Nutrition for the Non-nutritionist

Presented by Wendy Graham RD CDE
Mentor/ Best Practice Facilitator
March 2019

WaterlooWellington DIABETES

Clinical Practice Guidelines 2018
CDE Competencies 2018

Guidelines.diabetes.ca

Objectives

- Discuss the food sources of macronutrients and the effect on diabetes
- Discuss various nutrition strategies for diabetes management
- Provide an Introduction to Carbohydrate counting
- Provide nutrition strategies for people with complications or comorbidities
- Discuss the nutrition strategies for sick day management

Goals of Nutrition Therapy

- Maintain or improve the quality of life, nutritional and physiological health
- Prevent complications
- Treat complications, comorbid conditions and concomitant disorders

Goals of Nutrition Therapy

- Meet glycemic, blood pressure and lipid goals
- Attain or maintain healthy body weight
- Delay and prevent complications
- Nutritional needs
  - Personal, cultural preferences
  - Health and numeracy literacy
  - Access to healthful foods
  - Willingness and ability to make behavior changes

Nutrition Therapy Recommendations for the Management of Adults with Diabetes.
Diabetes Care Vol 37 S1, 2014.

Food is to be Eaten and Enjoyed

It's not just about blood glucose

Components of Food

Carbohydrate

Carbohydrate

Carbohydrate → Glucose

Carbohydrate

- Primary source of fuel
  - Controlled not restricted
- RDA 130 g/day
- Sugar and Fibre are contained within carbohydrate values

Quality and Quantity

Carbohydrate

Awareness

Carbohydrate counting

Legend

1 cup (250 mL)
½ cup (125 mL)
¼ cup (60 mL)
1 tablespoon (15 mL)
1 teaspoon (5 mL)
measure after cooking
1 ounce (30 grams) by weight
Choose more often
Choose less often

INCHES 1 2 3 4 5 6 7 8

CARBOHYDRATE CONTAINING FOOD

1 serving=15 g available carbohydrates or 1 carbohydrate choice:

GRAINS & STARCHES

Bannock, whole grain baked	Barley, bulgur	Bread, whole grain	Cereal, hot			Bagel	Bagel	Bannock, fried	Bread, white	Bun, hamburger or hotdog
1.5x2.5 in	¼ cup	1 slice	¼ cup			½ large	¼ small	1.5x2.5 in	1 slice	½
Chapati, roti, tortilla, whole wheat	Corn, kernel	English muffin, whole grain	Pasta, couscous			Cereal, flaked unsweetened	Crackers, soda type	Croutons	French fries	Naan bread
1 (6 in)	½ cup	½	½ cup			¼ cup	7	¾ cup	10	¼ (6 in)
Plantain, mashed, sweet potato	Pita bread, whole wheat	Potatoes, boiled, baked	Rice, millet	Soup, thick type		Pancake, waffle	Pita bread, white	Pizza crust	Taco shells	
⅓ cup	½ (6 in)	½ medium	⅓ cup	1 cup		1 (4 in)	½ (6 in)	¼ (12 in)	2 (5 in)	

FRUITS

Apple	Applesauce, unsweetened	Banana	Blackberries, strawberries	Blueberries	Cherries	Grapes	Kiwi			Mixed dried fruit
1 medium	½ cup	1 small	2 cup	¾ cup	15	15	2 medium			¼ cup
Mango	Melon	Orange	Peach	Pear	Pineapple	Plum	Canned fruit, in juice			Juice
½ medium	½ cup	1 medium	1 large	1 medium	½ cup	2 medium	½ cup			½ cup

MILK & ALTERNATIVES

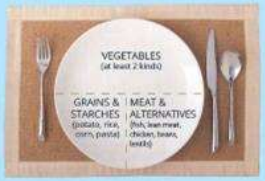
Chocolate milk, 1%	Evaporated milk, canned	Milk, low fat	Milk powder, skim	Soy beverage, flavoured	Soy beverage, plain	Soy yogourt, flavoured	Yogourt, low fat plain	Yogourt, artificially sweetened	
1 cup	½ cup	1 cup	4 tbsp	1 cup	1 cup	½ cup	¾ cup	¾ cup	

OTHER CHOICES (sweet foods and snacks)

Milk pudding, skim no sugar added	Popcorn, air-popped low fat			Arrowroot, gingersnap cookies	Brownie or cake, unfrosted	Jam, jelly, honey	Muffin	Oatmeal granola bar	Pretzels, low fat	Sugar
½ cup	3 cup			3	2 in square	1 tbsp	½ small	1 bar (28 g)	7 large/ 30 sticks	3 tsp

Beyond the Basics

Meal Planning for Healthy Eating and Diabetes Management



Meal Plan

TIME							
CARBOHYDRATES (grams / choices)							
GRAINS & STARCHES							
FRUITS							
MILK & ALTERNATIVES							
OTHER CHOICES							
VEGETABLES							
MEAT & ALTERNATIVES							
FATS							

VEGETABLES

Asparagus	Beans, yellow or green	Bean sprouts	Beets	Broccoli, cauliflower	Celery	Cabbage, greens	Carrots	Cucumber	Eggplant	
Mushrooms	Okra	Parsnips	Peas	Peppers	Salad vegetables	Snow peas	Squash	Tomatoes	Turnips	

MEAT & ALTERNATIVES

Cheese, skim <7% MF	Cheese, light <20% MF	Cottage cheese 1-2% MF	Egg	Fish, canned, drained	Fresh fish					Cheese, regular >20% MF
1 oz	1 oz	¼ cup	1 large	¼ cup	1 oz					1 oz
Hummus	Legumes	Meat, lean cut	Meat-game	Meat/poultry-ground, lean	Meat-organ and tripe				Meat, regular cut	Meat-ground, medium-regular
⅓ cup	½ cup	1 oz	1 oz	1 oz	1 oz				1 oz	1 oz
Meat-prepared, low-fat	Peameal/back bacon	Peanut butter	Poultry, skinless	Shellfish	Tofu, firm	Vegetarian meat alternatives			Meat-prepared, regular fat	Poultry/wings, skin on
1 oz	1 oz	2 tbsp	1 oz	1 oz	1.75x0.75 in (85 g)	1 oz			1 oz	1 oz

FATS

Avocado	Bacon	Butter	Cheese, spreadable	Margarine, non hydrogenated	Mayonnaise, light	Nuts, seeds	Oil, canola or olive	Salad dressing, regular	Tahini	
⅛	1 slice	1 tsp	1 tbsp	1 tsp	1 tbsp	1 tbsp	1 tsp	1 tsp	1 tbsp	

Beyond the Basics

- Each food ‘Choice’ contains approximately 15 grams of carbohydrate

- **Portion size is important**
- Groups containing carbohydrate are:
  - Grains and Starches
  - Fruits
  - Milk Products
  - Others

Beyond the Basics

This needs to be filled out!

Meal Plan

TIME							
CARBOHYDRATES (grams / choices)							
GRAINS & STARCHES							
FRUITS							
MILK & ALTERNATIVES							
OTHER CHOICES							
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FATS							

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1.5x2.5 in		1 slice	¾ cup			¼ large	½ small	1.5x2.5 in	1 slice	½
Chapati, roti, tortilla, whole wheat	Corn, kernel	English muffin, whole grain	Pasta, couscous			Cereal, flaked unsweetened	Crackers, soda type	Croutons	French fries	Naan bread
1 (6 in)		½					7	¾ cup	10	¼ (6 in)
Plantain mashed, sweet potato	Pita bread, whole wheat	Potatoes, boiled, baked	Rice, millet	Soup, thick type			Pancake, waffle	Pita bread, white	Pizza crust	Taco shells
½ cup	½ (6 in)	½ medium	⅓ cup				1 (4 in)	½ (6 in)	½ (12 in)	2 (5 in)

FRUITS

Apple	Applesauce, unsweetened	Banana	Blackberries, strawberries	Blueberries	Cherries	Grapes	Kiwi			Mixed dried fruit
1 medium		1 small	2		15	15	2 medium			
Mango	Melon	Orange	Peach	Pear	Pineapple	Plum	Canned fruit, in juice			Juice
½ medium		1 medium	1 large	1 medium	¾ cup	2 medium				

MILK & ALTERNATIVES

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			4			½ cup	¾ cup	¾ cup		

OTHER CHOICES (sweet foods and snacks)

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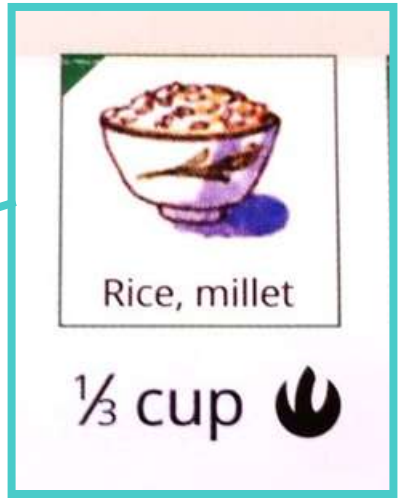

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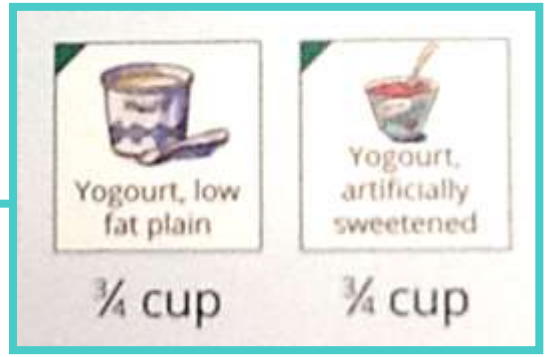


Beyond the Basics

250 ml of:

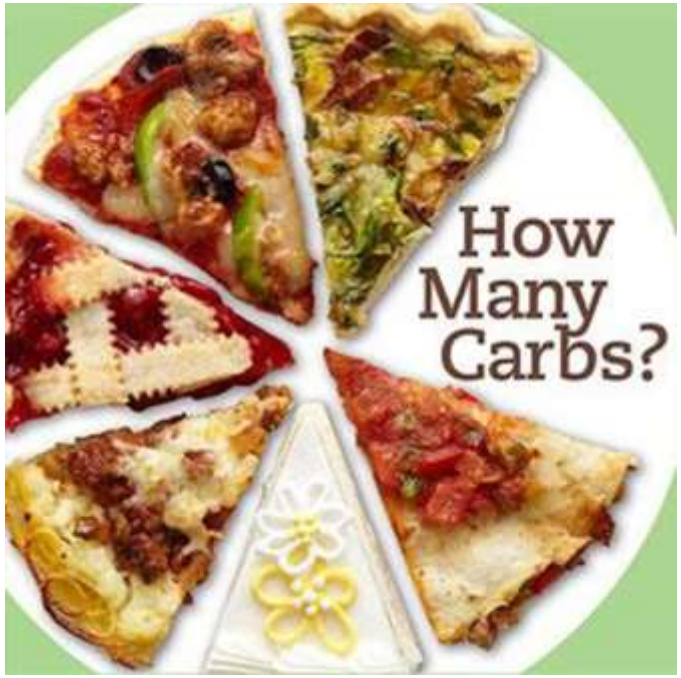
- Parsnips,
- peas and
- winter squash

are considered

1 Carbohydrate Choice

Know the food portions of the Beyond the Basics poster

Carbohydrate Counting



Carbohydrate Counting

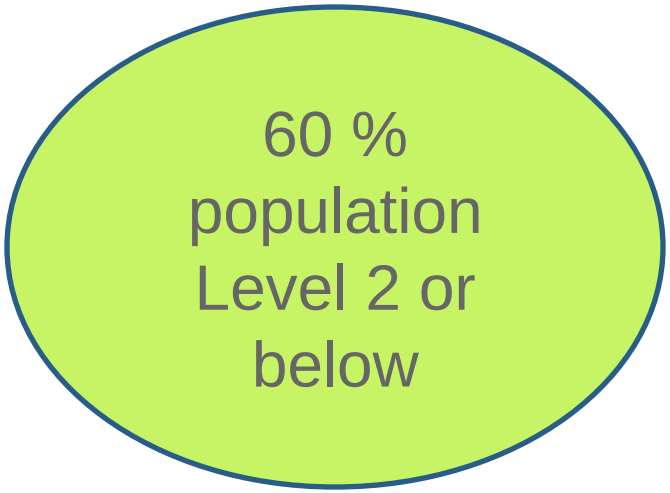
- Basic
  - Reading a label to identify 1 ‘Food Choice’
- Intermediate
  - Comparing the portion from a nutrient analysis to the budget of carbohydrate for a meal
- Advanced
  - Determining the amount of insulin to take based on the carbohydrate content of the meal

Carbohydrate Counting

- Type 1
- Insulin Pump
- Type 2 looking for tighter control
- Pregnancy

Health Literacy: Levels

1. Basic
2. Communicate and interact
   Extract information and apply
3. Critical Thinking
   Analyze information

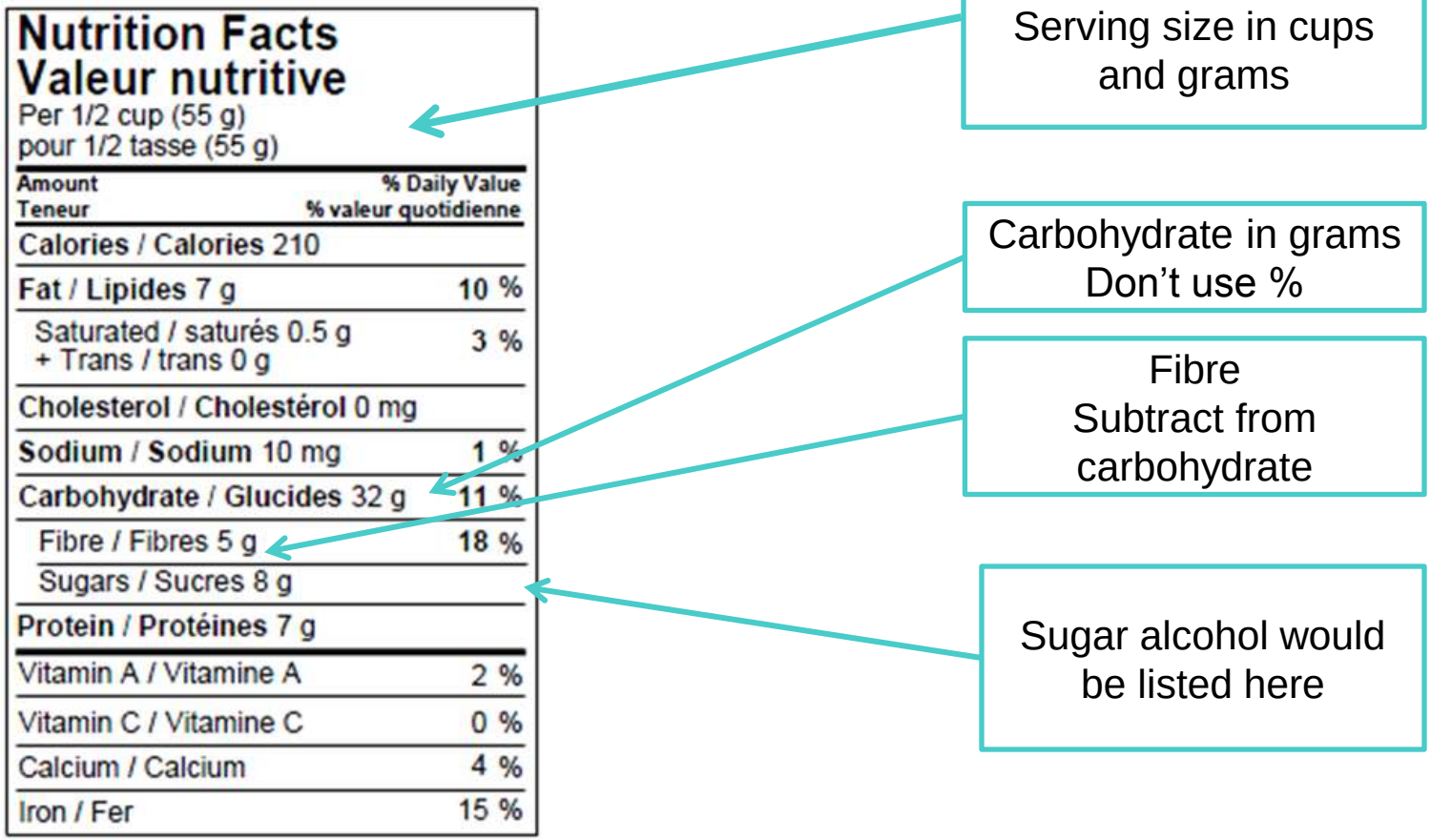


Carbohydrate Counting

Patient Requirements

- Literacy Skills
- Numeracy Skills
- Desire to do the work
- Equipment

Carbohydrate Counting: Labels



Nutrient Information available from:

- Food labels
- Nutrient content of common foods
- Calorie King
- My Fitness Pal
- Many apps

Carbohydrate Counting

Portion Size

Carbohydrate Counting

500 Rule

Calculate Total Daily Dose (TDD) of insulin

500 divided by TDD =
 # grams of carbohydrate covered by 1 unit of rapid insulin

Carbohydrate Counting- 500 Rule

Sarah takes 20 units of SBE glargine and 30 units of lispro

Her TDD 20 + 30 = 50 units

Calculating her Insulin to Carbohydrate ratio using 500 Rule

500/50 = 10

Therefore 1 unit of insulin would cover 10 grams of carbohydrate

Carbohydrate Counting- 500 Rule

Sarah eats a sandwich and a small apple for lunch.

	Carbohydrate
Sandwich	30 g
Apple(small)	10 g
	40 g

1 unit of insulin covers 10 g carbohydrate

40/10 = 4

Sarah would take 4 units of insulin

Carbohydrate Counting - 500 Rule

Sample Question # 1

Abdul uses aspart 10 units at breakfast, 6 units at lunch and 12 units at dinner. He takes 32 units of detemir at bedtime.

What would his insulin to carbohydrate ratio be using the 500 Rule?

1) 1:10
2) 1:15
3) 1:3
4) 1:8

Carbohydrate Counting - 500 Rule

Sample Question #1

Abdul uses aspart 10 units at breakfast, 6 units at lunch and 12 units at dinner. He takes 32 units of detemir at bedtime.

What would his insulin to carbohydrate ratio be using the 500 Rule?

1) 1:10
2) 1:15
3) 1:3
4) 1:8

Carbohydrate Counting- 500 Rule

e Question # 2

as type 2 diabetes. She uses humalog 25 units akfast, 10 units at lunch and 15 units at dinner. kes 50 units of basaglar at bedtime.

the 500 Rule what would her insulin to ydrate ratio be?

1) 0
2) 1:5
3) 1:6
4) 1.8

Insulin to Carbohydrate ratio

$$\frac{\text{\# grams carbohydrate}}{\text{\# units of rapid insulin}} = \text{1 unit of insulin per\_\_\_\_ gm CHO}$$

Insulin to Carbohydrate ratio

Lorne's breakfast is package of regular instant oatmeal, 125 ml of milk, 30 ml raisins, 10 ml of brown sugar and a pinch of cinnamon. He takes 10 units of rapid insulin for this meal.

	Carbohydrate
Oatmeal	17.0 g
Milk	6.0 g
Raisins	7.5 g
Sugar	10.0 g
Total	40.5 g

Insulin to Carbohydrate ratio

Lorne's breakfast is 200 ml of oatmeal, 125 ml of milk, 30 ml raisins, 10 ml of brown sugar and a pinch of cinnamon. He takes 10 units of rapid insulin for this meal.

 # grams carbohydrate
_____ **= 1 unit of insulin per____ g Carbohydrate**
 # units of rapid insulin

$\frac{40}{10} = 4$

***I:C ratio would be 1:4**

Calculating Carbohydrate

Tanya's Lunch

250 ml rice, salad, chicken, 1 banana

Calculation:

	Carbohydrate(grams)
Rice	45
Salad	0
Chicken	0
Banana	20
Total	65

Calculating Carbohydrate

Tanya's I:C Ratio is 1:10
1 unit to cover 10 grams of carbohydrate

Lunch

250 ml rice, salad, chicken, 1 banana = 65 grams of carbohydrate

65 divided by 10 = 6

This person would take 6 units of insulin

Carbohydrate Counting

Tim Horton bagel and soup

Bagel 58 grams
Soup 24 grams
Total 82 grams

I:C ratio of 1 unit to cover 8 grams

This meal requires 10 units of insulin

Carbohydrate Counting

Sample Question # 3

Brandon has type 1 diabetes. He uses a 1:9 insulin:carbohydrate ratio. How much insulin would he take for the following meal?

500 ml cooked pasta

75 ml tomato sauce & 6 Meatballs

1 slice garlic bread

Caesar salad with croutons

1) 5 units
2) 10 units
3) 9 units
4) 12 units

Carbohydrate Counting

Sample Question # 3

Brandon has type 1 diabetes. He uses a 1:9 insulin:carbohydrate ratio. How much insulin would he take for the following meal?

500 ml cooked pasta

75 ml tomato sauce & 6 Meatballs

1 slice garlic bread

Caesar salad with croutons

1) 5 units
2) 10 units
3) 9 units
4) 12 units

Total Fibre 30-50 g/day

Insoluble

- Improved bowel habits

Total Fibre 30-50 g/day

Soluble (10-20g)

- Decrease pc meal blood glucose
- Decrease LDL
- Delayed gastric emptying

Sugar

Sucrose (fructose) 10% energy

Sugar

Calculations

Carbohydrate has 4 calories per gram

Example
2000 calories
10% would be 200 calories
To get grams divide calories by # grams
Divide by 4
200/4= 50

Sugar

50 grams of added sugar are allowed within 2000 calorie diet

Components of Food

Protein

Protein

- RDA 0.8 – 1.0 g/kg body weight
- Restricted in renal disease
- Most protein food contain fat
  - (meat and alternatives, milk, nuts)

- Encourage meat alternatives
  - Plant based protein
- Low fat selections

Protein

Fatty Fish 2-3 times/week

- Salmon, tuna, sardines, trout

Components of Food

Fat

Total Fat 20- 35 %

- Saturated less than 9% energy
- Trans fats: minimal
- Polyunsaturated include omega 3
- Monounsaturated preferred

Calculating Percentage of Fat

2000 calories

- 30% fat = 600 calories
- Divide 600 by 9
- Fat has 9 calories per gram
- 600/9 = 66

66 grams of fat

Strategies for Nutrition Management

Prediabetes
Type 1
Type 2

Type 1

- Insulin to match carbohydrate
- Prevent hypoglycemia
- Adjust for activity
- Sick day management to prevent hypo or hyperglycemia

Strategies for Prediabetes and Type 2

- Weight loss or maintenance
- Portion Control
- Low GI
- Reduced refined carbohydrate
- Physical activity

Prediabetes

Reduce the risk of diabetes and potential risk of cardiovascular disease

Weight loss of 7% of body weight

Portion Control/ low GI

Exercise (moderate) 150 minutes/week

Decreased incidence of diabetes by 58% in Diabetes Prevention Program (DPP)

Type 2

People with type 2 should maintain regularity in timing and spacing of meals to optimize glucose control

2013 Clinical Practice Guidelines

Early Type 2

- Reduction in energy to promote weight maintenance or loss
- Portion control
- Low GI/high fibre
- CHO distribution
- Dietary pattern of choice
- Physical activity

2018 Clinical Practice Guidelines S66

Later Type 2

- Reduction in energy to promote weight maintenance or loss
- Portion control
- **CHO distribution**
- Low GI/high fibre
- Dietary pattern of choice
- Physical activity

Type 2- Basal Insulin

- **Portion control**
- Reduction in energy to promote weight maintenance or loss
- **CHO consistency**
- Low GI/high fibre
- Dietary pattern of choice
- Physical activity

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Type 2- Basal /bolus

- **Portion control**
- Reduction in energy to promote weight maintenance or loss
- **CHO consistency…..CHO counting**
- Low GI/high fibre
- Dietary pattern of choice
- Physical activity

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Nutrition Strategies

No perfect combination of food types!

Food Intake is Individualized

- Carbohydrate 45-60%
- Protein 15-20%
- Fat 20-35%

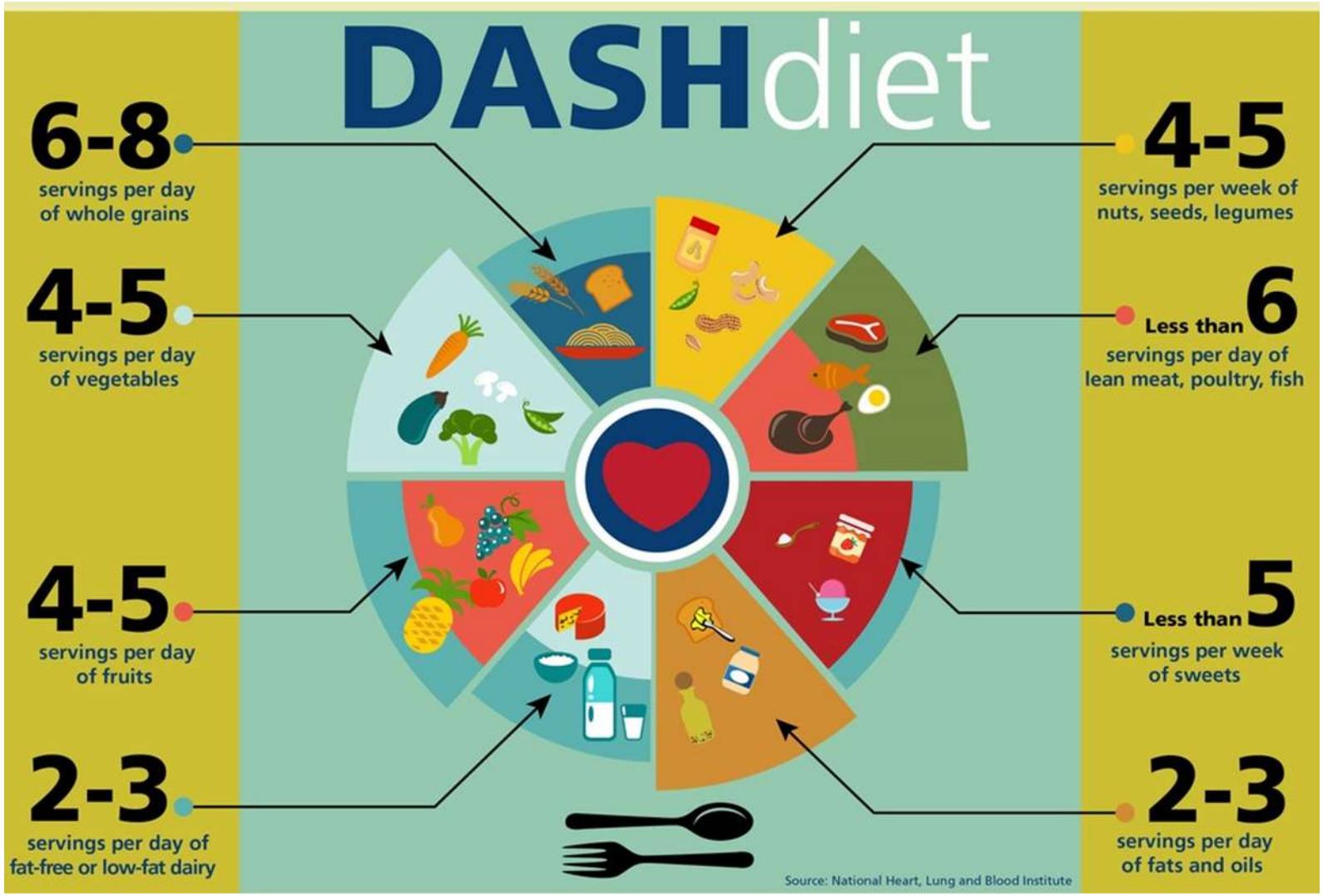
Dietary Patterns or Food Strategies

- Mediterranean
- DASH
- Portfolio
- Vegetarian
- Increased fruit and vegetables
- Increased legumes
- Add nuts

Mediterranean Diet

- Fresh Vegetables
- Fresh Fruit
- Whole Grains
- Wine in moderation
- Fish
- Legumes/beans
- Nuts for snacks
- Olive oil 4 Tbsp/day (1/4 c)
- Red or processed meat is limited

DASH Dietary Strategies to Stop Hypertension



Portfolio Diet

- Vegetarian (vegan) style of eating

- Daily inclusion of:
  - Nuts 50 g
  - Plant sterols 2 g
  - Soy Protein 50 g
  - Viscous (soluble) Fibre 10-25 g

Know basic differences between the DASH diet Mediterranean and Portfolio diet

Teaching Tools

Canada's Food Guide
Just the Basics


Canada's food guide
Eat well. Live well.
Eat a variety of healthy foods each day
Have plenty of vegetables and fruits
Eat protein foods
Make water your drink of choice
Choose whole grain foods
Discover your food guide at
Canada.ca/FoodGuide

Guidelines.diabetes.ca
Patient Resources
Tools and Resources
Management

DIABETES CANADA

Just the basics

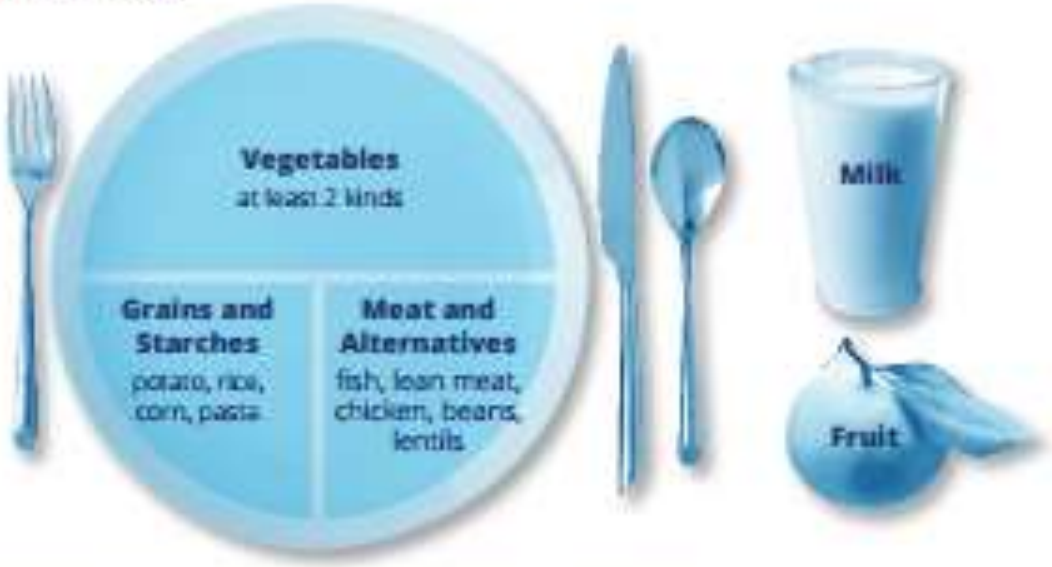
Diabetes is a condition in which your body cannot properly use and store food for energy. The fuel that your body needs is called glucose, a form of sugar. Glucose comes from foods such as fruit, milk, some vegetables, starchy foods and sugar.

To control your blood glucose you will need to eat healthy foods, be active and you may need to take pills and/or insulin.

Here are some tips to help you until you see a registered dietitian.

Tips:	Reasons:
Eat three meals per day at regular times and space meals no more than six hours apart. You may benefit from a healthy snack.	Eating at regular times helps your body control blood glucose levels.
Limit sugars and sweets such as sugar, regular pop, desserts, candies, jam and honey.	The more sugar you eat, the higher your blood glucose will be. Artificial sweeteners can be useful.
Limit the amount of high-fat food you eat such as fried foods, chips and pastries.	High-fat foods may cause you to gain weight. A healthy weight helps with blood glucose control and is healthier for your heart.
Eat more high-fibre foods such as whole grain breads and cereals, lentils, dried beans and peas, brown rice, vegetables and fruits.	Foods high in fibre may help you feel full and may lower blood glucose and cholesterol levels.
If you are thirsty, drink water.	Drinking regular pop and fruit juice will raise your blood glucose.
Add physical activity to your life.	Regular physical activity will improve your blood glucose control.

Plan for healthy eating



- Eat more vegetables. These are very high in nutrients and low in calories.
- Choose starchy foods such as whole grain breads and cereals, rice, noodles, or potatoes at every meal. Starchy foods are broken down into glucose, which your body needs for energy.
- Include fish, lean meats, low-fat cheeses, eggs, or vegetarian protein choices as part of your meal.
- Have a glass of milk and a piece of fruit to complete your meal.
- Alcohol can affect blood glucose levels and cause you to gain weight. Talk to your healthcare professional about whether you can include alcohol in your meal plan and how much is safe.

Low-Fat Dairy

\+ &

Fruit

Just the Basics- Concepts

- Eat 3 meals per day
- No more than 6 hours without eating
- Limit sweets
- Limit high fat foods
- Increase high-fibre foods
- Drink water
- Include physical activity

Other Aspect of Nutrition Strategies

Sweeteners
Alcohol
Glycemic Index

Sweeteners

Sweeteners		Sugar Alcohols
	Acceptable Daily Intake (ADI) mg/kg body weight	*Sugar alcohols do not have Acceptable Daily Intake (ADI). Large amounts (>10g/day) can cause diarrhea, cramps, gas and bloating.
Acesulfame potassium	15	Erythritol
Aspartame	40	Hydrogenated starch hydrolysates
Cyclamate	11	Isomalt
Erythritol	1,000	Lactitol
Neotame	2	Maltitol
Saccharin	5	Maltitol syrup
Stevia glycosides	4	Mannitol
Sucralose	8.8	Sorbitol
Tagatose	80	Sorbitol syrup
Thaumatin	0.9	Xylitol

2018 Clinical Practice Guidelines

DIABETES CANADA

Sugars and Sweeteners

Sweeteners that INCREASE blood glucose levels

Sweetener	Forms & uses	Other things you should know...
Sugars (Some examples)		
• Agave syrup • Barley malt • Brown rice syrup • Brown sugar • Corn syrup • Dextrose • Fructose • Fruit juice concentrates • Glucose • High fructose corn syrup • Honey • Icing sugar • Invert sugar • Lactose • Maltodextrins • Maltose • Maple syrup • Molasses • Sucrose • White sugar	• Used to sweeten foods and beverages • May be found in medications	• Sugars are carbohydrates that can affect your blood glucose, weight and blood fats. • There is no advantage to those with diabetes in using one type of sugar over another. • Sugars may be eaten in moderation by people with diabetes. Up to 10% of the days calories can come from added sugar. Their effect on blood glucose levels will vary. Talk to your dietitian about how to fit sugars into your meal plan.

Sweeteners that DON'T INCREASE blood glucose levels

Sweetener	Forms & uses	Other things you should know...
Sugar Alcohols		
• Hydrogenated starch hydrolysates (HSH) • Isomalt • Lactitol • Maltitol • Mannitol • Palatinit • Polydextrose • Polyol syrups • Polyols • Sorbitol • Xylitol	• Used to sweeten foods labelled "sugar free" or "no added sugar" • May be found in cough and cold syrups and other liquid medications (e.g. antacids)	• Sugar alcohols are neither sugars nor alcohols. Small amounts are found naturally in fruits and vegetables. They can also be manufactured. • They are only partly absorbed by your body, have fewer calories than sugar and have no major effect on blood glucose. • Check product labels for the number of grams of sugar alcohols per serving. If you eat more than 10 grams of sugar alcohols a day, you may experience side effects such as gas, bloating or diarrhea. • Talk to your dietitian if you are carbohydrate counting and want to use foods sweetened with sugar alcohols.

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Health Canada has approved the following sweeteners as safe if taken in amounts up to the Acceptable Daily Intake (ADI). These sweeteners may also be used in medications. Please read the label. Ingredients may change. New products may be available.

Sweetener	Common/ Brand name	Forms & uses	Other things you should know...
Acesulfame Potassium (Ace-K)	Not available for purchase as a single ingredient	• Added to packaged foods and beverages only by food manufacturers	• Safe in pregnancy* • ADI=15 mg/kg body weight per day For example, a 50 kg (110 lb) person could have 750 mg of Ace-K per day. One can of diet pop contains about 42 mg of Ace-K.
Aspartame	• Equal® • NutraSweet® • Private label brand	• Available in packets, tablets or granulated form • Added to drinks, yogurts, cereals, low calorie desserts, chewing gum and many other foods • Flavour may change when heated	• Safe in pregnancy* • ADI=40 mg/kg body weight per day For example, a 50 kg (110 lb) person could safely have 2000 mg of aspartame per day. One can of diet pop may contain up to 200 mg of aspartame.
Cyclamate	• Sucaryl® • Sugar Twin® • Sweet'N Low® • Private label brand	• Available in packets, tablets, liquid and granulated form • Not allowed to be added to packaged foods and beverages • Flavour may change when heated	• Safe in pregnancy* (Be cautious of exceeding the ADI) • ADI=11 mg/kg body weight per day For example, a 50 kg (110 lb) person could have 550 mg of cyclamate per day. One packet of Sugar Twin® contains 264 mg of cyclamate.
Saccharin	• Hermesetas®	• Available as tablets • Not allowed to be added to packaged foods and beverages	• Safe in pregnancy* • ADI=5 mg/kg body weight per day For example, a 50 kg (110 lb) person could have 250 mg of saccharin per day. One tablet of Hermesetas® contains 12 mg of saccharin. • Available only in pharmacies
Sucralose	• Splenda®	• Available in packets or granulated form. Added to packaged foods and beverages • Can be used for cooking and baking	• Safe in pregnancy* • ADI=9 mg/kg body weight per day For example, a 50 kg (110 lb) person could have 450 mg of sucralose per day. One packet of Splenda® contains 12 mg of sucralose; one cup (250 mL) contains about 250 mg of sucralose.
Steviol glycosides	Stevia-based sweeteners such as: • Stevia • Truvia • Krisda • Pure Via	• Table top sweeteners • Added to drinks, breakfast cereals, yogurt, fillings, gum, spreads, baked products, snack foods	• Safe in pregnancy* • ADI= 4mg /kg body weight per day For example a 50kg (110 lb) person could have 200mg of Stevia per day. A 30g portion of breakfast cereal may contain 11mg of steviol glycosides

*For nutritional reasons, pregnant women should not consume excessive products containing artificial sweeteners, since such foods could replace more nutritious foods.

DIABETES CANADA **diabetes.ca | 1-800 BANTING (226-8464)**

Diabetes Canada is making the invisible epidemic of diabetes visible and urgent. Eleven million Canadians have diabetes or prediabetes. Now is the time to End Diabetes – its health impacts as well as the blame, shame and misinformation associated with it. Diabetes Canada partners with Canadians to End Diabetes through education and support services, resources for health-care professionals, advocacy to governments, schools and workplaces, and, funding research to improve treatments and find a cure.

Know the aceptable daily intake for aspartame and sucralose.

Alcohol

- Beer: 360 ml (12 fl oz) regular strength(5 % alcohol)
- Spirits: 45 ml (1.5 fl oz) (40% alcohol)
- Wine: 150 ml (5 fl oz) (12% alcohol)

Alcohol

- Men 15 drinks/week
  - No more than 3 per day
- Women 10 drinks/week
  - No more than 2 per day

Alcohol and Type 1

Caution due to the risk of Hypoglycemia

- Symptoms can be mistaken for being drunk
- Hypoglycemia can be delayed up to 24 hours
- Do not take insulin for the carbohydrate in alcoholic beverages

To prevent Hypoglycemia Risk

- Have food when having alcohol
- Decrease insulin
- Monitor blood glucose (especially before bed and during the night)
- Tell someone you have diabetes

Alcohol and Type 2

- Hypoglycemia if they use secretagogues or insulin
- Concern if they are a poor eater or miss meals
- Contributes to weight gain
- Increases blood pressure and triglycerides

Glycemic Index

Grains and Starches

Low Glycemic Index (55 or less) Choose Most Often	Medium Glycemic Index (56 to 69) Choose Less Often	High Glycemic Index (70 or more) Choose Least Often
Breads:	**Breads:**	**Breads:**
Heavy Mixed Grain Breads	Chapati (White, Whole Wheat)	Bread (White, Whole Wheat)
Spelt Bread	Flaxseed/Linseed Bread	Naan (White, Whole Wheat)
Sourdough Bread	Pita Bread (White, Whole Wheat)	**Cereal:**
Tortilla (Whole Grain)	Pumpernickel Bread	All-Bran Flakes™ Cereal
Cereal:	Roti (White, Whole Wheat)	Corn Flakes™ Cereal
All-Bran™ Cereal	Rye Bread	Cream of Wheat™ (Instant)
All-Bran Buds™	(Light, Dark, Whole Grain)	Puffed Wheat Cereal
With Psyllium Cereal	Stone Ground Whole	Rice Krispies™ Cereal
Oat Bran	Wheat Bread	Special K™ Cereal
Oats (Steel Cut)	Whole Grain Wheat Bread	**Grains:**
Grains:	**Cereal:**	Jasmine Rice
Barley	Cream of Wheat™ (Regular)	Millet
Bulgur	Oats (Instant)	Sticky Rice
Mung Bean Noodles	Oats (Large Flake)	White Rice (Instant)
Pasta (Al Dente, Firm)	Oats (Quick)	**Other:**
Pulse Flours	**Grains:**	Carrots*
Quinoa	Basmati Rice	Potato (Instant Mashed)
Rice (Converted, Parboiled)	Brown Rice	Potato (Red, White, Hot)
Other:	Cornmeal	Pretzels
Peas	Couscous	Rice Cakes
Popcorn	(Regular, Whole Wheat)	Soda Crackers
Sweet Potato	Rice Noodles	
Winter Squash	White Rice (Short, Long Grain)	
	Wild Rice	
	Other:	
	Beets*	
	Corn	
	French Fries	
	Parsnip	
	Potato (Red, White, Cooled)	
	Rye Crisp Crackers	
	(e.g. Ryvita Rye Crispbread™)	
	Stoned Wheat Thins™	
	Crackers	
Additional foods:	**Additional foods:**	**Additional foods:**
1.	1.	1.
2.	2.	2.
3.	3.	3.

* Most starchy/sweet vegetables (e.g. peas, parsnip, winter squash) provide 15 g or more carbohydrate per 1 cup serving. Beets and carrots often provide less than 15 g carbohydrate per serving (marked above with *). Most non-starchy (or free) vegetables (e.g. tomato and lettuce) have not been assigned a GI because they have very little carbohydrate and have very little effect on blood sugar.

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Breads:
Heavy Mixed Grain Breads
Spelt Bread
Sourdough Bread
Tortilla (Whole Grain)

Cereal:
All-Bran™ Cereal
All-Bran Buds™
With Psyllium Cereal
Oat Bran
Oats (Steel Cut)

Grains:
Barley
Bulgur
Mung Bean Noodles
Pasta (Al Dente, Firm)
Pulse Flours
Quinoa
Rice (Converted, Parboiled)

Grains:
Basmati Rice
Brown Rice
Cornmeal
Couscous
(Regular, Whole Wheat)

Cereal:
All-Bran Flakes™ Cereal
Corn Flakes™ Cereal
Cream of Wheat™ (Instant)
Puffed Wheat Cereal
Rice Krispies™ Cereal
Special K™ Cereal

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Glycemic Index

Fruits

Low Glycemic Index (55 or less) Choose Most Often	Medium Glycemic Index (56 to 69) Choose Less Often	High Glycemic Index (70 or more) Choose Least Often
Apple	Banana (Ripe, Yellow)	Banana (Brown, Overripe)
Apricot (Fresh, Dried)	Cherries (Bottled) ▲	Watermelon
Banana (Green, Unripe)	Cherries (Fresh)	
Berries	Cranberries (Dried)	
Cantaloupe	Figs (Fresh, Dried)	
Grapefruit	Grapes	
Honeydew Melon	Kiwi	
Mango	Lychee	
Orange	Pineapple	
Peach	Raisins	
Pear		
Plum		
Pomegranate		
Prunes		
Additional foods:	**Additional foods:**	**Additional foods:**
1.	1.	1.
2.	2.	2.
3.	3.	3.

Some fruits have not been assigned a GI because they contain less than 15 g of available carbohydrate per serving (e.g. lemon and lime).

Many fruits and vegetables fall in the low or medium GI categories.

Glycemic Index

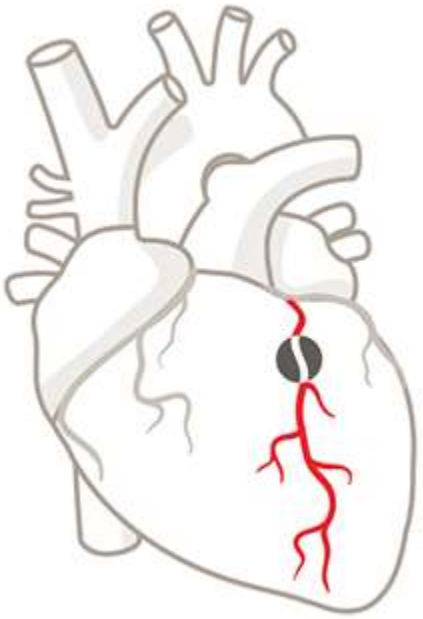
Meat and Alternatives

Low Glycemic Index (55 or less) Choose Most Often	Medium Glycemic Index (56 to 69) Choose Less Often	High Glycemic Index (70 or more) Choose Least Often
Baked Beans	Lentil Soup (ready-made)	
Chickpeas	Split Pea Soup (ready-made)	
Kidney Beans		
Lentils		
Mung Beans		
Romano Beans		
Soybeans/Edamame		
Split Peas		
Additional foods:	**Additional foods:**	**Additional foods:**
1.	1.	1.
2.	2.	2.
3.	3.	3.

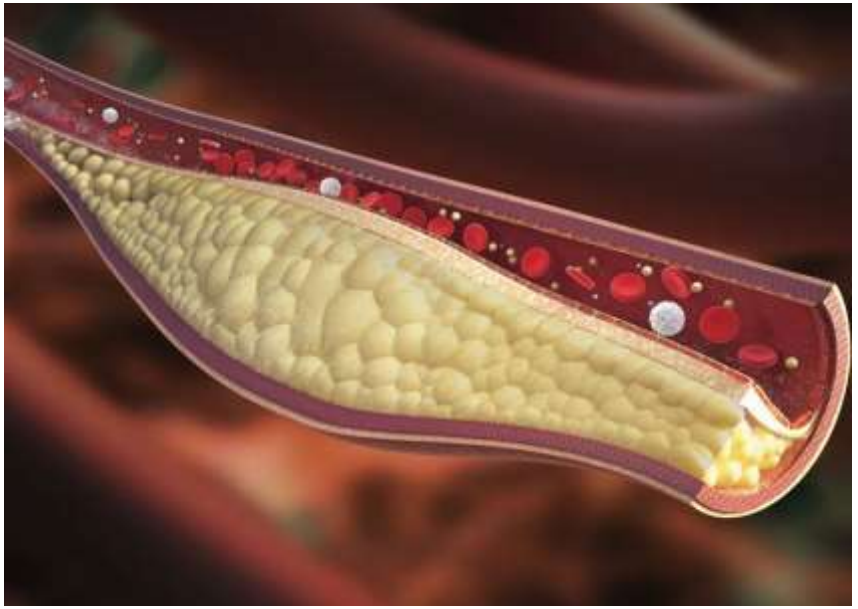
Complications and Comorbidities

Dyslipidemia
Hypertension
Gastroparesis
Renal
Celiac

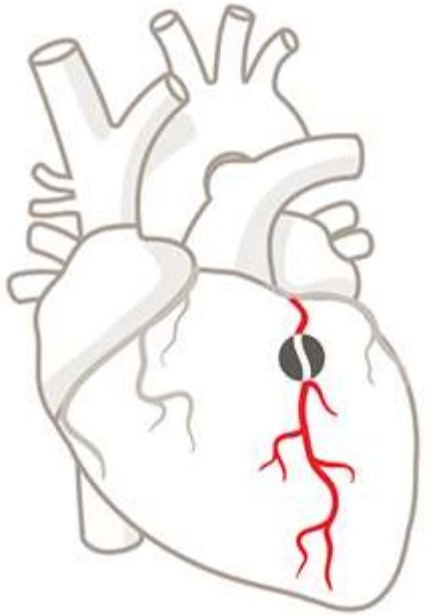
Dyslipidemia



- Patient's Goal
  - ↓Weight
  - ↑Physical Activity
  - D/C Smoking



Dyslipidemia

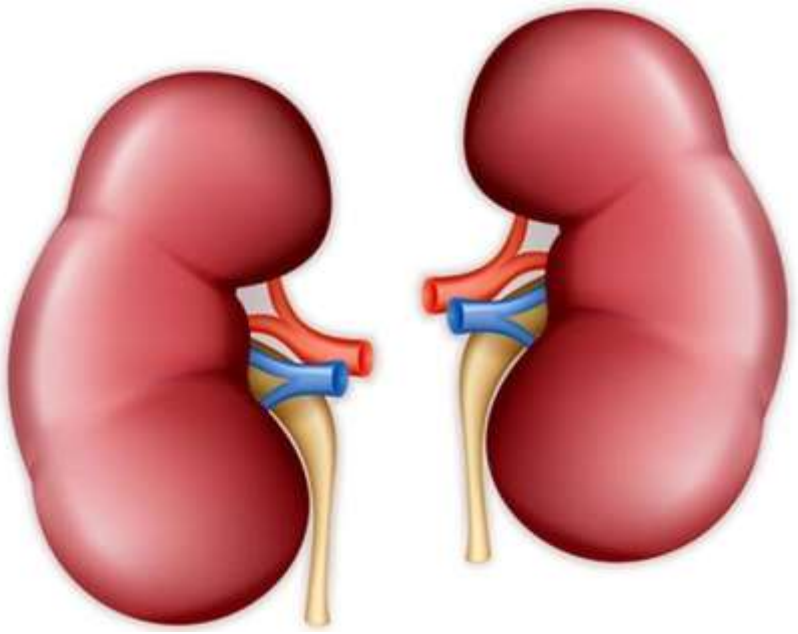


- Dietary Interventions
  - ↑Fibre
  - ↓Saturated Fat
  - ↑Monounsaturated Fat
  - ↓Dietary Cholesterol
  - Omega 3
  - Plant sterols
  - ↑Soy products

Hypertension

	Change in Systolic Blood Pressure mmHg
DASH	**8-14**
Sodium restriction	**2-8**
Alcohol reduction	**2-4**
Weight reduction (10 kg)	**5-20**
Increased physical Activity	**6-9**

Kidney Disease

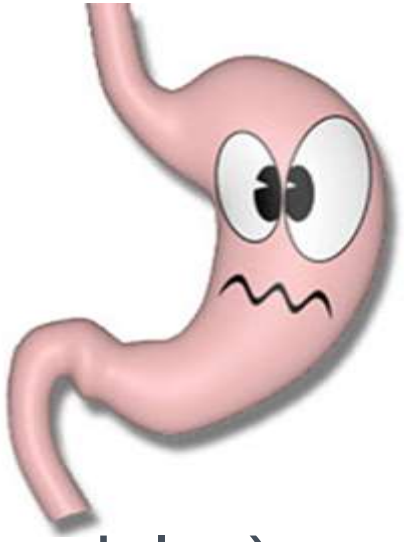


Complex Diet

- Potassium
- Sodium
- Phosphorus
- Protein
- Fluid

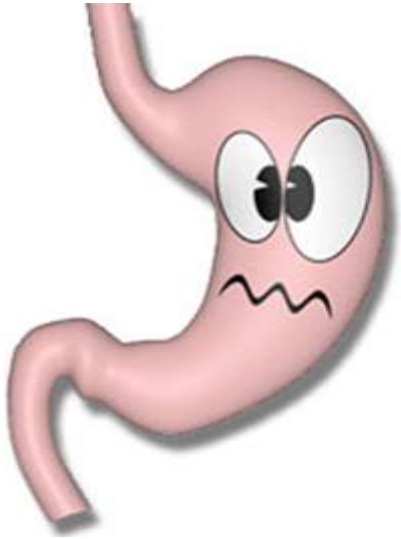
Blood Pressure and blood glucose control are important!

Gastroparesis



- Type of neuropathy
- Delayed gastric emptying (1-2 hour delay)
- Postprandial hypoglycemia
- Underdiagnosed
- Both Type 1 & Type 2

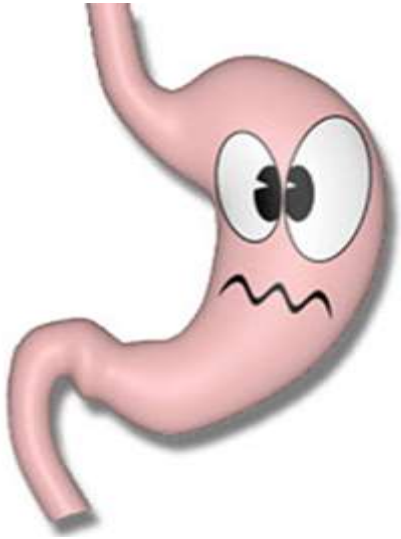
Gastroparesis



Symptoms:

- Nausea
- Vomiting
- Early Satiety
- Bloating
- Abdominal Pain
- Postprandial fullness
- Erratic Blood Glucose

Gastroparesis



Dietary Recommendations

- Low fat
- Low fibre
- Small meals
- Liquid based meals
- Avoid alcohol
- Avoid carbonated beverages

Celiac Disease

*Gluten FREE diet

- No wheat, rye, barley
- Oats can be used cautiously
- Gluten is HIDDEN in many
- Foods e.g. soy sauce

Long Term Risk:
Malabsorption of iron & calcium

Strategies for Sick Day Management

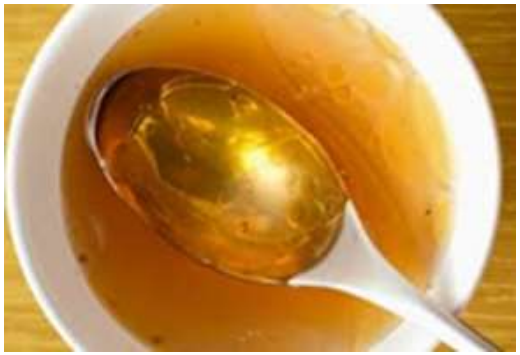
Sick Day Management

- Maintain Blood glucose:
  - preventing hyperglycemia (DKA)
  - Hypoglycemia
- Prevent dehydration

Sick Day Management

Convert solids to fluids to maintain carbohydrate intake

Contains 10 gm Carbohydrate	
Apple Juice	75 ml
Cranberry Juice(white)	50 ml
Cranberry Cocktail	75 ml
Cranberry Cocktail low cal	250 ml
Gatorade	200 ml
Grape Juice(white)	50 ml
Powerade	200 ml
Regular Jello	50 ml
Regular Gingerale	125 ml
Popsicle	1 stick



Sick Day Management

Sick Day food choices 15 grams of carbohydrate

Apple Juice	125 ml
Cranberry Cocktail	125 ml
Cranberry Cocktail low cal	325 ml
Gatorade	300 ml
Grape Juice(white)	75 ml
Powerade	300 ml
Regular Jello	75 ml
Regular Gingerale	175 ml
Popsicle	1.5 stick

Ice Cream	125 ml
Tomato Soup	250 ml
Cream of Chicken Soup	325 ml
Chicken Noodle Soup	325 ml

Sick Day Management

Blood Glucose mmol/L	Blood Ketones mmol/L	Urine Ketones	Action Required My rapid insulin is_____
< 3.9	negative		Decrease pre-meal insulin
4.0- 16.0	<0.6	+ or -	Usual insulin dose
4.0 – 16.0	≥ 0.6	Small light purple +2	Add an Extra 10% in addition to pre-meal dose
>16.0	<0.6	+ or -	Add an Extra 10% in addition to pre-meal dose
>16.0	≥0.7- 1.4	Moderate purple +3	Add an Extra 15% in addition to pre-meal dose
>16.0	≥1.5 – 3.0	Large dark purple +3	Add an Extra 20% every 4 hours in addition pre-meal dose Contact your Dr. or healthcare team as soon as possible.

Sick Day Management

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Stay Safe When You Have Diabetes and Are Sick or at Risk of Dehydration

You are at risk of dehydration if you have any of any of the following:

- Vomiting
- Diarrhea
- Fever
- Excessive exposure to heat and/or humidity without drinking enough

DRINK plenty of fluids, with minimal sugar (unless you have been told to limit fluids)

- Consider electrolyte replacement solutions (such as Gastrolyte®, Hydralyte®, Pedialyte®), clear soups or broths, water, diet soda (e.g. diet ginger-ale), watered down apple juice
- Limit caffeine (from coffee, tea and soda drinks) which makes dehydration worse

PREVENT low blood sugar (hypoglycemia).
If you cannot eat your usual foods, try any of the following foods, each containing about 15g of carbohydrates.

- 1 cup milk*
- ⅔ cup juice
- ½ cup applesauce
- ½ cup regular Jell-O
- ½ cup flavoured yogurt*
- ½ cup ice cream* or sherbet
- ⅔ cup regular soft drink (avoid caffeinated drinks)
- ¼ cup pudding or ½ cup sugar-free pudding
- 1 twin popsicle

* Consider avoiding these foods if vomiting or diarrhea

IF YOU ARE USING INSULIN, you need to check your blood sugar more often and you might need to adjust the amount of insulin you inject

IF YOU ARE EATING LESS THAN NORMAL, and the symptoms last more than 24 hours, you should TEMPORARILY STOP:

Certain Diabetes Pills

- Secretagogues: e.g. Gliclazide (Diamicron®), Glyburide (Diabeta®), Repaglinide (GlucoNorm®)

If the symptoms last more than 24 hours and you continue to be dehydrated, or at risk of dehydration, you should also TEMPORARILY STOP:

Certain Blood Pressure / Heart Medications

- ACE Inhibitors: e.g. Enalapril (Vasotec®), Fosinopril (Monopril™), Lisinopril (Prinivil®/Zestril®), Perindopril (Coversyl®), Quinapril (Accupril™), Ramipril (Altace®), Trandolapril (Mavik®)
- ARBs: e.g. Candesartan (Atacand®), Eprosartan (Teveten®), Irbesartan (Avapro®), Losartan (Cozaar®), Olmesartan (Olmetec®), Telmisartan (Micardis®), Valsartan (Diovan®)

All Water Pills

- e.g. Chlorthalidone (Hygroton), Furosemide (Lasix®), Hydrochlorothiazide, Indapamide (Lozide®), Metolazone (Zaroxolyn®), Spironolactone (Aldactone®)

Certain Diabetes Pills

- Metformin (Glucophage® or Glumetza®)
- SGLT2 Inhibitors: e.g. Canagliflozin (Invokana®), Dapagliflozin (Forxiga®), Empagliflozin (Jardiance™)

Anti-Inflammatory Pain Medications

- e.g. Ibuprofen (Advil®/Motrin®), Celecoxib (Celebrex®), Diclofenac (Voltaren®), Ketorolac (Toradol®), Napoxen (Aleve®/Naprosyn®)

Note: The list above does not include the names of medications that come in combination (2 medications in one tablet).

Ask your pharmacist to tell you:

The medications I need to TEMPORARILY STOP are:
When I am eating less than normal:

_____

When I am dehydrated:

_____

This personalized list last reviewed (date):

_____

Note: RESTART these medications when you are eating and drinking normally.

Call your health-care team (Pharmacist, Doctor, Nurse Practitioner, Nurse, Dietitian) and/or go the Emergency Department

- If you cannot drink enough fluids
- If you don't know which medications to stop
- If you don't know how to adjust your insulin
- If you have been told to check your ketones and they are moderate to high
- If you have any of the following that are not getting better: vomiting, diarrhea, stomach pain, frequent urination, extreme thirst, weakness, difficulty breathing or fever

Contact me at: wendyg@langs.org