

Blood sugar (glucose) problems are becoming increasingly prevalent among industrialized nations. A Western diet that is low in dietary fibers—and rich in processed sugars, fats and simple carbohydrates—contributes to an imbalance in the body's ability to manage glucose levels.

AIM GlucoChrom™ contains natural herbs and trace minerals to help support stable blood sugar levels and provide better balance for this aspect of your health.



## Blood sugar

Blood sugar is the amount of sugar (glucose) we have in our blood. When we eat, the body breaks down the carbohydrates in foods to produce sugars. The sugar is absorbed into the bloodstream, which carries it to every cell in the body. Blood sugar fuels the cells, providing them with the energy they need to keep us healthy. It is extremely important that glucose levels in the blood remain consistent and not be too high or too low.

### How insulin works

The amount of glucose in the blood is largely controlled by insulin, a hormone secreted by the pancreas. When the level of glucose in the blood permeating the pancreas is elevated, insulin secretion is increased. When it is low, the rate of insulin secretion is low.

Healthy individuals secrete enough insulin to efficiently metabolize glucose. Any unused sugar not accepted by the cells is turned into glycogen and is stored in the liver or muscle tissue for future use as energy when the body needs it.

When the body is unhealthy, the pancreas secretes too much insulin, and the cells are unable to accept and efficiently use glucose. Elevated glucose and fats remain in the blood and may result in abnormally high cholesterol and triglyceride levels, which over time, can damage the vital organs, causing heart attack, stroke, or kidney failure.

Inefficient insulin production and the inability to efficiently use insulin can lead to adult onset (Type II) diabetes mellitus and its related complications. An estimated 16 million adults in the United States and Canada suf-

fer from Type II diabetes. Another six million adults may have diabetes but do not know it. In recent years, children and adolescents have become at increased risk for the disease (as never seen before) due to dramatically rising rates in adolescent obesity. (*Journal of Pediatrics* May 1996)

## Metabolism and diet

As we've seen, the body needs a constant level of glucose in the blood, but a careful balancing act must be achieved for proper metabolism to take place. Dieting is the most obvious way to maintain insulin. With reduced amounts of insulin in the blood (within normal limits), fat cells are less inclined to store fat, and weight loss may become easier.

By contrast, those who are overweight may have insulin resistance, or the inability of the cells to accept and efficiently use glucose. Fat cells respond to increased levels of insulin in the bloodstream by storing even more fat. Quite simply, high insulin levels build fat, while low insulin levels break down stored fats and sugar. For those attempting weight loss, the management of glucose levels becomes a challenge.

The problem becomes further complicated when we consume a diet high in simple carbohydrates, fats and processed sugars that the body cannot easily assimilate into beneficial glucose (energy) for cells.

"A healthy diet and modest physical activity can help people cut their risk for developing" diabetes, according to the Centers for Disease Control and Prevention. "Studies show that the progression of prediabetes to diabetes can be prevented or delayed through lifestyle changes," states the CDC. (*Koplan 2003*)

## Chromium

Chromium is considered an essential trace element that improves the body's response to efficiently use insulin. It plays an important role in the biological process by regulating the movement of glucose out of the blood and into the cells, thus maintaining stable blood sugar levels.

Chromium also aids in the synthesis of fats, cholesterol and proteins in the blood, thereby reducing the risk of cardiovascular disease. Here, it is interesting to note that, among other symptoms such as increased thirst and

weight-gain, prediabetics often show signs of elevated triglyceride and cholesterol levels prior to full onset of the disease. (*Healthwell 2004*)

### *How does chromium react with insulin?*

Scientists think that chromium becomes a ‘cofactor’ to insulin to gain access to the cell membrane, thus allowing glucose to enter the cells. With increased sensitivity to insulin, the cells of the body absorb glucose out of the blood. As the level of insulin in the blood falls, fat cells are less inclined to store fat, and weight loss therefore, becomes easier.

Because of chromium’s close relationship with insulin, chromium has been studied as a supplement for use in diabetics to help regulate abnormalities in blood sugar levels.

Numerous studies indicate that abnormal glucose levels in prediabetics, and Type II (noninsulin-dependent) diabetics can be managed successfully through diet, exercise and nutritional support. When used in combination with exercise, chromium provides even greater benefit by helping to regulate the body’s use of glycogen, or stored sugar. (*Mindell and Hopkins 1997*)

Chromium is a naturally occurring substance found in drinking water and soil. Concentrated sources are also found in food substances such as whole grains, brewer’s yeast, broccoli, sugar and molasses, but when processed, many of these foods are stripped of their natural chromium. Modern farming practices have further reduced natural forms of chromium found in our food, since many crops today are grown in nutrient-depleted soil.

A chromium deficiency can produce symptoms that mimic diabetes, such as high glucose levels and decreased insulin-binding. When we consume a diet high in processed grains and sugars, deficiencies in chromium are exacerbated because metabolizing these foods requires more chromium than they provide. (*Healthwell 2004*)

## **Vanadium**

Vanadium is an ultra-trace mineral found in very small amounts in seafood; grains such as oats and buckwheat; radishes; cabbage; carrots; dill; parsley; corn; vegetable oils such as olive, sunflower and safflower; and in soy. Increasing evidence suggests that vanadium is an essential micronutrient needed for cellular metabolism, and it may play a role in reducing cholesterol.

In 1899, it was found that vanadium could decrease blood sugar levels, but it was not until the late 1970s that vanadium was found to stimulate insulin action. Vanadium is thought to activate insulin receptors—mak-

ing the cells more receptive to insulin—and through this, stimulates insulin activity.

Vanadium improves insulin sensitivity. (Cohen et al. 1995) It is also useful as a supplement for Type II diabetics, resulting in modest reductions of blood sugar and hepatic (liver) insulin resistance (*Boden et al. 1996*)

Vanadium also decreases hypersecretion of insulin. (Head 1997) Hypersecretion, or the excessive secretion of insulin from the pancreas, sometimes occurs as the result of poor diet and it can be associated with the metabolic disorders associated with aging.

## **Bitter melon**

Bitter melon (*Momordica charantia*) is a tropical fruit that grows in parts of Asia, East Africa, and South America. It has been used for ages as a folklore remedy for diabetes mellitus, and has gained recognition in recent years for its polypeptide properties.

Bitter melon may help to lower blood sugar levels by increasing the activity of hexokinase and glucokinase, the enzymes in the body that convert sugar into glycogen, which is then stored in the liver and used later for energy. In this way, bitter melon was found to reduce blood sugar by improving glucose utilization by the liver. (*Sarkar 1996*)

The authors of another study suggest that bitter melon may cause a renewal and recovery of the insulin-producing beta cells of the pancreas. (*Ahmed et al. 1998*) Other research found that 100 ml of bitter melon juice was found to improve glucose tolerance by 73 percent in a standard glucose tolerance test. (*Welihinda et al. 1986*)

## **Gymnema sylvestre**

*Gymnema sylvestre*—also known by the Hindi name *Gurmar* which literally means “the destroyer of sugar”—is a woody climbing plant native to the tropical forests of central and southern India.

Today, *G. sylvestre* is known to stimulate insulin secretion while lowering cholesterol and triglyceride levels, and is favored for long-term use as a supplement for blood-sugar stabilization.

*G. sylvestre* has been used with success in patients suffering diabetes, and is noted for reducing insulin requirements and lowering fasting blood glucose levels. (*Shanmugasundaram and Rajeswari et al. 1990*)

*G. sylvestre* may also improve the health of the pancreas by regenerating beta cells. (*Shanmugasundaram and Gopinath et al. 1990*)

## AIM GlucoChrom™

AIM GlucoChrom™ is a unique combination of chromium, vanadium, bitter melon, and *G. sylvestre*. Working together, they provide the body with a natural way to support healthy blood sugar balance.

A daily serving of 2 capsules of AIM GlucoChrom™ contains LeafBrand™ barley grass and vanadium delivering:

- 400 mcg of chromium
- 75 mcg of vanadium

and a proprietary blend of:

- bitter melon fruit powder
- *Gymnema sylvestre* leaf extract

### Organically bound Chromium

Most chromium supplements (chromium nicotinate and picolinate) are synthetic. The chromium in AIM GlucoChrom™ is in a natural form. It is not synthesized. AIM uses a proprietary process where barley grass is used as the medium through which chromium is supplied.

In AIM GlucoChrom™, barley grass is grown in water rather than soil, and chromium is added directly to the barley plant's water supply. This way, we can specify the amount of chromium present. The roots absorb the chromium with the water and the chromium is bound to the plants. The plants, roots and all, are harvested when they contain the optimum amount of chromium, shredded, dried at temperatures low enough to maintain enzymatic activity, and ground into a fine powder. The body most readily and naturally recognizes the plant-bound nutrients in AIM GlucoChrom™, and the chromium content becomes more bioavailable for absorption by the body.

## How to use AIM GlucoChrom™

Take 1 capsule twice per day. Best taken before meals.

Close tightly after opening and store in a cool, dry, dark place. Do not refrigerate.

## Q & A

### Who should use AIM GlucoChrom™?

Anyone who is at risk for high blood sugar or Type II (noninsulin-dependent) diabetes may benefit from using AIM GlucoChrom™. Those who want to promote fat-loss and maintain healthy, lean body mass should consider using AIM GlucoChrom™. Anyone interested in lowering cholesterol and triglyceride levels in the blood may find AIM GlucoChrom™ helpful as part of a healthy diet program.

### Is there anyone who should not use AIM GlucoChrom™?

Type I (insulin dependent) diabetics should not use AIM GlucoChrom™. Children, pregnant and nursing women should not use AIM GlucoChrom™. Those with Type II diabetes or those taking oral hypoglycemics or insulin should consult with their healthcare practitioner before using AIM GlucoChrom™.

### May I take AIM GlucoChrom™ with other supplements or medication?

Those taking oral hypoglycemics or insulin should consult a health practitioner before using AIM GlucoChrom™.

### Are there any side effects?

No significant side effects have been reported.

## References

- Ahmed, I., et al. "Effects of *Momordica charantia* Fruit Juice on Islet Morphology in the Pancreas of the Streptozotocin-Diabetic Rat." *Diabetes Res Clin Pract* 40, no. 3 (June 1998): 145-51.
- Baskaran, K.; B. Kizar Ahamath; K. Radha Shanmugasundaram; and E.R. Shanmugasundaram. "Antidiabetic Effect of a Leaf Extract from *Gymnema sylvestre* in Noninsulin-Dependent Diabetes Mellitus Patients." *J Ethnopharmacol* 30, no. 3 (October 1990): 295-300.
- Boden, G.; X. Chen; J. Ruiz; G.D. Van Rossum; and S. Turco. "Effects of Vanadyl Sulfate on Carbohydrate and Lipid Metabolism in Patients with Noninsulin-Dependent Diabetes Mellitus." *Metabolism* 45, no. 9 (September 1996): 1,130-5.
- Cohen, N.; M. Halberstam; P. Shlimovich; C.J. Chang; H. Shamoon; and L. Rossetti. "Oral Vanadyl Sulfate Improves Hepatic and Peripheral Insulin Sensitivity in Patients with Noninsulin-Dependent Diabetes Mellitus." *J Clin Invest* 95, no. 6 (June 1995): 2,501-9.
- Head, K.A. "Type I Diabetes: Prevention of the Disease and Its Complications." *Alt Med Rev* 2, no. 4 (1997): 256-281.
- Koplan, J.P., M.D., M.P.H., "Diabetes: Disabling, Deadly and on the Rise," U.S. Centers for Disease Control and Prevention, March 2003.
- Mindell, Earl L, R.Ph., Ph. D. *What You Should Know About Herbs, Supplements, Trace Minerals, and Homeopathic Remedies*, 2000.

Sarkar, S., et al. "Demonstration of the Hypoglycemic Action of *Momordica charantia* in a Validated Animal Model of Diabetes." *Pharmacol Res* 33, no. 1 (January 1996): 1-4.

Shanmugasundaram, E.R.; G. Rajeswari; K. Baskaran; B.R. Rajesh Kumar; K. Radha Shanmugasundaram; and B. Kizar Ahmath. "Use of *Gymnema sylvestre* Leaf Extract in the Control of Blood Glucose in Insulin-Dependent Diabetes Mellitus." *J Ethnopharmacol* 30, no. 3 (October 1990): 281-94.

Shanmugasundaram, E.R.; K.L. Gopinath; K. Radha Shanmugasundaram; and V.M. Rajendran. "Possible Regeneration of the Islets of Langerhans in Streptozotocin-Diabetic Rats Given *Gymnema sylvestre* Leaf Extracts." *J Ethnopharmacol* 30, no. 3 (October 1990): 265-79.

Welihinda, J., et al. "Effect of *Momordica charantia* [Bitter Melon Fruit] on the Glucose Tolerance in Maturity Onset Diabetes." *Journal of Ethnopharmacology* 17, no. 3 (September 1986): 277-82.

## Ask About

The new audio: "AIM GlucoChrom™:  
A Deeper Look."

## Benefits & Features

### Benefits

- Helps maintain healthy blood sugar levels
- Alleviates hypoglycemic (low blood-sugar) symptoms
- Promotes beneficial effects on blood cholesterol and triglyceride levels
- Increases lean body mass and lowers body weight
- Helps maintain a healthy lifestyle

### Features

- Special leaf-bound barley chromium
- Patented, synergistic formula
- 60-count vegetarian capsules

*AIM GlucoChrom™ is a Lifestyle Health product.*

*Distributed exclusively by*