

**Materials and Methods**

The present study was conducted in the summer of 2014 at the biomechanics laboratory of the Research Center of the Faculty of Rehabilitation Sciences of Iran University of Medical Sciences and Treatment Services.

This study has quasi-experimental design with the pretest and posttest. In this study, 16 healthy women and 16 healthy men with an age range of 18 to 35 years participated. They were selected through simple non-probability sampling method from the Faculty of Rehabilitation Sciences of Iran University and the University of Social Welfare and Rehabilitation Sciences. The exclusion criteria included history of lasting injury or illness in the lower limbs or spine, history of cardiorespiratory and neurological illnesses, lower limbs surgery, and real length difference of more than 1 cm in the lower limbs, as well as significant congenital malformations of the lower limbs, excessive obesity (body mass index more than 30), and lower limbs pain during execution of the test. Then, they were briefed regarding the test procedure. When they accepted to participate, they signed their written consent forms.

At first, all details of the study procedure were explained to the participants. To prevent the occurrence of injury, prior to the test, the participants exercised with the fixed bicycle for 5 minutes to warm up and performed stretching exercises special to hamstring, quadriceps and cuff muscles. Then, the test of 4-choice reaction time was conducted before the fatigue. Then the fatigue protocol was performed and finally the test was taken again.

**Fatigue protocol**

This protocol included consecutive jumps on the tatami mattress. The speed of the participant’s jump was adjusted based on the metronome sound equal to 108 beep sound per minute. By each beep sound, the participant would bring down one foot on the mattress. In case the participant would bring down his or her foot with a speed other than the metronome speed, or in case the participant was not able to continue the jump, he or she would have 30 seconds of active rest in the form of walking. These steps were repeated 5 times.

For measuring the fatigue level, the Borg Scale was used. At conclusion of the last step, the participant would express his or her real feeling in view of intensity of the activity he or she has carried out and its scale was extracted by using the table designed by Borg. The participant should select the minimum scale equivalent to hard activity (number 15) so that his or her fatigue could be confirmed.

**The choice action test**

The reaction time was checked by DLRT software. To determine the choice reaction time, we used the visual stimulus, which was introduced at random time. In this test, there were four white squares. By the appearance of a cross in each of the squares, the participant should immediately press the button related to that square. For each particular stimulus, pressing a special button on the keyboard was considered as response. The stimuli were repeated 30 times. Duration of the test for reaction time in the choice mode before and after fatigue was two minutes. Reaction time was calculated by the software in terms of milliseconds.

**Reference:** Tavahomi, M., Shanbehzadeh, S., & Abdollahi, I. (2017). Comparing the effect of fatigue on choice reaction time of healthy men and women. *Physical Treatments, 7* (1): 29-34.