

Supplemental Digital Content

Atkinson MA, James JJ, Quinn ME, Senefeld JW, and Hunter SK. Sex Differences in Track and Field Elite Youth. *Med Sci Sports Exerc.*

Contents

| | |
|--|----------|
| Supplemental Tables | 2 |
| Supplemental Table 1. Age-group performance times for track events of top 50 youth for both males and females. | 2 |
| Supplemental Table 2. Age-group performance distances of top 50 youth for both males and females..... | 3 |
| Supplemental Table 3. Sex difference in performances of top 50 youths..... | 4 |

Supplemental Table 1. Age-group performance times for track events of top 50 youth for both males and females.

| Age, y | Male youths | | | | Female youths | | | |
|--------|--|------------|------------|-------------|--|------------|------------|--------------|
| | Performance time, mean, s, by distance | | | | Performance time, mean, s, by distance | | | |
| | 100 m | 200 m | 400 m | 800 m | 100 m | 200 m | 400 m | 800 m |
| 7 | 15.6 ± 0.6 | 32.9 ± 1.5 | 77.6 ± 3.4 | 185.8 ± 9.1 | 16.2 ± 0.6 | 34.6 ± 1.3 | 82.0 ± 3.4 | 197.6 ± 10.1 |
| 8 | 14.5 ± 0.5 | 30.2 ± 1.1 | 70.7 ± 2.6 | 168.4 ± 7.6 | 15.1 ± 0.4 | 31.6 ± 0.9 | 74.1 ± 3.2 | 178.5 ± 7.6 |
| 9 | 13.9 ± 0.4 | 28.9 ± 0.9 | 67.3 ± 2.1 | 160.6 ± 5.7 | 14.5 ± 0.4 | 30.0 ± 0.9 | 70.2 ± 2.7 | 168.2 ± 6.9 |
| 10 | 13.4 ± 0.3 | 27.7 ± 0.7 | 63.9 ± 1.4 | 154.1 ± 5.0 | 13.8 ± 0.3 | 28.5 ± 0.7 | 65.8 ± 2.0 | 160.7 ± 5.2 |
| 11 | 13.0 ± 0.3 | 26.7 ± 0.7 | 61.4 ± 1.6 | 147.9 ± 4.5 | 13.3 ± 0.3 | 27.4 ± 0.6 | 62.9 ± 1.7 | 154.0 ± 4.6 |
| 12 | 12.4 ± 0.2 | 25.4 ± 0.5 | 57.7 ± 1.7 | 140.0 ± 4.6 | 12.8 ± 0.3 | 26.3 ± 0.6 | 60.6 ± 1.6 | 148.7 ± 4.4 |
| 13 | 11.9 ± 0.3 | 24.1 ± 0.5 | 54.7 ± 1.4 | 133.8 ± 3.5 | 12.5 ± 0.2 | 25.6 ± 0.5 | 59.1 ± 1.2 | 144.0 ± 4.0 |
| 14 | 11.4 ± 0.2 | 23.2 ± 0.4 | 52.5 ± 1.1 | 127.3 ± 3.1 | 12.4 ± 0.2 | 25.4 ± 0.5 | 58.3 ± 1.3 | 142.4 ± 3.9 |
| 15 | 11.1 ± 0.2 | 22.6 ± 0.3 | 50.9 ± 1.1 | 122.9 ± 2.7 | 12.2 ± 0.2 | 25.0 ± 0.5 | 57.4 ± 1.5 | 138.4 ± 3.7 |
| 16 | 10.9 ± 0.2 | 22.0 ± 0.3 | 49.5 ± 0.8 | 117.7 ± 2.1 | 12.0 ± 0.2 | 24.5 ± 0.5 | 56.4 ± 1.3 | 135.3 ± 3.7 |
| 17 | 10.7 ± 0.2 | 21.6 ± 0.3 | 48.5 ± 0.8 | 115.3 ± 1.6 | 11.9 ± 0.2 | 24.3 ± 0.4 | 55.6 ± 1.2 | 132.8 ± 3.2 |
| 18 | 10.5 ± 0.1 | 21.3 ± 0.3 | 47.9 ± 0.8 | 113.4 ± 1.3 | 11.8 ± 0.2 | 24.2 ± 0.4 | 55.4 ± 1.2 | 132.8 ± 2.7 |

Top 50 performance times of track running events (100 m, 200 m, 400 m, and 800 m) stratified by age group (7 to 18 years) for youth males and females averaged between three performance years (2019, 2021, and 2022) are reported as mean ± standard deviation (SD).

Abbreviations: m, meters; s, seconds; y, years.

Supplemental Table 2. Age-group performance distances of top 50 youth for both males and females.

| Age, y | Male youths | | Female youths | |
|--------|---|--------------------------|---|--------------------------|
| | Performance distance, mean, m, by event | | Performance distance, mean, m, by event | |
| | Long Jump | High Jump | Long Jump | High Jump |
| 7 | 3.09 ± 0.21 | 0.85 ± 0.04 ^a | 2.90 ± 0.27 | 0.92 ± 0.27 ^a |
| 8 | 3.62 ± 0.21 | 0.90 ± 0.09 ^a | 3.37 ± 0.33 | 0.83 ± 0.06 ^a |
| 9 | 4.00 ± 0.24 | 1.10 ± 0.08 | 3.71 ± 0.23 | 1.07 ± 0.09 |
| 10 | 4.31 ± 0.21 | 1.24 ± 0.07 | 4.08 ± 0.20 | 1.19 ± 0.07 |
| 11 | 4.66 ± 0.26 | 1.33 ± 0.09 | 4.39 ± 0.21 | 1.28 ± 0.07 |
| 12 | 5.00 ± 0.26 | 1.45 ± 0.07 | 4.69 ± 0.23 | 1.39 ± 0.07 |
| 13 | 5.41 ± 0.26 | 1.52 ± 0.07 | 4.99 ± 0.22 | 1.46 ± 0.07 |
| 14 | 5.94 ± 0.26 | 1.68 ± 0.08 | 5.17 ± 0.20 | 1.52 ± 0.07 |
| 15 | 6.29 ± 0.25 | 1.76 ± 0.08 | 5.36 ± 0.21 | 1.56 ± 0.07 |
| 16 | 6.60 ± 0.25 | 1.84 ± 0.08 | 5.60 ± 0.20 | 1.62 ± 0.06 |
| 17 | 6.90 ± 0.23 | 1.92 ± 0.07 | 5.76 ± 0.19 | 1.66 ± 0.06 |
| 18 | 7.09 ± 0.23 | 1.98 ± 0.07 | 5.78 ± 0.19 | 1.67 ± 0.06 |

Top 50 performance distances of field jumping events (long jump and high jump) stratified by age group (7 to 18 years) for youth males and females averaged between three performance years (2019, 2021, and 2022) are reported as mean ± standard deviation (SD).

Abbreviations: m, meters; y, years.

^aData associated with high jump performances were incomplete for elite youth for both the 7-year age-group (males, n = 7; females, n = 7) and 8-year age-group (males, n = 17; females, n = 17)

Supplemental Table 3. Sex difference in performances of top 50 youths.

| Age, y | Sex difference in performance, mean, %, by event | | | | | |
|--------|--|------------|------------|------------|------------|-------------------------|
| | 100 m | 200 m | 400 m | 800 m | Long Jump | High Jump |
| 7 | 3.9 ± 1.2 | 5.0 ± 2.3 | 5.4 ± 2.1 | 5.9 ± 1.6 | 6.6 ± 4.8 | 8.4 ± 14.3 ^a |
| 8 | 4.1 ± 1.6 | 4.5 ± 1.7 | 4.5 ± 1.3 | 5.7 ± 1.2 | 7.8 ± 3.8 | 8.1 ± 6.7 ^a |
| 9 | 4.2 ± 1.1 | 3.7 ± 1.2 | 4.1 ± 1.1 | 4.5 ± 1.2 | 8.0 ± 2.1 | 3.5 ± 2.7 |
| 10 | 3.1 ± 1.0 | 2.7 ± 0.7 | 2.9 ± 1.2 | 4.2 ± 0.7 | 5.7 ± 1.6 | 3.9 ± 2.3 |
| 11 | 2.6 ± 1.0 | 2.4 ± 0.9 | 2.5 ± 0.7 | 3.9 ± 1.1 | 6.0 ± 2.6 | 3.6 ± 3.0 |
| 12 | 2.9 ± 1.1 | 3.3 ± 0.9 | 4.8 ± 1.4 | 5.8 ± 0.7 | 6.7 ± 1.8 | 4.0 ± 2.0 |
| 13 | 5.1 ± 0.7 | 5.9 ± 0.6 | 7.3 ± 0.8 | 7.1 ± 0.6 | 8.5 ± 1.7 | 4.4 ± 1.9 |
| 14 | 7.5 ± 0.4 | 8.7 ± 0.8 | 9.9 ± 0.6 | 10.6 ± 1.2 | 14.8 ± 1.3 | 10.3 ± 2.4 |
| 15 | 8.5 ± 0.7 | 9.5 ± 0.6 | 11.3 ± 0.7 | 11.2 ± 1.0 | 17.3 ± 1.9 | 12.4 ± 2.9 |
| 16 | 9.0 ± 0.5 | 10.4 ± 1.0 | 12.4 ± 1.1 | 13.0 ± 1.3 | 17.9 ± 1.3 | 13.8 ± 2.5 |
| 17 | 10.1 ± 0.5 | 11.1 ± 0.4 | 12.7 ± 0.7 | 13.2 ± 1.3 | 19.9 ± 1.1 | 15.7 ± 1.2 |
| 18 | 10.5 ± 0.7 | 11.8 ± 0.9 | 13.5 ± 0.9 | 14.6 ± 0.9 | 22.7 ± 1.4 | 18.4 ± 2.0 |

Sex difference between youth males and females in the top 50 performances of track running (100 m, 200 m, 400 m, and 800 m) and field jumping events (long jump and high jump) stratified by age group (7 to 18 years) averaged between three performance years (2019, 2021, and 2022) are reported as mean ± standard deviation (SD). In this context, a total of 150 data points were available for analyses for each event and age-group (50 performances × 3 performance years), unless otherwise noted. Sex differences in performance were calculated for each place, event, and year as: [(male's performance) – (female's performance)] × (male's performance)⁻¹ × 100%.

Abbreviations: m, meters; y, years.

^aData associated with high jump performances were incomplete for elite youth for both the 7-year age-group (males, n = 7; females, n = 7) and 8-year age-group (males, n = 17; females, n = 17)