ABSTRACT

Title: Relationship between forced vital capacity and hand grip strength in children

Objectives: One of goals of this thesis is to find out how strong is the connection between the strength of a children’s handgrip and the FVC. Another aim is to ascertain what is the age limit to use a handgrip examination to estimate the children’s FVC. The last goal is to determine whether a body height, weight and age of a child are crucial to evaluate the handgrip and the FVC.

Methods: First part of this thesis is a research and tries to summarize basic information about an issue of dynamometry, spirometry and to characterize each of age brackets which are the main aim of this thesis. Second part of this work is a survey for which data from sport festivals for children and youth were assembled. This data were statistically processed to calculate correlation and to make graphs showing linear regression between observed variables (handgrip and FVC), finally the results were interpreted.

Results: Between the handgrip and the FVC was proven a strong correlation (girls r = 0,769, boys r = 0,809). It is possible to evaluate FVC with younger school age children from the value of handgrip’s strenght. Values of strenght of a handgrip are strongly influenced by body length, weight and age of a child.

Keywords: strenght of a handgrip, FVC, preschool children, younger school children, older school children