HIGH LEVEL SWIMMING PERFORMANCE AND ITS RELATION TO NON-SPECIFIC PARAMETERS: A CROSS-SECTIONAL STUDY ON MAXIMUM HANDGRIP ISOMETRIC STRENGTH¹,²

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Summary.—The relationship between handgrip isometric strength and swimming performance was assessed in the four competitive swimming strokes in swimmers of different age groups and of both sexes. 78 national-level Portuguese swimmers (39 males, 39 females) were selected for this study. Grip strength, previously used as a marker of overall strength to predict future swimming performance, was measured using a hand dynamometer. The best competitive time at 100 and 200 m in all four swimming strokes were converted into 2010 FINA points. Non-parametric tests were used to evaluate differences between groups. Pearson product-moment correlations were computed to verify the association between variables. Handgrip maximum isometric strength was significantly correlated with swimming performance, particularly among female swimmers. Among female age group swimmers, the relationship between handgrip and 100-m freestyle was significant. Handgrip isometric strength seems to be related to swimming performance, especially to 100-m freestyle and in female swimmers. For all other distances and strokes, technique and training probably are more influential than semi-hereditary strength markers such as grip strength.

Researchers have attempted to identify characteristics that differentiate skilled from less skilled performers and to identify the role of talent and environment in the development of expertise (Reilly, Williams, &

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