

# GLYCEMIC INDEX

BY

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GLYCEMIC INDEX (GI) IS A  
METHOD OF ASSESSING  
AND CLASSIFYING FOODS  
BASED ON THEIR  
GLYCEMIC RESPONSE

The GI is about the quality of the carb and not the quantity.

Carbohydrates that break down quickly during digestion have the highest GI, while those that breakdown slowly, releasing glucose gradually into the blood stream have low GI.

## MEASURING THE GI

To determine a food's GI rating, measured portions of the food containing 50 gms of carbohydrate are fed to 10 healthy people after an overnight fast. Finger prick blood samples are taken at 15-30 mts intervals over the next two hours. These blood samples are used to construct a blood sugar response curve for the the 2 hr period. The area under the curve is calculated to reflect the total rise in blood glucose levels.

# MEASURING THE GI

INCREMENTAL AREA UNDER  
THE BLOOD GLUCOSE  
RESPONSE CURVE FOR THE  
TEST FOOD

GI =

X 100

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CORRESPONDING AREA  
AFTER EQUI CARBOHYDRATE  
PORTION OF STANDARD FOOD

Glucose is given an arbitrary value of 100 and other carbs are given a number relative to glucose. The GI values obtained if white bread is used are about 1.4 times of those obtained when glucose is used as standard food

## GI RANGE

LOW = 55 OR LESS

INTERMEDIATE = 56 TO 69

HIGH = 70 OR MORE

The GI factor has turned some widely held beliefs upside down. The first surprise was that many starchy (bread, potatoes and types of rice) are digested and absorbed very quickly, not slowly as had always been assumed.

Secondly, typical amounts of most sugary foods do not produce dramatic rises in blood glucose as had always been thought. In fact foods containing sugar actually show quite low-to-moderate blood glucose responses, often lower than foods like bread.



## SIGNIFICANCE OF GI

- Low GI means a smaller rise in blood glucose levels after meals
- Low GI diet can help people lose weight
- Low GI diets can improve the body's sensitivity to insulin resistance
- High GI foods help refuel carbohydrate stores after exercise
- Low GI foods can improve diabetes control
- Low GI foods can prolong physical endurance's

# GI OF COMMON FOODS

• Wheat bread	68
• White bread	70
• Cornflakes	80
• Oatbran	50
• Whole meal oat porridge	74
• Corn/Maize	59
• Wheat whole kernels	30
• Rice	69

# GI OF COMMON FOODS CONTD

- Semolina 55
- Sweet corn 60
- Macaroni 46
- Popcorn 55
- Green peas 47
- Lima beans 32

## ROOT CROPS

- Carrot 49
- Yam 54

# GI OF COMMON FOODS

## CONTD

- Potatoes boiled 59
- French fries 75
- Potatoes baked 93

### Fruits

- Plum 39
- Orange 43
- Grapes 46
- Mango 55
- Banana 56

# GI OF COMMON FOODS

## CONTD

- Apricots 57
- Papaya ripe 58
- Raisins 64
- Pineapple 66
- Watermelon 72

### **MILK & MILK** **PRODUCTS**

- Fermented cow's milk 11
- Low fat yogurt 14
- Yakult 46

# GI OF COMMON FOODS CONTD

- Condensed milk  
sweetened 61

## SUGARS

- Fructose 22
- Honey 62
- Table sugar 64

## FACTORS AFFECTING GLYCEMIC INDEX

- PROTEIN AND FAT: Slows down the rate of stomach emptying and carbohydrate digestion .eg.foods that contain fat and protein such as milk and legumes have low GI.
- FIBER :Soluble fiber slows down interaction between starch and enzymes eg.,high fiber foods such has rolled oats , beans , lentils have low GI.

## FACTORS AFFECTING GLYCEMIC INDEX CONTD

- COOKING OR PROCESSING OF STARCH: When a food is processed or cooked the structure of the starch changes and the granules become swollen (gelatinized). Less gelatinized starch is digested slower resulting in lower GI.
- ACIDS IN FOODS: Slows down the rate of digestion and absorption. Addition of lemon juice and vinegar lowers GI.



## Tips to lower the GI of daily meals

- Base the food choices primarily on overall nutrition – including vitamins , minerals and fiber .
- Try to choose atleast one low GI food at each meal .
- Limit the amount of processed , refined starch foods , as they tend to be low in fiber and other nutrients and have a higher GI.

## Tips to lower the GI of daily meals

- Eat whole grain and bran breads more often than white breads
- Eat fresh fruits and vegetables . Fruits and vegetables have a low GI, so they break down into sugar slowly .
- Use vinegar instead of creamy salad dressings
- If u choose a high GI food , combine it with a low GI food for an overall medium GI meal.

THANK YOU