

Diabetes: Basic Dietary Instruction

I. Carbohydrates, Protein, & Fat

There are 3 calorie-containing nutrients in food: carbohydrate, protein, and fat.

A. **CARBOHYDRATE** is the main nutrient affecting blood sugar levels after you eat.

- That **does not** mean that people with diabetes have to avoid all carbohydrates. On the contrary, they are your body's main energy source. Carbohydrates should make up about 45-50% of your total daily calorie intake.
- However, it **does** mean that you should pay more attention to the carbohydrate in your food. Specifically, you should eat more moderate portions of high carbohydrate foods and aim to eat a consistent amount of carbohydrate at each meal, each day.
- There are 2 types of carbohydrate in foods: simple (sugars) and complex (starches).

Simple Sugars include...

- 1) **added sugars** (table sugar, honey, molasses, high fructose corn syrup, fruit juice concentrate, and fruit preserves), which are added to candy, cookies, donuts, cakes, ice cream, frozen yogurt, sugary breakfast cereals, and soda pop
- 2) **naturally-occurring sugars in whole foods** (fructose in whole fruits and lactose in milk and yogurt).

Complex Starches include...

- 1) **Refined and processed grains** (white breads, white rice, white pasta, cereals and baked goods made with "enriched wheat flour")
 - 2) **Whole grains and high fiber plant foods** (vegetables, beans, whole wheat bread, brown & wild rice, whole wheat pasta, cereals and baked goods made with "100% whole grains").
- It's best to limit added sugars and refined/processed grains most of the time. Why?

1. Added sugars are more concentrated sources of carbs (i.e. more carbs in less volume).

EX: 15 g carbs = 17 grapes 1/3 c. grape juice 1 Tbs. honey
30 g carbs = 1 c. bran flakes 1/2 c. Frosted Flakes 2.5 Tbs. sugar

If you choose to eat a lot of added sugars, you have to eat a smaller quantity to get the same amount of carbohydrate.

2. Refined grains and foods high in added sugars are usually very low in vitamins, minerals, and fiber. By contrast, whole natural foods are usually packed with these nutrients.

EX: - 1 c. strawberries has 45 calories and 10 g carbohydrate PLUS 2 g fiber (15%DV), 247 mg potassium, 84 mg vitamin C (140%DV), and 26 mcg folate (15%DV).
- 1 Tbs. sugar just has 45 calories and 12 g carbohydrate.

- Therefore, if you're given an allowance of only 15-30 g of carbohydrate for a snack, which is the better value (in terms of quantity and quality)? Whole natural foods by far!!!
- It's OK to enjoy refined/processed grains and added sugars once in a while. Just keep in mind, that they must be eaten in place of (not in addition to) other more healthful carbohydrate foods. And, if you did this all the time, you would deprive yourself of the much needed vitamins, minerals, and fiber that your body needs.

B. PROTEIN should be included with most meals and snacks.

- Why? Protein delays the rise in blood sugar after eating.
- Good sources of protein are lean meats (round and loin cuts), skinless chicken or turkey breast, fish, egg whites, low fat cheeses, 1% fat milk or yogurt, natural peanut butter, tofu, and beans.

C. FAT (unsaturated type) should be included with most meals and snacks.

- Fat slows down gastric emptying time, which also delays the rise in blood sugar after eating.
- For a healthy heart, choose fats with a lot of unsaturated fatty acids (e.g. canola and olive oils, avocados, nuts, and fatty fish). Limit fats with a lot of saturated and/or trans fats (like beef, chicken skin, whole fat milk products, butter, lard, coconut, palm, and palm kernel oils, stick margarine, and fried/processed foods made with "partially hydrogenated vegetable oil").

II. MEAL PLANNING & CARBOHYDRATE COUNTING

A. Meal Planning

- Four food groups contain carbohydrate: 1) bread/cereal/grain, 2) starchy vegetable, 3) fruit, and 4) milk/yogurt.
- As a general rule of thumb, limit bread/cereal/grain and starchy vegetables to ½-1 cup (total) per meal. Eat 2-3 pieces of whole fruit each day, and 2-3 cups fat-free milk/yogurt each day. Limit sweets to occasional treats (i.e. 2 small servings per week).

B. Carbohydrate Counting

- One serving (i.e. "exchange") from each carbohydrate-containing food group has ~ 15 g carbs.
- Refer to the ADA Exchange Lists for a complete listing of exchanges/serving sizes.
- For greater control, read food labels ("Nutrition Facts") for carbohydrate content on individual food items.

Suggested Carbohydrate Distribution

Calorie level	Total Carbohydrate* (g)	Brk	Lunch	Dinner	Snack	Snack	Snack
1400	155-175	30	45	45	15	15-30	0
1600	180-200	45	45	45	30	15-30	0
1800	200-225	45	45	45-60	30	30	0-15
2000	225-250	45	45-60	60	30	30	15
2200	250-275	45-60	60	60	30	30	15-30
2400	270-300	60	60	60	30	30-45	30-45

* Total carbohydrate based on 45-50% calories from carbohydrate.