

World ranked swimmers: analysis of the finalists' ages between 2000 and 2016 Olympic games

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Swimming is a sport determined being the age beginning to compete at high-level a concern for a proper planning of the swimmer's career plan. There is an understanding that the career in swimming, sometimes considered does happen very early as far as biological age is concerned (Platonov, & Fessenko, 1994). It was noted that swimmers reach the career peak earlier than other athletes (Silva et al., 2007). The aim of this study was to: (i) describe the decimal initial ages in the last five Olympic finals (2000 to 2016); and ii) compare the means of the decimal ages between genders, event distances and swimming strokes. It was analyzed 2080 entries corresponding to the classification of the 16 swimmers finalists and semifinalists in the following events: 50; 100; 200; 400; 800m or 1500m freestyle for both genders, respectively; 100 and 200m backstroke; 100 and 200m breaststroke; 100 and 200m butterfly and 400m medley for both genders. The inclusion criteria was: i) competing at the Olympic Games Sydney 2000, Athens 2004, Beijing 2008, London 2012 and Rio 2016; ii) having qualified to the finals in at least one swimming events; iii) swimmers name and chronological age were available; iv) final classification in the event was also available. Afterwards, chronological age was converted into decimal age at the day of the event heats. The results showed that average age was between 20 to 25 years old in Olympic finals, being the in the sprinting events that it was found the oldest swimmers. We also found that in sprinting events the decimal ages are higher than in the middle- or long-distance events. The breaststroke and the medley events presented initial decimal ages lower for the female gender, with 15 and 16 years for the entrance to the finals. It can be concluded that there was a trend to an increase the average age of male and female swimmers in the finals of the Olympic Games, which suggests an increase in the duration of the sport career in swimming.

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Effects of endurance versus strength training programs in the lipid profile of sedentary young adults

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Cardiovascular diseases are a major cause of mortality in the world, and abnormal blood lipids are an important risk factors for these disease (Stampfer et al., 2000). Thus, controlling this risk factor, particularly cholesterol and triglycerides levels is essential (Curb et al., 2004). It is consensual that physical activity contributes to healthy lipidic levels (Haskell, 1984), however, it is not clear which type of exercise training is the best to this end. The present study aimed to analyze the effect of aerobic vs. strength training in total cholesterol (TC) and triglycerides (TGL) levels of young adults. The sample was randomly clustered into three groups: the aerobic training group (N=32), the strength training group (N=28) and the control group (N=21). All participants were sedentary college students (young adults) and were similar age and height. The aerobic and strength training programs comprised a period of 14 weeks, with three sessions/week for 1 hour. Three evaluations were performed (initial, 7weeks and 14weeks), in which body composition was measured and unstimulated whole saliva was collected using the drooling technique. Salivary cholesterol and triglyceride were assessed by colorimetric methods. Comparison evidenced that the strength group showed a decrease in TC over the 14 weeks. On the contrary, the control group showed an increase in TC (p=0.017). These contributed to the observed differences in TC between strength and control groups after the 14 weeks (p=0.035). Regarding the TGL, there was a reduction in TGL of the aerobic group over the 14 weeks (p=0,003). The TGL levels of the strength and the control groups did not changed significantly. Between groups, no significant differences in TGL were observed. Taking into account the young adults population

and the training programs performed, our results seem to indicate that the strength training may be useful in TC reduction and the aerobic training in TGL reduction.

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Relay start in swimming: a review

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The literature is still scarce in studies on relay start in swimming (NPD). The reasons for this lack of research are considered to be based on the low number and public awareness of relay races in swimming events. FINA rules permit the second, the third, and the fourth swimmers to start their dives from the starting block before the incoming swimmer have finished their segments of the race. So, parts of the outgoing swimmer's foot must remain on the platform until the incoming swimmer has touched the wall. The aim of this study was to conduct a literature review regarding: i) the contribution of relay starts to overall swimming performance; ii) the effects of different starting techniques for evidence of relay. Using keywords (“swimming”, “relay start”, “relay”; “exchange time”), a comprehensive search was conducted on PubMed and Google Scholar databases. Only papers written in English and containing data about swimming relays with amateurs and/or elite swimmers (of all ages) were included. From the 6 studies found, some high variety methodologies in swimming relays were reported. With respect to swimming performance, the determination of the change over-time of the block output is the most studied topic of research, following by the final performance of the swimmers. The efficacy of different types of relay starts has also been studied but without consistent results, which seems to suggest that personal style is a key factor. Only one empirical study was found regarding the training intervention, suggesting a combination of verbal feedback and video analyses (with time) as relevant strategies to improve the relay exchange time, technique and team coordination. Recently Skorski, Etxebarria, and Thompson (2016) investigated if swimming performance is better in a relay race than in individual race, noting that highly trained swimmers do not swim faster in the relay events than the individual. The literature is consistent about the importance of the relay exchanges times during swimming events, but inconclusive about the optimal relay start technique and *practice intervention strategies*.

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Effects of classic strength training versus eccentric-enhanced resistance training in people with Multiple Sclerosis

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Despite looking like training with emphasis on eccentric actions it is safer and more efficient than the classical strength training to promote increases in strength, muscle mass and function (Roig et al., 2008; Fernández-Gonzalo et al., 2014), is not clear yet whether this training demonstrates the same benefits in people with Multiple Sclerosis (MS). To verify the effects of strength eccentric-enhanced resistance training (EERT) versus classic strength training (CST) in performance of functional testing and different manifestations of the strength of lower limbs in people with MS. Were evaluated 53 patients (20 men and 33 women) divided into two groups: the control group (GC) developed by the CST and the experimental group (GE) made EERT, both exercises are for lower limbs, with emphasis on the quadriceps. They were assessed before and after 13 weeks of training, through tests: get up and down (GUD), Timed Up and Go (TUG), maximal isometric strength (MIS) and maximal dynamic strength (IRM). Intragroup comparisons were made by Student t test for related samples. Intergroup comparisons were performed using the percentage delta by Student t test for independent samples. The effect size Cohen's d was calculated. The significance level was $p < 0.05$. No