

Supplementary References

1. Hajiaghameer, M., Wu, T., Panzer, M.B. and Margulies, S.S. (2019). Embedded axonal fiber tracts improve finite element predictions of traumatic brain injury. *Biomechanics and Modeling in Mechanobiology*, 1–22.
2. Wu, T., Alshareef, A., Giudice, J.S. and Panzer, M.B. (2019). Explicit Modeling of White Matter Axonal Fiber Tracts in a Finite Element Brain Model. *Annals of biomedical engineering*, 1–15.
3. Hajiaghameer, M., Seidi, M. and Margulies, S.S. (2020). Head Rotational Kinematics, Tissue Deformations, and Their Relationships to the Acute Traumatic Axonal Injury. *Journal of Biomechanical Engineering* 142.
4. Gasser, T.C., Ogden, R.W. and Holzapfel, G.A. (2005). Hyperelastic modelling of arterial layers with distributed collagen fibre orientations. *Journal of the royal society interface* 3, 15–35.
5. Giordano, C. and Kleiven, S. (2014). Connecting fractional anisotropy from medical images with mechanical anisotropy of a hyperviscoelastic fibre-reinforced constitutive model for brain tissue. *Journal of The Royal Society Interface* 11, 20130914.
6. Wright, R.M., Post, A., Hoshizaki, B. and Ramesh, K.T. (2013). A multiscale computational approach to estimating axonal damage under inertial loading of the head. *Journal of neurotrauma* 30, 102–118.
7. Fung, Y.-c. (2013). *Biomechanics: mechanical properties of living tissues*. Springer Science & Business Media.
8. Rashid, B., Destrade, M. and Gilchrist, M.D. (2014). Mechanical characterization of brain tissue in tension at dynamic strain rates. *Journal of the mechanical behavior of biomedical materials* 33, 43–54.
9. Arbogast, K.B. and Margulies, S.S. (1999). A fiber-reinforced composite model of the viscoelastic behavior of the brainstem in shear. *Journal of biomechanics* 32, 865–870.
10. Sullivan, S., Eucker, S.A., Gabrieli, D., Bradfield, C., Coats, B., Maltese, M.R., Lee, J., Smith, C. and Margulies, S.S. (2015). White matter tract-oriented deformation predicts traumatic axonal brain injury and reveals rotational direction-specific vulnerabilities. *Biomechanics and modeling in mechanobiology* 14, 877–896.
11. Mao, H., Zhang, L., Jiang, B., Genthikatti, V.V., Jin, X., Zhu, F., Makwana, R., Gill, A., Jandir, G. and Singh, A. (2013). Development of a Finite Element Human Head Model Partially Validated With Thirty Five Experimental Cases. *Journal of Biomechanical Engineering* 135, 111002.