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Validation of Contemporary Physical Activity Tracking Technologies through Exercise in a Controlled Environment

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Abstract : Extended periods engaged in sedentary behavior increases the risk of becoming overweight and/or obese which is linked to other health problems. Adding technology to the term ‘active living’ permits its inclusion in promoting and facilitating habitual physical activity. Technology can either act as a barrier to, or facilitate this lifestyle, depending on the chosen technology. Physical Activity Monitoring Technologies (PAMTs) are a popular example of such technologies. Different contemporary PAMTs have been evaluated based on customer reviews; however, there is a lack of published experimental research into the efficacy of PAMTs. This research aims to investigate the reliability of four PAMTs: two wristbands (Fitbit Flex and Jawbone UP), a waist-clip (Fitbit One), and a mobile application (iPhone Health Application) for recording a specific distance walked on a treadmill (1.5km) at constant speed. Physical activity tracking technologies are varied in their recordings, even while performing the same activity. This research demonstrates that Jawbone UP band recorded the most accurate distance compared to Fitbit One, Fitbit Flex, and iPhone Health Application.

Keywords : Fitbit, jawbone up, mobile tracking applications, physical activity tracking technologies
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