

### Definition

Hypo-glycaemia means low blood sugar (or blood glucose). 'Functional hypo-glycaemia' refers to the body's inability to keep its blood sugar levels stable, leading to poor glucose tolerance.

Functional hypo-glycaemia often accompanies other complaints especially those associated with prolonged stress or anxiety, including chronic fatigue syndrome and pre-menstrual syndrome (PMS).

### Main Symptoms

- Tiredness, vagueness or shakiness alleviated by eating
- Tiredness or irritability first thing in the morning or if meals are late
- Sugar cravings
- Hungry all the time or soon after eating
- Headaches when meals are delayed
- Inappropriate anxiety or feelings of inadequacy which disappear after eating
- Waking in the night feeling hungry

### Dietary Causes

Prolonged stress and/or dietary factors:

- Over-consumption of refined carbohydrates and sugar
- Alcohol without food or with sugar-based mixers
- Low levels of chromium, vitamin B3 and/or magnesium

### Blood Sugar

Blood sugar (glucose) is probably the most important factor in maintaining energy levels and weight. When the level drops you feel hungry. When it is too high the body converts glucose into glycogen and stores it in the liver or muscle as a long-term energy source. If this is not used, it causes weight-gain.

If you answer yes to four or more of the following questions, your body probably has difficulty keeping its blood sugar levels steady.

- Do you have difficulty feeling properly awake until at least 20 minutes after getting up?
- Do you need a cup of tea or coffee, a cigarette or something sweet to get you going in the morning?
- Do you feel drowsy during the day or after meals?
- Do you fall asleep in the early evening or need naps during the day?
- Do you avoid exercise because you don't have the energy?
- Do you get dizzy or irritable if you go six hours without food?
- Do you have lower energy levels now than you used to?
- Do you suffer from night sweats or frequent headaches?

### Maintaining optimal blood sugar

The best way to achieve optimal blood sugar is to control the *Glycaemic Load (GL)*. *GL* is a calculation based on the amount of carbohydrate in a food and how fast or slowly it releases its energy. See Table on page 2.

Foods with a high *GL*, such as sweets, cakes and white bread cause the body to produce too much insulin in order to move the glucose out of the blood into the cells. This is followed by a drop in blood sugar which can cause tiredness, low mood and cravings for sweet food or stimulants such as caffeine.

Foods such as oats release their energy slowly, so the blood maintains a steady level of glucose and you are less likely to feel tired, irritable or crave sweet food or stimulants.

The table below shows the Glycaemic Load of various foods. This is taken from a more detailed table in "The New Optimum Nutrition Bible" by Patrick Holford, published by Piatkus (2004).

Food	Portions amounting to 10 GLs
Porridge made with rolled oats	3 large bowls
Muesli (such as Alpen)	1 small bowl
Shredded Wheat	1 biscuit
Weetabix	2 biscuits
Cornflakes and Puffed Wheat	1 very small serving
Yogurt without fruit or sugar	3 pots
Yogurt with fruit and sugar	1.5 pots
Muffin - made with apple, no sugar	1 muffin (50 gms)
Muffin - made with blueberries	$\frac{1}{2}$ muffin (35 gms)
Croissant, doughnut	$\frac{1}{2}$ croissant (35 gms), $\frac{1}{2}$ doughnut (28 gms)
Oatcakes	4
Puffed rice cakes	2
Rye bread (Pumpernickel) / Ryvita	2 slices / biscuits
Wholemeal bread	1 thick slice (35 gms)
White bread	1 slice (30 gms)
Brown rice, boiled	1 small serving (80 gms cooked)
White rice, boiled	Half a serving (65 gms cooked)
Wholemeal pasta	1 large serving (110 gms)
White pasta	1 serving (90 gms)
Humus	4 large tubs
Butter beans, split peas, boiled 20 minutes	1.5 cups
Lentils, cooked	2 cups
Peanuts	1 large packet (500 gms)
Raspberries, blueberries, blackberries, strawberries	2 large punnets (1200 gms)
Apples, pears, peaches, kiwis, oranges, dates, figs	2
Grapes	20 (150 gms)
Banana	1 (100gms)
Apricots	Fresh 8, dried 6
Avocado	10 (1 kilo)
Green beans	10 handfuls (750 gms)
Tomatoes	5 (350 gms)
Turnip / swede	Half a swede (220 gms)
Potatoes	Mashed: 2 tbsps (100 gms). Boiled (110gms)
Tomato juice	1 pint (625 mls)
Smoothie with soya milk, banana	360 mls
Lucozade	$\frac{1}{4}$ cup (60 mls)
Sweets	4 jellybeans, 8 Polos, half Mars Bar,
<b>Rule 1:</b>	Eat no more than 50 GLs a day, or 40 GLs if you want to lose weight
<b>Rule 2:</b>	For main meals eat low-GL carbohydrates with protein-rich foods.