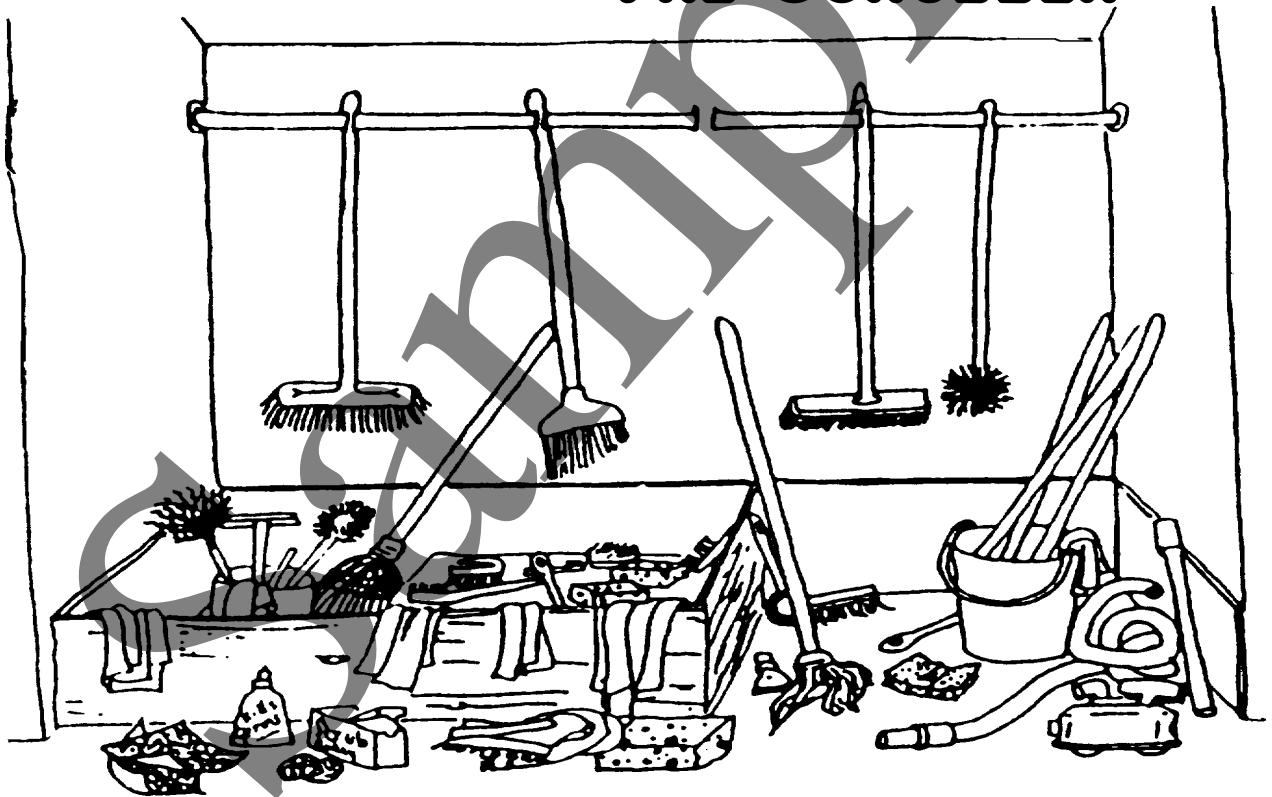


FIBER

THE SCRUBBER



Mops, brooms, sponges and water
help make my house to gleam,
Grains, fruits and nuts are God's scrubbers
they keep my insides clean.

FIBER THE SCRUBBERS

Objectives

- ◆ To introduce the concept that God intended for people to eat fiber-rich plant foods to protect against disease.
- ◆ To stress the importance of the adequate dietary intake of fruits, whole grains, legumes, nuts and vegetables.

References

- Genesis 1:29 (God's original diet for humans.) and Genesis 3:18 (Vegetables were added after sin entered this world.) Psalm 104:14. (Plants were made for people to eat.)
- "Grains, fruits, nuts and vegetables constitute the diet chosen for us by our Creator." CDF 313
- Health Power, Aileen Ludington, M.D. and Hans Diehl, Dr. HSc., MPH, Review and Herald, Hagerstown, MD 21740, 2000.
- USDA Food Composition Data Base, http://www.nal.usda.gov/fnic/cgi-bin/nut_search.pl

Supplies

- Activity #1** – Scrubbers: a mop, brushes, sponges, rags, squeegee, broom, tooth brush, scraper, etc.
- Activity #2** – Plant with leaves, roots, seeds and/or fruits.
- Activity #3** – Enlarged drawing of the kernel of grain (see next page sample).
 - A \$20 bill and one \$5 bill.
 - Large paper bag containing a large box or a basket with **sponges** around the inside edge, zip-lock bag of white flour with one tiny sponge and a couple jewels; and a small jewel box (or fancy wrapped box) filled with the most "precious jewels" (colored buttons, sequins, glitter, or Styrofoam packing "peanuts" sprayed with gold paint, coins, jewels).
 - Wide variety of whole grains displayed in large glass jars so they can easily be seen by the audience.
- Activity #4** – 19 oranges and/or seven 8 oz. glasses of orange juice (O.J.) and/or 17 apples and six 8 oz. glasses of apple juice. (One whole orange = 3.5 gm. fiber, juiced it is .17 gm., a glass of OJ is .5 gm; an unpeeled apple is 4 gm., a glass of apple juice is only .25 gm) USDA Food Values

- 4 slices of white and 1 slice of whole wheat bread.
- 100% whole wheat breads with their plastic wrappers.

Activity #5 – (Review)

- Grocery bag of **high-fiber** foods — fruits vegetables, beans, whole grain bread, nuts, popcorn, seeds.
- **And** 1 each of **no** and of **low-fiber** foods — meat, dairy products, white bread, juice, oil, margarine, soda pop.

Facts

- Only plant foods have fiber. It supports the plant's leaves, stems, seeds and fruit. There is no dietary fiber in animals or any of their products, such as eggs, milk or meat. Most fiber is removed when food is refined.
- In the body, the different types of food fibers hold water like a sponge and act as "**scrubbers**". They help clean the intestines and protect the blood vessels. Different foods have different cleaning abilities, which is why it is important to **eat a wide variety of whole foods**.
- **A diet with adequate fiber protects against:**
 - Constipation:** Fiber holds water, making stools bulkier and softer, and easier to move through the intestines.
 - Heart disease:** Fiber takes out cholesterol along with bile salts from the colon and this prevents their recirculation through the liver and blood vessels.
 - Cancer:** High-fiber foods are high in vitamins, sterols, minerals, and phytochemicals which all help to protect cells against cancer and oxidation damage.
 - Diabetes:** Fiber stabilizes blood sugar levels keeping them from going to high or too low.
 - Overweight:** Fiber has no calories but it is very filling so it decreases the desire to overeat.
- **Fiber Content of Foods:**
 - High-fiber foods** - berries, beans, whole grains (pop corn too), whole fruits, whole vegetables, nuts, and seeds.
 - Low-fiber foods** - refined grains and seeds, juices.
 - No-fiber foods** are all animal products: meat, milk, cheese, yogurt and eggs; - refined sugar, oil, alcoholic drinks, fruit drinks, soda pop, coffee and tea.

Activity #1

- Show cleaning objects one at a time and have the kids tell what they are used for.

- Explain why each item is important for its **specific cleaning job** and that most of them work best when used with water.

Activity #2

- Show the plant. Explain that long chains of fiber hold the parts of the plant together. Different foods have different fibers, which do **different jobs** in the body. That is why God gave us such a great variety of plant foods.

Activity #3

- **Show the enlarged picture of a kernel of grain** of wheat and the jars of different grains.
- **Explain that a kernel of grain (like wheat) has fiber, vitamins, phytochemicals and minerals**, which are like valuable jewels. Nutritious parts of the grain are the “jewels” especially in the **germ and bran**.
- **Show the large “grain kernel” treasure container**. Throw away the paper bag (husk). The wall is the **bran**. With great care take out sponges from inside the “kernel” box.
- **From one corner of the “kernel” take out the small fancy jewel box representing the germ**. Have it filled with the most precious “jewels”. Exclaim and “ahhh” over their great value and priceless worth.
- **Show the bag filled with white flour (endoderm)**. Explain that when grain is **refined**, the bran and germ are taken out of the grain, robbing the grain of much of its nutritional and health giving value. Over 50 nutrients are refined out, only five are returned — and then it is called “enriched” flour.
- **Arrange ahead of time: Illustrate by robbing the \$50 of money out of someone’s purse**. Act like you feel guilty and replace it with **only five dollars**. Does that person feel enriched? Why not? Is the “enriched” flour, rich?
- **Explain that animals often get better nutrition than people** because these valuable parts of the grain are used in animal feed. People eat the animal’s meat with its’ extra fat and cholesterol but no fiber or phytochemicals.

Activity #4

- **Demonstrate what refining does**. Show how much of each of the refined foods is needed to supply the same amount of dietary fiber as is found in the whole food.
- **Show and explain**: it takes 18 oranges juiced or 7 glasses of juice to equal the fiber of a whole orange.

- **Explain that**: six glasses of juice (17 apples juiced) contains the dietary fiber equal to 1 **unpeeled apple**.
- **Show and explain that it takes 4 slices of white bread** to equal the dietary fiber in 1 slice of **100% whole wheat bread**. Explain how to read the labels to tell which bread is not refined. (If enriched flour starts the list of ingredients it is a refined product.)
- The **refining process also robs foods** of their phytochemicals, vitamins, and minerals. Many slices of white bread are required to replace the nutrients found in one slice of whole wheat bread. Show the loss with the number of slices of white bread vs. one slice of 100% whole wheat bread in this chart.

Vitamins & Minerals	
Niacin (5)*	Phosphorus (5)
Pyridoxine (2-3)	Calcium (2)
Riboflavin (3-4)	Zinc (3-4)
Thiamin (7-8)	Biotin (10)
*Slices of white bread needed to equal 1 slice of 100% whole wheat bread	

Summary

- Protective fiber, vitamins, phytochemicals and minerals are found in abundance in natural, whole, high fiber foods, but they are lost in the refining process. There is no fiber in any animal products, oil, sugar or pop.

Review & or Activity #5

- Show individual foods from bags of groceries.
- Ask if each food is full of fiber, or has it been robbed? (Have kids reply by: **Thumbs up** for high fiber; **thumbs down** for no fiber; **stairways** for the low-fiber, foods.)
- Explain that when foods have been robbed, their sugar and fat contents are no longer balanced by other nutrients. When this happens, they become harmful to the body, especially if the “robbed” foods are eaten in excess.

X Give-Aways

- Give apples or other whole fruit at the end of the session when it is time to go home.
- Bath sponges or nail brushes

☆ Activity Sheet

- Find the Hidden “Internal Scrubbers”
- Ask the children to read labels on the foods at home and bring in some samples of 100% whole grain foods and some labels or containers of foods that are refined. Refer to them at the next class.

THE TUMMY ACHE

Dana was the cuddle-bug of the whole family. She had always liked to be hugged and rubbed. If Daddy tucked her in at night she had him rub her cheeks and head. Her older sister sometimes rubbed her feet & tickled them too. If she sat in church with Grandma she always asked to have her back rubbed. And most of all she liked to have Mommy hug her.

“Oh Mommy, my tummy aches,” whined Dana. “Would you rub it?”

“Oh my poor little cuddle-bug, you have been having tummy aches so often since you started school. What is going on,” questioned Mommy? “Do you like school?”

“I love school Mommy, and when I don’t get to see my teacher or friends I get so lonesome for them,” explained Dana.

“Well good, sometimes feeling sad makes a tummy ache, but that must not be the reason,” said Mommy thoughtfully.

Later that afternoon Mommy called Dana in to watch a TV program about bugs. Mommy rubbed her tummy while they watched the nature program.

“When was the last time you had a bowel movement? You have a hard little lump inside on the left side of your tummy?”

“I don’t know, maybe yesterday or the day before,” Dana replied.

“Well, I think you are constipated and that is the cause of your tummy ache. Let’s do a little detective work and find out what has changed since you started school. How much water do you drink each day,” she asked?

“Not very much. There is always a long line at the drinking fountain. I don’t know what happened to my water bottle, I can’t fine it.”

“Do you eat the lunch I send in your back pack?”

“Well, not really Mommy”. Dana slowly explained, “I have been trading my sandwich with Amy for her cheese sandwich and I give her my apple for her cookie.”

“Is her sandwich made with whole wheat bread or white bread?”

“It is white bread.”

“Hmmm” said Mommy, “I have also noticed that you have been skipping your cooked cereal if you get up a little late and the other morning you didn’t take time for your whole wheat toast. I think we have already had enough clues to solve the tummy ache mystery.”

“Let me draw a picture of your insides. This is your digestive tract. It carries your food from your mouth, to your stomach, to your small intestines. By the time the food gets to your small intestines it is in such tiny pieces it is moved into your blood to give you energy and to help you grow. The big intestine, also called the large bowel, is where the unused portion of the food is kept until you go to the bathroom and have a bowel movement.”

“You see, water, fruit and whole grain cereals and breads all have a job to do. They work together and help clean out your insides. They are God’s natural little bowel cleaners and scrubbers.”

“If you don’t have enough water or fruit, or the bread you eat is white instead of whole wheat, your food stays in your large bowel too long. The stool gets all dried out and hard so you don’t have a bowel movement each day. This can make you constipated and give you a tummy ache.”

“So I need to find a new water bottle and be sure I drink a lot of water all during the day” said Dana, “and I need to eat the sandwiches and fruit that you send, right Mommy?”

“That’s right cuddle-bug. You also need to go to bed on time so you can get up early enough to eat good breakfast. You have the answers as to why your tummy aches; now it is up to you to solve the problem.”

Ask the children to read labels on the foods at home and bring in some samples of 100% whole grain foods and some labels or containers of foods that are refined. Refer to them at the next class.

Fiber Content of Foods

Highest



Berries & Beans



Whole Grains & Tubers

Fruits & Vegetables



Lowest



Refined Grains & Juice

None

Alcohol

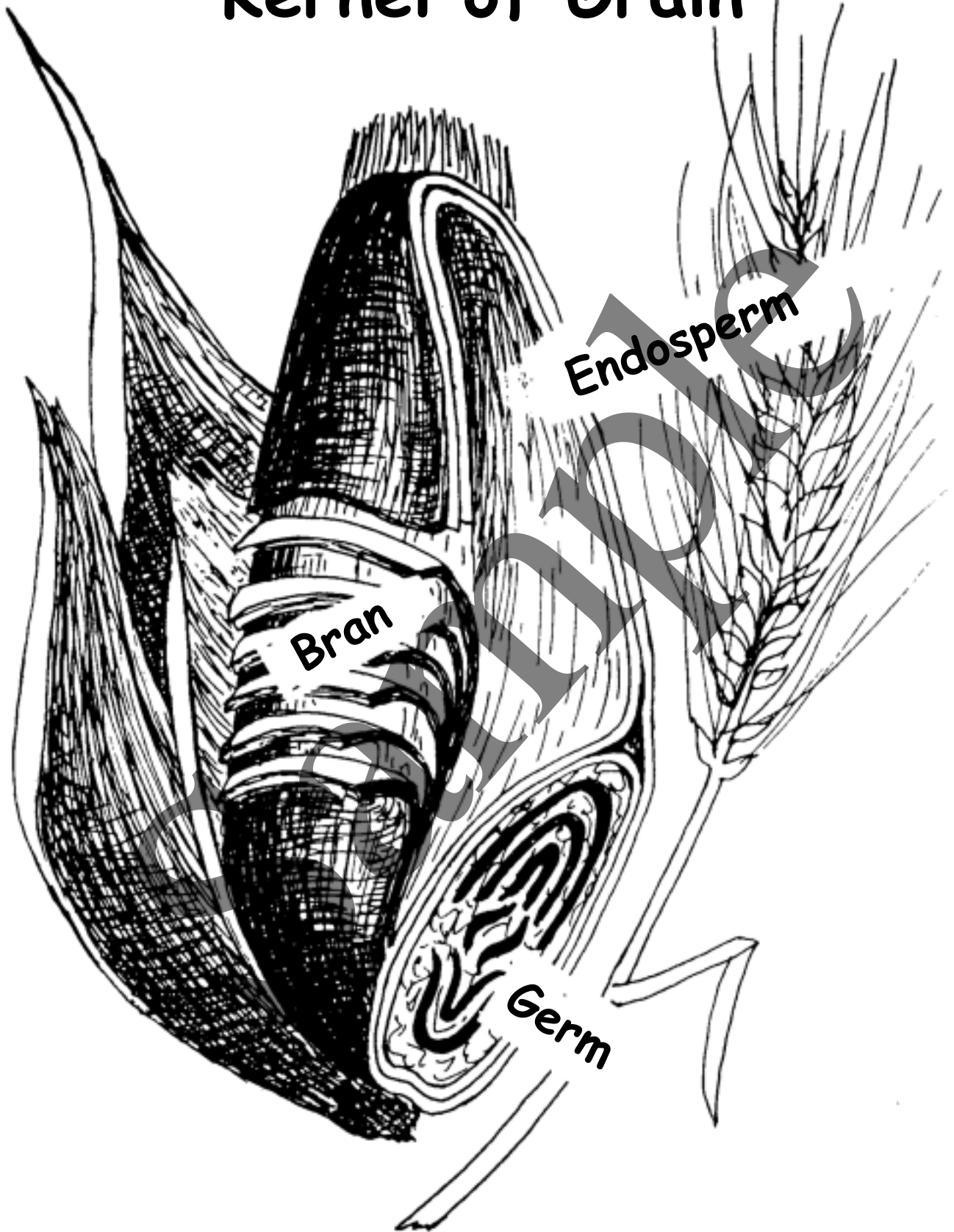


Fats

Sugar

Animal Products

Kernel of Grain





Can you find the hidden “scrubbers & brushes” of fiber in these protective high-fiber foods?

Nature's Natural Cleanser

We know that plants contain a wealth of vitamins and nutrients. But in keeping with their role as the ideal human diet, God also built unique cleansers into them called *dietary fiber*. Fiber serves plants as part of their structural framework—in the leaf, stem, root, tuber, and fruit, in different types and in varying proportions. Dietary fiber was formerly considered unimportant because these unique carbohydrate substances aren't digested like other nutrients. Now fiber is known to play a vital role in general health and in maintaining digestive tract function by literally keeping it clean and healthy. As an added bonus, foods high in fiber are 50-700% higher in vitamins, minerals, and phytochemicals than are refined, processed, low-fiber foods. These factors all combine to promote a healthy gut and overall good health.

Some dietary fiber is water-soluble and some is not. This makes a difference in the effect each has on the digestive process. Plant foods have different types of fiber in various ratios. A diet with a variety of plant foods supplies the body with combinations that help ensure well-balanced health. Some dietary fiber are water-soluble and some are not. This makes a difference in the effect they each have on the digestive process. Plant foods have different ratios of various types of fiber. By eating a diet with many different plant foods the body is supplied with combinations which help to ensure well balanced health.

Types and Functions of Dietary Plant Fiber

WATER-SOLUBLE (gum, mucilage, pectin, guar)

- **Lowers blood fats (triglycerides) and cholesterol levels.** This in turn protects against heart disease and decreases the formation of gallstones and the possibility of developing gall bladder disease.
- **Adds bulk to foods.** Foods are more filling, decreasing appetite and the desire for rich, fatty foods.
- **Regulates blood sugar levels.** This aids in insulin control and in decreasing the sense of hunger.

GOOD FOOD SOURCES

Oats, mature legumes (beans), barley, rice bran, oranges, prunes, and most other fruits and vegetables

WATER-INSOLUBLE (cellulose, hemicellulose, lignin)

- **Holds water in the stool.** Feces are softer and bulkier, preventing constipation. Diluting toxins prevents problems such as irritable bowel syndrome, diarrhea, diverticulosis and hemorrhoids.
- **Speeds the movement of food through the colon.** This decreases contact time of cancer-promoting substances with the intestinal wall.

GOOD FOOD SOURCES

Whole wheat, rye, millet, brown rice, mature legumes (beans), vegetable and fruit skins, nuts and seeds

Digestion and Dietary Fiber

Fiber is vitally important in determining the efficiency of each digestive organ.

- **Mouth**—Fiber requires that food be well chewed. This mixes in digestive enzymes.
- **Stomach**—High fiber foods are low in calories, but filling—a marked benefit in weight control.
- **Small intestine**—Fiber slows food movement, allowing nutrients to be fully absorbed.

Glucose can then be released at a steady pace, helping to stabilize blood sugar levels.

- **Bile from the gallbladder**—Fiber binds with bile and cholesterol to keep them from recirculating.
- **Large intestine**—Fiber speeds food through the large intestine and hastens fecal excretion.

Food Sources of Fiber

HIGHEST: Seeded fruits (figs), berries, mature legumes (beans), seeds, nuts, prunes, and bran of grains

EXCELLENT: Whole grains, starchy root and cruciferous vegetables (cabbage, broccoli, greens)

VERY GOOD: Fruits with their skins on and unpeeled vegetables not listed above

POOR: Refined and degerminated grains (white rice), white flour, pasta, and juices

NONE: Fats, oils, alcohol, sugar, honey, and all animal products (meat, eggs, cheese, milk, and fish)

The Role of Dietary Fiber in Maintaining Health

CONSTIPATION: Fiber retains water, so stools become heavier, bulkier, and softer. This causes bowels to empty quickly and easily, preventing straining and constipation.

DIVERTICULAR DISEASE: Hard stools force intestinal muscles to overwork in order to move hard fecal masses along. Sometimes the membrane (covering) of overworked areas forms little pouches called *diverticula*. Diverticulitis develops when these become infected. This condition, like appendicitis, is very painful and can be fatal. A high-fiber diet prevents this condition.

ATHEROSCLEROSIS, HEART ATTACK AND STROKES: Excessive cholesterol contributes to plaque formation leading to blocked arteries, heart attack and stroke. The fiber in beans and some grains helps remove cholesterol from the body. Beans lower harmful (LDL) cholesterol.

GALLSTONES: Fiber reduces the quantity of bile in the gallbladder, preventing super-saturation by overuse. This decreases the formation of gallstones.

COLON CANCER: Fiber's protective role is thought to be in its great ability to hold water. Extra water dilutes poisons and toxins and speeds the stool along. This shortens the time the colon wall surface is in contact with the stool and its damaging substances.

OBESITY: Fibrous foods require chewing time and saliva production. They also slow the filling and emptying time of the stomach, causing it to feel full longer. This delays feeling hungry again. A good weight-control plan lowers high-fat food intake and increases high-fiber plant foods.

DIABETES: Fiber stabilizes blood sugar absorption rates, producing less insulin and secreting it at slower rates. Maintaining glucose (blood sugar) levels in this way eliminates swings between high (diabetes) and low (hypoglycemia). Normal blood sugar levels reduce insulin needs and control hunger.

KIDNEY STONES: Animal protein and sugar increase the kidneys' workload by stepping up excretion of calcium and other substances that can lead to kidney stone formation. High fiber decreases this risk.

HEMORRHOIDS, HIATUS HERNIA AND VARICOSE VEINS: Fiber helps keep stools soft, decreasing frequent straining to move hard stools and reducing internal backpressure on blood vessels of the anal canal, esophagus and leg veins. Backpressure may contribute to the above conditions.

FASTING and COLONICS: A combination of adequate dietary fiber and sufficient water intake keeps foods moving through the colon and maintains the colon's internal environment (including the pH) in a perfectly balanced state that helps prevent disease. Therefore, an adequate intake of fiber renders fasting and colonics (as well as laxatives and enemas) unnecessary. Fiber is God's gift for keeping the colon clean, functioning and healthy.

GASTRIC UPSET: Fiber works to move food through the system within 24-36 hours instead of the 70- 80 hours it takes in low-fiber diets. This decreases putrefaction of food in the gut.

SUGGESTIONS FOR INCREASING FIBER IN YOUR DAILY MENU

- Plan daily menus to include adequate plant foods with 25-35 grams of fiber per day for adults. For children, add their age + 5 = grams per day up to age 20. (Example: age 2 + 5 = 7 grams a day).
- Eat 5-6 servings of fruits and vegetables (1/2 c = 100 grams, one piece = 2-3 grams fiber per serving). Use them whole instead of juiced and with the peelings on, if possible.
- Include 5-10 servings of whole grains, cereals, and whole grain breads (2-3 grams a slice, 1/2 c = 100 grams).
- Eat a 1/2 c serving of legumes (beans) each day (6-8 grams of fiber per serving).
- If you feel you must eat snacks, pick fruits and vegetables rather than sweets or high-fat, refined foods.

If you have been on a low-fiber diet, don't be surprised if your intestines react for a few months. You may experience bloating, gas and distress while new bacterial flora is being produced to adjust to your new way of eating. Don't give up.

Nature's natural cleansers will reward you with a step toward good health.

Debilitating Diabetes

Filling an automobile's gas tank with fuel in order to drive a certain distance before it is empty is similar to fueling up the body by eating food rich in carbohydrates, the body's fuel of choice. Carbohydrates are easily converted to the blood sugar fuel *glucose*. After a meal you should be able to go 4-5 hours or even overnight before the hunger gauge tells you it is time to fill up again. Insulin is the body's pump that delivers fuel to the cells. If it is defective, it will not deliver glucose to the cells' engines that burn the fuel for energy.

The pancreas is the organ that produces the hormone *insulin* that serves as the automatic pump that carry fuel into the cells. Due to disease, the pancreas may lose its ability to make adequate amounts of insulin. The result is Juvenile (IDDM) or Type I Diabetes. Without insulin the cells receive no blood sugar (fuel) and death occurs. It becomes necessary to take insulin into the body either orally or by injections for life.

Now let us consider one other scenario. The car's gas tank is full, but the fuel pump is defective and won't deliver gas to the engine. The fuel pump needs to be repaired or replaced in order for the engine to run. This illustrates Adult Onset Diabetes, also called Non-Insulin Dependent (NIDDM) or Type II Diabetes. There is plenty of fuel (glucose) and insulin available, but the cells are resistant and don't respond to them. Trying to put more fuel into the body doesn't accomplish anything. The cells instead need to be re-sensitized (repaired) by a change in lifestyle, usually involving weight reduction, exercise and improved diet.

Checks and Balances

The body constantly monitors the amount of sugar in the blood. When blood sugar (glucose) rises after a meal, the pancreas releases insulin into the bloodstream. In addition to helping sugar get inside the cells where it is used for fuel, insulin helps prevent loss of high levels of glucose into the urine via the kidneys.

Between meals, when blood sugar levels fall, the pancreas slows down insulin production and produces another hormone *glucagon*. Glucagon causes the liver and other tissues to release stored glucose and maintain a constant supply of energy for the body cells to use as fuel.

Types of Diabetes

If the pancreas is damaged by disease, usually in children and young adults, Type I diabetes develops and necessitates lifelong insulin use. This type makes up only 5-10% of all diabetics. A more common form of diabetes, Type II, usually begins later in life and is caused by lifestyle behaviors plus genetic tendencies. The pancreas produces insulin, but the body's cells don't respond normally; they are resistant to its effects. This is now becoming a troublesome and common disease worldwide. Medical workers are concerned because so many new cases are developing each year (even in younger people). It is a disease that damages most body systems.

Symptoms and Complications of Diabetes

- **Extreme thirst** - High concentrations of sugar in the blood cause water to be drawn into the blood stream. This extra load overwhelms the kidneys, spilling excess sugar and water out into the urine and leading to excessive urination, dehydration and thirst.
- **Frequent urination** - Frequent urination is a red flag warning to get blood sugar levels checked.
- **Excessive hunger, weight loss and fatigue** - Even with adequate glucose fuel available, cells starve for fuel because fuel cannot enter the resistant cells for energy production.
- **Eye damage** - Diabetes can result in blindness within just a few years of its onset.
- **Kidney disease** - Due to overwork, a common complication is kidney damage and failure.
- **Weight gain** - Obesity increases insulin need. Insulin medications promote weight gain. This unrelenting cycle of weight gain and increased insulin need is difficult to break without drastic lifestyle changes.
- **Nerve damage** - Burning, aching, and/or numbness in the feet, legs, hands and arms may develop.
- **Wounds that are difficult to heal** - Impaired circulation and high blood sugar interfere with wound healing. This can result in foot ulcerations that lead to amputation if the area develops gangrene.

- **Heart Attack and Stroke** - Diabetics frequently have elevated blood fats, high blood pressure, obesity and elevated insulin levels. These all contribute to the common problem of blood vessel and heart disease.

Steps in Reversing Adult Onset (Type II) Diabetes

This disease is brought on by poor lifestyle practices, but can be reversed in most cases and brought under control by changes in lifestyle. The following lifestyle “rules” have been proven to work in the vast majority of cases. If these lifestyle practices are followed, oral drugs or insulin injections are seldom needed.

1. Develop a Daily Exercise Routine

Daily exercise plays a powerful role in reducing cell resistance to insulin. Muscles in motion improve insulin’s ability to pump glucose fuel into the cell. This reduces high blood sugar levels and helps stabilize blood sugar levels. A simple answer is to walk, walk, walk!

2. Adopt a Proper Diet – Eat Whole Foods in Their Natural State

- Enjoy good quality, healthful fats in their natural state (nuts, seeds, avocados, soybeans and whole, unrefined grains). Refined and excess fats cause atherosclerosis and obesity, common in diabetics.
- Eat natural foods whole. Avoid juices, white flour, refined oils and processed foods—they have been robbed of their fiber and nutrients. Dietary fiber promotes an even blood sugar pattern. Unrefined fruits, vegetables, grains, beans and nuts are high in fiber.
- Overworked, damaged kidneys suffer from excess protein. It is difficult to avoid excessive protein when meat and dairy products make up a large portion of the menu. Meat and animal products also contribute to heart disease, the # 1 killer in diabetics, while plant foods help to prevent cardiovascular diseases..
- Sugar contributes to unstable blood sugar levels, depletes nutrients (like chromium) that are necessary to control diabetes, and works along with LDL cholesterol to damage the lining of blood vessel walls.
- Whole fruits, vegetables, course grains, legumes, nuts and seeds help to control diabetes.

3. Maintain an Ideal Weight

Obesity is a primary cause of insulin resistance. Even the loss of as little as 10 pounds can make a difference.

4. Protect Your Family

- Start the whole family on a healthy lifestyle as outlined above.
- Breast-feed infants. Research shows that cow’s milk is one probable cause of Type I diabetes.
- Low birth-weight babies are more prone to develop diabetes and heart disease when grown.
- Avoid caffeine and nicotine while pregnant. Both may reduce the baby’s birth weight.

How Do You Measure Up?

A thick waist and abdominal obesity increase the risk of diabetes and heart disease..

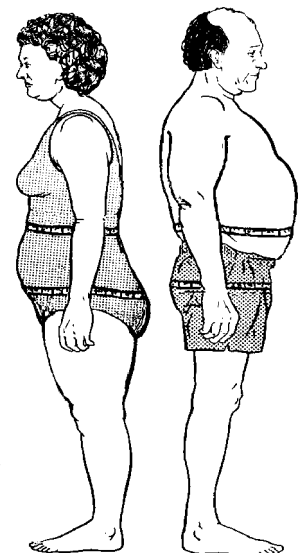
To evaluate your potential risk use a measuring tape and calculate the following:

1. With your feet together, stand straight and relax your abdomen.
Don’t pull in your stomach or hold your breath.
2. Measure the size of your waist at its smallest part _____ cm (inches)
Usually just above the belly button.
3. Measure your hip around the widest part _____ cm (inches)
4. Divide your waist measurement by your hip measurement. _____
6. Your hip-to-waist ratio is high risk for diabetes and heart disease if it is:
greater than 0.80 for women or 0.95 for men.

Women with a waist over 35 inches and men over 40 inches are also at high risk.

Type II (NIDDM) diabetes is preventable and treatable.

The key is lifestyle - diet and exercise!



How Much Fiber is Needed Each Day?

Fiber needs for children can be calculated by adding 5 grams of fiber to their age from 2 years to 20 years.

Example: Child aged 7 is $7 + 5 = 12$ grams of fiber per day. Adults need 25-35 grams per day.

Grams of Total Fiber in 1 cup of Food

ALCOHOL	0.0	GRAINS		NUTS	
DAIRY	0.0	cake (2 inch sq.)	1.8	almonds	11.0
soy milk	3.2	cookies (1)	0.3	walnuts	6.0
MEAT		cornmeal (raw)	8.9	mixed	12.3
0.0		oatmeal (cooked)	4.0	SEA FOOD	0.0
veggieburger	5.1	pasta (1c.)	1.8	SEEDS	
EGGS	0.0	popcorn (popped)	1.8	sesame	17.0
FATS	0.0	pumpnickel (slice)	1.7	sunflower	11.6
butter, margarine	0.0	rice (white)	0.7	pumpkin	8.9
lard, oil, shortening	0.0	rice (brown)	3.5	SUGARS	0.0
FRUIT		rye (slice)	1.9	dates	14.0
apple	3.4	white (slice)	1.5	VEGETABLES (raw)	
peeled	2.1	whole wheat (slice)	1.9	beets	3.6
sauce	2.9	LEGUMES (cooked)		broccoli	2.6
juiced	0.2	black	15.0	cabbage	2.0
bananas	3.6	fava	9.2	carrots	3.8
cherries	3.0	garbanzo	12.5	corn	4.2
figs (dried)	24.0	kidney	16.4	greens (cooked)	5.0
grapes	1.6	lentils	15.6	potato	2.9
melon	1.4	lima	11.6	peeled	1.8
orange	4.4	mung sprouts	1.9	squash (winter)	8.0
peach	4.4	navy	19.7	squash (summer)	2.5
pear	4.5	peanuts	12.4	lettuce/tomato salad	1.6
prune	12.0	pinto	14.7	tomato paste	11.8
raspberries	8.4	refried	13.4		
		peas (dried)	8.8		
		soy	10.3		

Suggestions for Increasing Fiber in the Diet

1. Plan daily meal menus to include adequate plant foods with 25 - 35 grams of fiber per day for adults.
2. Eat fruits and vegetables whole, with the peeling on. Save the money spent on juice.
3. Use whole grain flour and 100% whole grain breads. Pastry flour works well when baking without yeast.
4. Add a serving of beans each day; add to soups, salads, ethnic foods or mashed as bread spreads.
5. Have at least five servings (1c. or one piece) of fruits and vegetables each day.
6. Try whole grains as cereals - millet, corn, and wheat aren't just for chickens and oats aren't just for horses.
7. Use oats as a and ground flax in meat loaves, veggie-burgers, casseroles, sauces, breads and cutlets.
8. If snacks are to be eaten, choose fruits and vegetables rather than sweets or high-fat foods.
9. Always drink an abundance of pure water to aid fiber in doing its jobs well.
10. Children love fruit and they will learn to love most vegetables if their parents set good examples.

Fiber values: U.S. Department of Agriculture