



Key Points Summary

Wilde, E. A., Provenzale, J. M., Taylor, B. A., Boss, M., Zuccolotto, A., Hachey, R., Pathak, S., Tate, D. F., Abildskov, T. J., & Schneider, W. (2018). Assessment of quantitative magnetic resonance imaging metrics in the brain through the use of a novel phantom. *Brain Injury*, 32(10), 1266–1276.
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Primary Question this Study Addresses

What are the differences in anisotropic diffusion measurement across four scanners using a human and a novel phantom developed in conjunction with the Chronic Effects of Neurotrauma Consortium?

Study Findings That Add to Our Knowledge

Intra-scanner test-retest reliability estimates for fractional anisotropy (FA) demonstrated relative stability over testing intervals.

The human tissue and phantom showed similar FA ranges, high linearity, and large within-device effect sizes.

Inter-scanner measures of FA indicated substantial differences, some exceeding typical DTI effect sizes in mTBI.

How Study Evidence Might Be Used in Practice

The novel phantom provides a technique that may allow FA values between scanners to be more easily interpreted.

The diffusion phantom may be used to better elucidate inter-scanner variability in DTI-based measurement and provides an opportunity to better calibrate results obtained from scanners used in multisite and longitudinal studies.

 [Resource](#)

To access the study abstract, click here:

 [Abstract](#)

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