

## Blood sugar changes

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### Symptoms

Changes to blood sugar can be associated with fatigue, lethargy and fluctuating energy levels. Sometimes changes may not be noticed. If left unmanaged, it can lead to [diabetes](#) [1][Diabetes mellitus] A disorder in which sugars in the diet cannot be metabolised into energy due to a lack of the enzyme insulin. Late-onset diabetes mellitus may be a long-term side effect of some anti-HIV drugs. where additional symptoms will be experienced including frequent urination (especially at night) and excessive thirst. The Oral Glucose Tolerance Test will determine if there is a problem with blood sugar changes in the body.

### Causes

Blood sugar problems are related to changes in [insulin resistance](#) [2]A diabetes-like condition in which, while adequate amounts of insulin are produced by the pancreas, the body does not respond normally to the action of insulin. In the wider community, insulin is related to obesity, while in HIV it may be related to lipodystrophy. that also affect [blood fats](#) [3]A type of fat in the blood. Elevated triglyceride levels may be a side effect of some anti-HIV drugs. associated with lipodystrophy. Risk factors for diabetes include a family history of diabetes, obesity and diet. Drug side effects are an additional risk factor. Protease inhibitors are the most common cause of blood sugar changes. Nucleosides can cause mitochondrial damage. This affects the way blood sugars are processed in body cells.

### Complementary & Supportive Therapy

**Dietary supplements:** Various supplements can assist blood sugar problems including chromium and the herbs gymnema ( *Gymnema sylvestre* ) and fenugreek ( *Trigonella foenum-graecum* ). Stevia ( *Stevia rebaudiana* ) is a naturally sweet herb that can be used as an alternative to sugar and is suitable for diabetics.

**Exercise and diet:** Thirty minutes a day of moderate physical activity such as walking is recommended. Dietary modifications to improve blood glucose control can be achieved using the glycaemic index (GI). The GI ranks food based on their effect on blood sugar levels.

When a [carbohydrate](#) [4]Any of a number of compounds, including sugars and starches, which are important as sources of energy. Along with fat and protein, one of the main constituents of food.-containing food such as pasta, fruit or milk is consumed and digested, it releases sugar (mainly glucose), which is then absorbed into the blood. The body responds by releasing a hormone called insulin, which causes glucose to be stored in the body, mainly into muscle and [liver](#) [5]A large organ, located in the upper right abdomen, which assists in digestion by metabolising carbohydrates, fats and proteins, stores vitamins and minerals, produces amino acids, bile and cholesterol, and removes toxins from the blood. tissue, for future use. GI is a measure of how fast the glucose from a food is absorbed into the blood. The lower the GI, the slower and more evenly glucose is absorbed into the blood. Foods that result in a slow release of glucose are generally termed low GI foods. Low GI foods are generally less processed carbohydrate foods that are higher in fibre. Consultation with a dietician can help you to find foods that are right for you. General recommendations for improving blood (glucose) sugar includes eating multigrain breads, cereals, pasta, milks, yoghurts, legumes, fruit and vegetables (low GI foods), eating foods that are low in fat especially saturated fat, and minimising simple sugar intake or high GI foods.

### Medical & Drug Treatment

Metformin is sometimes used to help control blood sugar, but can cause lactic acidosis in people with HIV and should be used with care.

Sulfonylurea drugs and glitazone drugs (e.g. Avandia) are prescribed when blood sugar problems progress to diagnosis of Type II Diabetes.

Insulin is required when the oral medications are unable to control blood sugar at appropriate levels.

## Special Precautions & Considerations

- See your doctor before commencing herbal remedies and [complementary therapies](#) [6] A broad range of healing philosophies, approaches, and therapies that Western (conventional) medicine does not commonly use to promote well-being or treat health conditions. Examples include acupuncture, herbs, Traditional Chinese Medicine, etc. for blood sugar problems.
- Seek advice from a dietician since early approaches can help control blood sugar problems and may help to prevent the onset of diabetes which is much harder to manage and a more serious condition.

[◀ Skin problems / rash](#) [7] [up](#) [8] [Cholesterol \(blood fat\) problems](#) [▶](#) [9]

- [diabetes](#)

### Links:

[1] <http://www.napwa.org.au/glossary/term/95>

[2] <http://www.napwa.org.au/glossary/term/99>

[3] <http://www.napwa.org.au/glossary/term/114>

[4] <http://www.napwa.org.au/glossary/term/86>

[5] <http://www.napwa.org.au/glossary/term/102>

[6] <http://www.napwa.org.au/glossary/term/478>

[7] <http://www.napwa.org.au/resource/managing-side-effects/skin-problems-rash>

[8] <http://www.napwa.org.au/resource/managing-side-effects/managing-common-side-effects>

[9] <http://www.napwa.org.au/resource/managing-side-effects/cholesterol-blood-fat-problems>