

**Main Constraints:**

[avg man measurements](#) - 199.8 lbs and 5'7" tall

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Body Mass Index (BMI)

**31.3**

[More Information About Bmi](#)

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**Estimated Daily Caloric Needs**

**3,654 kcal/day**

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**Recommended nutrient intakes (eg. protein, fat, calcium, fiber, etc) (grams)**

[USDA Nutrition Calculator](#)

Macronutrient	Recommended Intake Per Day
Carbohydrate	411 - 594 grams <a href="#">More Information About Carbohydrate</a>
Total Fiber	40 - 51 grams <a href="#">More Information About Fiber</a>
Protein	73 grams - 180 (2g per kg of body weight) <a href="#">More Information About Protein</a>
Fat	81 - 142 grams <a href="#">More Information About Fat</a>
Saturated fatty acids	As low as possible while consuming a nutritionally adequate diet.
<i>Trans</i> fatty acids	As low as possible while consuming a nutritionally adequate diet.
α-Linolenic Acid	1.6 grams <a href="#">More Information About Alpha linolenic acid</a>
Linoleic Acid	17 grams <a href="#">More Information About Linoleic acid</a>
Dietary Cholesterol	As low as possible while consuming a nutritionally adequate diet.

Total Water	3.7 liters (about 16 cups)
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### Total time spent exercising

#### [exercise recommendations](#)

- 300 minutes a week or more of moderate aerobic activity (walking, biking, swimming)
  - OR 150 minutes of vigorous aerobic activity (running, swimming laps)
- strength training at least 2 times a week. One set for each major muscle group for 12-15 repetitions
  - Chest, back, shoulders, legs, arms, and core
  - We may assume that each set takes 7 minutes with 30 second break in-between, should allot for
    - 42 minutes exercising, 2.5 minute break. 44.5 minutes total

### Calories burned

- [calories burned doing nothing](#) - 20 yr old man - 2,020 cal
- [Calories burned from strength training](#): assuming 45 minute session: 225 cal

#### [Calories burned for moderate activity](#)

Activity	Calories burned after 300 minutes
walking	1710 cal
cycling	4518 cal
swimming	2711 cal

#### [Calories Burned from vigorous aerobic activity:](#)

Activity	Calories burned after 150 minutes
Running (fast)	2824 cal
Swimming laps (vigorous)	2259 cal

### Conservation constraint, amount of calories burned should maintain a healthy deficit against the amount of calories consumed

#### [Optimal diet strategies.](#)

- A deficit of 500-750 calories is adequate for weight loss

### Time available for exercise (hours)

- Assume they are a student who must keep up their grades and other obligations

- 8 hours for sleep
- 4 hours for classes
- 2 hours for studying
- 3 hours for other misc tasks (eg. walking to class, cooking, errands, etc)
- 1 hour for extracurriculars