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# ENTWICKLUNG EINES NEUEN ANSATZES ZUR OBJEKTIVIERUNG VON MUSKELANPASSUNGEN MIT HILFE VON DIFFUSION- TENSOR MRT

## Literatur

- Behan, F. P., Vermeulen, R., Smith, T., Arnaiz, J., Whiteley, R., Timmins, R. G. & Opar, D. A. (2019). Poor agreement between ultrasound and inbuilt diffusion tensor MRI measures of biceps femoris long head fascicle length. *Translational Sports Medicine*, 2 (2), 58-63.
- Boakes, J. L., Foran, J., Ward, S. R. & Lieber, R. L. (2007). Case report: muscle adaptation by serial sarcomere addition 1 year after femoral lengthening. *Clinical Orthopaedics and Related Research*, 456, 250-253.
- Bolsterlee, B., Finni, T., D'Souza, A., Eguchi, J., Clarke, E. C. & Herbert, R. D. (2018). Three-dimensional architecture of the whole human soleus muscle in vivo. *PeerJ*, 6, e4610.
- Bolsterlee, B., Veeger, H. D., van der Helm, F. C., Gantdevia, S. C. & Herbert, R. D. (2015). Comparison of measurements of medial gastrocnemius architectural parameters from ultrasound and diffusion tensor images. *Journal of Biomechanics*, 48 (6), 1133-1140.
- Butterfield, T. A. (2010). Eccentric exercise in vivo: strain-induced muscle damage and adaptation in a stable system. *Exercise and Sport Sciences Reviews*, 38 (2), 51-60.
- Damon, B. M., Buck, A. K. & Ding, Z. (2011). Diffusion-tensor MRI based skeletal muscle fiber tracking. *Imaging in Medicine*, 3 (6), 675.
- Franchi, M. V., Atherton, P. J., Reeves, N. D., Flück, M., Williams, J., Mitchell, W. K., ... & Narici, M. V. (2014). Architectural, functional and molecular responses to concentric and eccentric loading in human skeletal muscle. *Acta Physiologica*, 210 (3), 642-654.
- Gérard, R., Gojon, L., Declève, P. & Van Cant, J. (2020). Eccentric training and biceps femoris architecture and strength: a systematic review with meta-analysis. *Journal of Athletis Training*, 55 (5), 000-000.
- Kim, S. Y., Boynton, E. L., Ravichandiran, K., Fung, L. Y., Bleakney, R. & Agur, A. M. (2007). Three dimensional study of the musculotendinous architecture of supraspinatus and its functional correlations. *Clinical Anatomy: The Official Journal of the American Association of Clinical Anatomists and the British Association of Clinical Anatomists*, 20 (6), 648-655.
- Körting, C., Schlippe, M., Petersson, S., Pennati, G. V., Tarassova, O., Arndt, A., ... & Wang, R. (2019). In vivo muscle morphology comparison in post-stroke survivors using ultrasonography and diffusion tensor imaging. *Scientific Reports*, 9 (1), 1-11.
- Konrad, A. & Tilp, M. (2014). Increased range of motion after static stretching is not due to changes in muscle and tendon structures. *Clinical Biomechanics*, 29 (6), 636-642.
- Kwah, L. K., Pinto, R. Z., Diong, J. & Herbert, R. D. (2013). Reliability and validity of ultrasound measurements of muscle fascicle length and pennation in humans: a systematic review. *Journal of Applied Physiology*, 114 (6), 761-769.
- Mori, S. & Zhang, J. (2006). Principles of diffusion tensor imaging and its applications to basic neuroscience research. *Neuron*, 51 (5), 527-539.
- Oudeman, J., Mazzoli, V., Marra, M. A., Nicolay, K., Maas, M., Verdonschot, N., ... & Froeling, M. (2016). A novel diffusion tensor MRI approach for skeletal muscle fascicle length measurements. *Physiological Reports*, 4 (24), e13012.
- Vetter, S., Schleichardt, A., Köhler, H. P. & Witt, M. (2022). The effects of eccentric strength training on flexibility and strength in healthy samples and laboratory settings: a systematic review. *Frontiers in Physiology*, 13, 873370.

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