## Meal Planning tor feope wet Diabetes



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Cette brochure existe également en version française.

Diabetes Québec's mission is to inform, promote awareness, educate, provide services, foster research, and act as an advocate for the rights of people with diabetes.

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## Authors' Note

A new edition of this guide was necessary as new food products are constantly appearing on supermarket shelves, while others are disappearing, and nutrition labels will start to change soon.

A balanced diet is the cornerstone of diabetes treatment. This guide is intended to help dietitians/nutritionists and people with diabetes create a personalized meal plan that can be integrated into daily life. Effectively controlling blood glucose and lipid levels, achieving and maintaining optimum weight and adopting a healthy, delicious diet are the primary objectives of this meal plan.

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## What is the Exchange System?

The exchange system is the basis of your meal plan.
It includes seven food groups: starches, fruits, vegetables, milk and alternatives, other foods, meat and alternatives, and fats.

Within each group, foods are ranked according to their carbohydrate, protein, and fat content. Foods in the same group, when eaten in the amounts indicated, represent one exchange for this group. For example, a starch exchange equals 75 mL cooked rice or one slice of bread (see p. 14).

To use the exchange system,

1) Ask your dietitian/nutritionist to complete your daily meal plan.
2) Familiarize yourself with the different food groups and the amounts indicated in your meal plan.
3) Use your meal plan at mealtime to choose the recommended number of exchanges from each food group.

Foods whitin the same group can be exchanged in the amounts indicated. Sometimes, you can also exchange foods from two different groups, for example, by eating a starch instead of a fruit. However, you must pay attention to the carbohydrate content of the substituted food because it is important that your total carbohydrate intake stay the same to avoid large fluctuations in blood glucose levels (blood sugar). To help you, the average carbohydrate content is given for each food group.

## Keep In Mind

If the DAILY MEAL PLAN page in your guide has not been completed by a dietitian/nutritionist, you are missing a key element for effectively controlling your condition or promoting proper weight loss. Only a qualified dietitian/nutritionist can create a meal plan based on:

- your specific nutritional needs, based on your age, height, bone structure, gender, and degree of physical activity;
- your personal preferences and eating habits;
- your medication (antidiabetic pills and insulin);
- diabetes-related conditions, such as hypertension (high blood pressure), heart problems, and dyslipidemia (change in blood lipid levels, including cholesterol and triglycerides).

The exchange system proposes a list of the most common foods in each group which is why some foods may not appear on the list. You can still eat these foods provided you check their carbohydrate content so that you will know how to include them in your meal plan.

To find out the amount of carbohydrates and other nutrients in store-bought food not mentioned in this guide, refer to the nutrition facts table on the packaging. You must use the total carbohydrate content, as shown in the example below. Since dietary fibre has no effect on blood glucose levels (glycemia), it can be subtracted from the total carbohydrate.

This is the method that was used to calculate the food servings in this guide.

A new nutrition facts table will gradually replace the existing one. You can see both versions on the next page.

To find out the amount of carbohydrates and other nutrients in a basic food (e.g., fresh fruit) whose nutritional information is not provided, refer to the booklet, Nutrient Value of Some Common Foods, which can be downloaded from Health Canada's website at http://www.hc-sc.gc.ca/fn-an/ nutrition/fiche-nutri-data/nutrient_value-valeurs_ nutritives-eng.php

Example: Whole wheat bread- nutrition facts for two slices (81 grams)


Remember to substract the fibre from the total carbohydrate amount. In this example, two slices of bread weigh 81 grams and contain 33 grams of carbohydrate minus 6 grams of fibre, which equals 27 grams of available carbohydrates (that have a direct effect on blood glucose level).

## Food Groups and Exchanges

On the following pages, you will find a food list for each of the seven food groups. Each portion indicated represents one exchange for that food groop (e.g., 75 mL pasta $=1$ starch exchange; see p.14). Pay special attention to serving size. To begin, we recommend measuring your food. Gradually, at a glance, you'll develop the ability to estimate serving size.

Then you'll only have to weigh your food occasionally to make sure your eyes aren't playing tricks on you!

The table below summarizes the average nutritional value of one exchange from each food group.


# Food Groups and Exchanges 

Starches<br>Fruits<br>Vegetables<br>Milk and Alternatives<br>Other Foods<br>Meat and Alternatives<br>Fats

Note: Foods with an asterisk (*) are high in salt and should thus be eaten in moderation. However, some of these foods are now available in low-salt versions, such as natural peanut butter and low sodium $V-8^{\circledR}$.

## Starches

Whole-grain products are recommended because they are more nutritious than refined products and contain fibre. Fibre promotes the proper functioning of the intestine and helps stabilize blood glucose levels. When it comes to whole-grain cereals, those with little or no added sugar are the best choice.

One starch exchange $=15 \mathrm{~g}$ carbohydrate 3 g protein 0 g fat 70 calories


Each serving in the list below represents 1 Starch exchange

Crackers and snacks

| Grissol ${ }^{\circledR}$ bread sticks | 3 sticks or 2 packs |
| :---: | :---: |
| Melba ${ }^{\circledR}$ toast, rectangular | 4 |
| Popcorn, plain | 750 mL |
| Quaker ${ }^{\circledR}$ rice cakes - Plain, cheddar | 2 |
| Ryvita ${ }^{\circledR}$, Wasa ${ }^{\circledR}$ crispbreads | 2 |
| Salted pretzels* | 35 sticks or 6 twists |
| Soda crackers* | 7 |
| Swedish toast (Krisprolls ${ }^{\circledR}$ ) | 2 |
| For these choices, also calculate 1 Fats exchange: Breton ${ }^{\circledR *}$, Triscuits ${ }^{\circledR}$, original crackers | 5 |
| Ritz $®^{*}$ crackers | 8 |
| Vinta ${ }^{\text {® }}$, original crackers* | 5 |

Breakfast cereals containing at least 2 g of fibre per serving

| All Bran Buds with psyllium (Kellogg's ${ }^{\text {® }}$ ) | 125 mL |
| :---: | :---: |
| All Bran Flakes (Kellogg's ${ }^{\text {® }}$ ) | 250 mL |
| All Bran, original (Kellogg's ${ }^{\circledR}$ ) | 125 mL |
| Cheerios (General Mills ${ }^{\circledR}$ ) - plain, whole grain, and multigrain | 175 mL |
| Corn Bran (Quaker ${ }^{\text {® }}$ ) | 175 mL |
| Fibre 1 (General Mills ${ }^{\circledR}$ ) | 175 mL |
| Mini-Wheats (Kellogg's ${ }^{\text {® }}$ ) | 8 biscuits |
| Müslix (Kellogg's ${ }^{\text {® }}$ ) | 75 mL |
| Oat Bran hot cereal (Quaker ${ }^{\text {® }}$ ) - Uncooked | 75 mL |
| Oatmeal Crisp (General Mills ${ }^{\circledR}$ ) | 75 mL |
| Oatmeal squares (Quaker ${ }^{\text {® }}$ ) | 75 mL |
| Oatmeal, plain - Uncooked | 75 mL |
| Puffed Wheat (Quaker ${ }^{\text {® }}$ ) | 375 mL |
| Raisin Bran (Kellogg's ${ }^{\text {® }}$ ) | 75 mL |
| Shredded Wheat (Post ${ }^{\text {® }}$ ) | 1 biscuit |
| Shreddies ( Post $^{\text {® }}$ ) | 75 mL |


| Spoon Size Shredded Wheat 'N Bran (Post ${ }^{\circledR}$ ) | 125 mL |
| :---: | :---: |
| Weetabix ${ }^{\text {® }}$ | 1 biscuit |
| Wheat germ (Quaker ${ }^{\text {® }}$ ) | 75 mL |
| For this choice, also calculate 1 Fats exchange: Harvest Crunch, original (Quaker ${ }^{\circledR}$ ) | 75 mL |
| Other breakfast cereals |  |
| Corn Flakes (Kellogg's ${ }^{\text {® }}$ ) | 175 mL |
| Cream of Wheat ( raft $^{\text {® }}$ ) | 1 pack |
| Instant oatmeal, flavored | 1/2 pack |
| Rice Krispies (Kellogg's ${ }^{\text {® }}$ ) | 150 mL |
| Special K (Kellogg's ${ }^{\circledR}$ ) <br> - Special K Red Berries | $\begin{aligned} & 175 \mathrm{~mL} \\ & 125 \mathrm{~mL} \end{aligned}$ |


| Flour |  |
| :--- | :--- |
| Oat | 60 mL |
| Wheat, buckwheat, millet, barley, spelt | 45 mL |
| Rice, corn | 30 mL |

Corn Starch
30 mL

## Vegetables

| Corn |  |
| :--- | :--- |
| - On the cob | $1 / 2 \mathrm{cob}$ |
| - Creamed | 75 mL |
| - Kernel | 125 mL |
| Jerusalem artichoke, raw | 125 mL |
| Parsnip, raw | 175 mL |
| Peas, green, boiled | 250 mL |
| Plantain | $1 / 4 \mathrm{or} 75 \mathrm{~mL}$ |
| Potato | $1 / 2 \mathrm{medium}-$ sized |
| - Boiled or baked | 125 mL |
| - Mashed |  |
| Squash, cubed and cooked | 125 mL |
| - Buttercup | 250 mL |
| - Butternut, Hubbard, acorn | 500 mL |
| - Spaghetti | 60 mL |
| Sweet cassava, raw |  |
| Sweet potato | 60 mL |

For this choice, also calculate 1 Fats exchange:
French fries
10 medium
For this choice, also calculate 2 Fats exchanges:
Chips* 15
Restaurant-style corn chips (Tostitos ${ }^{\circledR}$ ) 6

## Legumes

For these choices, also calculate 1 Meat and Alternatives exchange:
Beans (black, mung, pinto, red, white), lentils, chickpeas or broad beans, cooked

125 mL
Pea soup*
250 mL
For this choice, also calculate 1 Meat and Alternatives exchange

+ 3 Fats exchanges:
Hummus
125 mL

Breads

| Bagel $(90 \mathrm{~g})$ | $1 / 3$ |
| :--- | :--- |
| Bread crumbs | 45 mL |
| Bread, light (e.g., Weight Watchers ${ }^{\circledR}$ ) | 2 slices |


| Bread: white, white enriched with fibre, whole wheat, <br> multigrain, rye, raisin <br> Croutons, plain | 1 slice $(30 \mathrm{~g})$ |
| :--- | :--- |
| English muffin, hot dog or hamburger bun, pita $(18 \mathrm{~cm}$ in diameter) | $1 / 2$ |
| French bread (baguette) | 1 slice 5 cm long $(30 \mathrm{~g})$ |
| Salad roll | $1(30 \mathrm{~g})$ |
| Tortilla, corn or wheat ( 18 cm in diameter) | 1 |
| For these choices, also calculate 1 Fats exchange: | $1 / 2$ medium $(30 \mathrm{~g})$ |
| Croissant | 2 |

## Pasta and other cooked grains

| Barley, couscous, millet, and rice | 75 mL |
| :--- | :--- |
| Bulgur, quinoa | 125 mL |
| Egg noodles, rice noodles | 75 mL |
| Japanese soba noodles | 125 mL |
| Pasta, white or whole wheat (macaroni, spaghetti, etc.) | 75 mL |

## Soups

| Cream of tomato, canned, prepared with an equal amount of milk* | 150 mL |
| :--- | :--- |
| Cream soup, dry, prepared with milk* (asparagus, cauliflower, leek) | 375 mL |
| Soup with noodles, rice, or any another starch* | 250 mL |
| For these choices, also calculate $\boldsymbol{1}$ Fats exchange: <br> Ramen noodles, prepared with water* | 175 mL |
| For these choices, also calculate $\mathbf{1}$ to 2 Fats exchanges: <br> Cream of celery or mushroom, canned, <br> prepared with an equal amount of milk* | 250 mL |

Flour-based products

| Crepe, thin ( 10 cm in diameter) | $1 / 2$ |
| :--- | :--- |
| Pizza crust ( 30 cm in diameter, 2 cm thick) | $1 / 12(35 \mathrm{~g})$ |
| For this choice, also calculate $\mathbf{1}$ Fats exchange: | 1 |
| Frozen waffle $(10 \mathrm{~cm}$ in diameter) | 1 slice |
| French toast |  |
| For these choices, also calculate $\mathbf{2}$ Fats exchanges: | $1 / 8$ pie $(40 \mathrm{~g})$ |
| Pie crust ( 23 cm in diameter) |  |
| - Double (top and bottom) | $1 / 4$ pie $(40 \mathrm{~g})$ |

## Fruits

Fruits are high in vitamins, minerals and fibre. Choose brightly colored fruits (e.g., oranges, strawberries) most often, as they are high in vitamins (beta carotene, vitamin C, and other antioxidants like lycopene) and can help in the prevention of heart disease and certain cancers.

Choose fresh fruit, unsweetened frozen fruit or canned fruit in unswetened fruit juice. The servings indicated for canned fruit include a small amount of juice (approximately 30 mL ). If fruit is in syrup, rinse with water.

One fruit exchange $=15 \mathrm{~g}$ carbohydrate
0 g protein
0 g fat
60 calories


## Each serving in the list below represents 1 Fruits exchange

| Fruits |  |
| :---: | :---: |
| Apple |  |
| - Fresh | 1 medium |
| - Sauce, unsweetened | 125 mL |
| Apricot |  |
| - Fresh or dried | 4 |
| Banana | $1 / 2$ large or 12 cm |
| Blackberries | 250 mL |
| Blueberries | 175 mL |
| Cantaloupe | $1 / 3$ melon or 250 mL |
| Cherries | 15 |
| Clementine | 2 |
| Cranberries, fresh | 500 mL |
| Currants | 375 mL |
| Dates, dried | 3 |
| Figs |  |
| - Fresh or dried | 1 large or 2 small |


| Fruit compote with no sugar added | 125 mL |
| :--- | :--- |
| Grapefruit, pink or white | 1 small or $1 / 2$ large |
| Grapes, fresh | 15 large |
| Guava | 3 |
| Honeydew melon | $1 / 8$ melon or 250 mL |
| Kiwi | 2 small |
| Lychee | 10 |
| Mango | $1 / 2$ medium |
| Nectarine | 1 |
| Orange | 1 |
| Papaya | 1 small or $1 / 2$ large |
| Passion fruit | 6 |
| Peach |  |
| - Fresh | 1 large |
| - Canned | 125 mL |
| Pear | 1 sresh |
| - Canned | 125 mL |


| Persimmon | 2 |
| :--- | :--- |
| Pineapple |  |
| - Fresh |  |
| - Canned (chunks) | 2 slices |
| Plum | 125 mL |
| - Fresh |  |
| - Canned |  |
| Pomegranate | 2 medium |
| Pomelo | 4 |
| Prunes | 125 mL of seeds |
| Raisins | $1 / 3$ |
| Raspberries | 3 medium |
| Rhubarb | 30 mL |
| Starfruit (carambola) | 375 mL |
| Strawberries, whole | unlimited |
| Tangerine, mandarin orange | 3 |
| - Fresh | 500 mL |
| - Canned in light syrup | 1 large |
| Watermelon | 75 mL |

## 100\% pure fruft juice, no sugar added

| Cranberry blend | 100 mL |
| :--- | :--- |
| Peach and pear nectar | 100 mL |
| Pineapple, orange, grapefruit, apple, or a blend of these juices | 125 mL |
| Prune, grape juice | 75 mL |

$100 \%$ pure fruit juices contain carbohydrates which are rapidly absorbed despite having no added sugar. It is important to moderate consumption of fruit juices for this reason. The best choice is fresh fruit, since it contains dietary fibre. Here are a few tips for drinking less fruit juice:

- Use a smaller glass in order to reduce the amount of juice you drink.
- Dilute juice with water or soda water (being careful to choose waters with less than 20 mg of sodium per liter).
- If you drink juice, drink it with meals to reduce its effect on your blood glucose levels. Limit yourself to one exchange per day.

Fruit drinks and fruit-flavored crystals are not 100\% pure fruit juice. They are high in added sugar and low in vitamins and minerals. For this reason, they are listed in the Other food group.

## Vegetables

Vegetables are high in vitamins and minerals,


Take vegetable exchanges into consideration only if you must calculate the amount of carbohydrate you eat very accurately, i.e., if you require multiple daily injections of insulin.

When preparing vegetables, opt for cooking methods that maintain nutritional value, such as steaming, cooking in a microwave or conventional oven, or boiling in a small amount of water.

Eat them raw: they're so crisp and tasty in salads or with homemade yogurt dip!

Vegetable juices should be consumed sparingly because they are high in salt and contain no fibre. Low-salt versions are preferred.

Whole fresh, frozen or canned vegetables (rinsed) are the best choice.

1 vegetable exchange $\leq 5 \mathrm{~g}$ carbohydrate
2 g protein
0 g fat
$\leq 25$ calories
Generally speaking, 1 vegetable exchange is equal to - 125 mL of fresh, frozen, or canned* vegetables or vegetable juice*

- 250 mL raw leafy vegetables
- 125 mL cooked leafy vegetables

Vegetables you can eat as desired

| Alfalfa or radish sprouts | Juice, vegetable* or tomato* |
| :---: | :---: |
| Artichoke | Kale |
| Asparagus | Kohlrabi |
| Bamboo shoots | Leafy vegetables (e.g., spinach arugula, mache) |
| Bean sprouts (mung bean sprouts) | Leeks |
| Beans, yellow or green | Lettuce |
| Beets | Mushrooms |
| Broccoli | Okra |
| Brussels sprouts | Onions |
| Cabbage, Chinese (bok choy) | Peas, snow |
| Cabbage, green or red | Peppers |
| Carrots | Pumpkin |
| Cauliflower | Radish |
| Celeriac | Rapini |
| Celery | Rutabaga (turnip, yellow) |
| Chard | Shallots |
| Cucumber | Tomato sauce, canned* |
| Eggplant | Tomatoes fresh, tomatoes canned* |
| Endive | Turnip, white |
| Fennel | Water chestnuts |
| Fiddleheads | Zucchini |

## Milk and Alternatives

Milk and alternatives are the main source of calcium. Consuming milk and alternatives is key to maintaining healthy bones and teeth. This food group provides protein, too.

1 Milk and Alternatives exchange =
12 to 15 g carbohydrate
8 g protein
0 to 9 g fat 90 to 160 calories

The fat and calorie content of foods in this group varies according to product type. To reduce your fat intake, choose skim milk or partly skimmed milk and yogurt with 2\% millk fat (M.F.) or less.

| Millk, 250 mL | Fat <br> (Grams) | Calories |
| :--- | :---: | :---: |
| Whole, 3.25\% M.F. | 9 | 160 |
| Partly skimmed, 2\% M.F. | 5 | 130 |
| Partly skimmed, 1\% M.F. | 3 | 110 |
| Skim | 0 | 90 |

## Each serving in the list below represents 1 Milk and Alternatives exchange

| Kefir, plain | 375 mL |
| :--- | :--- |
| Milk, evaporated, skim (Nestlé Carnation ${ }^{\circledR}$ ) | 125 mL |
| Milk drink, calcium or omega-3 enriched | 250 mL |
| Instant skim milk powder | 60 mL |
| Milk: skim, $1 \%$ M.F., $2 \%$ M.F., or $3.25 \%$ M.F. | 250 mL |
| Soy drink, enriched, non-flavored | consult nutrition facts table |
| Yogurt, plain | 175 mL or 175 g, between |
|  | 5 to 10 g of carbohydrate |


| Flavoured fromage blanc | 100 g |
| :--- | :--- |
| Kefir with fruit | 125 mL |
| Yogurt, drinkable |  |
| - DanActive ${ }^{\circledR}$ | 1 bottle of 93 mL |
| - Yop ${ }^{\circledR}$, Astro Kik ${ }^{\circledR}$ | $1 / 2$ bottle of 200 mL |

Yogurt

- fruit or flavored, fat-free, no sugar added (Source ${ }^{\circledR}$, Danone $0 \%{ }^{\circledR}$ ) two containers of 100 g
- fruit or flavored (vanilla, coffee, etc.), regular or Greek 100 mL or 100 g

Cheese and plain Greek yogurt are listed in the Meat and Alternatives group because they are low in carbohydrates and high in protein.

## Other Foods

Other Foods contain added sugar. Some also contain one or more fats exchanges. These foods are generally low in vitamins, minerals, and fibre but high in calories.

1 Other Foods exchange $=$ 15 g carbohydrate Varying amount of protein, fat, and calories

Here are some recommendations concerning these foods:

- Very few foods in this group will leave you feeling full. Eating foods from this group regularly may make it more difficult to control your weight. Eat them occasionally, in moderation, as part of a balanced diet.
- At meals, foods from this group can occasionally replace other carbohydrate-containing foods which means they should be substituted, not added to the meal, because the total carbohydrate intake at the meal must stay the same.
- It is preferable to avoid eating these foods in large quantities or as snacks since they can lead to hyperglycemia (high blood glucose levels).

The following list contains foods commonly found at the supermarket. Keep in mind, however, that the nutrition facts printed on the product packaging are the most accurate source of information on carbohydrate and fat content.

Homemade baked goods (muffins, cakes, etc.) often contain less sugar and fat than store-bought varieties. They can also be prepared with fat choices that are healthier for your heart. Ask your dietitian/nutritionist about how to reduce the fat and sugar content in your favorite recipes.

Each serving in the list below represents 1 Other Foods exchange

| Cookies |  |
| :---: | :---: |
| Arrowroot ${ }^{\circledR}$, Graham ${ }^{\text {® }}$ | 3 |
| Social Tea ${ }^{\text {® }}$, Petit beurre ${ }^{\circledR}$ | 4 |
| Goglu ${ }^{\circledR}$, Village ${ }^{\circledR}$ | 2 |
| Molasses ( 8 cm in diameter) | 1 |
| For these choices, also calculate 1 Fats exchange: Cookies: chocolate chip, chocolate sandwich or oat | 2 |
| Beverages |  |
| Chocolate milk | 125 mL |
| Clam and tomato juice* | 250 mL |
| Flavoured plant-based drink (soy, almond) | 175 mL to 250 mL |
| Fruit drink or punch, cranberry cocktail | 125 mL |
| Iced tea mix, sweetened (Nestea ${ }^{\circledR}$ ) | 30 mL |
| Malt mix for plain or chocolate beverage (Ovaltine ${ }^{\text {® }}$ ) | 30 mL |
| Soft drink, regular | 125 mL |
| Thirst quencher (e.g., Gatorade ${ }^{\circledR}$ ) | 250 mL |


| Sweet sauces (cherry, cranberry, sweet and sour, hoisin) | 30 mL |
| :--- | :--- |
| BBQ sauce, original (for grilling) | 30 mL |
| Desserts and snacks |  |
| Cranberries, dried and sweetened | 30 mL |
| Flavored ice (e.g., Popsicle ${ }^{\circledR}$ ) | 1 stick of 75 mL |
| Fresh pudding (e.g., Danette ${ }^{\circledR}$ ) | 1 container of 100 g |
| Gelatin, flavored (Jell-0®) | 125 mL |
| Ice milk (e.g., Coaticook ${ }^{\circledR}$ ) | 125 mL |
| Ice milk bar, fudge | 1 bar of 60 mL |
| Jell-0 ${ }^{\circledR}$ fat-free pudding, (sold in powder form) and reconstituted | 125 mL |
| For these choices, also calculate 1 Fats exchange: <br> Cake frosting | 20 mL |
| Ice cream (vanilla, strawberry, chocolate) | 125 mL |
| Ice cream bar | 1 bar of 60 mL |
| Candy |  |
| Hard candy | 3 pieces or 18 g |


| Jujubes | 4 |
| :--- | :--- |
| Maple sugar | 1 cube of 2.5 cm or 15 g |
| Maple taffy | 15 mL |
| Marshmallows | 3 large |
| Soft candy, caramels | 2 pieces |
| For this choice, also calculate $\mathbf{1}$ Fats exchange: <br> Milk chocolate | 30 g |
| For this choice, also calculate $\mathbf{5}$ Fats exchanges: <br> Dark chocolate (70\% cocoa) | 60 g |
| Spreads, syrups, and sugars |  |
| Caramel spread, maple butter | 15 mL |
| Honey | 15 mL |
| Jam, jelly, marmalade (regular) | 15 mL |
| Molasses | 15 mL |
| Sugar, white or brown | 4 packets or 15 mL |
| Syrup (corn, table, maple) | 15 mL |
| For this choice, also calculate 2 Fats exchanges: <br> Chocolate spread (Nutella ${ }^{\circledR}$ ) | 20 mL |

Each serving in the list below represents 2 Other Foods exchanges

## Desserts and snacks

Sherbet 125 mL

For this choice, also calculate 1 to 3 Fats exchanges:
Donut
1

Each serving in the list below represents 3 Other Foods exchanges

## Desserts: pies and cakes

For this choice, also calculate 2 Fats exchanges:
Lemon, cherry, or apple pie ( 20 cm in diameter)
Each serving in the list below represents 4 Other Foods exchanges
For this choice, also calculate 3 Fats exchanges:
Cake with frosting, two layers ( 23 cm in diameter)
1/12
For this choice, also calculate 4 Fats exchanges:
Pecan pie ( 20 cm in diameter)
1/6


Meat and alternatives are the primary source of protein in our diet. They also provide a certain amount of fat, depending on the food. It is recommended that you:

- Replace meat with legumes or soy foods, such as tofu or edamame (green soybeans), more often.
- Choose lean Meat.
- Eat fish at least twice a week in order to reduce the risk of heart disease. Choose fish high in omega-3 fatty acids, such as salmon, trout, albacore white tuna, halibut, sardines, herrings, and mackerel.

1 Meat and Alternatives exchange $=0 \mathrm{~g}$ carbohydrate 8 g protein 3 g fat 60 calories

Each serving in the list below represents 1 Meat and Alternatives exchange.

## How can I prepare meat to obtain leaner products?

- Choose lean cuts of meat with no marbling.
- Remove visible fat.
- Use cooking methods without added fat: boiling, braising, grilling, baking, or steaming.
- Use frying pans that allow cooking with little or no fat. If you use fats or oils, opt for a vegetable oil and avoid overheating.
- Skim the fat off cooked meats and stews.

Each serving size in the list below represents 1 lean or very lean Meat and Alternatives exchange ( 3 g fat or less per amount indicated):

| Meat and poultry, cooked without fat |  |
| :--- | :--- |
| Back bacon* | 30 g |
| Beef, very lean or lean (boneless strip loin, T-bone, <br> cross rib, filet, flank, ribeye, round, sirloin) | 30 g |
| Chicken (skinless) | 30 g |
| Deli meats: smoked eye of round*, old-fashioned ham*, <br> smoked turkey breast* | 30 g |
| Ham, lean* | 30 g |
| Horse | 30 g |
| Lamb | 30 g |
| Moose, venison | 30 g |
| Pork (boneless inside round, center-cut loin, filet) | 30 g |
| Rabbit | 30 g |
| Turkey (skinless, dark or white meat) | 30 g |
| Veal and lean ground veal | 30 g |

Beef heart, liver, calf sweetbreads, kidneys, chicken liver 30 g
Fish and seafood
Fresh or frozen, cooked without fat:

| Assorted fish (salmon, rainbow trout, sole) | 30 g |
| :--- | :--- |
| Clams | 3 large |
| Lobster | 60 mL |
| Mussels | 10 small |
| Oysters | 5 medium |
| Scallops | 2 large |
| Shrimp | 6 large or 10 medium |
| Snails | 50 g |
| Snow crab | 75 mL |

Canned, drained:
Sardines in oil, with bones* 30 g
Tuna, salmon (in water) $60 \mathrm{~mL}(30 \mathrm{~g})$

## Dairy products

| Cottage cheese (2\% M.F. or less)* | 75 mL |
| :--- | :--- |
| Greek-style yogurt (0\% M.F.) | $60 \mathrm{~mL}(60 \mathrm{~g})$ |
| Plain quark cheese | $75 \mathrm{~mL}(75 \mathrm{~g})$ |
| Processed cheese*, sliced Black Diamond <br>  <br> Kraft $^{\circledR}$ and no-fat store brands | 2 slices |

## Legumes

For these choices, also calculate 1 Starch exchange:
Beans (white, black, red, mung, pinto), lentils, chickpeas, broad beans 125 mL cooked

Each serving size in the list below represents 1 medium fatty Meat and Alternatives exchange ( 5 g fat per amount indicated):

Cheese

| Mozzarella, partly skim (approximately 15\% M.F.) | 30 g |
| :--- | :--- |
| Parmesan, light*, grated (Kraft ${ }^{\circledR}$ and store brands) | 45 mL |
| Cretons made from veal, lean | $45 \mathrm{~mL}(45 \mathrm{~g})$ |
| Eqg | 1 large |
| Lean or extra lean ground beef cooked without fat | 30 g |
| Organ meats cooked without fat |  |
| Calf liver (caution: high in cholesterol) | 30 g |
| Calf or pork tongue | 30 g |
| Prosciutto* | 30 g |
| Soy-based products |  |
| Edamame (green soybeans), frozen, shelled | $125 \mathrm{~mL}(85 \mathrm{~g})$ |
| Soybeans, dry-roasted, plain | $30 \mathrm{~mL}(20 \mathrm{~g})$ |
| Tempeh, cooked | 50 g |
| Tofu, firm | 50 g |

Each serving in the list below represents 1 high fat Meat and Alternatives exchange ( 8 g fat per amount indicated):

Calculate 1 Fats exchange per amount indicated

## Cheese

| Cheese,* 20\% M.F. or higher (e.g., Brie, Cheddar, Swiss) | 30 g |
| :--- | :--- |
| Feta*, ricotta | 75 mL |
| Processed cheese*, sliced (Cheddar, Mozzarella, Swiss) | 2 slices $(38 \mathrm{~g})$ |
| Cretons*, regular | 45 mL |

## Fatty Organ Meats

Beef or veal brain (caution: high in cholesterol) 75 g

Each serving in the list below represents 1 very high fat Meat and Alternatives exchange ( 13 to 15 g fat per amount indicated):

Calculate 2 Fats exchanges per amount indicated

## Deli meats*

| Blood pudding* | 60 g |
| :--- | :--- |
| Bologna* | 2 slices $/ 60 \mathrm{~g}$ |
| Pork sausage, fresh* | 1 large $/ 75 \mathrm{~g}$ |
| Processed meat (mock chicken)* | 2 slices $/ 60 \mathrm{~g}$ |
| Salami* | 3 slices $/ 60 \mathrm{~g}$ |
| Smoked sausage (beef, turkey, chicken, pork)* | 2 links $/ 75 \mathrm{~g}$ |

Peanut butter* 30 mL

Seeds
Hemp, pumpkin 45 mL

## Fats

Fats provide vitamins (A, D, E, and K) and essential fatty acids to our body. Heart-healthy fats are recommended, and should be eaten in moderation, as each small amount is packed with energy.

One Fats exchange $=0 \mathrm{~g}$ carbohydrate
0 g protein
5 g fat 45 calories

Diabetes increases the risk of cardiovascular disease. To prevent it, follow these strategies:

- Opt for monounsaturated and polyunsaturated fats.
- Eat more omega-3 fatty acids are found in canola or walnut oil, walnuts, ground flaxseed, chia seeds and hemp seeds.
- Limit saturated fats and cholesterol. Saturated fats are found primarily in animal products and certain vegetable oils (e.g., palm oil) used in many processed foods.
Each serving in the list below represents 1 Fats exchange:


## Monounsaturated fat sources

| Avocado | $1 / 6$ |
| :--- | :--- |
| Margarine, reduced calorie* | 10 mL |
| Margarine, soft*, non-hydrogenated | 5 mL |
| Nuts plain <br> - Peanuts, cashews, hazelnuts, pecans, pistachios, almonds | 15 mL |
| Oil: canola, olive, nut, peanut | 5 mL |
| Olives, green or black, marinated* | 5 medium or 10 small |

Salad dressing, regular, store-bought* or homemade with canola, olive, nut, or peanut oil

Polyunsaturated fat sources
Mayonnaise

- regular 7 mL
- light 20 mL

| Mayonnaise-based salad dressing (Miracle Whip ${ }^{\circledR}$ ) |  |
| :--- | :--- |
| - regular | 20 mL |
| - Calorie Wise ${ }^{\circledR}$ | 35 mL |

Nuts and seeds, plain

- Hemp seeds, pumpkin seeds, sunflower seeds, sesame seeds, walnuts, Brazil nuts 15 mL - Ground flaxseeds, chia seeds $\quad 30 \mathrm{~mL}$

Oil: safflower, flaxseed, corn, walnut, sesame, soybean, sunflower 5 mL
Salad dressing, regular, store-bought* or homemade with polyunsaturated oil

10 mL
Saturated fat and cholesterol sources

| Bacon, well done* | 2 small strips |
| :--- | :--- |
| Butter | 5 mL |
| Coconut, dried, unsweetened | 20 mL |
| Coconut, fresh, shredded, pressed | 30 mL |
| Coconut milk | 30 mL |


| Cream |  |
| :--- | :--- |
| $-10 \%$ M.F. | 45 mL |
| $-15 \%$ M.F. | 30 mL |
| $-35 \%$ M.F. liquid | 15 mL |
| $-35 \%$ M.F. whipped | 30 mL |
| Cream cheese | 15 mL |
| Cream cheese, light | 30 mL |
| Lard, vegetable fat | 5 mL |
| Light coconut milk | 60 mL |
| Liver pâté* | 20 mL |
| Oil: coconut or palm kernel | 5 mL |
| Processed cheese spread* (e.g., Cheez Whiz ${ }^{\circledR}$ ) | 30 mL |
| Sour cream (14\% M.F.) | 30 mL |
| Sour cream tzatziki | 30 mL |
| Trans fat sources |  |
| Cool-Whip ${ }^{\circledR}$ whipped topping | 75 mL |
| Nutriwhip ${ }^{\circledR}$ whipped topping | 60 mL |
| Margarine, hydrogenated | 5 mL |
| Shortening | 5 mL |

## Low Calorie Foods

Low calorie foods have little or no effect on blood glucose and blood lipid levels because they contain less than 5 g of carbohydrate per serving and little protein or fat. They can be eaten freely or, in certain cases, in the amount indicated. Some of these foods are high in salt, so use them in moderation!

People whose treatment includes multiple daily injections of insulin should check with their dietitian/ nutritionist on how to use this group.

One Low Calorie Food exchange $\leq 5 \mathrm{~g}$ carbohydrate
0 g protein
0 g fat
$\leq 20$ calories

| Cinnamon | Onion powder |  |
| :---: | :---: | :---: |
| Celery powder | Pepper |  |
| Curry | Piri-piri sauce* |  |
| Dry mustard | Salad dressing, Italian, low fat* |  |
| Essences (e.g., vanilla, almond) | Salt* |  |
| Fish sauce* 15 mL | Shallots |  |
| Garlic, celery, onion salt* | Soy sauce* | 15 mL |
| Garlic (fresh, powdered) | Spices* <br> (some blends may be high in salt) |  |
| Ginger (fresh, powdered) |  |  |
| Herbs (fresh, dried) | Sriracha sauce |  |
| Hot peppers | Vinegar |  |
| Lemon (juice, zest) | Wasabi |  |
| Lime (juice, zest) | Worcestershire sauce* | 15 mL |
| Miso* |  |  |


| - Beverages | Condiments |  |
| :---: | :---: | :---: |
| Broth, clear, defatted* | Capers |  |
| Cocoa powder, unsweetened 15 mL | Chili sauce | 15 mL |
| Coffee, tea, and tisane, plain | Dill pickles* |  |
| Coffee creamer (powder or liquid) 15 mL | Horseradish |  |
| Consommés* | Ketchup* | 15 mL |
| Diet soft drinks | Mustard, prepared* |  |
| Hot chocolate from mix, light 1 packet/13 g | Relish* | 10 mL |
| Iced tea, lemon, light 250 mL | Salsa | 60 mL |
| Mineral water, bubbly, less than 20 ppm sodium ( Na ) per liter (e.g., Perrier) | Steak* or barbecue* sauce | 10 mL |
| Soda water, plain |  |  |
| Unsweetened almond beverages |  |  |
| $\underline{\text { Water flavouring }\left(\mathrm{Mio}^{\circledR}, \mathrm{Crystal} \text { light }{ }^{\circledR} \text { ) }\right.}$ |  |  |
| Unsweetened coconut water |  |  |

Fat Free or Low Fat Foods

| Fat-free or low-fat cream cheese | 15 mL |
| :--- | ---: |
| Nonstick cooking spray |  |
| Sour cream, light: $5 \%$ M.F., <br> or fat free | 30 mL |

## No Sugar or Low Sugar Foods

Chewing gum, sugarfree
Chewing gum, sweetened 2 sticks
Gelatin, flavored, no sugar added (sugar free Jell-O ${ }^{\circledR}$ ) 250 mL
Gelatin, plain
Hard candy, sugar free 1 candy
Ice cream cone, sugar free, waffle type 1 cone
Table syrup, unsweetened
(ED Smith ${ }^{\circledR}$ )
15 mL
Sugar substitutes, noncaloric (see next page)

## Sugar Substitutes

Various sugar substitutes are available on the market. These substitutes fall into two categories: non-caloric and caloric.

## Non-caloric sugar substitutes

A number of non-caloric sugar substitutes are approved by Health Canada. An acceptable daily intake (ADI) has been established for each one, according to body weight. Generally speaking, if you eat sugar substitutes or food containing them occasionally and in moderation, you will not exceed the ADI.

Pregnant or nursing women should avoid cyclamates.

People with diabetes are not required to consume sugar substitutes.

Non-caloric Sugar Substitutes Approved by Health Canada:

Acesulfame K
Aspartame (Equal ${ }^{\circledR}$, NutraSweet ${ }^{\circledR}$ )
Cyclamates (Sugar Twin ${ }^{\circledR}$, Sucary ${ }^{\circledR}{ }^{\circledR}$, Sweet'N Low ${ }^{\circledR}$ )
Monk fruit extract (luo han guo)

## Neotame

Saccharine (Hermesetas ${ }^{\circledR}$ )
Steviol glycosides (stevia, Pure Via ${ }^{\circledR}$, Sugar Twin ${ }^{\circledR}$, Truvia ${ }^{\circledR}$ )

Sucralose (Splenda ${ }^{\circledR}$, Sugar Twin ${ }^{\circledR}$ )
Thaumatin

## Caloric sugar substitutes

Some sugar substitutes contain calories and can influence blood glucose levels. These products should be used in moderation, as part of a balanced diet.

- Fructose is a sugar (or carbohydrate) that causes less of an increase in blood glucose level than white sugar. There is no proof that using it as a substitute for table sugar (sucrose or saccharose) has any advantage in controlling diabetes. Consuming large quantities can result in diarrhea and an increased triglyceride levels.
- Sugar alcohols (isomalt, lactitol, maltitol, mannitol, sorbitol, xylitol) are carbohydrates that are not absorbed or only partially absorbed by the intestine. Thus, they have little effect on blood glucose level and contain fewer calories than white sugar. However, if consumed in large amounts, sugar alcohols can lead to flatulence, diarrhea and other intestinal discomforts. Note that they may be used as a sugar substitute in foods that are high in fat and calories (e.g., chocolate with no sugar added).


## Alcohol

Drinking alcohol can lower blood glucose levels and cause hypoglycemia (low blood glucose levels), especially when you drink alcohol on an empty stomach and use insulin or oral sulfonylurea medications (e.g., Amary ${ }^{\circledR}$, Avandary ${ }^{\circledR}$, Diabeta ${ }^{\circledR}$, Diamicron ${ }^{\circledR}$ ) or meglitinides (e.g., Gluco-Norm ${ }^{\circledR}$ or Starlix ${ }^{\circledR}$ ). Alcohol can also increase blood glucose levels and when consumed regularly or in excess, interfere with weight control, as well as blood glucose and triglyceride levels. Alcohol may also affect other medical conditions such as high blood pressure. For these reasons, you should discuss your alcohol intake with your doctor.

## Rules to follow if you drink alcohol:

- Always drink with meals.
- Drink in small quantities-1 to 2 drinks per day One drink equals:
- 140 mL dry wine ( $12 \%$ alcohol)
- 85 mL fortified wine ( $20 \%$ alcohol)
- 340 mL beer ( $5 \%$ alcohol)
- 45 mL hard liquor
- Check your blood glucose levels more often within 24 hours of drinking alcohol.
- Remember to eat your snacks, especially in the evening.
- Wear identification indicating that you have diabetes.
- Keep a source of sugar on hand, in case of hypoglycemia.

Carbohydrate: Term used for all types of sugars (fibre, starch, sucrose, fructose, glucose, lactose, etc.).
Dietary cholesterol: A type of fat found in foods of animal origin. Dietary fibre: A type of carbohydrate found in foods of vegetable origin. It is not digested by the body and is eliminated in the stool. Fibre can slow the absorption of sugar from the food and help reduce blood cholesterol.
Glycemia: Level of glucose (or sugar) in the blood.
HDL cholesterol (HDL-C): Often called "good cholesterol," it is produced by the body and acts as a carrier in the blood. A high level of HDL cholesterol can help reduce the risk of cardiovascular disease by carrying fats from the blood to the liver.
LDL cholesterol (LDL-C): Often called "bad cholesterol," it is produced by the body and acts as a carrier in the blood. It carries fat into the blood and promotes fat accumulation in the arteries (atherosclerosis), which can lead to cardiovascular disease.
Lipids: Term used for all types of fats.
Monounsaturated fat: Fat contained in certain foods and their oils, such as olives, avocados, peanuts, almonds, hazelnuts, pecans, pistachios, cashews, and some soft margarines. When used instead of saturated fats, it can reduce the level of "bad cholesterol" (LDL-C) and help maintain the level of "good cholesterol" (HDL-C).

Polyunsaturated fat: Fat contained in foods such as flaxseed, soybean, sunflower, safflower, corn, and sesame oils, some soft margarines, fish, walnuts, and pinenuts, as well as pumpkin, sesame, sunflower, and flax seeds. This fat helps reduce the level of "bad cholesterol" (LDL-C) in the blood. It includes omega-3 fatty acids, recognized as beneficial to heart health.
Protein: Nutrient specific to living organisms and necessary for building, repairing, and renewing all organs in the human body.
Saturated fat: Fat contained in a number of foods of animal origin, such as dairy products (cheese, cream, and butter), meat, and lard, as well as certain foods of vegetable origin, such as coconut, palm kernel, and palm oils. This fat increases the level of "bad cholesterol" (LDL-C).
Triglycerides: Fat reserves stored in the body. High levels of triglycerides in the blood can be a risk factor for cardiovascular diseases.

Converting Milliliters to Cups and Ounces to Grams?

## CONVERSION TABLE

International System
Imperial System


[^0]By following your meal plan, you will have a balanced diet and increase the chance of improving your blood glucose control.

Here are some recommendations to help you achieve your objectives:

1) Eat foods in the amounts recommended in your DAILY MEAL PLAN.
2) Eat all scheduled meals and snacks.
3) Respect the total amount of carbohydrates planned for each meal. For example, avoid eating an extra slice of bread for breakfast and leaving one out at lunch.
4) As much as possible, try and eat your meals (and snacks, if any) at the same time every day.
5) Choose a variety of foods within the same group (for example, eat different types of fruits and vegetables).
6) Contact your dietitian/nutritionist if your exercise program, medication, health, weight, or appetite changes significantly. Do not hesitate to consult your dietitian/nutritionist with any questions about your diet.


| Food Groups | DAILY TOTAL | Breakfast | Morning Snack <br> Time: |
| :---: | :---: | :---: | :---: |
| Starches |  |  |  |
| Fruits |  |  |  |
| Vegetables |  |  |  |
| Milk and Alternatives |  |  |  |
| Meat and Alternatives |  |  |  |
| Fats |  |  |  |
| Total carbohydrates |  |  |  |

Note: Foods included in the Other Foods group may occasionally replace Starch, Fruit, or Milk and Alternatives exchanges in your meal plan.

| Lunch Time: | Afternoon Snack Time: | Supper Time: | Evening Snack Time: |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| g | -g | - g | -g |

## One Step at a Time...

Changing your lifestyle takes time and motivation. Trying to change too fast can often lead to failure. Set realistic goals, give yourself time, and make sure you have all the help you need (family, friends, professionals, support groups, books).

## My goals

For example: I will eat three meals a day starting next Monday.
I will eat two kinds of vegetables at lunch and at supper.


[^0]:    * one soup spoon is equal to one tablespoon.

