

# Consumer and Family Sciences



Department of Foods and Nutrition



## Altering Recipes for Better Health

**D**ietary guidelines recommend that we reduce the amount of fat, sugar, and salt that we eat. These same guidelines encourage us to include more fiber in our diets by eating whole grain products and more fruits and vegetables.

You may decide that the best way for you to improve your diet is by reducing the portions of the foods you normally eat or by eating less of foods that are high in fat, sugar, and salt. But, one way to improve your diet is by altering the recipes of the foods that you are now eating by using less fat, sugar, and salt. You may or may not be satisfied with the results of these changes, depending on your personal tastes and standards, as well as the type of food.

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### Changing the ingredients

Some recipes can be altered by simply reducing an ingredient or substituting one for another. Some general reductions and substitutions include the following:

- Sugar can be reduced by  $\frac{1}{3}$ . Example: If a recipe says 1 cup, use  $\frac{2}{3}$  cup. This works best in home canned and frozen fruits and in making puddings and custards. It may be less desirable for cookies and cakes. It should be remembered that noncaloric sweeteners work best as substitutes for sugar in uncooked foods. They are usually adversely affected by heat. These substitutes also do not perform the other functions of sugar, which will be discussed later in this publication.
- Fat can often be reduced by  $\frac{1}{3}$ . Example: If the recipe has 6 tablespoons, use 4 tablespoons. This works best in gravies, sauces, puddings, and quick breads.
- Salt may be left out or reduced by  $\frac{1}{2}$ . Example: If the recipe says 1 tablespoon, use  $1\frac{1}{2}$  tea-

spoons. Use spices and herbs for a different flavor.

- Whole grain flour can be substituted for  $\frac{1}{4}$  to  $\frac{1}{2}$  of refined flour. Example: If recipe has 3 cups all-purpose flour, use  $\frac{3}{4}$  cup whole grain flour and  $2\frac{1}{4}$  cups all-purpose flour.
- Yogurt or cottage cheese may be substituted for sour cream in some sauce and dip recipes.
- Use low-fat cheese in place of higher fat cheese in recipes.
- Skim milk may be substituted for whole milk in most recipes.
- Evaporated milk or whipped nonfat dry milk may be substituted for cream in some recipes calling for whipped cream.

### Functions and effects

Reducing sugar, salt, and fat can affect different foods in different ways. The following information tells the functions of these ingredients in different foods, gives the typical proportions of the ingredients, and lists the effects of reducing them in different foods.



## CANDIES

### Function

- Sugar is needed for crystallization, proper consistency, texture, and flavor.
- Fat contributes to rich flavor and helps prevent large crystals from forming.

### Typical Proportions

- About 3 cups sugar per cup liquid
- Fat highly variable
- Salt variable

### Possible Effects of Reduced Sugar, Fat, and Salt

- Volume, texture, and consistency may be affected drastically if sugar is reduced. Do not change sugar amounts in candy recipes.
- Fat reduction may make a coarser texture.
- Salt reduction may affect flavor.

## CANNED AND FROZEN FRUITS

### Function

Sugar helps to preserve firm texture and bright color during processing.

### Typical Proportions

- $\frac{1}{2}$  to  $1\frac{1}{3}$  cups sugar per cup water for syrup
- $\frac{1}{4}$  to  $\frac{1}{3}$  cup sugar per pint of frozen fruit (dry pack)

### Possible Effects of Reduced Sugar

- Texture not as firm, color not as bright, flavor not as sweet.

## CANNED VEGETABLES

### Function

- Salt adds flavor

### Typical Proportions

- 1 teaspoon salt per quart:  $\frac{1}{2}$  teaspoon salt per pint

### Possible Effect of Reduced Salt

- Different flavor.

## COOKED FRUITS

### Function

• Sugar helps retain shape and texture in cooked fruit. When too much sugar is used, fruits shrink and become firm. Too much sugar hides true fruit flavor. Sugar increases transparency, which brightens the color of fruit.

### Typical Proportions

- $\frac{1}{2}$  cup sugar to each cup water used in cooking

### Possible Effects with Reduced Sugar

Softer texture, color not as bright, and flavor less sweet.

## COOKIES

### Function

- Sugar increases browning, tenderness, and spreading while baking. It also gives a sweet flavor.
- Fat increases tenderness.
- Salt adds flavor

### Typical Proportions

- $\frac{1}{3}$  to  $1\frac{1}{3}$  cups sugar per cup flour
- $\frac{1}{4}$  to  $\frac{1}{2}$  cup fat per cup flour
- $\frac{1}{4}$  to  $\frac{1}{2}$  teaspoon salt per cup flour

### Possible Effects of Reduced Sugar, Fat, and Salt

- Less sugar means less spread, paler crust, less tender texture, and less sweet flavor.
- Reduced fat may make cookies less tender
- Reduced salt may affect the flavor slightly.

## CUSTARDS AND PUDDINGS

### Function

- Sugar makes a softer custard and raises the temperature of coagulation.
- Salt adds flavor

### Typical Proportions

- $1\frac{1}{2}$  to 3 tablespoons sugar per cup milk
- $\frac{1}{8}$  teaspoon salt per cup milk

### Possible Effects of Reduced Sugar and Salt

- The consistency of custard or pudding will be stiffer and the baking time may be shorter with less sugar.
- Reduced salt may affect flavor.

## ICE CREAM

### Function

- Fat (in cream) helps make a smooth texture and aids in incorporation of air during freezing. It also gives a rich flavor.
- Sugar lowers the freezing point and lengthens the freezing time so ice cream will be softer at a given temperature. It also helps in the formation of smooth texture and adds sweetness.
- Salt adds flavor

### Typical Proportions

- $\frac{1}{2}$  cup sugar to each cup of milk and cream
- Liquid usually about  $\frac{1}{2}$  milk and  $\frac{1}{2}$  cream
- Salt variable

### **Possible Effects of Reduced Sugar, Fat, and Salt**

- Texture may be coarser and harder with less sugar. The flavor may also be less sweet and the freezing time may be shortened if less sugar is used.
- With less fat (cream), texture may be coarse.
- Reducing salt has little effect on flavor.

### **MAIN DISHES**

#### **Function**

- Salt adds flavor

#### **Typical Proportions**

- 1 teaspoon salt to 4 to 6 servings
- 1 teaspoon salt to each pound ground beef

#### **Possible Effect of Reduced Salt**

- May change flavor

### **PASTA, RICE, AND LEGUMES**

#### **Function**

- Salt adds flavor

#### **Typical Proportions**

- 1 teaspoon salt to each cup of uncooked pasta, rice, and legumes

#### **Possible Effect of Reduced Salt**

- May change flavor

### **PICKLES**

#### **Function**

- Sugar is important for texture of pickles and may act as a preservative if used in high enough proportions.
- Salt is essential in brine to permit the growth of certain microorganisms that produce acid. Acid prevents spoilage.

#### **Typical Proportions**

- Highly variable

#### **Possible Effects of Reduced Salt and Sugar**

- Never attempt to alter pickle recipes. There may be spoilage and changes in texture.

### **QUICK BREADS**

#### **Function**

- Fat shortens and tenderizes by coating the gluten in dough. Pastries that are said to be "short" are crisp and crumbly because they are made with a large proportion of butter or other shortening.
- Sugar sweetens, tenderizes, and causes outer surfaces to brown during baking. Sugar also delays drying out and may increase the volume.

- Salt adds flavor

#### **Typical Proportions**

- 1 to 4 tablespoons fat per cup flour
- 1 to 4 tablespoons sugar per cup flour
- $\frac{1}{4}$  to  $\frac{1}{2}$  teaspoon salt per cup flour

#### **Possible Effects of Reduced Sugar, Fat, and Salt.**

- Less sugar may result in less browning, less tender texture, greater tendency to tunnel, greater tendency to dry out, and a less sweet taste.
- Less fat may result in a less tender and dry texture and a greater tendency to tunnel.
- Reduced salt may affect flavor slightly.
- Keeping time will be shortened.

### **SAUCES AND GRAVIES**

#### **Function**

- Fat separates the flour or starch granules to prevent lumping during cooking.
- Salt adds flavor

#### **Typical Proportions**

- 1 to 3 tablespoons fat per cup liquid
- $\frac{1}{4}$  teaspoon salt per cup liquid

#### **Possible Effects of Reduced Fat and Salt**

- Smooth sauces can be made with less fat.
- Sauces will have a milder flavor with less fat and salt. If all fat is removed, use cold liquid to separate starch and flour granules.

### **SHORTENED CAKES**

#### **Function**

- Fat shortens and tenderizes by coating the gluten with dough. Shortening (solid fats used in baking) has more emulsifying properties than liquid fat. Shortening helps give a finer grain and texture. Do not substitute oil for shortening in recipes. Use specially formulated recipes for oil.
- Sugar contributes to tenderness, fine texture, moistness, crust browning, and flavor.

- Salt adds flavor

#### **Typical Proportions**

- $\frac{1}{2}$  to  $\frac{3}{4}$  cup sugar per cup of flour
- 2 to 4 tablespoons fat per cup of flour
- $\frac{1}{8}$  to  $\frac{1}{4}$  teaspoon salt per cup of flour

### **Possible Effects of Reduced Sugar, Fat, and Salt**

- Cakes with less sugar may have a paler crust and less color. They may also be drier with a more open texture and have a more rounded top. The flavor may be less sweet, the cakes may dry out faster, and they will have less volume.

- Cakes with less fat may affect flavor slightly.

### **SWEET SPREADS (JELLIES, JAMS, PRESERVES, BUTTERS)**

#### **Function**

- Sugar is necessary as a preservative to prevent spoilage. It is essential in the correct proportion for jelling.

#### **Typical Proportions**

- Highly variable

#### **Possible Effect of Reduced Sugar**

- Never tamper with recipes for sweet spreads unless they are to be refrigerated or frozen. They are carefully balanced to produce a high quality product that will not spoil.

### **YEAST BREADS AND ROLLS**

#### **Function**

- Fat increases tenderness and enhances keeping quality. Large amounts decrease volume.
- Sugar increases the rate of fermentation for yeast, except in sweet rolls with larger proportions of sugar. Then sugar depresses the yeast action. Sugar contributes to a soft texture, flavor, and a brown crust.
- Salt inhibits yeast fermentation, improves texture, has a slight toughening effect, and adds flavor.

#### **Typical Proportions**

- 1 teaspoon to 1 tablespoon fat per cup flour in bread; 1 to 4 tablespoons fat per cup flour in rolls
- 0 to 1 tablespoon sugar per cup flour in bread; 1 teaspoon to 2 tablespoons sugar per cup flour in rolls
- 1/4 to 1/2 teaspoon salt per cup flour in bread and rolls

#### **Possible Effects of Reduced Fat, Sugar, and Salt**

- Less fat may reduce keeping time.
- Less sugar may either slow down or speed up the rate of fermentation. Rolls may not brown as quickly. Texture may not be as tender or as moist.
- Less salt may speed up fermentation of yeast and cause poor

texture. Satisfactory bread can be made with less fat or sugar but not without some salt.

### **A HEALTHIER RECIPE**

Here is an example of how a recipe can be altered by reducing or substituting certain ingredients.

#### **Chicken in Sauce**

##### **Old Recipe**

Yield: 6 servings

6 meaty chicken pieces

1/3 cup butter or margarine

1 can (4 ounces) mushrooms, drained

2 cans (10 3/4 ounces) cream of mushroom soup

1 large clove garlic, minced

2/3 cup cream

Slivered almonds

In large skillet, brown chicken in butter. Remove chicken. Brown mushrooms; stir in soup and garlic. Add chicken. Cover and cook over low heat for 45 minutes. Blend in cream: heat slowly. Serve with rice. Garnish with slivered almonds.

##### **New Recipe**

Yield: 6 servings

6 meaty chicken pieces, skin removed

2 tablespoons butter or margarine

1 can (4 ounces) mushrooms, drained (reserve and slice one for garnish)

1 can cream of mushroom soup

1/8 tablespoon each thyme, oregano, and rosemary

1 large clove garlic, minced

2/3 cup evaporated milk or whole milk

Sliced mushroom or paprika

In large, nonstick skillet, brown chicken in butter. Remove chicken. Brown mushrooms; stir in soup, garlic, and seasonings. Add chicken. Cover and cook over low heat 45 minutes. Blend in milk; heat slowly. Serve with rice (wild rice or brown rice may be used). Garnish with sliced mushroom. To decrease the sodium even further, substitute a white sauce made with chicken stock for the can of mushroom soup.

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