Magdalena Hagner-Derengowska, Transl Med 2014, 4:3
http://dx.doi.org/10.4172/2161-1025.S1.013

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Translational Medicine
November 03-05, 2014 Las Vegas, USA

The influence of solving cognitive tasks of two different levels of difficulty on the parameters of a gait analysis performed with the use of the BTS SMART system

Magdalena Hagner-Derengowska
Nicolaus Copernicus University, Poland

Gait is a complex motor activity associated with a precise synergy of the musculoskeletal system and the nervous system. It also involves the use of cognitive functions.The aim of the paper is to evaluate the influence of cognitive tests performed at various levels of difficulty on gait biomechanics. The said evaluation was carried out with the use of a three-dimensional BTS SMART system. The study comprised of 53 women, the average age was 64.5±6.7 years (age range: 47-79). The study was carried out with the use of a BTS SMART system – a system for comprehensive gait analysis. An analysis of gait parameters was performed during free gait and during gait combined with the performance of simple and complex cognitive tests.Performance of cognitive tests during gait resulted in a statistically significant extension of the left and right foot gait cycle, shortening of the length of steps made with the right extremity, reduction of speed of swings made with the left and right extremity and reduction of gait speed. Some of the above changes were recorded only with regard to more difficult tests.Performance of cognitive tests during gait hinders, to a statistically significant degree, gait biomechanics. An increase in the level of difficulty of cognitive tasks only amplifies these disorders.

Biography

Magdalena Hagner-Derengowska is academic clinician physiotherapist. She works as Associate Proffessor at The Universiy of Nicolaus Copernicus in Toruń – Collegium Medicum in Bydgoszcz, Chair and Department of Clinical Neuropsychology, sheisalsoclinician physiotherapist in Rehabilitation Clinic in University Hospital nr 1 in Bydgoszcz. Magdalena Hagner-Derengowska graduated as masters of physiotherapy in 2006 at Nicolaus Copernicus University in Toruń. Masters and doctoral graduated with honors. In 2010 she graduated PhD degree in medical science in the field of biology and medicine at the Medical University in Łódź. From 2011 is a Vice Chancellor and Dean of the Faculty of Physiotherapy in Private Univesity in Bydgoszcz. She is also a Vice President of Kujawsko-Pomorski Polish Rehabilitation Society and Member of the Polish Society of Physiotherapy. She cooperates on academic, research and clinician field with many units in Poland and overseas including The University of Michigan and Sports Medicine Clinic MedSports in Ann Arbor, USA, University of South Australia in Adelaide, South Australia, Hampstead Rehabilitation Centre in Adelaide, South Australia, HanYan Korean University in Seoul, Korea. She is the author and co-author of many publications in the field of medical rehabilitation and physiotherapy. Her current research is focused on exercise physiology, aging and neuropsychology in rehabilitation.

m_hagner-derengowska@wp.pl