

Treating Diabetes From A Nutritional Perspective – PART FIVE

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MEASURING YOUR METABOLIC RATE

As discussed in our last installment in this series, weight management is critical to blood sugar control. Determining your daily calorie requirements in association with your basal metabolic rate can help you better manage your weight. The old adage, “calories in/calories out,” still applies. Your basal metabolic rate (BMR) refers to the number of calories you require to maintain normal bodily processes when your body is at rest.

HERE IS HOW YOU DETERMINE BMR.

We provide an example of a 130 pound women:

Step 1

Change pounds to kilograms by dividing your weight by 2.2. (Our example: 130 divided by 2.2 kg = 59 kg).

Step 2

Multiply weight in kilograms by the BMR factor to determine the number of BMR calories used per hour. For men the factor is 1.0 and for women it is 0.9. (Our example: 59 kg x 0.9 = 53 calories per hour).

Step 3

Multiply the calories used in one hour by the hours in a day. (Our example: 53 calories per hour x 24 hours = 1,272 calories per day).

The number of total calories per day represents the BMR which is the number of calories that are needed to maintain life processes such as respiration, heart beat, body temperature, and other essential body functions.

Once you determine your BMR, you will need to calculate how many calories you expend throughout the day and therefore determine your calorie needs. To do this you must add “activity calories” to your BMR. Activity calories relate to the type and amount of activity you engage in on a

daily basis. Everything you do during the day that involves the use of your muscles must be considered. Mental activity requires only slightly more energy than resting and therefore does not require much calorie usage. Contraction of muscles is what burns up calories. The following is a general guideline:

For light activity (Example: office workers), add 50% of the BMR

For moderate activity (Example: light industry, store workers), add 70% of the BMR

For very active (Example: laborers, athletes), add 100% of BMR

If the women in the BMR example engage in light activity, we would estimate her calorie needs by multiplying her BMR calories per day by 50%. $1,272 \times 50\% = 636$ calories. This 636 must then be added to her BMR of 1,272 which would give her a calorie requirement of 1,908 calories per day. At moderate activity her calorie needs would be 2,162 per day and at the very active level her calorie needs would stand at 2,544.

Calories consumed in excess of daily requirements can result in weight gain, whereas calories consumed at less than daily requirements can result in weight loss as the body will be forced to burn stored calories. It should also be noted that your BMR will depend on the functional level of your glandular system, including the thyroid gland. To determine thyroid activity, you can administer the following test.

On the night before the test, shake down an oral thermometer and leave it at an accessible place beside your bed. The very moment you awake, after a good nights sleep, stay in bed and place the thermometer firmly in the armpit and leave it there for ten minutes. If your reading is lower than 97.8, (normal resting temperature), it's an indication that your thyroid is underactive which could result in a lower metabolic

rate and a subsequent slower burning of calories. It is wise to repeat this test several times in a row in order to make a proper determination. If you are a women of child bearing years, perform this test on only the second and third days of menstruation.

Low thyroid activity can result in a lower BMR and slower burning of calories in general. This will impact a person's ability to lose weight.

BODY MASS INDEX: (BMI)

Body mass index is an index of desirable weight for adults. It is calculated by first determining a person's weight in kilograms. One pound equals 2.2 kilograms. This weight in kilograms is then divided by the square of a person's height in meters. One inch equals 2.5 centimeters and 100 centimeters equals one meter.

Let's take for example a 6.0 foot male weighing 180 pounds. $180 \div 2.2 = 81.8$ kilograms. Our male weighs 81.8 kilograms. Our male is 72 inches tall. $2.5 \times 72 = 180$ centimeters or 1.8 meters. $1.8 \text{ meters squared} = 3.24$ (1.8×1.8). We now divide 81.8 by 3.24 which gives us a BMI of 25.2 for our six foot, 180 pound male. Our male is just slightly over the desirable BMI.

BMI Range

	Desirable	Overweight	Obese
Female	18.7 - 23.5	23.5 - 28.2	28.5 +
Male	20.5 - 25.0	25.0 - 30.0	30.0 +

While the number of calories consumed and the rate at which those calories are burned is important to any weight management program, the nutritional quality of those calories will often determine your success or failure in arriving at a desirable weight. Your dietary program must include foods high in nutritional density along with an appropriate amount of fiber if you hope to succeed at weight control. The extent to which vitamins, minerals, enzymes, amino acids, →

complex carbohydrates, essential fatty acids and a host of other nutrients are present in the daily diet, will be the extent to which the body is able to efficiently burn calories. The eating of whole foods versus processed and refined foods needs to be your goal. An appropriate supplementation program may also be necessary to insure adequate nutritional support. The daily elimination of the wastes of metabolism is also critical to this process and plays a major role in weight management and your overall health.

THE ROLE OF FIBER

The intake of 30 to 40 grams of various types of fiber in the diet on a daily basis will go a long way in slowing down the digestion of carbohydrates and fats and therefore help regulate sugar metabolism. Fiber is the non-digestible part of foods that serve to facilitate good elimination of wastes through the colon. Adding flax seed fiber, oat and wheat bran, apple pectin and other such fibers to the diet will slow down carbohydrate metabolism and create less demand for insulin. Fiber will also improve bowel function and shorten the transit time for the elimination of waste after eating a meal. Rapid elimination of the wastes of metabolism is vital to having a healthy body.

Testing For Blood Sugar Levels

You can monitor your own blood sugar levels in the convenience of your home. Simply purchase a blood glucose test kit from your local drugstore and follow the instructions. Since diabetes is so wide spread in America, with many Americans not even knowing they have it, I recommend that all adults test their blood sugar levels from time to time. This is especially true for anyone over forty.

SYNDROME X AND DIABETES

The term syndrome X has been coined to describe a group of symptoms which include insulin resistance, upper-body obesity, elevated cholesterol and triglycerides, and high blood pressure. It is felt that insulin resistance, which results in elevated glucose and insulin levels, is the corner stone of this syndrome. While it is possible to have insulin resistance without having syndrome X, syndrome X will always include insulin resistance and compromised glucose metabolism. Excess insulin promotes increases in cholesterol, triglycerides, high blood pressure and abdominal obesity. This is why excess insulin, due to insulin resistance, tends to be the major dynamic in syndrome X.

Syndrome X is primarily caused by eating a diet high in refined carbohydrates. This type of diet not only raises glucose levels and increases insulin resistance, it also fails to supply the body with the vitamins, minerals, enzymes, and multiple other nutrients that we need for repair and maintenance of body tissue. Moving from a processed and refined food diet to a whole food diet is a key step in avoiding and/or reversing syndrome X. Adding a high quality green food concentrate along with key nutritional supplements, such as a high quality multiple vitamin and mineral complex, additional vitamins C and E, alpha lipoic acid, and other such nutrients, will contribute significantly to avoiding syndrome X. A good book to read on this subject is Syndrome X, by Challen, Berkson and Smith.

This concludes this series on treating diabetes from a nutritional perspective. Visit www.milkandhoneyhealthfoods.com for comprehensive articles on many aspects of health and nutrition.