A feasibility study for the integration of 3D accelerometry in fall risk assessment

Current research has shown that miniaturized body worn acceleration sensors can produce comparable results to existing validated clinical gait and balance scales but they are still used mainly in a research setting. The current study shows that it is technically and logistically possible to introduce standardized accelerometry into the clinical practice in the context of an European multi-center setting. The results obtained from the acceleration signals confirm the expectations and provide more information compared to the traditional methods used to assess postural stability. Finally, the correlation between gait speed and age adds to the construct validity of our algorithms. We conclude that the actibelt® platform is a promising technology to be further developed towards a validated personalized fall risk assessment tool set.