

Lactose Intolerance



What is lactose intolerance?

- When the body cannot digest the milk sugar called lactose that is found in milk and milk products.
- The body lacks the enzyme lactase that breaks down lactose.



- Lactose that cannot be broken down and absorbed **goes through the body's GI tract and attracts water** into the intestines.
- Bacteria ferment as a result. Causing any of the following or a combination of symptoms.



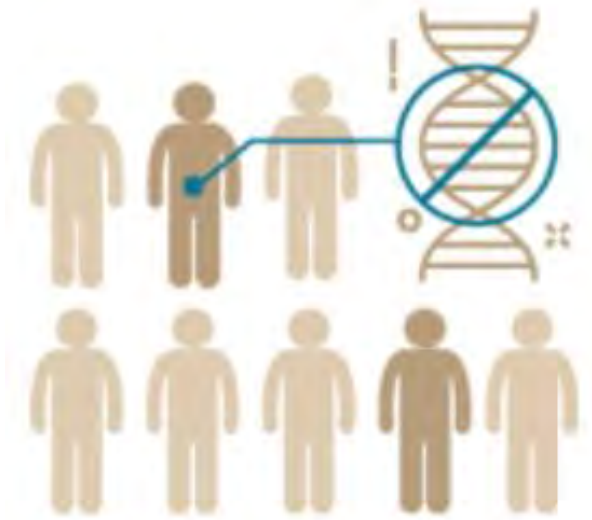
- Diarrhea
- Abdominal Pain
- Flatulence
- Bloating

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Whose affected?

- 79% of First Nation adults are lactose intolerant.⁵
- 7.4% of First Nation children living off reserve and 5.6% of Metis ages 6 and under, reported to be lactose intolerant.⁹
- More than 75% of the people in the world become lactose intolerant shortly after weaning.⁴



**A lot of us don't
have enough of
this enzyme in
our body**



Diagnosis

Hydrogen breath test

- If you think you are lactose intolerant you can request a simple breath test from your primary health care practitioner.



What is a milk allergy?

- Immune sensitivity to the protein in dairy that results in an allergic reaction.
- The body can react in several ways and results in symptoms that can be moderate to severe, and unpredictable.



- A milk allergy can cause the following or a combination of the following symptoms:

- Moderate to severe skin irritation:
 - Rashes
 - Hives
 - Itching
 - Swelling

- Trouble breathing
- Wheezing
- Anaphylaxis
- Loss of consciousness

Carrying an epinephrine autoinjector may be essential!



Lactose Intolerance v.s. Milk Allergy

- Those that are lactose intolerance should limit milk products and products containing milk. **Small amounts** of milk may be tolerated.
- Those that have a milk allergy, should **avoid** foods that contain milk.



Foods & Ingredients that contain milk

Butter, butter fat, butter oil, butter acid, butter ester(s)	Lactoferrin
Buttermilk	Lactose
Casein hydrolysate	Lactulose
Caseinates (in all forms)	Milk protein hydrolysate
Cheese	Pudding
Cottage cheese	Recaldent
Cream	Rennet casein
Curds	Sour cream, sour cream solids
Custards	Sour milk solids
Diacetyl	Tagatose
Ghee	Whey (in all forms)
Half-and-half	Whey protein hydrolysate
Lactalbumin, lactalbumin phosphate	Yogurt

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Dietary Considerations

When restricting or eliminating dairy from the diet it is important to have enough Calcium and Vitamin D from other dietary sources.

Ca

D

Vitamin



Calcium DRI



- 1000-1300mg a day are recommended years of age
 - Children 9-18 years: 1300 mg
 - Adults 19-50 years: 1000 mg
 - Pregnancy or lactation:
 - 14-18 years: 1300 mg
 - 19-50 years: 1000 mg
 - Adults 50+ years:
 - Male: 1000 mg
 - Female: 1200 mg
 - 70+ years: 1200 mg





Calcium **DRI's**

- Bone health
- Muscle function
- Prevent Osteoporosis



Calcium Rich Foods

- Fortified orange juice and
- Fortified non-dairy beverages
(e.x. Oat milk, almond milk, rice milk, ect.)
- Fortified cereals
- Vegetables
- Fruits
- Pulses
- Fish



“All great sources of Calcium”

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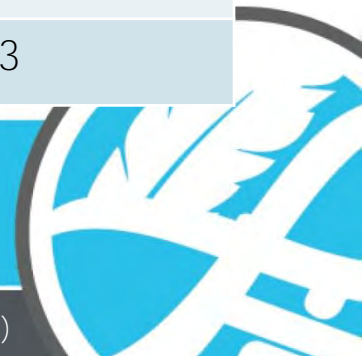
Calcium Rich Plants

FOOD	SERVING SIZE	CALCIUM (mg)
Almonds. Dry roasted	½ cup/125 mL	186
Beans (white, canned)	1 cup/250 mL	191
Soybeans (cooked)	1 cup/250 mL	170
Beans (navy, soaked, drained, cooked)	1 cup/250 mL	126
Beans (great northern, soaked, drained, cooked)	1 cup/250 mL	120
Spinach (raw, chopped)	1 cup/250 mL	166
Turnip greens (frozen, cooked)	½ cup/125 mL	104
Beet greens (cooked)	½ cup/ 125 mL	82
Dandelion greens (cooked)	½ cup/125 mL	74
Mustard greens (cooked)	½ cup/125 mL	55
Fireweed leaves, raw	½ cup/125 mL	52
Orange	1 medium	50

Calcium Rich Fish

FOOD	SERVING SIZE	CALCIUM (mg)
Salmon (with bones, canned)	½ can/105 g	240
Sardines (with bones, canned)	½ can/55 g	200
Pickrel, walleye (baked or broiled)	2.5 oz/75 g	106
Bass (baked or broiled)	2.5 oz/75 g	69
Mollusks, clam, mixed species, (boiled or steamed)	2.5 oz/75 g	69
Smelt, rainbow (baked or broiled)	2.5 oz/75 g	58
Oysters	90 g	53
Trout mixed species (baked or broiled)	2.5 oz/75 g	41
Pike	2.5 oz/75 g	33

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Calcium Rich Fortified Foods

FOOD	SERVING SIZE	CALCIUM (mg)
Fortified orange juice	1 cup/250 mL	300
Almond, rice, or soy beverage	1 cup/250 mL	300
Instant oatmeal, (calcium added)	1 pouch/32 g	150
Fibre 1	1 Cup/31 g	396
Tofu (with calcium sulfate)	3 oz/84 g	130
Dessert Tofu	½ cup/100 g	75

Fortified foods can be high in sugar and added sugars

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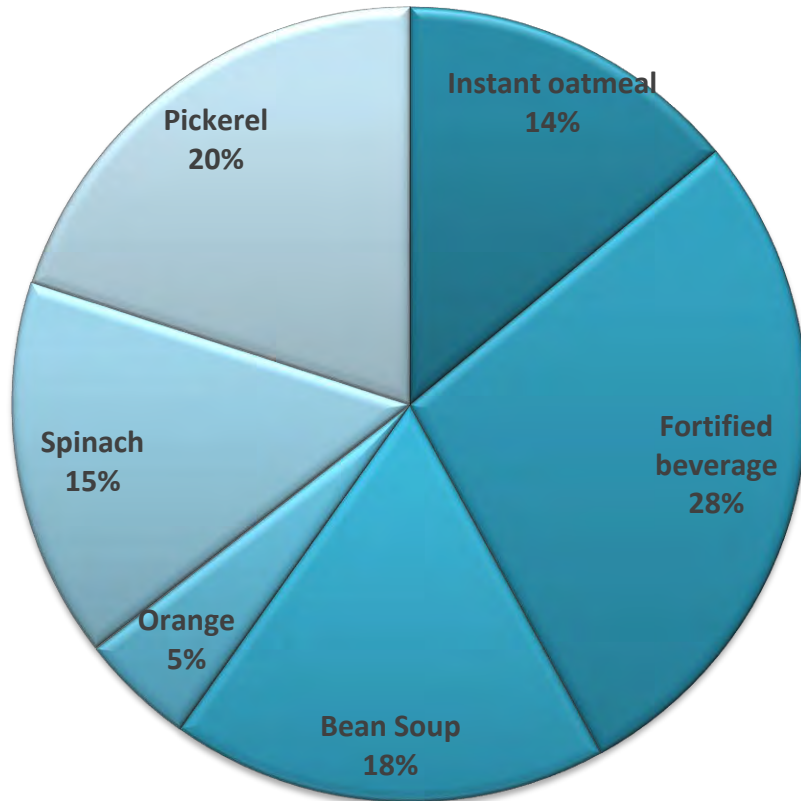




Oatmeal Low in Sugar with Calcium

Each serving contains 16-32 mg of Calcium

A Day's Worth of Calcium = 1,071.5 mg



For Breakfast:

- Oatmeal; 1 serving (32 g)
- Fortified non-dairy milk; 1 Cup

For Lunch:

- White bean soup; 1 cup beans
- 1 orange

For Supper:

- Spinach salad (1 cup of raw spinach)
- Pickerel (1.5 servings or 3.5-4 oz)

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Vitamin D

“The Sunshine Vitamin”



- Stimulates calcium absorption
- Prevent Rickets
- DRI:
 - Children; 400 IU/day
 - Adults (pregnant & lactating): 600 IU/day



Exposure to Sunlight & Vitamin D Production

- Skin tone
- Sunscreen
- Environmental latitude
- Age





Vitamin D Rich Foods

- Fish
- Eggs
- Mushrooms
- Cod liver oil
- Fortified cereal
- Fortified orange juice



Dietary Sources of Vitamin D

FOOD	SERVING SIZE	VITAMIN D IU
Cod Liver Oil	1 Tablespoon	1,360
Mushrooms, portabella exposed to UV light, raw	3 Oz	375
Bass fresh water, mixed species, (baked or broiled)	2.5 oz/75 g	342
Arctic Char	2.5 oz/75 g	301
Mushrooms, shitake, raw	3 oz	178
Trout mixed species (baked or broiled)	2.5 oz/75 g	148
Pickarel, walleye (baked or broiled)	2.5 oz/75 g	138
Sardines, canned in oil, drained	2 sardines	46
Beef liver, cooked	3 oz	42
Egg	1 large	41 (in yolk)

Foods Fortified with Vitamin D

FOOD	SERVING SIZE	VITAMIN D IU
Orange juice (fortified with Vitamin D)	1 Cup	137
Margarine, fortified	1 T	60
Ready-to-eat cereal	$\frac{3}{4}$ C	~40

Remember, fortified foods can be high in sugars & added sugars.

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Nutrition Facts	
Serving Size 1 Bottle (450mL)	
Amount Per Serving	
Calories 170	
	% Daily Value*
Total Fat 0g	0%
Sodium 25mg	1%
Potassium 660mg	15%
Total Carb. Total Carbohydrates 49g	15%
Sugars 36g	
Protein 3g	Not a significant source of protein
Calcium (30mg) 2%	* Vitamin C 90%
Thiamin 10%	* Niacin 4%
Vitamin B6 6%	* Folate 15%
Magnesium 8%	
Not a significant source of calories from fat, saturated fat, trans fat, cholesterol, dietary fiber, vitamin A and iron.	
*Percent Daily Values are based on a 2,000 calorie diet.	

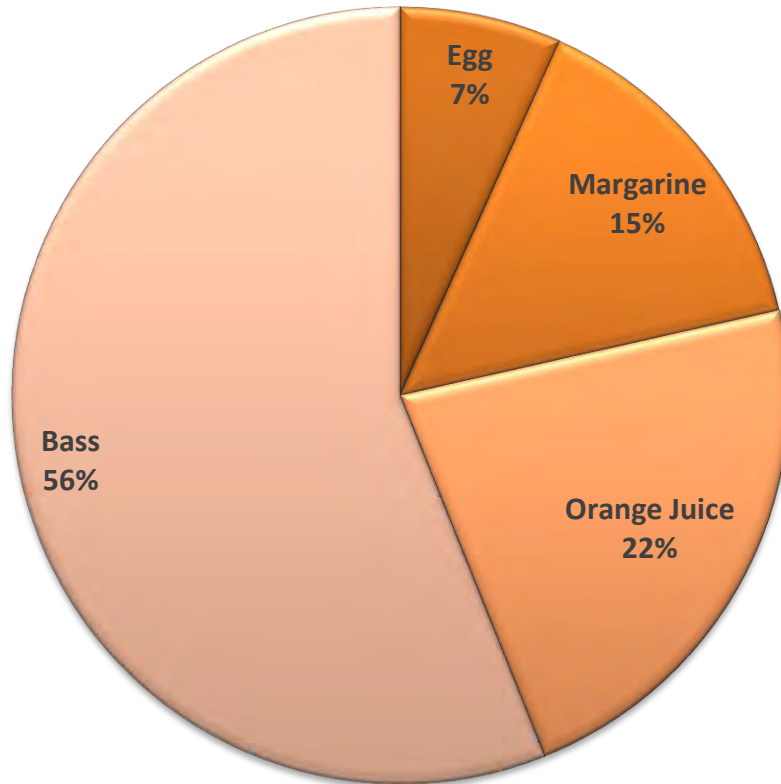


1 Bottle (450 mL) = 9 tsp of sugar

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A Day's Worth of Vitamin D = 610 IU



For Breakfast:

- 1 Egg
- Margarine; 1.5 teaspoons
- Orange juice; 1 cup

For Supper or Lunch:

- Bass; 2.5 oz

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Supplementation



- People living in Canada are at a higher risk of being vitamin D deficient therefore a D3 (cholecalciferol) is recommended year-round.
- Cholecalciferol: term used for a vitamin D supplement
- Adults 50+ should take a vitamin D **supplement, 400 IU's daily**



Lactase Enzyme

- Lactase pills
- Dairy that has been treated with lactase (e.g. lactaid milk)
- Small amounts of dairy may be tolerated, without a lactase supplement (e.x. Probiotic yogurt and aged cheeses).



Bottom Line!

- Calcium and Vitamin D are essential in maintaining bone health.
- Achieved by consuming non dairy sources of Calcium & Vitamin D.
- Dietary sources with both of these nutrients are fatty fish, plant foods and fortified foods.



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Thank You!



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