

Type II diabetes is a chronic condition in which the body cannot maintain a normal blood glucose level. This occurs when the body resists the effects of insulin and eventually doesn't produce enough insulin to maintain healthy blood sugar levels. Insulin, which is produced by the beta cells of the pancreas, is an important hormone that regulates the movement of glucose into the body's cells as well as inhibits the release of glucose from the liver into the blood when blood sugar levels are high. The resistance and decrease of insulin in diabetes patients cause high blood sugar levels since glucose stays in the blood instead of being taken up by the cells, also called the effectors.

Glucose Metabolism:

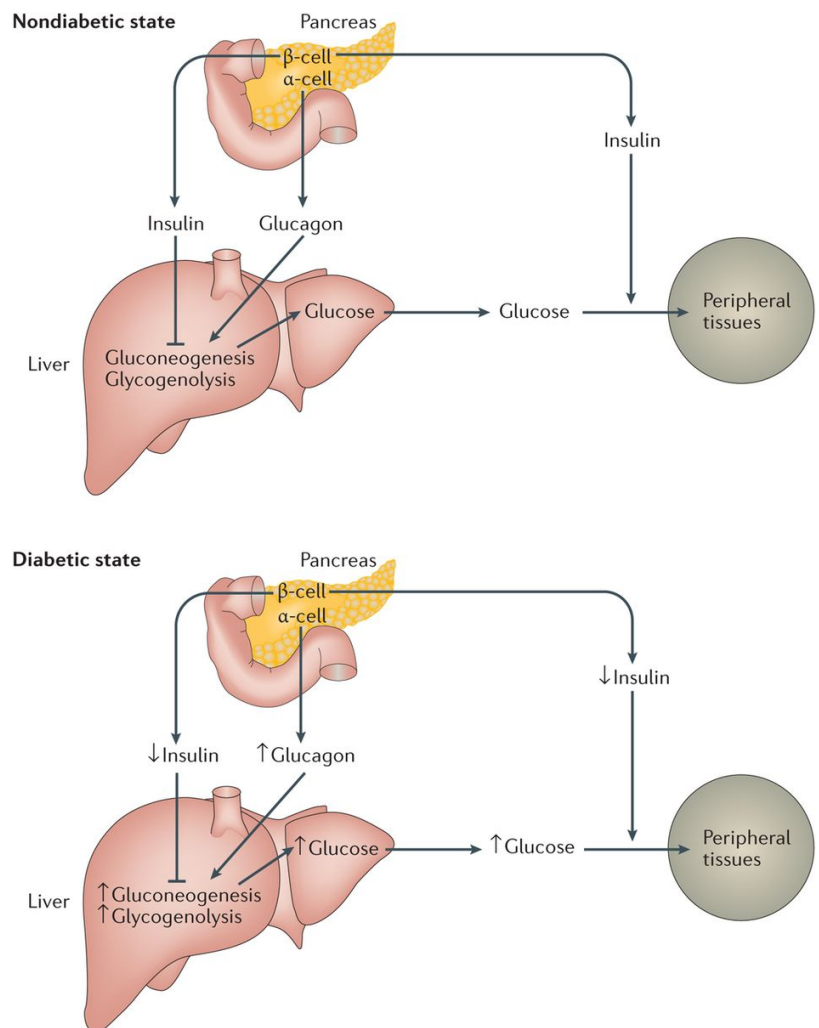
Glucose, which is stored in the body as glycogen, is kept in the liver and is broken down to glucose and then released into the bloodstream to raise glucose levels. This process is regulated by the glucagon released from pancreas alpha cells when blood glucose levels are low. The glucose released to the bloodstream is from either glycogenolysis, break down of the glycogen, or gluconeogenesis, a process that converts non-carbohydrate molecules such as amino acids, fat or lactate, and pyruvate into glucose. The liver is the primary location of gluconeogenesis and glycogenolysis.

Insulin and glucagon work synergistically in glucose metabolism. Blood glucose levels increase after a meal which then stimulates the release of insulin. This release promotes the uptake of glucose into the effectors to lower blood sugar levels.

The major effectors that take up glucose from the blood are the liver, skeletal muscles, and adipose tissues. When insulin levels are high, effectors increase the uptake of glucose which can lead to one or more of the following: increased glucose uptake by membrane transporters, increased breakdown of glucose to provide energy or cause glucose to be converted to glycogen to be stored in the liver.

Insulin works through cell surface receptors called tyrosine kinase-linked receptors. When the receptor becomes activated by the binding of insulin, the receptor then phosphorylates a number of intracellular proteins which generate a biological response. In resting skeletal muscle and adipose tissue, insulin mobilizes the GLUT4 transporter for diffusion of glucose. GLUT4 can only be triggered by insulin. In working skeletal muscles, typically during exercise, insulin is not required for the uptake of glucose because physical activity mobilizes the transporter GLUT4. This is why physical activity is an important factor to help maintain blood sugar levels.

The liver, unlike adipose tissues and resting skeletal muscles, can uptake glucose without insulin. The liver uses a different transporter (GLUT1, 2, or 3) that resides permanently in its plasma membrane. Due to the fact that the liver



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has Glucose-6-phosphatase (G6Pase), it is the only organ that can release a significant amount of glucose into the blood. The binding of insulin to the receptor on the hepatic cell triggers the inhibition of glucose release into the blood and downregulates the liver's gluconeogenesis and glycogenolysis process. The inability of insulin to suppress hepatic glucose production is a key defect found in type II diabetes.

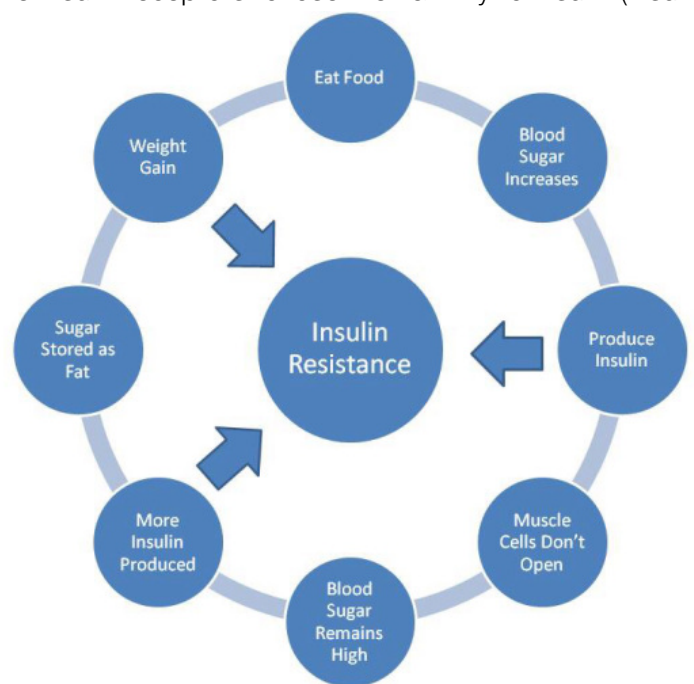
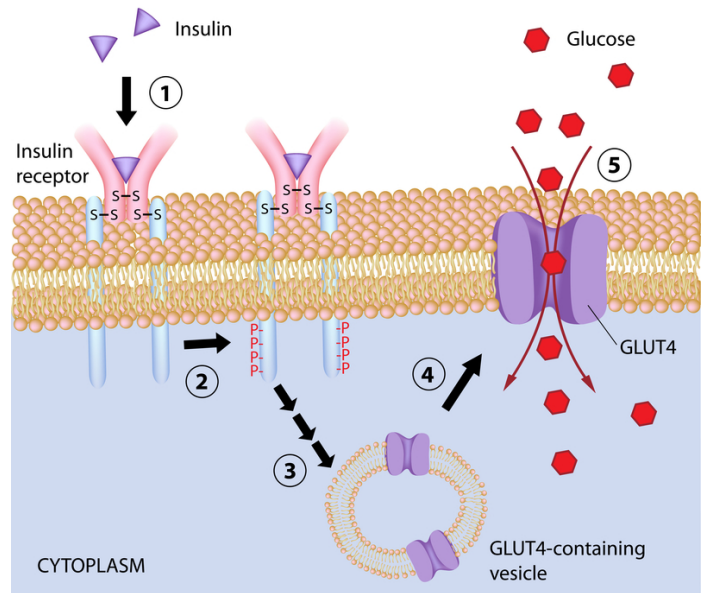
The normal age of onset for type II diabetes is over 40. Normal blood sugar levels range from 72 to 99 mg/dL. In patients with prediabetes, the range is from 100 to 125 mg/dL and for those with full blown diabetes, higher than 126mg/dL. When blood sugar levels are consistently high such as in prediabetes and diabetes, the long-standing glucose in the blood can damage the vessels that supply blood to vital organs. Other dangers of hyperglycemia include increased risk of heart disease, stroke, kidney disease such as CKD, vision problems, and nerve problems. Hypoglycemia (below 70 mg/dL) can also occur in patients with diabetes. This can occur with medications that increase insulin levels, taking too much medication, and skipping meals. Although mildly low blood sugar levels are somewhat common for people with diabetes, severely low blood sugar levels can lead to seizures and nervous system damage.

Causes: Although the cause of insulin resistance and reduced insulin secretion is still unknown, factors such as genetics, obesity/diet, and fungus could all play a role.

Genetics can play a role in the development of diabetes due to specific DNA that affects how the body makes insulin. Researchers are currently still trying to pinpoint the specific gene that carries this risk.

Obesity is a big risk factor in the development of type II diabetes since poor eating habits go hand in hand with elevated blood sugar levels. When a patient ingests a lot of high sugar foods, the result is high glucose levels in the blood. The pancreas then needs to exponentially increase its secretion of insulin to maintain a normal blood sugar level. Over time, such high blood insulin levels can cause the insulin receptors to lose their affinity to insulin (insulin resistance). The cell signal transduction then no longer communicates the movement of glucose into the cells and no longer regulates glucose release from the liver. To compensate for the reduction in the response of insulin receptors to insulin, the pancreas has to produce higher levels of insulin, which is a symptom of insulin resistance. This puts higher demand on the insulin-producing beta cells in the pancreas, often setting the stage for diabetes. This stage of the condition is usually referred to as prediabetes in clinic. Chronic overproduction of insulin can cause the beta cells to burn out and stop producing insulin. As a result, blood sugar levels rise to an above normal range and patients become full-blown diabetic.

Effect of Insulin on Glucose Uptake



Hyperlipidemia is also common among types II diabetes patients. In addition to the sugar metabolism disorder, the patient may also have high cholesterol, triglyceride, and VLDL levels. Recent research has shown that elevated blood sugar levels may actually be caused by hyperlipidemia. The abnormal blood lipid levels may inhibit the interactions between insulin receptor proteins and affect signal transduction. Such interference can cause insulin to work less efficiently with the insulin receptors on the hepatic cell surface (insulin resistance). In order to compensate for the reduced efficiency of insulin, the pancreas has to secrete higher levels of insulin to maintain normal blood sugar levels. Patients become insulin resistant and are then classified as pre-diabetic. The liver plays a key role in the lipid metabolism. Many type II diabetes patients who have hyperlipidemia also have elevated liver enzyme levels (AST/SGOT and ATL/SGPT). In these patients, their poor liver function causes hyperglycemia which triggers the insulin resistance. When the beta cells eventually burn out and stop producing insulin, blood sugar levels rise to an above normal range leading to the development of type II diabetes.

Fungal infections in the liver can also cause insulin resistance leading to type II diabetes. Secreted aspartyl proteinases (SAP proteins) produced by *Candida* can destroy the insulin receptors on the cell surface of the liver and block insulin signal transduction. In order to compensate for the reduction of functional insulin receptors in the hepatic cell surface, the pancreas has to secrete a higher concentration of insulin to maintain blood sugar levels and insulin resistance occurs. The fungus that infects the liver usually comes from the digestive tract. The fungus in the digestive tract can also spread to the pancreas causing pancreas irritation and inflammation. Chronic hyperproduction of insulin and pancreas inflammation can cause early degeneration of the beta cells. Eventually, the beta cells can no longer produce enough insulin to overcome insulin resistance. As a result, blood sugar levels rise to an above normal range and patients become fully diabetic.

Other factors such as family history, age, and race all seem to play a role as well but research on those factors are still being examined.

Symptoms: The symptoms of diabetes typically develop slowly as the disease progresses. Increased thirst is a common symptom as excess glucose builds up in the bloodstream causing fluid from surrounding tissues to be pulled out. This effect leaves patients thirstier and as a result, polyuria is another common symptom. Increased hunger is also a symptom since there isn't enough insulin to move sugar into the body's cells, therefore, neglecting the muscles and organs of energy. This effect can trigger hunger since the body feels it has no energy. This effect can also cause fatigue in diabetes patients since the cells are deprived of sugar, which results in decreased energy. Blurred vision can also occur with hyperglycemia when fluid is pulled from the lenses of the eyes. If the blood sugar levels can't be maintained, patients can develop complications including cardiovascular disease, kidney failure, foot neuropathy and retinopathy due to damage to the eye.

Wellness Recommendation

The key factor to address diabetes is to resolve the insulin resistant condition. More specifically, at a normal blood insulin level, the liver has to hold its sugar release to the blood and downregulate its gluconeogenesis and glycogenolysis process.

Physical exercise and a low sugar diet are recommended. If the cause of insulin resistance is hyperlipidemia due to liver dysfunction, the recommendation includes Brown and LC Balancer. Brown improves liver function and structure to help normalize liver enzyme levels and blood lipid levels to restore the activity of the insulin signal transduction pathway and alleviate the strain on sugar metabolism. LC Balancer improves overall microcirculation which in turn reduces blood glucose levels. Xcel is also recommended to support kidney function for effective waste secretion. As the liver activity is enhancing, there will be excessive amounts of wastes released to the bloodstream. If the patient's kidneys are weak and can't secrete out these wastes, they can cause symptoms of anxiety, warm sensations, insomnia, fatigue or flu-like symptoms. If the patient's pancreas has been exhausted and can't produce and secrete enough insulin, Soup A is recommended to improve the pancreas' structure and function and restore the insulin levels.

Patients should experience improved liver enzyme levels (AST/SGOT and ATL/SGPT), blood lipid levels and blood sugar level within 3-4 weeks. It will require up to 6 weeks to 3 months of the protocol for sustained blood sugar control and reversal of metabolic disorders. It is recommended to have a blood lipid panel and liver enzyme testing performed every 4-6 weeks during the protocol. The results on the blood sugar level can be sustained if their blood lipid and liver enzyme levels are in the normal range.

If the insulin resistance is caused by a fungal infection, the recommendation includes Brown, LC Balancer, Soup A, Glymycin, and Glymycin-R. Brown and LC Balancer help restore the integrity of the hepatic cell surface insulin receptors. Brown improves liver function and structure to help repair the damage to the insulin receptors on the liver's cell surface enhancing cell signal transduction. LC Balancer improves overall microcirculation which in turn reduces blood glucose levels. Xcel may also be required to help the kidneys excrete excess waste. Soup A is recommended to improve the pancreas' structure and function and repair damages to the pancreas to assist in insulin production and secretion. Glymycin helps clear liver fungal infections and inflammation, while Glymycin-R clears fungal infections from the pancreas. If the patient is in an acute phase of diabetes, Plasmin is also required to clear the fungus in the bloodstream.

With the use of Brown, LC Balancer, Soup A, Glymycin, and Glymycin-R, patients should notice symptom improvement and improved blood sugar levels in two weeks, and 6 weeks to 3 months of the protocol is recommended for sustained results.

Patients should watch their blood sugar levels closely. If their blood sugar is decreasing, the dosage of their prescribed medication should be reduced to avoid low blood sugar levels. The reduced amount on their prescribed medication will vary for each individual depending on the specific condition. Patients may need to repeat a short period (1-2 weeks) treatment if symptoms come back.

The liver infectious agents usually come from the intestine through portal circulation. If patients exhibit symptoms from a GI infection such as diarrhea/constipation, bloating, cream-color mucus in stool, and intestinal cramps then Formula F and Formula G may also be required to clear digestive track fungal infections in order to achieve sustained treatment results.

For patients with severe pancreatic islet cell degeneration with a wide range of blood sugar swings between high blood sugar and low blood sugar levels, Glucogen which nurtures spleen Yang, and Stemgen which nurtures Spleen Yin, are recommended to improve the structure and function of the spleen to enhance the supply of stem cells to the pancreatic islet for their regeneration. Recent research has revealed that the spleen is a crucial organ that hosts many lineages of stem cells that help maintain the body's regenerative function. These stem cell lineages help bone marrow produce blood cells and regenerate pancreatic islet cells and other tissues. Research has found that patients who have their spleen removed due to trauma or injury develop diabetes later in life.

Diabetes Product Recommendation Summary

Product	Description
Brown	Improve liver function – enhance cell signal
LC Balancer	Increase microcirculation – reduce blood sugar levels
Xcel	Improve kidney function – assist in waste removal
Soup A	Improve pancreas structure – assist in insulin production
Glymycin	Clears fungal infections in the liver
Glymycin-R	Clears fungal infections in the pancreas
Plasmin	Clears fungal infections in the blood
Formula F	Clears fungal infections in the stomach
Formula G	Clears fungal infections in the intestines
Glucogen	Enhances blood circulation to the spleen
Stemgen	Improves the spleen structure

Selected Case Studies

Case 1: Successful Reduction of Blood Sugar Levels in Type II Diabetes

Dr. Marco Cazares, DC, California

A 60-year-old female patient was diagnosed with type II diabetes. She had struggled with this condition for two to three years and her blood sugar levels were consistently measured at 300 mg/dL even though she was taking Metformin to reduce her blood sugar levels. Dr. Cazares recommended Wei Laboratories herbal formulas that target the liver. Within 3 to 4 weeks of the protocol, the patients' blood sugar level had dropped to 120 mg/dL. These results were exceptional and the patient is now consulting with her doctor to lower her dosage of Metformin.

Case 2: Type I Diabetes Study

Dr. Marco Cazares, DC, California

A study focusing on a group of 4 patients with an average age of 54 who were all diagnosed with Type 1 Diabetes was conducted. They had each been under a medical treatment of daily Metformin to control blood sugar and daily insulin administration. On average, the patients took 15 units of insulin per day; one patient took as much as 35 units of insulin per day. Blood sugar levels were measured to be abnormally high at 350 mg/dL and liver and kidney enzyme levels were elevated in all patients. I advised them on the Glycemic Index which warns them of the types of foods that affect blood sugar levels and recommended specific exercises for 30-40 minutes per day. I also recommended Wei Laboratories Brown 3 times a day, and LC Balancer 3 times a day for 10 days.

The patients were reexamined after the first 10-day trial and blood sugar levels significantly dropped from an average of 300 mg/dL to 140 mg/dL during morning blood tests (fasting blood sugar). All patients reported less fatigue, tiredness, and some reported vision improvement. After 4 weeks of treatment, there was a 50% decrease in the elevated liver and kidney enzymes as well as maintenance or improvement of blood sugar levels. After six weeks of treatment, blood sugar levels showed major improvements ranging from 98-110 mg/dL.

After the initial 6 weeks of treatment, the patients began reducing insulin administration (Reduced from an average of 15 units per day to 4 units per day). The dosage of LC Balancer and Brown was also reduced to a maintenance dosage to make sure enzyme levels remained normal for an extended time.

Based on the response to LC Balancer and Brown, Traditional Chinese Medicine shows great promise in the treatment for diabetes and I would advocate clinical trials on more patients to be performed.

Case 3: Decreased Blood Sugar Levels and Blood pressure in Type II Diabetes Patient

Charles Abbott, LaC, OMD, LSym, NC

A 62-year-old male patient with Type 2 Diabetes and High Blood Pressure came to Dr. Abbott seeking alternative care for his diabetes. He was on high blood pressure and Metformin for about 2 years. He started seeing Dr. Abbott to address his Type 2 Diabetes as his primary condition, and he was put on a course of acupuncture twice a week for six weeks as well as Brown and LC Balancer from Wei Laboratories. After three weeks, his blood sugar levels went from 120 mg/dL down to 90 120 mg/dL. He continued for an additional three weeks, after which the blood sugar decreased and then stabilized, and he was able to get off of his metformin. The obliteration of his symptoms, made the maintenance of his health a priority.

Case 4: Successful Diabetes and Gout Resolution

Dr. Gary Hartell, DC, CT

A 69-yr. old female with a long history of health problems came to my office for an alternative approach. She recently was suffering from frequent bouts of gout and uncontrolled blood sugar even with prescription medication. She reported problems with side effects from both her gout and diabetes meds and was seeking a non-drug solution to health problems.

Blood workup prior to treatment at this office: blood sugar 124 mg/dL with medication, elevated liver enzymes: AST/SGOT 50.00, ALT/SGPT 59.00. After 6 weeks of therapy with herbal formulas from Wei Labs including Brown, LC Balancer, and Xcel, the patient is feeling much better. She is experiencing no gout flair ups and her blood sugar levels were stable. She was also able to reduce and eventually remove her prescription medications.

Her recent blood work up: blood sugar 103 mg/dL (no meds), liver enzymes normal at AST/SGOT 20.00, ALT/SGPT 25.00.

Case 5: Resolution of Hepatitis C and High Blood Sugar

Dr. Bob Heron, DC, NV

A male patient contracted Hepatitis C from his drug addiction in his earlier years. His AST/ALT ratio was very high indicating liver toxicity. He was also concurrently diagnosed with diabetes where his blood sugar level was up to 700 mg/dL. At this point, his adrenals started to shut down and he was diagnosed with adrenal fatigue.

Dr. Heron recommended a protocol consisting of Brown to nurture the liver, LC Balancer to increase microcirculation and support the kidney, and Xcel to address kidney function and filtration. The patient followed the protocol for 9 months and re-evaluated his blood levels. He noticed that his numbers were in a much healthier range and ever since the herbal supplements his AST/ALT ratio and blood sugar levels have been lowering. Through supporting the kidneys and liver the patient has also lost almost 60 pounds.

Case 6: Reduced Blood Sugar Levels in Type II Diabetes with Complication of CKD

Dr. Sandy Johnson, DC, OR

A 64-year-old male patient visited Dr. Johnson for his Stage IV chronic kidney disease and diabetes. His glucose was at 139, BUN at 53, and creatinine at 4.5. The kidney solution from Wei Laboratories was recommended including LC Balancer, Xcel, Formula C, KS, Cellgen and Anemic Formula.

After 1 month of treatment, his blood glucose levels dropped to 105 mg/dL. This was a huge improvement as he had not experienced blood sugar levels below 130 mg/dL since being diagnosed. On the next month blood work, his Hgb A1C dropped from 6.7% to 5.9%. He never had such a low level for many years since the diagnosis of CKD.

Case 7: Successful Improvement of Kidney Function and Blood Sugar Levels

Dr. Marilyn Coady, DC, New Mexico

A 62-year-old veteran visited Dr. Coady with multiple health issues due to his experience in the Vietnam War. His GFR was 57, BUN was 12, and Creatinine was 1.26. The patient also suffered from stomach issues. Any spicy food would trigger severe stomach pain with blood sugar the increased to 102-120 mg/dL.

Dr. Coady recommended Wei Lab's herbal formulas including Spring Capsule, SJ, Formula B, Silver, and Stomacin to address his stomach problem, and LC Balancer, Xcel, Nefnin, K-2 and Cellgen for his kidney issues. After three weeks of the protocol, the lab work showed great improvement in his kidney function. His GFR went up from 67 to

72. BUN went from 19 to 17. Creatinine decreased 1.26 to 1.02. The patients stomach issues were much better as well. However, the spicy food was still causing colon spasms and diarrhea. Also, his blood sugar had been climbing up to 156 mg/dL. Dr. Coady suspected that the patient may have fungal infections. Formula F and Formula G were recommended to clear the fungus in the digestive tract and bile ducts and Plasmin was recommended to clear fungus in the blood. The patients had three weeks of stinky stools while taking the products and then felt much better. To help control his blood sugar, Dr. Coady recommended Glymycin and Glymycin-R with LC Balancer, Brown and Xcel. After 2 weeks using the additional formulas, the patients' blood sugar levels reach below 100 md/dL. The patient had continued the protocol for a couple of weeks more and two months after the treatment, the patient's blood sugar was still in normal range.