How the Barbie Calorie Deficit Calculator Works (With Calculations)

# 1. Size (Age, Weight, Height, Sex) → BMR

We use the Mifflin–St Jeor Equation:

• Men: BMR = (10 × weight in kg) + (6.25 × height in cm) – (5 × age in years) + 5

• Women: BMR = (10 × weight in kg) + (6.25 × height in cm) – (5 × age in years) – 161

Example (female, 45kg, 152cm, 21y):

BMR = (10×45) + (6.25×152) – (5×21) – 161 = 1206 kcal/day

# 2. Activity → TDEE

We multiply BMR by an activity factor:

• Sedentary = ×1.2

• Light = ×1.375

• Moderate = ×1.55

• Very active = ×1.725

• Super active = ×1.9

Example: TDEE = 1206 × 1.55 = 1869 kcal/day

# 3. Goal / Deficit → Target Calories

Subtract your chosen deficit:

• Mild = –250 kcal

• Moderate = –500 kcal

• Aggressive = –750 kcal

Example (moderate deficit): Target = 1869 – 500 = 1369 kcal/day

# 4. Weekly Weight Change

We assume 7,700 kcal = 1 kg fat.

So: Weekly change = (deficit × 7) ÷ 7700

Example: (500×7) ÷ 7700 = 0.45 kg loss per week

# 5. Protein, Fat, Carbs (Macros)

• Protein: 1.6 g × body weight (kg) → 45kg → ~72g protein (~290 kcal).

• Fat: ~25% of calories → 1369 × 0.25 = 342 kcal (~38g fat).

• Carbs: Remaining calories → 1369 – (290 + 342) = 737 kcal (~184g carbs).

⚠️ These are estimates, but they’re based on widely used scientific formulas. The numbers adjust if your inputs (age, weight, activity, deficit) change.