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Metabolic Equivalents of College-Aged Male Athletes

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### Why?

- **Metabolic Equivalent - Assumed**
  - 3.5 ml O₂ /kg/min
    - Value determined by 1 male, 40 yr old, 70 kg
- **Byrne:** 671 subjects, varying ages and genders
  - MET = 2.6 ml/kg/min

Due to conflicting results, the purpose of this study is to determine whether the accepted value of 3.5 ml O₂ /kg/min is an acceptable MET value for male college athletes aged 18-25.

### Subjects and Methods

**University of Dayton male athletes aged 18-25**

- 10 Cross Country runners
  - BMI between 18.5 and 24.9 (Normal Range)
- 10 Football Linemen
  - BMI ≥ 30.0 (Obese Range)

- **Height, Weight, BMI**
- **Body Composition via Bod Pod**
  - Siri Equation: \( \frac{495}{HBD} - 450 \)
  - Percent Fat, Lean Body Mass, Fat Mass
- **Resting Metabolism via Indirect Calorimetry**
  - Parvo Medics TrueOne 2400
  - Mouth piece, head piece, nose clip, connecting tube
  - VO₂, VCO₂, Calories, RER
- **Steady State Heart Rate for 5 Minutes**
  - Polar Heart Rate Monitor

### Findings

- **Accepted Value**: 3.5 ml/kg/min
- **Byrne Value**: 2.56 ml/kg/min
- **Experimental Values**:
  - Football: 3.57 ml/kg/min
  - Cross country: 4.51 ml/kg/min
    - Total: 4.04 ml/kg/min
- **Percent Differences**
  - Football: 39.5% greater
  - Cross Country: 76.2% Greater
    - Total: 57.8% Greater

Reasons for Differences: Small sample size, age, heterogeneous vs. homogeneous group, BMI

### Conclusion

Assumed MET value may not be accurate for all populations.