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HEALTH AND CARE

Eating With Diabetes

Diabetes Education Program

American Diabetes Association®

Goals For Class Today:

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Meal Planning

- Why control the amount of carbohydrates?
- Carbohydrate foods-healthy options
- Different ways to count carbs
- How alcohol affects blood sugar

Being Heart Healthy with Diabetes

- Ways to increase fiber intake
- Choosing healthier protein and fat foods
- Dining out- making healthy choices.

Eating with Diabetes

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Healthy Eating

Physical Activity

Medication

Eating with Diabetes

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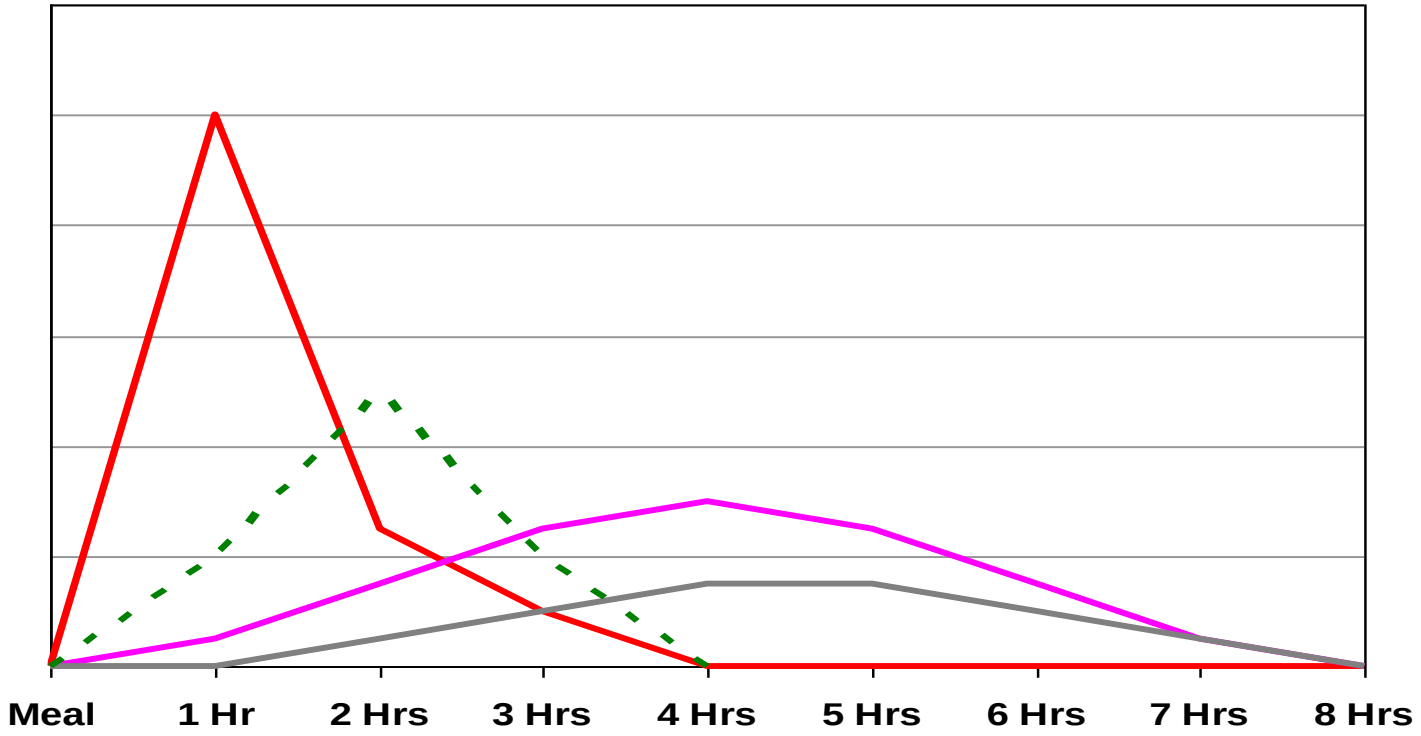
A healthy way of eating that everyone can do!

Where do calories come from?

1) Protein
2) Fat
3) Carbohydrate

Carbohydrates have the greatest impact on blood glucose!

How fast does food digest?



Carbohydrate - rapid digestion, total absorption/conversion to glucose (100%)

Sugar Alcohols - moderate digestion, partial absorption as glucose (50%)

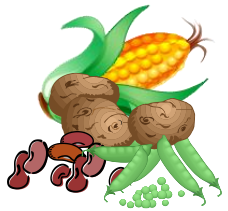
Protein - slow digestion, partial conversion to glucose (~40%)

Fat - slow digestion, little conversion to glucose (<20%)

What are Carbohydrate foods?

Grains

(bread, rice, pasta, cereal, crackers)



Starchy Vegetables

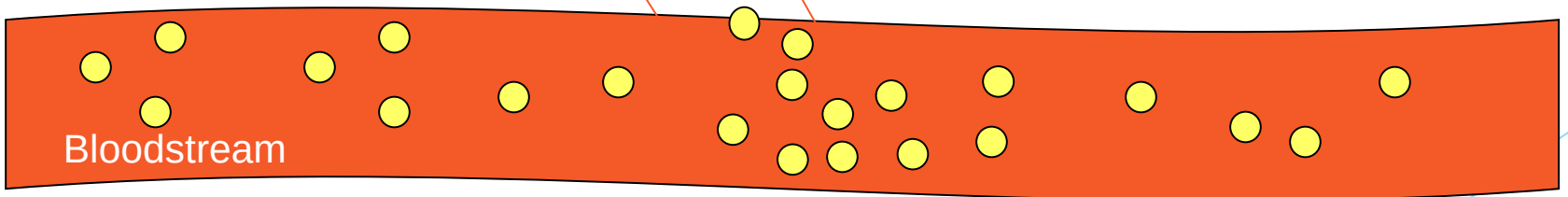
(corn, peas, potato, legumes)

Fruit and Juice

Milk and Yogurt

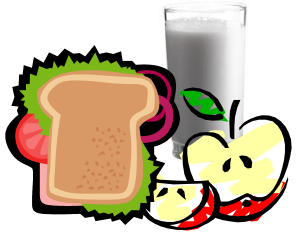
Sweets

Digestion



Glucose

Stable blood sugars are a balancing act!



Stable Blood Sugar

Right Amount of Carbohydrate

High blood sugar

Too much carbohydrate

Too little carbohydrate

Low blood sugar

How many carbs do you need?

Meals:

Women:

45 to 60 grams of carb (active/weight maintenance)

30 to 45 grams of carb (inactive/weight loss)

Men:

60 to 75 grams of carb (active/weight maintenance)

45 to 60 grams of carb (inactive/weight loss)

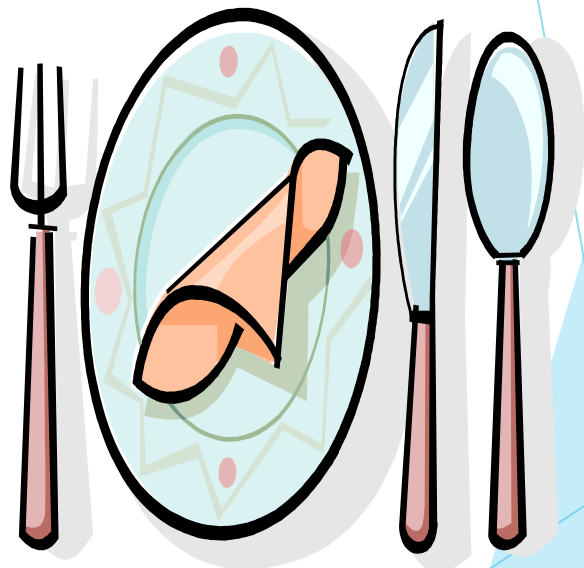
Snacks:

15-20 grams

Healthy Eating For Diabetes

- Eat 3 meals per day
- Do not skip meals
- Have one or two small snacks, if longer than 4 hours between meals
- Try to eat the same time every day

- Count carbohydrates
  - Be consistent with your carbs meal to meal
  - No saving up carbs for later



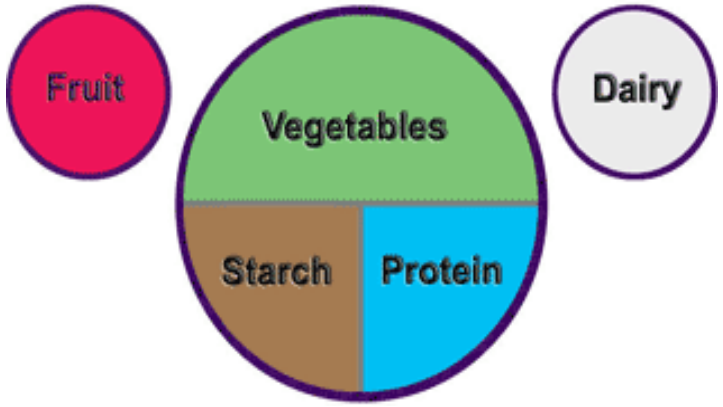
Carbohydrate Counting

Most Accurate Methods

- Label Reading
- Online and Print Resources
- Nutrition web sites, restaurant web sites, smart phone apps, carb/calorie counting books

Estimation Methods

- Exchange System
- Plate Method



Label Reading

Original Label

Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container 8

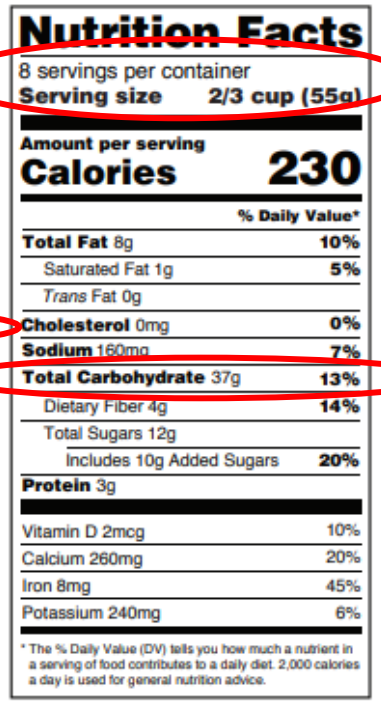
Amount Per Serving

Calories 230	Calories from Fat 72
	% Daily Value*
Total Fat 8g	**12%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**12%**
Dietary Fiber 4g	**16%**
Sugars 12g	
Protein 3g	
Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily value 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

New Label



Nutrition Facts

8 servings per container
Serving size **2/3 cup (55g)**

Amount per serving

Calories	**230**
	% Daily Value*
Total Fat 8g	**10%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**13%**
Dietary Fiber 4g	**14%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 240mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

1. The serving size now appears in larger, bold font and some serving sizes have been updated.
2. Calories are now displayed in larger, bolder font.
3. Daily Values have been updated.
4. Added sugars, vitamin D, and potassium are now listed. Manufacturers must declare the amount in addition to percent Daily Value for vitamins and minerals.

- Note **Serving Size**
- Note **Total Carbohydrate**

  Read for grams (g)

New Nutrition Label

1. More realistic serving sizes
   - Ice cream 2/3 cup vs. ½ cup

2. Larger Type

3. No more “Calories from Fat”
   - Note Type of fat
   - Replace Saturated, Trans fats with Unsaturated fats

4. Added Sugar = Empty Calories.
   - Keep low

5. Added Vitamin D and Potassium
   - low intake in Americans

(Removed Vitamin C & A due to rare risk of deficiencies)

Label Reading - Specialty Foods

Ignore "Net Carbs" and "No Sugar Added"

Always read the Nutrition Facts Panel!

Serving size 2/3 cup (92g)
Serving per container 3

Calories	Per Serving 200		Per Container 610	
		%DV*		%DV*
Total Fat	17g	22%	52g	67%
Saturated Fat	11g	55%	34g	170%
Trans Fat	0.5g		1.5g	
Cholesterol	105mg	35%	320mg	107%
Sodium	100mg	4%	310mg	13%
Total Carbohydrate	15g	5%	44g	16%
Dietary Fiber	4g	14%	11g	39%
Total Sugars	1g		2g	
Incl. Added Sugars	0g	0%	0g	0%
Sugar Alcohol	5g		15g	
Protein	3g		10g	
Vitamin D	1mcg	6%	2mcg	10%
Calcium	46mg	4%	139mg	10%
Iron	1mg	6%	3mg	15%
Potassium	104mg	2%	311mg	6%

* Percent daily values (DV) are based on a 2,000 calories diet.

Ingredients: Cream, water, egg yolks, non-GMO soluble corn fiber, erythritol, allulose, dutched cocoa, milk protein concentrate, vegetable glycerin, butter, buttermilk, coconut oil, milk, cheese culture, beet juice (color), natural flavor, tara gum, guar gum, monk fruit extract, salt, pectin, titanium dioxide, citric acid, carob gum, potassium sorbate.

Contains: Milk, eggs, and coconut.

Made in a facility that uses tree nuts and peanuts.

44g Carbs - **11**g Fiber - **15**g Sugar Alcohol - **11**g Allulose = **7g Net Carbs per pint**

Label Reading - Specialty Foods

Look at Serving Size = 1 bar
Total Carbs = 15 grams
Total Fat = 0 grams
Protein = 6 grams

Nutrition Facts

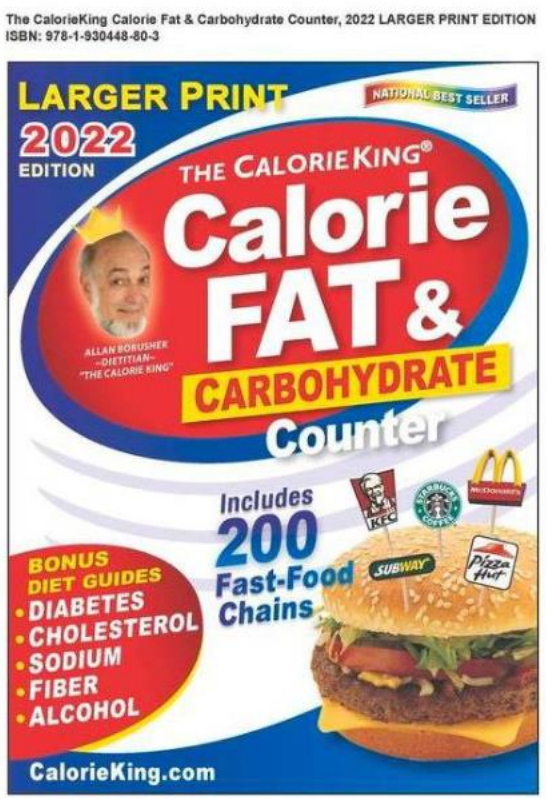
4 servings per container
Serving size **1 Bar (65g)**

	Per Serving		Per Container	
Calories	**80**		**330**	
		% DV*		% DV*
Total Fat	0g	**0%**	1g	**1%**
Saturated Fat	0g	**0%**	0.5g	**3%**
Trans Fat	0g		0g	
Cholesterol	0mg	**0%**	5mg	**2%**
Sodium	45mg	**2%**	170mg	**7%**
Total Carb.	15g	**5%**	61g	**22%**
Dietary Fiber	1g	**4%**	3g	**11%**
Total Sugars	12g		47g	
Incl. Added Sugars	8g	**16%**	34g	**68%**
Protein	6g	**12%**	22g	**44%**
Vitamin D	0mcg	0%	0mcg	0%
Calcium	150mg	10%	600mg	45%
Iron	0.8mg	4%	3.1mg	15%
Potassium	200mg	4%	790mg	15%

*The % Daily Value tells you how much a nutrient in a serving of

A much better choice!

Online and Print Resources



Carb, Fat and Calorie Counting Sites:

- calorieking.com – book, web and app
- myfitnesspal.com – web and app
- nutritionfacts.org
- Restaurant sites

Other Great Sites:

- American Diabetes Assoc. - diabetes.org
- diabetesfoodhub.org (for healthy recipes)
- Your Diabetes Life - dlife.com

Plate Method

- **Choose healthy carbohydrates**
  - High fiber grains
  - Fresh fruits, vegetables
  - low fat dairy
- **Eat smaller portions**
- **Choose lean proteins**
- **Use healthy fats-olive oil, avocado, nuts**

Non-Starchy Veggies & Free Foods

Non-Starchy Veggies

5 grams carbohydrates:

- ½ cup cooked
- 1 cup raw

Free Food

- Under 5 grams of carbs and under 20 calories.

- Coffee, tea unsweetened
- Diet pop, Club soda
- Crystal Light
- Artificial Sweeteners
- Sugar-free Jell-O
- Bouillon
- Most condiments

Carb Counting

Defines a serving size for foods that contain the same amount of carbohydrate.

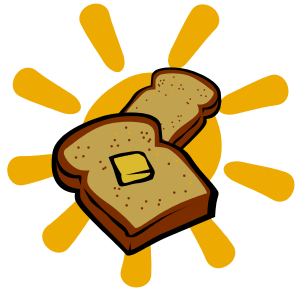
1 serving (or 1 choice) = 15 grams Carbohydrate

- Allows you to estimate carbs in foods without a label
- Measure foods to learn portion sizes

Starchy Grains and Vegetables

1 Choice = 15 g Carbohydrate

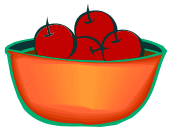
- **1 slice** (1 oz.)
  - standard sandwich bread
  - ½ hamburger or hot dog bun
  - 1 six-inch tortilla
  - 1 four-inch waffle, pancake
  - ¾ ounce snack foods
  - 6-8 crackers
- **½ cup**
  - COOKED cereals
  - corn, peas, potatoes, beans or lentils
- **1/3 cup**
  - COOKED pasta or rice

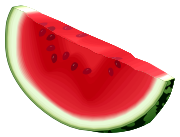


Fruit

1 Choice = 15 g Carbohydrate

- **1 cup**
  - 1 small apple, orange, peach, pear (tennis ball size)
  - melon, berries





- **½ cup**
  - Canned fruit, Sauces or Juice
  - 17 grapes, 12 cherries
  - ½ banana (4 inch)

- **2 tablespoons**
  - Dried fruit

Milk and Yogurt

1 Choice = 15 g Carbohydrate

Milk

- **1 cup** (8 ounces)
  - Milk (skim, 1%, 2%)
  - Almond, soy, rice milks vary in their carb amount

- **6-8 ounces**
  - Plain, “light” or Greek yogurt

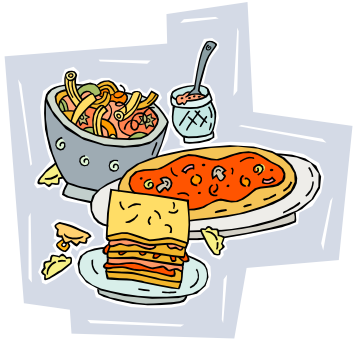
Combination Foods

15 grams carbs:

- **1 cup**
  - Soup (broth or cream made with water) or Stew
  - Meat and vegetable mix (Asian stir-fry)

30 grams carbs:

- **1 cup**
  - Casserole (Meat + starch + veg)
  - Lasagna or spaghetti with meatballs
  - Chili with beans
  - Macaroni & cheese



- **Common Portions:**
  - Pizza, 1/4 of 12-inch cheese *thin* crust pizza, 30 g carbs
  - Pita or Pocket Sandwich, 45 g carbs

Sweets 

15 g carbohydrates:

- ½ cup ice cream, pudding
- 1/3 cup sherbet, sorbet, Italian ice
- 2 sandwich cookies
- 2” square unfrosted cake
- 1 tablespoon sugar, honey, jelly, jam, syrup, frosting

Common Portions:

- Cinnabon, Classic, 117 g carbs
- Auntie Anne’s Pretzel or pretzel stix, 65 g carbs
- Dairy Queen, Medium Blizzard, 96–148 g carbs
- Baker’s Square Pie Slice, 39–63 g carbs
- Mrs. Fields Cookie, Chocolate Chip, 45 g carbs
- Starbuck’s – Carmel Macchiato, 16 oz Grande, 35 g carbs

More to Healthy Eating for Diabetes

Heart Healthy Living

A. A1C - Control blood sugar (<6.5% or <7.0%)

- Moderate Carbohydrate diet
- Exercise 30 min 5-7days per week

B. Blood Pressure (<120/80)

- Reduce Sodium in your diet
- Exercise- as above
- Lose weight, if needed

C. Control Cholesterol (LDL 70-100)

- Replace saturated fat with healthy fat
- Eat more fiber – fruit, vegetables and whole grains
- Lose weight, if needed

Protein Foods (Non-Carbohydrate Foods)

Lean Proteins

(Choose most often)

- Lean beef & pork
- Poultry without skin
- Egg
- Egg white or egg substitute
- Low fat cheese

Heart Healthy Choices

- Fish (non-fried)
- Peanut butter
- Tofu/Soy products
- Legumes (also carb source)

High Fat Proteins

(Limit or avoid)

- Processed meats bacon, sausage, hot dogs, bologna, salami, pastrami, pepperoni
- Premium steaks, corned beef, ribs
- Poultry-white or dark with skin or fried
- Cottage cheese-4% fat
- Cheese-most hard cheeses, full fat types

Types of Fat (Non-carbohydrate Foods)

Monounsaturated Healthiest	Polyunsaturated Healthy	Saturated Unhealthy
Olive Oil	Soybean Oil	Palm Oil
Canola Oil	Safflower Oil	Meat Fat/Lard
Avocados	Corn Oil	Butter
Olives	Salad Dressings	Whole Milk
Nuts		Bacon
		Trans Fats
Omega – 3 Fats		Margarine, stick
Fish		Shortening
Flax		Fried or Bakery Foods
Walnuts		Fatty Snack Foods (hydrogenated fat)

Omega-3 Recommendations

- **Fish (non-fried)**
  - Best Sources: salmon, tuna, herring, sardines, mackerel, lake trout
  - American Heart Association: Two 4-ounce servings a week (not fried)

- **Plant Sources**
  - Flax seed (ground) – highest plant source
  - Walnuts and canola oil

- **Supplements**
  - Fish oil: DHA+EPA = 1000 mg per day

Why Fiber?

- **Soluble:**
  - Slows blood sugar rise by slowing digestion
  - Reduces cholesterol
  - Helps you feel full and controls appetite
  - > 10 grams per day
- **Examples:** Oats, beans, barley, fruits

- **Insoluble:**
  - Relieves constipation
  - Prevents diverticulosis
  - Reduces colon cancer risk
  - > 15 grams per day
- **Examples:** Whole wheat products, bran, brown rice, vegetables, nuts

Total Fiber/day = 25-35 grams

Meal Planning Practice

BREAKFAST	CARBOHYDRATES
1 ½ cup Cheerios 	
Whole medium banana 	
1 cup milk 	
1 egg 	
TOTAL CARBS (grams) =	

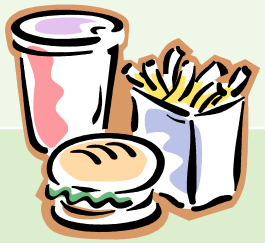
Meal Planning Practice

BREAKFAST	CARBOHYDRATES
McDonald's Egg McMuffin	
Medium Orange Juice (16 oz.)	
TOTAL CARBS (grams) =	

Meal Planning Practice

LUNCH	CARBOHYDRATES
Sandwich: 2 slices of bread	
1 slice of cheese	
2 slices of ham	
1 Tbsp light mayo	
1 cup cantaloupe	
6 oz. Greek yogurt	
TOTAL CARBS (grams) =	

Meal Planning Practice

LUNCH – Burger King	CARBOHYDRATES
Original Chicken Sandwich	
Side salad 	
Packet light Italian dressing	
Medium fries 	
Diet soda	
TOTAL CARBS (grams) =	

Meal Planning Practice

Healthy dinner - Panera	CARBOHYDRATES
½ Fugi Apple Chicken Salad	18 grams
1 Cup of Chicken Noodle soup	15 grams
TOTAL CARBS (grams):	33 grams
OR	
½ Ham and Swiss on Rye	34 grams
1 Cup of Garden Vegetable soup	15 grams
TOTAL CARBS (grams):	49 grams

Meal Planning Practice

DINNER	CARBOHYDRATES
3 oz. baked tilapia	
½ cup mango salsa	
Salad: Romaine, tomatoes, cucumbers, croutons 	
2 Tbsp. ranch dressing	
6-ounce baked potato	
½ cup cooked carrots 	
Small dinner roll	
1 tsp. butter	
TOTAL CARBS (grams) =	

Spending Carbs Wisely

Menu 1		Menu 2	
½ cup juice	15 g	1 cup cooked oats	30 g
1 Poptart	37 g	3/4 cup blueberries	15 g
		½ cup milk	7 g
Carbs	52 g	Carbs	52 g
Calories	260	Calories	250
Fiber	none	Fiber	8 g
No Satiety		More Satiety	

Dining Out the Healthy Way

- Choose: grilled, broiled, baked or steamed
- Avoid: fried, creamy, buttery, breaded
- Choose vinaigrette vs. creamy dressing
- Choose lean proteins
- Ask:
  - To skip the bread basket or chips
  - For sauces on the side
  - For substitutions
  - For take-home containers at initial order or split meal
- Visualize the plate method
- Enjoy yourself!

Alcohol

- Alcohol in Moderation
  - **If you choose to drink alcohol, do so with food**
- Guidelines-World Health Organization
  - Men- 2 drinks per day
  - Women 1 drink per day
- Serving of alcohol
  - 12 ounces of beer
  - 5 ounces of wine
  - 1 ½ ounces of distilled liquor
- Caution
  - Sweet mixes, liqueurs and regular beer are very high in carbohydrate, count them as part of your meal plan.

When to Avoid Alcohol

- If BG is either too high or too low
- On an empty stomach
- If triglycerides are > 500
- Alcohol abuse
- If you take prescription or over the counter medications that react with alcohol
  - Talk to your doctor or pharmacist

A Diabetes Case Study: Bob

Impact of Lifestyle Changes on Blood Glucose Control

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Bob Smith at Diagnosis

- 66-year-old
- A1C = 11.6%
- 5’9” and 197 lbs.
- BMI = 29.1
- Physical activity – Inactive
- Diet – skipped some meals Out to eat 3-4 x/week, large meals , evening snacking

Diabetes Plan

- Daily walking
- Carbohydrate counting
- Low dose of Metformin

A Diabetes Case Study: Bob

Impact of Lifestyle Changes on Blood Glucose Control

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Dietary Intake

Before

- **B:** Bowl raisin bran, skim milk (100g) OR bagel, juice (120g)
- **L:** Turkey club on white bread, fries (95g)
- **D:** *Out to eat 50% of time*: Pasta (Alfredo) + bread OR fried fish, baked potato, cheddar roll, salad (150g)
- Afternoon snack : Snickers
- Bedtime snack: cookie or chips

Diet Changes

- **B:** whole wheat English muffin, egg, cheese, 1 c. berries (45g)
- **L:** Chicken cobb salad, 2T dressing, 1 c. bean soup (43g)
- **D:** *Eating out less often:* Grilled Salmon, 2/3 c. quinoa, 1 c broccoli, 1 c. strawberries (45g)
- Afternoon snack: apple, walnuts
- Bedtime snack: Greek yogurt

A Diabetes Case Study: Bob

Impact of Lifestyle Changes on Blood Glucose Control

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Dietary Summary

- Carb counting – kept to 45 g carbs per meal
- Regular and equally sized meals
- Snacks were planned and portion controlled
- Less Eating out
- More vegetables – 3 or more cups per day
- More fruit – at breakfast, dinner and snack.
- Substituted whole grains for refined grains
- Less processed foods, sweets

Results after 6 months:

A1C – down from 11.6% to 6.9%

Weight – down 30 pounds, BMI 24.7

What To In Expect Class 3?

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- How to prevent complications of diabetes
- Medications-how they work
- What are your blood sugar readings telling you?
- Exercise vs. Activity
- Coping and Support with diabetes