

## SUMMARY

This booklet has been written to help you manage nutrition, health and diabetes and empower you with information to help prevent the early onset of complications. This is also a loud call to the adults who have the condition of diabetes to help prevent it in the next generation in their respective families, by incorporating healthy eating habits and encouraging an exercise routine for the whole family. This booklet emphasizes the importance of healthier eating habits with the Indian cuisine. Monitoring and managing blood glucose levels with this information then becomes easier. Moreover, if we guide the eating habits of our children on this cuisine from a very young age, healthy eating can become second nature to them as they grow up and can probably help them in the future when they face healthy and unhealthy food choices!!!

What are some of the unhealthy trends among our children today? Drinking a lot of soda everyday, eating a lot of high fat, high-refined carbohydrates and not maintaining good eating habits makes the everyday diet of the younger generation weak in valuable fiber and nutrients. If we do not prevent our children from developing poor eating habits (such as indiscriminate snacking, eating 'fast foods' 3-4 times or more a week and leading sedentary lifestyles from a very young age) becoming overweight follows easily and we may lose the weapon we have to prevent the onset of this disease as the next generation grows up. Bringing up our children on the Indian cuisine or managing our diabetes on this cuisine is not difficult once we know its strong points as well as its pitfalls.

The different regional cuisines in this booklet talk about their characteristics. Weekend get-togethers can often result in unhealthy eating and can become a problem. The chapter on Restaurant eating will help us, as consumers, to demand that better food be served. You can request that dhal be prepared without malai, (fat) that palak paneer be prepared with low-fat paneer, that the oils like olive or canola be used instead of hydrogenated fats, and that desserts be prepared to be more heart-healthy (see chapter on Carbohydrates and desserts). You have been given a list of food exchanges that are divided into different groups – Carbohydrates, Proteins and Fats, Dairy, Vegetables and Fruits. The Glossary will give you English equivalents to Indian terms and foods.

The Indian cuisine has many interesting ways to prepare vegetables, (like stir-frying), healthy legumes and lentils (gravies like sambaar or rajma) and even ways to cook milk and yogurt into the everyday meal (khaddi, paneer or aviyaal) . This can become 'unhealthy' when consumed in excess, when whole milk instead of 1% fat milk is used to make the paneer or when just an excessive amount of foods are eaten within a day. Fresh fruits are a better alternative to canned fruits or juices as you can get valuable fiber also. It is not the single 'soda', the 'chevda' or the 'small dessert' (the chapter on desserts talks about Indian desserts) that become a problem but the total cumulative effect when the whole day's meal becomes one high in calories, simple sugars, starches or oils and fats (check out the chapter on Cholesterol and triglycerides).

When the portions are also large, then the body is stressed to try and keep the blood glucose within optimal ranges. Conversely, when food eaten is insufficient, then a person can suffer from hypoglycemia. See below for tips on signs and symptoms of these two conditions. Here are some of the signs & symptoms of **Hyperglycemia** (when blood glucose levels are higher than the range at which the body functions optimally) and **Hypoglycemia** (when blood glucose levels drop below this range). Remember that any of these symptoms does not necessarily mean that you have the condition. The best way to know is to test your blood glucose and consult your doctor.

## **Some of the Signs & Symptoms of Hyperglycemia**

- Increased thirst and urination
- Weakness, pain in stomach, aching all over
- Heavy labored breathing
- Loss of appetite, nausea and vomiting
- fatigue
- large amounts of sugar in blood
- ketones in urine

### **What can you do?**

- ✓ Call the Doctor immediately
- ✓ Take fluids without sugar if able to swallow
- ✓ Test blood glucose frequently
- ✓ Test urine for ketones

### **What are the causes?**

- Not enough insulin
- Too much food
- Infection, fever, illness
- Emotional stress

## **Some of the Signs & Symptoms of Hypoglycemia**

- Cold sweats, dizziness, feeling faint
- Headache
- Pounding of heart, trembling, nervousness
- Blurred vision
- Hunger
- Inability to awaken
- Personality changes

### **What can you do?**

- ✓ Take Glucose tablets or orange juice
- ✓ Check blood glucose levels
- ✓ Do not give insulin
- ✓ Do not give anything by mouth if unconscious
- ✓ Give glucagons according to package instructions

### **What are the causes?**

- Too much insulin
- Not enough food
- Unusual amount of exercise
- Delayed meals

How can you avoid Hyperglycemia or Hypoglycemia?

Consult your Doctor and work with your dietitian. Your dietitian can recommend a diet suited to your lifestyle and preferences. She/he can also show you the amounts — of calories, carbohydrates, fats & proteins you are consuming presently, if you give him/her the information of the exact amounts consumed. So keeping a food record is a useful tool

### **Summary of some of the tips on Blood Glucose Management**

There is no diet known as a ‘diabetes diet’ and no special foods are necessary. The Introduction explains how the body regulates blood glucose in the blood both from the foods we eat and from the glucose it makes breaking down other nutrients like fats and proteins. Ask your doctor what the optimal range of blood glucose for you should be and try to keep your blood glucose within this range. Foods available in the supermarket can be used and can be eaten but with the information and awareness, you can combine healthy foods in appropriate amounts so that the insulin produced by your body (along with any other medication that is prescribed by your Medical Provider) will help your body use the foods you eat and keep the blood glucose (or ‘blood sugar’ as it is commonly called) within the Doctor-prescribed range.

Here are some tools that can help you achieve this goal:

1. Keep a record of foods and the approximate amounts till you get a good working knowledge with the help of your Medical Provider and a Registered Dietitian.
2. Use heart-healthy fats and oils – monounsaturated oils like olive oil, canola oil have been found to be healthy. If you use ghee, keep it to a minimum and for occasional use but also count it in your total daily fat allowance.
3. Include plenty of fresh or cooked vegetables (stir-fried with 1-2 tsps of oil to season for 3-4 cups of vegetables is recommended). The eating patterns of some regions talks about the small quantity of vegetables used. This is where the eating patterns can be improved. While stir-frying vegetable, use the spices, garlic, onion, coriander etc of this cuisine) to improve taste instead of increasing fats & oils ( this is one of the benefits of this cuisine).
4. Try to avoid ‘feasting’ and ‘fasting’. If you fast, make sure that you have a good balanced meal before and after a ‘fast’.
5. Make sure you include 6-8 cups of water everyday. Try to avoid soda or juices as a beverage substitute for water especially for young children as this can become a habit that is tough to break!
6. 3-4 cups of vegetables (without much oil) and fruits with whole grain cereals can help make sure that the bowels are ‘regular’ for you and the whole family!
7. Avoid excess salt while garnishing foods.
8. Foods like ginger, onion, garlic, cumin seeds, fenugreek seeds, fennel seeds, dhals, curry leaves, coriander leaves etc have been recommended in Ayurveda and can continue to be included as always.
9. Include an exercise program like yoga (after you check this out with your Medical Provider) everyday or at least 3-4 times a week.
10. Try and use brown rice as it has more fiber.

There are bibliographies at the end of almost every chapter that can give you additional information. We have also tried to include some translations at the end. A useful reference to keep is the number to the American Dietetic Association (800-877-1600 ext. 5000) or the e-mail address([www.eatright.org](http://www.eatright.org)). This organization can direct you to resources and qualified professionals to help you empower yourself with helpful information on eating and on how to manage your diabetes and blood glucose levels.

## More Information on Body Mass Risk Assessment and Physical Activity

### Key Recommendations (From the Expert Panel on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults)

Weight loss is advised to lower elevated blood pressure in overweight and obese persons with high blood pressure. Weight loss is also suggested to lower elevated levels of total cholesterol, LDL-cholesterol, and triglycerides, and to raise low levels of HDL-cholesterol in overweight and obese persons with dyslipidemia. Weight loss is effective to lower elevated blood glucose levels in overweight and obese persons with type 2 diabetes. Use the BMI to assess overweight and obesity. Body weight alone can be used to follow weight loss, and to determine the effectiveness of therapy. The BMI is used to classify excess weight and obesity and to estimate relative risk of disease compared to normal weight. The waist circumference should be used to assess abdominal fat content. The initial goal of weight loss therapy should be to reduce body weight by about 10 percent from the baseline. With success, and if warranted, further weight loss can be attempted. Weight loss should be gradual and around 1 to 2 pounds per week for a period of 6 months, with subsequent strategy based on the amount of weight lost. Low calorie diets (LCD) are used for weight loss in overweight and obese persons. Reducing fat as part of an LCD is a practical way to reduce calories. Reducing dietary fat alone without reducing calories is not sufficient for weight loss. However, reducing dietary fat, and with reducing dietary carbohydrates, can help reduce calories. A diet that is individually planned to help create a deficit of 500 to 1,000 kcal/day should be an integral part of any program aimed at achieving a weight loss of 1 to 2 pounds per week. Physical activity should be part of a comprehensive weight loss therapy and weight control program because it: (1) modestly contributes to weight loss in overweight and obese adults, (2) may decrease abdominal fat, (3) increases cardiorespiratory fitness, and (4) may help with maintenance of weight loss. Physical activity should be an integral part of weight loss therapy and weight maintenance. Initially, moderate levels of physical activity for 30 to 45 minutes, 3 to 5 days a week, should be encouraged. All adults should set a long-term goal to accumulate at least 30 minutes or more of moderate-intensity physical activity on most, and preferably all, days of the week. The combination of a reduced calorie diet and increased physical activity is recommended since it produces weight loss that may also result in decreases in abdominal fat and increases in cardiorespiratory fitness. Behavior therapy is a useful adjunct when incorporated into treatment for weight loss and weight maintenance. Weight loss and weight maintenance therapy should employ the combination of LCD's, increased physical activity, and behavior therapy. After successful weight loss, the likelihood of weight loss maintenance is enhanced by a program consisting of dietary therapy, physical activity, and behavior therapy and this should be continued. Drug therapy can also be used with a Doctor's guidance. However, drug safety and efficacy beyond 1 year of total treatment have not been established. A weight maintenance program should be a priority after the initial 6 months of weight loss therapy.

### Part 1: Assessing Your Risk

According to the NHLBI guidelines, assessment of excess weight involves using three key measures:

- **body mass index (BMI)**
- **waist circumference, and**
- **risk factors for diseases and conditions associated with obesity.**

The BMI is a measure of your weight relative to your height and waist circumference measures abdominal fat. Combining these with information about your additional risk factors yields your risk for developing obesity-associated diseases.

## What is Your Risk?

### 1. Body Mass Index (BMI)

BMI is a reliable indicator of total body fat, which is related to the risk of disease and death. The score is valid for both men and women but it does have some limits. The **limits** are:

- It may **overestimate** body fat in athletes and others who have a muscular build.
- It may **underestimate** body fat in older persons and others who have lost muscle mass.

Use the BMI **calculator** <<http://www.nhlbisupport.com/bmi/bmicalc.htm>> or **tables** to estimate your total body fat. The BMI score in the following shows how to rate the weight status.

FOR INDIANS Normal BMI is <23

	<b>BMI</b>
Underweight	Below 18.5
Normal	18.5 - 24.9
Overweight	25.0 - 29.9
Obesity	30.0 - 30.9
Morbid Obesity	40 & above

### 2. Waist Circumference

Determine your waist circumference by placing a measuring tape snugly around your waist. It is a good indicator of your abdominal fat (another predictor of your risk for developing risk factors for heart disease and other diseases). This risk increases with a waist measurement of over 40 inches in men and over 35 inches in women

The table, **Risks of Obesity-Associated Diseases by BMI and Waist Circumference**, <[bmi\\_dis.htm](#)> provides you with an idea of whether your BMI combined with your waist circumference increases your risk for developing obesity associated diseases or conditions.

### 3. Other Risk Factors

Besides being overweight or obese, there are additional risk factors to consider.

#### Risk Factors

High blood pressure (hypertension), high LDL-cholesterol ("bad" cholesterol) low HDL-cholesterol ("good" cholesterol), high triglycerides, high blood glucose, (sugar) family history of premature heart disease, physical inactivity and cigarette smoking.
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### 4. Assessment

For people who are considered obese (BMI greater than or equal to 30) or those who are

overweight (BMI of 25 to 29.9) and have two or more risk factors, the guidelines recommend weight loss. Even a small weight loss (just 10 percent of your current weight) will help to lower your risk of developing diseases associated with obesity. Patients who are overweight, but do not have a high waist measurement, and have less than 2 risk factors may need to prevent further weight gain rather than lose weight.

Talk to your doctor to see if you are at an increased risk and if you should lose weight. Your doctor will evaluate your BMI, waist measurement, and other risk factor for heart disease. People who are overweight or obese have a greater chance of developing high blood pressure, high blood cholesterol or other lipid disorders, type 2 diabetes, heart disease, stroke, and certain cancers. Even a small weight loss (just 10 percent less than current weight) will help to lower the risk of developing those diseases.

### **Guide to Physical Activity**

An increase in physical activity is an important part of your weight management program. Most weight loss occurs because of decreased caloric intake. Sustained physical activity is most helpful in the prevention of weight regain. In addition, exercise has a benefit of reducing risks of cardiovascular disease and diabetes, beyond that produced by weight reduction alone. Start exercising slowly, and gradually increase the intensity. Trying too hard at first can lead to injury.

### **Examples of moderate amounts of physical activity**

<b>Common Chores</b>	<b>Sporting Activities</b>
Washing and waxing a car for 45-60 minutes	Playing volleyball for 45-60 minutes
Washing windows or floors for 45-60 minutes	Playing touch football for 45 minutes
Gardening for 30-45 minutes	Walking 1 and 3/4 miles in 35 minute (20min/mile)
Wheeling self in wheelchair 30-40 minutes	Basketball (shooting baskets) 30 minutes
Pushing a stroller 1 1/2 miles in 30 minutes	Bicycling 5 miles in 30 minutes
Raking leaves for 30 minutes	Dancing fast (social) for 30 minutes
Walking 2 miles in 30 minutes (15min/mile)	Water aerobics for 30 minutes
Shoveling snow for 15 minutes	Swimming Laps for 20 minutes
Stairwalking for 15 minutes	Basketball (playing game) for 15-20 minutes
	Bicycling 4 miles in 15 minutes
	Jumping rope for 15 minutes
	Running 1 and 1/2 miles in 15 min. (10min/mile)

Your exercise can be done all at one time, or intermittently over the day. Initial activities may be walking or swimming at a slow pace. You can start out by walking 30 minutes for three days a week and can build upto 45 minutes of more intense walking, at least five days a week. With this regimen, you can burn 100 to 200 calories more per day. All adults should set a long-term goal to accumulate at least 30 minutes or more of moderate-intensity physical activity on most, and preferably all, days of the week. This regimen can be adapted to other forms of physical activity, but walking is particularly attractive because of its safety

and accessibility. Also, try to increase "every day" activity such as taking the stairs instead of the elevator. Reducing sedentary time is a good strategy to increase activity. Start by undertaking frequent, less strenuous activities. With time, you may be able to engage in more strenuous activities. Competitive sports, such as tennis and volleyball, can provide an enjoyable form of exercise for many. Care must be taken to avoid injury. Check with your Medical Practitioner before starting a physical activity regimen.

### **Activity Progression**

For the beginner, activity level can begin as very light and would include an increase in standing activities, special chores like room painting, pushing a wheelchair, yard work, ironing, cooking, and playing a musical instrument.

The next level would be light activity such as slow walking of 24 min/mile, garage work, carpentry, house cleaning, childcare, golf, sailing, and recreational table tennis.

The next level would be moderate activity such as walking 15 minute/mile, weeding and hoeing a garden, carrying a load, cycling, skiing, tennis, and dancing.

High activity would include walking 10 minute/mile or walking with load uphill, tree felling, heavy manual digging, basketball, climbing, or soccer/kick ball.

### **You may also want to try**

- flexibility exercise to attain full range of joint motion
- strength or resistance exercise
- aerobic conditioning

[http://www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/phy\\_act.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/phy_act.htm)

Body Mass Index, Assessing your Risk and Guide to Physical Activity: "Source: National Heart, Lung, and Blood Institute".

Some Important links:

<http://www.nhlbisupport.com/bmi/>

[www.va.gov/diabetes](http://www.va.gov/diabetes)

<http://www.hhs.gov/topics/diabetes.html>

<http://ndep.nih.gov/>

<http://www.diabetes.org/main/application/commercewf>

<http://www.diabetesnet.com/>

<http://www.aadenet.org/>

<http://www.joslin.harvard.edu/education/library/index.shtml>

<http://www.eatright.org/>

<http://ndep.nih.gov/get-info/dpi.htm>

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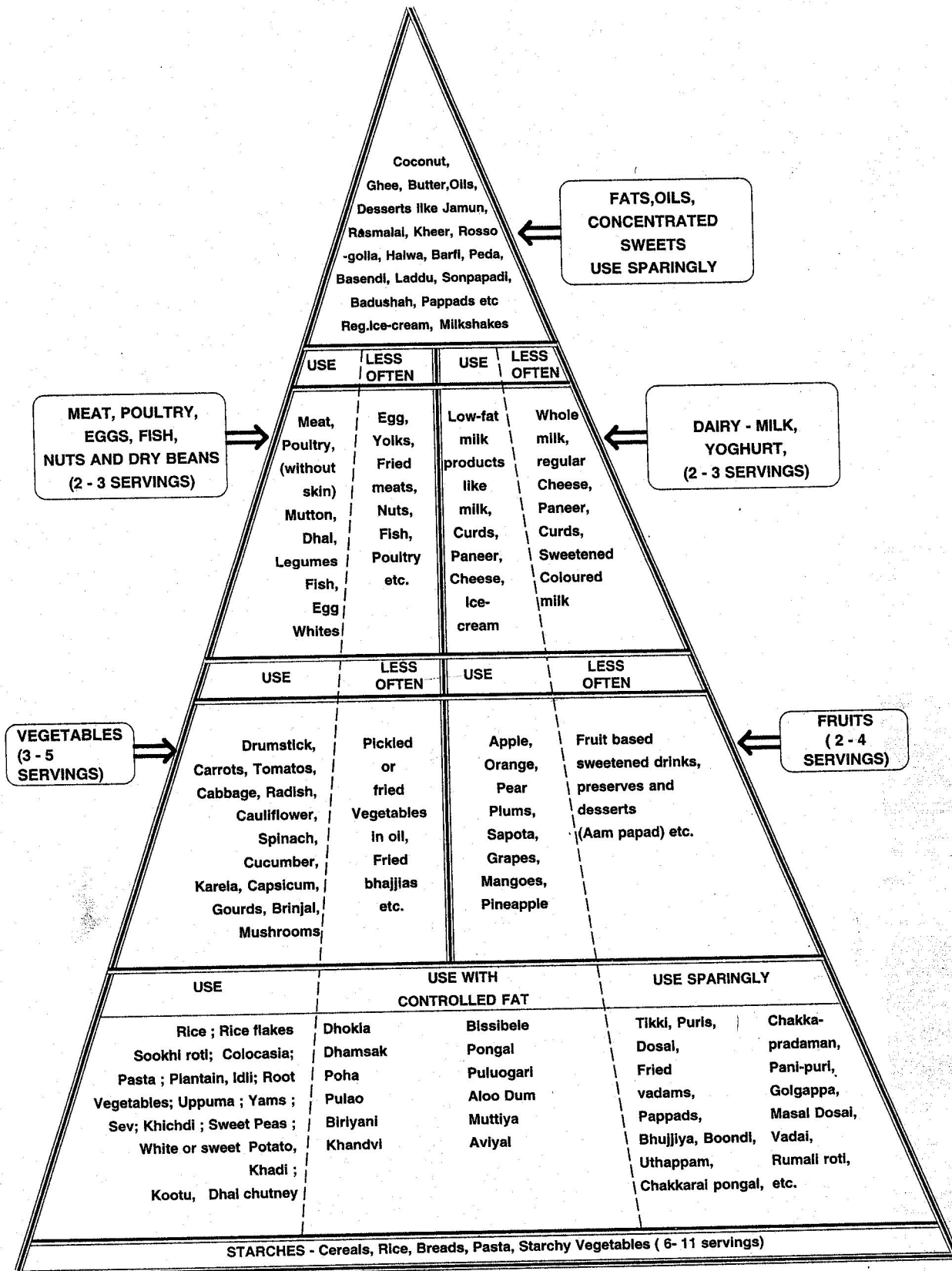
### Body Mass Index Table

	Normal					Overweight					Obese					Extreme Obesity																				
BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Height (inches)	Body Weight (pounds)																																			
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167	172	177	181	186	191	196	201	205	210	215	220	224	229	234	239	244	248	253	258
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	212	217	222	227	232	237	242	247	252	257	262	267
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189	194	199	204	209	215	220	225	230	235	240	245	250	255	261	266	271	276
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185	190	195	201	206	211	217	222	227	232	238	243	248	254	259	264	269	275	280	285
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202	207	213	218	224	229	235	240	246	251	256	262	267	273	278	284	289	295
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197	203	208	214	220	225	231	237	242	248	254	259	265	270	278	282	287	293	299	304
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204	209	215	221	227	232	238	244	250	256	262	267	273	279	285	291	296	302	308	314
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240	246	252	258	264	270	276	282	288	294	300	306	312	318	324
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216	223	229	235	241	247	253	260	266	272	278	284	291	297	303	309	315	322	328	334
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223	230	236	242	249	255	261	268	274	280	287	293	299	306	312	319	325	331	338	344
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70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250	257	265	272	279	286	293	301	308	315	322	329	338	343	351	358	365	372	379	386
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258	265	272	279	287	294	302	309	316	324	331	338	346	353	361	368	375	383	390	397
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265	272	280	288	295	302	310	318	325	333	340	348	355	363	371	378	386	393	401	408
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272	280	287	295	303	311	319	326	334	342	350	358	365	373	381	389	396	404	412	420
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279	287	295	303	311	319	327	335	343	351	359	367	375	383	391	399	407	415	423	431
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287	295	304	312	320	328	336	344	353	361	369	377	385	394	402	410	418	426	435	443

Source: Adapted from Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.

# FOOD GUIDE PYRAMID

A Guide to Daily Food Choices



Note : FOODS ARE BEST USED WHEN COOKED TO BE HEART-HEALTHY (i.e. controlled fats, sugars and salt) Watch portions !

Adapted from the USDA Food Pyramid and The Ethnic and Regional Food Practices on the Indian - Pakistani Cuisine by the Am. Diet Association and the Am. Diabetic Association, 1996