 **BAHIR DAR** 

**UNIVERSITY COLLEGE OF MEDICINE AND HEALTH SCIENCE**

**ENERGY ESTIMATION AND DAILY RECOMMENDED INTAKE**

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**Submitted to : Ms. Genet**

* A 32-year-old woman with 55 kg weight with moderate physical activity. She is in the 2nd trimester of pregnancy. What is her Energy, carbohydrate, protein, and fat requirements?

## During pregnancy, the body requires increased energy, protein, healthy fats, and carbohydrates to support maternal health and fetal development. These nutrients play a crucial role in sustaining the mother’s metabolic demands, promoting optimal fetal growth, and ensuring proper development of vital organs. A well-balanced diet with adequate macronutrient intake helps reduce pregnancy complications, supports placental function, and prepares the body for labor and breastfeeding.

## Given Data

• Age = 32 years  
• Weight coefficient for age = 8.7  
• Constant number for age = 829  
• Activity level = Moderate (Factor = 1.64)  
• Weight = 55 kg  
• Energy added for 2nd trimester pregnancy = 340 kcal  
• Recommended daily carbohydrate intake = 45-65%  
• Recommended daily fat intake = 20-35%  
• Recommended daily protein intake = 1.1 g/kg body weight

## Required

1. Total energy requirement = ?  
2. Recommended intake of carbohydrate = ?  
3. Recommended intake of protein = ?  
4. Recommended intake of fat = ?

## Solution

1. Total energy requirement

BMR = Weight coefficient × Weight + Constant value

= 8.7 × 55 + 829

= 1307.5 kcal

Energy with activity factor:

= 1307.5 × 1.64

= 2144.3 kcal

Total energy requirement including pregnancy energy needs:

= 2144.3 + 340

= 2484.3 kcal/day

2. Recommended intake of carbohydrate (RIC)

Step 1: Percentage × Total Energy Requirement (TER)

= 45-65% of 2484.3 kcal

= 1117.94 - 1614.79 kcal/day

Step 2: Convert kcal to grams (1g = 4 kcal)

= 1117.94 / 4 - 1614.79 / 4

= 279 - 404 g/day

3. Recommended intake of protein

Protein intake = 1.1 g/kg/day × Weight

= 1.1 × 55

= 61 g/day

4. Recommended intake of fat (RIF)

Step 1: Percentage × Total Energy Requirement (TER)

= 20-35% of 2484.3 kcal

= 496.86 - 869.51 kcal/day

Step 2: Convert kcal to grams (1g = 9 kcal)

= 496.86 / 9 - 869.51 / 9

= 55 - 97 g/day

## Conclusion: Dietary guidelines for pregnant women in the 2nd trimester should focus on a balanced intake of essential macro nutrients to support both maternal and fetal health. Emphasis should be placed on consuming complex carbohydrates, lean proteins, and unsaturated fats to ensure a well-rounded diet. Proper nutritional intake can reduce pregnancy complications, support fetal development, and prepare the body for labor and breastfeeding.