

Relative Energy Deficiency in Sport

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Some parents may have heard of the “female athlete triad”, which was a way of categorizing symptoms that patients with disordered eating habits developed: altered menstrual cycle, poor bone health, and decreased food intake/over exercising. But what about boys? What about girls who have not reached menstruation yet? What about girls on contraceptives who get regular periods despite not eating all day long? And what about those on other medications that may affect bone health, one way or another? The female athlete triad did not take these factors into consideration.

More recently, the International Olympic Committee (IOC) developed the term “Relative Energy Deficiency in Sport (RED-S)” to help clinicians and parents recognize some signs and symptoms that may be occurring in their children and patients, specifically in athletes. RED-S was developed to include males, those with other factors contributing to lack of menstruation or to bone health, and to include other signs or symptoms that athletes may be experiencing (both mental and physical). The syndrome develops from food intake not meeting needs, essentially exercising without replenishing the calories. The IOC defines RED-S as “impaired physiological functioning including, but not limited to, metabolic rate, menstrual function, bone health, immunity, protein synthesis, cardiac health caused by relative energy deficiency”. The combination of low food intake with athletic exertion leads to low energy availability for the body's normal functions. RED-S may not be evident through athletic performance, as often athletic performance is not impacted until the very late stages. However, the long term effects are severe.

Early detection is key. Without treatment, RED-S can contribute to nutrient deficiencies, chronic fatigue, increased illness, poor mental health, decreased metabolic rate, and increased risk of injuries, specifically to bone. If not caught early enough, some of these effects may be life-long. Treatment of RED-S includes exercise restrictions, potentially even stopping the sport, as well as increasing food intake. For safety and efficacy, treatment requires a team approach by a doctor, a therapist, and a Registered Dietitian. The IOC provides a stoplight system for determining when it is then safe for the child to return to the sport.

So what can we do about RED-S? First of all, we can encourage a variety of foods and food groups in our homes, avoid talking about weight and making critical comments about appearance, and teaching our children that obtaining a thin ideal or perfection in performance may be compromising their health. We can also take our children to the doctor if we notice any signs of chronic fatigue related to not eating enough or over exercising. Remember: the earlier it is caught, the less damage is done. Let’s all join in the fight to protect our children!