





















## Conclusion

In the high jump and long jump events, the distribution of RAE across three different stages shows that males exhibit higher RAE than females, and RAE tends to decrease with higher competitive levels, which generally aligns with the typical patterns observed in sports. There are no performance differences related to relative age among athletes in the high jump and long jump across the U18, U20, and Senior groups. Significant regional differences exist across age groups in the men's long jump event, with Asian athletes exhibiting higher RAE during youth stages (U18, U20), whereas there is no significant RAE among professional athletes from the Americas. There are no differences in athletic performance related to relative age among athletes in the high jump and long jump across the U18, U20, and Senior groups. Athletes in the AS group are consistently 2-3 years younger at key stages of their careers compared to those in the SS group. Although younger athletes generally have higher transition rates during their youth compared to older athletes, athletes in the AS group, which includes a higher proportion of older athletes, outperform those in the SS group in long jump and high jump events during their careers.

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### Key points

- The relative age effect is present across all age groups (U18, U20, Senior) and both sexes in the high jump and long jump events (except for the senior male high jump).
- Athletes in the all-phase success group are consistently 2-3 years younger at each key stage of their athletic careers compared to those in the senior success group.
- Relatively younger athletes exhibit higher transition rates during their youth period compared to relatively older athletes.

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