



Brain Injuries in Aviation

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Plaintiff Myths

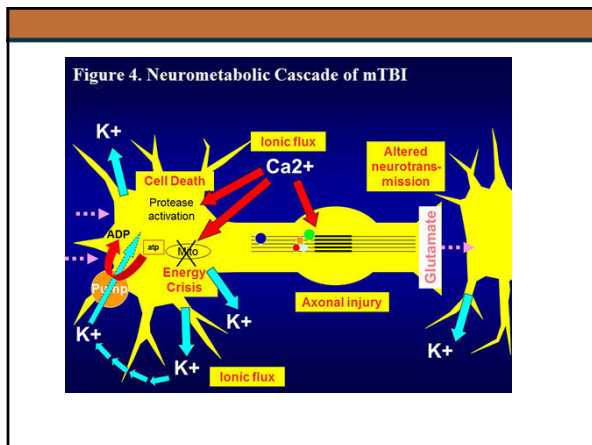
- Easy to “tack on”
- Growing public awareness
- Claims of permanency

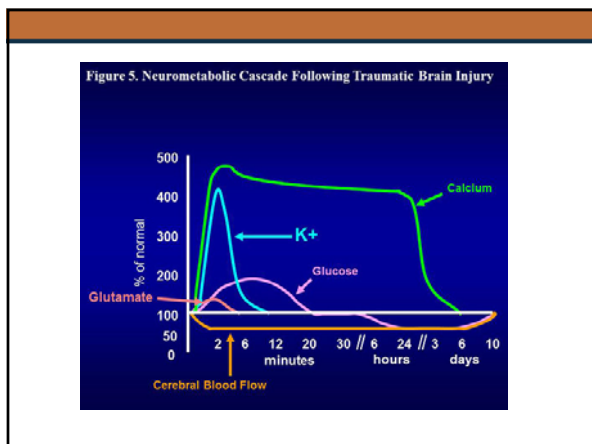


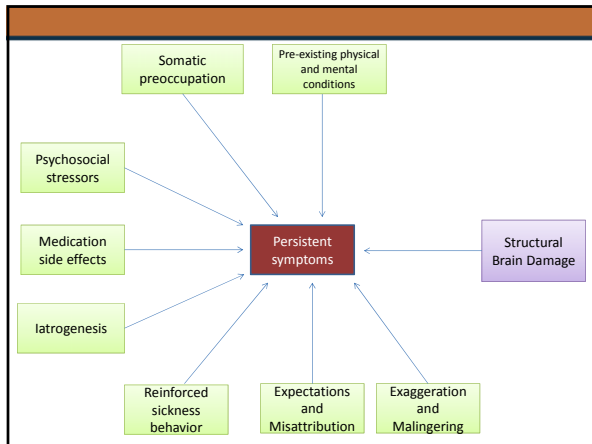
Defense Myths

- No loss of consciousness = no TBI
- No head impact = no TBI
- Normal CT or MRI = no TBI
- People that don't recover from a concussion are simply faking

Criteria	Mild	Moderate	Severe
LOC	0 - 30 mins	31 mins - 24 hrs	>24 hours
AOC	Moment - 24 hrs	>24 hours. Severity based on other criteria	
PTA	0 - 1 Day	2 - 7 Days	>7 Days
GCS	13 - 15	9 - 12	<9
Structural Imaging	Normal	Normal or Abnormal	Normal or Abnormal







Post-Traumatic Stress Disorder

"I don't think there's a claim out there worth less than \$1 million. Many will be worth multi-millions," said the lawyer, who has not been retained by any of the victims or their families.

"PTSD is an insidious illness," he said. "Many can't return to work. Even those who think they're fine and return to work, six months later they find out they're a blob on the floor because it finally comes home to roost."

When someone has a near-death experience, they typically suffer a serious psychological injury in the form of PTSD. While many people have likely heard about the condition in the context of soldiers and war zones, it's something that people also suffer in more common situations, like vehicle accidents or assaults.

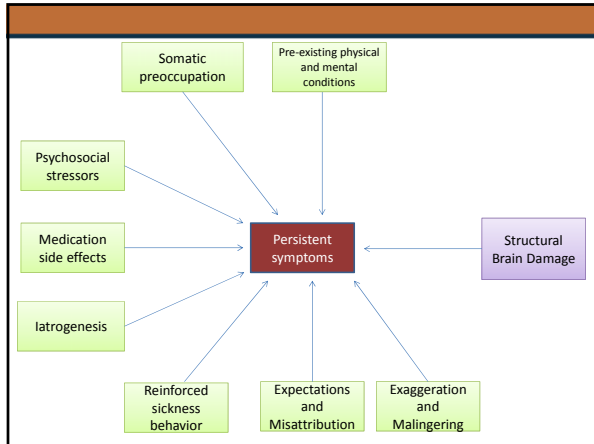
The airline is also responsible for ensuring that the survivors of this flight are tended to. In addition to the tragic death and serious injuries, the passengers all suffered severe psychological trauma. We hope that Southwest takes that fact seriously and offers their passengers everything they need to cope with the consequences.

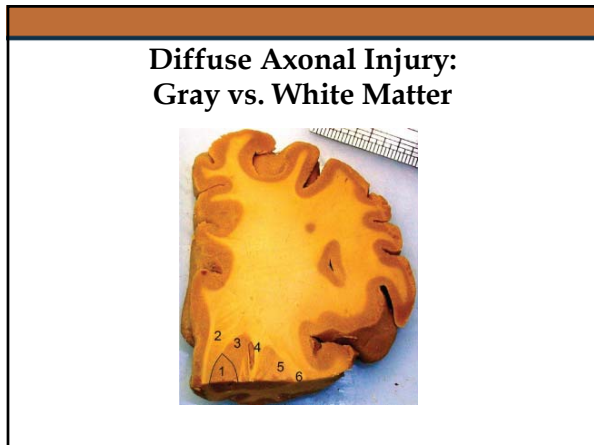
- ### DSM-5 PTSD Categories
- A. Trauma Exposure
 - B. Intrusion symptoms (≥ 1 of 5)
 - C. Avoidance symptoms (≥ 1 of 2)
 - D. Negative cognitions/mood (≥ 2 of 7)
 - E. Alterations in arousal or reactivity (≥ 2 of 6)
 - F. Duration ≥ 1 month
 - G. Functional impairment
 - ...

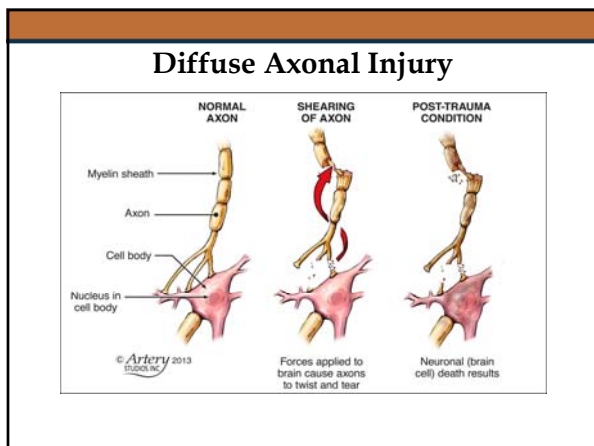
	Malingering	True PTSD
Dreams	Frequent nightmares always the same and occur every time one sleeps or dreams	Frequent nightmares fluctuating frequency (similar themes but varying content)
Flashbacks	Describes only visual imagery, involve one sensation results in premeditated	More than one sensation, actions appropriate at time

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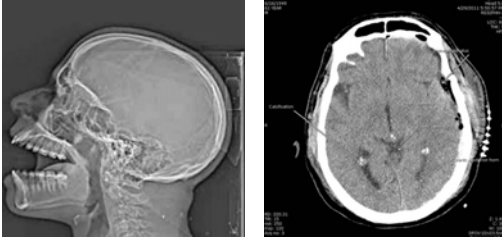
H. Not attributable to anything else	
•	Adjustment disorders
•	Other posttraumatic disorders and conditions
•	Acute stress disorder
•	Anxiety disorders/obsessive-compulsive disorder
•	Major depressive disorder
•	Personality disorders
•	Dissociative disorders
•	Conversion disorder
•	Psychotic disorders
•	Traumatic brain injury



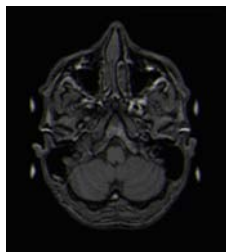
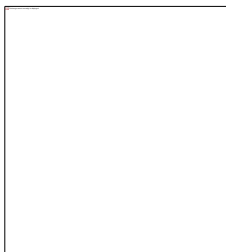




Computed Tomography



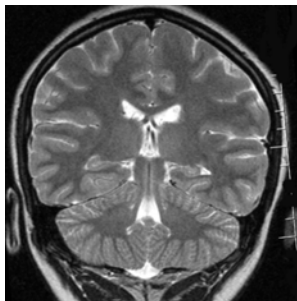
Magnetic Resonance Imaging: T1



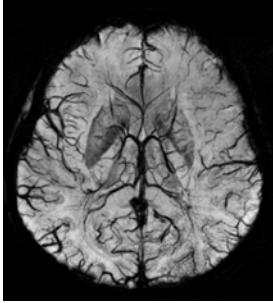
- White matter bright
- Best for visualizing anatomy

Montgomery
Rennie
Jonson

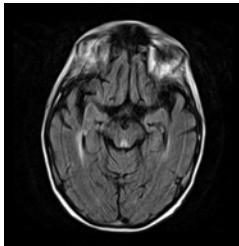
Magnetic Resonance Imaging: T2



Magnetic Resonance Imaging: SWI

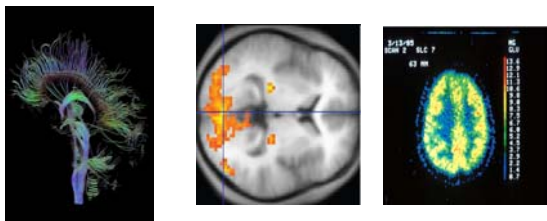


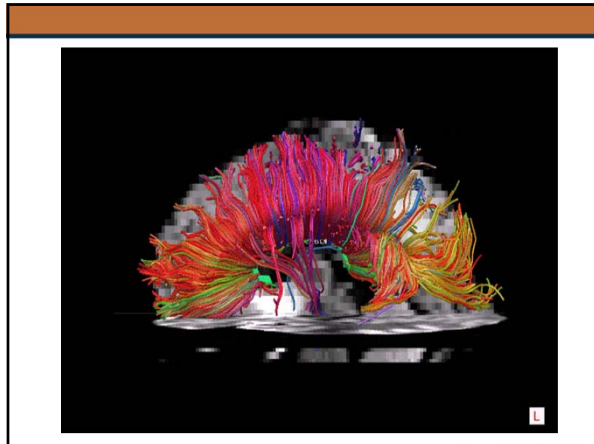
Magnetic Resonance Imaging: FLAIR

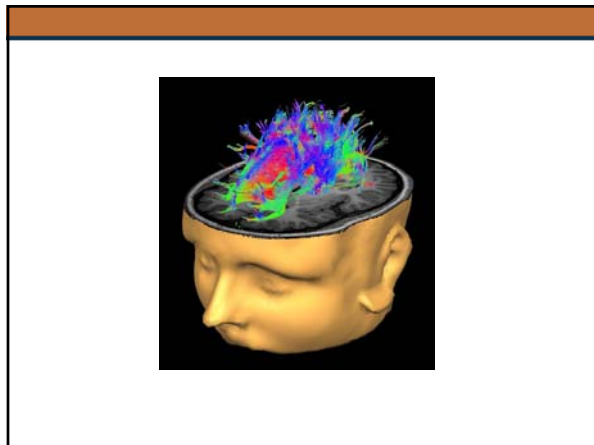


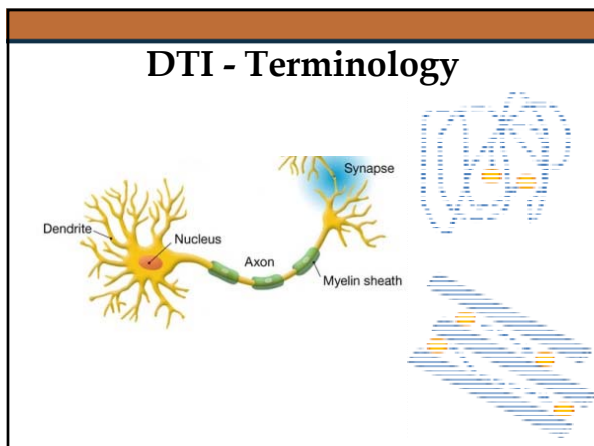
- White matter dark
- Best for visualizing pathology

Advanced Neuroimaging









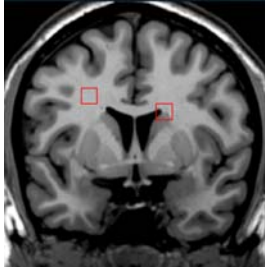
DTI



DTI - Fractional anisotropy

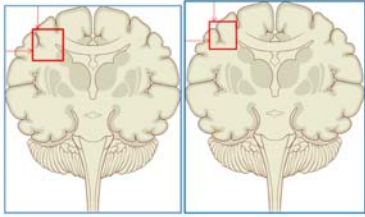


Advanced Neuroimaging: DTI



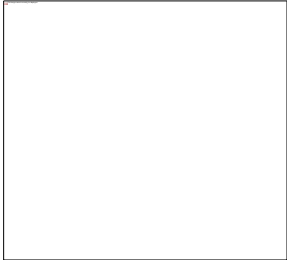
Partial Volume Effects

Advanced Neuroimaging: DTI



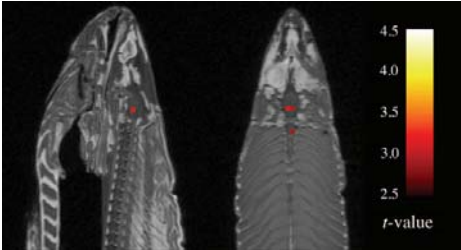
Mapping Errors

Advanced Neuroimaging: DTI



Motion Artifacts

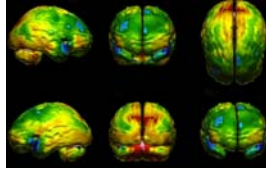
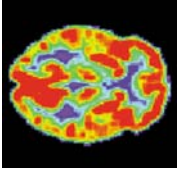
Advanced Neuroimaging



Multiple Comparison Problems

Nuclear Imaging: PET and SPECT

- Technological overview



- Protocol specifics
- Methodological shortcomings
- Interpretation problems

Questions?

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