There Is a Reversal Effect of Relative Age in Elite Senior Athletics: Successful Young Men Are «Early-Born Athletes», While in Adults There Are More «Late-Born» Athletes

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Abstract : Background: Previous studies have found that there is a wide range of the relative age effect (RAE) in young athletes, which is dependent on age and gender. However, there is currently scant data comparing the prevalence of the RAE in successful athletes across different age groups from the same sport during the same time period. We aimed to compare the prevalence of the RAE in different age groups of successful athletes. Materials and methods: The date of birth of all youth (under 18 years old) and senior (20 years and above) male and female track and field athletes were analyzed. All athletes had entered the World Top 20 rankings in disciplines where performance rules were the same at youth and adult levels. Data were collected from the website www. tilostopaja.eu between 1999 and 2006. Results: A significant prevalence of RAE in successful youth track and field athletes were reported. Early-born (61,1%) and late-born (38,9%) athletes were represented respectively ($\chi 2$ = 131,1, $p < 0,001$, ϖ = 0,24). The RAE is not significant in successful senior track and field athletes. Athletes born in the first half of the year are only 0.4% more prevalent than athletes born in the second half of the year (50,2% and 49,8%, respectively). Olympic Games and World Championship medalists are more often late-born athletes (44,1% and 55,9%, respectively) (p = 0,014, $\chi 2$ = 6,1, ϖ = 0,20). Conclusion: The RAE is only prevalent in successful young track and field athletes. The RAE was not observed in successful senior track and field athletes, regardless of gender, in any of the analyzed discipline groups. The RAE reverse was observed in successful senior track and field athletes.

Keywords : relative age effect, track, and field, talent identification, underdog effect
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