

# PREVENTING CHILDHOOD OBESITY – part 7

## Choosing Low Fat Foods

### Training Curriculum: Survey Question 7

#### OBJECTIVES

1. Staff will understand the health benefits of reducing fat intake.
2. Staff will be able to identify strategies for reducing fats and help participants incorporate them in their food choices.

#### MATERIALS

Nutrition Education Plan Survey

Nutrition Education Module for question 7

Staff Reference Sheet

Participant Flyer:     *“The Facts on Fats”*  
                              *“Fats in Foods”*  
                              *“Cut Out Fats to Cut Back Calories”*  
                              *“Changing Recipes to Reduce Fats”*

#### BACKGROUND INFORMATION

Discuss the following:

The Food Guide Pyramid recommends eating more vegetables, fruits, breads and non-fat milk products and less whole milk, cheese, ice cream, meat and fatty foods at the tip of the pyramid.

#### **Why is it important to cut down on foods that are higher in fats?**

*Solicit answers from group and supplement with the following information as needed.*

- A diet high in saturated fats may increase blood cholesterol levels. High levels of cholesterol in the blood can increase the risk of heart disease.
- High fat diets may increase the risk of some cancers (e.g., breast and colon cancer).
- High fat foods increase overall calorie intake, which then increases risk of obesity. Obesity, in turn, increases the risk for gallbladder disease, hypertension and insulin resistance/diabetes.
- Because of their higher fat content, milk and meat can have higher amounts of pesticides and environmental toxins than plant foods. Limiting these foods would reduce exposure.

#### **Let's not forget, though, that fats in the diet are necessary, especially for young children.**

*Ask staff to describe the roles of fats in diet and health. Supplement their responses with the following information as needed.*

- Fats provide essential fatty acids, necessary for proper growth in children.

- Fats are an important source of energy for the body, contributing nine calories per gram rather than the four calories per gram from carbohydrates or proteins.
- They are needed to carry the fat-soluble vitamins, D, E, A, and K in foods and aid in their absorption from the intestine.
- Fats help to maintain healthy skin, and are important for hormone production and function.
- Body fat is important for temperature regulation, as well as the support and protection of our organs.
- Fats are a key factor in how foods taste. They absorb the essence from spices and carry their flavors into our foods. Not only are they necessary for the way our foods taste, but they will also determine whether your cookies crunch or your muffin crumbles!

### **Why are we getting too many fats in our diets?**

It all boils down to food choices and portion control. Surveys show that fruits, vegetables and breads are being displaced by meat, snack foods, pastries and fast food, which can contribute a great deal of fat in our diets, depending on the type chosen. In addition, Americans often add more fat in cooking, or they buy commercially prepared foods and fast foods that are high in saturated fat or trans fatty acids. Portion control is fast becoming a lost art. Think about all the Super-Size meals and foods that you see in restaurants and grocery store aisles! In this case, more isn't better!

The Dietary Guidelines suggest cutting down on *total* fat intake and recommend a diet higher in unsaturated fat and lower in saturated fat and trans-fatty acids. (*Hand out the flyer "The Facts on Fats" and briefly discuss unsaturated, saturated fat and trans fatty acids.*) Although some fats are more heart healthy than others, ounce for ounce, they all have the same amount of calories. Oil is just as fattening as butter on the waistline, but oil is better than butter for the heart.

The bottom line is that we have to watch how much and what types of fats we eat.

### **How do we do that?**

Some options include the following:

- Make sure we are careful with our food choices. *Have staff suggest how to modify choices at dinner if lunch has a higher fat content.*
- Modify recipes to decrease their fat content. *Have staff describe strategies that can be used to reduce the fat in cooking. Use the handout "Changing Recipes to Reduce Fats" for additional tips.*
- Use more reduced-fat foods in our diet. *Have staff list a high-fat food item and a lower-fat alternative. Use the handout "Fats in Foods" for some examples.*
- Eat smaller portions of high fat foods.

Our goal is to help WIC participants make low fat choices, but there are a lot of obstacles in the way. **What are a few of them?**

*Divide into groups and have staff discuss reasons that they personally find difficult to follow a low saturated fat, moderate total fat diet. Then discuss as a group and supplement with the following information if indicated.*

- **Confusing.** It is difficult to keep track of all the different kinds of fat and the fat content of foods. The Dietary Guidelines suggest limiting fat to 30% of the calories. No one wants to count ‘fat grams’!
- **Mixed Messages.** The research findings about fat and cholesterol change. People don’t necessarily trust what they hear. Remember how our view on eggs has changed!
- **Availability.** Fast food chains reign! Also, many prepackaged crackers, donuts, muffins, etc. contain shortening and hydrogenated fats instead of oil. No one has time to cook a homemade meal, let alone make homemade breads and crackers!
- **Taste.** High fat foods taste good. Let’s face it, most people choose their foods based on taste. Some people don’t like the taste of low-fat or reduced-fat foods. (*Low-fat or reduced-fat foods can still taste good, but many people are simply not used to them.*)
- **Commercialization.** Television makes many high fat foods appealing.
- **Habit.** It is difficult to learn to cook and season foods in new ways. Many people rely on eating out more often, and choosing low fat foods at a fast food restaurant can be a challenge.
- **Family Pressure.** Kids/husband may want ‘full fat’ foods because they taste better!

Participants will have some of the same barriers. We need to encourage them to make small changes at a time. These habits won’t change overnight! We also need to apply the parenting principals that have been discussed in other modules to address objections and barriers that participants may raise.

## REVIEW OF THE NUTRITION EDUCATION MODULE AND HANDOUTS

*Hand out the module for question 7 and the flyers.*

This module is designed to encourage families to reduce fat intake beginning with a question about a simple change they could make.

**Based on your experience of working with families, how do you feel participants will be most likely to answer the first question on the module?**

The participant may answer this question honestly or she may tell you what she wants you to hear. There is no way that you can be certain. Keep in mind that the assessment is only as good as the information that the participant provides. However, because the information on reducing fat is so important, it will be of value to continue on with the module and see what else might come up in the conversation.

**How could you use visuals to enhance this module?**

*Allow staff to respond, emphasizing the importance of having the participant actually see the fat.*

There are many ways to help clients visualize fats, their different properties, and the hidden amounts of fats in foods. Here are a few ideas:

- Have a display of empty food packages, pictures of foods, or plastic food models that show high fat foods and comparable products that are lower in fat to provide clients with an idea of *the variety of foods* available to choose from. Also emphasize the portion sizes listed on the labels.
- Take test tubes, plastic containers or paper cups, and measure out the amounts of fats in certain foods, using shortening or modeling clay. Nasco sells “Fat Tubes” that illustrate the fat content of various foods, and actually seeing the quantities makes for a memorable and high-impact encounter.
- Review the physical properties of different fats by having pictures or actual samples of butter, margarine, vegetable oil, and animal fat. Focus on how saturated fats are more solid, and how polyunsaturated fats are liquid at room temperature. Then introduce partially hydrogenated fats as in-between those consistencies. Don’t forget to mention that the fats in our bodies tend to mirror the consistency of fats in the foods we eat.

Then ask the mother which high fat foods her child likes and which low fat foods he likes. Be sure to encourage her by mentioning how good it is that her child already likes certain low fat foods!

The question “Which of the foods on the low fat list has your child never tried?” serves as a crossover to get the mother thinking about substituting some new choices. You can make the idea of trying something new less intimidating by suggesting that she make small changes at a time.

Document whatever choices the mother is willing to make on the NER for follow-up at the next visit. If the mother seems reluctant to commit to any changes, ask her what obstacles stand in the way. Discuss her issues, applying the parenting information gleaned from the other modules as appropriate. Then document the outcome in the NER.

Optional: You may not have time to complete the next section. However, some participants may be very receptive to learning about how to reduce fat in their cooking. If time permits, ask the participant how she might modify her cooking techniques at home to reduce fat. Provide her with the handout “*Changing Recipes to Reduce Fats*” and ask her which ideas she may try. Again document on the NER if she is willing to make any changes.

## **PRACTICE SESSION – USING THE NUTRITION EDUCATION MODULE**

Role play the module in front of the group. Ask for volunteers to play the part of a typical caregiver while you play the more difficult part of the nutrition aide. (You may want to ask for some volunteers prior to the training session.)

For each role play, the caregiver should have a different problem or situation. Some suggestions include:

“My child is real picky. The only thing I can get him to eat for breakfast is donuts or Twinkies.”

“My husband wants me to cook like his mother does. She loads everything with grease.”

Be prepared to make some mistakes so staff realize that role playing is a learning experience, not a ‘command performance.’ After each role play, get feedback from staff by asking the following questions:

“What part of the contact did you especially like?”

“What could be done to improve the contact?”

After doing several role plays, divide the group into threes and practice some role plays on their own. Have one person be the client, another person the educator, and the third person an observer. Once the session is completed, have the observer provide feedback on the use of reflective listening, open-ended questions, and other counseling techniques you have learned.

If staff are reluctant to do individual role plays, do a ‘group role play’ by dividing the group in half. Assign each ‘half’ to play the role of the nutritionist or the parents. Keep the discussion between the teams going by asking questions such as:

“You are the nutritionist who is about to discuss choosing low fat foods. How would you get them started?” (Tell them to refer to the module if they have difficulty.)

Then ask the participant group, “What might a participant say in return?”

Go back to the nutritionist group and have them give responses to what the ‘participant’ group said.

Continue working the two groups until they are satisfied that the participant group can come away from the session with concrete suggestions that can be applied at home.

# The Facts on Fats



## Fats: A Good Thing in Moderation

Fats are important to keep us healthy. We need them for growth and energy, to keep our skin healthy, to help our body produce and use hormones, and to make our foods taste and smell good!

## Why do we need to cut down on fats in our diet?

Too much of a good thing is not always smart! Diets high in fats can lead to heart disease, cancer, and becoming overweight. Children who are overweight will be more likely to have high blood pressure, diabetes and gall bladder disease at an earlier age.

## Are some fats better than others?

Different fats may affect our health in different ways. The chart below tells us a little about fats, where they are from, and how they affect cholesterol levels in our blood.

FATS THAT RAISE CHOLESTEROL	SOURCES	EXAMPLES
Dietary cholesterol	Foods from animals	Meats, egg yolks, dairy products, organ meats (heart, liver, etc.), fish and poultry
Saturated fats	Foods from animals	Whole milk, cream, ice cream, whole-milk cheeses, butter, lard and meats
	Certain plant oils	Palm, palm kernel and coconut oils, cocoa butter
Trans fats	Partially hydrogenated vegetable oils	Cookies, crackers, cakes, French fries, fried onion rings, donuts
FATS THAT LOWER CHOLESTEROL	SOURCES	EXAMPLES
Polyunsaturated fats	Certain plant oils	Safflower, sesame, soy, corn and sunflower-seed oils, nuts and seeds
	Certain fish	Salmon, mackerel, sardines
Monounsaturated fats	Certain plant oils	Olive, canola and peanut oils, avocados

## So, how much fat am I allowed in a day?

Experts say that we should limit fat to less than 30% of daily calories, with less than 10% of those calories from saturated fats. For children, this would translate to 50 grams or less total fats, and about 17 grams from saturated fats. For an adult, it would be between 60 –67 grams of total fat, with 20-22 grams coming from saturated fats.

To get an idea of fat grams, picture this: one teaspoon of butter has 4 grams of fat, and a stick of butter has 64 grams. One cup of whole milk has about 8 grams of fat, and a cup of skim milk has less than one gram of fat. A Big Mac with a medium order of French fries has 53 grams of fat – that’s nearly one day’s worth in one meal!

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# Changing Recipes to Reduce Fats



Did your mother ever tell you that in order to become a good cook, you had to follow the recipe EXACTLY? Guess what! There are some simple changes you can make to recipes that will make them lower in fats and calories – and the best part is, your family won't even be able to tell the difference!

Keep in mind a few helpful tips. Some recipes, like casseroles and soups, are more easily changed than others. Baked goods can also be changed, but cookie recipes often work better than cakes.

Think about these questions before you decide to change a recipe:

***How often do you fix this food?***

A favorite family meal that you make a lot would be a better choice to change rather than something you only have once in a while.

***How much do you eat?***

It would make more sense to change the recipe for a main dish than a side dish.

***Is the recipe high in fat, sugar or salt?***

Baked goods that are rich, moist and tender or look and feel oily are more likely to have a lot of fat in them, and could be changed.

Here are some simple tricks you can use to reduce the fat and calories in your favorite recipes.



Reduce fat by one-half. For example, if a quick bread recipe calls for 1 cup of oil, use 1/2 cup instead. Replace the fat with fruit purees, applesauce or nonfat yogurt. Don't use this method with yeast breads or piecrusts!



Use vegetable oil instead of solid fats like shortening, lard or butter. Use about 1/4 less than the recipe calls for. For example, if a recipe says 1/4 cup shortening or butter (4 tablespoons), use 3 tablespoons of oil.



Use plain lowfat or nonfat yogurt instead of sour cream. Use the same amount of yogurt as sour cream. You can also use buttermilk or blended lowfat cottage cheese.



Use skim or 1% milk instead of whole milk or half and half. For extra richness you can use evaporated skim milk.



Use low-fat ricotta cheese for regular cream cheese.



Replace one egg with two egg whites.

Remember, there are two ways to reduce fat in any recipe:

1. Remove ingredients that are sources of fat.
2. Replace high-fat ingredients with low-fat ingredients.

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# Fats In Foods



## Low Fat Food Choices:

Food Item	Number of Fat Grams
2% Milk	4.7 g per 8 oz cup
1% Milk	2.6 g per 8 oz cup
Skim Milk	0.4 g per 8 oz cup
Lowfat Yogurt	4 g per 8 oz cup
Skim Yogurt	0.0 g per 8 oz cup
Mozzarella, part skim	4.5 g per 1 oz
Swiss	7.8 g per 1 oz
Lite Cream Cheese	4.7 g per 1 oz (2 Tbsp)
Lite Ranch Dressing	3.3 g per 1 Tbsp
Regular Hamburger	9 g
Grilled Chicken Deluxe	5 g
Small French Fries	10 g
Popcorn (light butter)	3 g per 3 cups
Pretzels	1 g in 1 oz
Apple	0.5 g in 1 medium apple
Carrot	0.1 g in 1 carrot
Graham Crackers	2 g in 2 crackers
Vanilla Wafers	3.2 g in 5 cookies

## High Fat Food Choices:

Food Item	Number of Fat Grams
Whole Milk	8.5 g per 8 oz cup
Whole Yogurt	7.4 g per 8 oz
American Cheese	8.9 g per 1 oz
Cheddar Cheese	9.4 g per 1 oz
Cream Cheese	9.5 g per 1 oz (2 Tbsp)
Regular Ranch Dressing	10.2 g per 1 Tbsp
Big Mac	31 g
Crispy Chicken Sandwich	25 g
Medium Fries	22 g
Large Fries	26 g
Popcorn (butter)	6 g per 3 cups
Corn Chips	8.8 per 1 oz
Nacho Chips	7.3 per 1 oz
Potato Chips	9.8 per 1 oz
Oreo Cookie	2 g per cookie
Chewy Chips Ahoy	3 g per cookie

Remember, most children should have a total of 50 grams of fat in a day and most adults should have between 60 – 67 grams of total fat in a day.

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# Cut Out Fats to Cut Back Calories!



Here are some practical tips you can try to reduce fats and calories in your diet:

- ✎ Trim all visible fat from meats that you serve your family.
- ✎ Remove skin from poultry. A roasted chicken leg (drumstick and thigh) has 15.4 grams of fat if you eat the skin, but if you don't, it only has 8.2 grams of fat.
- ✎ Bake, broil or boil rather than fry.
- ✎ Cook meat or poultry on a rack so the fat can drain off. Use non-stick cookware so you don't have to add fat to prevent foods from sticking.
- ✎ Choose lean meats like 90% lean ground beef instead of 75% lean ground beef.
- ✎ When making dishes like chili or spaghetti sauce, put in half the amount of ground beef that the recipe calls for, or substitute dried beans, peas or other vegetables for some of the meat.
- ✎ Don't buy big bags of chips or other snack foods. If you buy them at all, get the single serving bags. They cost more, which may make you think twice before you buy them, and the portion sizes are controlled.
- ✎ Include more fruits and vegetables in your everyday food choices. They are much lower in calories, packed with nutrients, and tend to fill you up because of their dietary fiber.
- ✎ Season vegetables with herbs and spices or lemon juice instead of sauces, butter or margarine.
- ✎ Include whole grain breads and cereals in your food choices. Again, the fiber in these foods will help you feel full.
- ✎ Read the labels to see how much fat is in the foods you eat, but make sure you pay attention to the serving sizes listed! If you need help figuring out the labels, ask your WIC staff.
- ✎ Use 2% or lower-fat milk for your whole family!
- ✎ Watch your portion sizes! A 3-ounce serving of meat should be no bigger than a deck of cards or the palm of your hand. A pancake should be the size of a compact disc, not the whole dinner plate! A medium piece of fruit is about the size of a tennis ball.

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## Choosing Low Fat Foods: Survey Question 7

You mentioned on the survey that children over age 2 should drink \_\_\_\_\_.

### **What made you choose that answer?**

*Assess her opinions/current knowledge.*

We often hear about how healthy it is to cut down on fat. Fat begins clogging up the blood vessels even in young children and can lead to heart disease and weight problems later on.

### **Of the foods you eat, which ones have the most fat?**

*Discuss the role of hidden fats in foods such as meat and meat dishes, snack foods and baked goods, and eating out, particularly at fast food restaurants. Use the information in the staff reference sheet to describe the difference in the amount of hidden fat in whole vs. 1% vs. skim milk. Then show the difference between the fat content of a Big Mac and a regular hamburger.*

Imagine how quickly the fat adds up depending on what you choose. The more low fat choices you offer your child each day, the less his blood vessels will clog up.

Here are some examples of low fat choices and high fat choices.

*Review the examples in the flyer, "Fats in Foods" explaining that just like the hamburger, you can only 'squeeze' a little fat from the choices on the left. Just like the Big Mac, you can 'drain' lots of fat from the choices on the right.*

### **Which foods from the high fat list does your child like to eat?**

### **Which foods from the low fat list does your child like to eat?**

*Be sure to encourage her by mentioning how good it is that her child already likes certain low fat foods.*

### **Which foods on the low fat list has your child never tried before?**

All these choices can seem overwhelming. It helps to make small changes at a time.

### **Which of these low fat choices would you be willing to try?**

*Encourage participant to commit to making a few changes from high fat to low fat foods. If she seems reluctant, ask her what she feels are the obstacles with making any changes. Use the parenting information you have received in the other modules to address her issues.*

Optional if time permits:

### **Do you do much cooking at home? What do you do to cut down on the fat?**

*Allow participant to respond and give her a copy of the flyer "Simple Ways to Reduce Fat in Foods" if she is interested in modifying recipes or the way she prepares food.*

# Choosing Low Fat Foods

## Staff Reference Sheet

By the time a child reaches 2 years of age, the recommendations for fat intake begin to mirror those of adults, particularly the types of fats provided by the diet. While obesity prevention is the primary focus of this series of modules, staff should keep in mind that the guidelines presented in this module also protect children against the development of cardiovascular disease and other chronic diseases.

While it is not clear why there is a dramatic increase in overweight children, we know that as the trend continues, our population will be faced with a greater prevalence of chronic disease at a much younger age. Our modules focus on addressing areas that can contribute to this epidemic. Certainly, an increase in high fat snack foods and eating out will contribute additional calories. However, you must caution clients against equating low-fat or reduced-fat foods as low-calorie substitutes.

### Recommendations for fat in children's diets

The age at which fats should be controlled in a child's diet varies depending on the source. For example, the *American Heart Association* recommends prudent fat intake for any child over the age of 2 years. The *National Cholesterol Education Panel* reports that 2-3 years of age is a transition period between the high-fat diet of infancy and the fat-modified prudent diet. They suggest that toddlers 2 and 3 years of age may safely make the transition to the recommended eating pattern as they begin to eat with the family. The *USDA Dietary Guidelines (5<sup>th</sup> edition, 2000)* suggest that preschool children gradually reduce dietary fat over a longer period of time, reaching the 30% of calories after 2 years of age without compromising growth and development.

The prudent diet would reflect the following:

- An average daily intake less than or equal to 30% Kcal from total fat
- An average daily intake less than 10% Kcal from saturated fat
- Less than 300 mg of cholesterol per day

These guidelines mirror the recommendations for adults, and are based on total caloric needs for a day, which is more challenging to follow than providing a recommended number of grams per day. The flyer "*The Facts on Fats*" recommends no more than 50 grams of total fat, with 17 grams from saturated fats for most children less than 5 years of age.

### Four ways to modify fats in the diet

1. *Make careful food choices.* If you have a higher fat content in one meal, adjust what you eat at other meals in the day to compensate for the extra fats and calories.
2. *Modify recipes to decrease their fat content* using simple ingredient substitutions and cooking methods that don't add fat.
3. *Include more reduced-fat foods in our diets.* Don't forget that reduced fat does not always mean reduced calories, though!
4. *Reduce portion sizes!*

## What are some common barriers to reducing fats in the diet?

### ***“It’s too confusing!”***

Many people have a hard time trying to keep track of their allowed fat consumption, especially when the recommendations are a percentage of your total daily calories! It is helpful to provide “benchmarks” for your clients, and express quantities in meaningful terms, if possible. For example:

- ☼ A teaspoon of butter or margarine has 4 grams of fat, about the same as an 8 oz serving of 2% milk
- ☼ A fast food hamburger has about 12 grams of fat, roughly a tablespoon of butter
- ☼ A Big Mac and Medium French fries has about 53 grams of fat, which is a little over half a stick of butter, and nearly the entire day’s allowance!

Painting a picture of the quantities we are talking about may help make an impact on your client.

### ***“First, you hear one thing, and the next day you hear the exact opposite! What am I supposed to believe anymore?”***

It is hard to keep up with the latest findings, but we need to caution people to listen carefully to what news reports are telling us.

- ☼ If they are reporting the results of a single study, people should be cautioned against applying that information to their daily food choices.
- ☼ The safest bet is to follow dietary guidelines from a reputable source, such as the USDA, the American Academy of Pediatrics, or the American Heart Association.
- ☼ Be familiar with their family history for heart disease and known risks.
- ☼ Get familiar with the concept of “moderation.” That is often a concept that we must help to teach. It involves portion control and weighing food choices. *“If I take my child to McDonald’s after their WIC appointment, I should probably make baked chicken for dinner tonight instead of the sausage pizza.” “If I want to have ice cream tonight, maybe I should skip the second helping of lasagna and have a little more salad instead.”*

### ***“I don’t have time or energy to cook homemade meals anymore. I would just rather go out to eat, or buy something I can pop in the microwave or oven.”***

This has more to do with the issues of availability, commercialization and habit. Lack of time is a common issue, and food companies are trying to cater to those who do not have time to cook.

Unfortunately, many of these products are higher in fats and sodium. Let’s face it, eating habits in America are changing!

- ☼ Roughly 57% of Americans eat away from home on any given day, according to the USDA’s 1994-1996 Continuing Survey of Food Intakes by Individuals (CSFII).
- ☼ This has increased by a third since the late 1970’s, and for children 5 and under, the most common sources of food away from home were from someone else, fast food places and day care.

Our responsibility is to help clients put things into perspective. Even though meals may not be the traditional sit-down, homemade dinners many of us grew up with, it is still possible to make healthy food choices and maintain the balance in our diets that is so important.

### **A word on fat replacers**

In many cases, reducing fats from the diet can be done simply by trimming visible fat from meats, not eating skin from poultry, and choosing fat-free or low-fat milk. But more often, it is the taste and textures that fats bring that draw us towards certain foods. The food industry's response to that need has been the development of many ingredients that can be substituted to mimic the taste and texture of fats. The table that follows lists common ingredients that are used to replace fats in certain foods.

The role of the nutritionist is to help clients understand how they can use lower fat foods to manage fat and calorie intake. As with any food choice, it is important to emphasize that calories and portion size still count when consuming lower or reduced fat foods.

## What Are Fat Replacers?

They are primarily old ingredients being used in new ways. Most are made from familiar ingredients. Some are new combinations of basic ingredients. They all fall into three categories:

**Carbohydrate –Based:** These are the most commonly found because of their versatility. They generally provide between zero and four calories per gram. Most are produced from other foods like potatoes, oats, rice or corn. Some of them are only partially digestible, so if they are consumed in large quantities, they may have laxative effects similar to fiber.

Cellulose

Dextrins

Fiber

Gums

Inulin

Maltodextrins

Oatrim

Polydextrose

Polyols

Starch/Modified Food Starch

Z-trim

**Protein-Based:** These are primarily used in many dairy products like cheese, yogurt, sour cream, ice cream, as well as mayonnaise and salad dressings. The microparticulated proteins are made from the proteins found in milk, egg or whey and are processed at high temperatures to form small, round particles that provide the creamy texture that many of these products have. They contribute four calories per gram. You may want to caution people who are allergic or sensitive to eggs or milk to avoid foods made with these ingredients.

Microparticulated protein

Modified whey protein concentrate

**Fat-Based:** These ingredients are fat-based because of their chemical structures, so they have the most similar cooking and taste properties of full-fat foods.

Salatrim - has only five calories per gram instead of the usual nine. It is a triglyceride that has a combination of short and long-chain fatty acids attached.

Emulsifiers (mono- and diglycerides) - are the most commonly used emulsifiers, and are fats made from glycerine and vegetable oils. They have nine calories per gram.

Sucrose Polyester (Olestra) - is made from sucrose and fatty acids from vegetable oils. However, by combining those two ingredients, the resulting molecule is so large that it is no longer digestible and cannot be absorbed by our body. It is a calorie-free cooking oil, and is the only fat replacer that can be used for deep-fat frying. That is why you will see it used primarily in snack foods such as crackers, potato and corn chips. Eating large quantities may produce diarrhea.