



Uso de sensores inerciales en fisioterapia: Una aproximación a procesos de evaluación del movimiento humano

Use of inertial sensors in physiotherapy: an approach to human movement assessment processes

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Resumen

Introducción: Los sensores inerciales o unidad de medición inercial (IMU) del inglés *Inertial measurement unit*, son pequeños dispositivos capaces de medir la aceleración lineal y la velocidad angular, siendo útiles en el área de la salud para la cuantificación y valoración objetiva del movimiento corporal humano. **Objetivo:** Analizar la información sobre el uso de sensores inerciales como una aproximación a los procesos de evaluación del movimiento corporal humano. **Materiales y métodos:** Se realizó búsqueda en bases de datos, empleando términos: sensores inerciales, salud, fisioterapia, acelerómetro, actividad física, movimiento y rehabilitación, y sus combinaciones. Como criterios de exclusión se tuvo: artículos exclusivos del campo de ingeniería con información no aplicable a fisioterapia. **Resultados:** Una IMU es compatible con aplicaciones (APP), con el objetivo de obtener datos de movimiento tridimensionales y como evaluación e intervención, o que permita cuantificar los resultados de la acción motora. **Conclusiones:** Las IMU tienen amplias posibilidades en áreas afines a la rehabilitación y otras referentes al entrenamiento y el área deportiva; por lo, cual es necesario estandarizar protocolos que permitan la medición de patrones motores que favorezcan los procesos de rehabilitación.

Palabras clave: Fisioterapia; sensores inerciales; unidad de medición inercial; rehabilitación; evaluación en salud; movimiento. (Fuente: DeCS, Bireme).

Abstract

Introduction: Inertial measurement units (IMU) are small devices capable of measuring linear acceleration and angular velocity. Therefore, they are useful in the health field for the quantification and objective assessment of the human body movement. **Objective:** To analyze information about the inertial sensors usage, as a way to approach to processes of evaluation of the human body movement. **Materials and methods:** A database search was performed, using the following terms: inertial sensors, health, physiotherapy, accelerometer physical activity, movement, rehabilitation and their multiple combinations. The exclusion criteria were exclusive articles from the engineering field covering information not relevant for physical therapy. **Results:** IMUs are devices that are compatible with applications, which can obtain three-dimensional movement data. They can also be used for assessment and intervention to quantify results of motor action. **Conclusions:** IMUs may have wide applications in fields such as rehabilitation, training and sports. As a result, it is necessary to standardize protocols to measure motor patterns and facilitate rehabilitation processes.

Palabras clave: Physiotherapy; inertial sensors; inertial measurement unit; rehabilitation; health evaluation; movement. (Fuente: DeCS, Bireme).

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Conflicto de intereses

Los autores declaramos no poseer ningún conflicto de interés respecto de la información presentada en este texto académico.

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