

Tiny Bites Total Big Calories

Introduction

According to defined standards, about two-thirds, or 64%, of American adults are overweight or obese resulting in serious and chronic health conditions such as diabetes, high blood pressure, and certain cancers, to name a few.

This information has been developed to increase your understanding of several measures used for determining overweight and obesity and to help you become more aware of your caloric intake. By paying attention to small snacks and tiny bites, you will see how extra calories can add up to weight gain. By making small changes to eating and exercise habits, the scale will tip to your favor.

To obtain an accurate picture of your health, it is important to use a combination of health assessment indices. These include but are not limited to:

- Body Mass Index (BMI),
- Waist Circumference (WC),
- Caloric intake and expenditure,
- Cholesterol and triglyceride levels and
- Blood pressure measurements.

Additional assessments in the area of smoking, alcohol consumption, eating habits, sleep apnea, and life stressors will help depict a more comprehensive picture of your health.

Part I: Body Measurements

I A. Body Mass Index (BMI)

BMI is an estimate of body fat based on a person's weight in relation to their height. BMI values apply to both men and women.

- Overweight is defined as having a BMI of 25.
- Obesity is defined as having a BMI of 30 or more.

BMI does not apply to pregnant and nursing women, frail or elderly persons, or persons under 18. Similarly, BMI is not always accurate for athletes and body builders.

*To find your BMI locate your height in the left hand column and scroll across to find your weight range.

	Healthy	Overweight	Obese
BMI	19-24	25-29	30-40
Height	Weight in pounds		
5' 0"	97-123	128-148	153-204
5' 2"	104-131	136-158	164-218
5' 4"	110-140	145-169	174-232
5' 6"	118-148	155-179	186-247
5' 8"	125-158	164-190	197-262
5' 10"	132-167	174-202	209-278
6' 0"	140-177	184-213	221-294
6' 2"	148-186	194-225	233-311
6' 4"	156-197	205-238	246-328

Rate your index: Healthy Overweight Obese

I B. Central Obesity- Waist Circumference (WC)

Excess abdominal fat, in and of itself, can be an accurate predictor of one's risk of experiencing conditions such as cardiovascular disease, diabetes or stroke.

- BMI estimates how much fat we carry.
- WC estimates the relative distribution of fat around the body's midsection and abdomen.
- WC greater than 40 inches or 102 cm is considered unhealthy for men.
- Health risks increase when the excess WC is matched with a BMI greater than 25.

To determine your WC, use a tape measure in either standard or metric units.

- Place the measuring tape just above the navel. The tape should be horizontal with the floor; it should not compress the skin or sink into the navel depression.

Write your WC measurement _____

Part II: Caloric Measurements

II A. Daily Caloric Need

Daily caloric need is the amount of energy or calories necessary to maintain normal bodily functions and to support physical activity.

- The minimum amount of calories required each day to maintain normal bodily functions such as breathing and heartbeat, while at rest, is called Resting Metabolic Rate (RMR).
- RMR is affected by many factors such as age, weight, genetics, gender, and body composition. Body composition is defined as the amount of body fat and muscle mass.
- To support daily physical activity in excess of RMR, our bodies require additional energy and caloric intake. Thus, the greater the activity, the greater the caloric need.

If we consume more calories than necessary to maintain RMR + physical activity, we are poised to gain weight in a slow but consistent manner.

***Calculate your RMR by using the Harris-Benedict equation.**

Equation for men:

$$66 + (6.3 \times \text{wt in lbs.}) + (12.9 \times \text{ht in inches}) - (6.8 \times \text{age in years})$$

Write your RMR value _____

In order to obtain a more accurate measure of your daily caloric need you should consider your activity level in addition to your RMR.

- Choose the activity multiplier that best suits you.
- Multiply this number with the RMR value you calculated using the Harris-Benedict equation above.

Activity Multiplier

- **Sedentary** with little or no exercise, multiply RMR by **1.2**
- **Lightly active**, light exercise or participate in sports 1-3 days per week, multiply RMR by **1.375**
- **Moderately active**, moderate exercise or participate in sports 3-5 days per week, multiply RMR by **1.55**
- **Heavy exercise**, hard exercise or participate in sports 6-7 days per week, multiply RMR by **1.725**

RMR value _____ x Activity Multiplier _____ = Daily caloric need _____

How well does your actual daily intake match your daily caloric needs?

II B. The Balancing Act

Every small step counts toward achieving a healthy balance between food intake and energy expenditure. Though mostly unnoticeable, the smallest bites and the tiniest snacks can seriously add to the total daily caloric intake.

Keep this in mind when you are thinking about a small snack or a tiny bite:

- Approximately 3500 calories equal one pound of fat gain.
- To lose or gain one pound of fat per week, you must decrease or increase your intake by 500 calories per day or 3500 calories per week.
- Theoretically, to lose one pound of fat per week, you either burn 500 calories through exercise or cut 500 calories from your diet; most effective if you use a combination of both.

Below is an example of how small amounts of food place our caloric intake above our daily needs. For comparison, we've included the activity required to expend those tiny bites.

The required energy expenditures are estimates based on a 47 year old male, at 5'10", 188 lbs, walking at 3 miles per hour.

You take the free doughnut with the 8-gallon minimum fill-up at the gas station.
Calories: 220 = 52 minutes walking

One bite-size snickers out of the office jar is not much. After all it is a bite-size!
Calories: 60 = 13 minutes walking

At lunch, you ask for extra mayo on the hamburger; additional Tbsp of Mayo.
Calories: 100 = 21 minutes walking

Your office colleague offers you a fillet of his "famous" fried fish.
Calories: 200 = 48 minutes walking

On the way home, you stop by McDonalds for a junior cheeseburger to beat the boredom of the drive!
Calories: 295 = 63 minutes walking

It has been a long day; you could use a beer.
Calories: 139 = 32 minutes walking

It's your turn to cook tonight, so while you're grilling you sample the sausage to make sure it's done.
Calories: 70 = 15 minutes walking

You are watching TV and feel hungry. ½ cup of vanilla ice cream sounds good.
Calories: 140 = 30 minutes walking

Total tiny bites = 1224 calories

Do you have a healthy balance between your total daily caloric intake and expenditure?

Part III: Self- Assessment

III A. Mapping a Plan for Change

Based on your self-assessment, do you need to make a Plan for Change?

Small snacks and tiny bites add up to slow but steady weight gain overtime. Small changes to eating and exercise habits, add up to a healthful life over time. Commit to small but consistent steps for change.

- Aim for Fitness
- Build a Healthy Base
- Choose Sensibly

Mapping a Plan for Change

What to change	Expected outcome	Start dates	Assess success in 3 & 6 months
Example: Decrease impulsive eating as evidenced by snacking immediately after arriving home from work; followed by a full meal for dinner and desert.	Eliminate snacking by eating dinner soon after arriving home.		

III B. Dietary Guidelines

The 2005 Dietary Guidelines and the Dietary Approaches to Stop Hypertension or the D.A.S.H. Eating Plan are excellent tools to assist you in implementing change.

- At least 30-60 minutes of moderate physical activity each day of the week to include cardiovascular, stretching and resistance exercise to include strength and endurance.
- Calorie intake and portion size control, intake should balance energy expended. For most women calorie intake is approximately 2000 and for men 2400-2600 per day.
- Food groups to be encouraged are:
 - Fruits and vegetables, 2 cups of fruits and 2 ½ cups of vegetables/day for a 2000 calorie intake.
 - Whole grains, 3 out of 6 servings of grains should be whole grains.

- Milk and Dairy, 3 cups/day of nonfat or low fat milk and milk products, include yogurt and cheese equivalents.
- Choose fats wisely, fat calories should comprise 20-35% of total daily caloric intake.
 - Less than 10% of calories from saturated fatty acids,
 - Less than 300 mg/day of cholesterol,
 - Trans fatty acid consumption (fried and processed food) should be as low as possible
- Choose carbohydrates wisely for good health
 - Fiber rich fruits, vegetables and whole grains
 - Use food and beverages with little added sugars
- Choose and prepare foods with little salt
 - Consume less than 2300 mg sodium/day – approx. 1 tsp salt
 - Consume potassium, magnesium and calcium rich foods
- If you drink alcohol, do so in moderation
 - 1 drink/day for women
 - 2 drinks/day for men
- Keep food safe to eat by cleaning hands, food contact surfaces, and fruits & vegetables. Also, by cooking food to a safe temperature.

It is never easy to modify our life styles or health habits. Social support, one that is gained at home and at work, is an important factor. More employers today, than ever before, are supporting lifestyle changes through worksite health promotion programs. NASA has taken a proactive role in establishing these services. To learn more about NASA's occupational health programs go to www.ohp.nasa.gov or visit your Center's health unit or the fitness center today.

Sources

1. NASA Occupational Health www.ohp.nasa.gov
2. Center for Disease Control and Prevention www.cdc.gov
3. Cornell University www.users.med.cornell.edu/~spon/picu/calc/index.htm
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www.health.gov/dietaryguidelines/dga2000/document/frontcover.htm
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www.umm.edu/healthcalculators/
6. Mayo Clinic www.mayoclinic.com
7. National Heart, Lung and Blood Institute www.nhlbi.nih.gov
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9. Bowes & Church's Food Values of Portions Commonly Used by Jean A.T. Pennington

Adapted from

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