Body Composition Periodization & Performance

A case-study in an Olympic-Level Female Middle-Distance Runner Over a 9-Year Career

Anthropometric, health measures and 1500m race performances were periodically assessed throughout a 9-year career in an Olympic-level female middle-distance runner implementing a science-based approach to body composition periodization.

Only 2 injuries, 1 anemia & 2.8±0.8 missed menstrual cycles/year

The competition body composition optimization phase (May to August) included creating an individualized timeframe and caloric deficit with various feedback metrics (body weight, performance, hunger) to guide the process.

There were also significant positive correlations between slower 1500m race times and increasing ISAK sum of 8 skinfolds (r=0.44), estimated fat mass (r=0.45) and body weight (r=0.51).

This case-study demonstrates a body composition periodization approach that allowed for targeted peak yearly performances, which improved throughout her career, while maximizing training adaptation and long-term athlete health via optimal energy availability.

Reference: by Trent Stellingwerff IJSNEM 2017

Designed by @YLMSportScience