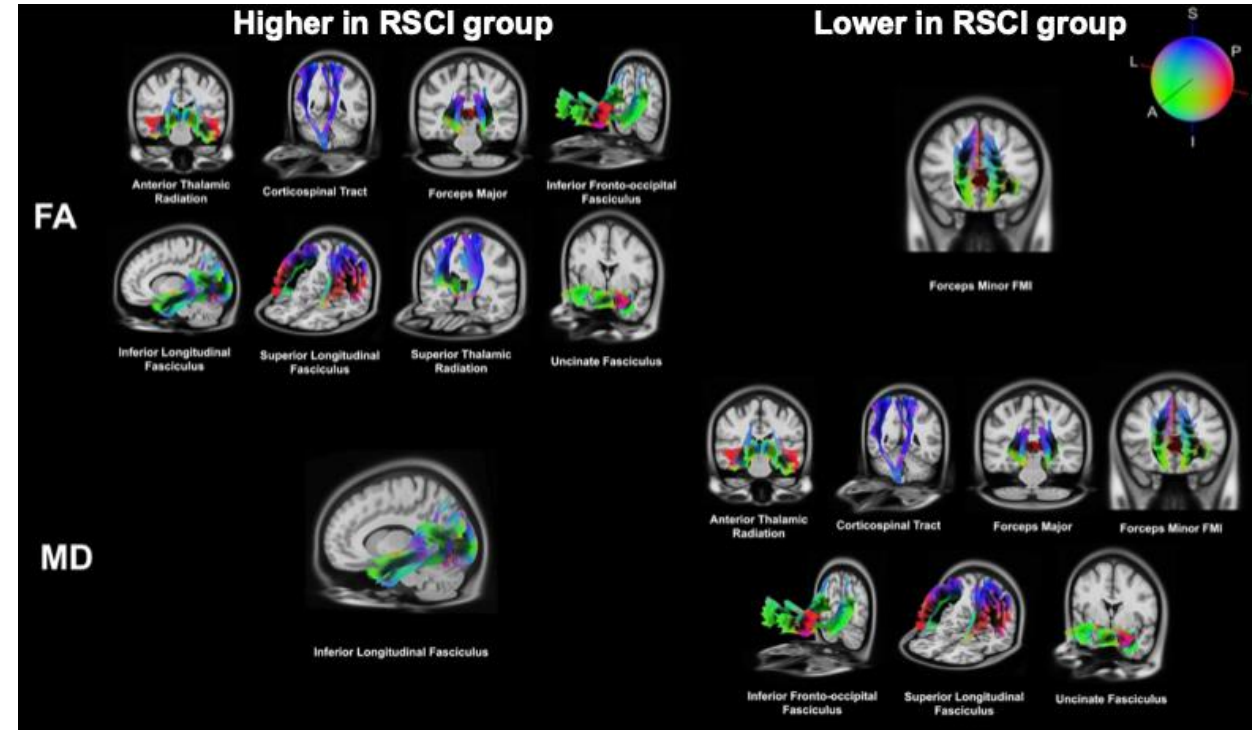
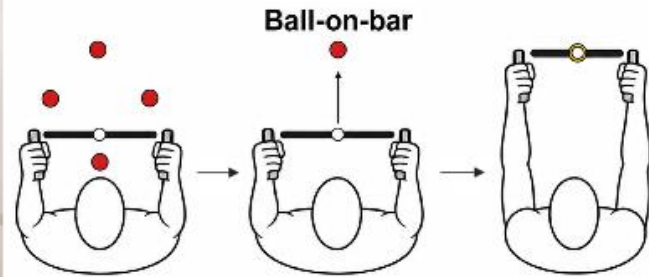


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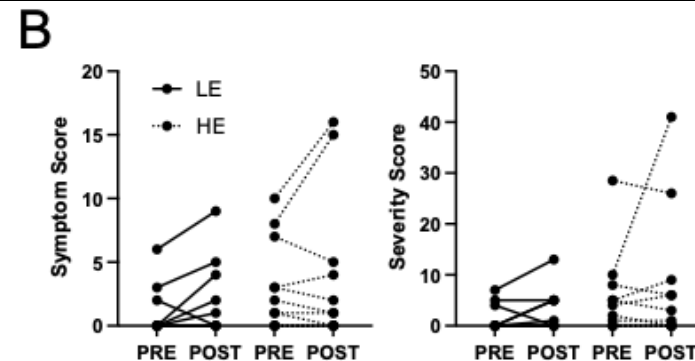
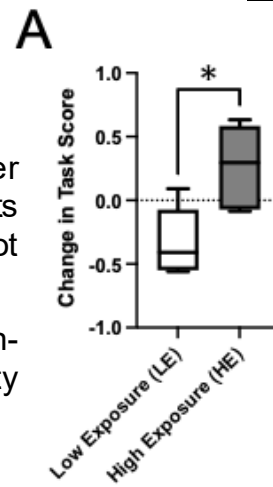
## Background

- Repeated head impacts may cause subtle brain changes without obvious symptoms or diagnosed concussion
- Imaging studies often report white matter differences after repetitive head impacts, but behavioural effects are less consistently studied
- Football players were collected (n=22), and split into high-exposure and low-exposure groups based on impact exposure, and compared to 13 non-contact athlete controls



## Results

- White matter:** Football players showed pre-season white matter differences versus non-contact controls, with higher FA in most tracts and lower MD in many tracts. However, HE and LE athletes did not show clear within-season DTI differences after correction
- Behaviour/symptoms:** HE athletes worsened on the Kinarm Ball-on-Bar task while LE athletes improved, but SCAT3 symptom and severity scores remained low and did not meaningfully differ between groups



## Conclusion

Repetitive subconcussive impacts were associated with white matter differences and worsening motor coordination, while symptom-based SCAT3 scores remained insensitive to these changes

