

# COMMUNICATING *Food for Health*<sup>®</sup>

DELICIOUS IDEAS AND

RESOURCES FOR NUTRITION EDUCATION

## Less Fat and More Fiber is Key

*A recent study shows that consuming more fiber and less fat is the key to keeping the risk of becoming overweight or obese lower.*



Many promoters of fad-diets, including Atkins, Sears (Zone Diet), and Agatston (South Beach Diet) have claimed high-carbohydrate diets promote obesity. The rationale given is that such diets, particularly if they have a high glycemic index (GI), cause an over stimulation of insulin production, which stimulates appetite, leading to excessive hunger and overeating, and the carbohydrates being converted to fat.

Even some well-respected researchers have published studies suggesting high carbohydrate diets, composed largely of high-GI foods, lead to increased ad libitum calorie intake. However, the problems with these studies was that they all failed to control for other factors known to im-

pact appetite and ad libitum calorie intake, such as fiber, protein, and energy density (ED).

Nevertheless, the unsubstantiated belief that a high-carbohydrate diet, composed largely of high GI foods and having a high glycemic load (GL), enhances appetite and promotes overeating, persists among the general public and some researchers and health professionals.

### Do High GI/GL Diets Promote Over Eating?

A recent study examined the impact of feeding 39 people diets with the same ED and consisting of either high or low GI foods and similar amounts of fat, protein, carbohydrate and fiber for 8 days. Subjects were allowed to eat as much as they wanted.

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Blood sugar and insulin levels were measured throughout the day on both diets on the first and eighth day. The results showed no significant differences for hunger, fullness, or desire-to-eat ratings on the high- and low-GI diets.

There was also no correlation between appetite ratings and either the blood glucose or insulin responses. The subjects choose to consume the same amount of calories on both the high- and low-GI diets.<sup>1</sup>

The results of this study clearly undermine claims made by fad diet book authors and some researchers linking a diet with a lot of high-GI

foods and a high GL with an increased appetite, overeating and obesity.

### Less Fat and More Fiber is Key

A study of U.S. adults age 20-59 years old examined the relationship between diet and BMI.

In men, the result showed an increased percent of dietary fat was most strongly associated with a greater BMI. While higher fiber was correlated with a lower BMI, the association did not reach statistical significance.

By contrast, the women in this study that consumed more fiber were much less likely to be overweight or obese, but the correlation with percent of fat intake and

body weight was much weaker than in men and not statistically significant. The relative risk of being overweight or obese for women in this study is shown in the figure below.<sup>2</sup>

As the figure below shows, the women who consumed a diet high in fat, as well as fiber, were more than three and a half times as likely to be overweight or obese as those who consumed a diet high in fiber and low in fat. However, the women who consumed a low-fat diet that was also low in fiber were about five times as likely to be overweight or obese as those who consumed a low-fat and high-fiber diet.

The data from this

study, combined with other studies, strongly suggests that both men and women would be far less likely to become overweight or obese if they consumed diets with a lot more fiber and a lot less fat than is the norm today.

It should be noted that only about 5% of Americans consume what the newest U.S. Dietary Guidelines called an adequate intake for fiber (14 g per 1,000 calories).

### Bottom Line:

A diet composed largely of fruits, vegetables and whole grains that is low in fat and fat-rich foods promotes weight loss without hunger. This is largely because such a diet has a lower calorie

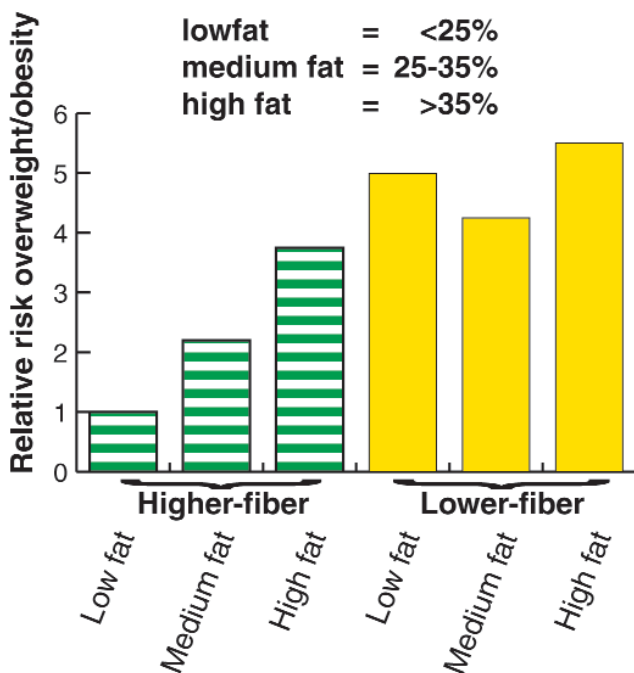
density, less fat, and more fiber, each of which increases satiety per calorie and so reduces ad libitum calorie intake. Such a diet can easily achieve the adequate intake for fiber and meet all other nutrient needs for young and middle-aged adults.

By James J. Kenney, PhD, RD, FACN.

### References:

1. *Diabetes Care* 2005;28:2123-9
2. *J Am Diet Assoc.* 2005;105:1365-72

## The Impact of Fiber And Fat On The Risk of Overweight And Obesity



adapted from Howarth et al. *JADA*. 2005;105:1365

This graph clearly shows the risk of becoming overweight and obese is 4 to 5 times higher when a diet is very low in fiber - even if the fat content of the diet is also fairly low.

This may help to explain why the proliferation of “low-fat” and “fat-free” foods, composed largely of refined flour and sugar, led many to mistakenly believe that high-carbohydrate diets are fattening.

We now know that, in addition to reducing fat in the diet, one also has to cut out most refined carbohydrate-rich foods, that are low in fiber, to promote weight loss and prevent obesity.



**Weight control oats**

Quaker has introduced *Quaker Oatmeal Weight Control*, a new instant oatmeal that claims to aid weight control with 25% more whole grains, fiber and protein to help people feel full. The ingredients in this product include: rolled oats, whey protein, salt, acesulfame K and sucralose. Cinnamon and banana bread are the flavors offered.

*Compared to regular oatmeal by weight, this product has about the same number of calories. However, while it contains a little more fiber (6 g versus 4) and protein (7 g versus 5), it contains 260 mg of sodium versus 0.*

*Further, one serving of Quaker Oatmeal Weight Control costs about 46 cents versus*

*about 14 cents per serving for regular oatmeal.*

*We recommend you use the bulk container of oatmeal - either instant or old fashioned - and add fruit for more fiber*

*and a sweet flavor.*

*FMI visit Quaker at [quakeroatmeal.com](http://quakeroatmeal.com)*

**Trans Fat Updates**

Food manufacturers are working on removing trans fat from their products as the new January, 2006 deadline looms on the horizon. Gorton's has removed trans fat from their frozen seafood products. However, a brief glance at the label shows that some of these products do remain high in fat and sodium. Popcorn Fish contain 17 g fat and 800 mg sodium per serving. Gorton's new line of *Grilled Fillet Meals* and other *Grilled items* are lower in fat and sodium. FMI see [gortons.com](http://gortons.com).

Boca Burger products do not contain trans fat as indicated on

their website. While their site has the updated info, the packages do not at this time. FMI see [bocaburger.com](http://bocaburger.com)

**CocoVia**

Chocolate manufacturer Mars Incorporated has launched a new line of chocolate bars that claim to be heart-healthy. They come in choices of snack bars, chocolate bars and chocolate-covered almonds.

**Snack bars** - Each 23 gram bar (about .8 ounces) contains just 80 calories, 2 g fat, 1 g saturated fat and 0 trans fat.

They have added calcium and vitamins for your heart. The ingredients include crisp rice, rice flour, oats, sugar and chocolate.

**Chocolate Bars** - these bars contain 100 calories, 6.5 g fat, 3.5 g saturated fat and 9 g sugar - so they are higher in calories and fat than the snack bars but contain about half the fat and calories found in a regular chocolate bar.

**Chocolate Covered Almonds** - 1 ounce of this treat rings in with 140 calories, 11 g fat, 3.5 g saturated fat and 0 trans fat. The website recommends 2 servings of these

*products a day for maximum cholesterol lowering benefits since they contain more flavonols (the same antioxidant found in red wine) and phytosterols than other chocolate products. However, we would rather look at them as an occasional lower-calorie chocolate treat that contains about half the fat and calories found in a regular chocolate bar. Following a heart-healthy diet and getting enough exercise is always the best approach. FMI see [cocovia.com](http://cocovia.com).*

**Kraft whole-grain cookies are new**

Kraft Foods has launched 100% whole-grain versions of Chips Ahoy and Fig Newtons. Press releases for Whole Grain Chips Ahoy indicate they will contain, per serving: 150 calories, 8 g fat and 0 g trans fat. They contain 10 fewer calories than their regular counterparts. Consumers should be reminded that while it is important to consume more whole grains, these are calorie-dense treats that don't really count as a whole grain serving. FMI see [kraft.com](http://kraft.com).



## Give Me Hi-Fi (high fiber!)

### Pear Almond Salad

- 2 cups romaine lettuce
- 1/4 cup sliced green onion
- 1/2 carrot, grated
- 1/4 cup diced tomato
- 1 pear, sliced
- 1 tablespoon toasted almond slices
- Balsamic vinegar to taste
- Black pepper to taste

#### Directions:

1. Wash and chop lettuce. Place on large dinner plate.
2. Top the lettuce with green onion, grated carrot, tomato and pear slices. Chill until ready to serve.
3. Top with almonds, vinegar and black pepper when ready to serve.

*Serves 1. Each 3 cup serving: 227 calories, 5 g fat, 0.5 g saturated fat, 0 g trans fat, 0 mg cholesterol, 63 mg sodium, 45 g carbohydrate, 12 g fiber, 5 g protein.*

### Pumpkin Raisin Oatmeal

- 1 tablespoon seedless raisins
- 1/4 cup pumpkin puree
- 1/2 teaspoon pumpkin pie spice or cinnamon
- 1/2 cup oatmeal, uncooked
- 1 cup water
- Topping: 1 cup skim milk

#### Directions:

1. Combine raisins, pumpkin, spice, oatmeal and water in a 1.5-qt microwave-safe dish. Microwave on high power for 3 to 4 minutes.
2. Stir well and serve with skim milk.

*Serves 1. Each 1-1/2 cup serving: 286 calories, 3 g fat, <1 g saturated fat, 0 g trans fat, 5 mg cholesterol, 113 mg sodium, 51 g carbohydrate, 6 g fiber, 15 g protein.*

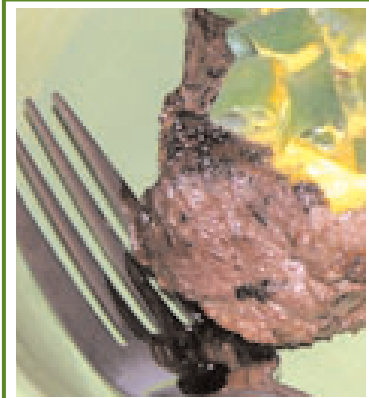
### Penne with Lentils

- 1 cup dry lentils
- 8 ounce package dry penne
- 26-ounce jar pasta sauce
- 1 teaspoon Italian seasoning
- 4 tablespoons Parmesan

#### Directions:

1. Bring water to a boil in a large pan over high heat. Add the lentils and lower heat to medium.
2. Cook lentils for 5 minutes then add pasta. Cook until pasta and lentils are done, about 10 minutes. Drain in colander.
3. Place the same pot back on the stove and add the pasta sauce and Italian seasoning. Bring to a boil then add the pasta and lentils. Heat through; serve with Parmesan cheese on top.

*Serves 5. Each 1 cup serving: 385 calories, 2 g fat, <1 g saturated fat, 0 g trans fat, 0 mg cholesterol, 501 mg sodium, 71 g carbohydrate, 16 g fiber, 16 g protein.*



### What's For Dinner?

Here are some delicious high-fiber meal ideas from our kitchen - so easy you don't need a recipe!! They are great for weight-conscious diners on the go.

- Veggie burger and salad in a whole wheat pita pocket.
- Whipped potatoes with skin - whip them fluffy with hand beaters or mixer (serve with baked fish or chicken)
- Whole grain pasta with chunky tomato sauce (mix no-added-salt, diced tomatoes with pasta sauce)
- Lowfat chili
- Lentils and rice - cook all together in rice cooker
- "Cook-all-day" soup - find your favorite recipe with barley and vegetables and cook in the crock pot.

# Easy Ways to Increase Fiber in Your Diet

If you look at the graph below you will see that a higher fiber diet was found to help lower the risk for overweight and obesity in women in a recent study.

Sounds fair enough - but most people only eat about half of the fiber they should. Here is what you need to know:

## Where do you find fiber?

Fiber is found in whole plant foods:

- Whole-grain foods, including: breads, cereals (hot and cold), pasta, popcorn and rice
- Beans, peas and lentils
- Nuts and seeds
- Fruits
- Vegetables

You won't find fiber in meat, poultry, milk, dairy products or fats.

You also won't find much of it in your favorite baked goods that are usually made with sugar and white flour.

This also means it is not found in significant amounts in favorite American fast foods like burgers, fries, pizza and other fast foods.

## How do you eat more fiber?

The best way to get more fiber in your diet is to start switching out low-fiber carbs and other foods for those that are higher in fiber. It is not as hard as you think. Here's a few examples:

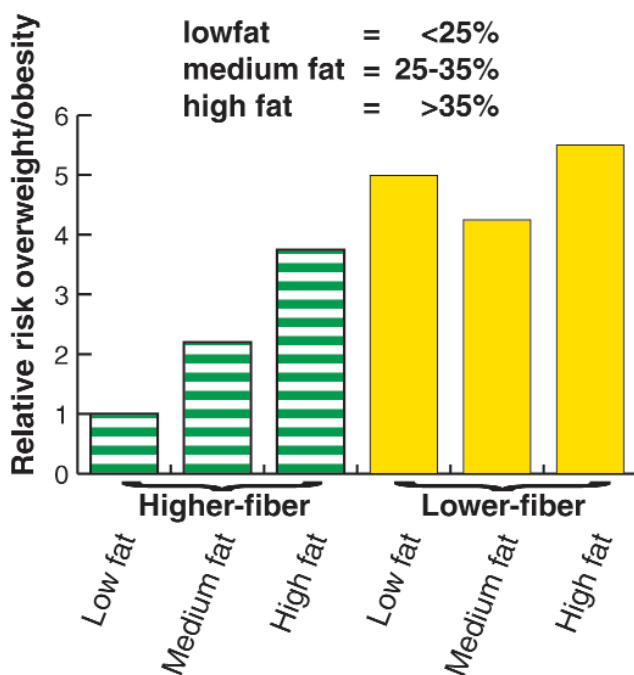
- Switch from white pasta to **whole grain pasta**
- Switch from white rice to

## brown rice.

- Eat **beans** a few times a week in place of your usual choice of chicken or beef.
- Get enough **fruits and vegetables** - the current daily recommendation is about 4.5 cups which is about 1.5 cups or a half plate at each meal.
- Eat **oatmeal** or **whole grain cereal** in place of bagels and bakery treats.
- Top your salad with toasted **nuts** instead of croutons.
- Get your **3 servings of whole grains** each day and include a variety - like oats, whole wheat, barley and brown rice.

For more info and recipes on whole grains, visit online at [www.wholegrainscouncil.org](http://www.wholegrainscouncil.org)

## The Impact of Fiber And Fat On The Risk of Overweight And Obesity



adapted from Howarth et al. JADA. 2005;105:1365

This graph clearly shows the risk of becoming overweight and obese is 4 to 5 times higher when a diet is very low in fiber - even if the fat content of the diet is also fairly low.

If you are trying to lose weight you should cut the fat in your diet.

But it is also important to cut out most refined carbohydrate-rich foods that contain little fiber, like baked goods and crackers.

You should consume adequate amounts of fiber-rich foods like fruits, vegetables, legumes/beans and whole grains, to promote weight loss and prevent obesity.

# 6 Easy Ways to Lower Calories on Your Holiday Dessert Table

## 1. Lighten ingredients in your desserts.

- Use *Splenda* brand sweetener in place of all or part of the *sugar*.
  - Splenda is a non-nutritive sweetener that measures just like sugar.
  - Splenda works great in pie fillings, puddings, cranberries, etc.
  - Splenda is not recommended for crisp cookies or cakes where sugar is needed for structure.
  - Save 652 calories per cup compared to sugar.
  - Follow tips on the box or at [www.splenda.com](http://www.splenda.com).
- Use *egg whites* or *nonfat egg substitute* in place of *whole eggs*.
  - Use 1/4 cup of egg whites or nonfat egg substitute for every whole egg.
  - Save 41 calories and 5 grams of fat each egg.
- Use *Grape-Nuts cereal* in place of half the *nuts*.
  - Save 320 calories and 71 g of fat a cup.
- Reduce amount of *chocolate chips* and *nuts* by 25%.
- Use *fat-free whipped cream* in place of *regular whipped cream*.
  - Save 30 calories and 4.5 g of fat for each 2-tablespoon serving.
- Substitute *skim milk* for *whole milk*.
  - Save 64 calories and 8 g of fat a cup.
- Use *evaporated skim milk* in place of *evaporated milk*.
  - Save 140 calories and 18.5 g of fat per cup.
- Use *trans-free stick margarine* in place of *butter*.
  - Save 89 calories, 12 g fat and 93 g of saturated fat per cup.

## 2. Cut everything into smaller pieces.

- Cutting pies into 10 pieces versus 8 saves 20% of the calories; cutting into 12 versus 8 saves 33% of the calories.
- Cakes and brownies should be cut into bite-sized pieces.

## 3. Make cookies smarter.

- Make cookies smaller.
- Make just one or two varieties. Consider making dough and freezing - bake just what you need, a little at a time, during the holiday season.
- Cutting fat doesn't really save calories because it is replaced with sugar and flour.

## 4. Make fewer high-calorie items, such as cakes and pies.

- You will be less inclined to eat too many desserts if your choice is limited to a few special treats.
- If you really like to bake, consider making inedible crafts as part of your holiday creations, instead of so many baked goods.

## 5. Feature hot beverages with dessert.

- Hot beverages can be a low-calorie highlight.
- Try hot herbal teas.
- Make your own flavored coffees. Try adding ground cinnamon, pure vanilla or almond extract to the coffee grinds before brewing.
- Use lower-calorie condiments such as fat-free half and half, fat-free whipped cream, orange zest, cinnamon sticks and non-nutritive sweeteners.

## 6. Offer your guests a variety of fresh fruits with dessert.

- Serve grapes, oranges, pears and a variety of colors from fruits in season.
- Place whole items in a bowl and put sliced fruits on holiday platters.





“I usually try to see what **food group(s) the client needs** help with and wants to work on to achieve their goal. Then I show him, her or the parents where to look for recipe sites to get healthful foods for their meal or snacks. I try to help them get a few main course meal ideas. They can work on side dishes, and if they get stuck they can call me for more help.” – Mary

“Use a baby bottle filled with red colored water and another one filled with corn syrup dyed red. Ping pong balls inserted show **how red blood cells move or do not move when blood sugars are high**. I use this in classes and with individuals in counseling.” – Kathryn Simons

“When teaching the **plate method for portion control**, I recommend that they put the vegetables on the plate first and then the meat and the starch afterwards. This way the vegetables will take more space. If they put the meat and starch on first there is often not much space for the vegetables.”

– Chris Loudon

“We are developing a skit us-

ing **life-sized fruit and vegetable costumes**. Their old friend Pecos Pyramid has had an Extreme Makeover and they don't know where they belong anymore. The fashion designer and fitness trainer are helping them find their new home.”

– Deana Hildebrand

“I have seen **food samples and sugar cubes** or teaspoons of sugar in a zip-lock next to the item with the number of teaspoons per serving. I've also seen a burger, fries and drink put into a blender and pureed. All the fat goes to the top after it sits for a bit. You can see the fat content in your lunch. Also, families don't know what a serving is for their child. Most things are for adults. Examples of serving sizes and ways to make food child-friendly – colors, textures, etc. always are helpful.” – Debbie Still

“We are developing **training-specific meals for our high school athletes** that will be available as USDA reimbursable school meals. Students will attend sports nutrition sessions conducted by an RD and their complete training needs will be available in the school cafeteria.” – Sara Schmitz, RD

“We plan to use the **Super-size Me video** to do employee education sessions at our health center and eventually carry it over to the high school and other departments within the community.” – Beth Scheelk

“I have students use **food labels to put lower fat and lower calorie items into recipes**. They put in the new information into the computer (at [mypyramid.gov](http://mypyramid.gov)) and then print out the new calorie and fat numbers. Then they actually make both dishes and see if the calories saved have an impact on taste.” – Shari Portnoy, MPH, RD.

“In **cooking with families**, the more generations we have the better. They cook together and they actually challenge each other to expand their list of food choices. Family peer pressure works wonders.” – Margrethe Horlyck-Romanovsky

“We're planning to offer an 8-week **Healthy Eating With Aging** class this fall. We will talk about setting goals and we will help individuals set and review goals each week. We will also pass along nutrition information, do a cooking demo and have the class members bring in their favorite healthy recipe for a healthy eating book at the end of class. We will also offer a walking class before or after the class.” – Danielle Krueger, RD, CD.

“If you look at how many **calories are in a whole box** of cookies (usually 2,500 or more) or a whole cake, pie or other high-calorie item, you will be more aware of the damage of buying a large box or item versus just a small pack or single serving.” – Judy Doherty

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# How Cholesterol Triggers Heart Attacks

Researchers know high cholesterol levels in the blood lead to cholesterol deposits in the arteries. Over time, these cholesterol deposits are believed to somehow promote heart attacks, strokes, and other cardiovascular events. However, the mechanism by which cholesterol deposits can trigger plaque rupture and a heart attack has remained a bit of a mystery.

In recent years, growing attention has been placed on inflammation in diseased arteries as the trigger for plaque rupture and clot formation. It is known that in some people plaques rupture with relatively little inflammation and in other cases inflammation plays a major role.

A study in the September 2005 issue of *Clinical Cardiology* sheds new light on the role that cholesterol deposits appear to be playing in triggering plaque rupture.

Cardiologist George Abela's work, at Michigan State University, shows that as cholesterol goes from a liquid to a solid, it expands in volume by about 45%.

Dr. Abela found that once the cholesterol starts to crystallize, it

takes only a few minutes to go from a liquid to solid state. If a large cholesterol deposit in the artery wall crystallizes, this expansion could rupture the fibrous cap surrounding it. Once the plaque ruptures, the blood is exposed to dead and dying cells that release chemical agents that trigger a blood clot that stops blood flow.

However, when the cholesterol deposits in the artery wall are smaller, Dr. Abela found the cholesterol crystals can penetrate thin membranes. He believes these smaller crystals could do enough damage to lead to the breakdown of the fibrous cap separating the plaque's contents from the blood flowing through the artery.

If Dr. Abela is correct, reducing the amount of cholesterol in the artery walls should help reduce chances for crystallization, inflammation, and plaque rupture. Cholesterol in the arteries comes from dietary cholesterol as well as cholesterol made by the liver in response to diets higher in saturated fat and trans fats and low in fiber.

By James J. Kenney, PhD, RD,  
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