, Weiner, MR, Schwab, ZJ, & Rauch, SL. Whom can you trust? Neural correlates of subliminal perception of facial trustworthiness. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

178. Weiner, MR, Schwab, ZJ, & Rauch, SL, **Killgore, WD**. Impulsiveness predicts responses of brain reward circuitry to high-calorie foods. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

179. Weiner, MR, Schwab, ZJ, & Rauch, SL, **Killgore, WD**. Conscientiousness predicts brain responses to images of high-calorie foods. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

180. Crowley, DJ, Covell, MJ, **Killgore, WD**, Schwab, ZJ, Weiner, MR, Acharya, D, Rosso, IM, & Silveri, MM. Differential influence of facial expression on inhibitory capacity in adolescents versus adults. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

181. Gruber, SA, Dahlgren, MK, **Killgore, WD**, Sagar, KA, & Racine, MT. Marijuana: Age of onset of use impacts executive function and brain activation. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

182. **Killgore, WD,** Conrad, TA, Grugle, NL, & Balkin, TJ. Baseline executive function abilities correlate with risky behavior following sleep deprivation. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

183. **Killgore, WD,** Grugle, NL, Killgore, DB, & Balkin, TJ. Resistance to sleep loss and decision making during sleep deprivation. Abstract presented at the 39th Annual Meeting of the International Neuropsychological Society, Boston, MA, February 2-5, 2011.

184. **Killgore, WD,** Rosso, IM, Britton, JC, Schwab, ZJ, Weiner, MR, & Rauch, SL. Cortico-limbic activation differentiates among anxiety disorders with and without a generalized threat response. Abstract presented at the 66th Annual Meeting of the Society for Biological Psychiatry, San Francisco, CA, May 12-14, 2011. ***[*Blue Ribbon Finalist for Top Poster Award: Clinical/Translational]***

185. Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD.** Emotional and cognitive intelligence: Support for the neural efficiency hypothesis. Abstract presented at the 66th Annual Meeting of the Society for Biological Psychiatry, San Francisco, CA, May 12-14, 2011.

186. Weiner, MR, Schwab, ZJ, Rauch, SL, & **Killgore WD**. Personality factors predict brain responses to images of high-calorie foods. Abstract presented at the 66th Annual Meeting of the Society for Biological Psychiatry, San Francisco, CA, May 12-14, 2011.

187. **Killgore, WD,** Grugle, NL, & Balkin, TJ. Sleep deprivation impairs recognition of specific emotions. Abstract presented at the 25th Annual Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 11-15, 2011.

188. **Killgore, WD,** & Balkin, TJ. Does vulnerability to sleep deprivation influence the effectiveness of stimulants on psychomotor vigilance? Abstract presented at the 25th Annual Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 11-15, 2011.

189. Killgore, DB, **Killgore, WD,** Grugle, NJ, & Balkin, TJ. Sleep deprivation impairs recognition of specific emotions. Abstract presented at the 25th Annual Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 11-15, 2011.

190. Weiner, MR, Schwab, ZJ, & **Killgore, WD.** Daytime sleepiness is associated with altered brain activation during visual perception of high-calorie foods: An fMRI study. Abstract presented at the 25th Annual Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 11-15, 2011.

191. Schwab, ZJ, Weiner, MR, & **Killgore, WD.** Functional MRI correlates of morningness-eveningness during visual presentation of high calorie foods. Abstract presented at the 25th Annual Meeting of the Associated Professional Sleep Societies, Minneapolis, MN, June 11-15, 2011.

192. **Killgore, WD,** Weiner, MR, & Schwab, ZJ. Daytime sleepiness affects prefrontal regulation of food intake. Abstract presented at the McLean Hospital Research Day, January 11, 2012.

193. Kipman, M, Schwab ZJ, Weiner, MR, DelDonno, S, Rauch SL, & **Killgore WD**. The insightful yet bitter comedian: The role of emotional versus cognitive intelligence in humor appreciation. Abstract presented at the McLean Hospital Research Day, January 11, 2012.

194. Weber, M, & **Killgore, WD**. Gray matter correlates of emotional intelligence. Abstract presented at the McLean Hospital Research Day, January 11, 2012.

195. Schwab, ZJ, & **Killgore, WD**. Sex differences in functional brain responses to food. Abstract presented at the McLean Hospital Research Day, January 11, 2012.

196. DelDonno, S, Schwab, ZJ, Kipman M, Rauch, SL, & **Killgore, WD**. The influence of cognitive and emotional intelligence on performance on the Iowa Gambling Task. Abstract presented at the McLean Hospital Research Day, January 11, 2012.

197. Song, CH, Kizielewicz, J, Schwab, ZJ, Weiner, MR, Rauch, SL, & **Killgore, WD**. Time is of the essence: The Design Organization Test as a valid, reliable, and brief measure of visuospatial ability. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

198. Kipman, M, Schwab, ZJ, DelDonno, S, & **Killgore, WD**. Gender differences in the contribution of cognitive and emotional intelligence to the left visual field bias for facial perception. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

199. Kipman, M., Schwab, ZJ, Weiner, MR, DelDonno, S, Rauch, SL, & **Killgore, WD**. Contributions of emotional versus cognitive intelligence in humor appreciation. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

200. Schwab, ZJ, & **Killgore, WD**. Disentangling emotional and cognitive intelligence. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

201. Schwab, ZJ, & **Killgore, WD**. Sex differences in functional brain responses to food. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

202. DelDonno, S, Schwab, ZJ, Kipman, M, Rauch, SL, & **Killgore, WD**. The influence of cognitive and emotional intelligence on performance on the Iowa Gambling Task. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

203. **Killgore, WD**, Britton, JC, Rosso, IM, Schwab, ZJ, Weiner, MR, & Rauch, SL. Shared and unique patterns of cortico-limbic activation across anxiety disorders. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

204. **Killgore, WD**, & Balkin, TJ. Sleep deprivation degrades recognition of specific emotions. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

205. **Killgore, WD**, & Schwab, ZJ. Emotional intelligence correlates with somatic marker circuitry responses to subliminal cues of facial trustworthiness. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

206. **Killgore, WD**, & Schwab, ZJ. Trust me! Neural correlates of the ability to identify facial trustworthiness. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

207. **Killgore, WD**, Schwab, ZJ, Weiner, MR, Kipman, M, DelDonno, S, & Rauch SL. Overeating is associated with altered cortico-limbic responses to images of high calorie foods. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

208. **Killgore, WD**, Weiner, MR, & Schwab, ZJ. Daytime sleepiness affects prefrontal regulation of food intake. Abstract presented at the 40th Annual Meeting of the International Neuropsychological Society, Montreal, CA, February 15-18, 2012.

209. Weber, M, DelDonno, S, Kipman M, Schwab, ZJ, & **Killgore WD**. Grey matter correlates of self-reported sleep duration. Abstract presented at the Harvard Medical School Research Day, Boston, MA, March 28, 2012.

210. **Killgore, WD**. Overlapping and distinct patterns of neurocircuitry across PTSD, Panic Disorder, and Simple Phobia. Abstract presented at the 32nd Annual Conference of the Anxiety Disorders Association of America, Arlington, VA, April 12-15, 2012.

211. **Killgore, WD**, Britton, JC, Rosso, IM, Schwab, ZJ, & Rauch, SL. Shared and unique patterns of cortico-limbic activation across anxiety disorders. Abstract presented at the 67th Annual Meeting of the Society of Biological Psychiatry, Philadelphia, PA, May 3-5, 2012.

212. **Killgore, WD**, Schwab, ZJ, & Rauch, SL. Daytime sleepiness affects prefrontal inhibition of food consumption. Abstract presented at the 67th Annual Meeting of the Society of Biological Psychiatry, Philadelphia, PA, May 3-5, 2012.

213. Rosso, IM, Britton, JC, Makris, N, **Killgore, WDS**, Rauch SL, & Stewart ES. Impact of major depression comorbidity on prefrontal and anterior cingulate volumes in pediatric OCD. Abstract presented at the 67th Annual Meeting of the Society of Biological Psychiatry, Philadelphia, PA, May 3-5, 2012.

214. Kipman, M, Weber, M, DelDonno, S., Schwab, ZJ, & **Killgore, WD**. Morningness-Eveningness correlates with orbitofrontal gray matter volume. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

215. Kipman, M, Schwab, ZJ, Weber, M, DelDonno, S, & **Killgore, WD**. Yawning frequency is correlated with reduced medial thalamic volume. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

216. Weber, M, DelDonno, S, Kipman M, Schwab, ZJ, & **Killgore WD**. Grey matter correlates of daytime sleepiness. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

217. Weber, M, DelDonno, S, Kipman M, Schwab, ZJ, & **Killgore WD**. Grey matter correlates of self-reported sleep duration. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

218. DelDonno, S, Weber, M, Kipman M, Schwab, ZJ, & **Killgore, WD**. Resistance to insufficient sleep correlates with olfactory cortex gray matter. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

219. DelDonno, S, Schwab, ZJ, Kipman, M, Weber, M, & **Killgore, WD**. Weekend sleep is related to greater coping and resilience capacities. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

220. Schwab, ZJ, DelDonno, S, Weber, M, Kipman M, & **Killgore, WD**. Habitual caffeine consumption and cerebral gray matter volume. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

221. Schwab, ZJ, & **Killgore, WD**. Daytime sleepiness affects prefrontal regulation of food intake. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

222. **Killgore, WD**, Schwab, ZJ, DelDonno S, Kipman, M, Weber M, & Rauch, SL. Greater nocturnal sleep time is associated with increased default mode functional connectivity. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

223. **Killgore, WD**, Kamimori, GH, & Balkin, TJ. Caffeine improves efficiency of planning and sequencing abilities during sleep deprivation. Abstract presented at the 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA, June 9-13, 2012.

224. Sneider, JT, **Killgore, WD**, Crowley, DJ, Cohen-Gilbert, JE, Schwab, ZJ, & Silveri, MM. Inhibitory capacity in emerging adult binge drinkers: Influence of Facial Cues. Abstract presented at the 35th Annual Scientific Meeting of the Research Society on Alcoholism, San Francisco, CA, June 23-27, 2012.

225. **Killgore WD**. Multimodal neuroimaging to predict cognitive resilience against sleep loss. Abstract presented at the DARPA Young Faculty Award 2012 Meeting, Arlington, VA, July 30-31, 2012. ***[*Winner Young Faculty Award in Neuroscience]***

226. Cohen-Gilbert, JE, **Killgore WD**, Crowley, DJ, Covell, MJ, Schwab, ZJ, Weiner, MR, Acharya, D, Sneider, JT, & Silveri, MM. Differential influence of safe versus threatening facial expressions on inhibitory control across adolescence and adulthood. Abstract presentede at the Society for Neuroscience 2012 Meeting, New Orleans, LA, October 13-17, 2012.

227. Weber, M, DelDonno, S, Kipman M, Schwab, ZJ, & **Killgore WD**. Grey matter correlates of self-reported sleep duration. Abstract presented at the Harvard Division of Sleep Medicine Annual Poster Session, Boston, MA, September 27, 2012.

228. Weber, M, DelDonno, SR, Kipman, M, Preer, LA, Schwab ZJ, Weiner, MR, & **Killgore, WD.** The effect of morning bight light therapy on sleep, cognition and emotion following mild traumatic brain injury. Abstract accepted for poster presentation at the 2012 Sleep Research Network Meeting, 22-23 October 2012, Bethesda, MD.

229. Sneider, JT, **Killgore, WD**, Crowley, DJ, Cohen-Gilbert, JE, Schwab, ZJ, & Silveri, MM. Inhibitory capacity in emerging adult binge drinkers: Influence of Facial Cues. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

230. Cohen-Gilbert, JE, **Killgore WD**, Crowley, DJ, Covell, MJ, Schwab, ZJ, Weiner, MR, Acharya, D, Sneider, JT, & Silveri, MM. Differential influence of safe versus threatening facial expressions on inhibitory control across adolescence and adulthood. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

231. Tkachenko, O, Schwab, ZJ, Kipman, M, DelDonno, S, Gogel, H., Preer, L, & **Killgore, WDS**. Smarter women need less sleep. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

232. DelDonno, S, Kipman, M, Schwab, ZJ, & **Killgore, WDS**. The contributions of emotional intelligence and facial perception to social intuition. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

233. Kipman, M, Schwab, ZJ, DelDonno, S, Weber, M, Rauch, SL, & **Killgore, WDS**. The neurocircuitry of impulsive behavior. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

234. Preer, LA, Tkachenko, O, Gogel, H, Schwab, ZJ, Kipman, M, DelDonno, SR, Weber, M, Webb, CA, & **Killgore, WDS**. Emotional intelligence as a mediator of the association between anxiety sensitivity and anxiety symptoms. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

235. Gogel, H, DelDonno, S, Kipman M, Preer, LA, Schwab, ZJ, Tkachenko, O, & **Killgore, WDS**. Validation of the Design Organization Test (DOT) in a healthy population. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

236. Brennan, BP, Schwab, ZS, Athey, AJ, Ryan, EM, Pope, HG, **Killgore, WDS**, Jenike, MA, & Rauch, SL. A functional magnetic resonance imaging study of rostral anterior cingulate cortex activation in obsessive-compulsive disorder using an emotional counting stroop paradigm. Abstract presented at the Annual McLean Hospital Research Day, January 16, 2013.

237. Cohen-Gilbert, JE, Schwab, ZJ, **Killgore, WDS**, Crowley, DJ, & Silveri MM. Influence of Binge Drinking on the Neural Correlates of Inhibitory Control during Emotional Distraction in Young Adults. Abstract presented at the 3rd International Conference on Applications of Neuroimaging to Alcoholism (ICANA-3), New Haven, CT, February 15-18, 2013.

238. Weber, M, & **Killgore, WDS**. The interrelationship between 'sleep credit', emotional intelligence and mental health – a voxel-based morphometric study. Abstract presented at Harvard Medical School Psychiatry Research Day, April 10, 2013.

239. Cohen-Gilbert, JE, Schwab, ZJ, **Killgore, WDS**, Crowley, DJ, & Silveri MM. Influence of Binge Drinking on the Neural Correlates of Inhibitory Control during Emotional Distraction in Young Adults. Abstract presented at Harvard Medical School Psychiatry Research Day, April 10, 2013.

240. Mundy, EA, Weber, M, Rauch, SL, **Killgore, WDS**, & Rosso, IM. The relationship between subjective stress levels in childhood and anxiety as well as perceived stress as an adult. Abstract presented at Harvard Medical School Psychiatry Research Day, April 10, 2013.

241. Webb, CA, **Killgore, WDS**, Britton, JC, Schwab, ZJ, Price, LM, Weiner, MR, Gold, AL, Rosso, IM, Simon, NM, Pollack, MH, & Rauch, SL. Comparing categorical versus dimensional predictors of functional response across three anxiety disorders. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

242. Preer, LA, Tkachenko, O, Gogel, H, Schwab, ZJ, Kipman, M, DelDonno, SR, Weber, M, Webb, CA, Rauch, SL, & **Killgore, WDS**. Linking Sleep Trouble to Neuroticism, Emotional Control, and Impulsiveness. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

243. Preer, LA, Tkachenko, O, Gogel, H, Schwab, ZJ, Kipman, M, DelDonno, SR, Weber, M, Webb, CA, Rauch, SL, & **Killgore, WDS**. Emotional Intelligence as a Mediator of the Association between Anxiety Sensitivity and Anxiety Symptoms. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

244. Kipman, M, Schwab, ZJ, DelDonno, S, Weber, M, Rauch, SL, & **Killgore, WDS**. The neurocircuitry of impulsive behavior. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

245. Weber, M, **Killgore, WDS**, Rosso, IM, Britton, JC, Simon, NM, Pollack, MH, & Rauch, SL. Gray matter correlates of posttraumatic stress disorder—A voxel based morphometry study. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

246. Weber, M, Penetar, DM, Trksak, GH, DelDonno, SR, Kipman, M, Schwab, ZJ, & **Killgore, WDS**. Morning blue wavelength light therapy improves sleep, cognition, emotion and brain function following mild traumatic brain injury. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

247. Tkachenko, O, Schwab, ZJ, Kipman, M, Preer, LA, Gogel, H, DelDonno, SR, Weber, M, Webb, CA, Rauch, SL, & **Killgore, WDS**. Difficulty in falling asleep and staying asleep linked to a sub-clinical increase in symptoms of psychopathology. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

248. **Killgore, WDS**, Schwab, ZJ, Kipman, M, DelDonno, SR, Rauch, SL, & Weber, M. Problems with sleep initiation and sleep maintenance correlate with functional connectivity among primary sensory cortices. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

249. **Killgore, WDS**, Schwab, ZJ, Kipman, M, DelDonno, SR, Rauch, SL, & Weber, M. A Couple of Hours Can Make a Difference: Self-Reported Sleep Correlates with Prefrontal-Amygdala Connectivity and Emotional Functioning. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

250. Brennan, BP, Schwab, ZS, Athey, AJ, Ryan, EM, Pope, HG, **Killgore, WDS**, Jenike, MA, & Rauch, SL. A functional magnetic resonance imaging study of rostral anterior cingulate cortex activation in obsessive-compulsive disorder using an emotional counting stroop paradigm. Abstract presented at the 68th Annual Meeting of the Society of Biological Psychiatry, San Francisco, CA, May 16-18, 2013.

251. Weber, M, & **Killgore, WDS**. The interrelationship between 'sleep credit', emotional intelligence and mental health – a voxel-based morphometric study. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

252. Weber, M, Penetar, DM, Trksak, GH, DelDonno, SR, Kipman, M, Schwab, ZJ, & **Killgore, WDS**. Morning blue wavelength light therapy improves sleep, cognition, emotion and brain function following mild traumatic brain injury. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

253. **Killgore, WDS**, Schwab, ZJ, Kipman, M, DelDonno, SR, & Weber, M. Problems with Sleep Initiation and Sleep Maintenance Correlate with Functional Connectivity Among Primary Sensory Cortices. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

254. **Killgore, WDS**, Schwab, ZJ, Kipman, M, DelDonno, SR, & Weber, M. A Couple of Hours Can Make a Difference: Self-Reported Sleep Correlates with Prefrontal-Amygdala Connectivity and Emotional Functioning. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

255. Tkachenko, O, Schwab, ZJ, Kipman, M, DelDonno, SR, Preer, LA, Gogel, H, Weber, M, Webb, CA, & **Killgore, WDS**. Difficulty in falling asleep and staying asleep linked to a sub-clinical increase in symptoms of psychopathology. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

256. Preer, LA, Tkachenko, O, Gogel, H, Schwab, ZJ, Kipman, M, DelDonno, SR, Weber, M, Webb, CA, & **Killgore, WDS**. Linking Sleep Initiation Trouble to Neuroticism, Emotional Control, and Impulsiveness. Abstract presented at the SLEEP 2013 Annual Meeting, Baltimore, MD, June 1-5, 2013.

257. Preer, L, Tkachenko, O, Gogel, H, Bark, JS, Kipman, M, Olson, EA, & **Killgore, WDS**. The role of personality in sleep initiation problems. Abstract presented at the Annual McLean Hospital Research Day, January 22, 2014.

258. Demers, LA, Olson, EA, Weber, M, Divatia, S, Preer, L, & **Killgore, WDS**. Paranoid traits are related to deficits in complex social decision-making and reduced superior temporal sulcus volume. Abstract presented at the Annual McLean Hospital Research Day, January 22, 2014.

259. Tkachenko, O, Weber, M, Gogel, H, & **Killgore, WDS**. Predisposition towards unhealthy foods linked with increased gray matter in the cerebellum. Abstract presented at the Annual McLean Hospital Research Day, January 22, 2014.

260. Olson, EA, Weber, M, Tkachenko, O, & **Killgore, WDS**. Daytime sleepiness is associated with decreased integration of remote outcomes on the IGT. Abstract presented at the Annual McLean Hospital Research Day, January 22, 2014.

261. Cui, J, Tkachenko, O, & **Killgore, WDS**. Can the activation of anterior cingulate predict the emotional suppression? An fMRI study with masked faces. Abstract presented at the Annual McLean Hospital Research Day, January 22, 2014.

262. Gogel, H, & **Killgore WDS**. A psychometric validation of the Design Organization Test (DOT) in a healthy sample. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

263. **Killgore, WDS**, Kipman, M, Tkachenko, O, Gogel, H., Preer, L, Demers, LA, Divatia, SC, Olson, EA, & Weber, M. Predicting resilience against sleep loss with multi-modal neuroimaging. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

264. **Killgore, WDS**, Weber, M, Bark, JS, Kipman, M, Gogel, H, Preer, L, Tkachenko, O, Demers, LA, Divatia, SC, & Olson, EA. Physical exercise correlates with hippocampal volume in healthy adults. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

265. **Killgore, WDS**, Tkachenko, O, Weber, M, Kipman, M, Preer, L, Gogel, H, & Olson, EA. The association between sleep, functional connectivity, and emotional functioning. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

266. Preer, L, Tkachenko, O, Gogel, H, Bark, JS, Kipman, M, Olson, EA, & **Killgore, WDS**. The role of personality in sleep initiation problems. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

267. Tkachenko, O, Weber, M, Olson, EA, Gogel, H, Preer, LA, Divatia, SC, Demers, LA, & **Killgore, WDS**. Gray matter volume within the medial prefrontal cortex correlates with behavioral risk taking. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

268. Olson, EA, Weber, M, Bark JS, Demers L, Divatia, SC, Gogel, H, Kipman M, Preer, L, Tkachenko, O, & **Killgore, WDS**. Sex differences in threat evaluation of emotionally neutral faces. Abstract presented at the 42nd Annual Meeting of the International Neuropsychological Society, Seattle WA, February 12-15, 2014.

269. Cui, J, Tkachenko, O, & **Killgore, WDS**. Can the activation of anterior cingulate predict the emotional suppression? An fMRI study with masked faces. Abstract presented at the 36nd Annual Conference of the Anxiety Disorders Association of America, Chicago, IL, March 27-30, 2014.

270. Webb, CA, Weber, M, Mundy, EA, & **Killgore, WDS**. Reduced gray matter volume in the anterior cingulate, orbitofrontal cortex and thalamus as a function of depressive symptoms: A voxel-based morphometric analysis. Abstract presented at the 36nd Annual Conference of the Anxiety Disorders Association of America, Chicago, IL, March 27-30, 2014.

271. Weber, M, Penetar, DM, Trksak, GH, Kipman, M, Tkachenko, O, Bark, JS, Jorgensen, AL, Rauch, SL, & **Killgore, WDS**. Light therapy may improve sleep and facilitate recovery from mild traumatic brain injury. Abstract presented at the 10th World Congress on Brain Injury, San Francisco, CA, March 19-22, 2014.

272. Cui, J, Tkachenko, O, & **Killgore, WDS**. Can the activation of anterior cingulate predict the emotional suppression? An fMRI study with masked faces. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

273. Divatia, S, Demers, LA, Preer, L, Olson, EA, Weber, M, & **Killgore, WDS**. Advantageous decision making linked with increased gray matter volume in the ventromedial prefrontal cortex. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

274. Demers, LA, Olson, EA, Weber, M, Divatia, S, Preer, L, & **Killgore, WDS**. Paranoid traits are related to deficits in complex social decision making and reduced superior temporal sulcus volume. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

275. Preer, LA, Weber, M, Tkachenko, O, Divatia, S, Demers, LA, Olson, EA, & **Killgore, WDS**. Gray matter volume in the amygdala is associated with facial assessments of trustworthiness. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

276. Tkachenko, O, Weber, M, Gogel, H, & **Killgore, WDS**. Predisposition towards unhealthy foods linked with increased gray matter volume in the cerebellum. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

277. Olson, EA, Weber, M, Gogel, H, & **Killgore, WDS**. Daytime sleepiness is associated with decreased integration of remote outcomes on the IGT. Abstract presented at the 21st Annual Meeting of the Cognitive Neuroscience Society, Boston, MA, April 5-8, 2014.

278. Demers, LA, Preer, LA, Gogel, H, Olson, EA, Weber, M, & **Killgore, WDS**. Left-hemifield bias on sad chimeric face task correlates with interpersonal emotional intelligence. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014.

279. Weber, M, **Killgore, WDS**, Olson, EA, Rosso, IM, & Rauch, SL. Morphological brain network organization in relation to trauma and posttraumatic stress disorder. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014.

280. Divatia, S, Demers, LA, Preer, L, Gogel, H, Kipman, M, & **Killgore, WDS**. Schizotypal and manic traits are associated with poorer perception of emotions in healthy individuals. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014.

281. **Killgore, WDS**, Weber, M, Olson, EA, & Rauch, SL. Sleep reduction and functioning of the emotion regulation circuitry. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014. ***[*Blue Ribbon Finalist for Top Poster Award: Basic Neuroscience]***

282. Webb, CA, Weber, M, Mundy, EA, & **Killgore, WDS**. Reduced gray matter volume in the anterior cingulate, orbitofrontal cortex and thalamus as a function of depressive symptoms: A voxel-based morphometric analysis. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014.

283. Marin MF, Song H, Landau AJ, Lasko NB, Foy Preer LA, Campbell A, Pace-Schott EF, **Killgore, WD**, Orr SP, Pitman RK, Simon NM, Milad MR (2014). Psychophysiological and Neuroimaging Correlates of Fear Extinction Deficits Across Anxiety Disorders. Abstract presented at the 69th Annual Meeting of the Society of Biological Psychiatry, New York, NY, May 8-10, 2014.

284. **Killgore, WDS**. The effects of sleep loss on food preference. Abstract presented at SLEEP 2014, Minneapolis, MN, May 31-June 4, 2014.

285. Weber, M, & **Killgore, WDS**. Sleep habits reflect in functional brain network organization. Abstract presented at SLEEP 2014, Minneapolis, MN, May 31-June 4, 2014. ***[*2014 AASM Young Investigator Award, Honorable Mention]***

286. Freed, MC, Novak, LA, **Killgore, WDS**, Koehlmoos, TP, Ginsberg, JP, Krupnick, J, Rauch S, Rizzo, A, Engle, CC. DoD IRB delays: Do they really matter? And if so, why and for whom? Abstract presented at the Military Health System Research Symposium, Fort Lauderdale, FL, August 18-21, 2014.

287. Freed, MC, Novak, LA, **Killgore, WDS**, Koehlmoos, TP, Ginsberg, JP, Krupnick, J, Rauch S, Rizzo, A, Engle, CC. DoD IRB delays: Do they really matter? And if so, why and for whom? Abstract accepted for presentation at the AMSUS Annual Meeting, Washington DC, December 2-5, 2014.

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. Over the past 12 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 have since been 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 anxiety disorders and post-traumatic stress. During the past five years I have also successfully secured multiple grants from the DoD and DARPA totaling more than $7.8M, including a study of the neural basis of emotional intelligence, a study of a novel light treatment for improving sleep and cognitive functioning in mTBI, and a neuroimaging study of the effectiveness of an internet based cognitive-behavior therapy program, a neuroimaging study of axonal damage in mTBI, and a study of the neural basis of resilience against the adverse effects of sleep deprivation. In early 2011, I was named Co-Director of the Social, Cognitive, and Affective Neuroscience Lab at McLean Hospital.

My recent teaching activities have primarily involved daily supervision and training of student research assistants and postdoctoral fellows, as well as occasional seminar presentations. Over the past 6 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.