Trends in American Female Youth and Junior Weightlifting Performance from 2015 to 2023

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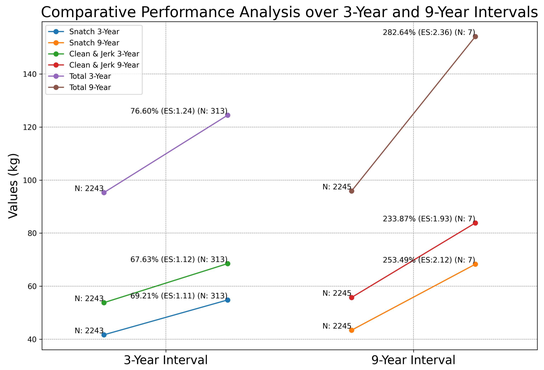
Introduction

Recent years have seen a remarkable increase in youth/junior female participation in Olympic Weightlifting in the US, rising from 96 athletes at the 2012 USA Nationals to 520 in 2023. This surge highlights a significant shift not captured by earlier research, which largely focused on periods of lower engagement up to 2015. Alongside the growth in participation, training practices have evolved, underscoring the need for updated analysis on performance trends and best practices in this changing landscape.



These results suggest that compared to previous years trends, Olympic weightlifting performance from 2015-2023 in youth female athletes in the USA have higher starting performances (SNT, CJ, and T), higher initial participation rates, greater performance gains over years of training, but potentially earlier performance peaks/plateaus. However, there is a reduced participation rate overall across years for individual athletes.

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Youth female weightlifters start competing with better performance and reach peak sooner than previous generation.

But participation rates drop dramatically after the first competition.

What does this mean for long-term development and retention of youth female athletes?

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Methods

Study Design: Utilized a longitudinal observational approach to analyze performance data of American youth and junior female weightlifters from 2015 to 2023.

Participants: Data from 960-2230 athletes in sanctioned USA Weightlifting meets, focusing on the ≤ 20 age category.

Data Handling: Standardized using Python to create uniform data sets for accurate analysis, including cleaning and structuring of data according to athlete competition timelines.

Statistical Analysis: Applied statistical techniques to assess performance changes over time using normalized performance metrics, effect sizes, and pairwise deletion for missing data.

Outcomes

Training Implications:

Earlier peaks suggest benefits of specialized training regimes from a young age. Recognizing plateaus post 3-year mark is crucial for adapting training to athletes' evolving needs.

Societal Influence:

Decline in participation rates may be influenced by sociocultural factors; targeted interventions needed for better engagement.

Data Considerations:

Future research should aim for improved data collection and standardized reporting to aid in comprehensive analysis.

For Coaches:

Leverage early training to harness rapid development phases. Innovate beyond traditional methods to support long-term athlete performance and engagement.