

ABSTRACT

Title: Rating postural stability in synchronized swimming

Objectives: The aim of the diploma thesis is to detect, with a use of the system Gaitview ® AFA - 50 systém (Foot Scanner), if synchronized swimming has effect on postural stability of synchronized swimmers.

Methods: Therotical part of diploma thesis is about synchronized swimming, influence of the aquatic environment, postural stability, stabilization and balance. A sample of 113 female athletes aged 6-35, who were long term synchronized swimmers at competition level, was chosen for this survey. Postural stability of athletes was tested while standing still with open and closed eyes by Gaitview ® AFA-50 system (Foot Scanner). Measured data were processed through Gaitview software, Microsoft Excel 2010 and analyzed by statistical methods (average percentage, ratio, linear trend).

Results: Results confirmed the effect of synchronized swimming on athletes postural stability. The longer are athletes dedicated to synchronized swimming the better is postural stability. From the age of 15 years and after 9 years of experience in synchronized swimming postural stability was shown to be better without access to visual information than with it. In the youngest category there is the biggest difference in postural stability while standing still with open or closed eyes. The more older athletes get and thus the longer they are into synchronized swimming, the lower the difference in value is and even in 46% of cases the values measured with closed eyes are higher than the ones measured with eyes opened. The second most common result is reaching the same values in both types of measuring and the least common is the one when values with eyes opened exceeded the ones with eyes closed.

Keywords: Synchronized swimming, aquatic environment, postural stability, postural stability of children, postural stability of adults, Gaitview ® AFA - 50 system, posturography, vestibular system, sensorimotor functions.