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Authors: Simon Franklin, François-Xavier Li, Michael J. Grey

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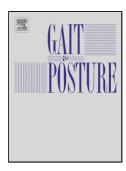
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## ACCEPTED MANUSCRIPT

Modifications in lower leg muscle activation when walking barefoot or in minimalist shoes across different age-groups.

Simon Franklin a, François-Xavier Li a\*, Michael J. Grey b

<sup>a</sup> School of Sport, Exercise and Rehabilitation Sciences, University of Birmingham, Edgbaston, Birmingham, B152TT, United Kingdom

<sup>b</sup> Acquired Brain Injury Rehabilitation Alliance (ABIRA), School of Health Sciences, University of East Anglia, Norwich Research Park, NR4 7TJ, United Kingdom

\*Corresponding author at: School of Sport, Exercise and Rehabilitation Sciences, University of Birmingham, Edgbaston, Birmingham, B15 2TT, United Kingdom. Tel: +44 (0)121 414 4114. E-mail address: f.x.li@bham.ac.uk

#### **Highlights**

- Minimalist shoes are intermediate to barefoot and conventional footwear
- Stance phase gastrocnemius medialis activity is decreased in supportive shoes
- Initial stance tibialis anterior activity reduced when barefoot/in minimalist shoes
- Reduced peroneus longus activity at initial stance when barefoot in younger ages

### **Abstract**

Ageing is associated with a decline in muscle strength and impaired sensory mechanisms which contribute to an increased risk of falls. Walking barefooted has been suggested to promote increased muscle strength and improved proprioceptive sensibility through better activation of foot and ankle musculature. Minimalist footwear has been marketed as a method of reaping the suggested benefits of barefoot walking whilst still providing a protective surface. The aim of this study was

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