USDA

United States Department of Agriculture

10 tips
Nutrition Education Series

MyPlate MyWins

Based on the **Dietary Guidelines for Americans**

Choose MyPlate

Use MyPlate to build your healthy eating style and maintain it for a lifetime. Choose foods and beverages from each MyPlate food group. Make sure your choices are limited in sodium, saturated fat, and added sugars. Start with small changes to make healthier choices you can enjoy.

1 Find your healthy eating style

Creating a healthy style means regularly eating a variety of foods to get the nutrients and calories you need. MyPlate's tips help you create your own healthy eating solutions—"MyWins."

2 Make half your plate fruits and vegetables

Eating colorful fruits and vegetables is important because they provide vitamins and minerals and most are low in calories.

3 Focus on whole fruits

Choose whole fruits—fresh, frozen, dried, or canned in 100% juice. Enjoy fruit with meals, as snacks, or as a dessert.

4 Vary your veggies

Try adding fresh, frozen, or canned vegetables to salads, sides, and main dishes. Choose a variety of colorful vegetables prepared in healthful ways: steamed, sauteed, roasted, or raw.

5 Make half your grains whole grains

Look for whole grains listed first or second on the ingredients list—try oatmeal, popcorn, whole-grain bread, and brown rice. Limit grain-based desserts and snacks, such as cakes, cookies, and pastries.

6 Move to low-fat or fat-free milk or yogurt

Choose low-fat or fat-free milk, yogurt, and soy beverages (soymilk) to cut back on saturated fat. Replace sour cream, cream, and regular cheese with low-fat yogurt, milk, and cheese.

7 Vary your protein routine

Mix up your protein foods to include seafood, beans and peas, unsalted nuts and seeds, soy products, eggs, and lean meats and poultry. Try main dishes made with beans or seafood like tuna salad or bean chili.

8 Drink and eat beverages and food with less sodium, saturated fat, and added sugars

Use the Nutrition Facts label and ingredients list to limit items high in sodium, saturated fat, and added sugars. Choose vegetable oils instead of butter, and oil-based sauces and dips instead of ones with butter, cream, or cheese.

9 Drink water instead of sugary drinks

Water is calorie-free. Non-diet soda, energy or sports drinks, and other sugar-sweetened drinks contain a lot of calories from added sugars and have few nutrients.

10 Everything you eat and drink matters

The right mix of foods can help you be healthier now and into the future. Turn small changes into your "MyPlate, MyWins."

Center for Nutrition Policy and Promotion
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Go to **ChooseMyPlate.gov** for more information.

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Based on the **Dietary Guidelines for Americans**

Build a healthy meal

Each meal is a building block in your healthy eating style. Make sure to include all the food groups throughout the day. Make fruits, vegetables, grains, dairy, and protein foods part of your daily meals and snacks. Also, limit added sugars, saturated fat, and sodium. Use the MyPlate Daily Checklist and the tips below to meet your needs throughout the day.

1 Make half your plate veggies and fruits

Vegetables and fruits are full of nutrients that support good health. Choose fruits and red, orange, and dark-green vegetables such as tomatoes, sweet potatoes, and broccoli.

2 Include whole grains

Aim to make at least half your grains whole grains. Look for the words "100% whole grain" or "100% whole wheat" on the food label. Whole grains provide more nutrients, like fiber, than refined grains.

3 Don't forget the dairy

Complete your meal with a cup of fat-free or low-fat milk. You will get the same amount of calcium and other essential nutrients as whole milk but fewer calories. Don't drink milk? Try a soy beverage (soymilk) as your drink or include low-fat yogurt in your meal or snack.

4 Add lean protein

Choose protein foods such as lean beef, pork, chicken, or turkey, and eggs, nuts, beans, or tofu. Twice a week, make seafood the protein on your plate.

5 Avoid extra fat

Using heavy gravies or sauces will add fat and calories to otherwise healthy choices. Try steamed broccoli with a sprinkling of low-fat parmesan cheese or a squeeze of lemon.

6 Get creative in the kitchen

Whether you are making a sandwich, a stir-fry, or a casserole, find ways to make them healthier. Try using less meat and cheese, which can be higher in saturated fat and sodium, and adding in more veggies that add new flavors and textures to your meals.

7 Take control of your food

Eat at home more often so you know exactly what you are eating. If you eat out, check and compare the nutrition information. Choose options that are lower in calories, saturated fat, and sodium.

8 Try new foods

Keep it interesting by picking out new foods you've never tried before, like mango, lentils, quinoa, kale, or sardines. You may find a new favorite! Trade fun and tasty recipes with friends or find them online.

9 Satisfy your sweet tooth in a healthy way

Indulge in a naturally sweet dessert dish—fruit! Serve a fresh fruit salad or a fruit parfait made with yogurt. For a hot dessert, bake apples and top with cinnamon.

10 Everything you eat and drink matters

The right mix of foods in your meals and snacks can help you be healthier now and into the future. Turn small changes in how you eat into your MyPlate, MyWins.

Types of Heat-Related Problems

Heat Cramps—symptoms include painful cramping and spasms of legs, arms and/or abdominal muscles.

Heat Exhaustion—symptoms include feeling tired, weak and dizzy; headache, nausea and possible vomiting. Heavy perspiration; skin feels moist.

Heat Stroke—symptoms include feeling tired, weak and dizzy. Skin feels hot and dry—even under armpits; appears red and flushed. May become delirious and unconscious. **This is a life threatening situation! Call 911.**

Reducing Your Risks

1. Drink lots of cool water, even more than you think you need, when the weather is hot and humid. (High humidity makes heat injuries more likely because perspiration does not evaporate from the skin as quickly; this causes the body to cool down more slowly.) Water is best; fruit and vegetable juices are good, too.

   Drink at least a gallon of liquid a day (about 16 glasses) when the outside temperature is above 90 degrees and you are not in air-conditioned surroundings. This will mean drinking 1 ½ times as much liquid as your thirst signals you to drink.

   Overweight people need even more water during summer than average weight people.

   Do not drink beer or other alcoholic beverages, coffee, tea or other drinks containing caffeine because they cause you to lose fluid.

2. Maintain normal salt intake in your diet (1 ½ teaspoons or less per day). If you have heart disease or high blood pressure, ask your doctor about your salt intake.

3. Wear light-colored clothes that are loosely woven and absorbent. Cotton is best; it absorbs 40 percent of its weight in moisture. Most synthetic (manmade) materials trap body heat and are not absorbent. Wear a hat to shade your head.

4. Avoid outside activities during the heat of the day. If you are required to work outside, take frequent breaks and drinks of cool water. Do not run or do other types of energetic exercise during the heat of the day. Get wet, wear wet clothing, or bathe/shower as often as possible without drying yourself—this gives your body cooling system a boost.

5. If there is no air conditioning:
   - Use a fan.
   - Open windows wide to create as much cross-ventilation as possible.
   - If your apartment or home is shaded from the sun at certain times of the day, the windows should be open on that side, and the drapes/shades should be closed on the sunny side of your home or apartment.
   - Avoid cooking.
   - Go to a cool place, if possible, like the library, the senior center, the theater, or the shopping center during the heat of the day.
   - Take frequent, cool baths or showers.

6. Realize that older people are more sensitive to heat and may easily suffer heat-related sickness. Also, anyone with diabetes, heart disease, arteriosclerosis, high blood pressure, or Parkinson's Disease is more sensitive to the effects of heat.

Reducing Your Risks During Physical Activity

To physically perform your best in hot weather, you must have an unlimited amount of water available to drink. You should:

- Drink two 8-ounce glasses of water, juice, or a sports drink 2 hours before physical activity (8 ounces equals one full measuring cup of fluid).
- Drink 4 to 8 ounces (½ to 1 full measuring cup of fluid) or more of water or a sports drink 5 to 10 minutes before physical activity.
- Drink 8 to 10 ounces of fluid, or as much as you can tolerate, every 15 to 20 minutes during heavy physical activity.
- Avoid drinks with caffeine—they may cause muscle cramping.
- Eat plenty of fruits and vegetables to maintain adequate amounts of sodium, calcium and potassium.
- Avoid taking salt tablets—most foods provide enough sodium.

Treating Heat-Related Problems

Heat Cramps

1. Rest in a cool, shaded place.
2. Drink cool water slowly (4 ounces, which is equal to ½ cup of fluid, every 15 minutes).
3. Stretch the muscle lightly.
4. Massage the area gently.

Heat Exhaustion

1. Rest in a cool, shaded place.
2. Lie down with feet raised 8 to 12 inches.
3. Loosen all clothing.
4. Drink cool water (4 ounces, which is equal to ½ cup of fluid, every 15 minutes).
5. Place cool, wet clothes on forehead and body.

Heat Stroke

1. Remove clothing.
2. Sponge with cool water.
3. Fan with a towel or cloth.
4. Call an ambulance and transport the person to the nearest emergency room immediately. **This is a life-threatening emergency.**

References:

- *Nancy Clark's Sports Nutrition Guidebook*, 2nd Edition. Human Kinetics, 1997.
- *Principles of Athletic Training*, 8th Edition. Mosby-Year Book, Inc., 1993.

For more information about heat-related problems, contact your local county Extension agent.

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Avoiding and Treating Heat-Related Problems

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FAST FOOD MEALS

Fast foods are quick and easy substitutes for home cooking, and a reality with the busy schedules many families maintain. However, fast foods are almost always high in calories, fat, sugar, and salt.

Fast food used to mean fried food. However, today there are many more healthy alternatives available at fast food restaurants. Some restaurants still use hydrogenated vegetable oils for frying. These oils contain trans fats, which increase your risk for heart disease. Some cities have banned or are trying to ban the use of these fats. Now, many restaurants are preparing foods using other types of fat.

Even with these changes, it is hard to eat healthy when you eat out often. Many foods are still cooked with a lot of fat, and many fast-food restaurants do not offer any lower-fat foods. Large portions also make it easy to overeat, and few restaurants offer many fresh fruits and vegetables.

Before heading out, it is important to know your personal calorie limit. Staying within yours can help you get to or maintain a healthy weight. Most adolescents need 1800 (girls) to 2200 (boys) calories; however, knowing how many calories one needs is based upon age, sex, height, weight, and activity level. When choosing what to eat and drink, it's important to get the right mix – enough nutrients, but not too many calories.

In general, eat at places that offer salads, soups, and vegetables. Select a fast-food restaurant that you know offers a variety of food selections that fit in your healthy eating plan. Along with that, the following tips can help you make healthier selections when dining at fast-food restaurants.

Check and compare nutrition information. Knowing the amount of calories, fat, and salt in fast foods can help you eat healthier. Many restaurants now offer information about their food. This information is much like the nutrition labels on the food that you buy. If it is not posted in the restaurant, ask an employee for a copy.

Have it your way. Remember you don't have to settle for what comes with your sandwich or meal – not even at fast-food restaurants. Ask for healthier options and substitutions. Adding bacon, cheese, or mayonnaise will increase the fat and calories. Ask for vegetables instead, such as lettuce or spinach, and tomatoes. With pizza, get less cheese. Also pick low-fat toppings, such as vegetables. You can also dab the pizza with a paper napkin to get rid of a lot of the fat from the cheese.

Keep portion sizes small. If the fast-food restaurant offers several sandwich sizes, pick the smallest. Bypass hamburgers with two or three beef patties, which can pack close to 800 calories and 40 grams of fat. Choose instead a regular- or children's-sized hamburger, which has about 250-300 calories. Ask for extra lettuce, tomatoes, and onions, and omit the cheese and sauce. If a smaller portion is not available, split an item to reduce calories and fat. You can always take some of your food home, and it is okay if you leave extra food on your plate.

Skip the large serving of french fries or onion rings and ask for a small serving instead. This switch alone saves 200 to 300 calories. Or, ask if you can substitute a salad or fruit for the fries.

Strive to make half your plate fruits and vegetables. Take advantage of the healthy side dishes offered at many fast-food restaurants. For example, instead of french fries choose a side salad with low-fat dressing or a baked potato, or add a fruit bowl or a fruit and yogurt option to your meal. Other healthy choices include apple or orange slices, corn on the cob, steamed rice, or baked potato chips.

When choosing an entrée salad, go with grilled chicken, shrimp, or vegetables with fat-free or low-fat dressing on the side, rather than regular salad dressing, which can have 100 to 200 calories per packet. Vinegar or lemon juice are also healthier substitutes for salad dressing. Watch out for high-calorie salads, such as those with deep fried shells or those topped with breaded chicken or other fried toppings. Also skip extras, such as cheese, bacon bits and croutons, which

quickly increase your calorie count. If you forgo the dressing, you can find salads for around 300 calories at most fast food chains.

Opt for grilled items. Fried and breaded foods, such as crispy chicken sandwiches and breaded fish fillets, are high in fat and calories. Select grilled or roasted lean meats – such as turkey or chicken meat, lean ham, or lean roast beef. Look for meat, chicken, and fish that are roasted, grilled, baked, or broiled. Avoid meats that are breaded or fried. If the dish you order comes with a heavy sauce, ask for it on the side and use just a small amount.

Go for whole grains. Select whole-grain breads or bagels. Croissants and biscuits have a lot of fat. People who eat whole grains as part of a healthy diet have a reduced risk of some chronic diseases.

Slow down on sodium. Americans have a taste for salt, but salt plays a role in high blood pressure. Everyone, including kids, should reduce their sodium intake to less than 2,300 milligrams of sodium a day (about 1 tsp of salt). Adults age 51 and older, African Americans of any age, and individuals with high blood pressure, diabetes, or chronic kidney disease should further reduce their sodium intake to 1,500 mg a day.

When eating at a fast food restaurant, pay attention to condiments. Foods like soy sauce, ketchup, pickles, olives, salad dressings, and seasoning packets are high in sodium. Choose low-sodium soy sauce and ketchup. Have a carrot or celery stick instead of olives or pickles. Use only a sprinkling of flavoring packets instead of the entire packet.

Watch what you drink. What you drink is as important as what you eat. Teenagers often drink more carbonated and caffeinated beverages and eat more fast foods. This, along with peer pressure related to eating and exercise, make teenagers particularly vulnerable to becoming sedentary, overweight, and obese. An obese teenager has a greater than 70% risk of becoming an obese adult.

Many beverages are high in calories, contain added sugars and offer little or no nutrients, while others may provide nutrients but too much fat and too many calories. For example, a large regular soda (32 ounces) has about 300 calories. Instead, order diet soda, water, unsweetened iced tea, sparkling water or mineral water. Also, skip the shakes and other ice cream drinks. Large shakes can contain more than 800 calories and all of your saturated fat allotment for the day.

Drink water. This is a better choice over sugary drinks. Regular soda, energy or sports drinks, and other sweet drinks usually contain a lot of added sugar, which provides more calories than needed. Water is usually easy on the wallet. You can save money by drinking water from the tap when eating out. When water just won't do, enjoy the beverage of your choice, but just cut back, avoiding the supersized option.

Don't forget dairy. Many fast food restaurants offer milk as an option for kids' meals, but you can request it! Dairy products provide calcium, vitamin D, potassium, protein, and other nutrients needed for good health throughout life. When you choose milk or milk alternatives, select low-fat or fat-free milk or fortified soymilk. Each type of milk offers the same key nutrients such as calcium, vitamin D, and potassium, but the number of calories are very different. Older children, teens, and adults need 3 cups of milk per day, while children 4 to 8 years old need 2 ½ cups, and children 2 to 3 years old need 2 cups.

The American Heart Association recommends some examples of healthier alternatives to common fast food picks.

Instead of…	**Try…**
Danish	Small bagel
Jumbo cheeseburger	Grilled chicken, sliced meats or even a regular 2 oz. hamburger on a bun with lettuce, tomato and onion
Fried chicken or tacos	Grilled chicken or salad bar (but watch out for the high-calorie dressing and ingredients)
French fries	Baked potato with vegetables or low-fat or fat-free sour cream topping

Potato chips	Pretzels, baked potato chips
Milkshake	Juice or low-fat or fat-free milk or a diet soft drink (Limit beverages that are high in calories but low in nutrients, such as soft drinks.)

References

American Heart Association www.heart.org/HEARTORG/GettingHEalthy?nuritionCenter/DiningOut/Tips-for-Eating-Fast-Food_UCM_308412_Article.jsp

Choose My Plate Nutrition Education Series http://www.choosemyplate.gov/healthy-eating-tips/ten-tips.html

- Choose My Plate
- Make Half Your Grains Whole
- Salt and Sodium
- Make Better Beverage choices
- Enjoy Your Food, But Eat Less

Choose My Plate – Calories: How Many Can I Have?
http://choosemyplate.gov/weight-management-calories/calories/empty-calories-amount.html

Mayo Clinic
www.mayoclinic.com/health/fast-food/MY01268

National Institutes of Health – Medline Plus
www.nlm.nih.gov/medlineplu/ency/patientinstructions/000105.htm

US Department of Health & Human Services - Office on Women's Health
www.girlshealth.gov/nutrition/fsatfood/fastfood_tips.cfm –

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Altering Recipes for Good Health

Revised by Mary Claire Kinney Bielamowicz, PhD, MS, RD, LD, CFCS, Regents Fellow, Professor and Nutrition Specialist, Texas A&M AgriLife Extension Service, Texas A&M System, May 2012.

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Artful Recipe Altering

For several years, health professionals have advised Americans to eat less fat, sugar, and salt, and to eat more fiber. The USDA's ChooseMyPlate.gov website, based on the *Dietary Guidelines for Americans* (2010), reflects these recommendations.

To make an eating plan or healthy diet that follows the *Dietary Guidelines for Americans*, take the following actions:

- emphasize fruits, vegetables, whole grains, and fat-free or low-fat dairy and milk products;
- include lean meats, poultry, fish, beans, eggs, and nuts; and
- keep it low in saturated fats, trans fats, cholesterol, salt (sodium), and added sugars.

Visit ChooseMyPlate.gov to help you in selecting an eating plan based on current eating patterns, health status, daily exercise plan, and potential risk for health problems linked to diet, such as obesity, diabetes, or heart disease. Perhaps a change to some cooking methods may be in order.

Recipes = Chemical Formulas

Recipes specify the ingredients, proportions, and methods necessary to produce a quality product. Companies and publishers spend time and money testing recipes for consumer use. Any change made in the recipe will produce a slightly different product from the one that was tested and published. Some changes you may like and others you may not.

Recipes for combined foods, such as casseroles and soups, are more flexible than others. A cookie recipe is more adaptable than a cake recipe. Recipes for most baked products can be altered, but recipes for any preserved product, such as pickles, salsa, jellies, or candies should not be changed at all.

Modifying a recipe may produce a product that doesn't meet your expectations. For example, a cake made with less fat will not have the same flavor or texture as the high-fat version. Cookies with less sugar or fat will still be acceptable but might not look or taste the same as those made by the original recipe. Substituting skim milk for whole milk in puddings, soups, and sauces will give a product that is less rich and creamy but has less fat and calories.

Ingredients that can Be Changed

Most people either fail to notice much difference or accept the difference that results when the following kinds of changes are made.

Reduce sugar by one-third. For example, if a recipe says to use 1 cup of sugar, use ⅔ cup. This change works best in canned and frozen fruits and in making puddings and custards. In cookies and cakes, try using ½ cup sugar per cup of flour. For quick breads and muffins, use 1 tablespoon sugar per cup of flour. To enhance the flavor when sugar is reduced, add vanilla, cinnamon, or nutmeg.

Reduce fat by one-third. For example, if a recipe calls for ½ cup of fat, use ⅓ cup. This method works best in gravies, sauces, puddings, and some cookies. For cakes and quick breads, use 2 tablespoons fat per cup of flour.

Omit salt or reduce by one-half. For example, if a recipe calls for ½ teaspoon salt, use ¼ teaspoon. This method may be more acceptable if you gradually reduce the amount of salt each time you make the recipe. Herbs, spices, or salt-free seasoning mixes can also be used as flavor enhancers. Do not eliminate salt from yeast bread or rolls; it is essential for flavor and helps the texture.

Substitute whole grain and bran flours. *Whole wheat flour* can replace from one-fourth to one-half of the all-purpose flour. For example, if a recipe has 3 cups all-purpose flour, use 1½ cups whole wheat flour and 1½ cups all-purpose flour.

Oat bran or oatmeal (that has been ground to flour consistency in a food processor or blender) can replace up to one-fourth of the all-purpose flour. For example, if a recipe has 3 cups all-purpose flour, use ¾ cup oat bran or ground oatmeal and 2¼ cups all-purpose flour.

Bran cereal flour is made by grinding a ready-to-eat cereal such as Bran Buds® or 100% Bran® in a blender or food processor for 60 to 90 seconds. It can replace up to one-fourth of the all-purpose flour. For example, if a recipe calls for 2 cups all-purpose flour, use ½ cup bran flour and 1½ cups all-purpose flour.

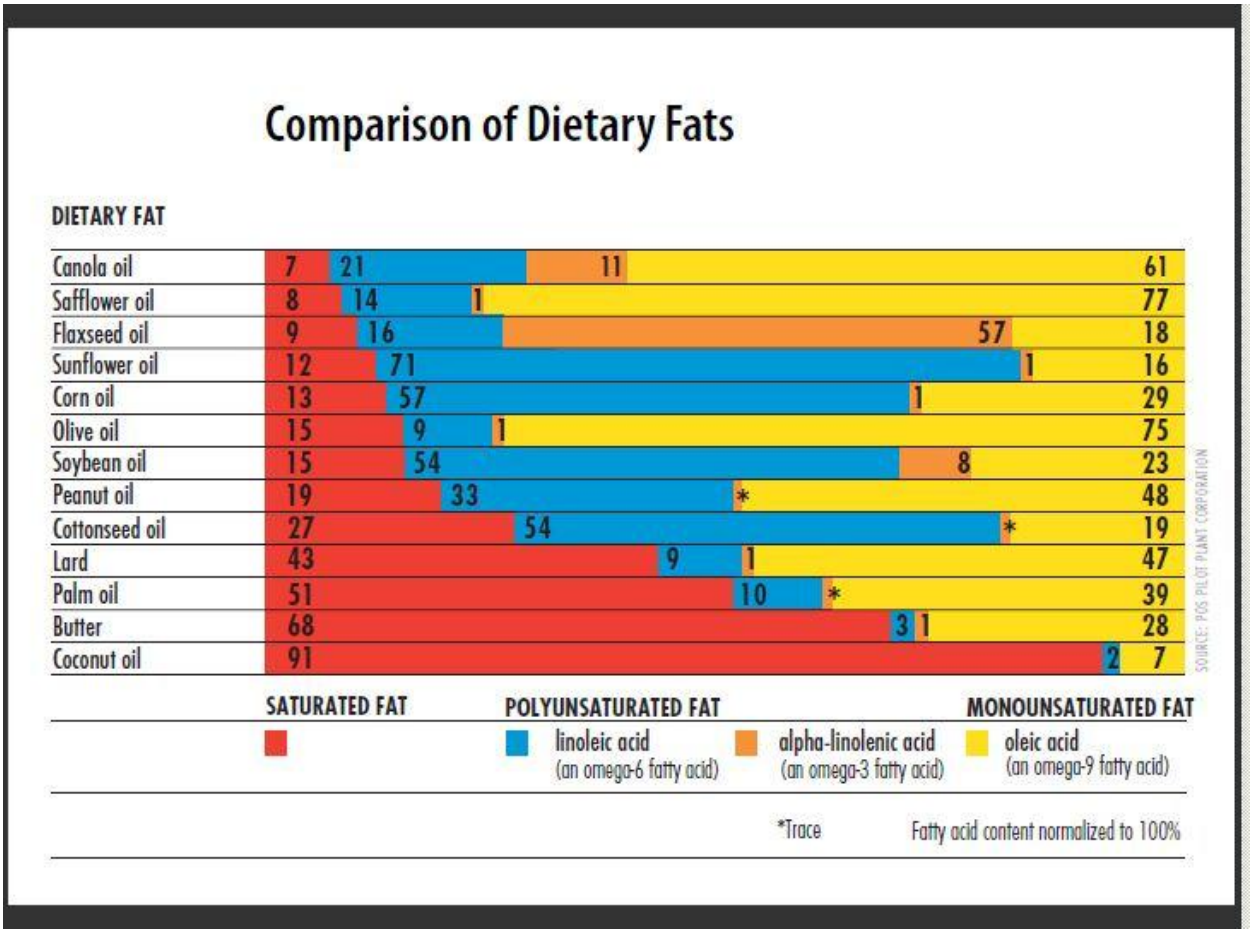
Detect Fat

All fats and oils are high in calories, but you can make a healthier choice by selecting those with less saturated fat. Some sources of saturated fat include animal products and tropical oils such as palm kernel or coconut oil. Another fat of concern is trans fatty acids or trans fats (partially hydrogenated vegetable oil). Trans fatty acids are found in stick margarine, vegetable shortening, and some prepared foods such as cakes, cookies, crackers, and commercially fried foods. Trans fats occur naturally in small quantities in meats (beef, pork, lamb), butter, and milk. Since 2006, trans fats have had to be identified on the food label. Likewise, when you use lower-fat dairy products, you reduce fat, calories, and cholesterol.

Fat and Oil Comparison

Type of fat or oil	Cholesterol (mg/Tbsp.)	Saturated fat or oil
Coconut oil	0	77%
Butter	33	54%
Palm oil	0	51%
Beef fat	14	51%
Animal fat shortening	0	44%
Lard	12	41%
Cottonseed oil	0	27%
Vegetable shortening (Crisco)	0	26%
Margarine	0	18%
Soybean oil	0	15%
Olive oil	0	14%
Peanut oil	0	13%
Corn oil	0	13%
Sunflower oil	0	11%
Safflower oil	0	9%
Canola oil	0	6%

From *Small Steps Make a Big Fat Difference,* Puritan Oil, Proctor and Gamble, 2000. This chart provides only the amounts of cholesterol and saturated fats that may cause blood cholesterol levels to increase.



Canola Oil Council of Canada, 2012, https://canola-council.merchantsecure.com/canola_resources/product45.aspx . This chart provides the amounts of saturated fat, polyunsaturated fat (linoleic and alpha-linolenic acids), and monounsaturated fat (oleic acid).

Fats are not always interchangeable, as shown in the examples below:

- Oil is 100 percent fat; margarine is an emulsion containing 80 percent fat and 20 percent water ("lite" margarine-type spreads contain a higher proportion of water). Substituting 1 cup oil for 1 cup margarine adds more fat than the recipe intended. Consequently, cookies will feel and taste greasy.
- A well-textured cookie depends on thorough creaming of the fat and sugar. Oil cannot be creamed, so substituting it for a solid shortening is likely to change both texture and volume.
- Can lite margarine-type spreads be substituted for solid shortening when baking? It is possible, but it cannot be a direct substitution. Since lite or diet margarines have more water, the amount of liquid in the recipe also must be reduced. Rather than substituting reduced-fat margarines, try using less of the regular margarine. You won't have to alter the amount of liquid, and you will save calories.

Milk Product Comparison

(Values are approximations for general comparisons; check the labels for specific values.)

Milk products (1 cup)	Calories	Fat (g)	Cholesterol (mg)
Whipping cream (Heavy cream, fluid)	832	90	336
Medium cream (25% fat)	590	61	208
Light cream	470	46	159
Half and half (half milk, half cream)	315	28	89
Whole milk	150	8	33
2 percent milk	120	5	18
1 percent milk	100	3	10
Skim milk	85	trace	4
Evaporated whole milk	340	19	74
Evaporated skim milk	200	1	9

From *Food Values of Portions Commonly Used*, 19th edition. New York: Harper and Row. 2009.

Did You Know?

You can use reduced-fat sour cream, low-fat or non-fat yogurt, or cottage cheese instead of regular sour cream in sauces and dips. Skim milk can be used instead of whole milk in most recipes. Evaporated milk can be substituted for whipping cream, and evaporated skim milk can be substituted for regular evaporated milk in some recipes.

Ingredient Substitutions that Are Heart-Smart

By making a few substitutions and changes, you can still prepare your favorite recipes and reduce your intake of calories, fat, and cholesterol.

INSTEAD OF	TRY	BEST CHOICE
Butter	60/40 margarine - butter blend	Margarine or reduced calorie margarine
Sour cream	Lite sour cream	Mock Sour Cream
2 whole eggs	1 whole egg plus 2 egg whites	4 egg whites, commercial egg substitute, or Homemade Egg Substitute
Whole milk	2% milk	Skim milk
Cream	Evaporated milk	Evaporated skim milk
Cream cheese	Light cream cheese or Neufchâtel®	Yogurt Cheese
Whipped cream or non-dairy whipped topping	Non-fat whipped topping	Non-fat whipped topping or no-fat whipped topping
Cheddar, Colby, Swiss Cheese	Cut down on the amount you usually eat	Select part-skim mozzarella, reduced-fat natural cheese, farmer cheese, or low-fat processed cheese
Cottage cheese	Low-fat cottage cheese	Non-fat ricotta or cottage cheese
Baking chocolate (1 ounce)	3 tablespoons powdered cocoa plus 1 tablespoon cooking oil	3 tablespoons powdered cocoa plus 1 tablespoon cooking oil
Mayonnaise	Lite mayonnaise	Half cholesterol-free mayonnaise and half non-fat yogurt
Salad dressing	Reduced-fat dressing	Fat-free dressing
Chicken with skin	Remove skin *after* cooking	Remove skin *before* cooking
Regular ground beef	Lean ground beef	Use extra lean ground beef or lean ground turkey

Recipes for Reduced Fat Substitutes

To save money as well as calories, make your own low-fat substitutes by using the recipes that follow.

No-Fat Whipped Topping

1 tablespoon unflavored gelatin
2 tablespoons boiling water
½ cup non-fat dry milk powder
a cup ice water
2 tablespoons lemon juice
3 tablespoons sugar
1 teaspoon vanilla

1. Dissolve gelatin in boiling water.
2. In a thoroughly chilled small bowl, beat milk and ice water.
3. Beat in lemon juice.
4. Add sugar and vanilla, and beat to soft peaks.
5. Add gelatin mixture and beat.

Yield: about 1½ cups

Calories: 12 per tablespoon

Mock Sour Cream

1 cup lowfat cottage cheese*
2 tablespoons skim milk
1 tablespoon lemon juice

Combine all ingredients using a blender or food processor.

Yield: about 1 cup

	Sour Cream	**Mock Sour Cream**
	Per Tablespoon	
Calories	26.0	14
Fat, grams	2.5	0
Cholesterol, mg	5.0	1

*Use non-fat cottage cheese, if available.

Another option is to use a blender to combine equal amounts of low-fat or non-fat cottage cheese with low fat or non-fat plain yogurt.

Casserole Sauce Mix

Use this recipe instead of canned cream soups in casserole recipes. It has about one-third the calories.

2 cups non-fat dry milk powder
¾ cup cornstarch
¼ cup instant reduced sodium chicken or beef bouillon
½ teaspoon dried crushed thyme
½ teaspoon dried crushed basil
¼ teaspoon pepper

1. Combine all ingredients using a blender or food processor. Store in an airtight container.
2. To prepare a substitute for one can of condensed cream soup in recipes, stir together a cup dry mix and 1¼ cups water in a saucepan.
3. Cook and stir until thickened.

Yield: Equivalent to 9 cans condensed soup

Calories: 107 per cup of dry mix **Fat:** 1 gram

Homemade Egg Substitute (for Cooked Products Only):

Because this recipe contains raw eggs, do not use it in uncooked products such as eggnog and ice cream.

¼ cup non-fat dry milk powder
1 teaspoon vegetable oil
6 egg whites

1. Combine all ingredients (using a blender or electric mixer) until the mixture is smooth.
2. Store in covered container in the refrigerator for up to 2 days, or freeze in ¼ cup portions; thaw overnight in the refrigerator.

Yield: 1 cup; ¼ cup is equivalent to 1 egg.

	Large Egg	**Homemade Egg Substitute**
Calories	79.0	70.0
Fat, grams	5.6	3.5
Cholesterol, mg	213.0	<1.0

Yogurt Cheese

Use this recipe as a substitute for cream cheese in spreads or in desserts and frostings. Make your own spreads by mixing with cinnamon, orange peel, dried fruit, jam, or herbs.

32 ounces plain non-fat or low-fat yogurt made without stabilizers or gelatin

1. Line a strainer with a double layer of cheesecloth or with a paper coffee filter; place it over a bowl.
2. Pour yogurt into the lined strainer. Cover it with plastic wrap and refrigerate.
3. Allow it to drain for 8 to 24 hours, until the liquid has drained into the bowl and the yogurt is thick and spreadable. The longer it drains, the more whey is expressed and the firmer the cheese.
4. Remove the cheese from the cloth and refrigerate in an airtight container.

	Cream cheese	**Yogurt cheese**
	Per tablespoon	
Calories	49.0	5
Fat, grams	4.9	0
Cholesterol, mg	15.5	0

Did You Know?

The amount of saturated fat in the diet has a much greater effect on blood cholesterol than does the amount of cholesterol in the diet.

Remove the Fat

Healthy eating involves recognizing habits that may not be so healthy and then taking steps to change them. For example, think about the foods you ate yesterday. Which ones contained fat? Write them down in the left column below. What lower-fat foods could you have chosen instead? Write them down in the right column.

Foods eaten		Lower fat choices
	Breakfast	
	Snack	
	Lunch	
	Snack	
	Dinner	
	Snack	

Fat Substitute Facts

Some consumers are interested in lowering their fat intake with the use of fat substitutes. Fat substitutes help reduce the intake of high-fat foods with reduced fat substitutes of familiar foods. These fat substitutes do contain about the same number of calories as carbohydrates and protein, so they should be eaten within the context of a healthful diet using moderation and variety.

Fat Substitutes in Processed Foods

Modified foods may be labeled as light (lite), reduced calorie, or reduced fat. These foods may be made from a fat-reduced formula or contain a commercial fat substitute with fewer calories per gram than fat. Two major types of fat substitutes are carbohydrate-based and protein-based.

- **Carbohydrate-based fat substitutes** such as modified starches, dextrins, cellulose, and gums work by combining with water to provide a thicker texture and appearance, as in fat-free salad dressings.
- **Protein-based fat substitutes** made of skim milk protein provide the sensation of creaminess as well as improving appearance and texture. Low-fat cheese made with a protein-based substitute has an appearance and texture close to full-fat cheese.

Both types of fat substitutes contribute some calories, although less than that contributed by fat. Often, a combination of ingredients is used to create higher quality reduced-fat products.

What Types of Foods Use Fat Substitutes?

Foods commonly high in fat such as margarines, salad dressings, mayonnaise, cheese, sour cream, and frozen desserts have used fat substitutes with varying degrees of success. Now you can buy low-fat ice creams with either a protein-based fat substitute or a combination of starches and gums. Many baked goods and some candies are also made using fat substitutes to help reduce their fat.

Cutting Fat in Foods

	Traditional Recipe *(grams of fat)*	**Made Using Fat Substitute** *(grams of fat)*
Margarine, 1 tablespoon	7-12	0-6
Salad dressing		
Creamy, 2 tablespoons	11-21	0-8
Clear, 2 tablespoons	5-20	0-6
Mayonnaise, 1 tablespoon	11	0-5
Cheese		
Hard, 1 ounce	8-11	4-5
Processed, 1 ounce	7-9	0-4
Cream cheese, 2 tablespoons	9-10	0-5
Sour cream, 1 tablespoon	2-5	0-1
Ice cream, ½ cup	7-26	0.3-2

Source: Pennington, J.A.T. Bowes & Church's Food Values of Portions Commonly Used, 19th edition. Philadelphia: J.B. Lippincott Company, 2009; and Facts about Fat Substitutes Nutrition Fact Sheet, National Center for Nutrition and Diabetes, 2004.

What Are Some Fat Substitutes on the Market Today that Are Approved by the Food And Drug Administration?

- Simplesse® = protein-based fat substitute
- Olestra® = synthetic triglyceride modifications with sugar molecules containing long chain fatty acids

Recipes for Using Fat Substitutes
To find recipes for baking or for other food preparation using fat substitutes, contact consumer information at the following numbers:

- Simplesse® Fat, CP Kelco Company: 1-678-247-7300 or 1-800-535-2687 http://www.cpkelco.com/products/index.html
- Olean® (Olestra®), Proctor and Gamble Consumer Hotline: 1-800-477-8899 or e-mail at http://www.pgfoodingredients.com/
- For all others, contact the company directly for consumer information about the products' use in food preparation.

Three contacts about the safety of using fat substitutes:

- Academy of Nutrition and Dietetics' (ANAD) Hotline: 1-800-366-1655; 1-800-877-1600; www.eatright.org
- American Heart Association 1-800-AHA-USA; 1-800-(242-8721) http://www.americanheart.org
- Food and Drug Administration, Consumer Inquiries**:** 1-888-INFO-FDA (463-6332), http://www.fda.gov

Detect Sugar

At least 21 different forms of simple carbohydrates are identified as sugars. All provide calories, but there are few nutrients. Sugar is a necessary ingredient in many products because it provides sweetness and bulk.

What Health Concerns Are Related to Sugar?

Health concerns about sugar consumption are not as strong as they were 20 years ago. The only health problem strongly linked to sugar is tooth decay. Studies have found that most people consume small to moderate amounts of sugar within the context of healthful meals.

Sugar is not "bad" in terms of being harmful. But its use should be monitored because it contains more calories than nutrients. Eating too many sugary foods can cause individuals to bypass more nutritious foods or to take in more calories than needed and thus lead to weight gain. Weight gain and/or obesity lead to degenerative diseases such as cardiovascular disease, diabetes, hypertension, and it may aggravate other diseases such as arthritis.

What about Sugar Substitutes?

Sugar substitutes make the food sweeter with few calories and no nutrients. They don't have the functional properties of sugar, and some are adversely affected by heat. The five alternate sweeteners, approved by the U.S. Food and Drug Administration (FDA), on the market today are: saccharin, aspartame, acesulfame-K, sucralose, and neotame. Neotame is available only in processed foods and not for table use to date (2007). The more purified forms of Stevia – Purevia®, and Truvia® – received the Generally Recognized As Safe (GRAS) rating from FDA (2009).

Fruit juices, honey, and molasses are offered as sugar substitutes for baking and cooking. However, the sugar they provide is no more nutritious than other forms of sugar. The amounts used are seldom enough to provide meaningful vitamins or minerals.

To Reduce Sugar

- To cut down on sugar, try new recipes or adjust old ones by using one-third less. To add flavor, use more vanilla or spice.
- Satisfy your longing for something sweet with fruits for snacks and desserts. Eat baked sweets and candies less frequently and/or in smaller portions.
- Read labels of commercially prepared products; many are high in sugar. Whenever possible, substitute home-prepared items made with less sugar.
- Recognize that the following are names of sugars: sucrose, sorbitol, maple syrup, corn syrup, high fructose corn syrup, glucose, fructose, mannitol, molasses, dextrose, maltose, honey, and lactose.
- If you are trying to lose weight and/or have diabetes, then select alternate or non-caloric sweeteners, such as: saccharin (Sweet'N'Low®), aspartame (Equal® or NutraSweet®), acesulfame-K (SweetOne®), or sucralose (Splenda®). Saccharin, sucralose, or acesulfame-K can be used for cooking because they are not destroyed by heat. Aspartame is a protein-derivative and is destroyed by heat, losing its flavor.

To find recipes for baking, cooking, or preserving food and other techniques regarding the use of these products, contact the company's consumer representative:

- **Saccharin - Sweet'N'Low®** Hotline: 1-800-231-1123; 1-800-221-1763
- **Aspartame, Neotame - NutraSweet® or Equal®**: 1- 800-323-5316 (**Equal®**); or 1-800-323-5321 (**NutraSweet®)**
- **Acesulfame-K - SweetOne®**: 1-800-544-8610; or **Sunette®** 1-800-344-5807
- **Sucralose - Splenda®**: 1-800-777-5363

For all other questions about non-nutritive sweeteners, contact the following organizations:

- Academy of Nutrition and Dietetics' (ANAD) Hotline: 1-800-366-1655; 1-800-877-1600; www.eatright.org
- American Diabetes Association's Hotline 1-800-232-3472 or 1-800-342-2383 http://www.diabetes.org
- American Heart Association 1-800-AHA-USA; 1-800-242-8721 http://www.americanheart.org
- Food and Drug Administration, Consumer Inquiries**:** 1-888-INFO-FDA (463-6332), http://www.fda.gov

Non-Nutritive Sweetener Conversion Chart

Sugar	2 teaspoons	¼ cup	a cup	½ cup	1 cup
Non-nutritive Sweeteners					
Saccharin					
Sweet N' Low ® packet	1	3	4	6	12
Sweet N' Low ® bulk	1	1 tsp.	1¼ tsp.	2 tsp.	4 tsp.
Sweet N' Low ® liquid *for other brands, see food label for sugar equivalents	20 drops	½ tsp.	2 tsp.	1 Tbsp.	2 Tbsp.
Aspartame					
Equal®/NutraSweet® packet	1	Not in bulk packages Not recommended for cooking/baking			
Acesulfame-K					
SweetOne® packet *Sugar Twin®, Weight Watchers®, Sucaryl®, Adolphs®, and Sweet 10®	1	3	4	6	12
Sucralose					
Splenda®: *(equivalent of sugar)*	2 teaspoons	¼ cup	a cup	½ cup	1 cup

Detect Fiber

Dietary fiber is the undigested material left after nutrients are absorbed from food. Both insoluble fibers (such as in wheat, fruits, and vegetables) and soluble fibers (such as in oats, legumes, apples, and citrus fruits) are important. Study the high fiber choices in this section and use your imagination to find ways to include them more often. Here are three general reminders.

1. Fruits, vegetables, and grains have fiber; animal products do not.
2. The closer a fruit, vegetable, or grain is to its original, natural state the more fiber it will have. An apple has more fiber than applesauce, which has more fiber than apple juice.
3. Substitute a high-fiber food for a low-fiber one to increase your daily fiber supply.

Fiber Substitutes

Instead of	Try	For
Chinese noodles canned onion rings croutons/bacon bits	bran cereal	casserole toppings
cornflakes graham crackers bread crumbs	crushed bran cereal wheat or oat bran	dessert crusts and crumb toppings, in meatloaf, for chicken/fish coatings
white rice	brown rice barley, wheat kernels	casseroles, soup, stir fry, side dishes
chocolate chips	half chips & half raisins	cookies, bars

Add bran cereals, oat bran, and wheat bran to streusel toppings, chili, sloppy joes, sandwich spreads, and spaghetti sauce; or use as a topping for baked potatoes and salads. Bran cereal flour can be substituted for up to one-fourth of the all-purpose flour to increase fiber content. Bran cereals can contain 30 grams of fiber or more per cup. Check labels for exact amounts.

Look on the **Ingredients Listing** on a label for whole grains, cellulose, and other fiber sources such as cellulose, wheat gluten, or starch, etc. Look at the **Nutrition Facts** on a label to find the amount of both total carbohydrates and dietary fiber. As a general rule, a food is considered **a good source of fiber** if it has between 3 to less than 5 grams of fiber, or **high-fiber** if it has 5 or more grams of fiber.

Do You Know which Food Groups Provide the Most Fiber?

Take a look at these foods and the relative amount of fiber each group provides.

Food Groups	Grams Fiber per Serving
breads	1-3
whole fruits, cereals and grains	2
starchy vegetables	3
nonstarchy vegetables	1B4
beans, peas, and lentils	6

Know Your Flours

When a recipe lists flour as an ingredient, we assume it means all-purpose flour. To increase your success rate when substituting other flours, we need to review why flour is used.

The gluten that is formed when protein from wheat flour is combined with liquid gives dough its elasticity and baked products their structure. Flours from other grains have little or no gluten-forming protein. Using specialty flours may result in a reduced volume and a "heavier" finished product, as well as changes in color, flavor, and nutritional value. When using specialty flours:

- Stir whole-grain flours with a spoon before measuring but do not sift. Spoon into the measuring cup and level with a metal spatula.
- Decrease the oven temperature by 25 °F, and increase the baking time because the dough is likely to be more compact.
- For yeast breads, add all of the specialty flour first. Then work the all-purpose or bread flour into the dough. The doughs are mixed and kneaded for a shorter time because of the higher proportion of non-gluten-forming materials. The dough also requires a shorter rising time.

Flour Substitutes

As a thickening: 1 tablespoon flour = ½ tablespoon cornstarch, potato starch, rice starch, or arrowroot starch
or = 1 tablespoon quick-cooling tapioca
or = 2 teaspoons tapioca

Self-rising flour: Add 1½ teaspoons of baking powder and ½ teaspoon of salt per cup of all-purpose flour

How Much Fiber Is in Flour?

All-purpose flour is a highly refined ingredient; consequently, it has very little fiber. If you want to increase fiber in home-baked products, you can substitute other flours in many products. Here's how some flour choices compare in fiber content:

LEAST FIBER		MOST FIBER		
All Purpose Flour	**Medium Rye Flour**	**Cornmeal**	**Oat Flour***	**Whole Wheat Flour**

** To make oat flour, put oatmeal in the blender, and blend about 60 seconds. Store in the refrigerator or freezer because of its high- fat content.*

To ensure that whole-wheat fiber (not caramel coloring nor molasses) is present, read labels on bread products. By law, a product labeled "whole wheat" must be made from 100 percent whole-wheat flour. Wheat bread may have varying proportions of enriched white flour and whole-wheat flour. The type of flour present in the largest amount is listed first on the ingredient label.

Allergies to Wheat?

Replacement substitutes for one cup of flour are:

• Barley flour	½ cup	**OR**	½ cup rye flour + ½ cup potato flour
• Corn flour	1 cup		**or**
• Corn meal	¾ cup		b cup rye flour + a cup potato flour
• Potato starch flour	e cup		**or**
• Rolled oats	1a cup		e cup rye flour + a cup rye flour
• Rice flour	1¼ cup		(10 tablespoons)
• Rye flour*	1¼ cup		**or**
• Rye meal*	1 cup		1 cup soy flour + ¾ cup potato starch flour

***NOTE:** Some individuals who are allergic to wheat may also be sensitive to gluten, a protein found in wheat and other grains. Grains that contain gluten are barley (and malt), rye, oats, wheat, and triticale. If a person is allergic to wheat, it is a good idea to check with his or her health care provider to see if foods that contain gluten should also be eliminated from the diet.

Detect Salt

Salt, the traditional seasoning of choice, has been linked to high blood pressure. Eat no more than 2300 mg/day or no more than 700 milligrams (mg.) per meal. For persons with hypertension or those who are more sensitive to the effects of sodium (such as blacks and middle-aged and older adults), eat even less sodium during the day (around 1500 milligrams) as advised by the *Recommended Dietary Guidelines for Americans*, 2010.

Have you been told to cut down on sodium? Then you will find the information on labels very helpful. When you're buying packaged foods, always check the labels to make sure the product does not contain too much sodium.

Do you know what to look for to help you cut sodium in your meal plan when selecting foods in the grocery store? Here's how you do it. Select single foods with no more than 400 milligrams of sodium in a single serving; entrees should have no more than 800 milligrams of sodium.

As a result of many people needing to reduce the sodium content of their meals, many no-salt and low-salt seasoning mixes are now on the market. Also, by using the following herb and spice guides and recipes for low-sodium seasonings, you can make them at home.

Herb and Spice Guide

Spices and herbs can be used to enhance the flavor of a fat- or sodium-reduced food. Experiment with small amounts to find an acceptable seasoning level. Powdered herbs are stronger than crumbled, and dried herbs are stronger than fresh herbs. If a recipe calls for ¼ teaspoon powdered herb, you can use ¾ to 1 teaspoon crumbled or flaked, or 2 teaspoons fresh herb.

What's the Difference between an Herb and a Spice?

- Herb (ûrb,hûrb) n. leaves of plants and shrubs with non-woody stems
- Spice (spis) n. comes from bark, roots, fruit, seeds, or flowers of plants

When adding herbs or spices, take a tip from professional recipe developers. Start with 1 teaspoon of a mild herb (dried) or spice (such as oregano, basil, cumin, and cinnamon) per six servings. Use only ¼ teaspoon of a strong herb or spice (such as rosemary, cloves, nutmeg, ginger, mustard, allspice) per six servings. Try these herbs and spices with the following foods:

Beef (see also Meat Loaf): allspice, basil bay leaf, caraway seed, chervil, chili powder, cinnamon, cloves, coriander, cumin, curry powder, dill, fennel, garlic, ½ Greek seasoning to ½ pepper, ginger, lemon pepper, marjoram, oregano, paprika, pepper, rosemary, savory, tarragon

Breads: anise, caraway seed, cardamom, cinnamon, coriander, dill, fennel, nutmeg, parsley, poppy seed

Cheeses: basil, caraway seed, cayenne, celery seed, chervil, chives, coriander, cumin, dill, jalapeño pepper, marjoram, oregano, parsley, pepper, sage, thyme

Dips: cayenne, chili powder, chives, curry powder, dill, oregano, parsley, pepper, sage

Eggs: basil, cayenne, celery seed, chervil, chili powder, chives, cumin, curry powder, dill, marjoram, mustard seed, oregano, paprika, parsley, pepper, rosemary, saffron, sage, savory, tarragon, thyme, turmeric

Fish: basil, bay leaf, cayenne, celery seed, chervil, cumin, curry powder, dill, ginger, lemon pepper, marjoram, mustard seed, oregano, paprika, parsley, pepper, saffron, sage, savory, tarragon, thyme, turmeric

Fruits: allspice, anise, basil, cardamom, cinnamon, cloves, curry powder, fennel, ginger, mace, mint, nutmeg, rosemary, poppy seed

Grains: basil, celery seed, chili powder, cumin, curry powder, dill, marjoram, mint, oregano, parsley, pepper, rosemary, saffron, savory, thyme

Jams and Jellies: allspice, bay leaf, cardamom, cinnamon, mace, mint, nutmeg

Lamb: basil, bay leaf, chervil, cinnamon, cloves, cumin, curry powder, dill, garlic cloves, lemon pepper, marjoram, mint, nutmeg, oregano, parsley, pepper, rosemary, saffron, sage, savory, thyme

Lentils: basil, bay leaf, caraway seed, chives, tarragon, thyme, turmeric

Liver: basil, bay leaf, caraway seed, chives, tarragon, thyme, turmeric

Marinades: allspice, bay leaf, cayenne, celery seed, chili powder, cloves, ginger, mustard seed, oregano, parsley, rosemary, tarragon, turmeric

Meat Loaf: chili powder, cumin, curry powder, marjoram, nutmeg, oregano, parsley, pepper, sage, savory, thyme

Pasta: basil, oregano, parsley, pepper, poppy seed

Pickled vegetables: allspice, bay leaf, cardamom, cinnamon, cloves, coriander, dill, ginger, mint, mustard seed, pepper, tarragon, turmeric

Pork: allspice, basil, bay leaf, caraway seed, chervil, cinnamon, cloves, coriander, fennel, ginger, marjoram, nutmeg, pepper, rosemary, sage, savory, thyme

Poultry: basil, bay leaf, chervil, coriander, curry powder, dill, ginger, lemon pepper, marjoram, paprika, parsley, pepper, rosemary, saffron, sage, savory, tarragon, thyme, turmeric

Relishes: allspice, cayenne, chili powder, cloves, coriander, ginger, mace, tarragon

Salad Dressings: caraway seed, celery seed, chervil, chili powder, chives, coriander, curry powder, dill, ginger, mint, mustard seed, paprika, parsley, pepper, poppy seed, tarragon, turmeric

Shellfish: basil, bay leaf, cayenne, curry powder, marjoram, oregano, paprika, parsley, saffron, sage, savory, tarragon, thyme

Soups and Stews: allspice, basil, bay leaf, caraway seed, cayenne, celery seed, chervil, chili powder, chives, cloves, coriander, curry powder, dill, ginger, marjoram, oregano, paprika, parsley, pepper, rosemary, saffron, tarragon, thyme

Stuffings: basil, marjoram, oregano, pepper, rosemary, sage, savory, tarragon, thyme

Vegetables:

Artichoke: bay leaf, coriander, parsley, savory, thyme

Asparagus: chives, lemon pepper, marjoram, mustard seed, parsley, tarragon, thyme, turmeric

Beans, dried: allspice, bay leaf, celery seed, chili powder, cloves, cumin, jalapeño pepper, mint, mustard seed, oregano, sage, savory, tarragon, turmeric

Beans, lima: cumin, dill, marjoram, mustard seed, oregano, sage, savory, tarragon, thyme

Beans, snap: basil, caraway seed, chili powder, dill, marjoram, mustard seed, savory, tarragon, thyme

Beets: allspice, anise, bay leaf, caraway seed, cinnamon, dill, fennel, ginger, mustard seed, savory, tarragon, thyme

Broccoli: caraway seed, dill, mustard seed, oregano, tarragon

Brussels sprouts: basil, caraway seed, dill, mustard seed, sage, thyme

Cabbage: caraway seed, celery seed, cumin, dill, fennel, mustard seed, nutmeg, oregano, paprika, savory, tarragon, turmeric

Carrots: allspice, anise, bay leaf, caraway seed, cinnamon, cloves, dill, fennel, ginger, mace, marjoram, mint, nutmeg, parsley, rosemary, sage, thyme

Cauliflower: caraway seed, celery seed, coriander, dill, mace, nutmeg, paprika, parsley

Corn: chili powder, chives, oregano, parsley, sage, savory

Cucumber: basil, chives, cinnamon, cloves, dill, mint, parsley, pepper, tarragon

Eggplant: basil, marjoram, oregano, parsley, sage, thyme

Greens, dark leafy: allspice, basil, mace, marjoram, nutmeg, oregano, tarragon

Greens, salad: basil, celery seed, chervil, chives, dill, lemon pepper, marjoram, oregano, parsley, pepper, sage, savory, tarragon

Mushrooms: chives, dill, marjoram, parsley, tarragon, thyme

Onions: caraway seed, curry powder, mustard seed, nutmeg, oregano, parsley, sage, thyme, turmeric

Parsnips: chervil, dill, marjoram, parsley, rosemary, sage, thyme

Peas: allspice, basil, chervil, chives, dill, marjoram, mint, oregano, poppy seed, rosemary, sage, savory, tarragon, thyme

Potatoes, sweet: allspice, cardamom, cinnamon, cloves, ginger, mace, nutmeg

Potatoes, white: basil, bay leaf, caraway seed, celery seed, chives, dill, lemon pepper, mustard seed, oregano, parsley, pepper, poppy seed, rosemary, savory, tarragon, thyme

Pumpkin: allspice, cardamom, cinnamon, cloves, ginger, mace, nutmeg

Squash, summer: chervil, lemon pepper, marjoram, parsley, pepper, savory

Squash, winter: allspice, basil, cardamom, cinnamon, cloves, fennel, ginger, mace, mustard seed, nutmeg, rosemary

Squash, zucchini: lemon pepper, marjoram, oregano, parsley

Tomatoes: basil, bay leaf, celery seed, chervil, chili powder, dill, lemon pepper, oregano, parsley, sage, savory, tarragon, thyme

Turnips: allspice, dill, mace, nutmeg, paprika, thyme

Vegetable juices: basil, bay leaf, oregano, parsley, pepper, tarragon

Seasonings without Salt

One teaspoon of salt has about 2,000 mg of sodium. Substantially reduce your sodium intake by substituting. Any of the following seasonings can be used.

Zesty Herb Seasoning
Sodium: 47 milligrams per teaspoon

Grated peel of 1 lemon
2 tablespoons ground cinnamon
1 tablespoon ground mace
1 tablespoon dried basil leaves, crushed
1 tablespoon dried thyme leaves, crushed
1 tablespoon dried rosemary leaves, crushed
2 teaspoons paprika
1 teaspoon salt and potassium chloride mixture (a purchased product with half the sodium of table salt)
1 teaspoon pepper
1 teaspoon ground cloves
½ teaspoon ground nutmeg
½ teaspoon ground allspice

1. Combine all ingredients. Refrigerate in covered container.
2. Sprinkle as desired over meat, poultry, or fish before broiling or baking.

Oriental Spice
Sodium: About 1.6 milligrams per teaspoon

1 teaspoon fresh grated lemon peel
¼ teaspoon anise seed, crushed
¼ teaspoon fennel seed, crushed
¼ teaspoon ground cinnamon
¼ teaspoon ground cloves
¼ teaspoon ground ginger

1. Combine all ingredients. Refrigerate in covered container.
2. To use, sprinkle as desired over poultry or meat stir-fry dishes.

Herbed Seasoning
Sodium: 0.65 milligrams per teaspoon

2 tablespoons dried dill weed or basil leaves, crumbled
2 tablespoons onion powder
1 teaspoon dried oregano leaves, crumbled
1 teaspoon dried celery seed
½ teaspoon lemon pepper (sodium-free)

1. Combine all ingredients in small bowl and blend well.
2. Spoon into shaker and use with poultry and fish.
3. Store in cool, dry place.

Spicy Blend
Sodium: 0.59 milligram per teaspoon

2 tablespoons dried savory, crushed
1 tablespoon dry mustard
2½ teaspoons onion powder
1¾ teaspoons curry powder
1¼ teaspoons ground pepper
1¼ teaspoons ground cumin
½ teaspoons garlic powder

1. Mix thoroughly and place in shaker. Store in cool, dry place.
2. Use with main dishes.

Shaker Spice Blend
Sodium: 1.78 milligrams per teaspoon

5 teaspoons onion powder
2½ teaspoons garlic powder
2½ teaspoons paprika
2½ teaspoons dry mustard
1¼ teaspoons thyme leaves, crushed
½ teaspoon ground pepper
¼ teaspoon celery seed

1. Mix thoroughly and place in shaker.
2. Use at table on main dishes, vegetables, soups or salads.

Did You Know?

Health professionals recommend a daily sodium intake below 2,300 milligrams (mg). About one third of the average intake of sodium comes from salt added to food during cooking or at the table. Read the ingredients listing and nutrition information on food labeling in all processed food.

Modifying Recipes

Reason for ingredient		Amount usually used	Result of reducing ingredient
Candies			
Fat	Adds to rich flavor and helps prevent large crystals from forming.	Amount varies widely.	May be coarser in texture.
Sugar	Needed for crystallization, proper consistency, texture, and flavor.	About 3 cups sugar per cup liquid.	Do not change recipe. May drastically affect the volume, texture, and consistency.
Salt	Helps balance and round out the flavor.	Amount varies widely.	May change flavor.
Cakes			
Fat	Contributes to tenderness, fine grain, and texture.	2 to 4 tablespoons fat per cup of flour.	May seem less moist and flavorful.
Sugar	Contributes to tenderness, flavor, texture, moistness, and browning.	½ to 1⅓ cup sugar per cup of flour	Flavor may be less sweet; becomes stale faster. May have paler crust, less color, more open texture, more rounded top, and be drier.
Salt	Adds flavor.	Variable.	Little effect.
Canned and Frozen Fruit			
Sugar	Helps to preserve firm texture and bright color.	½ to 1⅓ cups sugar per cup water for syrup; ¼ to ⅓ cup sugar per pint of frozen fruit (dry pack).	Texture may be less firm. Flavor may be less sweet. Color may be less bright.
Canned Vegetables			
Salt	Adds flavor.	1 teaspoon salt per quart.	Flavor may change.
Cooked Fruits			
Sugar	Helps retain fruit shape and texture during cooking. Increases transparency so brighter.	½ cup sugar per cup water (too much sugar causes fruits to shrink and become firm).	Texture likely to be softer; color likely to be less bright; flavor will be less sweet.
Cookies			
Fat	Increases tenderness.	¼ to ½ cup fat per cup flour.	May make cookies less tender.
Sugar	Contributes to sweetness, browning, and tenderness. Melts during baking so cookie spreads out.	⅓ to 1⅓ cups sugar per cup flour.	Flavor will be less sweet; cookie will be tougher and paler. With less sugar to melt, cookie won't spread as much.
Salt	Adds flavor.	¼ to ½ teaspoon salt per cup flour.	May alter flavor slightly.

Reason for ingredient		Amount usually used	Result of reducing ingredient
Custards and Puddings			
Fat	Causes eggs to coagulate at higher temperature so consistency is softer.	1½ to 3 tablespoons sugar per cup milk.	Consistency will be firmer, and baking time may be shorter.
Salt	Adds flavor.	⅛ teaspoon salt per cup milk.	Flavor may change.
Ice Cream			
Fat	Fat (in cream) helps make a smooth texture and aids incorporation of air during freezing; also gives a rich flavor.	Liquid is usually about half milk and half cream.	Using a milk product that is lower in fat reduces the richness, creaminess, and smoothness of the ice cream.
Sugar	Lowers freezing point and lengthens freezing time so ice cream will be softer at a given temperature. Contributes to smooth texture. Adds sweetness.	½ cup sugar to each cup of milk or cream.	Texture may be coarser. Ice cream will be harder and less sweet. Freezing time will be shorter.
Salt	Adds flavor.	Amount varies.	Little effect.
Main Dishes			
Salt	Adds flavor.	1 teaspoon salt per 4 to 6 servings. 1 teaspoon salt to each pound ground beef.	Little effect.
Pasta, Rice, Legumes			
Salt	Adds flavor.	1 teaspoon salt to each cup of uncooked pasta, rice, legumes.	May change flavor.
Pickles			
Sugar	Contributes to crisp texture. May act as a preservative if enough is used.	Highly variable	Never change recipe. May cause texture changes and/or spoilage.
Salt	Essential in brine to permit growth of desirable micro-organisms and produce acid for preventing spoilage.	Highly variable	Never change recipe. May cause texture changes and/or spoilage.
Quick Breads			
Fat	Increases tenderness.	1 to 4 tablespoons fat per cup of flour.	May be less tender and less moist.
Sugar	Contributes to sweetness, tenderness, browning, moistness, and volume.	1 to 4 tablespoons sugar per cup of flour.	May result in a less sweet, less tender product with a greater tendency to dry out.
Salt	Adds flavor.	¼ to ½ teaspoon salt per cup of flour.	May affect flavor slightly.

Reason for ingredient		Amount usually used	Result of reducing ingredient
Sauces and Gravies			
Fat	Separates the flour or starch granules to prevent lumpiness.	1 to 3 tablespoons fat per cup liquid.	Smooth sauces can be made with less fat. If no fat is used, blend starch or flour with cold liquid. Flavor will be milder.
Salt	Adds flavor.	¼ teaspoon salt per cup liquid.	Little effect.
Sweet Spreads (Jellies, Jams, Preserves, Butters)			
Sugar	Essential for jelling and protecting against spoilage.	Highly variable.	Do not change recipes for sweet spreads unless they are to be frozen or refrigerated. They are carefully balanced to produce a high-quality product that will not spoil.
Yeast Breads and Rolls			
Fat	Increases tenderness and enhances keeping quality. Large amounts decrease volume.	1 to 3 teaspoons fat per cup of flour in bread; 1 to 4 tablespoons fat per cup flour in rolls.	May reduce keeping quality.
Sugar	Contributes to a soft texture, sweet flavor, and brown crust. Provides food for yeast during fermentation. Small amounts of sugar increase the rate of fermentation; large amounts of sugar depress yeast action.	Up to 1 tablespoon sugar per cup of flour in bread; ½ to 2 tablespoons sugar per cup flour in rolls.	May affect rate of fermentation. May not be as tender or moist. Rolls may not brown as quickly.
Salt	Inhibits yeast fermentation. Improves texture. Adds flavor. Has a slight toughening effect on the gluten.	¼ to ½ teaspoon salt per cup flour.	May cause yeast to grow too rapidly, resulting in a poor texture. Satisfactory bread needs some salt.

Nighttime and Drowsy Driving

t-driver.com/know-the-risks/high-school/driving-at-night/

6/24/2011

The single biggest risk factor

Fifty-eight percent of teen crash deaths occur between 6pm and 6am (Insurance Institute for Highway Safety). As reported by a 2010 study by Texas A&M Transportation Institute, this is primarily due to a combination of the visibility challenges caused by dark conditions, slower response time brought about by fatigue, and a lack of experience driving under such conditions. It is largely for these reasons that most states include a nighttime driving restriction in Graduated Driver License (GDL) laws. In most states with a GDL law, the nighttime restriction and a limit on the number of passengers allowed are the most widely implemented features of that law.

The problem of visibility:

- The average person's field of vision is smaller without the aid of light, and glare from oncoming headlights can further limit the ability to see clearly and avoid hazards[1].
- High Intensity lights are becoming more common. These lights are brighter to on-coming traffic and require your eyes to adjust faster[2].
- It is more difficult to judge other vehicle's speeds and distances at night.
- Dusk is the most dangerous time since your eyes are constantly having to adjust to more darkness[3].
- Rural roadways can be especially dangerous at night due to higher numbers of unlit roadways.
- On average, 62% of fatal teen crashes occurred on rural roadways and an average of 53% of the fatal crashes occurred between 6 pm – 6 am[4].

What to do about poor visibility:

- As always, wear your seat belt. The danger of driving at night should not be multiplied by being unsecured.
- Keep distractions to a minimum to keep your eyes and attention on the road.
- Turn headlights on at dusk and observe night driving safety as soon as the sun goes down[3].
- Reduce your speed and increase your following distances. Don't overdrive your headlights. You should be able to stop inside the illuminated area. If you can't, you are creating a blind crash area in front of your vehicle[3].
- Keep your headlights and windshield clean. A thin film of debris on your headlights can reduce your visibility significantly[2].
- If an oncoming vehicle's lights are too high, avoid glare by watching the right edge of the road and using it as a steering guide[3].
- Have your headlights properly aimed. Misaimed headlights blind other drivers and reduce your ability to see the road[3].

The problem of drowsy driving:

- Research suggests that teens should have 8 to 10 hours of sleep each night. Most teens do not get enough sleep — one study found that only 15% reported sleeping 8 1/2 hours on school nights[5].
- Being awake for 18 hours is similar to having a blood alcohol concentration of .05 and .10 after 24 hrs. .08 is legally intoxicated for adults over 21[5].
- Young drivers have a higher risk of falling asleep behind the wheel[5].
- Sleepiness or fatigue causes the following[6]:
    - Impaired reaction time, judgment, and vision
    - Problems with information processing and short-term memory
    - Decreased performance, vigilance, and motivation
    - Increased moodiness and aggressive behaviors
- A recent study (2015) found that individuals who have slept less than 2 hours in the prior 24 hours are too sleep deprived to get behind the wheel of a vehicle[6].
- A recent survey found that teens report being “reluctant to miss out” and have an “always-on lifestyle” that can contribute to drowsy driving as they are getting less than six hours of sleep each night[7].
    - 70% of teens surveyed admitted to driving tired
    - 50% reported actually falling asleep or nearly falling asleep at the wheel citing:
        - A busy schedule: 43%
        - Staying up late to do homework: 32%
        - Staying up late for social activities: 24%
        - Working late hours during the week: 20%
        - Being tired or hung over from drinking/partying the night before: 10%

What to do about drowsy driving:

- Here are some signs of being tired and it’s time to pull over[8]:
    - Difficulty focusing, frequent blinking and/or heavy eyelids
    - Difficulty keeping daydreams at bay
    - Trouble keeping your head up
    - Drifting from your lane, swerving, tailgating and/or hitting rumble strips
    - Inability to clearly remember the last few miles driven
    - Missing exits or traffic signs
    - Yawning repeatedly
    - Feeling restless, irritable, or aggressive

- Before you drive, consider whether you are[8]:
    - Sleep-deprived or fatigued (6 hours of sleep or less triples your risk)
    - Suffering from sleep loss (insomnia) or poor quality sleep
    - Driving long distances without proper rest breaks
    - Driving through the night or when you would normally be asleep
    - Taking medications that make you tired (cold tablets, antihistamines)
    - Studying a lot or attending more activities than usual, which may be decreasing your sleep time
    - Drinking even small amounts of alcohol
    - Driving alone or on a long, rural, dark or boring road
- What you can do to prevent falling asleep while driving [8]:
    - Get a good night's sleep before you hit the road. You'll want to be alert for the drive, so be sure to get adequate sleep the night before you go
    - Don't be too rushed to arrive at your destination. Many drivers try to maximize the holiday weekend by driving at night or without stopping for breaks
    - It's better to allow the time to drive alert and arrive alive
    - Use the buddy system. Just as you should not swim alone, avoid driving alone for long distances. A buddy who remains awake for the journey can take a turn behind the wheel and help identify the warning signs of fatigue
    - Take a break every 100 miles or 2 hours. Do something to refresh yourself like getting a snack, switching drivers, or going for a run
    - Take a nap—find a safe place to take a 15 to 20-minute nap, if you think you might fall asleep. Be cautious about excessive drowsiness after waking up
    - Avoid alcohol and medications that cause drowsiness as a side-effect
    - Avoid driving at times when you would normally be asleep
    - Consume caffeine. The equivalent of two cups of coffee can increase alertness for several hours

Sources:

1. Texas A&M Transportation Institute
2. AAA Foundation
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5. National Sleep Foundation
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7. Liberty Mutual & SADD: https://www.libertymutualgroup.com/about-lm/news/news-release-archive/articles/new-study-finds-teens-fear-of-missing-out-is-proving-to-be-dangerous
8. DrowsyDriving.org

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Speeding and Street Racing

t-driver.com/know-the-risks/high-school/speeding/

6/24/2011

Teens do not consider driving 5 to 10 miles above the speed limit to be dangerous

The problem of speeding:

- About 33 percent of young driver and passenger deaths occur in speed-related crashes[1].
- In a high-speed crash, a passenger vehicle cannot withstand the force of the crash and maintain the passenger compartment. Also, as crash speeds get very high, restraint systems such as airbags and seat belts cannot keep the forces on occupants below severe injury levels[2].
- Speed influences the risk of crashes and crash injuries in three basic ways[2]:
    - It increases the distance a vehicle travels from the time a driver detects an emergency to the time the driver reacts, so by the time you realize you need to react, you've traveled closer to the danger.
    - It increases the braking distance. For example, If you double your speed – say from 30 mph to 60 mph – your braking distance does not become twice as long. It becomes four times as far. Traveling at 55 mph, it will take about 6 seconds to stop your vehicle. The vehicle will travel approximately 302 feet before coming to a stop. That is longer than the length of a football field[3].
    - It increases the crash energy by the square of the speeds. For example, when impact speed increases from 40 to 60 mph (a 50 percent increase), the energy that needs to be managed increases by 125 percent.
- The total stopping distance of your vehicle depends on four things[3]:
    - Your perception time
    - Your reaction time
    - Your vehicle reaction time
    - Your vehicle braking capability
- Teens are more likely than older drivers to speed and allow shorter headways (the distance from the front of one vehicle to the front of the next)[4].
- Speeding has been found to be more prevalent among teenagers who reported more risky friends, particularly among those who reported lower perceived risk for risky driving[5]
- Those with exclusive access to a vehicle were more likely to speed than those who shared a vehicle and more likely to speed at night and with passengers[6].

What to do about speeding:

- Know with every mile per hour increase you also increase your reaction travel time, braking distance and crash energy[2].
- High speed wrecks compromise your car's safety features[2].
- When you speed, you also decrease the judgment of other drivers to be able to gauge your distance and speed.
- Understand speed limits are set with safety in mind. They are based on roadside environment, roadway design and pedestrian traffic[2].
- Speeding to keep up with the flow of traffic is not legal and you can still be ticketed.
- Speeding decreases your fuel efficiency.
- You should always be able to stop within the distance you can see ahead.
- Consider road conditions, weather and road design and slow down accordingly.
- It is easier to lose traction when speeding around a curve and the high center of gravity makes it easier to roll over. Slow down before curves.
- Remember to use the two-second rule to keep a safe distance between you and the car ahead of you.

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1. National Highway Traffic Safety Administration
2. Insurance Institute for Highway Safety
3. Southern Illinois University
4. Simons-Morton, B. G., Ouimet, M. C., Chen, R., Klauer, S. G., Lee, S. E., Wang, J., & Dingus, T. A. (2012). Peer Influence Predicts Speeding Prevalence Among Teenage Drivers. Journal of Safety Research, 43(5-6), 397–403. http://doi.org/10.1016/j.jsr.2012.10.002
5. Simons-Morton, 2015. Naturalistic teenage driving study: Findings and lessons learned. Journal of Safety Research, 54, pp. 41-48.
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Low Safety Belt Use

t-driver.com/know-the-risks/high-school/low-seat-belt-use/

6/24/2011

Safety belt use continues to be lowest with 16- to 24-year-olds

The problem of low safety belt use:

- Roughly 2 out of every 5 teenagers involved in a fatal crash were not wearing a seat belt including drivers and passengers[1].
- Passengers between the ages of 18-19 years old had the highest percentage of unbelted passengers involved in fatal crashes[2].
- In 2013, the use of seat belts in passenger vehicles saved an estimated 12,584 Seat belts have saved nearly 63,000 lives during the 5-year-period from 2008 to 2012[3].
- You can be ticketed for not wearing a safety belt – even if you are sitting in the back seat. If you are in a state that does not have a primary seat belt law (police can't pull you over just for not wearing a seat belt) check to verify if there is a law that requires anyone under the age of 18 to be buckled up. Visit here for more seatbelt laws.
- A safety belt does not protect you when it's not worn properly[3].
- Overall seat belt use is improving among teens. In 2013, 7.6% of teens reported never or rarely wearing a seat belt when driving with someone else within the last 30 days compared to 25.95 in 1991[4].

What to do about safety belts:

- When referring to safety belts, “properly worn” means with both straps snugly fitted to transfer
- the impact of the collision to the parts of your body that can take it – your hipbones and shoulder bones. With just the shoulder strap on, you can slide out from under the seat belt and be strangled, while the lap belt alone doesn’t keep your face from hitting the steering wheel[5].
- A safety belt is your best and last protection if you are in an accident
- During a crash, being buckled up helps keep you safe and secure inside your vehicle. Being thrown out of a vehicle is almost always deadly[3].
- Air bags are designed to work with safety belts, not replace them. In fact, if you don’t wear your seat belt, you could be thrown into an opening airbag and be injured or even killed[2].
- Get in the habit of always putting your safety belt on every time you get into a vehicle. No matter where you are sitting or the distance you are going.
- Ask your passengers to buckle up also. You are responsible for their safety.

Sources:

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2. National Highway Traffic Safety Administration (NTSA), FARS Query 2012-2014.

3. Dunn, L., Holliday, A., & Vegega, M. (2016). Motor vehicle occupant protection facts – Children, youth, young adults (Fact book. Report No. DOT HS 8120521). Washington, DC: National Highway Traffic Safety Administration
4. Center for Disease Control, (2013). Youth Risk Behavior Surveillance, U.S.
5. Oklahoma State University

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Impaired Driving

t-driver.com/know-the-risks/high-school/impaired-driving/

6/24/2011

Drivers between 16-20 are 17 times more likely to die in a crash when they have a blood alcohol content (BAC) of .08% compared to when they have not been drinking

The problem of driving under the influence:

- Young drivers are less likely than adults to drive after drinking alcohol, but their crash risk is substantially higher when they do. This is especially true at low and moderate blood alcohol concentrations (BACs)[1].
- Drivers are less likely to use restraints when they have been drinking[3].
- In the most recent survey, 1 out of every 13 high school students 16 and older reported drinking and driving in the past 30 days[2].
- In 2013, 21.9% of students nationwide had ridden one or more times in a car or other vehicle driven by someone who had been drinking alcohol in the past 30 days[4].
- In 2014, the amount of 16-17 year older drivers involved in fatal crashes with a BAC greater than .08 increased from 10% to 15%[5].
- Most of those killed in alcohol-related crashes involving teen drivers are the young drivers themselves and their passengers[3].

What to do about driving under the influence of alcohol:

- Driving after even one drink is just not worth it. Ride with a sober friend, ask someone else to drive or call a parent or older sibling.
- Food, coffee or exercise will not reduce the amount of alcohol in your system. Only time decreases the effects of alcohol.
- Don’t believe you can “fool” a police officer. They are trained to look for tale-tell signs of a driver who is under the influence.
- If a friend has been drinking and is about to drive, speak up. Offer to drive, take the keys or call a parent.
- Never get in the car with a driver who has been drinking. Everyone reacts to alcohol differently. If you know a friend has been drinking, assume they are unable to drive.

The law and other consequences of driving under the influence:

- Zero tolerance law makes it illegal per se (in and of itself) for persons under the age of 21 to drive with any measurable amount of alcohol in their blood[3].
- Violators of underage drinking laws often face a trip to jail, the loss of their driver’s license, and dozens of other unanticipated expenses including attorney fees, court costs, and other fines[3].

- A DUI conviction follows a teen, so there is the added embarrassment, humiliation, and potential loss and consequence related to academic eligibility, college acceptance, scholarship awards, and more[3].
- Increased efforts by local law enforcement make the chances of getting caught even greater[3].
- The Texas Department of Transportation conducted a study which found that a first time offender could expect to pay between $5,000 and $24,000 for DWI arrest and conviction.

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3. National Highway Traffic Safety Administration
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5. IIHS, Alcohol Impaired Driving Facts, 2014

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Distracted Driving

t-driver.com/know-the-risks/high-school/distractions/

6/24/2011

A distraction is anything that takes your mind and attention away from driving

The problem of distractions:

- There are three main types of distraction[1]:
  - Visual — taking your eyes off the road
  - Manual — taking your hands off the wheel
  - Cognitive — taking your mind off what you're doing
- A recent survey by Liberty Mutual and SADD (Students Against Destructive Decisions) found that teens felt pressure to stay connected or "always on" contributed to their need to engage with cell phones, even while driving[2]:
  - 48% of teens reported texting more when alone in their car
  - 55% reported texting while driving to update parents
  - 37% reported texting to coordinate or confirm event details with friends
  - 34% reported taking their eye off the road when receiving an app notification
- Most popular apps teens report using behind the wheel include[2]:
  - Snapchat: 38%
  - Instagram: 20%
  - Twitter: 17%
  - Facebook: 12%
  - Youtube: 12%

Cell phones:

- Drivers who use hand-held devices are four times as likely to get into crashes serious enough to injure themselves[3].
- Hand-held cell phone use while driving continues to be highest among female drivers and drivers ages 16-24 years of age[4].
- Engaging in visual-manual subtasks (such as reaching for a phone, dialing and texting) associated with the use of hand-held phones and other portable devices increased the risk of getting into a crash by three times[5].
- 10% of drivers of all ages under the age of 20 involved in fatal crashes were reported as distracted at the time of the crash and *represents the greatest portion of distracted drivers*[6].

- Texting and driving causes reaction time to double and those drivers have a harder time staying in their lane and maintaining a consistent speed[7].

Passengers:

- More fatal teen crashes occur when passengers (often other teens) are in the car[4].
- Over two out of four teens that died as passengers are in vehicles driven by other teens[3].
- Research has shown that crash risk and risk of being killed in a crash increases as the number of young passengers in the vehicle increases. One study found a 44% increase in crash risk adding one passenger; two passengers doubled the risk of being killed and 3 passengers quadrupled the risk of dying in a crash[8].
- Additionally, crash risk was shown to be decreased when the passenger was older than 35 highlighting the safety factor of supervised driving for teens[8].

What to do about distracted driving:

- Focus on the road. When you are driving is not the time to multi-task.
- Keep distractions out of the car. If you know you will be tempted to look at or use your phone, lock it in the trunk or turn it off.
- Ask passengers to obey your rules while they are in the car, meaning buckle up and don't distract you.
- Designate a texter. If you have a passenger, hand over your phone so they can do your texting or talking for you.
- Be a good passenger by not distracting the driver.
- Know that as a driver, you have the responsibility to yourself and others. A vehicle is heavy machine and should be treated with respect.
- Set your music/radio before you take your car out of Park.
- Never use headphones while driving. It's illegal and dangerous.
- Keep passengers to a minimum. If every person doesn't have a seat belt, you have too many passengers.
- If you don't feel well or emotionally able to drive – don't. Ask for a ride or wait until you are able.
- Know your limitations. Driving experience comes with time. It's ok to not be ready for certain driving conditions. Never feel pressured to drive dangerously or beyond your experience.

Sources:

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2. Liberty Mutual & SADD, 2013 https://www.libertymutualgroup.com/about-lm/news/news-release-archive/articles/new-study-finds-teens-fear-of-missing-out-is-proving-to-be-dangerous
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Be a BAC Fighter

Make the meals and snacks from your kitchen as safe as possible. **CLEAN:** wash hands and surfaces often; **SEPARATE:** don't cross-contaminate; **COOK:** to safe temperatures, and **CHILL:** refrigerate promptly. Be a BAC Fighter and reduce your risk of food borne illness!

Visit "Ask Karen" at *FoodSafety.gov* to ask a food safety question

Call the USDA Meat & Poultry Hotline:
1-888-MPHotline (1-888-674-6854)

FDA Food Information Line
1-888-SAFEFOOD (1-888-723-3366)

See ***www.fightbac.org*** for free downloadable brochures, fact sheets, stickers, and other great stuff! Materials for educators can be ordered through the on-line BAC store!

The mission of the non-profit Partnership for Food Safety Education is to end illness and death from food borne infection.

Please go to ***www.fightbac.org*** for more information on how you can get involved and to sign up to receive food safety e-cards!

Sign up to be a BACFighter at www.fightbac.org

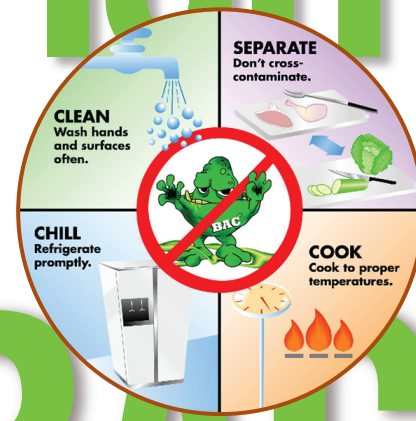
Apply the heat... and Fight BAC!®

Cooking food to the safe temperature kills harmful bacteria. So *Fight BAC!*® by thoroughly cooking your food as follows:

SAFE MINIMAL INTERNAL TEMPERATURES *As measured with a food thermometer*	
Beef, pork, veal and lamb (roast, steaks and chops)	145°F with a 3-minute "rest time" after removal from the heat source.
Ground Meats	160°F
Poultry (whole, parts or ground)	165°F
Eggs and egg dishes	160°F Cook eggs until both the yolk and the white are firm. Scrambled eggs should not be runny.
Leftovers and casseroles	165°F
Fin Fish	145°F
Guidelines for Seafood	
Shrimp, Lobster, Crabs	Flesh pearly and opaque
Clams, Oysters and Mussels	Shells open during cooking
Scallops	Milky white, opaque and firm

2011 PFSE

FIGHT BAC!®



FIGHT FOODBORNE BACTERIA

Four Simple Steps to **Food Safety**

www.fightbac.org

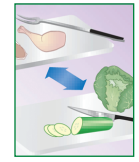
BAC (foodborne bacteria) could make you and those you care about sick. In fact, even though you can't see BAC—or smell him, or feel him—he and millions more like him may have already invaded the food you eat. But you have the power to *Fight BAC!*®.

Foodborne illness can strike anyone. Some people are at a higher risk for developing foodborne illness, including pregnant women, young children, older adults and people with weakened immune systems. For these people the following four simple steps are critically important:

CLEAN: *Wash hands and surfaces often*

Bacteria can be spread throughout the kitchen and get onto hands, cutting boards, utensils, counter tops and food. To ***Fight BAC!***®, always:

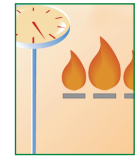
- Wash your hands with warm water and soap for at least 20 seconds before and after handling food and after using the bathroom, changing diapers and handling pets.
- Wash your cutting boards, dishes, utensils and counter tops with hot soapy water after preparing each food item and before you go on to the next food.
- Consider using paper towels to clean up kitchen surfaces. If you use cloth towels wash them often in the hot cycle of your washing machine.
- Rinse fresh fruits and vegetables under running tap water, including those with skins and rinds that are not eaten.
- Rub firm-skin fruits and vegetables under running tap water or scrub with a clean vegetable brush while rinsing with running tap water.



SEPARATE: *Don't cross-contaminate*

Cross-contamination is how bacteria can be spread. When handling raw meat, poultry, seafood and eggs, keep these foods and their juices away from ready-to-eat foods. Always start with a clean scene—wash hands with warm water and soap, and wash cutting boards, dishes, countertops and utensils with hot water and soap.

- Separate raw meat, poultry, seafood and eggs from other foods in your grocery shopping cart, grocery bags and in your refrigerator.
- Use one cutting board for fresh produce and a separate one for raw meat, poultry and seafood.
- Never place cooked food on a plate that previously held raw meat, poultry, seafood or eggs.



COOK: *Cook to safe temperatures*

Food is safely cooked when it reaches a high enough internal temperature to kill the harmful bacteria that cause illness. Refer to the chart on the back of this brochure for the proper internal temperatures.

- Use a food thermometer to measure the internal temperature of cooked foods. Make sure that meat, poultry, egg dishes, casseroles and other foods are cooked to the internal temperature shown in the chart on the back of this brochure.
- Cook ground meat or ground poultry until it reaches a safe internal temperature. Color is not a reliable indicator of doneness.
- Cook eggs until the yolk and white are firm. Only use recipes in which eggs are cooked or heated thoroughly.
- When cooking in a microwave oven, cover food, stir and rotate for even cooking. Food is done when it reaches the safe internal temperature as measured with a food thermometer.
- Bring sauces, soups and gravy to a boil when reheating.

CHILL: *Refrigerate promptly*

Refrigerate foods quickly because cold temperatures slow the growth of harmful bacteria. Do not over-stuff the refrigerator. Cold air must circulate to help keep food safe. Keeping a constant refrigerator temperature of 40ºF or below is one of the most effective ways to reduce the risk of foodborne illness. Use an appliance thermometer to be sure the temperature is consistently 40ºF or below. The freezer temperature should be 0ºF or below.

- Refrigerate or freeze meat, poultry, eggs and other perishables as soon as you get them home from the store.
- Never let raw meat, poultry, eggs, cooked food or cut fresh fruits or vegetables sit at room temperature more than two hours before putting them in the refrigerator or freezer (one hour when the temperature is above 90ºF).
- Never defrost food at room temperature. Food must be kept at a safe temperature during thawing. There are three safe ways to defrost food: in the refrigerator, in cold water, and in the microwave. Food thawed in cold water or in the microwave should be cooked immediately.
- Always marinate food in the refrigerator.
- Divide large amounts of leftovers into shallow containers for quicker cooling in the refrigerator.
- Use or discard refrigerated food on a regular basis. Check USDA cold storage information at ***www.fightbac.org*** for optimum storage times.

Emergency Preparedness Information

Wildfires

Basic Safety Tips

- If you see a wildfire and haven't received evacuation orders yet, call 9-1-1. Don't assume that someone else has already called.
- If ordered to evacuate during a wildfire, do it immediately- make sure and tell someone where you are going and when you have arrived.
- Many communities have text or email alerting systems for emergency notifications.To find out what alerts are available in your area, search the Internet with your town, city, or county name and the word “alerts.”
- If you or someone you are with has been burned, call 9-1-1 or seek help immediately; cool and cover burns to reduce chance of further injury or infection.

Fire Weather Watch

Fire weather watch = dangerous fire weather conditions are possible over the next 12 to 72 hours

Steps to Take

- Turn on your TV/radio. You’ll get the latest weather updates and emergency instructions.
- Know where to go. If you are ordered to evacuate, know the route to take and have plan of where you will go. Check-in with your friends and family.
- Keep your car fueled, in good condition, and stocked with emergency supplies and a change of clothes.

Prepare Your Home

- Regularly clean the roof and gutters.
- Maintain an area approximately 30’ away from you home that is free of anything that will burn, such as wood piles, dried leaves, newspapers and other brush.
- Connect garden hoses long enough to reach any area of the home and fill garbage cans, tubs, or other large containers with water.
- Review your homeowner's insurance policy and also prepare/update a list of your home's contents.

After a Wildfire

- Returning Home
    - Return home only when authorities say it is safe.
    - For several hours after the fire, maintain a "fire watch." Check and re-check for smoke, sparks or hidden embers throughout the house, including the roof and the attic.
    - Use caution when entering burned areas as hazards may still exist, including hot spots, which can flare up without warning. Evacuate immediately if you smell smoke.
- Cleaning Your Home
- Wear a NIOSH certified-respirator (dust mask) and wet debris down to minimize breathing dust particles.
- Discard any food that has been exposed to heat, smoke or soot.
- Do NOT use water that you think may be contaminated to wash dishes, brush teeth, prepare food, wash hands, or to make ice or baby formula.
- Photograph damage to your property for insurance purposes.

Before Wildfire season - Make a Wildfire plan

- Know your wildfire risk.
- Make a wildfire emergency plan.

- Build or restock your emergency preparedness kit, including a flashlight, batteries, cash, and first aid supplies.
- Familiarize yourself with local emergency plans. Know where to go and how to get there should you need to get to higher ground, the highest level of a building or to evacuate.
- Stay tuned to your phone alerts, TV, or radio, for weather updates, emergency instructions or evacuation orders.

Tornadoes

Tornadoes are nature's most violent storms. Spawned from powerful thunderstorms, tornadoes can cause fatalities and devastate a neighborhood in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long. Every state is at some risk from this hazard. Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others. Occasionally, tornadoes develop so rapidly that little, if any, advance warning is possible. Before a tornado hits, the wind may die down and the air may become very still. A cloud of debris can mark the location of a tornado even if a funnel is not visible. Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.

Before a Tornado

- To begin preparing, you should build an emergency kit and make a family communications plan.
- Listen to NOAA Weather Radio or to commercial radio or television newscasts for the latest information. In any emergency, always listen to the instructions given by local emergency management officials.
- Be alert to changing weather conditions. Look for approaching storms.
- Look for the following danger signs:
    - Dark, often greenish sky
    - Large hail
    - A large, dark, low-lying cloud (particularly if rotating)
    - Loud roar, similar to a freight train.
    - If you see approaching storms or any of the danger signs, be prepared to take shelter immediately.

Tornado Facts

Quick facts you should know about tornadoes:

- They may strike quickly, with little or no warning.
- They may appear nearly transparent until dust and debris are picked up or a cloud forms in the funnel.
- The average tornado moves Southwest to Northeast, but tornadoes have been known to move in any direction.
- The average forward speed of a tornado is 30 mph, but may vary from stationary to 70 mph.
- Tornadoes can accompany tropical storms and hurricanes as they move onto land.
- Waterspouts are tornadoes that form over water.
- Tornadoes are most frequently reported east of the Rocky Mountains during spring and summer months.
- Peak tornado season in the southern states is March through May; in the northern states, it is late spring through early summer.
- Tornadoes are most likely to occur between 3 pm and 9 pm, but can occur at any time.

Know the Terms

Familiarize yourself with these terms to help identify a tornado hazard:

- Tornado Watch - Tornadoes are possible. Remain alert for approaching storms. Watch the sky and stay tuned to NOAA Weather Radio, commercial radio or television for information.

- Tornado Warning - A tornado has been sighted or indicated by weather radar. Take shelter immediately.

During a Tornado
If you are under a tornado warning, seek shelter immediately! Most injuries associated with high winds are from flying debris, so remember to protect your head.

If you are in:	Then:
A structure (e.g. residence, small building, school, nursing home, hospital, factory, shopping center, high-rise building)	• Go to a pre-designated area such as a safe room, basement, storm cellar, or the lowest building level. If there is no basement, go to the center of a small interior room on the lowest level (closet, interior hallway) away from corners, windows, doors, and outside walls. Put as many walls as possible between you and the outside. Get under a sturdy table and use your arms to protect your head and neck. • In a high-rise building, go to a small interior room or hallway on the lowest floor possible. • Put on sturdy shoes. • Do not open windows.
A manufactured home or office	• Get out immediately and go to a pre-identified location such as the lowest floor of a sturdy, nearby building or a storm shelter. Mobile homes, even if tied down, offer little protection from tornadoes.
The outside with no shelter	If you are not in a sturdy building, there is no single research-based recommendation for what last-resort action to take because many factors can affect your decision. Possible actions include: • Immediately get into a vehicle, buckle your seat belt and try to drive to the closest sturdy shelter. If your vehicle is hit by flying debris while you are driving, pull over and park. • Take cover in a stationary vehicle. Put the seat belt on and cover your head with your arms and a blanket, coat or other cushion if possible. • Lie in an area noticeably lower than the level of the roadway and cover your head with your arms and a blanket, coat or other cushion if possible. In all situations: • Do not get under an overpass or bridge. You are safer in a low, flat location. • Never try to outrun a tornado in urban or congested areas in a car or truck. Instead, leave the vehicle immediately for safe shelter. • Watch out for flying debris. Flying debris from tornadoes causes most fatalities and injuries.

Thunderstorms & Lightning

All thunderstorms are dangerous. Every thunderstorm produces lightning. While lightning fatalities have decreased over the past 30 years, lightning continues to be one of the top three storm-related killers in the United States. On average in the U.S., lightning kills 51 people and injures hundreds more. Although most lightning victims survive, people struck by lightning often report a variety of long-term, debilitating symptoms.

Other associated dangers of thunderstorms include tornadoes, strong winds, hail and flash flooding. Flash flooding is responsible for more fatalities – more than 140 annually – than any other thunderstorm-associated hazard. Dry thunderstorms that do not produce rain that reaches the ground are most prevalent in the western United States. Falling raindrops evaporate, but lightning can still reach the ground and can start wildfires.

Before Thunderstorm and Lightning

To prepare for a thunderstorm, you should do the following:

- To begin preparing, you should build an emergency kit and make a family communications plan.
- Remove dead or rotting trees and branches that could fall and cause injury or damage during a severe thunderstorm.
- Postpone outdoor activities.
- Secure outdoor objects that could blow away or cause damage.
- Get inside a home, building, or hard top automobile (not a convertible). Although you may be injured if lightning strikes your car, you are much safer inside a vehicle than outside.
- Remember, rubber-soled shoes and rubber tires provide NO protection from lightning. However, the steel frame of a hard-topped vehicle provides increased protection if you are not touching metal.
- Shutter windows and secure outside doors. If shutters are not available, close window blinds, shades or curtains.
- Unplug any electronic equipment well before the storm arrives.

Lightning Risk Reduction When Outdoors

If you are:	Then:
In a forest	Seek shelter in a low area under a thick growth of small trees.
In an open area	Go to a low place such as a ravine or valley. Be alert for flash floods.
On open water	Get to land and find shelter immediately.

Facts about Thunderstorms

- They may occur singly, in clusters or in lines.
- Some of the most severe occur when a single thunderstorm affects one location for an extended time.
- Thunderstorms typically produce heavy rain for a brief period, anywhere from 30 minutes to an hour.
- Warm, humid conditions are highly favorable for thunderstorm development.
- About 10 percent of thunderstorms are classified as severe – one that produces hail at least an inch or larger in diameter, has winds of 58 miles per hour or higher or produces a tornado.

Facts about Lightning

- Lightning's unpredictability increases the risk to individuals and property.
- Lightning often strikes outside of heavy rain and may occur as far as 10 miles away from any rainfall.

- "Heat lightning" is actually lightning from a thunderstorm too far away from thunder to be heard. However, the storm may be moving in your direction.
- Most lightning deaths and injuries occur when people are caught outdoors in the summer months during the afternoon and evening.
- Your chances of being struck by lightning are estimated to be 1 in 600,000 but could be reduced even further by following safety precautions.
- Lightning strike victims carry no electrical charge and should be attended to immediately.

During Thunderstorms and Lightning:
If thunderstorm and lightning are occurring in your area, you should:

- Use your battery-operated NOAA Weather Radio for updates from local officials.
- Avoid contact with corded phones and devices including those plugged into electric for recharging. Cordless and wireless phones not connected to wall outlets are OK to use.
- Avoid contact with electrical equipment or cords. Unplug appliances and other electrical items such as computers and turn off air conditioners. Power surges from lightning can cause serious damage.
- Avoid contact with plumbing. Do not wash your hands, do not take a shower, do not wash dishes, and do not do laundry. Plumbing and bathroom fixtures can conduct electricity.
- Stay away from windows and doors, and stay off porches.
- Do not lie on concrete floors and do not lean against concrete walls.
- Avoid natural lightning rods such as a tall, isolated tree in an open area.
- Avoid hilltops, open fields, the beach or a boat on the water.
- Take shelter in a sturdy building. Avoid isolated sheds or other small structures in open areas.
- Avoid contact with anything metal—tractors, farm equipment, motorcycles, golf carts, golf clubs, and bicycles.
- If you are driving, try to safely exit the roadway and park. Stay in the vehicle and turn on the emergency flashers until the heavy rain ends. Avoid touching metal or other surfaces that conduct electricity in and outside the vehicle.

After a Thunderstorm or Lightning Strike
If lightning strikes you or someone you know, call 9-1-1 for medical assistance as soon as possible. The following are things you should check when you attempt to give aid to a victim of lightning:

- **Breathing** - if breathing has stopped, begin mouth-to-mouth resuscitation.
- **Heartbeat** - if the heart has stopped, administer CPR.
- **Pulse** - if the victim has a pulse and is breathing, look for other possible injuries. Check for burns where the lightning entered and left the body. Also be alert for nervous system damage, broken bones and loss of hearing and eyesight.

After the storm passes remember to:

- Never drive through a flooded roadway. Turn around, don't drown!
- Stay away from storm-damaged areas to keep from putting yourself at risk from the effects of severe thunderstorms.
- Continue to listen to a NOAA Weather Radio or to local radio and television stations for updated information or instructions, as access to roads or some parts of the community may be blocked.
- Help people who may require special assistance, such as infants, children and the elderly or those with access or functional needs.
- Stay away from downed power lines and report them immediately.
- Watch your animals closely. Keep them under your direct control.

All information taken from: www.ready.gov/texas

2016 4-H Consumer Judging Study Guide
Natural Disasters: Be Aware, Be Prepared

We all see them on TV, natural disasters such as tornados, floods, fires, and hurricanes, which devastate small towns and parts of urban areas. You might have a matter of days or hours to prepare for such events, but other times they strike out of the blue. We don't think that it will ever happen to us, in our town or our city — think again. These events are becoming more and more common, proving that no part of the country is immune to natural disasters. The Federal Emergency Management Agency educates and empowers Americans to take some simple steps to prepare for and respond to potential emergencies, including natural disasters.

One way to be prepared is to be equipped with the proper supplies that you may need in the event of an emergency or disaster. You can purchase emergency preparedness kits, or you can assemble one of your own.

The following is a list of some basic items that every emergency supply kit should include:

- Water: one gallon per person, per day (3-day supply for evacuation, 2-week supply for home)
- Food: non-perishable, easy-to-prepare items (3-day for evacuation, 2-week supply for home)
- Flashlight and extra batteries
- Battery-powered or hand crank radio (NAOO Weather Radio, if possible)
- First Aid Kit
- Medications (7-day supply) and medical items
- Sanitation and personal hygiene items
- Copies of personal documents (medication list and pertinent medical information, proof of address, deed/lease to home, passports, birth certificates, insurance policies)
- Cell phone with chargers
- Family and emergency contact information
- Extra cash
- Emergency blanket
- Whistle
- Dust mask (to help filter contaminated air)
- Plastic sheeting and duct tape (to shelter-in-place)
- Manual can opener
- Blankets or sleeping bags

Try to assemble your kit or purchase your kit well in advance of an emergency. Be sure it's ready to use. In a disaster situation, you may need to get your emergency supply kit quickly, whether you are sheltering at home or evacuating.

- Once you have gathered your supplies, pack the items in easy-to-carry containers.
- Clearly label the containers and store them where you can reach them easily.
- Remember that certain items, like medications and paper documents, need to be kept in waterproof containers.

Some additional information and related items found in the emergency kit include:

Water

Having an ample supply of clean water is a top priority in an emergency. Your supply kit should include a three-day supply of water, which is a gallon of water per person, per day. A normally active person

needs to drink at least two quarts of water each day. Water will also be needed for food preparation and hygiene.

To prepare the safest and most reliable emergency supply of water, it is recommended that you purchase commercially bottled water. Keep bottled water in its original container, and do not open it until you need to use it. Store bottled water in the original sealed container, and observe the expiration or "use by" date.

Fill your own containers of water. Use food-grade water storage containers, such as those found at surplus or camping supply stores. If you cannot buy this type of container, you can use 2-liter plastic soda bottles. Always completely clean your containers before storing the water. Do **not** use the following for water storage: Containers that have ever held anything poisonous, containers that can break easily (like those made of glass), containers without a tight seal, and milk jug-like containers (that can be hard to clean and are made of plastics that break down overtime).

Store all water in a cool, dark place in your home, office, and car. Replace water every six months.

Food

You will need at least a **3-day supply of food per family member**, including pets. You may want to store more than this amount. Remember, it is better to have extra food that you can share than to run out of food during an emergency. Choose foods that last a long time, do not need to be refrigerated, and are easy to make. Also, try to pick items that are high in calories and nutrition.

Examples of suggested emergency food supplies:

- Ready-to-eat canned meats, fruits and vegetables
- Canned juices, milk, soup (if powdered, store extra water)
- Staples: sugar, salt, pepper
- High energy foods: peanut butter, jelly, crackers, granola bars, trail mix
- Foods for infants, elderly persons or persons on special diets (for example, diabetics or those with allergies)
- Comfort/stress foods: cookies, hard candy, sweetened cereals, lollipops, instant coffee, tea bags
- Vitamins

Make sure you have a manual can opener and disposable utensils.

First Aid kits

In any emergency, a family member or you may suffer an injury. If you have these basic first aid supplies you are better prepared to help your loved ones when they are hurt. Choose one that allows you to treat a range of problems, from small cuts or burns to ones that require major bandaging. We also suggest you get familiar with how to use the kit before you need to.

Knowing how to treat minor injuries can make a difference in an emergency. You may consider taking a first aid class, but simply having the following things can help you stop bleeding, prevent infection, and assist in decontamination:

- Two pairs of Latex, or other, sterile gloves (if you are allergic to Latex)
- Sterile dressings to stop bleeding
- Cleansing agent/soap and antibiotic towelettes

- Antibiotic ointment
- Burn ointment
- Adhesive bandages in a variety of sizes
- Eye wash solution to flush the eyes (or as a general decontaminant)
- Thermometer
- Prescription medications you take every day (such as insulin, heart medicine, and asthma inhalers. You should periodically rotate medicines to account for expiration dates)
- Prescribed medical supplies (such as glucose and blood pressure monitoring equipment and supplies)
- Non-prescription drugs:
    - Aspirin or non-aspirin pain reliever
    - Anti-diarrhea medication
    - Antacid
    - Laxative

Other first aid supplies:

- Scissors
- Tweezers
- Tube of petroleum jelly or other lubricant

Battery Operated and Hand Crank Radios

Because power outages frequently accompany emergency situations, choosing a reliable radio that does not require electricity is critical to the safety and welfare of your family's emergency plan. Emergency radios should have the following features:

- Hand crank to charge a built-in battery,
- Easy enough for a young child to crank,
- Solar panel that can generate power during the day,
- At least a half-hour of play time,
- Equipped with a flashlight (which will use up the charge much more quickly), and
- Lightweight.

Some criteria for choosing an emergency radio include one that is:

- Easy to operate,
- Has an effective range,
- Inexpensive, and
- Readily available.

Added features available in emergency radios include:

- Four-way charging: AC/DC wall adapter, solar cell, self-contained hand generator and automobile charger;
- Ability to reach local and national news and weather reports;
- Ability to pick up weak signals; and
- Multi-band radio channels: AM/FM/SW (both short wave and broad bands that receive hundreds of channels worldwide may be helpful during emergencies).

According to Consumer Reports Magazine, important criteria for comparing emergency radios include:

- Price,
- Length of radio play (in minutes),
- Crank time (in minutes),
- Weight,

NOAA Weather Radio

NOAA Weather Radio is a service of the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce. Continuous weather information is broadcasted 24 hours a day, seven days a week, and originates from local National Weather Service offices around the country. When appropriate, other natural disasters and national emergencies are broadcasted as well.

NOAA Weather Radio provides up-to-the-second information on severe weather, such as severe thunderstorms, tornadoes, and flash floods. Many weather radio receivers are equipped with a tone alert feature that will sound an alarm when severe weather warnings are issued.

Weather band radios can be purchased from many retail outlets, including electronics, department, sporting goods, and boat and marine accessory stores. When purchasing a radio, consider one with a battery backup, which is crucial since power outages often occur during storms.

Keep it Fresh

Check the expiration dates on food, water, medicine, and batteries at least two times per year. It's extremely important that all items in your kit are functional at the time of an emergency.

- Store your kit in a convenient place known to all family members. Keep a smaller version of the Family Emergency Kit in the trunk of your car.
- Keep items in air-tight plastic bags.
- Change your stored water supply every six months so it stays fresh.
- Rotate your stored food every six months.
- Re-evaluate your kit and family needs at least once a year. Replace batteries, update clothes, etc.
- Ask your physician or pharmacist about storing prescription medications.

Resources

"Emergency Supply List." FEMA, http://www.fema.gov/media-library-data/1390846764394-dc08e309debe561d866b05ac84daf1ee/checklist_2014.pdf

"Are you Ready? An In-depth Guide to Citizen Preparedness." FEMA, August 2004. http://www.fema.gov/media-library/assets/documents/7877

"Food and Water in an Emergency." FEMA, August 2004.

Insect Repellent

Lyme. West Nile. Zika. The list of insect-borne diseases to worry about seems to get longer - and scarier - every year. Whether you're enjoying the great outdoors in your own backyard or on a tropical island, when you apply insect repellent, you want the best, most effective protection from biting bugs.

Ratings provided by Consumer Reports[1] identify which products work best against the Aedes mosquitoes (the aggressive mosquitoes that tend to bite during the day and that can spread Zika) as well as against Culex mosquitoes (night-time biters that can spread West Nile) and deer ticks (which can carry Lyme and other diseases). And choosing the right repellent matters.

Prevention and Control[3]:
In order to avoid mosquito bites, one should:

- Use insect repellents when you go outdoors. Repellents containing DEET, picaridin, IR3535, and some oil of lemon eucalyptus and para-menthane-diol products provide longer-lasting protection.
- When weather permits, wear long sleeves, long pants, and socks when outdoors. Mosquitoes may bite through thin clothing, so spraying clothes with repellent containing permethrin or another EPA-registered repellent will give extra protection. Don't apply repellents containing permethrin directly to skin.
- Take extra care during peak mosquito biting hours. Be sure to use repellent and protective clothing from dusk to dawn or consider avoiding outdoor activities during these times.

Ingredient Information:
Around half of the respondents who use insect repellent during the summer (which is more than a third of all adult Americans) in Consumer Reports' most recent nationally representative survey of more than 2,000 U.S. adults said they don't read the ingredients on insect repellents before they buy them. That's a mistake, because the active ingredient and concentration matters, in terms of both effectiveness and safety.

Products with any one of these three active ingredients - deet, oil of lemon eucalyptus, and picaridin - work well. And all are safe, even for pregnant women, when used appropriately. Here's what you need to know about each.

- **DEET:** Many people assume that the more DEET (N, N-diethyl-meta-toluamide) a product contains, the better. A higher concentration does not mean that the product will work better. It means that it will be effective for a longer period of time. Additionally, tests have found that products with 15 to 30 percent DEET can provide long-lasting protection against mosquitoes and ticks. And some research suggests that higher concentrations and excessive doses can pose risks, including rashes and possibly even disorientation and seizures. That's why it's recommended to avoid repellents with more than 30 percent DEET, and not use it at all on babies younger than two months. Infants should be protected from mosquito bites by using a carrier draped with mosquito netting with an elastic edge for a tight fit. Also, make sure you don't go too low on DEET concentration. Products with just 7 percent DEET have shown not to work well, especially against Aedes (daytime) mosquitoes.

- **Picaridin:** This is a synthetic repellent modeled after a compound that occurs naturally in the black pepper plant. In Consumer Reports'[1] study, a 20-percent picaridin product was the top repellent overall - and the only one to ward off both species of mosquitoes, plus ticks, for at least eight hours.

  But concentration matters: Another picaridin product, this one just 5 percent, was the second-lowest scoring insect repellent. And while picaridin seems safe, even for use on infants, it can irritate your skin and eyes, so use it carefully.

- **Oil of Lemon Eucalyptus:** This is a naturally occurring compound, extracted from the gum eucalyptus tree; products that contain 30 percent oil of lemon eucalyptus (OLE) have proven to ward off mosquitoes and ticks for at least seven hours.

  All the other products with plant oils - including cedar, cinnamon, citronella, clove, geranium, lemongrass, rosemary, or peppermint – have shown to provide little protection, often failing in tests within a half hour, especially against Aedes (daytime) mosquitoes. OLE also appears to be relatively safe when used properly, though it can cause temporary eye injury, and the Food and Drug Administration recommends against using it on children under three.

- **IR3535 and 2-Undecanone:** Tests have shown that products with these two ingredients are less effective (compared to deet, picaridin, and OLE), offering limited protection. IR3535 is a man-made compound that is structurally similar to a naturally-occurring amino acid, and 2-Undecanone is a synthesized version of a compound found in rue, wild tomatoes, and several other plants.

  The IR3535 product we tested worked well against ticks and Culex mosquitoes, but offered only three hours of protection against Aedes mosquitoes. And the repellent with 2-Undecanone worked for only about three hours against all three insects. Both products appear relatively safe but, as with all repellents, should be used with caution, especially on children.

The Buzz: Things to Think About

Be Wary of "Natural" Repellents:
Several makers of "natural" insect repellents (which typically contain essential plant oils like cedar, citronella, lemongrass, and rosemary) claim that their products can help ward off mosquitoes, including those that carry the Zika virus. However, tests show that was true only for products tested with oil of lemon eucalyptus.

Don't Combine Sunscreen and Bug Repellent:
Products that combine sunscreen and repellent are not recommended because sunscreen may need to be reapplied more often and in larger amounts than needed for the repellent component to provide protection from biting insects. In general, the recommendation is to use separate products, applying sunscreen first and then applying the repellent. Due to the decrease in SPF when using a DEET-containing insect repellent after applying sunscreen, travelers may need to reapply the sunscreen more frequently.

The Right Way to Spray:
To optimize safety and effectiveness, repellents should be used according to the label instructions. Proper application and use is essential, both for maximum protection and to avoid possible side effects, including skin or eye irritation. That means:

- Apply repellent only to exposed skin or clothing (as directed on the product label). Never put it on under clothing.
- Use just enough to cover and only for as long as needed; heavier doses don't work better and can increase risks.
- Don't apply repellents over cuts, wounds, or irritated skin.
- When applying to your face, spray first on your hands, then rub in, avoiding your eyes and mouth, and using sparingly around ears.
- Don't let young children apply. Instead, put it on your own hands, then rub it on. Limit use on children's hands, because they often put their hands in their eyes and mouths.
- Don't use near food, and wash hands after application and before eating or drinking.
- At the end of the day, wash treated skin with soap and water, and wash treated clothing in a separate wash before wearing again.

References:

[1]Consumer Reports (2016). Insect Repellent Buying Guide. Taken from: www.consumerreports.org/cro/insect-repellent/buying-guide.htm on October 26, 2016.

[2]Centers for Disease Control and Prevention (2015). Chapter 2: The Pre-Travel Consultation – Protection Against Mosquitoes, Ticks & Other Arthropods. Taken from: http://wwwnc.cdc.gov/travel/yellowbook/2016/the-pre-travel-consultation/protection-against-mosquitoes-ticks-other-arthropods on October 26, 2016.

[3]Centers for Disease Control and Prevention (2016). West Nile Virus – Prevention and Control. Taken from: http://www.cdc.gov/westnile/prevention/index.html on October 26, 2016.

Centers for Disease Control and Prevention (2016). Fight the Bite for Protection from Malaria: Guidelines for DEET Insect Repellent Use. Taken from http://www.cdc.gov/malaria/toolkit/DEET.pdf on October 26, 2016.