

Intro to REDS

What is REDs



Definition

- REDs (Relative Energy Deficiency in Sport) occurs when calorie intake is insufficient relative to energy expended in sports.

Evolution

- Initially known as the Female Athlete Triad, REDs now encompasses broader health and performance implications beyond bone health, menstrual irregularities, and low energy availability.

Risk Indicators

- Bradycardia, electrolyte imbalances, low body fat percentage, plateau in growth curve, low bone density, stress fractures

Consequences

Health

- endocrine dysfunction
- metabolic changes
- growth delays
- iron deficiency
- psychological issues
- Gastrointestinal problems
- suppressed immunological function

Performance

- Decreased endurance
- higher injury risk
- reduced glycogen stores
- impaired cognitive functions
- mood changes

Energy Availability Formula

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$$\frac{\text{caloric intake} - \text{exercise energy expenditure}}{\text{fat free mass}}$$



Critical Threshold:

- Below 30 kcal/kg FFM/day for recreational adult women can lead to severe health consequences.
- Adolescents: May require an energy availability of 45 kcal/kg FFM/day or more.

Treatment

Treatment Team: Involves physicians, sports dietitians, mental health specialists, athletic trainers, physical therapists, coaches, and support from family/friends

Interventions: Non-pharmacologic approaches include nutritional adjustments (e.g., optimizing carbohydrate and bone-building nutrients), strength training, stress management, and psychological support.

➔ Transdermal estrogen can improve bone density and return of menses

➔ Birth control can be used but doesn't address root of problem