

# MANAGING YOUR DIABETES WITH NUTRITION

Presented By

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# PRESENTATION GOALS

- ▶ Understand Carbohydrate Basics
- ▶ Select Quality over Quantity to Improve Blood Glucose and HbA1c
- ▶ Learn to Count Carbs when needed

# CARBOHYDRATES

ARE THEY GOOD FOR YOU OR NOT?

YES !!!

NO !!!

# CARBS



# CARBS EVERYWHERE

# TERMS TO UNDERSTAND DIABETES BASICS

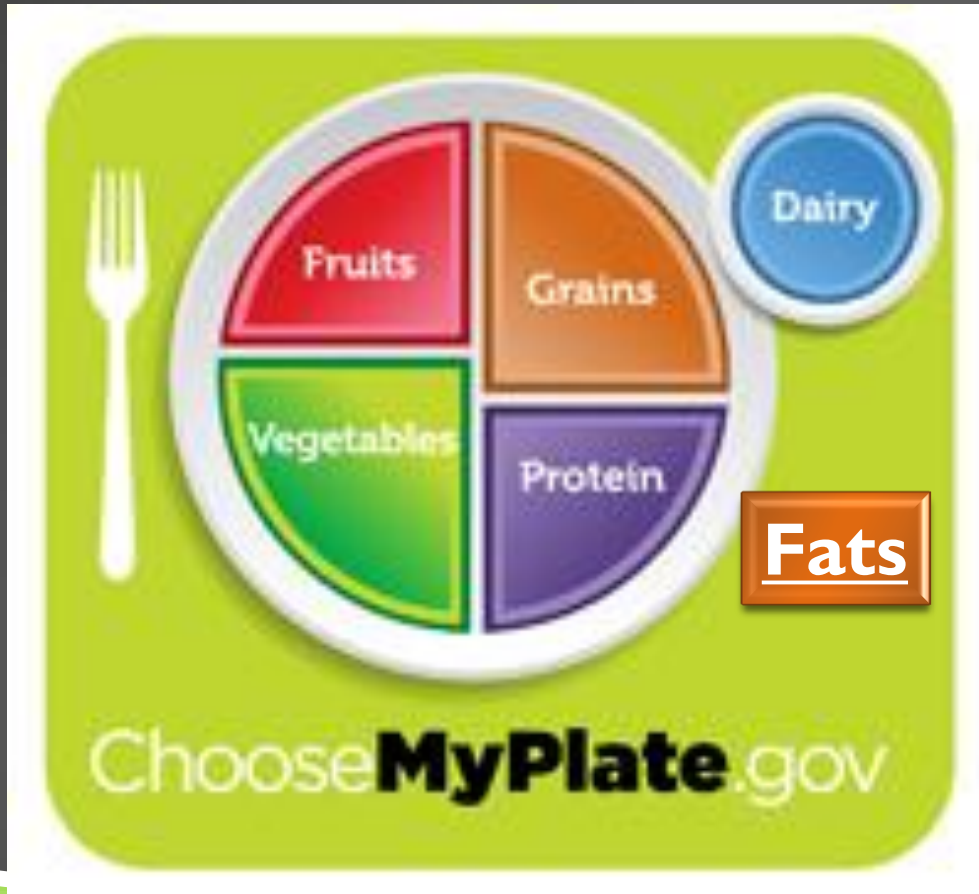
- ▶ Hemoglobin A1C
- ▶ Glycemic Index/ Load
- ▶ Glycated Hemoglobin
- ▶ Muscle Glycogen

# CARBOHYDRATES ARE IMPORTANT

- ▶ The Amount You Eat
- ▶ The Quality You Select



# FOUR OUT OF SIX GROUPS HAVE CARBS



Whole Grains

Fruits

Dairy Products

Vegetables

# CARB BASICS: CHO = CARBOHYDRATES

▶ A CHO serving = 15 grams

C= Carbon    H= Hydrogen    O= Oxygen

# CARBS- MINIMUM AMOUNT FOR SAFETY

- ▶ Atkins-  $< 60$  grams to produce ketones
- ▶ South Beach Diet- Induction Phase -2 weeks -  $< 60$  grams to produce ketones
- ▶ Joslin Diabetes Center and American Diabetes Association-  $\geq 140$ g
- ▶ Sports: 50%-70% of the person's diet
- ▶ Cardiac: 50% or more of the person's diet

# GOOD CARBS- WHOLE GRAINS

15G CHO PER 1/3 CUP CKD. SERVING

▶ Other Whole Grains: Rye, Spelt, Kamut, Barley, Amaranth

▶ Brown Rice



Quinoa



Rolled Oats



▶ Whole Corn



Buckwheat



Whole Wheat





# GOOD CARBS- LEGUMES

15G CHO PER 1/2 CUP SERVING

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▶ Chickpeas



Blackbeans



Kidney Beans



▶ Lentils



Navy/Great Northern Beans



Black Eyed/Lima Beans



# GOOD CARBS- WHOLE FRUITS- 15G CHO EACH



1 apple



1 small pear



1/2 banana



1 cup berries



15 grapes



1 cup melon



3/4 cup pineapple

# GOOD CARBS-VEGETABLES

5 GRAMS CHO PER SERVING

1 CUP RAW OR ½ CUP COOKED





# GOOD CARBS- DAIRY PRODUCTS WITH NO SUGAR ADDED



16 grams per 8 ounces



8-10 grams/ 5.7 oz.



Milk-any type

12 grams per 8 oz.



# NUTRITION FACTS LABEL- CHO & FIBER

| Nutrition Facts                                                                                                                     |                                |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Serving Size 1 cup (4 oz)                                                                                                           |                                |
| Serving Per Container 3                                                                                                             |                                |
| Amount Per Serving                                                                                                                  |                                |
| Calories 75 Calories from Fat 27                                                                                                    |                                |
|                                                                                                                                     | % Daily Value*                 |
| Total Fat 3 g                                                                                                                       | 5%                             |
| Saturated Fat 0 g                                                                                                                   | 0%                             |
| Cholesterol 0 mg                                                                                                                    | 0%                             |
| Sodium 300 mg                                                                                                                       | 4%                             |
| <b>Total Carbohydrate 10 g</b>                                                                                                      | <b>3%</b>                      |
| Dietary Fiber 5 g                                                                                                                   | <b>20%</b>                     |
| Sugars 3 g                                                                                                                          |                                |
| Protein 2 g                                                                                                                         |                                |
| Vitamin A 80% - Vitamin C 60% - Calcium 4% - Iron 4%                                                                                |                                |
| * Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs: |                                |
|                                                                                                                                     | Calories: 2,000      2,500     |
| Total Fat                                                                                                                           | Less than 65g      80g         |
| Sat Fat                                                                                                                             | Less than 20g      25g         |
| Cholesterol                                                                                                                         | Less than 300mg      300mg     |
| Sodium                                                                                                                              | Less than 2,400mg      2,400mg |
| Total Carbohydrate                                                                                                                  | 300g      375g                 |
| Dietary Fiber                                                                                                                       | 25g      30g                   |
| Calories per gram:                                                                                                                  |                                |
| Fat 9 • Carbohydrate 4 • Protein 4                                                                                                  |                                |

The total carbohydrate tells how many grams of carbohydrate are in 1 serving.

Fiber has to be subtracted from the Total Carbohydrate

Total CHO (10g)  
- Fiber CHO (5g)  
5g Net CHO

The **NET** Carbohydrate is **5g**

If the fiber grams is less Than 5, do not subtract From total carbs.

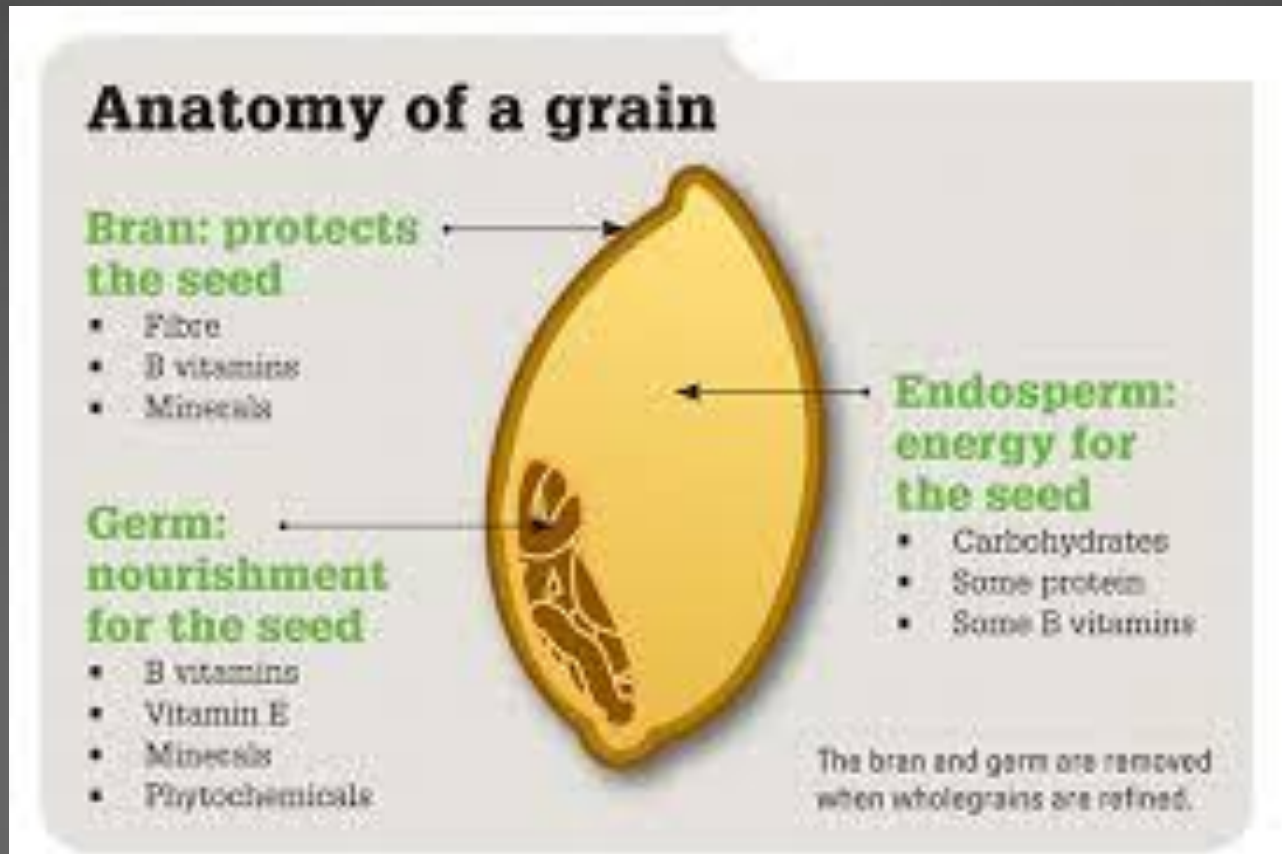
# WHOLE GRAIN ONLY- NOT ENRICHED

Fat 9 • Carbohydrate 4 • Fiber 1

**INGREDIENTS: WHOLE WHEAT FLOUR**  
(WHOLE GRAIN), WATER, SUGAR, WHEAT  
GLUTEN, YEAST, SOYBEAN OIL  
(NON-HYDROGENATED), HONEY, SALT,  
CONTAINS 2% OR LESS OF THE FOLLOWING:  
CALCIUM SULFATE, CULTURED  
AMMONIUM



# WHOLE GRAIN BENEFITS





# BAD CARBS-

## PROCESSED/REFINED- DRIVES UP INSULIN



# BAD CARBS-

# FAST ACTING CARBS- DRIVES INSULIN UP

Coca-Cola

20 fl oz bottle



similar products



nutrition ingredients varieties

## Nutrition Facts

|                               |            |
|-------------------------------|------------|
| Serving Size 1 bottle         |            |
| Servings Per Container 1      |            |
| <b>Amount Per Serving</b>     |            |
| <b>Calories 240</b>           |            |
| <b>% Daily Value*</b>         |            |
| Total Fat 0g                  | 0%         |
| Sodium 75mg                   | 3%         |
| <b>Total Carbohydrate 65g</b> | <b>22%</b> |
| Sugars 65g ←                  |            |
| Protein 0g                    |            |

Not a significant source of fat calories, saturated fat, trans fat, cholesterol, fiber, vitamin A, vitamin C, calcium and iron.

\*Percent Daily Values (DV) are based on a 2,000 calorie diet.

choices made easy from prepstoc. For more information on our Smart Spot™ nutrition standards and help getting started with a healthy lifestyle, visit [www.smartspot.com](http://www.smartspot.com).

## Nutrition Facts

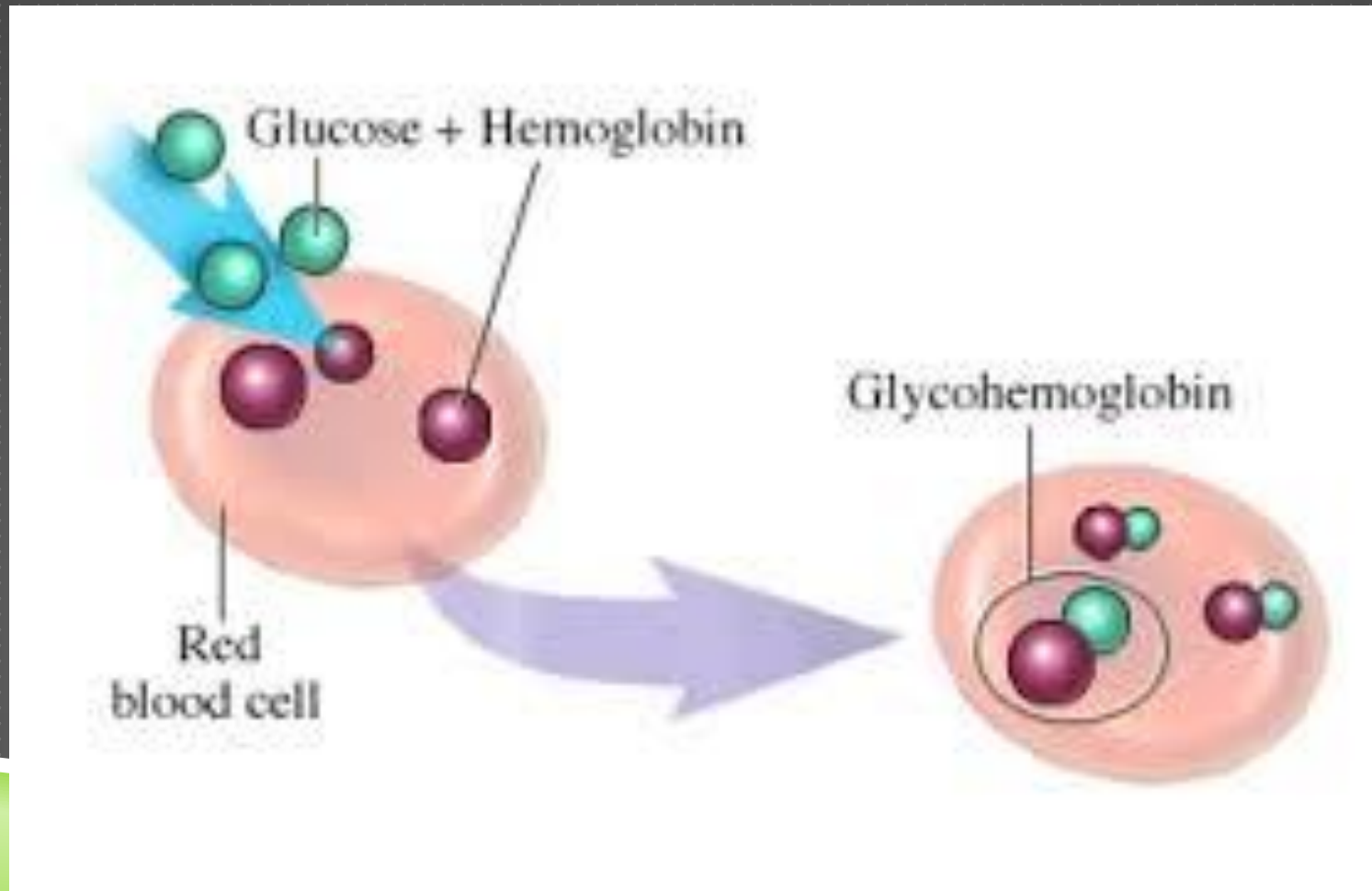
Serving Size 8 fl oz (240 mL)  
Servings Per Container 8

|                                         |                |
|-----------------------------------------|----------------|
| <b>Amount Per Serving</b>               |                |
| <b>Calories 110</b> Calories from Fat 0 |                |
| <b>% Daily Value*</b>                   |                |
| Total Fat 0g                            | 0%             |
| Saturated Fat 0g                        | 0%             |
| Trans Fat 0g                            |                |
| Cholesterol 0mg                         | 0%             |
| Sodium 0mg                              | 0%             |
| Potassium 450mg                         | 13%            |
| <b>Total Carbohydrate 26g</b>           | <b>9%</b>      |
| Dietary Fiber 0g 0%                     |                |
| Sugars 22g                              |                |
| <b>Protein 2g</b>                       |                |
| Vitamin A 0%                            | Vitamin C 120% |
| Calcium 35%                             | Iron 0%        |
| Vitamin D 25%                           | Thiamin 10%    |
| Riboflavin 4%                           | Niacin 4%      |
| Vitamin B6 6%                           | Folic Acid 15% |

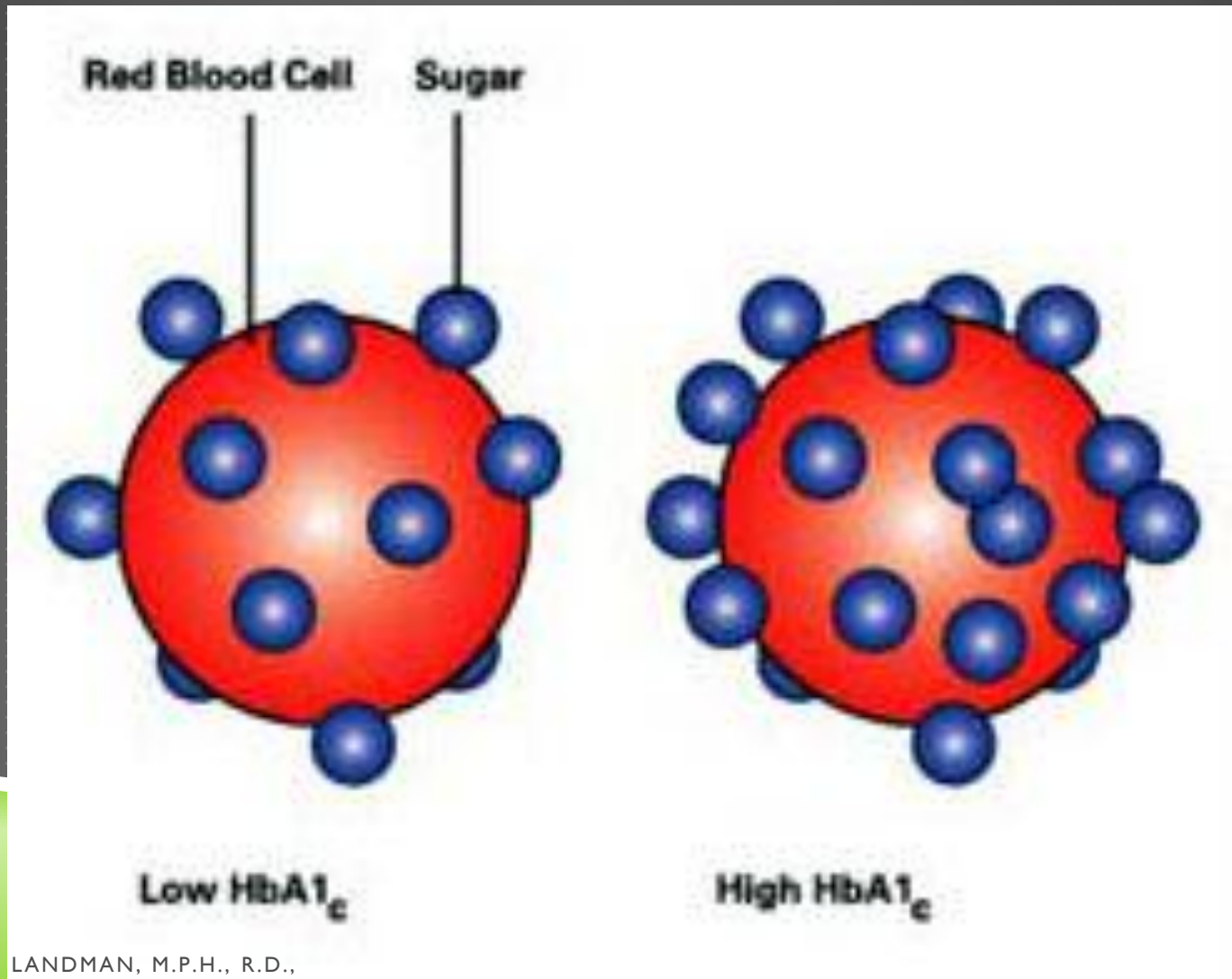




# GLYCATED HEMOGLOBIN



# GLYCATED HEMOGLOBIN



# SPECIFIC GRAINS ARE ADDICTIVE: WHEAT, BARLEY, RYE, CORN- PRODUCING “GLUTEOMORPHINES” IN THE BRAIN





# LEARNING ABOUT DIABETES.ORG

## WHAT'S MY A1C?

The A1C is a blood test you get at the doctor's office or health clinic. It shows:

- Your average blood sugar level for the last 3 months
- Your risk (chance) of having other health problems because of diabetes

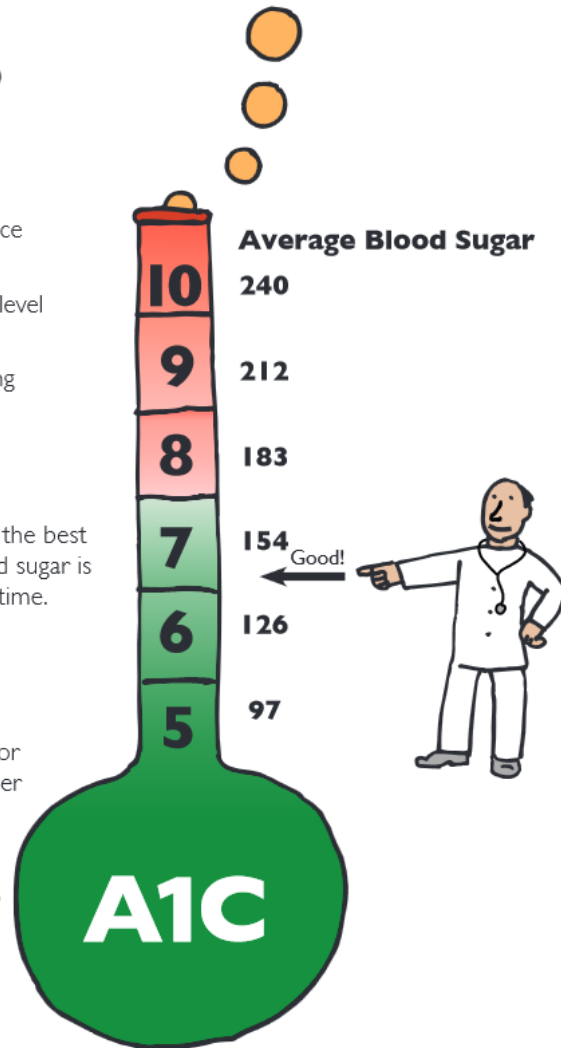
### Why do I need it?

Your A1C test results are the best way to know if your blood sugar is under good control over time.

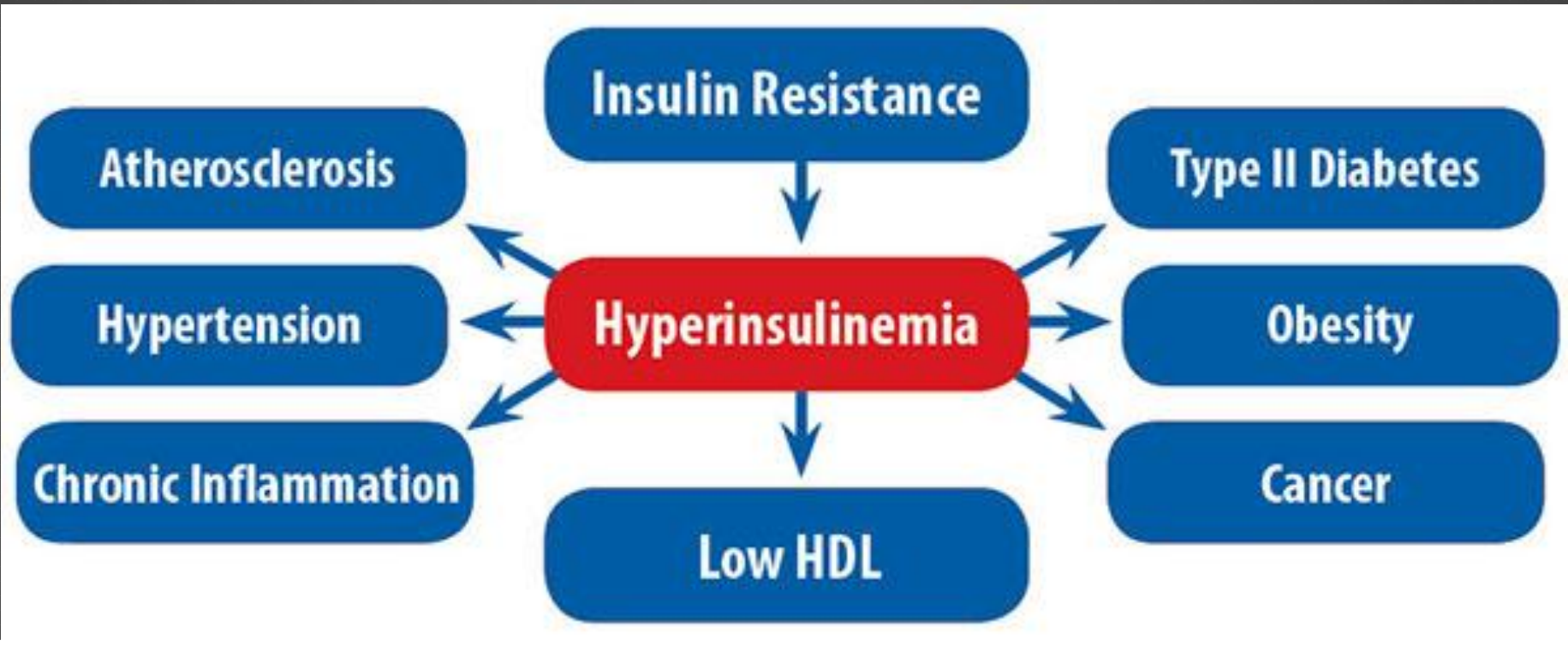
### What is a good A1C number?

7 or lower. You and your doctor or diabetes educator will decide the A1C number (goal) that is best for you.

**Be your BEST,  
Get the TEST!**

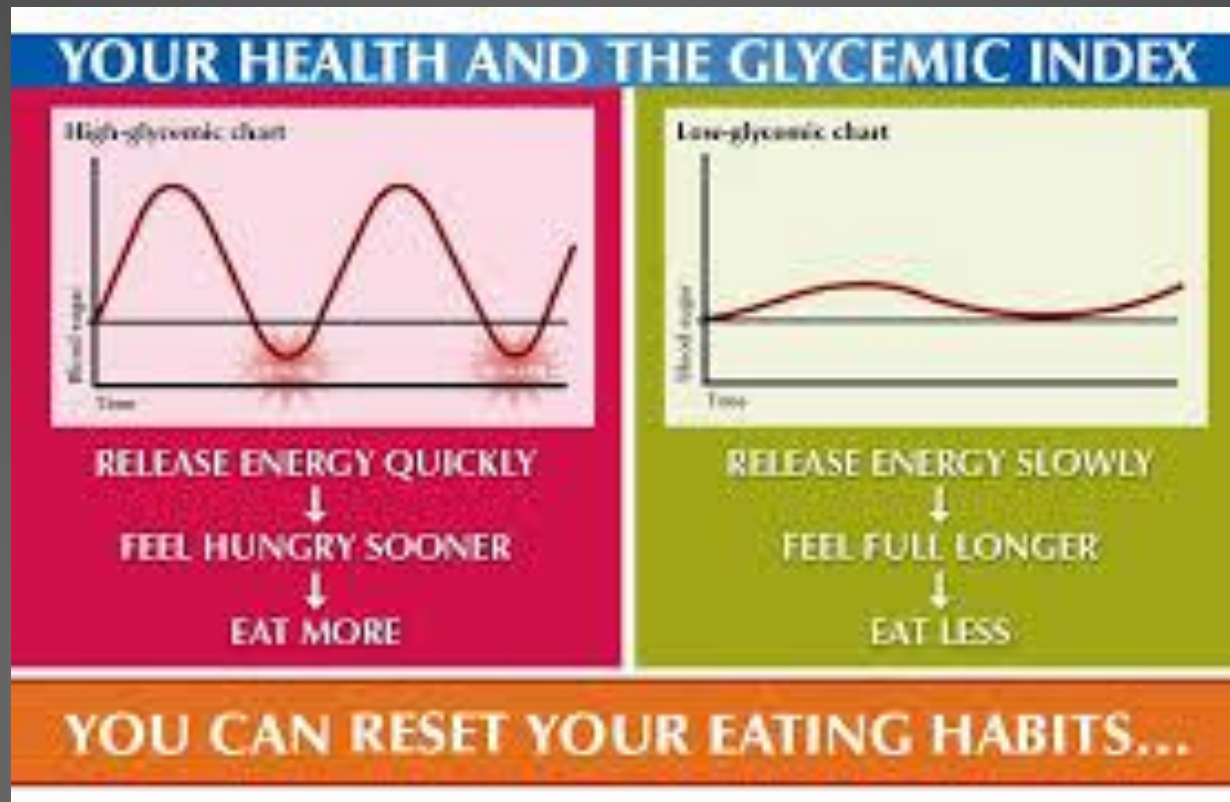


# CONSEQUENCES OF HIGH BLOOD GLUCOSE – LEADS TO MANY DISEASES



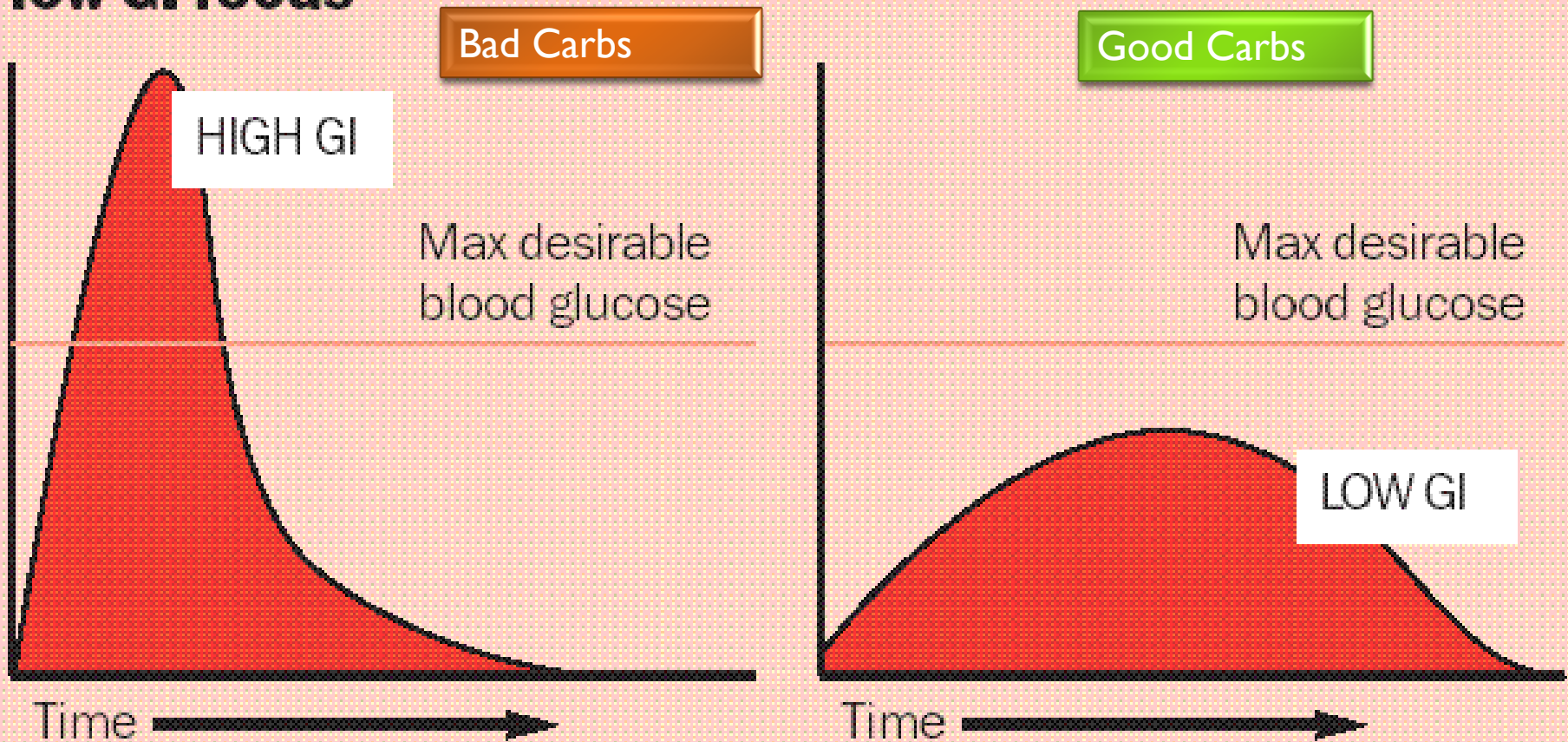
**Alzheimers/ Dementia**

# EAT BELOW 50 ON THE GLYCEMIC INDEX



# YOU CAN RESET YOUR EATING HABITS

**Figure 1: blood sugar response curves for high GI and low GI foods**



# [LEARNINGABOUTDIABETES.ORG](http://LEARNINGABOUTDIABETES.ORG)

## ■ THE GLYCEMIC INDEX



The glycemic index, or GI, uses a scale of numbers from 1 to 100 to rank carbohydrate foods by how quickly a serving size of each raises blood sugar. Why is this important? Because carbohydrates, or carbs, such as rice, pasta, bread, and fruit, raise blood sugar more, and more quickly, than fats or proteins do.



**Carbs with low glycemic index numbers (from 1 to 55) are better carbohydrate food choices for good blood sugar control because they raise blood sugar slowly.**



Are you making good food choices to control your diabetes? To help you find out, check the table on the following pages, which list the glycemic index number of 100 commonly eaten carbs.

# KNOW YOUR CARBS

Knowing how many carbohydrates (carbs) you eat can help you control your diabetes. Below is an easy way to find out how well you know your carbs. Circle only the food servings below that have about 15 grams of carbohydrate. If you get almost all of them right, great. If not, tell your doctor or diabetes educator you want to learn more about how counting carbs can help you control your blood sugar.

A  1 tablespoon of Sugar


\_\_\_\_\_

B  1/2 Bagel

\_\_\_\_\_

C  1 small apple

\_\_\_\_\_

D  1/2 cup cooked beans

\_\_\_\_\_

E  8 ounces of fat-free milk

\_\_\_\_\_

F  1 cup cooked rice


\_\_\_\_\_

G  3/4 cup of Cheerios or Wheaties

\_\_\_\_\_

H  1 can of any regular soda

\_\_\_\_\_

I  1 medium (6 ounces) boiled potato

\_\_\_\_\_

J  1/2 cup cooked oats

\_\_\_\_\_

K  1 slice of whole wheat bread

\_\_\_\_\_

L  1/2 large muffin

\_\_\_\_\_

M  1/2 cup of pasta

\_\_\_\_\_

N  1 small orange

\_\_\_\_\_

O  1/2 cup of raw broccoli

\_\_\_\_\_

P  4 ounces of any fruit juice

\_\_\_\_\_

# DIABETES AND WEIGHT MANAGEMENT

- ▶ Have a set amount of low glycemic high quality carbohydrate at each meal:

Example:

- ▶ Breakfast- 15, 30, 45, or 60 grams
- ▶ Lunch- 15, 30, 45, or 60 grams
- ▶ Dinner- 15, 30, 45, or 60 grams



# KEY TO DIABETES AND WEIGHT MANAGEMENT

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- ▶ Carbohydrate Consistency at Meals
- ▶ Know How Many Carbs You Need In a Day
- ▶ Choose Whole. Unprocessed Carbs- Naturally High in Fiber



# CARBOHYDRATE CONSISTENCY

| Breakfast #1        | Amount   | CHO       |
|---------------------|----------|-----------|
| Scrambled Eggs      | 2.       | 0         |
| Spinach, Peppers    | 1/2 cup  | 0         |
| Oatmeal- Rolled     | 1.5 cup  | 30        |
| Apple               | 1        | 15        |
|                     |          | <b>45</b> |
| Breakfast #2        | Amount   | CHO       |
| Whey Protein Powder | 2 scoops | 0         |
| Blueberries         | 1 cup    | 15        |
| Banana              | Half     | 15        |
| Skim Milk           | 1 cup    | 12        |
|                     |          | <b>42</b> |



30g CHO



15g CHO



15 g CHO



15g CHO



12 g CHO

# CARBOHYDRATE CONSISTENCY

| Lunch #1      | Amount | CHO       |
|---------------|--------|-----------|
| Salmon Burger | 3 oz.  | 0         |
| Sweet Potato  | 1 cup  | 30        |
| Broccoli      | 1 cup  | 0         |
| Apple         | 1      | 15        |
|               |        | <b>45</b> |
| Lunch #2      | Amount | CHO       |
| Turkey Burger | 3 oz.  | 0         |
| Chili Beans   | 1 cup  | 30        |
| Stringbeans   | 1 cup  | 0         |
| Half Banana   | 1      | 15        |
|               |        | <b>45</b> |



30g CHO



15g CHO



30 g CHO



15g CHO

# LEARNIGABOUTDIABETES.ORG

## LOW BLOOD SUGAR

(Hypoglycemia)

A low blood sugar can happen quickly. If not treated right away, low blood sugar can cause a medical emergency. You can even pass out.

Common causes: Skip a meal or not eat enough food; too much insulin or diabetes pills; more active than usual.

Warning signs include:



Shaky or dizzy



Blurry vision



Weak or tired



Sweaty



Headache



Hungry



Upset or nervous

What to do?



Check your blood sugar right away. If it is below 70, treat for low blood sugar. If you can't check, treat anyway to be safe.



Treat by eating 3 packets or 1 tablespoon of regular sugar, 4 ounces of regular fruit juice, or 8 ounces of regular (not diet!) soda.



Check your blood sugar in 15 minutes. If it is still low (below 70), treat again. If you keep having problems and you don't know why, call your doctor or health clinic.

# DETERMINING CARB INTAKE

- ▶ Younger ages- **0-30 yrs** and athletes require higher carb intakes- **50-70 % carbs**
- ▶ **People > 40 yrs.**, people with glucose management issues (diabetes), PCOS, and those desiring weight loss, need to control how much carbs they eat. **35-50% of total calories.**

# DETERMINING YOUR CARB AMOUNT

- ▶ Desired weight: 150 lbs add a zero to this = 1500
- ▶  $1500 / 50\% = 750$  calories
- ▶  $750 \text{ calories} / 4 \text{ calories/gram of carb} = 187 \text{ g CHO}$
- ▶  $187 \text{ g CHO} / 15 \text{ g per 1 serving} = 12.5$  servings

# DIABETES/CARDIAC- MEDITERRANEAN DIET

## Mediterranean Diet Pyramid

*A contemporary approach to delicious, healthy eating*

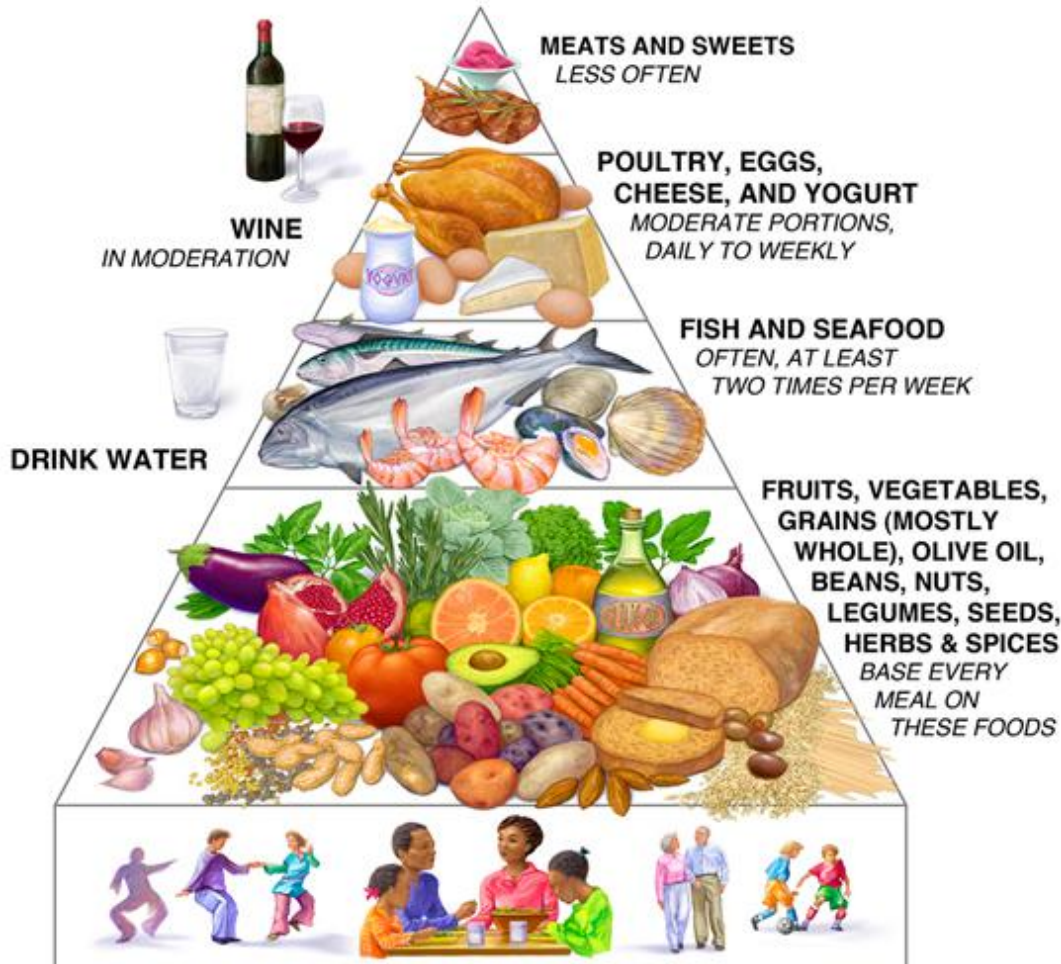


Illustration by George Middleton

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**BE PHYSICALLY ACTIVE; ENJOY MEALS WITH OTHERS**

Research has shown reversal of cardiac and improved glucose symptoms following a Mediterranean Diet. Many studies show quality counts more than quantity.



# MEDITERRANEAN DIET BREAKFASTS

Oats with Yogurt and Fresh Fruit



Poached Egg on Whole Wheat Pita and Veggies



# MEDITERRANEAN DIET LUNCHES

Corn Veg & Bean Stew



Veggie Chickpea and Brown Rice



Shrimp Salad stuffed in Avocado

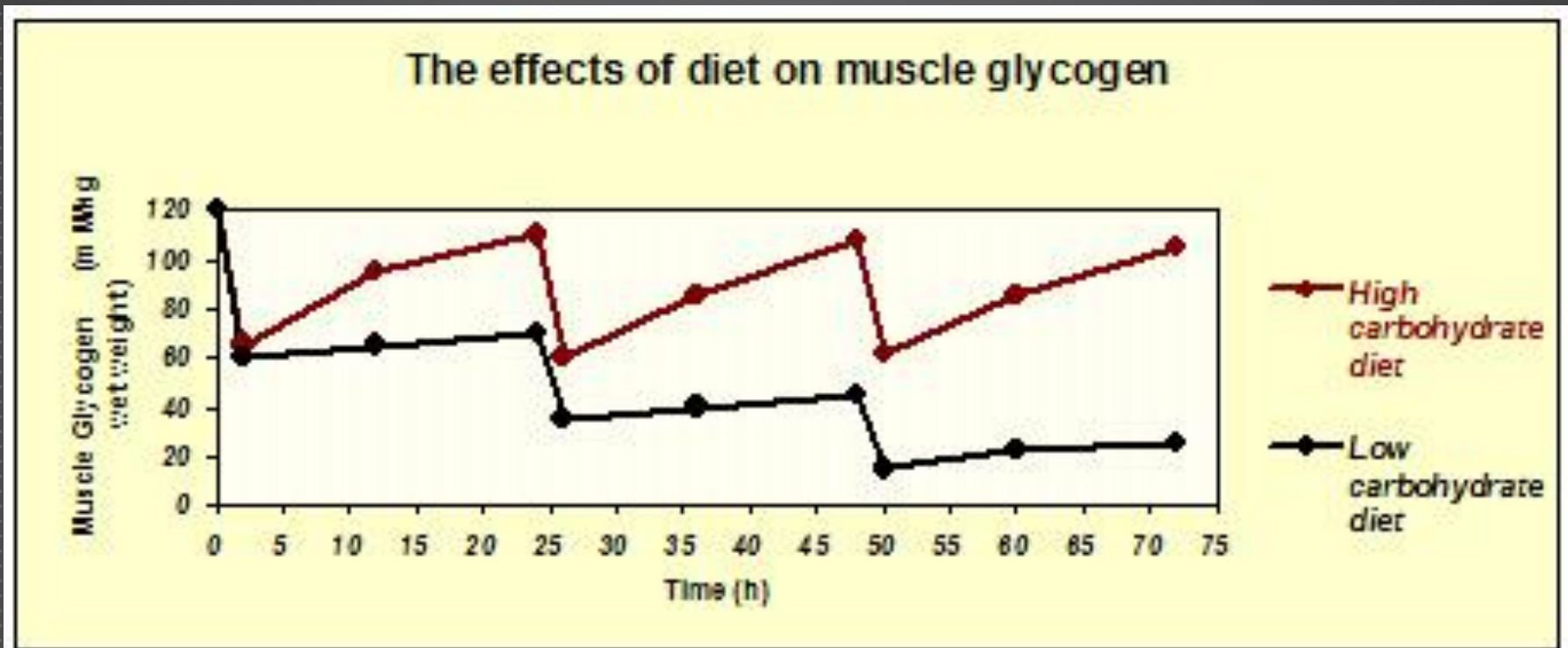




# SPORTS NUTRITION- ATHLETES NEED CARBS AND EXERCISE LOWERS BLOOD GLUCOSE



# CARBOHYDRATES AND SPORTS



Costill, D.L., Miller, J.M. Nutrition for endurance sport: Carbohydrate and fluid balance. *Int. J. Sports Med.* 1:2-14, 1980.

# YOUNG PEOPLE EXERCISING – FUEL THEM WITH GOOD CARBS TO MAINTAIN THEIR ENERGY- (AND MUSCLE GLYCOGEN)





# LOTS OF EXERCISE NEEDED TO BURN FAT... 5 DAYS WEEKLY – 60 MINUTES DIET- CONTROLLED CARBS AND FAT



# CARBOHYDRATE AMOUNT IS SAME AT BREAKFAST, LUNCH, DINNER

| Meals        | Monday              | Amt.    | CHOg       | Tuesday | Amt. | CHOg | Wednesday |
|--------------|---------------------|---------|------------|---------|------|------|-----------|
| Breakfast    | Rolled Oats         | 1.5 cup | 30         |         |      |      |           |
|              | Apple               | 1       | 15         |         |      |      |           |
|              | Egg                 | 2       | -          |         |      |      |           |
|              |                     |         | 45         |         |      |      |           |
| Snack a.m.   | Peanuts             | ¼ cup   | 6          |         |      |      |           |
|              |                     |         | 6          |         |      |      |           |
| Lunch        | Salmon Burger       | 4 oz.   | -          |         |      |      |           |
|              | Sweet potato        | 1 cup   | 30         |         |      |      |           |
|              | Broccoli            | 1 cup   | -          |         |      |      |           |
|              | Banana              | Half    | 15         |         |      |      |           |
|              |                     |         | 45         |         |      |      |           |
| Snack p.m.   | Greek Yogurt        | 5.7 oz  | 10         |         |      |      |           |
|              | Almonds             | 15      | 3          |         |      |      |           |
|              |                     |         | 13         |         |      |      |           |
| Dinner       | Chicken breast      | 5 oz.   | -          |         |      |      |           |
|              | Quinoa              | 1 cup   | 45         |         |      |      |           |
|              | Spinach             | 1 cup   | -          |         |      |      |           |
|              | Mixed Raw Salad     | 2 cups  | -          |         |      |      |           |
|              | Olive oil & Vinegar | 2 T.    | -          |         |      |      |           |
| Snack        |                     |         | 45         |         |      |      |           |
| <b>TOTAL</b> | <b>CHO</b>          |         | <b>154</b> |         |      |      |           |
|              |                     |         | <b>g</b>   |         |      |      |           |

# DIABETES PLACEMENT “PLATE METHOD”

## Diabetes Nutrition Placemat



milk

fruit

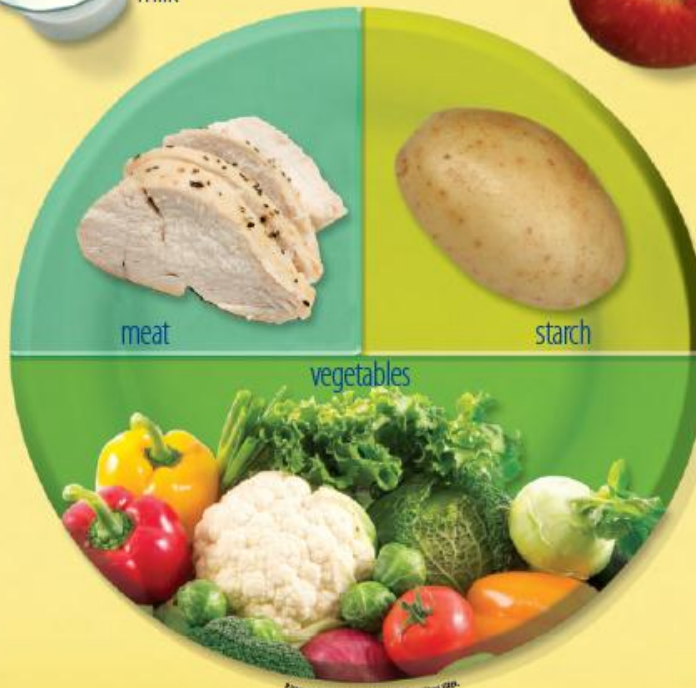


| Portion Sizes                   |  |
|---------------------------------|--|
| SERVING                         |  |
| 1 oz. = 1 thumb                 |  |
| 3 oz. = size of a deck of cards |  |
| 1 cup = a fist                  |  |
| 1 tsp. = a thumb tip            |  |
| 1/4 cup = a golf ball           |  |
| 2 Tbsp. = a large marshmallow   |  |
| 1 oz. = 4 dice                  |  |

\*SEE BACK FOR PORTION EXAMPLES



Live Life to the Max!



meat

starch

vegetables

| 30 MINUTES of Activity       | Lifestyle Activities |                     |
|------------------------------|----------------------|---------------------|
|                              | Your weight 150lbs   | Your weight 200 lbs |
|                              | Calories Burned      | Calories Burned     |
| Baseball, playing catch      | 85                   | 113                 |
| Basketball, shooting baskets | 153                  | 204                 |
| Bicycling – moderate         | 272                  | 363                 |
| Bowling                      | 102                  | 136                 |
| Dancing                      | 153                  | 204                 |
| Gardening                    | 136                  | 181                 |
| Golf – riding in cart        | 119                  | 159                 |
| Pushing baby stroller        | 85                   | 113                 |
| Running                      |                      |                     |
| 5 mph (12 min. per mile)     | 272                  | 363                 |
| Swimming, leisure, no laps   | 204                  | 272                 |
| Tai Chi                      | 136                  | 181                 |
| Vacuuming                    | 119                  | 159                 |
| Washing car                  | 102                  | 136                 |
| Walking a dog                | 102                  | 136                 |
| Walking                      |                      |                     |
| 3 mph (20 min. per mile)     | 109                  | 145                 |
| Yoga                         | 85                   | 113                 |

| Did you know*                                   | Added Calories |
|-------------------------------------------------|----------------|
| 1 scoop vanilla ice cream (10% fat)             | == 100         |
| 1 chocolate chip cookie                         | == 110         |
| 1 package potato chips                          | == 150         |
| 1 cafe latte with skim milk (12 oz.)            | == 180         |
| 1 donut – glazed                                | == 250         |
| 1 slice of chocolate cake with frosting (3 oz.) | == 320         |
| 1 brownie (3 1/2 oz.)                           | == 420         |

\*Ask your CDE how to fit these foods into your nutrition & exercise plan.

My Diabetes Educator \_\_\_\_\_  
Phone ( ) \_\_\_\_\_

To find a Certified Diabetes Educator (CDE) Call 1-800-832-6874

# SUMMARY OF CONCEPTS

- ▶ Learn the **AMOUNT** and **QUALITY** of the carbs you eat...take an inventory by keeping a daily food journal.
- ▶ Whole grain, beans, whole fruits, vegetables and no added sugar dairy products are the **SAFEST CARBS** to eat.
- ▶ For **GOOD BLOOD GLUCOSE CONTROL**, select both quality and the amount of carbs best for your health needs- Seek a dietitian for support and education.
- ▶ To **EXCEL IN SPORTS**, insure you have 50% or more carbs of total calories.
- ▶ For **WEIGHT LOSS**, eat less carbs of high quality: 35-50% of low glycemic unprocessed carbs.

# DIABETES RESOURCES

- ▶ [Dlife.com](http://Dlife.com)
- ▶ [Learningaboutdiabetes.org](http://Learningaboutdiabetes.org)
- ▶ [Diabetes.org](http://Diabetes.org)
- ▶ [Cleananddelicious.org](http://Cleananddelicious.org)



IS YOUR

BLOOD GLUCOSE IS > 150

HBA1C IS > 7

HAVE TINGLING IN YOUR HANDS

OR FEET

DON'T KNOW WHAT TO EAT TO

IMPROVE YOUR HEALTH...

# DIETITIAN TO THE RESCUE!!!



Thank You  
For  
Attending!

Happy  
Holidays!!!