



# JROTC Virtual Learning

LET 2 Wellness, Fitness, and First Aid  
Controlling Fat [U4C1L6]

April 13, 2020



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## LET 2 Controlling Fat

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# Student Learning Plan

## Unit 4: Wellness, Fitness, and First Aid

### Controlling Fat [U4C1L6]



#### What you will accomplish in this lesson:

Determine how body fat impacts your overall health



#### Why this lesson is important:

You may have seen or read advertisements from individuals and organizations that encourage people to use their diet plan to control weight. Not every plan will work for everyone. In this learning plan, you will examine ways to safely control weight and reduce your overall intake of fat in your diet.



#### What you will learn in this lesson:

- Identify the risks of a high fat diet on long term health
- Explore tendencies that encourage fat accumulation
- Define current and desired state for healthy lifestyle
- Identify steps that lead to a leaner, healthier body
- Relate food intake and physical activity to weight control
- Define key words: Basal Metabolic Rate (BMR), Body Mass Index (BMI), essential fat, storage fat, obese, overweight



#### You will have successfully met this lesson's purpose:

- by reviewing your diet and exercise plans
- when you evaluate your current menu plan for fat and empty calories
- when you revise your plan to minimize empty calories



#### Learning Activities:

These learning activities are designed to help you learn the target skills and knowledge for this lesson. Your instructor may assign additional or alternative learning activities.

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#### INQUIRE PHASE: What do you already know?



- \_\_\_\_ 1. THINK ABOUT what you know about fat in different foods. PREPARE for this lesson by discussing *What you will accomplish in this lesson; What you will learn in this lesson; Why this lesson is important, and When you will have successfully met this lesson's purpose.*
- \_\_\_\_ 2. LISTEN to a briefing about empty calories. With your team, COMPLETE Exercise #1: Breakfast, Lunch, Dinner. CALCULATE the total number of calories on the menu and the number of empty calories from solid fat and added sugar.
- \_\_\_\_ 3. REFLECT on the way solid fats and added sugars add empty calories to your diet. ANSWER the reflection questions presented by your instructor.

**GATHER PHASE: So, what else do you need to know or learn?**

- Part 1**
- \_\_\_\_\_ 1. VIEW the “Weighty Risks” presentation. With your team, DISCUSS popular foods and which foods are advertised. SELECT one of your favorite restaurants and research the amount of calories and fat in popular items. All major chain restaurants publish nutritional information about their menus on the internet. CREATE a T-Chart listing the items and calories from fat. POST your findings for class review.
  - \_\_\_\_\_ 2. REFLECT on the information you learned about popular foods. ANSWER the reflection questions presented by your instructor.
- Part 2**
- \_\_\_\_\_ 3. VIEW the “Road to Fat Control” presentation. With your team, CREATE a Flow Map detailing the steps to building a leaner body. PRESENT your Flow Map to the class.
  - \_\_\_\_\_ 4. REFLECT on ways to control fat. ANSWER the reflection questions presented by your instructor.

**PROCESS PHASE: Now what can you do with this new information you've learned?**

- Part 1**
- \_\_\_\_\_ 1. With your team, CREATE a radio announcement about the risks of a high fat diet or the benefits of a low fat diet. BE SURE to include information you learned during the previous activity. PRESENT your announcement to your peers.
  - \_\_\_\_\_ 2. REFLECT on how people are influenced to eat certain foods. ANSWER the reflection questions presented by your instructor.
- Part 2**
- \_\_\_\_\_ 3. ASSESS what changes you need to make by completing Exercise #2: Controlling Body Fat.
  - \_\_\_\_\_ 4. REFLECT on changes you need to make. ANSWER the reflection questions presented by your instructor.

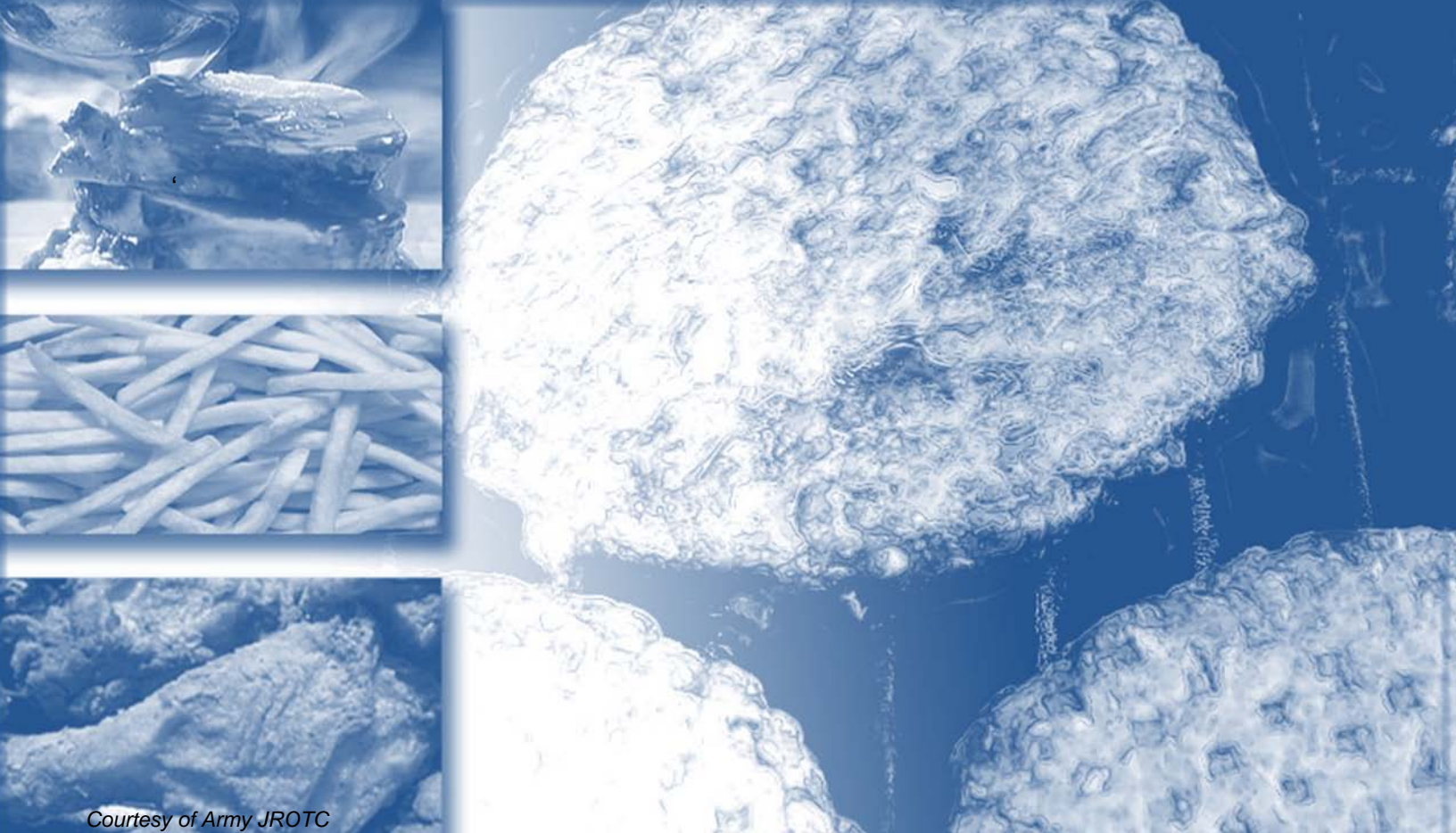
**Assessment Activities:****APPLY PHASE: What else can you do with what you've learned today?**

- \_\_\_\_\_ 1. COMPLETE the Controlling Fat Performance Assessment Task. SUBMIT your completed performance assessment task to your instructor for feedback and a grade.
- \_\_\_\_\_ 2. REVIEW the key words of this lesson.
- \_\_\_\_\_ 3. REFLECT on what you have learned in this lesson and how you might use it in the future.

**Self-Paced Learning and Assessment Activities:**

Independently complete the activities outlined below:

1. **Inquire Phase:** Complete the Learning Activities 1 – 3 or as modified by your instructor.
2. **Gather Phase:** Complete the Learning Activities 1 – 4 or as modified by your instructor.
3. **Process Phase:** Complete the Learning Activities 1 – 4 or as modified by your instructor.
4. **Apply Phase:** Complete the Learning Activities 1 – 3 or as modified by your instructor.



Courtesy of Army JROTC

U4C1L6

## Controlling Fat

### Key Words:

Basal Metabolic Rate

Body Mass Index  
(BMI)

Essential Fat

Storage Fat

Obese

Overweight

### What You Will Learn to Do

Determine how body fat impacts your overall health

### Linked Core Abilities

- Take responsibility for your actions and choices

### Skills and Knowledge You Will Gain Along the Way

- Identify the risks of a high fat diet on long term health
- Explore tendencies that encourage fat accumulation
- Define current and desired state for healthy lifestyle
- Identify steps that can lead to a leaner, healthier body
- Relate food intake and physical activity to weight control



## Introduction

In today's society, obese and overweight people, young and old, seek corrective advice from all types of organizations and individuals. These "experts," for many reasons, attempt to encourage and control what we eat, how we eat, when we eat, how much we eat, etc. In this lesson, you learn how it is possible, without difficulty, to carry an amount of fat that is helpful and encourages the dynamic living principle. You will see in the simplest terms a method designed to keep you healthy and promote enjoyment of living while participating in life to your fullest potential.

## Weighty Risks

Are those new jeans you got for your birthday a little tighter around your waistline? Do you find yourself skipping breakfast, and famished at lunch, eating way too many carbs and sugar to boost your energy throughout the day? Are you grabbing a few too many snacks with your friends after school? Do you always reach for that extra helping of potatoes at suppertime?

Consistently making poor dietary choices can lead to unfortunate health consequences.

First, let's talk about what **body mass index (BMI)** means. A person's BMI refers to his or her ratio of body weight to height. BMI is a tool that is often used to determine if a person is at a healthy weight, overweight, or obese, and whether a person's health is at risk due to his or her weight. A body mass index (BMI)



of 18.5 to 24.9 is considered healthy. A person with a BMI of 25 to 29.9 is considered overweight, and a person with a BMI of 30 or more is considered obese. But, BMI isn't a full-proof measurement because it doesn't actually measure a person's body fat. BMI is one of several indicators to help determine whether or not a person's weight is in a healthy range.

For example, to be considered **overweight** a person's BMI must fall between 25 and 29.9. Body weight comes from fat, muscle, bone, and body water. It is important to remember that although BMI correlates with the amount of body fat, BMI does not directly measure body fat. As a result, some people, such as athletes, may have a BMI that identifies them as overweight, even though they do not have excess body fat. This is because muscle often weighs more than fat. Thus athletes with lots of muscle, may have higher BMIs.

Body Mass Index Table																																																						
BMI	Normal					Overweight					Obese					Extreme Obesity																																						
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54																		
Height (inches)	Body Weight (pounds)																																																					
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167	172	177	181	186	191	196	201	205	210	215	220	224	229	234	239	244	248	253	258																		
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	212	217	222	227	232	237	242	247	252	257	262	267																		
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189	194	199	204	209	215	220	225	230	235	240	245	250	255	261	266	271	276																		
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62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202	207	213	218	224	229	235	240	246	251	256	262	267	273	278	284	289	295																		
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76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287	295	304	312	320	328	336	344	353	361	369	377	385	394	402	410	418	426	435	443																		

Source: Adapted from Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.

**Obesity** is excess body fat and indicated by a BMI of 30 or higher. Obesity can create many serious health issues and risks, including high blood pressure, stroke or heart attack, diabetes, arthritis and cancer.

The body needs a certain amount of energy (calories) from food to sustain basic life functions. Body weight is maintained when the calories eaten equals the number of calories the body uses or “burns.” When more calories are consumed than burned, energy balance is tipped toward weight gain, being overweight, and becoming obese. Genetic, environmental, behavioral, and socioeconomic factors can all lead to becoming overweight or obese.

Approximately one third of U.S. adults age 20 and over are overweight, while another one third are obese. Less than one third of U.S. adults are at a healthy weight! In the past 40 years the prevalence of obesity increased from 13 – 35 percent in U.S. adults age 20 – 74.



### Did you know ...?

- Over two-thirds of U.S. adults age 20 and older are overweight or obese (BMI 25 to 29)
- Over one-third of U.S. adults 20 and older are obese (BMI 30)
- Less than one-third of U.S. adults are at a healthy weight (BMI 18.5 to <25)
- In the past 40 years the prevalence of obesity increased from 13.4 to 35.1 percent in U.S. adults age 20 to 74
- Research indicates that approximately 12.4 percent of children age 2 to 5 and 17 percent of children age 6 to 11 were overweight and 17.6 percent of adolescents (age 12 to 19) were overweight

Centers for Disease Control and Prevention <http://apps.nccd.cdc.gov/dnpabmi/>

## Fat Control

Being obese or overweight increases your risk of cardiovascular disease, high blood pressure, gall bladder disease, diabetes, and certain types of cancer. It also prevents you from performing actively at your highest potential and raising your self-esteem and self-assurance.

To determine whether you are obese or overweight does not depend on how much you weigh on a scale. All of us have our own unique and special body types, which include our inherited strengths and weaknesses, and tendencies that encourage accumulation of fat in our formative years. These tendencies include:

- family eating habits
- a tendency to develop more fat cells
- a large skeletal structure
- any number of unproved theories passed down through the years

To ensure that you follow a proper and proven method for obtaining a healthier lifestyle, we will present you with a few guidelines on learning how to control your fat intake. As you read through the next two sections, you will learn how to control the amount of fat you consume in your daily diet.



## Steps Toward Building a Leaner Body

The steps to controlling body fat are a combination of restricting your fat intake, adequate exercise, making the right food choices, and understanding how to measure your body fat and how to use that information to make positive changes for your overall health.

### Step 1: Restricting Your Fat Intake

Most of us are continually trying to lower our body fat. When you diet, the body says you need to store more fat instead of less. This causes, especially in females, the body to slow down, which reduces the fat burning enzymes. Therefore, with each diet you undertake, the body reduces more fat burning enzymes, making it harder for you to lose fat. But remember, fat levels that drop too low are also unhealthy and unsafe. A certain amount of **essential fat** is necessary to maintain the bodily functions discussed earlier.

For example, most women should not go below eight percent, as this would upset the menstrual cycle, the ability to conceive children, and eventually hormonal balance. In men, the lower limit is approximately three to four percent.

**Storage fat**, on the other hand, is our fat reserve that can become a problem for many of us. Women in general seem to have a greater propensity to store fat. The reason for this is probably estrogen, which increases the fat-storing capability. Evidence points to the hips, thighs, and buttocks as the body's most desirable storage areas.

Listed below are ratings of body fat percentages by age and gender:

<b>Males ages 18 to 30:</b>		<b>Females ages 18 to 30:</b>	
Athletes	6 – 10%	Athletes	10 – 15%
Good	11 – 14%	Good	16 – 19%
Acceptable	15 – 17%	Acceptable	20 – 24%
Possibly needs help	18% and over	Possibly needs help	25% and over
(Obese/Overweight)		(Obese/Overweight)	

The average-weight adult has approximately 25 to 30 billion fat cells whereas the average overweight adult has between 60 and 100 billion. However, some overweight people can have as many as 200 billion. Many factors are responsible for the development of these fat cells. Despite all the reasons, a person's growth and/ or activities may or may not use all of the foods, or calories, consumed. The body will store the non-used calories as fat. For maximum benefit, keep saturated fat to a minimum. Count your total fat intake over a seven-day period. If you foul up, just cut back the next day.

When your fat content is where you desire, the next step is to develop a lifetime guideline for healthy eating. Calculate your daily intake of carbohydrates, fats, and proteins (as you did in the Journal Exercises for those lessons). Then, choose one of the following plans and stick to it. The two plans that best enhance the dynamic living profile are #2 or #3. Whichever plan you select will require an effort on your part to make it succeed; but, it will work and you can enjoy the benefits of that change.

Plan #1 (Average American Diet)		Plan #3 (The Lifetime Eating Plan)
Fat	Fat	10%
Saturated Fat	Saturated Fat	Low
Protein	Protein	10 – 15%
Carbohydrates	Carbohydrates	75 – 80%
Plan #2 (The New American Diet)		Plan #4 (U.S. Dietary Goals)
Fat	Fat	30%
Saturated Fat	Saturated Fat	10%
Protein	Protein	10%
Carbohydrates	Carbohydrates	60%

## Step 2: Exercise – How the Body Burns Food

In addition to eating a healthy diet, you must follow an exercise program to maintain a lean body fat content. Balancing how many calories you consume with how many calories your body burns daily is the key to maintaining body fat content and weight. People gain body fat when they consume more calories daily than their bodies use for energy. Keep in mind that one pound of body fat contains approximately 3,500 calories. Therefore, if a person wants to lose a pound of body fat in one week, he or she must burn 3,500 calories more than he or she consumes over the course of the week.

Your body burns calories even when it is at complete rest. **Basal metabolic rate (BMR)** is the number of calories burned at complete rest, and it varies based on age, health, and body size, shape, and weight. For example, after age 25, most people’s BMR decreases approximately one percent because their requirements for energy slow down. In addition to your BMR, your body burns calories through muscle activity; and while you do not have much control over your BMR, you do have control over the amount of physical activity you participate in. Obviously, the more active you are, the more calories you’ll use.

Choose an exercise program that accomplishes the two goals of improving your heart and lungs, as well as working your muscles. You can increase the efficiency of the heart and respiratory system through exercises such as jogging, swimming, and biking that increase the heart rate and maintain it for a set period of time. The time will vary based on your age, abilities, and the exercise being performed.

The second goal of working your muscles includes toning your muscles and/or increasing your muscle size, and improving your muscle strength.



### Did you know ...?

Since muscle burns more energy than fat, the more muscle tissue you have, the more calories you burn. This is also true of your BMR, meaning that even at rest, the more muscle mass you have, the more energy your body will burn. You can work your muscles through weight training and exercises such as push-ups and sit-ups.

## Step 3: Food Control and Choice

People eat for many different reasons: they feel hungry, the time of day, they missed a meal, or they are following their families' eating routine. Whatever the reason to eat at any given time, it is the choice of food that will truly make the difference in whether you will develop an over fat problem or maintain the dynamic living profile.

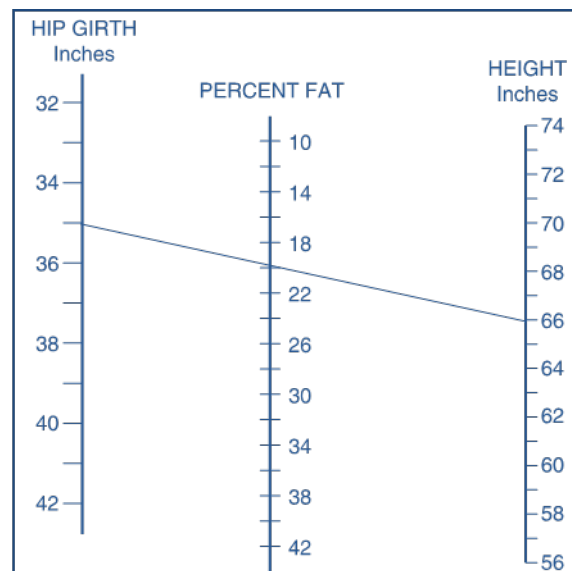
## Step 4: Measuring Your Body Fat

This text presents two fairly accurate methods of measuring your body fat. Follow the directions and do not be discouraged. Body types differ, and you are your own special person.

### Pinch an Inch Test

Remember, your body does not need large amounts of fat. Use the "pinch an inch" test as a simple method of measuring and maintaining your body's fat.

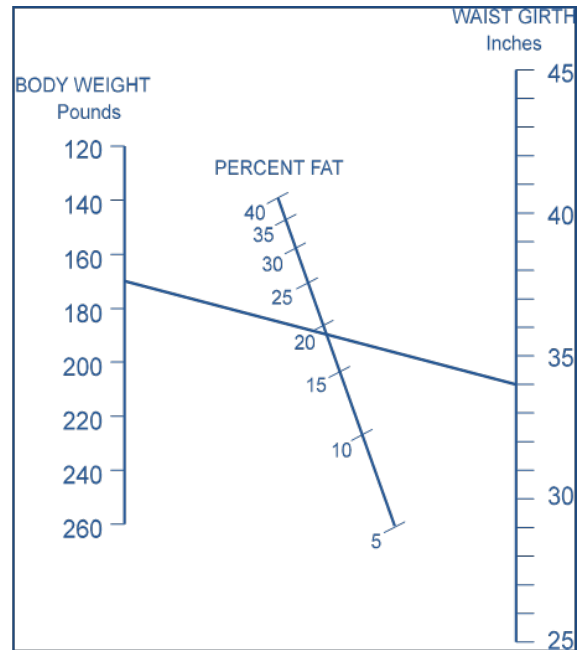
You can perform the "pinch an inch" test by pinching the skinfold of your triceps (women only), waist, or thighs between your fingers. If the fat is over an inch between your thumb and forefinger, you might consider continuing your fat control program.



## Estimating Body Fat

Women: Measure the circumference of your hips at the widest point, and plot that measurement and your height on the following chart. Then, using a straight edge, draw a line connecting the two plots. Your body fat percentage is where the line crosses the percent fat column. Refer to the appropriate chart in Step 1 to see if your fat content is acceptable, good, athletic, or needs help.

Men: Measure the circumference of your waist at the exact level of the belly button, making sure to keep the tape perfectly horizontal. Plot that measurement and your weight on the chart at the top of the next column. Then, using a straight edge, draw a line connecting the two plots. Your body fat percentage is where the line crosses the percent fat column. Refer to the appropriate chart to see if your fat content is acceptable, good, athletic, or needs help.



## Appetite, Hunger and Metabolism

Whether a fat calibrating test or a medical professional's advice concludes that you should change your weight, doing so will require changing your eating habits. Once you've achieved a healthy weight, you'll want to maintain it. To maintain a healthy weight, the number of calories you eat each day should match the daily calorie needs of your body.

Calories are units of energy. If you eat more calories than your body can use it will store the excess energy as fat, causing you to gain weight. A diet that contains fewer calories than you need, can make you lose weight.

Your calorie needs are determined by your activity level – the more active you are, the more calories you need. In addition, your basal metabolic rate – the rate at which you use energy when your body is completely at rest – affects your calorie needs. The higher your basal metabolic rate, the more calories you will burn. Various factors affect basal metabolic rate. For example, older people tend to have a lower basal metabolic rate than yours. Children and pregnant women tend to have a higher basal metabolic rate than the rest of the populations. Regular exercise may help increase a person's basal metabolic rate.

## Conclusion

The science of nourishing the body properly is a continually revolving door of facts, information, and misleading information. Much of the data is very conflicting and difficult to sort out, although there is some material that has remained consistent throughout the years. A basic understanding of this information will enable you to stay properly nourished.

To begin building a healthy diet, consider the following advice:

1. Eat a variety of foods to obtain the energy, proteins, vitamins, minerals, and fiber you need for good health.
2. Maintain a healthy weight to reduce your chances of having high blood pressure, heart disease, a stroke, certain cancers, and the most common kind of diabetes.
3. Choose a diet low in fat, saturated fat, and cholesterol. Because fat contains over twice the calories of an equal amount of carbohydrates or protein, a diet low in fat can help you to maintain a healthy weight.
4. Choose a diet with plenty of vegetables, fruit, and grain products that provide the needed vitamins, minerals, fiber, and complex carbohydrates, and can help you to lower your intake of fat.
5. Use sugars only in moderation. A diet with lots of sugars has too many calories and too few nutrients for most people.
6. Use salt and sodium only in moderation.

Avoid drinking alcoholic beverages. Although alcoholic beverages supply calories, they have little or no nutrients. Furthermore, drinking alcohol is the cause of many health problems and accidents.





## Lesson Check-up

1. What tendencies encourage fat accumulation?
2. Explain the difference between being overweight and obese.
3. What foods in your own dietary plan are too high in fat content?
4. 4. How can you moderate the fat content in your diet?
5. Do some additional investigating and explain the reasons behind specific health risks of obese people.
6. Describe a safe way to lose weight.