Determining Estimated Calorie Needs using Mifflin-St. Jeor Equation

**Males:** REE = \((10 \times \text{wt in kg}) + (6.25 \times \text{ht in cm}) - (5 \times \text{age}) + 5\)

**Females:** REE = \((10 \times \text{wt in kg}) + (6.25 \times \text{ht in cm}) - (5 \times \text{age}) - 161\)

Then multiply by activity factor to determine estimated daily calorie expenditure.

**Activity Factors:**
- Sedentary—1.2
- Moderately active—1.55
- Very active—1.725

*REE = Resting Energy Expenditure
*weight in pounds/2.2 = weight in kilograms (kg)
*height in inches x 2.54 = height in centimeters (cm)

Estimating Macronutrient Needs

**Carbohydrates:** 60-70% calories OR
\(2.5-6.0 \text{ grams carbohydrates/pound body weight}\)

**Protein:** 0.54-0.64 grams protein/pound body weight

**Fat:** 20-30% calories

**Pre-event meal guidelines:**
- High in carbohydrates, non-greasy and easily digestible
- Meal should be eaten 3-4 hours prior to start of event and should provide 150-350 grams of carbohydrates (1.5 grams/pound body weight)
- Small amounts of protein can aid in regulating energy levels by slowing down carbohydrate absorption
- One hour before event, consume 0.5 grams of carbohydrate/pound body weight.

**During exercise:**
- When events last longer than 60 minutes, carbohydrates should be consumed during the workout, especially during the later stages of the event.
- The forms of carbohydrates recommended during the event include fluid replacement drinks (7-10 fl. oz. every 15-20 minutes), solid forms or gel forms.

**After exercise:**
- Eat within 30 minutes after exercise and then eat small meals two hours and again at four hours after the event.
- Choose high-carbohydrate foods such as bagels, pasta, fruits, yogurts, fluid replacement drinks, food bars, fruit juice, etc.
- Include a small amount of protein to aid with muscle recovery.
- If you can’t consume solid foods within 30 minutes after exercise, try 2-4 cups of a fluid replacement drink and incorporate solid foods two hours after exercise.