Adamantios Arampatzis (PhD) is Professor of Movement Science, head of the Department of Training and Movement Sciences and Spokesperson of the Berlin School of Movement Science at the Humboldt-University Berlin. He received his PhD in Movement Science and Sports Medicine in 1995 and finished his habilitation in Biomechanics in 2002 at the German Sport University Cologne. His research deals with the interaction of the central nervous and peripheral systems, how these systems develop over the lifespan and adapt to changing environmental demands. In this context the main areas of his research focus on the adaptation of the muscle-tendon unit, neuromuscular control, locomotor adaptation and dynamic stability control in healthy and pathological conditions. His workgroup focus on the investigation of the underlying mechanisms of neuromuscular and mechanical functioning of the lower limb during steady and unsteady locomotion. The different functional organization level, e.g. muscle fascicle, muscle-tendon unit, neural control and joints are considered, aiming to understand their underlying dynamical interplay that governs effective and stable human gaits. Through an interplay of analytical, computational and experimental methods, his research group endeavour to improve the understanding of how neural pathways for locomotion are organised. In an attempt to transfer fundamental research findings to daily life, the group expand its analyses to locomotion in both steady and unsteady conditions.

Ten most important publications

1. Bohm, S., Mersmann, F., Schroll, A., **Arampatzis, A.** (2024): Assessment and modelling of the activation-dependent shift in optimal length of the human soleus muscle in vivo. The Journal of Physiology, 602.7, 1371–1384, doi: 10.1113/JP285986.
2. Brüll, L., Santuz, A., Mersmann, F., Bohm, S., Schwenk, M., **Arampatzis, A**. (2024): Spatiotemporal modulation of a common set of muscle synergies during unpredictable and predictable gait perturbations in older adults. Journal of Experimental Biology, 227, jeb247271, doi: 10.1242/jeb.247271.
3. **Arampatzis, A.,** Kharazi, M., Theodorakis, C., Mersmann, F., Bohm, S. (2023): Biarticular mechanisms of the gastrocnemii muscles enhance ankle mechanical power and work during running. R. Soc. Open Sci. 10:230007. https://doi.org/10.1098/rsos.230007.
4. Kharazi, M., Theodorakis, C., Mersmann, F., Bohm, S., **Arampatzis, A.** (2023): Contractile Work of the Soleus and Biarticular Mechanisms of the Gastrocnemii Muscles Increase the Net Ankle Mechanical Work at High Walking Speeds. Biology, 12, 872. https://doi.org/10.3390/biology12060872.
5. Munoz-Martel, V., Santuz, A., Bohm, S., **Arampatzis, A.** (2021): Proactive modulation in the spatiotemporal structure of muscle synergies minimizes reactive responses in perturbed landings. Frontiers in Bioengineering and Biotechnology, DOI: 10.3389/fbioe.2021.761766.
6. Pentidis, N., Mersmann, F., Bohm, S., Schroll, A., Giannakou, E., Aggelousis, N., **Arampatzis, A.** (2021): Development of Muscle-Tendon Adaptation in Preadolescent Gymnasts and Untrained Peers: A 12-Month Longitudinal Study. Medicine & Science in Sports & Exercise, 53, 2565-2576, doi: 10.1249/MSS.0000000000002742.
7. Bohm, S., Mandla-Liebsch, M., Mersmann, F., **Arampatzis, A.** (2020): Exercise of Dynamic Stability in the Presence of Perturbations Elicit Fast Improvements of Simulated Fall Recovery and Strength in Older Adults: A Randomized Controlled Trial. Front. Sports Act. Living 2:52. doi: 10.3389/fspor.2020.00052.

8. Janshen L, Santuz A, Ekizos A, **Arampatzis A.** (2020): Fuzziness of muscle synergies in patients with multiple sclerosis indicates increased robustness of motor control during walking. Scientific Reports 10:7249, https://doi.1038/s41598-020-63788-w.
9. Santuz A, Brüll L, Ekizos A, Schroll A, Eckardt N, Kibele A, Schwenk M, **Arampatzis A.** (2020): Neuromotor Dynamics of Human Locomotion in Challenging Settings. iScience 23, 100796. https://doi.org/10.1016/j.isci. 2019.100796.
10. Bohm S, Marzilger R, Mersmann F, Santuz A, **Arampatzis A.** (2018): Operating length and velocity of human vastus lateralis muscle during walking and running. Scientific Reports, 8:5066. DOI:10.1038/s41598-018-23376-5.