CHANGES OF INSPIRATORY PARAMETERS AND SWIMMING PERFORMANCE BY INFLUENCE OF POWERBREATHE PLUS LEVEL 3

Abstract
The aim of the study was to detect changes of inspiratory parameters and performance in underwater swimming by the use of the device POWERbreathePlus Level 3 (POWER®breathe, Southam, UK). The research specimens were comprised of probands (n = 5, height = 177.8±7.6 cm, weight = 66.0±6.6 kg) aged 17.5 to 23.1 years. POWERbreathePlus Level 3 (POWER®breathe, Southam, UK) was integrated into the training process for 10 weeks. The experimental factor was given twice a day for 30 inspirations in the morning and evening. The impact of the experimental factor was monitored by an assay on the POWERbreathe K 5 (POWER®breathe, Southam, UK) breathing equipment. The assay was focused on finding out the intensity index (S – index), maximum speed of inhalation (flow) and volume of inhaled air. The other test included underwater swimming on single breath. In parameter S – index was average level in input testing 111.0±42.7 cmH₂O and the average level in output testing was 133.6±46.2 cmH₂O which means significant improvement (T = 0, n = 5, p < 0.05, ES = 0.90 – large effect). The improvement of the ensemble’s level was also detected in third inspiratory parameter where the volume was following: (T = 0, n = 5, p < 0.05, ES = 0.92 – large effect). The input level was 3.02±0.48 and output level was 3.52±0.52 l. Significant increase of the average level of the ensemble (T = 0, n = 5, p < 0.05, ES = 0.91 – large effect) was detected also when the distance was increased which was swum under the water when the value of the ensemble during input testing was 38±6 m and during output testing was 43±6 m.

Key words: functional breathing parameters, Powerbreathe, swimming performance