

1. National Survey and Tissue Bank

■ National Survey

- Data collection completed with approx. 8,000 responses, 59% participation rate, short of goal of 9,700 responses
- Provisional data analysis beginning
- Decision point: resume data collection to increase response?
- RTI team will discuss this in detail tomorrow.

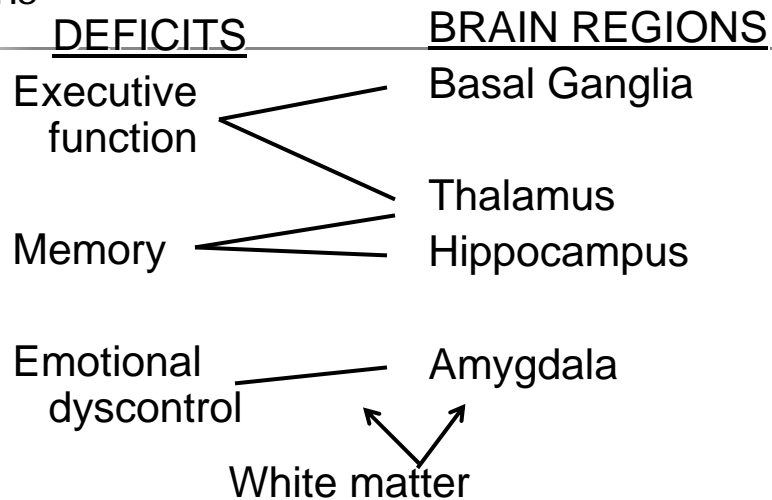
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| | <h2>1. National Survey and Tissue Bank</h2> <ul style="list-style-type: none">■ Tissue Bank |
| | <ul style="list-style-type: none">– Present goal: collect serum, DNA, RNA from 2,092 survey participants (all syndromic and sample of others)– Suffered a 12 month work stoppage.– Resumed blood collections in November– Have completed approx. 750 participants– Field collections running smoothly now– Project completion of 2,092 by fall– Considering enlarging sample to all survey participants (to be discussed tomorrow) |

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| | <h2>Paraoxonase Laboratory</h2> <ul style="list-style-type: none">■ Established Paraoxonase Laboratory in 2006 (John Teiber, PhD) |
| | <ul style="list-style-type: none">■ Developed automated, high throughput assays for:<ul style="list-style-type: none">– Paraoxonase– Arylesterase– Diazonase– Butyryl-cholinesterase (BChE)– PCR genotyping of PON1, PON2, PON3 genes– Validated Q/R interpolation method for heterozygotes■ Completed experiments testing whether Gulf War chemicals might reduce PON enzyme activity.■ Will soon apply for CLIA Certification and begin PON/BChE assays on GW serum. |

2. Neuroimaging and Biomarker Studies

- Purposes of the Neuroimaging studies
 - To understand the neurological basis of GWI
 - Measure brain pathology from different perspectives, all in the same group of ill and well veterans, to develop a *mosaic of evidence*.
 - To develop an objective diagnostic test for GWI
 - VA needs a brief, cost-effective set of tests to decide who has GWI for service connection and treatment.
 - Researchers need an objective measure to create groups homogeneous for a given illness to allow efficient clinical trials of treatment
 - Suggest mechanisms at which to target treatment.

Designed New Brain Imaging Tests to Probe GWV's Deficits and Respective Brain Regions



Operational Plan

- Three phases of neuroimaging
 - A long series of developmental pilots in normals (2005-Present)
 - Formal pilot study in 50 seabees studied in '96 & '98 (2008-9)
 - Confirmatory study in a population representative sample (Future)
- Formal Pilot Study in Seabees Battalion
 - July 2008 – April 2009
 - Sample: 24th Reserve Naval Mobile Construction Btln
 - Factor Sd 1 10
 - Factor Sd 2 14
 - Factor Sd 3 10
 - Controls 16 Total 50 (45 completed)
 - Researchers still blinded to group membership
 - Reporting on initial results later this morning
 - Sampling plan for Confirmatory study to be discussed tomorrow

Organization of Tests

- Studies of Global Brain Integrity
 - MR spectroscopy, Volumetrics, DTI, EEG, Cholinergic challenge with SPECT, Dexamethasone Suppression Test
- Neuropsychological/Psychological Tests
- fMRI of Memory
 - Memory encoding, Memory associations
- fMRI of Executive Functions and Language
 - Attention/concentration, Working memory, Word-finding, Complex verbal function
- fMRI of Affective Functions
 - Emotional response to threat, Fronto-striatal circuits involved in depression
- fMRI of Sensory Perception
 - Warming threshold and heat pain
- fMRI of Functional Connectivity

Basic Brain Anatomy

