

عنوان مقاله:

Dynamic analysis and modeling for lower extremity flexors and extensor in children with cerebral palsy by the use of opensim

محل انتشار:

کنفرانس بین المللی تحلیل حرکت (سال: 1399)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

Objective: To determine the kinematics quantities to evaluate the impact and comparison of lower extremity flexors and to use kinetics to evaluate muscular forces and torques
Design: A cross-sectional prospective study.
Subjects: twelve children with cerebral palsy, two healthy people (8-12 years old)
Materials and Methods: Experiments were performed in a laboratory environment with self-selected gait. All samples were also examined by a physiotherapist. Finally, all the samples have been modeled in Opensim software to further investigate and provide a skeletal muscle model. GaitFullBody and Lowerbody model from the opensim Managed Model Repository v.3.3 of the commercial software package opensim Modeling System (Opensim Technology, Stanford University, USA) was employed.
Findings: A comparison of range of motion and forces and joint moments in cerebral palsy and healthy is presented. The differences presented indicate the amount of muscle activity between the two groups. ($P < 0.05$)
Conclusion: In this study, we propose a musculoskeletal model based on muscle strength and motor computation. In addition, the model can predict muscle activity. During walking in children with CP spasm was consistent with measured muscle activity. Using musculoskeletal models may be important to advance our understanding of motor disorders due to spasm. In addition, the inclusion of spasm models in predictors. Walking simulations may lead to more accurate simulation of gait kinematics and eventually used to predict treatment outcome in children with CP.

کلمات کلیدی:

Modeling, dynamic analysis, flexor and extensor, cp children, opensim

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