

# Blood Sugar

An introduction to blood sugars.



## The Highs and Lows

On average the population eats 50kg of sugar per person every year. Many people eat too much refined sugar - that is white, brown or raw sugar, honey, sucrose, glucose, molasses and syrup. Most of this sugar (70%) is contained in foods like soft drinks, confectionery, breakfast cereals, 'health' bars, biscuits, beer and wine. It is the regular intake of sugar that may affect our energy levels, mood, and overall health.

### What is blood sugar level?

Carbohydrates in our diet are broken down and digested in the digestive tract into simple sugars. Glucose is fuel used for energy by our brain and our body.

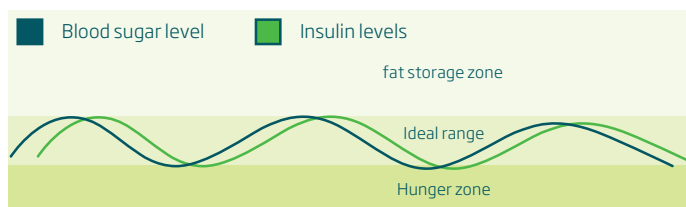
It is absorbed into the blood stream from the digestive tract. The amount of glucose in the blood at any one time is referred to as 'blood sugar level'.

Carbohydrates can be complex - such as whole grains, oatmeal and vegetables, or simple - such as beer, sugar, white flour, pasta, biscuits, sweets etc. It is the speed at which they are broken down and absorbed into the blood stream that affects our blood sugar level.



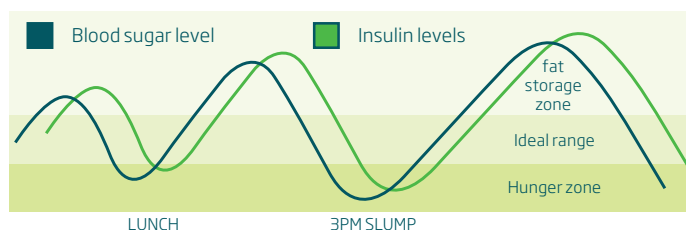
### What happens to glucose in the blood?

Your body aims to keep your blood sugar level as even as possible at all times. After a meal the blood glucose level goes up significantly, this stimulates the pancreas to release insulin. Insulin is a hormone that aids the glucose to move from the blood into the body cells to be used for energy or stored. This results in a decrease in blood sugar level and signals the body to eat again to increase the level. This repeats itself and for an individual 'normal' person, who balances their blood sugar level and energy requirements well, their blood sugar curve might look like this:



### What is poor blood sugar balance?

It's the sugar blues! You know that late morning or afternoon feeling of tiredness, irritability and difficulty in concentrating? It's due to a roller coaster effect of your blood sugar level rising too steeply and then dropping too low, and it's caused by eating a diet high in refined carbohydrates, chocolate, tea, coffee and sugars.



# Balancing blood sugar

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### Ideally...

#### Eat 3 small meals plus 2-3 snacks

To prevent the blood sugar level dropping too low at any time and overeating at meal times.

#### Eat some protein with each meal and snack on protein

Protein takes longer and uses more energy to breakdown and hence, regulates a more even insulin response as the glucose is absorbed into the blood slower.

Sources of protein include: nuts and seeds, eggs, yoghurt, milk, chickpeas, beans, quinoa, soya, lean meat, poultry and fish.

#### Eat a good breakfast

Breakfast boosts metabolism after resting overnight and ensures a steady blood sugar level through out the morning; oats with fruit, nuts and seeds plus milk/rice milk and yoghurt is ideal.

#### Increase fibre

All complex carbohydrates, fruits and vegetables contain fibre and are digested more slowly, which slows down the release of sugars into the blood and can act as a barrier slowing the absorption of simple carbohydrates.



### Healthy snack ideas:

- A piece of fruit (apple or pear is best) with a small handful of nuts or pumpkin seeds
- Rice cakes with almond / hazelnut butter (not peanut butter) or houmous
- Vegetable sticks and houmous, yoghurt dip, guacamole, or fresh salsa
- Yoghurt and fruit
- If you are on the move a lot, carry with you fresh or dried fruit, with nuts and seeds



### Refined, processed food, sugar and stimulants...

This includes white bread, white rice etc, ready-made meals and other processed foods. Be aware and read labels - sugar comes in various forms: sucrose, glucose, fructose, brown sugar, molasses, invert syrup, corn syrup and honey is used to 'bulk' out most ready-made food and jars etc.

Do not substitute sugar with sweeteners - they do not encourage you away from a sweet taste and have been shown to have negative effects on the body.

Alternatively, eat a whole food diet containing whole grains which are slower releasing carbohydrates, and plenty of vegetables and fruit. Fruit does contain natural sugar, but varying amounts of the slower releasing sugar fructose; also the fibre content of the fruit is complex and slows the rate of digestion and absorption.

All fruit and vegetables are full of vitamins, minerals and anti-oxidants, for general health, balanced blood sugar levels and a strong immune system.

Stimulants such as tea, coffee, alcohol, and fizzy drinks disturb insulin production and function, playing havoc with blood sugar levels. They are energy's greatest enemy.

Alternatives include coffee substitutes and herbal teas of which there is a wide range available in many supermarkets and health food stores.

