

Meckel, Y., Bishop, D., Rabinovich, M., Kaufman, I., Nemet, D., Eliakim, A. (2013) Repeated Sprint Ability in Elite Water Polo Players and Swimmers and its Relationship to Aerobic and Anaerobic Performance, *Journal of Sports Science and Medicine* 12, 738-743

The purpose of this study was to determine indices of swimming repeated sprint ability (RSA) in 19 elite water polo players compared to 16 elite swimmers during a repeated sprint swimming test (RST), and to examine the relationships between these indices and aerobic and anaerobic performance capabilities in both groups. Indices of RSA were determined by the ideal sprint time (IS), the total sprint time (TS), and the performance decrement (PD) recorded during an 8 x 15-m swimming RST. Single long – (800-m) and short-(25-m) distance swim tests were used to determine indices of aerobic and anaerobic swimming capabilities, respectively. The water polo players exhibited lower RSA swimming indices, as well as lower scores in the single short and long swim distances, compared to the swimmers. Significant relationships were found between the 25-m swim results and the IS and the TS, but not the PD of both the swimmers and the water polo players. No significant relationships were found between the 800-m swim results and any of the RSA indices in either the swimmers or the water polo players. No significant relationships were found between the 25-m and the -800m swim results in either the swimmers or the water polo players. The results indicate that swimmers possess better RSA as well as higher anaerobic and aerobic capabilities, as reflected by the single short- and long-distance swim tests, compared to water polo players. The results also indicate that, as for running and cycling, repeated sprint swim performance is strongly related to single sprint performance.