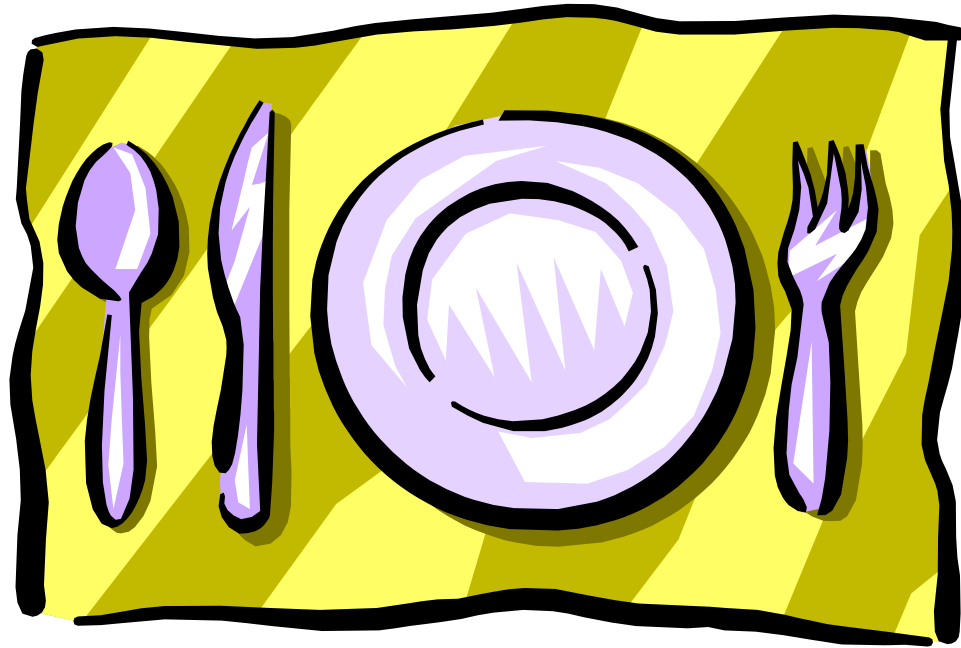


# Glycemic Index Explained



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Canadian Diabetes Association Nutrition Guidelines

Implementation Subcommittee

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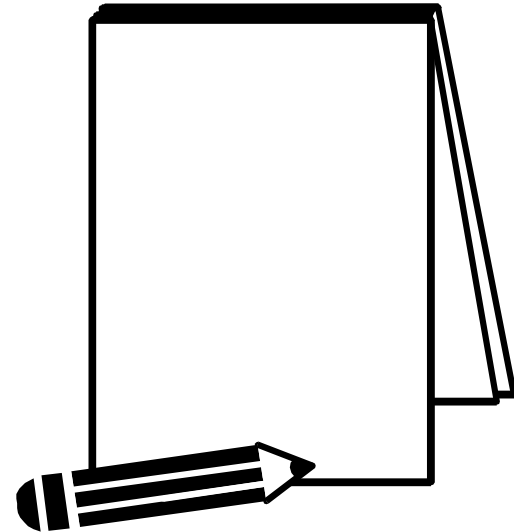
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# Let's discuss...

- Glycemic Index
  - What does it mean?
  - Factors that influence the glycemic index rating
  - Factors that influence our body's glycemic response
- Possible benefits to health
- What to eat!

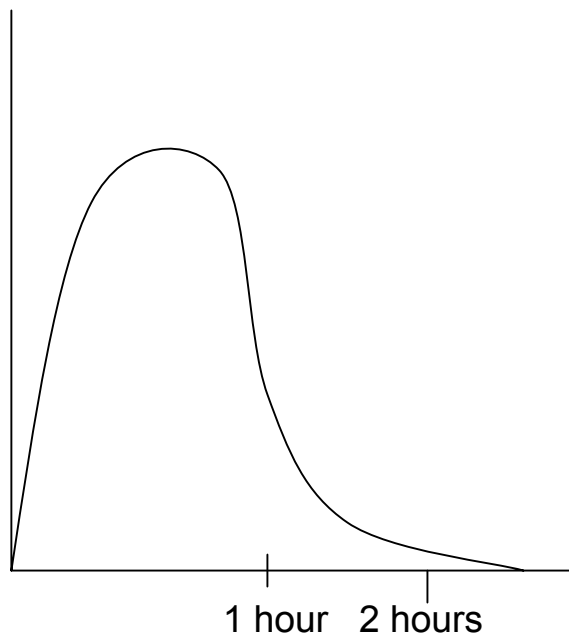


# The Glycemic Index (GI)

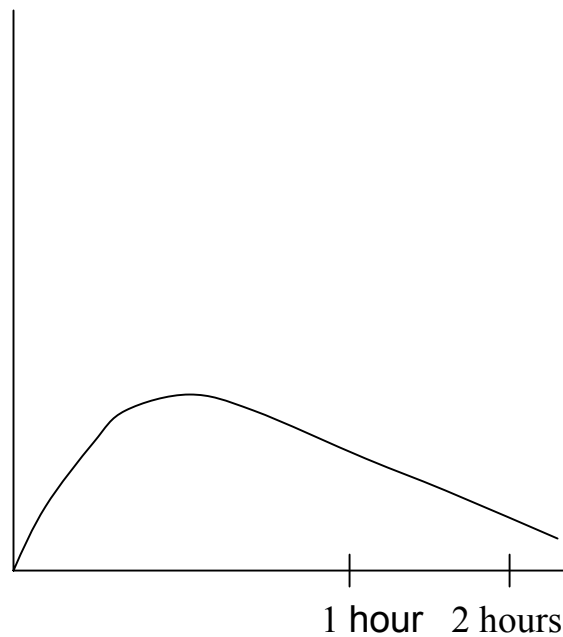
- A scale that ranks carbohydrate-rich foods by how much they raise blood glucose levels compared to a standard food.

**White Bread or Glucose  
(Standard)**

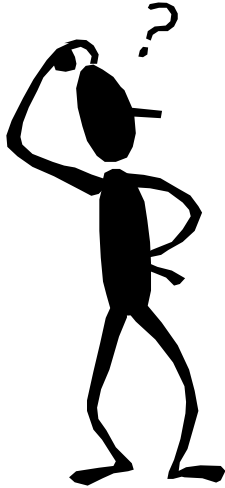
**Blood Glucose Levels**



**Lentils**

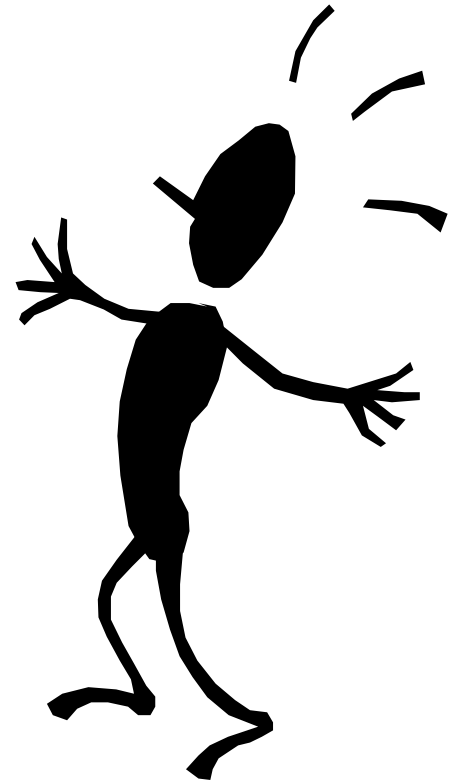


# Factors Influencing the Glycemic Index Rating



# Factors Influencing GI Rating

- Type of starch
- Cooking
- Food processing
- Fat content of the food
- Acid content of the food



# Type of Starch

## Amylose vs. Amylopectin

<b>Amylose</b>	<b>Amylopectin</b>
<ul style="list-style-type: none"><li>•Molecules form tight clumps</li><li>•Harder to digest</li></ul>	<ul style="list-style-type: none"><li>•Molecules are more open</li><li>•Easier to digest</li></ul>
Lower GI Rating	Higher GI Rating

# Cooking

- Cooking can **increase** the GI rating of a food
- Cooking swells starch molecules and softens foods making it faster to digest

spaghetti, white

– Boiled 5 min:           GI = 34

– Boiled 10 – 15 min:   GI = 40



# Processing

- Highly processed foods are digested faster and tend to have a higher GI rating

Cornflakes GI = 86

Porridge  
(rolled oats) GI = 49



# Processing

- For **unprocessed** grains the GI rating is lower because it takes longer to digest the food

pumpernickel bread GI = 46

white bread GI = 73



# Fat in Foods

- Foods with higher fat content have lower GI ratings. Fat content changes how your body digests foods.
- This shows that Low GI foods are not always the healthiest choice!

Potato chips GI = 75

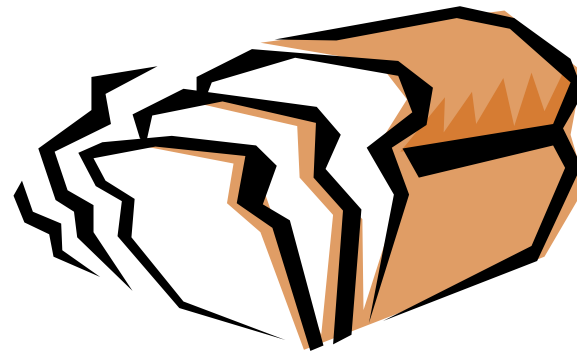
Baked potato GI = 93



# Acid in Foods

- Acids present in foods slow down your body digesting that food. Slower digestion means slower rise in blood glucose.

sourdough breads



# Factors Influencing the glycemic response

- Speed of stomach emptying
  - fat and protein
- Mixed meals



# Speed of stomach emptying: Fat and Protein

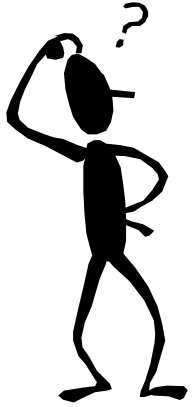
- Fat and protein slow the rate of stomach emptying
- Foods are digested at a slower rate
- Lower glycemic response



# Eating foods with a low GI may help to

- Control blood glucose levels
- Control cholesterol levels
- Control appetite
- Decrease risk of heart disease
- Decrease risk of type 2 diabetes





# What Should I Eat?



## Remember:

Using the GI is only one part of healthy eating. Follow Canada's Food Guide when making food choices for overall good health!

Eat at regular times

Limit sugar and sweets

Decrease fat intake

Include high fibre foods

Limit salt, alcohol and caffeine

# Tips to include low GI foods

1. **Enjoy** vegetables, fruits and low fat milk with your meals.
2. **Choose** one low GI food per meal
3. **Plan** menus around low GI food choices like lentils, barley and couscous.
4. **Exchange** high GI breads and cereals for lower GI alternatives

# Glycemic Index

## Lower GI Foods

Raise your blood glucose slower and lower.

Choose **more** often.

## Lower GI ideas

All Bran (42)

Bran Buds with psyllium (42)

Oatmeal (42 to 66)

Oat Bran (50)



## Higher GI Foods

Raise your blood glucose faster and higher.

Choose **less** often.

## Higher GI foods

Cornflakes (84)

Branflakes (74)

Rice Krispies (82)

Cheerios (74)

# The Glycemic Index

## Lower GI ideas

Pasta cooked “al dente”  
(32-64)

Whole grain pumpernickel (46)

Rice:

basmati or brown or  
long grain or parboiled (48-56)

Barley (25) Bulgur (48)

Buckwheat (54) Chana dal (8)

## Higher GI foods

Canned or overcooked  
spaghetti

White bread (71-77)

Instant rice (87)

Short grain rice(72)



# The Glycemic Index

## Lower GI ideas

Popcorn (55)



Boiled new potatoes (56)

Pear (38)

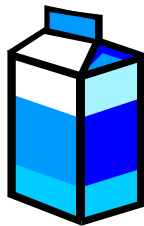


Plums (39)

Peach (42)

Milk (42)

Yogurt (30 to 40)



## Higher GI foods

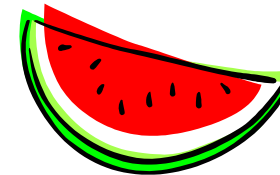
Pretzels (89)

Soda crackers (74)

French fries (75)

Baked potato (93)

Watermelon (72)



# ***LUNCH:***

Sandwich on whole grain bread  
Yogurt on fresh peach slices



**OR**

Sandwich on white bun  
Doughnut



# Questions

