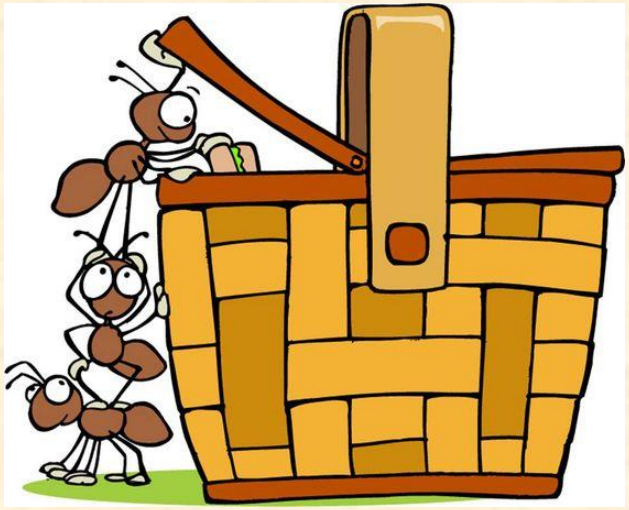
Sweet Science
Carb Counting Nitty Gritty



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Overview

-Healthy Eating

-Food Pyramid/food groups

-Fats

-Carbohydrates

-Proteins

-Fiber

-Serving Size vs. Portion

-Nutrition Label

-Carb Counting

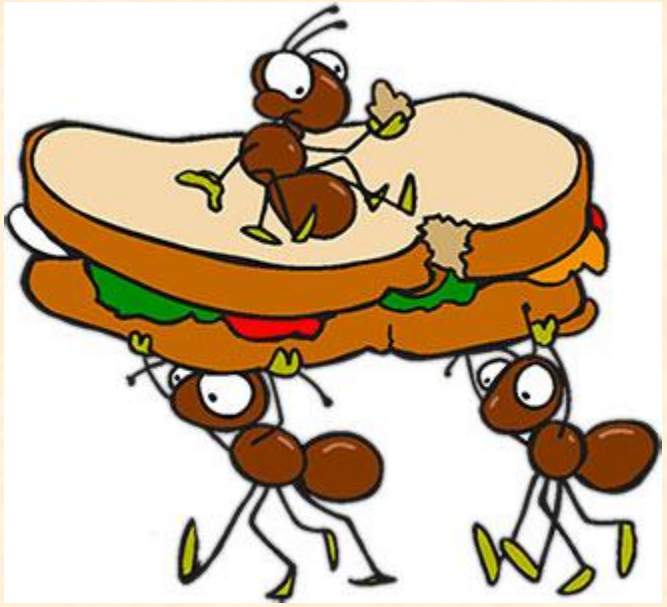
“Diabetic Diet”

-Antiquated term for kids/teens with T1D

-Previously 1800 calorie ADA diet, etc.

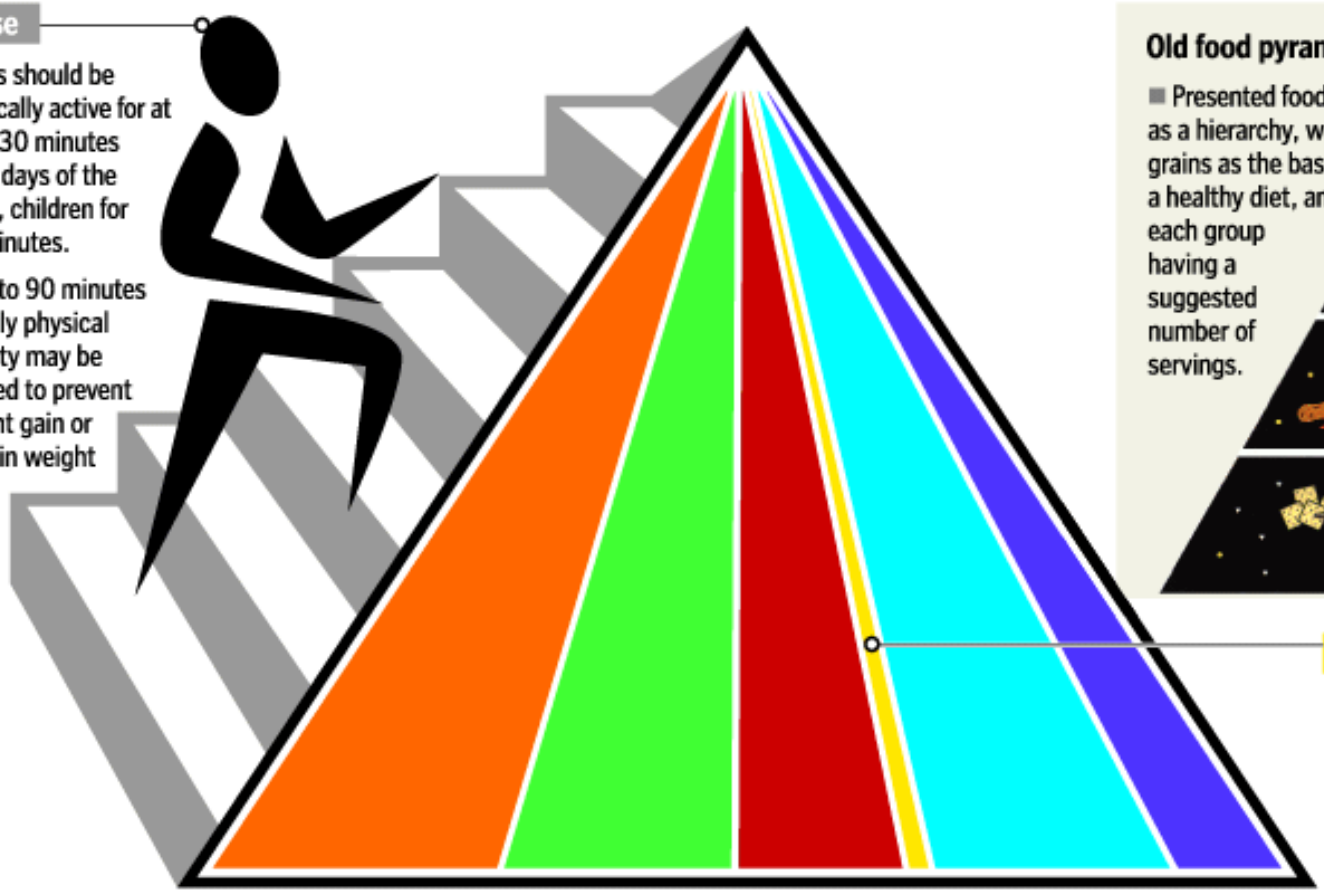
-Very, very low carbs

-Small scheduled meals with snacks in between



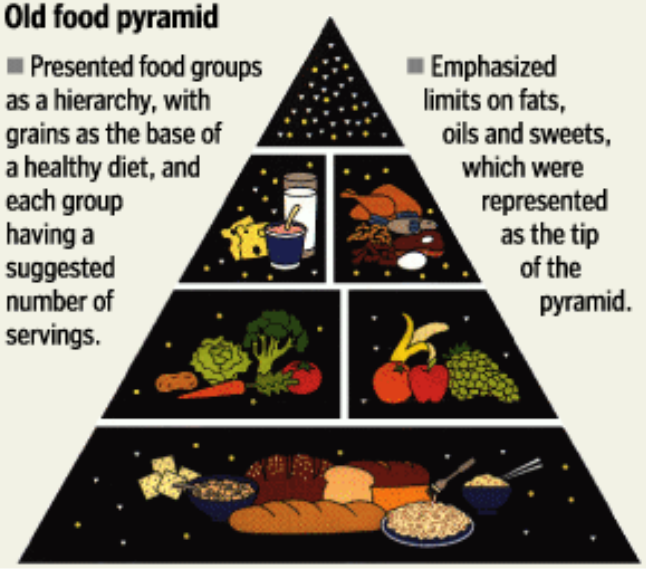
Exercise

- Adults should be physically active for at least 30 minutes most days of the week, children for 60 minutes.
- Sixty to 90 minutes of daily physical activity may be needed to prevent weight gain or sustain weight loss.



Old food pyramid

- Presented food groups as a hierarchy, with grains as the base of a healthy diet, and each group having a suggested number of servings.
- Emphasized limits on fats, oils and sweets, which were represented as the tip of the pyramid.



Oils

- Most fat should be from fish, nuts and vegetable oils.
- Limit solid fats, such as butter, margarine or lard.
- Keep consumption of saturated fats, trans fats and sodium low.
- Choose foods low in added sugar.

CATEGORY	Grains	Vegetables	Fruits	Milk	Meat and beans
RECOMMENDATION	Half of all grains consumed should be whole grains.	Vary the types of vegetables you eat.	Eat a variety of fruits. Go easy on juices.	Eat low-fat or fat-free dairy products.	Eat lean cuts, seafood and beans. Avoid frying.
DAILY AMOUNT	6 oz.	2.5 cups	2 cups	3 cups	5.5 oz.

Based on a 2,000 calorie diet.

Recommended nutrient intakes at 12-calorie levels can be found on ***mypyramid.gov.***

Grains

- Includes bread, cereal, rice, pasta
- Contains: carbs, B vitamins, minerals
- Serving Sizes

  1 slice bread

  1 oz. ready to eat cereal

  ½ cup COOKED cereal, rice, pasta

Vegetables

- Includes vegetables, vegetable juice
- Contains: vitamins, minerals, carbs
- Serving Sizes:

  1 cup raw leafy vegetables

  ½ cup other vegetables (cooked or raw)

  ¾ cup vegetable juice

Fruit

- Includes fruits
- Contains carbs, vitamins, minerals
- Serving Sizes:

  1 medium size apple, orange, or banana

  ½ cup chopped, cooked, or canned fruit

  ¾ cup of fruit juice

Milk

- Includes milk, yogurt, cheese
- Contains carbs, vitamins, minerals, Vit. D, protein
- Serving Sizes

  1 cup milk or yogurt

  1 ½ ounces of natural cheese

  2 ounces of processed cheese

Meat

- Includes meat, poultry, fish, dry beans, eggs, & nuts
- Contains: protein, irion, vitamins, minerals
- Serving Sizes:

2-3 ounces of cooked lean meat.
fish, or poultry
½ cup cooked dry beans
1 egg
2 Tbsp peanut butter
1/3 cup nuts

**1/2 cup of cooked dry beans/1 egg/2 Tbsp peanut butter/1/3 cup nuts counts as 1 ounce meat.

https://www.cnpp.usda.gov/sites/default/files/archived_projects/FGPPamphlet.pdf

Fats

- Use sparingly.
- Contains saturated and unsaturated fats
- Includes:

  butter

  vegetable oils

  sour cream

  cream cheese

Good Fat vs. Bad Fat

- Mono-unsaturated and Poly-unsaturated fats
  - -lower risk of certain diseases by helping to reduce LDL cholesterol
  - -contribute Vitamin E to diet
  - -liquid at room temp and solid when chilled

    Examples: olive oil, canola oil, corn oil
- Trans Fats:

  Examples: foods processed with partially hydrogenated oil
- Saturated Fats:

  Examples: red meat, butter

Mono-Unsaturated Fats

-lower risk of certain diseases by helping to reduce LDL cholesterol

-contribute Vitamin E to diet

-liquid at room temp and solid when chilled

Examples: olive oil, canola oil, corn oil

https://healthyforgood.heart.org/eat-smart/articles/polyunsaturated-fats

Poly-Unsaturated Fats

-lower LDL levels

-contribute Vit. A

-provide essential fats: omega-3 and
    omega-6 fatty acids

-liquid at room temp. but start to solidify when chilled.

Examples: soybean oil, corn oil, sunflower oil, walnuts, sunflower seeds, tofu

https://healthyforgood.heart.org/eat-smart/articles/polyunsaturated-fats

Trans Fats

- Natural and artificial

  -Naturally occurring: produced in gut of some animals (cows-milk)

  -Artificially produced through chemical process

  -Cheap

  -Raise LDL and lower HDL cholesterol, triglycerides, c-reactive protein.

  -Function: enhance taste and texture make foods last longer

Examples of foods with trans fats:

Bacon, frozen pizza, fried fast foods, microwave popcorn.

https://www.nbcnews.com/health/health-news/trans-fat-ban-saved-lives-new-york-study-shows-n745631

Carbohydrates

- Two Types:
    1. Simple
    2. Complex

- Sugars (simple)
- Sugar Alcohols (nonnutritive sweetener)
- Starches (complex carb)
- Dietary Fiber (complex carb)

Sugars

- Found naturally in many foods
- Added to many foods/beverages
- Function: along with starches, are body's main source of glucose, which is the primary source of energy. Also used to sweeten, preserve food.

Sugar Alcohols

- Found naturally in small amounts of fruits/vegetables
- Commercially produced and added as low calorie sweeteners
- Examples: Isomalt, Hydrogenated Starch Hydrolysates, Mannitol, Sorbitol, Xylitol
- Function: provide sweet taste without lot of calories per gram; add bulk and texture to food, help retain moisture and prevent browning of foods
- Many “sugar free” and “no sugar added” foods contain sugar alcohols.

Sugar Alcohols cont.

- Must still look at carb count per serving.
- Often causes a laxative effect if eaten in larger than serving size or more than one serving eaten at a time.

- **Carb Counting Sugar Alcohols:**

  Subtract HALF of the grams of sugar alcohol listed on the food label from the total grams of carbs. Generally, not required if amount of sugar alcohols is less than 5 g.

http://www.joslin.org/info/what_are_sugar_alcohols.html

Starches

- Found naturally in some foods
- Added to other foods as a thickener or as a stabilizer
- Function: along with sugars, are main source of calories. Breaks down into glucose, which is the primary energy source.

Fiber

- Found naturally in variety of foods
- “roughage”; isn’t digested by the body
- Function: provide a “full” sensation, slows digestion, interferes with absorption of dietary fat and cholesterol (a good thing), promotes intestinal regularity

Fiber

- Two types:

1. Soluble: dissolves in water; helps lower cholesterol and blood sugar

Examples: oats, citrus fruits

2. Insoluble: promotes movement of foods through digestive system; helps with regularity

Examples: nuts, wheat bran

Fiber

- IF a food label lists “INSOLUBLE Fiber”, the total grams can be subtracted from the total carb grams and from the total fiber grams. IF there are 5 or more grams of fiber left, subtract HALF of the dietary fiber from the total carbs.
- IF a product has 5 or more grams of fiber, subtract HALF of that from the total carb amount.

Proteins

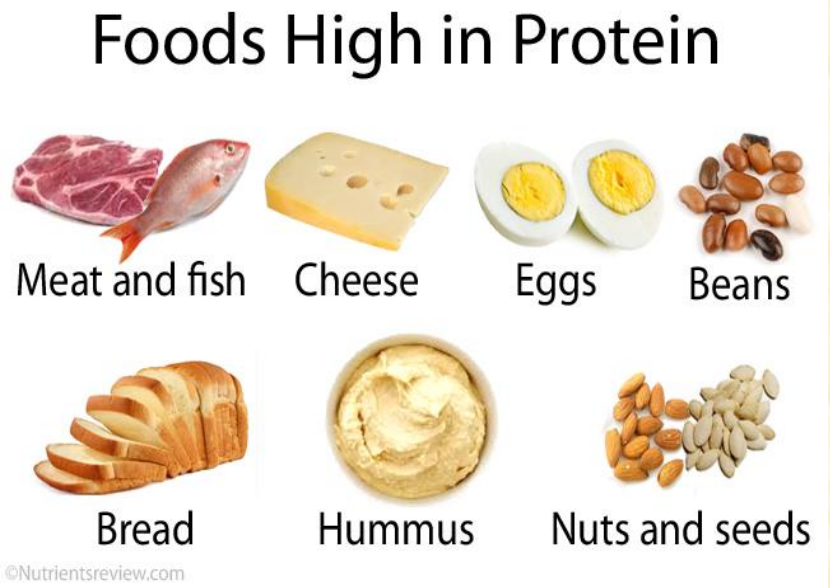
- Found in muscle, bone, skin, hair
- Made up of amino acids

  12 of these, the “essential” amino acids come from diet only.
- Responsible for enzymes that fuel chemical reactions in the body
- Responsible for hemoglobin

(n.d.). Retrieved September 05, 2017, from https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/protein/

Complete Proteins

- Proteins that contain all of the essential amino acids.
- Examples: milk, meat



Changes to the Nutrition Label

RACCs for serving sizes updated to reflect what people are actually eating

Fiber has been defined

Footnote table goes away and statement changed to explain what DV means

Nutrition Facts

Serving Size 1 cookie (30g)
Servings Per Container 8

Amount Per Serving	
Calories 150	Calories from Fat 90
	% Daily Value*
Total Fat 10g	15%
Saturated Fat 6g	30%
Trans Fat 0g	
Cholesterol 25mg	8%
Sodium 75mg	3%
Total Carbohydrate 15g	5%
Dietary Fiber 1g	4%
Sugars 10g	
Protein 1g	
Vitamin A 4%	• Vitamin C 0%
Calcium 0%	• Iron 2%

*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
Saturated 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

Nutrition Facts

8 servings per container
Serving size **1 cookie (30g)**

Amount per serving
Calories **150**

	% Daily Value*
Total Fat 10g	13%
Saturated Fat 6g	30%
Trans Fat 0g	
Cholesterol 25mg	8%
Sodium 75mg	3%
Total Carbohydrate 15g	5%
Dietary Fiber 0g	0%
Total Sugars 10g	
Includes 6g Added Sugars	12%
Protein 1g	
Vitamin D 0mcg	0%
Calcium 5mg	0%
Iron 1mg	6%
Potassium 35mg	0%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2000 calories a day is used for general nutrition advice.

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Single Size Containers containing less than 200% of RACC must be labeled as Single Serving

Bigger type size for Calories & Serving Size; Calories from Fat removed

Updated DVs for Added Sugars, Sodium, & Fiber

Added Sugars are now required

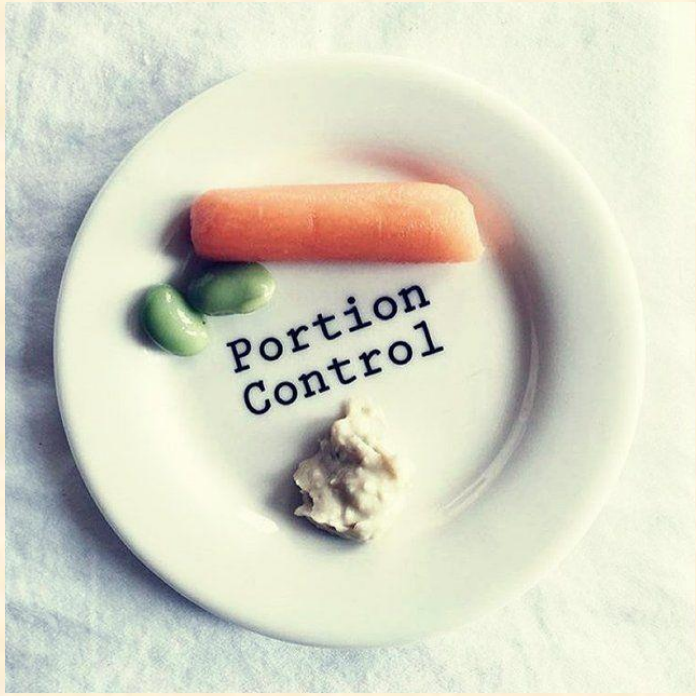
Vitamins A & C are no longer required, Vitamin D & Potassium have been added as required along with Calcium & Iron

Compliance By: July 28th 2018
Manufacturers with less athan $10 million annual sales will have an extra year to comply.

Serving Size vs. Portion Size

Serving Size: measured amount of food or drink on nutrition label.

Portion Size: the amount actually eaten by someone.



The Portion Size Illusion

Which plate contains the most food?

Think about it before looking at the answer below

There is exactly the same amount of food on each plate

MotiveWeight.Blogspot.com

Portion Control

20 Years Ago	Today	Difference	20 Years Ago	Today	Difference
 333 Calories	 590 Calories	257 More Calories	 8 oz. 85 Calories	 20 oz. 250 Calories	165 More Calories
 500 Calories	 850 Calories	350 More Calories	 210 Calories	 500 Calories	290 More Calories
 500 Calories	 1,025 Calories	525 More Calories	 270 Calories	 630 Calories	360 More Calories

Approximately Measuring…

2016-08-08-1470655655-489947-HandPortionSizeGuide.jpg

Carb Counting

Carb counting:

- helps gain tighter control of blood sugars;
- allows flexibility over how much of a carb you want to eat;
- all foods/fluids containing carbohydrates will need to be counted when eaten.

- Although carb counting, still need to make good, healthy choices. It is NOT a reason to eat all the carbs desired.

Carbs are found in more than just starchy/sweet foods.

- The following food groups all contain carbs:
  - Grains
  - Fruits
  - Milk
  -Starchy Vegetables
  -Meat (IF it’s breaded.)

Non-Carbohydrate Categories

- Meats & Protein: beef, chicken, turkey, seafood, eggs, cheese, tofu
- Fats: oils, butter, margarine, sour cream, mayonnaise
- Non-Starchy Vegetables: any vegetable that is bring in color, can be eaten raw, and usually found in a salad

- HOWEVER, large servings of these foods can affect blood sugars and add extra calories to the diet. And, if any of these non-carb foods are breaded or have a crust, then they have added carbs. As in anybody's diet, the serving sizes of these foods should be controlled to maintain a healthy diet and weight.

Today You Had…

- Breakfast:
- Snack:
- Lunch:
- Snack:

More Food In The Bowl

- Make a meal out of the foods on your table as a group.
- Calculate the carbs in your meal.

Now… How About That Fast Food

- Pick your meal as a group. Calculate carbs.
- Ooops, now you want seconds of at least one food. Add in those carbs.
- What if you had already given insulin for the first set of carbs?

Let’s Suppose You are a Grazer…

- You had a handful of Goldfish crackers at 9am.

  Carbs:

- At 10am you had two miniature Reece's Peanut Butter Cups.

- At 10:30 you decided you needed something salty and had a lunchbox bag of Cheetoes and an 8 ounce Coke.

  Carbs:

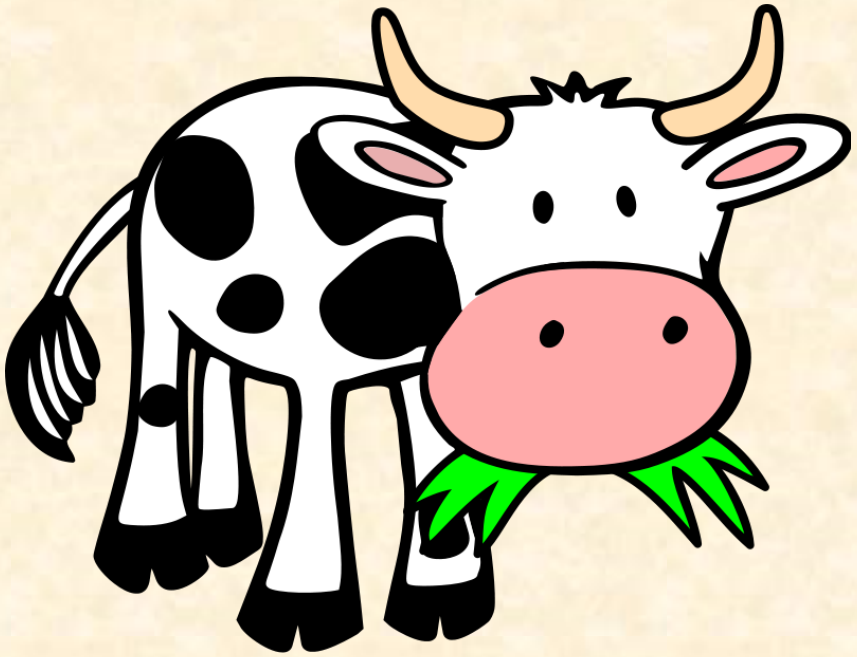
- You needed something “healthy”, so you had a cutie at 11am.

  Carbs:

- Then, you had a meeting and needed a piece of peppermint, but had two instead.

  Carbs:

- How many carbs did you eat grazing between 9am and 11am?



- How many carbs have you eaten during this session? Seriously, please add them up.

It’s All About Choices

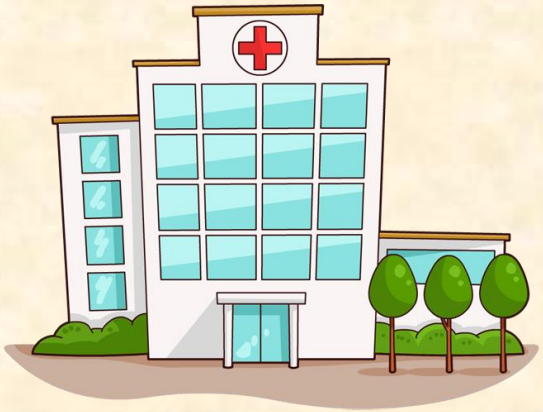
Fast Food Healthy Choices

- Do NOT “biggie” size.
- Choose something green-side salad.
- Grilled or baked over fried.
- Choose low fat condiments.
- Drink Water with meal.
- Avoid a buffet.
- Salad dressing on the side.

http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/fast-food/art-20047179

In the Hospital…

- Are all foods served on hospital food trays to kids with diabetes low carb?
- Are all tickets with carb counts on trays served to kids with diabetes correct?
- Do graham crackers/saltine crackers have carbs?
- Do juice cups have carbs?
- Is insulin given BEFORE a meal?



Breakfast

2 Scrambled Eggs = 0 grams carbs

1 Piece Toast = 12 grams carbs

1 Tbsp. Grape Jelly = 13 grams carbs

2 Slices Bacon = 0 grams carbs

1 Cutie = 9 grams carbs

Breakfast

2 Scrambled Eggs = 0 grams carbs

1 Piece Toast = 12 grams carbs

1 Tbsp. Grape Jelly = 13 grams carbs

2 Slices Bacon = 0 grams carbs

1 Cutie = 9 grams carbs

Total: 34 grams carbs

School Lunch

• Sausage Pizza	1 slice	40 g
• Corn on Cob	1 piece	14 g
• Salad	side salad	0 g
• Ranch Dressing	1 Tbsp	1 g
• Potato Smiles	1 serving	15 g
• Peach Cobbler	1 serving	40 g
• Chocolate Milk	1 8oz serving	26 g

School Lunch

• Sausage Pizza	1 slice	40 g
• Corn on Cob	1 piece	14 g
• Salad	side salad	0 g
• Ranch Dressing	1 Tbsp	1 g
• Potato Smiles	1 serving	15 g
• Peach Cobbler	1 serving	40 g
• Chocolate Milk	1 8oz serving	26 g
• Total:		136 g

Snack Time

• Peanut Butter	1 Tbsp.	4 g
	1 To Go Cup	11 g
• Apple	1 small apple	20 g
• Bag of Doritos	1 small bag	17 g
	1 grab bag	50 g
• Coca Cola	1 reg can	24 g
• Snickers	1 regular bar	33 g
	1 fun size bar	10 g

Food is Medicine
for Kids with Type 1 Diabetes

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