Diabetes and Healthy Eating

Healthy eating refers to eating a variety of food for a balanced diet, and includes making healthy food choices, understanding the ideal portion sizes, and meal frequency. Healthy eating helps manage blood sugar and reduce other risks for diabetes-related complications. The key to health eating is moderation and making smart choices in your daily diet. Following these healthy eating tips will helps you to control your blood sugar level, also offers ways to incorporate your favorite food into a healthy diet.

1. Limit portion size and frequency- You don't have to cut out the food you love to eat, just cut down portion size and treat your self with these foods on special occasions.



- Serve food on a plate rather than as buffet style which tend to serve too much food on a plate
- Make sure to serve the right portion of foods from each food groups on your plate
- Drink water with meals
- 2. Go skinny on fats- Limit your consumption to two to three tablespoons of unsaturated fat each day including cooking, salad dressings, margarine and mayonnaise.



- try to make chapattis with less oil/ghee and make them with boiling water or some warm low fat milk instead of oil
- try to avoid adding butter ghee/margarine when cooking rice, dhal and other foods

When making curries add less oil and improve the taste by adding more ginger, garlic and other spices

- Limit the consumption of foods high in saturated fat like parathas, red meat, fried foods and Briyanis
- Choose fish and lean meat and curry poultry without the skin
- Try using low fat or skim milk with chai, yogurt and cheese
- 3. Go easy with salt- Most of us eat more salt than we need. A high intake of salt can raise blood pressure, particularly if you are overweight or if it runs in your family.



Try to reduce salt in cooking, i.e. in curry, rice, salad, lassi

Use different flavors as an alternative to salt, e.g. black pepper, mixed spices, lemon juice, garlic

Eat fresh foods and decrease pickles and canned foods

4. Include foods high in fiber daily



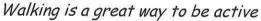
Whole grain foods such as whole wheat chapattis, breads, crackers, cereals, and brown rice, oatmeal, and barley



Include a variety of colorful fruits and vegetables

Since dhal is consumed daily, try to choose the one with high in fiber content

5. Be active- 30 minutes of physical activity five days a week and lose a modest amount of weight





- Walk around the house while you talk on the phone
- Dancing is also fun way to be active. Get off the couch, turn on the music, and move
- 6. Plan ahead- People living with diabetes can include desserts in their meals plans, just plan ahead and make other meal adjustments to compensate for the dessert, like cutting back on other foods with carbohydrates at the same meal.



Limit sweets and desserts like Kheer, when you have it have small serving at the end of a healthy meal and not every day

Share your dessert and large portions when eating out

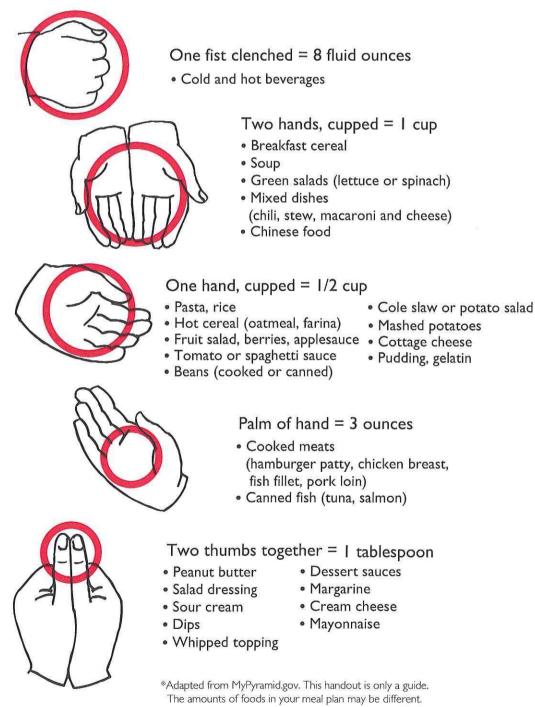
Eat breakfast every day

Take Control of Your Blood Sugar and Take Control of Your Life ...

PORTION SIZES WHEN YOU CAN'T MEASURE YOUR FOOD

Your Helpful Hands...

The best way to find out how much of a food you are eating, or your portion size, is to use measuring cups, spoons or a scale. Sometimes, such as when you eat out, you can't do this. Here are a number of ways you can use your hands to help you find out about how much you are eating. * The portion sizes in each food group use an adult *woman's* hand as a guide.



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ABOUT FIBER

Foods that come from plants have parts that your body can't use. These parts are called fiber.

Why should I eat fiber?

Just as a broom cleans a floor, fiber helps "clean "things out of your body that you don't need or can't use for energy. Eating foods high in fiber can also help you:



- Keep your blood sugar under control after eating
- Lose weight by making you feel full when you eat sooner
- Lower "bad" cholesterol
- Make "going to the bathroom" easier (relieve constipation)

Foods high in fiber include grain and whole wheat products, fruits, vegetables, nuts, oats, beans and seeds.

Grain and Whole Wheat Products



Whole grain/wheat chapattis and rotis Whole grain breads and rolls Brown rice

Pulses and Legumes



Rajmah Moth beans Green gram whole Moong (Mung)

Vegetables



Cauliflower, Cabbage, Pataul Tomato, Spinach, Dhondul Peas, Eggplant, Squash (Kadu), Bitter guard Carrots, Beet roots, Long beans, fat beans

1

¹ Dietary Fiber Taken from <u>http://www.dietaryfiberfood.com/dietary-fiber/</u>



How much fiber should I eat?

Adults should try to eat about 25 to 30 grams of fiber a day. Here is an example of one the many ways to do this:

BREAKFAST: 2, 7inch Whole wheat chapatti or Lal atta roti (5.8 grams); ½ cup sheem Bhaji or Sabji (3.3 grams)

LUNCH : ¹/₄ cup of Brown Basmati rice (2 grams); ¹/₂ cup Chicken curry (~1.5 grams), Saag (with spinach) 3.9grams , ¹/₂ cup of tomatoes dhal curry (16.5grams) DINNER: 1/2cup Parboiled rice (1.6grams); ¹/₂ cup of Beef curry with red potatoes

with skin (~1.8 grams)

TOTAL = 36.4 grams.

Here are other ways to add fiber to your meals:

- Eat whole-wheat chapatti and rotis instead regular ones, choose brown rice over parboiled or white rice, and eat oatmeal daily.
- Eat fruits with skin instead of drinking the fruit juices and other soft drinks
- Add berries or nuts to your cereal and low fat yogurt
- Add high fiber dhal, chickpeas to your rice dishes
- Include vegetables in each meal

Add fiber meals slowly. This will help you get used to eating more fiber. Drink lots of water everyday. Water helps to keep fiber moving through you body.

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² RAMANI R., MURTHY N.K. and ANNAPURANI S. (1986) Indian J. Nutr. Diet23, (11), 309–314.

ABOUT WHOLE GRAINS

Whole grain is grain the way nature made it. It has not been changed in anyway.

Why are whole grains good for you?

Eating whole grains as part of your meal plan can:

- help you lose weight
- lower "bad" cholesterol
- increase "good" cholesterol
- help you control your blood sugar

What foods are high in whole grains?

Oatmeal, whole-grain cereals (Shredded wheat, Basic 4 Whole Grain, Cheerios, and All Bran etc), Shabu daana, Whole grain durum wheat chapatti, Whole wheat and oats are some of the many foods high in whole grains.

How much whole grain should I eat?

Eating at least three servings of whole-grain foods a day is a good goal for most people. A serving should contain about 16grams (16g) of whole grain.

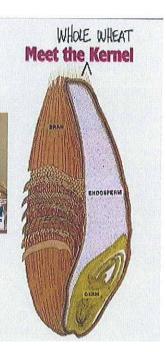
Examples of food servings with 16grams of whole grain include:

- ¹/₂ cup of cooked oatmeal
- ¹/₂ cup of brown rice
- 2, 7inch whole wheat chapattis

Refined grains are not whole grains. Foods made with refined grains such as white bread, chapatti and roti made of white flour (Maida) noodles, baked goods like cookies (salty crackers, Rusk, moody, mixtures, pakaros) samosa, pihta, are often high in calories and low in nutritional value. They also raise blood sugar more quickly than whole-grain foods.

Read the labels when you shop. Foods high in whole grains usually list "whole grain" as the first item of the contents.

Always talk to your doctor or diabetes educator before you make any changes in your meal plan.



What is carbohydrate counting?

Carbohydrate counting is a method of determining how much insulin to take to match with the foods which raise your blood glucose (sugar).

Why carbohydrate count?

Learning to count carbohydrates can increase meal flexibility and maintain good blood glucose control. It allows you to make changes in the amount and type of foods you eat and adjust your insulin dose for these changes.

Where do I get information on carbohydrate counting?

In order to count carbohydrates you will need to know how much carbohydrate is contain in the various foods you eat. Some good sources of information:

- 1. Food labels where the nutrition information is listed.
- 2. Supermarket pocket books with carbohydrates tables.
- 3. Nutrients data bases available on World Wide Web:
 - USDA data base online: <u>http://www.nal.usda.gov/fnic/cgi-bin/nut_search.pl</u>
 - Nutrient Analysis Tool (NAT) http://www.ag.uiuc.edu

How do I carbohydrate count?

When learning to count carbohydrates, you will need to work with your health care team to determine your carbohydrate/insulin ratio. The carbohydrate/insulin ratio is the amount of insulin required to bring your blood glucose back to the same level as before eating.

For example,

Your blood glucose before breakfast was 5.0mmol/L (90mg/dl), and you ate 45g of carbohydrate, and you took 3 unit of *rapid acting*

insulin. 4 hours after breakfast your glucose – was 5.3mmol/L. Then you would have taken 1 unit of insulin for 15g of carbohydrate. This would be a ratio of 1 to 15 or you would need to take 1 unit of <u>rapid</u> <u>acting</u> insulin for every 15g of carbohydrate you eat.

45 grams of carbohydrate \div 1 unit of rapid acting insulin per 15 grams of carbohydrate = 3 units of rapid acting insulin.

Carbohydrate/insulin ratio = 15 grams/ 1 unit of insulin So

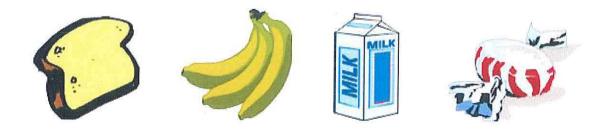
If you ate 75g of carbohydrate at lunch, you would need to take 5 units of insulin to cover your lunch.

Carbohydrate to insulin ratios vary from person to person And can also vary from meal to meal.

To determine your own carbohydrate/insulin ratio, you will need to keep a food record and initially test your blood glucose before and after all meals and snacks. Working together with the Dietitian on your health care team you can learn to count carbohydrate.

What foods contain carbohydrate?

Many foods contain carbohydrates and can increase your blood glucose. All starch foods, most milk products, all fruit and juices some vegetables and those foods with added sugar contribute carbohydrate (sugar) to your diet and will raise blood glucose (sugar).



Total carbohydrate in a food label gives you all the information of the products like how much starch and how much simple sugar in the product. Fiber in the any food products is technically considered as carbohydrates, but it does not go into your blood streams. So you actually don't need to count the fiber content of that food. *Available Carbohydrate* can be calculated by <u>subtracting dietary fiber from the total carbohydrate</u>.

For example: The nutrition panel on a package of whole wheat bagel reads:

Nutrition Information per bagel (95g)

Food Energy	262 kcal
Protein	0.0 g
Fat	15.0 g

Total Carbohydrate	52.0 g
Sugars	4.3 g
Dietary Fiber	8.0 g

Total Carbohydrate 52.0 g

subtract - Dietary Fiber 8.0 g

Available Carbohydrate 44.0 g

One bagel will provide 44g of available carbohydrate to raise blood glucose.

When determining carbohydrate from product labels, it is very important to subtract the dietary fiber, if it is listed on the label. (If you do not do this, then you could estimate too much carbohydrate and take too much insulin, especially if your meal is very high in fiber.) Practice carbohydrate counting using the following information from food labels.

1. Bran Cereal with Raisins 175ml ³/₄ cup (1serving size)

Energy 130 kcal Protein 3.0 g Fat 0.4 g **Total carbohydrate 32.0 g** Sugar 11.0 g Dietary Fiber 4.6 g

Calculate the Available carbohydrate? That is (total carbohydrate 32.0 g) – (Dietary Fiber 4.6 g) gives you 27.4g.

2. Beans with Po	ork in Molasses per 250ml (1cup)
Energy	300kcal
Protein	15.0g
Fat	2.2g
Total carbo	ohydrate 55.0g
Dietary H	Fiber 12.0g

Find out how much is the available carbohydrate???

The next step in learning how to count carbohydrate is to practice at home. Keep a food record with details of the amount eaten and estimate the amount of carbohydrate you eat at each meal. Together with the Dietitian on your diabetes health care team, you can see how accurate your "counting" is and begin to count carbohydrate at home and take control of your blood sugar. References:

Karmeen D. Carbohydrate Counting: A practical meal planning option for people with Diabetes. Clinical Diabetes 23:120-122, 2005

Kulkarni K: Carbohydrate counting for pump therapy: insulin to carbohydrate ratios. In A Core Curriculum for Diabetes Education. Diabetes Management Therapies. 5th ed. Chicago, American Association of Diabetes Educators, 2003.

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Be Good to Your Heart.

Know Your Cholesterol Numbers and Take Action!

A lipid profile me be tested at the de	w your cholesterol and triglyceride numbers? asures your cholesterol and triglyceride levels and can octor's office. Adults 20 and older should have a lipid profile.
Here is what you	r cholesterol numbers means:
Total cholesterol	(mg/dL):
Less than 200	Desirable
200-239	Borderline high: Depending on your other risk
	you may be at a higher risk for heart disease.
240 or higher	High: You are at risk for clogged arteries and
	heart disease.
LDL (Jousy had) cholesterol (mg/dl): Keep it low!
Less than 100	Optimal (ideal)
100-129	Near optimal/ above ideal
130-159	Borderline high
160-189	High
190 and above	0
	<i>,</i>
HDL (healthy, g	ood) cholesterol (mg/dl):
The higher the b	etter! Keep it above 40.
Triglycerides (m	g/dl) Keep it below 150.

¹ The National Cholesterol Education Program (May 16, 2001), Journal of American Medical Association

Make the switch to heart healthy eating

How to switch your family from whole milk to fat free milk:

Γo switch your family from drinking whole milk to fat free milk, serve them whole milk whole milk mixed with reduced fat milk for a month. During the next month, serve them reduced fat with low fat milk, then low fat mixed with fat free milk, until you and your family were drinking only fat free milk. Soon you couldn't even taste the difference.

Try some of these When Shopping

1. Buy lowfat milk and lowfat or

2. Buy nonstick skillet or thawa when foods instead of

simple changes:

(1percent) or fat free (skim) fat free yogurt.

cooking spray. Spray it on the making chapatti and other greasing the pan with butter.

3. Read the food label to help you choose foods lower in saturated fat, trans fat and cholesterol.

Helpful Tips:

It is important to know that eating foods high in saturated fat can raise your blood cholesterol level. So it essential to modify your recipes by using healthy choices. Avoid adding butter or oil while making chapatti and other foods like dhal and other curries, make chapatti with boiling water or some warm lowfat milk. Now it is low in fat, saturated fat, trans fat and cholesterol, and still taste great.

Cooking With Less Saturated Fat

What meat can I eat with high cholesterol? Fatty Fish

The fact is fish high in omega 3 fatty acids help lowers bad cholesterol and raise the good cholesterol. Fatty fish include salmon, mackerel, albacore tuna, herring, sardines and lake trout. The American Heart Association (AHA) recommends consuming fatty fish at least twice a week.

Poultry and Red meat

When you are trying to lower high cholesterol, select poultry without the skin.

- 1. Take the skin (skin has a high fat content) off chicken. Cut the chuck of fat off beef and pork.
- white mean a
- 2. Removing the skin from poultry and selecting the white meat will help cut back on fat intake. (Dark meat contains a higher fat content than light meat.)
- 3. When preparing poultry, do not fry it, but enjoy it baked, grilled or broiled.
- 4. Cut the chunk of fat off beef and other red meat. Trimming beef, lamb and pork of fat reduces simply by lowering the amount of fat.
- 5. Meat, particularly red meat, is commonly identified as a major source of dietary cholesterol².
- 6. Chill chicken, beef, and lamb curries in the freezer or refrigerator. The fat will form a hard layer. Take off the hard fat layer and heat it and serve.



Liver and Eggs

Generally, foods high in animal fat are also high in cholesterol. Two expectation to this generalization are liver and eggs, which are not high high in fat but are high in cholesterol.²

- Liver contains large amount of cholesterol because the liver is the body organ that makes cholesterol.
- Eggs contain large amounts of cholesterol because they contain nutrients and other substances to support a growing embryo² (egg also contain a very high quality of protein and are rich in vitamins and minerals).

The table below shows the approximate cholesterol content of some common animal-based foods³:

Foods	Milligrams of cholesterol
3 ounces of liver	300
one large egg	215
3 ounces of lean red meat	90
3 ounces skinless poultry	90
3 ounces of fish	50
3 ounces of shrimp	133-166
one cup of whole milk	33
one cup of skim milk	4
1 teaspoon of butter	11

The AHA recommends that you eat less than 300 milligram of cholesterol. So it is very important to read your food labels for cholesterol and saturated fat content. What counts is your daily average

² Taken from American Heart Association <u>http://www.americanheart.org/presenter.jhtml?identifier=180</u>

³ Controlling your Cholesterol: Facts you should know. Taken from http://www.askdrsears.com/html/4/T040800.asp

over time, not your exact total each day. If you scrambled eggs for breakfast on Saturday but lean meats poultry, and fish, along with liberal servings of vegetables, fruits and grains the rest of the week, then your average is likely to be below 300 milligrams.

Dietary Fiber⁴

Fruits, vegetables, whole grains, beans, and nuts and seeds are good sources of dietary fiber. Dietary fiber, especially a certain type of fiber called **soluble fiber** can help lower cholesterol levels by sweeping cholesterol out of the body before it gets to the bloodstream. Especially high in soluble fiber are foods such as oat bran, oatmeal, beans, peas, rice bran, citrus fruits, barley, apple pulp and psyllium seed (the main ingredient in Metamucil, a fiber supplement available at pharmacies and grocery stores)⁴.

⁴ Cholesterol, Fiber and Oat Bran: American Heart Association, Taken from <u>http://www.americanheart.org/presenter.jhtml?identifier=4494</u>



Good FAT AND BAD FAT



In every food we eat, there are both good fats and bad fats. Contrary to what a lot of people think, it is important to have fat in our diet, but it is essential to have the good kind of fats rather than the artery clogging bad fats. So learn how to recognize good fats and bad fats. Here is the table:

Avoid…Trans Fat	Eat LessSaturated Fat	EatGood Fat
 Aalu Bhaji Coconut Oil Deep Fried Foods such as shingara, samosas, patties Many fresh baked foods (pies, cookies) Some packaged snacks such as chanachur mix, motorshuti, nimki, etc) 	 Butter Whole Milk Cream Red Meat Dessert (payesh, shemai, kulfi, rosher mishti like roshogolla, jalebi, pantua) 	 Oily fish like salmon, elish, etc. Olive Oil Nuts Canola Oil Soybean or Corn Oil
• Candy		

Let's start with "bad" fats.

1. **Saturated fats**. Saturated fats are in fatty meat cuts, cheese, milk, and poultry with skin. Saturated fats increase bad cholesterol (LDL), which can cause heart disease.

2. **Hydrogenated Fats (trans-fats).** Hydrogenated fats are man-made, but they take on many of the traits of saturated fats. They are specifically re-engineered to stay hard at room temperature1¹.

You can find hydrogenated fats in sweets and cookies; you can also find it in any margarine products, so it is important to check the ingredient labels on food products before you purchase them.

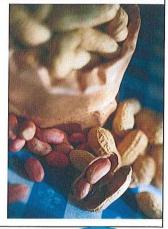
Now, for the "good" fats:

1. **Monounsaturated fats.** Monounsaturated fats are natural fats that lower "bad" cholesterol (LDL) and prevent "good" cholesterol (HDL) from getting lower. Monounsaturated fats in the form of canola oil, olive oil, peanut oil, nuts, and avocados2¹. Monounsaturated fats can have a beneficial effect on your health... when eaten in moderation and when used to replace saturated fats or *trans* fats.

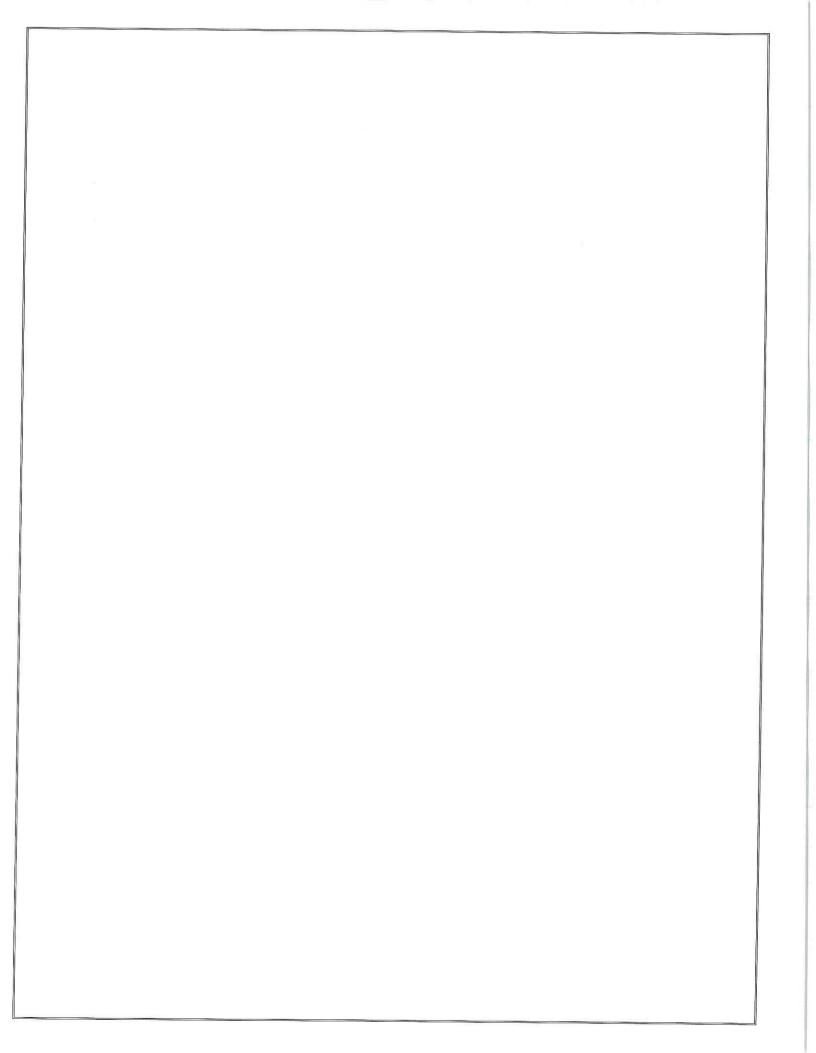
2. **Polyunsaturated fats**. Polyunsaturated fats are also natural fats. They come in two major groupings: Omega-3 and Omega-6 fatty acids. Omega-3 is common in most types of fatty fish, such as salmon and trout; Omega-6 fatty acids can be found in most seed oils. Studies shows that Omega fatty acids help to reduce bad cholesterol, promote brain health, and reduce incidence of sudden death from heart attacks³¹.

you should also focus primarily on "good" fats--poly and monounsaturated fats-- to increase your "good cholesterol," lower your bad cholesterol," and other disease.









NUTRITION FACTS LABEL

Check serving size

Check total carbohydrate

(Sugars are part of total carbohydrate. Don't count twice.)

Serving Size: 1/2 cup (Servings Per Containe	40g) er: 13		
Amount Per Serving			
Calories 150	Calories fro	om Fat 7	
	% D	aily Value*	
Total Fat 3g)	4%	is g
Saturated Fat 0.5g		2%	(3g o
Trans Fat 0g		0%	(580
Cholesterol 0mg		0%	🗕 Eat
Sodium 140mg)	6%	of t
Total Carbohydrate 27g)	9%	01.
Dietary Fiber 4g		15%	Hig
Sugars 1g			is g
Protein 5g		Street State	U
			(3g o
Vitamin A		4%	
Vitamin C		2%	
Calcium		20%	
Iron		4%	

Low fat is good (3g or less)

Eat less of these

High fiber is good

(3g or more)

Illustration only.

Large Fish	Medium Sized	Small Sized
Salmon	Rissha	Shrimp
Tilapia	Bhata	Koi
Hilsha	Lakka	Chapila
Rui	Baim	Tangra
Carp	Magur (Catfish)	Kachki
Pabda	Shing Dhela	Mola
Ayer	Shoil	Puti
Boal	Mrigel	
Pabda	Rupchanda	
Gojar	Kakila	
Swordfish	Poa	
Chital	Cheuwa	
	Rajua	
	Bata	
	Taki	
	Chiring	

Common Bangladeshi Fishes Consumed in The US:

Common Oils Used:

Vegetable, Canola, Corn, Mustard, Olive Oil Mustard Oil is mainly used to prepare Bhortas.

Cooking Preparation:

1) Many Big/small fishes can usually be fried, while majority of medium sized ones are used for curry items.

2) All sizes of fishes are used in curry with assortments of vegetables.

- 3) Fish Curry preparation involves two main methods:
- a) Fish is first fried and then placed into vegetables or jhol(usually in northern Bangladesh)
- b) Fish is directly mixed with spices and vegetables and cooked directly
- 4) Dry fish are usually reserved for Bhortas

5) Fish like chital, shrimp are also used for Bhortas, Kebabs or chops.







Eat Well, Live Well: Motivational Strategies to Eating Healthy

Healthy Eating Habits and Behavioral changes:

- For more variety, include your favorite foods and foods you haven't tried before. Get creative within the guidelines of your healthy-eating plan.
- Look for inspiration from others who are following a plan and enjoying the benefits.
- Walk after meals to digest your meals, walk with a family member or friend to keep you company. In winters take few laps inside the house.
- Choose the healthiest foods in the right amounts at each meal



- If you stick to your meal plan and watch your serving sizes, you'll eat about the same amount of carbohydrates and calories every day. This helps control your blood sugar and your weight. On the flip side, the more you vary what you eat — especially the amount of carbohydrates — the harder it is to control your blood sugar.
- If you're already eating a variety of healthy foods, you may simply need to adjust portion sizes to keep your blood sugar (glucose) under control.

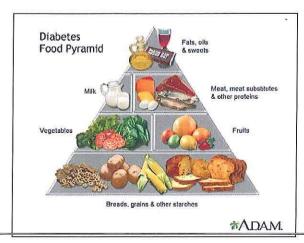
MAKE SHORT-TERM & LONG TERM GOALS

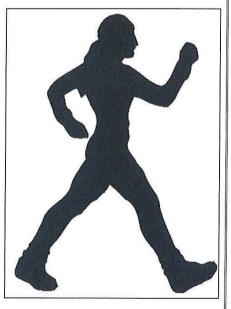
Short-term goals can include:

- a) Eating your meals at regular times
- b) sticking to your meal plans
- c) starting an exercise program
- d) starting a food journal

Long-term goals might include:

- a) Having your Hemoglobin A1C level drop closer to normal levels
- b) losing a certain amount of weight in a few months
- c) learning more about diabetes





USING REWARDS

You may want to use a reward system in your goal setting.

If you want to use rewards make sure the rewards aren't food or activities that would be counterproductive to your diabetes management plan. A chocolate ice cream cone might sound like a great reward, but if it will make your blood glucose rise to much and/or make you gain weight it's not a good bonus.

Try to choose rewards that will help you feel better about your new found success and help you with your diabetes control. For example, you may decide to buy a new pair of shoes for every ten pounds you lose, or go watch a movie with your family after a week of healthy eating. For some people feeling better and having better diabetes control is a good reward in itself.

Make realistic goals and approach them in manageable increments.

How do you stick to your resolve when you're offered something you're not comfortable eating?

Choose phrases that acknowledge the person's feelings, but still make your point: "That looks amazing, and I wish I had room, but I'm really enjoying the [insert other food here]." If the server persists, take a little of the food and give it a try, if you like; there's no law that says you have to clean your plate. If you're offered a second helping you don't need, keeping your reply in the past tense gives your words a sense of finality: "It sure was delicious, but I've had enough." "I couldn't eat another bite, but it was fantastic."

If you have trouble saying no, take a tip from trained speakers and practice, practice, practice. Take some time ahead of the event to imagine what it will be like, being as specific as possible. Who will be there? What will be served? How will you act, and what will you say? Rehearse as much as you need to, until you feel you can head into the festivities with confidence.

- If you are going for a party eat something before that at home, doing this when you are at the party you won't feel an urge to eat everything and concentrate on the food at the table that is healthy and appropriate for you.
- Involve your family and friends talk to them about your goals and ask them to motivate you in your fight to control diabetes.

Eating Out? Make Healthy Choices

- As a beverage choice, ask for water or order fat-free or low-fat milk, unsweetened tea, or other drinks without added sugars.
- If you drink Coffee or lattes ask for them with fat-free (skim) milk.
- In a restaurant, start your meal with a salad packed with veggies, to help control hunger and feel satisfied sooner.
- Order an item from the menu instead of heading for the "all-you-can-eat" buffet.
- Look for healthy, low cal. And low sugar
- Order steamed, grilled, or broiled dishes instead of those that are fried or sautéed.