

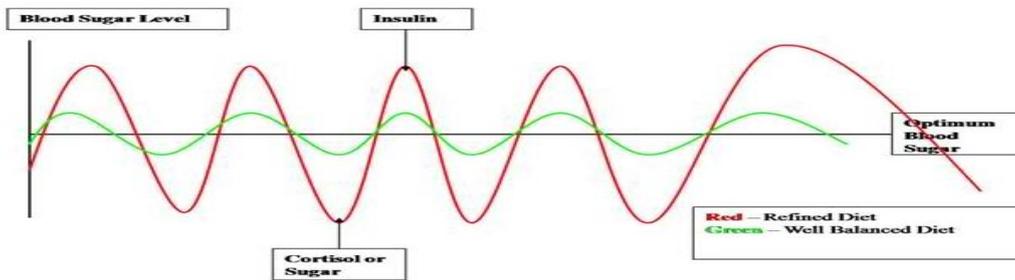
Balancing Blood Sugar

Why Are Blood Sugar Levels Important? All foods contain sugar, which is released into the body once it is digested. Our body needs this sugar (as glucose) as the main source of energy and it is delivered to where it is needed most (brain, nervous system and muscle function) by the blood. Keeping the level of sugar in the blood within strict limits is very important for our body to work efficiently - it will regulate itself to keep within these limits, via homeostasis.

- When our blood sugar is very low we might feel quite tired (mentally & physically) and the body will stimulate a feeling of hunger or even a craving for sweet foods.
- When it is very high we may become more hungry, thirsty or hyperactive and it could cause weight gain because the body will store excess glucose as fat if it is not needed.

Modern diets are generally high in sugars, refined carbohydrates (**e.g. white bread, pasta, rice, sweets, fizzy drinks**) and stimulants (**e.g. coffee, alcohol, cigarettes**), which means there is often too much sugar released into the body, too quickly. In response to excess sugar in the blood, our body produces large quantities of insulin, a hormone that transports glucose from the blood to the cells, either for immediate use as energy or to be converted by the liver to glycogen (for short-term energy use in the muscles and liver), or to fat (long-term body storage).

However, this can cause blood sugar levels to drop too low, so the body then responds by secreting cortisol, another (stress) hormone, which will raise blood sugar levels again. The net effect is constantly fluctuating blood sugar levels and eventually this “yo-yo” effect of blood sugar can cause a vicious circle of cravings, exhaustion and accumulation of fat.



Blood Sugar Curve (Source: Patrick Holford)

Glycaemic Index: The Glycaemic Index is a way of comparing the blood glucose-raising potential of different foods containing the same amount of glycaemic carbohydrate. It was devised as a means of helping diabetics control their blood glucose through diet, because the greater the rise in blood glucose, the higher the amount of insulin secreted or required.

- **High GI foods** – potatoes, white bread / rice / pasta, breakfast cereals, fruit juice, etc
- **Medium GI foods** – beetroot, banana, porridge, sweet potatoes, brown rice, muesli, etc
- **Low GI foods** – berries, carrots, peas, apples, lentils, beans, nuts, green leafy veg, etc

Fibre is the determining factor – the **HIGHER** the fibre content, the slower the release of sugar. Low GI foods are recommended for blood glucose and weight regulation.

Glycaemic Load: GI does not always take into account the amount of carbohydrate in a typical portion of the food. E.g. a Mars bar and beetroot have similar GI values, but a Mars consists of over 4 times the carbohydrate than a portion of beetroot, so will therefore have a far greater impact on blood glucose. This overall impact on blood glucose of consuming a portion of the food is called the Glycaemic Load (GL), and is more representative of the real impact of a food on blood sugar than GI. Spikes in blood glucose levels resulting from eating high GL foods increases insulin secretion, which promotes fat storage, and can lead to 'blood sugar crashes' and cravings for more high GL foods, which can be avoided by consuming low GL foods.

HEALTH MATTERS!

Dietary Advice For Balancing Blood Sugar

Choose complex carbohydrates (MED/LOW GI), approx. 130g per day (carbohydrates, including starchy vegetables should not make up more than a ¼ of each plate):

- **Whole grains:** rye bread, brown rice, quinoa, amaranth, pearl barley etc, oats, oatcakes, whole wheat bread & pasta and wholegrain cereals (no added sugar).
- **Beans/pulses:** pinto, butter, flageolet, soya, kidney, cannellini, aduki, lentils, split peas, baked beans (sugar free).

Eat protein at every meal, as they break down slower – slowing the release of sugars and keep you fuller for longer (should make up at around a ¼ of a plate). Choose:

- Lean meats, eggs, fish, tofu, Quorn, pulses, full fat cheese/plain yoghurt, nuts, seeds.

Eat 5-10 x 80g portions of fresh vegetables a day (should make up a ½ of a plate). Choose from:

- Broccoli, courgettes, aubergines, green beans, mushrooms, celery, peppers, parsnips, beetroot, sweet potatoes, squash, corn, peas, broad beans, green leafy veg etc.

Eat at least 2 portions of fresh fruit a day, additionally with full fat protein (yoghurt) e.g. The best fruits are:

- Apples, pears, apricots, papaya, berries, peaches, melon, citrus fruits (not oranges).

Eat regular meals and (if you have blood sugar dysregulation) small healthy snacks in between - eating approximately every 3-4 hours.

- Never skip (a healthy) breakfast – THE most important meal for balancing blood sugar that provides the body with vital energy, nutrients and by boosting your metabolism.

Combine complex carbohydrates with protein such as: fish, chicken, nuts, eggs and small amounts of full fat cheese/plain yoghurt, with pulses, starchy vegetables and grains.

Replace tea and coffee with herbal teas or water and dilute any fruit juices by ½. This helps to prevent blood sugar levels becoming imbalanced.

Try to Exercise: as well as all the other health benefits regular exercise provides, it also increases the body's response to insulin and could increase your overall sense of wellbeing.

Avoid or Limit - foods that contain very high sugar levels that release sugar into the body too quickly (i.e. **HIGH GI**).

- Simple sugars e.g. sugar in tea, sweets.
- Refined carbohydrate products - White rice, pasta, pastries (sweet and savoury), couscous, cakes, biscuits, crackers & potato snacks.
- Products with added sugar – fruit juices, sweets, puddings, cakes, biscuits, sauces, jam, chutney, condiments, processed foods/ready meals.
- Overcooked foods.
- Sugary drinks: Coke, squash, Red Bull etc.
- Large quantities of fruit, fruit juices, canned fruit
- Processed potatoes e.g. snacks, packet mash, gnocchi.

Avoid stimulants that cause the liver to release sugar into the blood. These are:

- Caffeinated drinks: tea, coffee, Coke, Red Bull, guarana, mate & other stimulating drinks.
- Cigarettes/recreational drugs.
- Alcohol.
- Excessive stress.

Please Note: This handout should only be used as a guide to help inform you of the diet and lifestyle modifications that **may** help to help to stabilise blood sugar levels. It **should not** be used as definitive guide to blood sugar management. If you think you may have issues with your blood sugar levels then please contact a medical doctor, or a qualified nutritionist.