Comment. Although neural control of a single DOF at the knee during non–weight-bearing situations has been shown previously,3 this is to our knowledge the first demonstration of neural control of a knee and ankle. Real-time ankle control was unexpected using only EMG signals measured from thigh muscles. These results suggest that targeted muscle reinnervation may not be required to achieve non–weight-bearing control of sagittal plane knee and ankle movements. This is a preliminary study with few participants, and testing was completed in a virtual environment. We are currently modifying powered knee and ankle prostheses3,4 to implement our neural control algorithms. Whether these findings will apply when tested on physical prostheses remains to be tested.

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