

عنوان مقاله:

Musculoskeletal analysis of sit-to-stand maneuver in order to compare the various standing up strategies

محل انتشار:

هجدهمین کنفرانس مهندسی پزشکی ایران (سال: 1390)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

Recently, by improved computational biomechanics software, biomechanical analyses of various kinds of body movements are attainable. Sit-to-Stand movement is one of the essential human daily activities on average performed four times in an hour. The style of standing up is different for each person and it depends on his/her manner. Obesity, age, infirmity and each kind of standing up style has its individual biomechanical influence on human body. As a result, finding the appropriate standing up style is beneficial for patients, elders, physiotherapists and every person engaged in STS movement infirmity. In the present study, musculoskeletal simulation of STS maneuver was performed to determine the biomechanical influences of various standing up strategies. The musculoskeletal simulation software AnyBody (version 5.1, Anybody Technology, Aalborg, Denmark) was used so as to simulate four disparate standing up styles. Therefore, the influences of the modification of four mentioned STS styles on body joints and muscles was discussed and compared in order to find the appropriate sit-to-stand strategy for each kind of human infirmity. Our results showed that each kind of STS task has its particular blind spots and strong spots. And finally, it was discussed that the sit-to-stand assistance and rehabilitation devices must be customized for each person depending on his/her infirmity.

کلمات کلیدی:

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