



sensors



Special Issue Reprint

Wearables for Movement Analysis in Healthcare

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Quantitative movement analysis is widely used in clinical practice and research to investigate movement disorders objectively and in a complete way. Conventionally, body segment kinematic and kinetic parameters are measured in gait laboratories using marker-based optoelectronic systems, force plates, and electromyographic systems. Although movement analyses are considered accurate, the availability of specific laboratories, high costs, and dependency on trained users sometimes limit its use in clinical practice. A variety of compact wearable sensors are available today and have allowed researchers and clinicians to pursue applications in which individuals are monitored in their homes and in community settings within different fields of study, such as movement analysis. Wearable sensors may thus contribute to the implementation of quantitative movement analyses even during out-patient use to reduce evaluation times and to provide objective, quantifiable data on the patients' capabilities, unobtrusively and continuously, for clinical purposes.



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