RESTING METABOLIC RATE IN ADOLESCENT ATHLETES:

The development and validation of new equations, and comparison to previous models

Reale RJ, Roberts TJ, Lee KA, Bonsignore JL, Anderson, MA. (2020) Int J Sport Nutr Exer Metab. **Link to Full Text**

ENERGY BALANCE

is an important factor not only for performance and recovery, but also for the growth and maturation of adolescent athletes[1,2]

RESEARCH

on RMR (and associated prediction equations) in adolescent athletes is sparse.

Are current RMR Prediction Equations valid for adolescent athletes?

126 COMPETITIVE ATHLETES

97 FEMALE

29 MALE

13 - 19 YEARS OLD

8 DIFFERENT TEAM & INDIVIDUAL SPORTS REPRESENTED

DEXA — **TESTING** — **RMR**

Most Existing prediction equations underestimate RMR in adolescent athletes

Mass (BM, FFM and FM) and sex were the greatest determinants of RMR

Including maturity (assessed as years to peak height velocity) did not improve prediction of RMR

We suggest the following equation be used to predict RMR in adolescents

RMR = 11.1 x BM (kg) + 8.4 x height (cm) – (340 Male, or 537 Female)

1. Mountjoy, M., J. K. Sundgot-Borgen, L. M. Burke, K. E. Ackerman, C. Blauwet, N. Constantini, C. Lebrun, B. Lundy, A. K. Melin, N. L. Meyer, R. T. Sherman, A. S. Tenforde, M. Klungland Torstveit and R. Budgett (2018). "IOC consensus statement on relative energy deficiency in sport (RED-S): 2018 update." Br J Sports Med 52(11): 687-697.

2. Schofield, K. L., H. Thorpe and S. T. Sims (2019). "Resting metabolic rate prediction equations and the validity to assess energy deficiency in the athlete population." Exp Physiol 104(4): 469-475.