

Youth Distance Running

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Growth and distance

Is it safe for kids to run long distances? This is a million dollar question and has remained controversial for the past few decades. The popularity of youth distance running is on the rise and almost every sport encompasses running in some form, yet, the research has not kept up with the growth rate of the sport. Distance guidelines are often based on expert opinion that is lacking scientific evidence for support. Therefore, it is truly difficult to come up with a consensus without more research.

Children are not small adults and their physiology, psychology, and energy demands are different than their adult counterparts. Unlike adults, youth are more vulnerable to growth plate injuries as the growth plate is 2-5x weaker than the surrounding connective tissue.¹ Additionally, youth runners are more susceptible to heat stress than adult runners.² Youth runners are also at risk for overtraining, burnout, and overuse injury.³ Furthermore, youth are not big or little, and specific guidelines for high school runners should not be assumed for pre-pubescent runners. As there is more literature pertaining to high school runners, there is currently a dearth of literature specific to the pre-pubescent runner. Youth may be at different stages of puberty, have different bone ages, and may mature at different rates. All of these concerns add on to the difficulty of creating safe distance guidelines for the youth runner.

Current recommendations by experts and bodies

Previous position statements for youth runners defined youth as 18 years of age and younger. However, there currently lacks any guidelines or recommendations specific to the pre-pubescent runner. In 1982, the American Academy of Pediatrics (AAP) disapproved long-distance running prior to skeletal maturation due to fears of growth plate damage and unnecessary psychological stress.⁴ Yet, in 1990, the AAP updated the policy statement to state, “until further data are available concerning the relative risk of endurance running at different ages, if children enjoy the activity and are asymptomatic, there is no reason to preclude them from training for and participating in such events.”⁵

In 2003, the AAP published a new position statement on youth running marathons under 18 years of age. They strongly recommended against youth marathon running leading to the concerns for overuse injury and psychological burnout.² However, this recommendation lacked any evidence and was challenged. Therefore, in 2007, the AAP revised the position statement acknowledging this lack of evidence. Their new revision recommended a well-designed weekly training program that ensured safe running conditions, particularly on the importance of heat stress and proper hydration guidelines.⁶

Today, distance guidelines for youth runners are based more on an individualized approach. Experts recommend that youth runners should complete a supervised training program, remain pain and injury free, meet appropriate weight and height gains, and maintain adequate sleep and

nutritional needs.⁷ The youth runner should be self-motivated and run for the purpose of it being fun and not for competition.⁷

Additionally, different race organizations and specific races have different age restrictions. For example, according to USATF, the minimum age requirement is 16 years old to run the half marathon, and 18 years old to run the marathon. Furthermore, some specific races also have discrepancies for age restrictions. For example, the OneAmerica Mini Marathon does not have an age restriction to run the half marathon, while the Rock n Roll and Walt Disney races have minimum age limits to run the half marathon of 12 years old, and 14 years old, respectively. All of these different age restrictions only adds to the confusion.

Counter with current evidence

Although youth are different than adults, and should be treated differently, there have been instances of youth completing both marathon and ultramarathon distances with no adverse outcomes. From 1982 to 2007, 310 youth runners, ages 7 to 17, finished the Twin Cities Marathon with an injury incidence lower than the incidence rate for adult finishers.⁸ Furthermore, the Students Run Los Angeles Program, from 1989-2018, had more than 63,000 youth runners complete the marathon distance with no reports of adverse outcomes.⁷ These findings suggest that long distance running, including marathon or longer, may be safe for youth. However, more research is warranted before any recommendations can be made regarding the safety of long distance running as no studies to date have investigated the long-term effects of long-distance running.

It is currently advised that an individualized approach be sought, and that the distance depends on the maturity status of the runner. However, the current recommendations do not take into account biological age of the child. For example, a 16-year-old may still have open growth plates, while a 14 year old may mature at a faster rate and have closed growth plates. Thus, given the concerns related to skeletal immaturity and distance running, perhaps guidelines for general age groups may not be the best indicator of injury risk and the child's bone age should also be taken into consideration.

Future of youth distance running research

The majority of youth distance running research has only reported the types of injuries; however, future studies should report the severity of the injury and how many days lost the youth runner took from that injury. Future research should also investigate the long-term effects of long-distance running, particularly prior to and post skeletal maturation to see if there is a relationship between long-term injury and intensity / volume of training and racing. The child's nutrition, psychological, and sleep patterns should also be taken into consideration over time. Lastly, current youth running data reports injuries at races, and there is a need for more injury data tracked throughout regular training and races. Although each individual youth runner is different, and should still be treated based on an individualized approach, more research targeting large-scale injury surveillance systems may help bring more insight for future recommendations.

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