



Advanced neuroimaging to quantify myelin in vivo: Application to mild TBI

Purpose

To examine past research literature regarding TBI and the loss of or damage to myelin in the brain and neuroimaging techniques capable of capturing these changes.

Participants

N/A- literature review

How was the study conducted?

The authors reviewed past publications detailing limitations of diffusion tensor imaging to target myelin and the promise of a newer technique, multi-component relaxometry (MCR,) for visualizing myelin integrity in those with a history of mTBI. .

Findings

Myelin changes do seem to occur after mTBI. MCR techniques have been applied to demyelinating diseases and neurodevelopment but have not yet been applied widely in TBI.

Military Impact

When it comes to better diagnosing of mTBI, multi-component relaxometry (MCR) techniques can help track changes in the brain after mTBI, especially changes in myelin.

Jurick, S.M., Bangen, K.J., Evangelista, N.D., Sanderson-Cimino M., Delano-Wood L., Jak, A.J. Advanced neuroimaging to quantify myelin in vivo: Application to mild TBI. (2016). Brain Injury, 30(12): 1452-1457. PubMed: 27834545

<https://www.tandfonline.com/doi/full/10.1080/02699052.2016.1219064?scroll=top&needAccess=true>