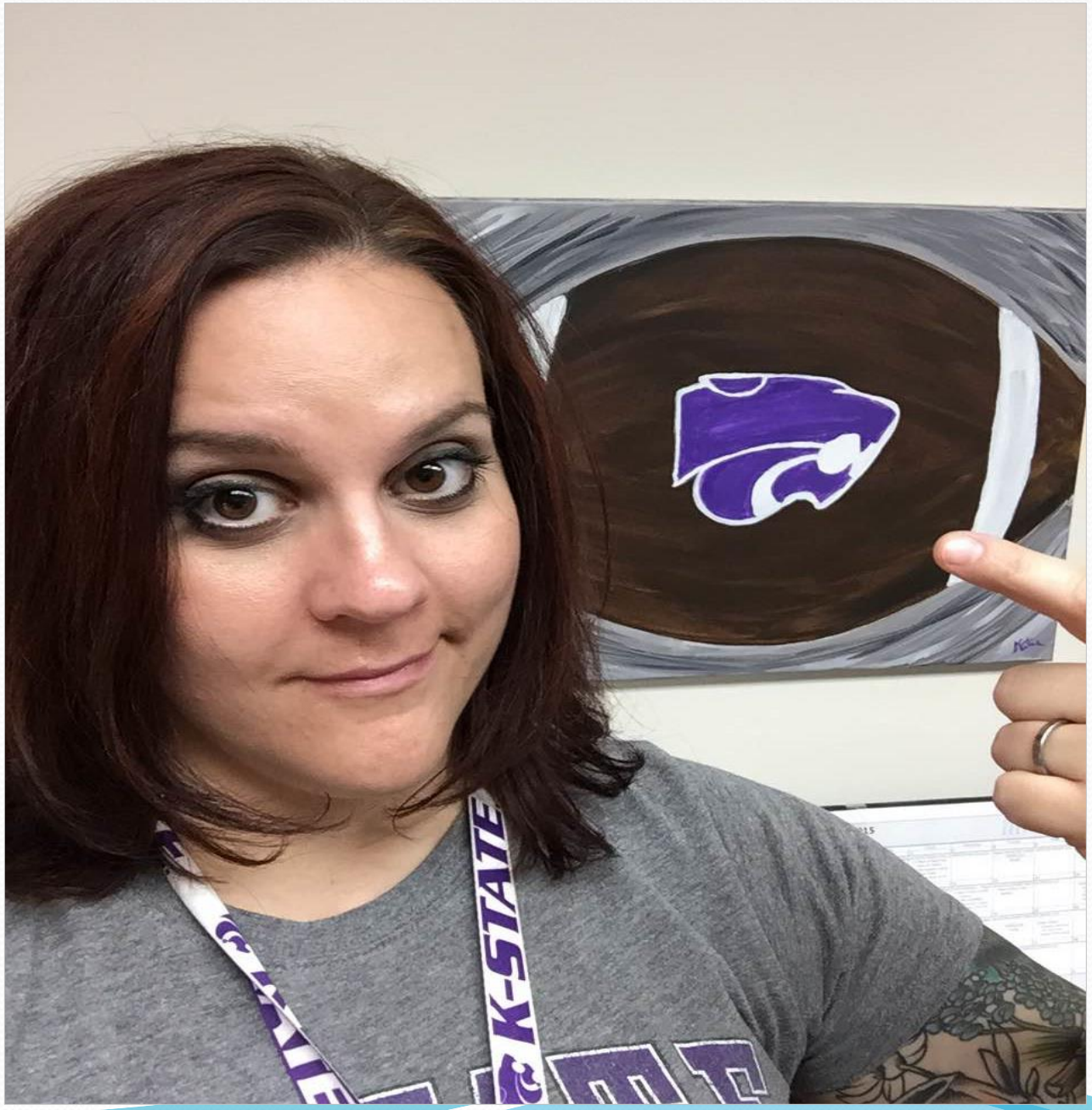
Katie Teague, Au.D.



Walter Reed Study[1]: Blast Injury

- 36 vets, w/ mild TBI (didn't show up on scans) & 29 age-gender matched controls vets
- Tests: DD, SSW, GIN, QSiN, MLD, ABR & LLR
- Compared to controls SSW was consistently strongest (& surprisingly DD weakest)

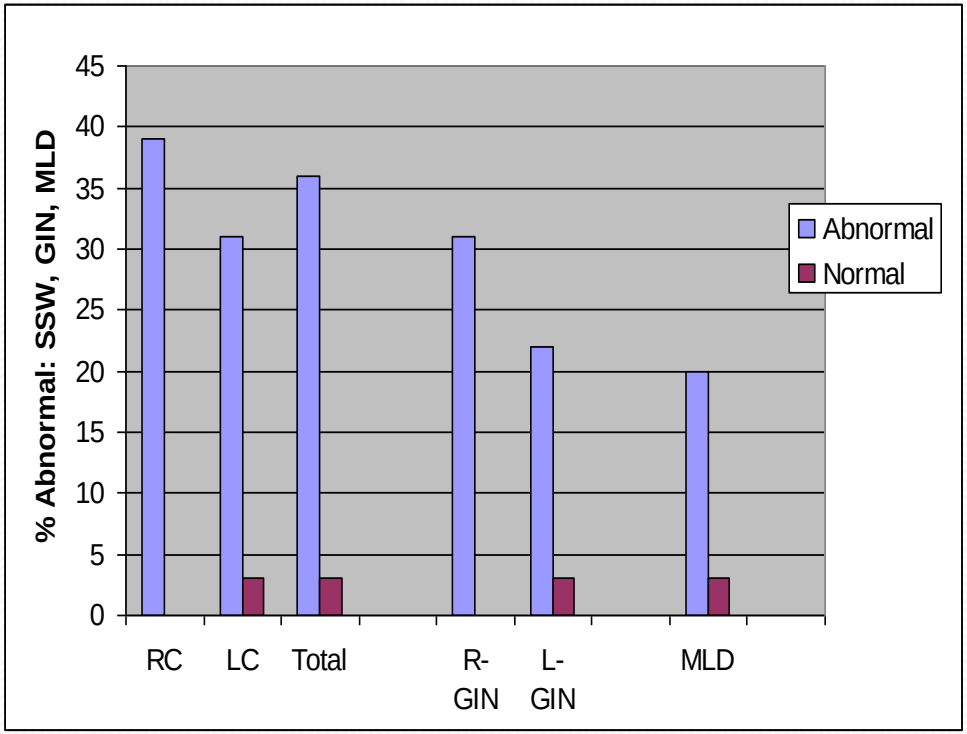
[1] FJ Gallun et al. (2012). Performance on tests of CAP by individuals exposed to high-intensity blasts. J. Res. Rehab. Devel. (VA). 49: 11/12: 1005-1024

SSW, GIN & MLD (Gallun et al., 2012)

The 2 SSW competing conditions & Total score were most sensitive indicators in their battery with mild TBI cases

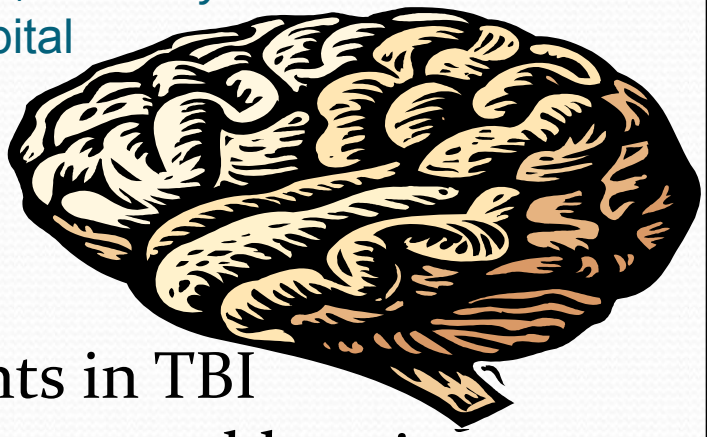
GIN Right and Left were next & third was MLD

They were the ones that differed significantly between the TBIs & controls



Central Auditory Aspects: Blast Injury/TBI

Alice Cerkoney, AuD. CCC-A
Special Clinical Program Manager Audiologist, TBI/Polytrauma
James A. Haley Veteran's Hospital



AP Testing

- There are significant hearing complaints in TBI population, yet, most have essentially normal hearing.
- Central auditory indications of TBI often overlap with other auditory, cognitive and emotional/behavioral disorders

APD assessment at James A. Haley VA Hospital

Those with a history of blast injury/TBI are screened for APD (Dichotic Digits and speech in noise testing)

Then Test Battery:

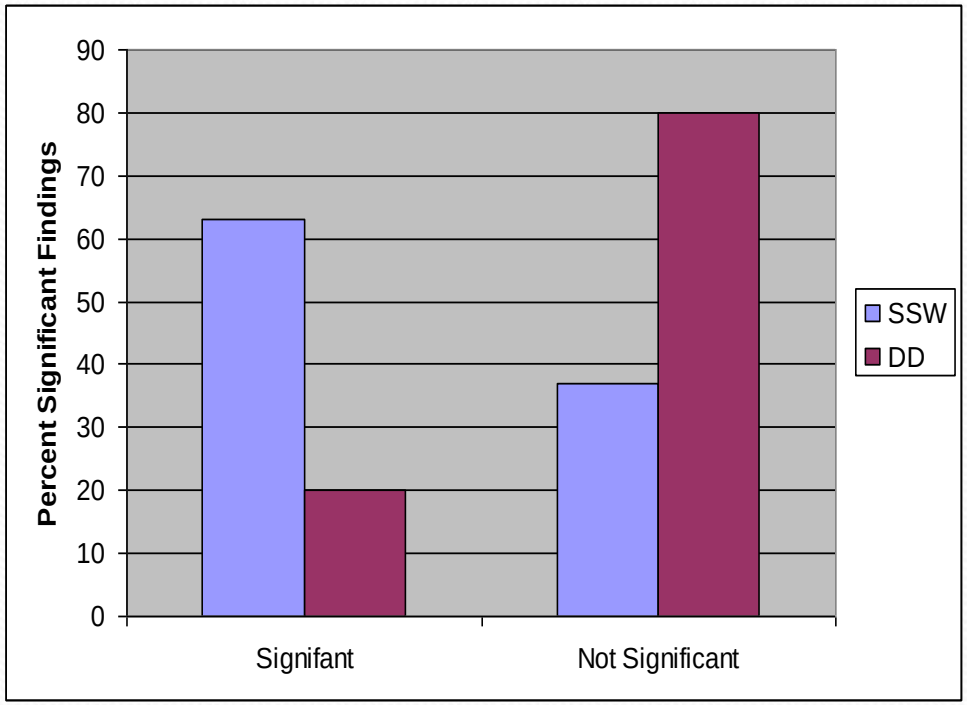
- **Dichotic/Binaural interaction:** (Dichotic Digits, SSW and subtests of the SCAN-3)
- **Low-redundancy monaural speech:** (Quick-SIN, WIN, subtests of SCAN-3)
- **Temporal processing:** (Pitch/Duration Patterns, Gaps in Noise)
- **Electrophysiologic testing:** (ABR, MLR, P300)

Trends in this Study

- 37 adult patients with Blast Injury/TBI (19-47 years) were tested for APD
- Used behavioral and electrophysiological APD tests.
- Less than 3% of TBI/blast injury patients seen for AP testing had completely normal findings.
- All patients found to have abnormal findings on AP test battery also had an abnormal finding in the interdisciplinary evaluations

Behavioral test findings

SSW and Dichotic Digits for Veterans with TBI



Electrophysiologic Test Findings

- ABR: 100% of patients tested had **normal** ABRs
- MLR: 50% of patients tested had a unilateral abnormal MLR finding (mostly diminished amplitude on the affected side)
- P300: 28% of patients tested had an abnormal P300 (either absence of response, delayed latency or diminished amplitude

Remediation Considerations at James A. Haley VA Hospital

- Environmental modifications to improve acoustic access and acoustic clarity and assistive listening devices (bottom-up)
- Teach/counsel compensatory strategies (higher order top-down)
- Direct remediation techniques (bottom-up)