

The Truth About Diabetes and Its Natural Treatments

Diabetes

Diabetes is a chronic health condition in which the body is either unable to produce insulin, produces too little insulin, or becomes resistant to insulin, resulting in the improper breakdown of sugar (glucose). As a result blood sugar levels rise to a dangerous level.

It is a serious condition that needs controlling and maintaining to avoid complications

Description

When a person eats sugars and starches, the body changes them rapidly into a sugar called glucose.

Glucose is the main source of body energy. Your liver produces some glucose and you get the rest through the above digestion process. It is absorbed from the intestine and is metabolized and used immediately where it is needed by all cells in the body via glucose transportation, and the rest is stored in the muscles and liver as glycogen for future requirement.

In diabetes, the mechanism that controls the amount of glucose in the blood breaks down. The blood glucose level rises to dangerously high levels as a result, causing symptoms and damage to the body.

Glucose is transported by a signal produced by insulin. After transportation insulin triggers its correct dispersion.

Insulin is a hormone (part of the endocrine system) produced by beta cells (islets of Langerhans) in the pancreas. It manages how much glucose the liver produces and helps glucose to be taken up by the cells where it is used as energy.

Insulin acts as a key to unlock the cells so that blood sugar can be stored in them. High blood sugar levels can be related to not enough keys (insulin), or an inefficient lock (cell entry point), or both.

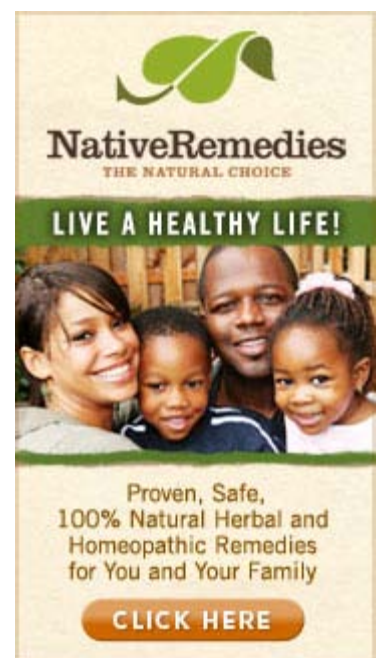
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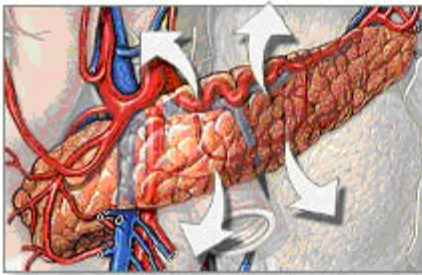


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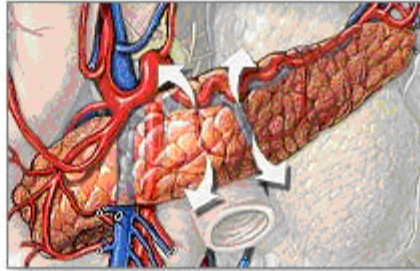
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Normal insulin production

Insufficient insulin production (diabetes mellitus)



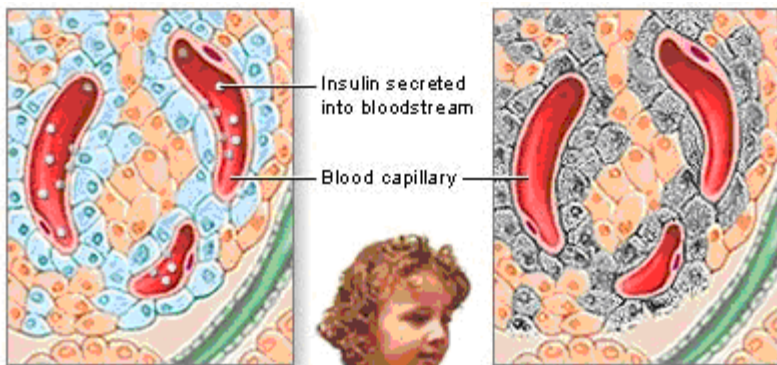
(National Library of Medicine (NLM))

Diabetes is actually a group of diseases characterized by high levels of blood glucose resulting from defects in insulin production, insulin action, or both, resulting in either hypo- (abnormally low blood sugar) or hyperglycaemia (an elevated concentration of glucose in the blood).

The primary types of diabetes include type 1 diabetes and type 2 diabetes.

Type 1 diabetes

It develops when the body's immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin that regulates blood glucose. It occurs most usually from childhood or teen years.



■ Insulin-producing cells

■ Insulin-producing cells destroyed



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Type 2 diabetes

It consists of a resistance to insulin produced by the body. Obesity is a heavy contributor to its development, as is type 1 diabetes and high (imbalanced) cholesterol levels.

Insulin resistance occurs when the body fails to respond effectively to the insulin already produced by the pancreatic beta cells.

Type 2 diabetes usually affects adults following a trigger. This could be another illness or the effects of obesity, for example.

Other forms of diabetes

Gestational diabetes is a form of glucose intolerance diagnosed during pregnancy where a woman is not able to increase their secretion of insulin. Gestational diabetes requires treatment to normalize maternal blood glucose levels to avoid complications in the fetus. Genetics and obesity are major contributing factors.

Gestational diabetes is usually asymptomatic and not necessarily life threatening to the mother. This condition is associated with an increase in neonatal morbidity, neonatal hypoglycaemia and jaundice.

It is characterized by excessive hunger, thirst, and the need to urinate, it is a mild condition and often goes unnoticed, but it is important to treat because elevated blood sugar levels can damage the fetus.

It has been found to respond well, and even to resolve, with a combination of diet, exercise and appropriate supplementation where necessary.

Secondary diabetes is named due to it forming as a result of other particular conditions, such as pancreatic disease, hormone disturbances, drug overuse and malnutrition.

Impaired glucose tolerance is a condition that shows blood glucose levels that are intermediate between normal and clearly abnormal.

Diabetes is often under diagnosed, being more likely to be recorded as one of the major complications of circulatory problems and heart disease (artherosclerosis, stroke, or high blood pressure), kidney disease, retinopathy (damage to the retina), blindness, nerve damage and even foot ulcers (heart attacks and strokes are more common in diabetics due to the increased risk of clogging of blood vessels). Diabetic skin lesions are also a possible long term effect.

Rather the opposite is actually true....

In all forms of diabetes, high levels of blood glucose increase the risk of

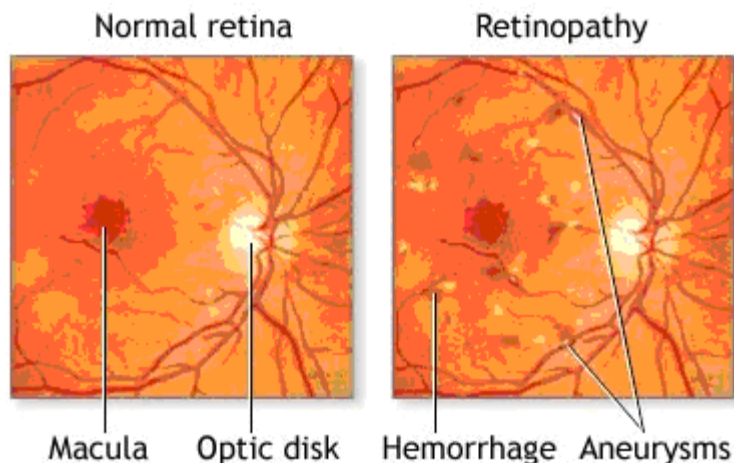


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the above, what are now known to be diabetes-related complications (rather than diseases in their own right).

Diabetic retinopathy is a damage to the retina of the eye that can eventually lead to blindness. It often has no early warning signs. In general however, a person is likely to notice blurred vision, which in some cases will get worse during the day.

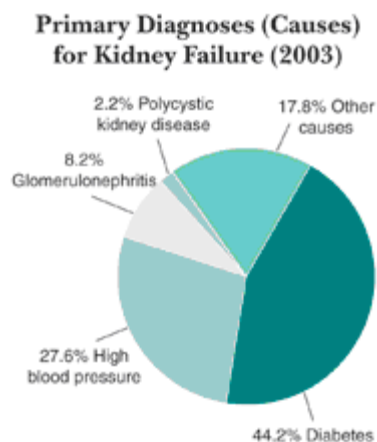
As new blood vessels form at the back of the eye as a part of *proliferative diabetic retinopathy* (PDR) process they can bleed and further blur vision. In extreme cases a person may only be able to tell light from dark in that eye.



ADAM.

(National Library of Medicine (NLM))

These conditions are also multi-generating, i.e. it has been proven that high blood pressure and high levels of blood glucose can themselves increase the risk of a person with diabetes progressing to other severe, potentially fatal complications such as kidney failure...



People with diabetes have an increased mortality rate due to all these consequent complications.

Left untreated (or undiagnosed), or mismanaged diabetes can easily lead to any or all of these long-term damages and major organ failures.

Further Type 1 and type 2 complications

Other complications related to immunity depletion include ulcers, gastrointestinal disorders, genitourinary and sexual dysfunctions. Complications with both type I and II occur when blood sugar levels are not properly controlled. Ketoacidosis (not taking enough insulin, allowing glucose to build up in the blood), and hyperosmolar nonketogenic coma (severe dehydration) are examples.

Complications can be acute and chronic. People with diabetes can suffer both high and low blood sugar episodes. Acute conditions resulting from one or either form of diabetes include:

Hypoglycaemia (or dangerously low blood sugar)

and

Hyperglycaemia (or dangerously high blood sugar).

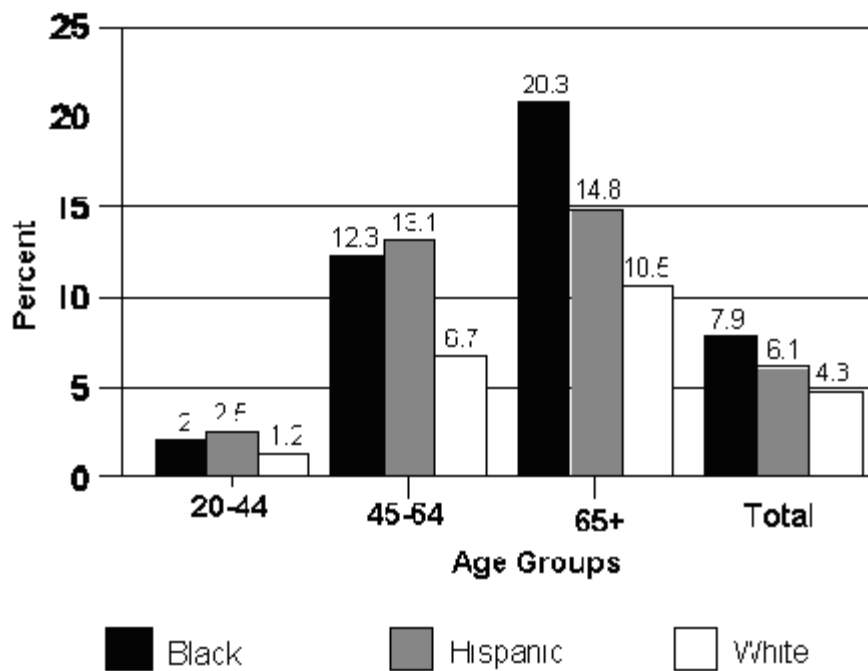
These are both life-threatening and need to be managed and maintained.

Statistics

Over 194 million people suffer with diabetes worldwide. This global figure is estimated to reach 333 million by 2025 if current trends continue. This includes:

- Around 18.2 million diagnosed Americans;
- Approximately 1.8 million diagnosed in the UK;
- 18.1 diagnosed in India;
- 10.3 million diagnosed in China; and
- 13 million diagnosed in other Asian and island areas

Interestingly diabetes is more prevalent amongst black and Hispanic origins than in white people of all age groups. For those 65 years and older prevalence is greater across the board.



- Further undiagnosed people are unaware they have the condition. In some countries this figure could be as much as 80%.
- Diabetes contributes to almost 250,000 deaths a year.
- Diabetic mismanagement causes blindness in 19% of diabetics; kidney disease in 15%; and limb amputation in 17% of diabetics.
- 70-90% of type 2 diabetes sufferers are overweight (a normal weight balance can contribute to a cure).
- Adult-onset diabetes is thought to be accountable for almost ½ of all male impotence.
- Diabetes increases the risk of developing heart disease by a staggering **300%**!

Causes

A lowered natural resistance (immune system damage), and Disruption of natural biological and hormonal rhythms.

The common modern medical approach that matches drugs to symptoms does not completely address many of these factors. As a result, modern medicine often cannot fully remove the disorder and the condition becomes chronic.

Genetic factors are strongly implicated to put you in a high-risk category. However, diet, obesity, nutritional, environmental and other health factors - such as viral infections and autoimmune processes against pancreatic cells (where antibodies created to fight allergies and infections turn against their own body tissues) - are the main contributors and key elements for diabetes development.

Nutrition

Type 2 Diabetes is first and foremost a nutritional disease. Without correct nutritional intake and supplementation the immune system is unable to maintain its proper function. Viral (and other) infections invade, leaving the body weakened, triggering diabetes and associated complications.

Type 2 diabetes, for example, is usually a result of many years of abuse on the digestive system (usually leading to obesity), including high intake of junk foods, fats and preservatives.

Food allergies and sensitivities also lower insulin and increase autoimmune damage.

Optimum vitamins and minerals are the foundation of good health, together with carbohydrates, protein and other essential nutrients. Individuals with diabetes are often lacking in a significant number of these (e.g. most diabetics have low levels of chromium....)

Diagnosis

A glucose test following an overnight 'fast' (and usually 2 hours after drinking a sugar solution) can measure glucose levels accurately. A level of 110 or under is normal. Levels between 110-126 mg/dL would not be full diabetes, but would indicate impaired glucose tolerance (or a borderline reading)... a resistance to glucose.

A glucose level of 126 or more would indicate diabetes.

Type 1 diabetes can be diagnosed by testing body fluids and tissues for auto-antibodies to cells, to insulin, to glutamic acid decarboxylase (GAD65) and to tyrosine phosphatases (IA-2 and IA-2B).

Your healthcare practitioner should go through all the usual medical and genetic checks to give an indication of any high risk factors, your daily routines and any symptoms you may be experiencing.

A urine test will likely be requested initially to check for sugar content, and A blood test, for increased accuracy or confirmation.

You can also do 'home tests' (although they may be less accurate than a doctor's test) by purchasing chemically treated glucose testing strips or electronic measuring devices.

NB: Any diabetic treatment should be started at the soonest possible opportunity, hence the importance of early and accurate diagnosis... Studies have proven that people who have begun therapy early (within 2½ years of diabetes development in the case of Type 1) have reduced their risk of complications, e.g. retinopathy, by up to 89% (as compared to only 70% in people who had a later diagnosis and therefore began treatment later).

Signs & Symptoms

In recent years underlying symptoms of undiagnosed or mismanaged diabetes have become widely ignored in favour of being treated / suppressed as conditions in their own right (e.g. heart disease and high blood pressure are symptoms and warnings of conditions like diabetes).

Hyperglycaemia and Hypoglycaemia

These are the 2 main features associated with diabetes.

Hyperglycaemia is an excessively high level of glucose in the blood, a feature of untreated or inadequately managed diabetes.

Symptoms that indicate a state of hyperglycemia, and a requirement for further investigation into the current diabetic management regime, include:

- **Excessive thirst and urination**, as the excess sugar in your blood increases urine production.
- **Blurred vision**, as high blood sugar levels lead to fluid build-up in the lens.
- **Weight loss**, as your body burns fat for energy when it can't process glucose.
- **Increased and/or unexplained fatigue**, as your cells have no glucose to burn.
- **Increased hunger**, as your body senses the lack of glucose.
- **Tingling or numbness** in hands or feet, as high blood sugar levels damage or irritate the nerves.
- **Sexual problems**, as high blood sugar causes impotence and changes in lubrication, and
- **Skin infections and unhealed wounds**, as high blood sugar causes the immune system to work poorly.

To illustrate the signs more graphically:

HYPERGLYCEMIA

(High Blood Glucose)







Causes: Too much food, too little insulin or diabetes pills, illness, or stress.

Onset: Often starts slowly. May lead to a medical emergency if not treated.



EXTREME THIRST

SYMPTOMS:

 NEED TO URINATE OFTEN	 DRY SKIN	 HUNGRY
 BLURRY VISION	 DROWSY	 SLOW-HEALING WOUNDS

WHAT CAN YOU DO?



CHECK BLOOD GLUCOSE



CALL YOUR HEALTHCARE PROVIDER

Call your healthcare provider if your blood glucose levels are higher than normal for 3 days and you don't know why.

Hypoglycaemia on the other hand is the opposite of this...indicating too low a level of glucose in the blood. This occurs when a diabetic has injected too much insulin, eaten too little food, or has exercised without extra food.

Symptoms of hypoglycaemia are split into 2 categories...Adrenergic and neurological...

Adrenergic symptoms include sweating, palpitations, nervousness and hunger, and are actually helpful signs as they are the first indications that your blood sugar levels have dropped below 60mg/dL, and that you need to immediately eat or drink something to raise your blood sugar immediately.

Neurological symptoms include headaches, lack of coordination, double vision, numbness, confusion and speech problems, and indicate that your blood sugar has dropped below 40mg/dL. Such neurological symptoms are often not noticed by the patient as they are already too

confused to deal with them, therefore these are potentially dangerous signs and needs to be treated with emergency.









To illustrate the signs more graphically.....

HYPOGLYCEMIA
(Low Blood Glucose)

Causes: Too little food or skip a meal; too much insulin or diabetes pills; more active than usual


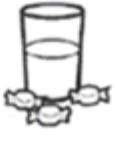

Onset: Often sudden; may pass out if untreated.

SYMPTOMS:

 SWEATING	 DIZZY	 ANXIOUS	 HUNGRY
 BLURRY VISION	 WEAKNESS OR FATIGUE	 HEADACHE	 IRRITABLE

SHAKY **FAST HEARTBEAT**

WHAT CAN YOU DO?

 CHECK	TREAT		CHECK 
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CHECK your blood glucose right away. If you can't check, treat anyway.

TREAT by eating 3 to 4 glucose tablets or 3 to 5 hard candies you can chew quickly (such as peppermints), or by drinking 4-ounces of fruit juice, or 1/2 can of regular soda pop.

CHECK your blood glucose again after 15 minutes. If it is still low, treat again. If symptoms don't stop, call your healthcare provider.

(graphics courtesy of gainesvilletoday)

Hypoglycaemia can occur even in people that try to manage their medications carefully. It can be helped by better insulin management if this is relevant, or by changes of medication if they are the cause (e.g. oral sulfonylureas, Prandin and Starlix can all cause hypoglycaemia).

Without treatment hypoglycaemia can lead to seizures, coma and, in severe cases, brain damage and potential death. Some patients are trained to give themselves glucagon injections (to raise blood glucose levels rapidly) as well as insulin injections, in case of emergency.

Conventional Treatments

Particular attention should be paid to the health of common areas affected by diabetes (i.e. your nervous system, your kidneys and your eyes). Specific nutritional and supplemental advice should include the need to strengthen these areas and prevent any further deterioration.

It is notable that insulin and oral medication may be reduced (or even eliminated in some cases of type 2 diabetes) when the condition is stabilized by weight reduction, exercise, nutritional supplements and sensible food plans.

Type 1 diabetes

Part of the treatment plan for type 1 diabetes almost always requires a daily injection of insulin. It is common to administer a combination of a short-acting insulin, such as Lispro or Aspart, together with a long-acting insulin, such as NPH, Lente, Glargine, Detemir, or Ultralente insulins.

Type 2 diabetes

As well as the possibility of insulin injections (though not as for type 1 diabetes), conventional treatment for type 2 diabetes will depend partly on how elevated your blood sugar is. If it is minimal you may be able to lower your blood sugar level without medication (e.g. by losing weight and/or exercising more).

If it is high, oral medication such as Sulfonylurea or Biguanide may be advised to try to control your blood sugar level. There are numerous potential medications used in conventional diabetic treatment. There are also many serious side effects to be aware of.

Classes of diabetes drugs...

The main Classes of diabetic treatment drugs include sulfonylureas, biguanides, alpha-glucosidase inhibitors, thiazolidinediones and meglitinides... Sulfonylureas...

e.g. glimepiride (Amaryl); glipizide (Glucotrol (XL)); glyburide (DiaBeta, Glynase, Prestab, Micronase)

...acting to force your pancreas to make more insulin (it must already be producing some for this drug to work). Effective in Type 2 diabetes (not Type 1, as they do not work if the pancreas is producing NO insulin).

Studies have shown that these drugs have a tendency to lose effect with time, as pancreatic cells continue to be destroyed.

Common side effects include an upset stomach, weight gain, skin rash, itching, increased sensitivity to sunlight, changes in taste, headache and nausea/vomiting.

More serious side effects can include hypoglycemia, convulsions, unconsciousness and allergic reactions.

Biguarides...

e.g. metformin (Glucophage (XR))

...these drugs improve insulin's ability to move glucose into cells especially into the muscle cells. They also prevent the liver from releasing stored glucose. They are often prescribed for obese diabetics (i.e. people who have become resistant to insulin).

Common side effects include many gastrointestinal problems, nausea and vomiting, especially with alcohol, bloating, gas, diarrhea, possible dehydration, weakness, fatigue, dizziness, respiratory effects and a metal taste.

Biguanides are not used in people who have kidney damage or heart failure because of the risk of precipitating a severe build up of acid (called lactic acidosis) in these patients.

Alpha-glucosidase inhibitors...

e.g. acarbose (Precose); miglitol (Glyset)

...these block digestive enzymes digesting starches, resulting in a slower rise of blood sugar.

Side effects may include stomach problems, diarrhea, gas, bloating, abdominal pain, weakness and headaches. More serious side effects include yellowing of skin or eyes, dark urine, unusual abdominal pain, hypoglycemia.

These drugs are not recommended for people with inflammatory bowel disease, liver or kidney problems.

Thiazolidinediones...

e.g. pioglitazone (Actos); rosiglitazone (Avandia)

...increasing insulin sensitivity/decreasing body resistance to insulin action.

Side effects include liver problems, nausea, vomiting, stomach pain, lack of appetite, tiredness, yellowing of the skin or whites of the eyes, or dark-colored urine, weight gain, muscle pain, anemia, swollen ankles or legs, upper respiratory infections and sinusitis.

If you take birth control pills this drug may make them less effective.

News...

”Troglitazone (Rezulin), a thiazolidinedione that has been removed from the market in the United States and some European countries, has been shown to cause severe liver problems in a small number of people. At present the newer thiazolidinediones (rosiglitazone and pioglitazone) have not been shown to cause liver damage.

However, this may still be a risk.” (US Newswire)

Symptoms of liver damage include:

- >> Nausea, vomiting, and abdominal pain
- >> Fatigue
- >> Loss of appetite
- >> Jaundice, and
- >> Dark urine.

Meglitinides...

e.g. repaglinide (Prandin)

...encourages the pancreas to produce more insulin after meals, i.e. more quickly than sulfonylureas.

NB: because it works fast, you must eat straight away and consume carbs-rich foods, or else blood sugar levels will fall too low.

Side effects include weight gain, body aches, constipation, diarrhea and hypoglycemia.

News...

Antidepressants May ‘Up’ Diabetes Risks

“If you are already at high risk of getting type 2 diabetes antidepressant drugs may boost that risk, according to newly reported research as part of the Diabetes Prevention Programme.

The American Diabetes Association have reported that initial investigations into particular antidepressant types (SSRIS, e.g. Prozac and Aropax) for their ability to CUT the risk of getting diabetes revealed that ANY kind of antidepressant actually BOOSTS risks of developing the disease.” (HealthDayNews, 06)

Examples of oral drugs used for blood sugar control...

Actos

(Pioglitazone)

An insulin sensitizer that is usually taken once a day to increase your

sensitivity to insulin.

Side effects can include headaches, muscle aches, sore throat, nasal discharge and cold symptoms. More serious side effects can include an allergic reaction (difficulty breathing, closing of the throat, swelling of the lips, tongue, or face), hives, nausea, vomiting, abdominal pain, loss of appetite, unusual fatigue, yellowing of the skin or eyes and dark urine.

Signs of hypoglycaemia may also be experienced (i.e. headache, drowsiness, weakness, dizziness, fast heartbeat, sweating, tremors and nausea).

News...

Two Commonly Prescribed Diabetes Drugs May Cause Heart Failure and Fluid Build-up

“Two diabetes medications, taken by more than 6 million Americans, may lead to serious side effects including the onset of congestive heart failure.

Oral drugs such as Pioglitazone and Rosiglitazone can cause or exacerbate heart failure and pulmonary edema. Both medications among a class of drugs known as thiazolidinediones are used for the treatment of non-insulin dependent (type 2) diabetes mellitus.

Researchers report that from discontinuing with these medications and administering diuretics, sufferers no longer exhibited the signs and symptoms of congestive heart failure and pulmonary edema.

The Food and Drug Administration approved Rosiglitazone and Pioglitazone in 1999. The prescribing information indicates that the drugs should not be used by individuals with heart conditions, particularly in combination with insulin.” (Dallas newswire, 03; MayoClinic research excerpt, 03)

Amaryl

A sulfonylurea (increasing pancreatic insulin production) usually taken once a day.

Side effects can include an allergic reaction, chest pain, restlessness, irritability, muscle cramps, nausea, headache, confusion, seizures, skin rashes, itching, redness, irritation, easy bruising or bleeding, unusual weakness, stomach pain, low fever, loss of appetite, dark urine, clay-coloured stools and jaundice. Signs of hypoglycaemia may also be experienced.

Avandaryl

A combination of 2 medicines (rosiglitazone and glimiperide) in one tablet.

Common side effects include backache, acute nasal, throat or sinus infections, the flu, fluid retention and anemia. Rare side effects can include discoloured skin, blurred vision, macular edema, chronic heart failure, inflammation of blood vessels, fluid in the lungs, hepatitis, skin redness, itching, hives, water retention, weight gain, allergy, low blood counts, sun-sensitive skin and diarrhea.

Avandia

An insulin sensitizer usually taken once or twice a day. Side effects include as for Avandaryl.

Byetta

A synthetic hormone that stimulates insulin secretion in response to blood glucose levels, usually given twice a day as an injection. Byetta is also known to slow down the exit of food from the digestive track so you feel full longer, helping to maintain weight.

Common side effects of Byetta include nausea and vomiting, diarrhea, feeling jittery, upset stomach, decreased appetite/food intake and/or body weight, and possible allergic reaction.

Glipizide

A sulfonylurea.

Side effects include as for Byetta above, plus headache, back pain, joint pain, weight gain, increased sensitivity to sunlight, cough or fever. This medication can cause low blood sugar (hypoglycemia).

Glucophage

Bguanide (Metformin)

Encouraging the liver to stop producing too much glucose.

Common side effects include terrible stomach cramps and diarrhea on high doses, nausea, loss of appetite, increased abdominal gas and a metallic taste.

Glucovance

A fixed combination tablet.

Side effects can include nausea, stomach upset, diarrhea, or weight gain. A serious allergic reaction to this drug is unlikely but can occur.

Glucotrol XL

Stimulating the release of insulin from the pancreas. Side effects are as for Glucovance above.

Glyburide

A sulfonylurea, working on the pancreas to increase insulin production. Side effects are as for Glucovance above.

News...

Diabetes Medications May Raise Sunburn Risks

“According to studies performed for the Medicine Shoppe International, Glyburide and Glipizide, common diabetes drugs, can cause photosensitivity reactions, increasing sunburn exposure and damage by a huge percentage.

Diabetic patients on either of these drugs are being urged to read drug labels and consult with their pharmacist or doctor before going out in the sun, and to increase sunscreen to SPF 30 or more, with zinc oxide.”
(Washington Post, 06)

Glyset

A glucosidase inhibitor. Side effects include diarrhea, gas, upset stomach, or stomach pain. A serious allergic reaction to this drug is unlikely but can occur.

Metaglip

A combination tablet. Side effects are as for Glucotrol above.

Prandin

A short-acting insulin secretagogue (an agent that induces secretion). Side effects are as for Glucotrol above.

Precose

A glucosidase inhibitor.

Common side effects can include gas, diarrhea and stomach cramps. More rare side effects can include yellowing of skin or eyes from liver problems, blocked bowels, hepatitis, water retention, and allergic reaction.

Starlix

A short-acting insulin secretagogue. Side effects are as for Glucotrol above.

Insulin

Although insulin is needed for people with Type 1 diabetes, many people with Type 2 diabetes also often need to take insulin, either because of a worsening of their condition, or the successful action of current medication regimes stops.

Insulin must be taken by injection as if taken orally it would be broken down by digestive enzymes before it reaches the bloodstream. New studies are proving the effectiveness of an inhaled form of insulin too. The types of insulin usually used are: short-, intermediate- and long-acting.

Short-acting (or ‘regular’) insulin (usually denoted by an ‘R’ in the title, such as Humulin R or Novolin R, is known as a human insulin, because it is made to be similar to that produced in the body. This is the type of

insulin that is injected around 30 minutes prior to eating, so that it is able to act on the food after it is eaten.

There are also rapid-acting insulins, known as analogue insulins, which have a modified structure which is designed to work faster than regular insulin. These are injected immediately before eating to begin acting on the food within a few minutes (it is therefore obviously very important to eat right after injecting).

Intermediate-acting insulins contain protamine (NPH insulin, e.g. Humulin N, Novolin N), or zinc crystals, which makes the liquid cloudy and slows insulin absorption.

Long-acting insulins (known as ultralente, and shown as a 'U' in the name, such as Humulin U), contain larger zinc crystals, further slowing insulin in the bloodstream.

Side effects of taking insulin can include a susceptibility to hypoglycaemia if insulin is overdosed, or if it is mistimed in conjunction with exercise and diet. Allergic reactions can occur, and eventual insulin resistance is even more common.

Natural Treatments

A diet emphasizing complex carbohydrates, fiber, whole grains, legumes and vegetables may help to reduce the requirement for insulin dependence by slowing and controlling glucose release.

It is also desirable to take professional supplementation that can further support a good diet. However, any such supplement should be addressing more than just blood sugar levels. It is important that ingredients also concentrate on whole organ and body protection, to strengthen against diseases of diabetic complication and indeed to greatly reduce risks of such complications.

Apart from the well known nutrients Chromium and Biotin and their benefits to Diabetics there are many more. Some of these are listed below with additional information.

Alpha-lipoic acid An antioxidant able to neutralize free radicals before they cause oxidative damage, repairing damaged tissue and treating peripheral nerve damage. ALA also improves glucose metabolism (to help lower blood sugar) in diabetics by increasing insulin sensitivity. It is thought to be able to improve blood flow in the tiny blood vessels that supply nerves.

Bilberry Bilberry contains anthocyanosides (responsible for the colors in the flowers and fruits), along with at least 12 other phenolic acids. Evidence suggests that

anthocyanosides strengthen blood vessel walls, reducing inflammation and generally stabilizing tissues containing collagen (the main protein in the fluid matrix of the eye). This helps to prevent eye disease. (NB: Blindness occurs in 19% of diabetic sufferers.)

Corosolic acid A main active ingredient of glucosol. It is significant in glucose transportation from the blood into the tissue cells where it is used or stored. It is an essential part of the metabolic process needed to convert dietary elements into body energy, a mimic of insulin for glucose metabolism.

Green tea Research has found that green tea results in a reduction of the risks of developing diabetes, such as in obesity for weight loss. It has high antioxidant properties and its detoxification ability on the pancreas. One study concluded that people who drank 6 cups or more of green tea per day were 1/3 less likely to get diabetes. The link was stronger in women than in men.

Gymnema sylvestre Scientific evidence continues to conclude its effectiveness in both type 1 and type 2 diabetes. It is one of the most practical herbs for improving blood sugar control in diabetics. Its leaves have the ability to raise insulin levels, possibly due to their ability to help regenerate and revitalize the beta- (insulin-producing) cells in the pancreas. A water-soluble acidic fraction of the leaves (gymnemic acid) also provides hypoglycemic actions. The leaves are noted for lowering serum cholesterol and triglycerides too, a related help to prevention of diabetes-associated diseases.
Extracts have shown no side effects.

NB: In type 2 diabetes some patients have been able to discontinue oral drugs in favour of *Gymnema sylvestre* use.

Inositol D-chiro-Inositol is a rare component present in proposed mediators of insulin action. The metabolism of D-chiro-inositol is abnormal in diabetes and appears to be influenced by short- and long-term metabolic control, therefore supplementation helps to successfully control glucose metabolism. Inositol also increases circulatory ability, helping to prevent atherosclerosis.

Iron Emerging scientific evidence has disclosed unsuspected influences between iron metabolism and type 2 diabetes, where glucose metabolism impinges

on several iron metabolic pathways.

In recent years, increased iron stores have been found to predict the development of type 2 diabetes, and iron deficiency may also increase the development of type 2 diabetes itself....i.e. where excess glucose binds to hemoglobin (the iron-containing part of red blood cells) causing a reduction in oxygen, iron supplementation increases hemoglobin levels and consequently oxygen content.

The study of individual iron susceptibility propose to be valuable in anticipating and treating diabetes complications. NOTE: It is important that the type of iron used in a supplement is not one which will oxidize in the body.

Luteolin

Used in Indian medicine mostly, luteolin is a natural flavonoid possessing strong antidiabetic activity.

Luteolin inhibits alpha-glucosidase and alpha-amylase, suggesting that it can suppress postprandial hyperglycemia in patients with non-insulin dependent diabetes mellitus. (Alpha-glucosidase inhibitors are anti-hyperglycemic agents that inhibit the digestion and absorption of complex carbohydrates, reducing the rise in post-prandial blood glucose). Its glucosidase inhibitory potency has been stronger than that of widely prescribed antidiabetic drugs.

Luteolin also helps in the prevention of diabetes complications...due to its anti-oxidative, anti-inflammatory and vasoprotective properties. It has anti-cataract and anti-obesity actions.

Momordica charantia

Otherwise known as Bitter melon, it is shown to regulate glucose uptake into jejunum membrane brush border vesicles and stimulate glucose uptake into skeletal muscle cells similar to the response obtained with insulin, also helpful for glycogen synthesis in the liver, improving glucose tolerance.

It assists in keeping body functions operating in a normal manner, suppresses the neural response to sweet-taste stimuli and helps to regenerate beta cell function in the pancreas.

At least three groups of constituents found in all parts of bitter melon have clinically demonstrated hypoglycemic properties. These chemicals include steroidal saponins, insulin-like peptides, and

alkaloids. The hypoglycemic effect is more pronounced in the fruit of bitter melon.

Myricetin A naturally occurring flavonoid important in lowering plasma glucose. Myricetin has excellent antioxidant properties and is capable of also modifying LDL cholesterol in a way that improves white blood cell update and modulates glucose absorption. It mimics insulin stimulation and glucose transportation and its excellent hyperglycaemic actions.

Nigella sativa Otherwise known as Black cumin, it has been studied for its effect on insulin secretion. Many studies conducted conclude that it is significant in increasing glucose-induced insulin release from islets in the pancreas.

Piper longum Known as Long pepper this plant is used to improve the immune system. It is a good rejuvenator. It is antibacterial and soothes the nervous system.

Quercetin and Rutin Quercetin inhibits the enzyme known as aldose reductase, which converts blood sugar (glucose) to sorbitol. Sorbitol is implicated in the development of many of the complications of diabetes, including diabetes-related cataracts, retinopathy and neuropathy. (Sorbitol ingested, as opposed to manufactured by the body has no deleterious effects.) Quercetin therefore helps to protect the membranes of the lens of the eye from high glucose damage.

In addition to inhibiting aldose reductase, quercetin may also help control diabetes through enhancing the secretion of insulin, protecting the beta-cells of the pancreas from free radical damage, and inhibiting the aggregation of blood platelets.

Selenium Selenium is an antioxidant mineral thought to reduce oxidative damage commonly associated with diabetes. Selenium has essential functions in glutathione peroxidases and thioredoxin reductases and contributes remarkably to the maintenance of the cellular antioxidative balance. It is significant in the expression of proteins in insulin-resistant type 2 diabetes.

Research indicates that selenium, especially when given in combination with vitamin E, had a significant protective effect against diabetes-associated oxidative damage in the blood, liver (relevant to liver glucose synthesis) and muscle. In addition, patients with diabetes have exhibited low selenium concentrations in their lymphocytes (white

blood cells) and therefore need this essential mineral boost.

Silybum marianum

Commonly known as Milk thistle, this plant could decrease the insulin requirements of diabetic patients, especially suffering with alcoholic liver cirrhosis. It has good antioxidant properties and is effective on hyperinsulinemia, exogenous insulin need and malondialdehyde levels in cirrhotic diabetics.

Sulfur as MSM

Sulfur-containing B vitamin biotin is a critical part of glucokinase, the enzyme involved in the utilization of the sugar glucose. Sulfur is also a component of insulin, the protein hormone secreted by the pancreas that is essential to carbohydrate metabolism. Lack of nutritional sulfur in the diet can result in low production of biological active insulin. Studies indicate, that MSM improves cellular glucose uptake by improving cell permeability, thus balancing blood sugar level and returning the pancreas to normal functioning.

Vaccinium myrtillus

Vaccinium myrtillus L. (blueberry) has been used traditionally in the treatment of diabetes as it has been shown to help drop plasma glucose levels by about 26% (also decreasing plasma triglyceride (TG) levels). It significantly reduces thrombus formation in diabetics, possibly because of its effects on free fatty acid metabolism. Its active constituents may also prove useful in the treatment of dyslipidaemia (disorders of lipoprotein metabolism).

Valeriana officinalis

Hyperglycemia in diabetes mellitus is responsible for the development of oxidative stress, which is characterized by increased lipid peroxide production and/or decreased antioxidative defence. *Valeriana officinalis* acts as a catalyst, significantly reducing diabetic oxidative stress.

Zinc

Development of diabetic complications is thought to be accelerated by the generation of free radicals in cells and tissues. In diabetes oxidative stress is due in part to an increased production of plasma free radical concentrations and a sharp reduction in antioxidant defences. Among the causes of enhanced free radical production, hyperglycemia, hyperinsulinemia and/or insulin resistance.

Zinc has shown over and over in studies to have major potential beneficial antioxidant effects in supplementation for people with type 2 diabetes. These results are particularly important to the use of

Zinc in supplementation.

Pterocarpus marsupium This plant extract has a long history of being used in diabetic treatment in India. It is a potent flavonoid that has been shown to help regenerate beta cells in the pancreas and help to control blood sugar levels as part of a hypoglycaemic action, mimetically similar to that of insulin.

Recommended Products

Option 1:

For assistance in normalizing blood sugar levels and minimizing the damaging effects of diabetes on your organs. Diabet-Eze contains all the specialty nutrients referred to in "

Product	Quantity Per Day	You Need
Diabet-Eze	6 tablets per day	1 bottle per month

Option 2:

For the benefits of Option 1 **PLUS** the extra benefits that Total Balance can provide to your overall health and the added protection it can give you against potential diabetic caused damage:

Product	Quantity Per Day	You Need
Diabet-Eze	6 tablets per day	1 bottle per month
Omega 3/DHA Fish Oil Premium	2 soft gels per day	1 bottle per month
Total Balance	Variable	Variable

Note: It is important when you are using Diabet-Eze that you monitor your blood sugar levels as you may be able to reduce your daily dose rate of this product. If you take insulin it is possible that your amount may be able to be adjusted downwards...but, only after consultation with your Doctor.

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Alternative Healing Academy

[Advanced Color/Crystal Reflexology Practitioner](#) | [Basic Anatomy & Physiology](#) | [Basic Reflexology Practitioner](#)
[Basic Aromatherapy Practitioner](#) | [Advanced Reflexology Practitioner](#) | [Advanced Aromatherapy Practitioner](#)
[Basic Color/Crystal Therapy Practitioner](#) | [Mini Courses](#) | [Advanced ReflexAromatherapy Practitioner](#)

With the increasing popularity of aromatherapy, reflexology, color & crystal therapy and a return to a more holistic lifestyle, people have begun searching for ways to earn more money; expand their skills; improve the health of themselves, friends & family; and increase their knowledge of alternative medicine.

The Alternative Healing Academy has developed several new courses in the holistic health care field for those who would like the opportunity to learn a healing modality at their own pace and in their own homes.

A Doctor of Reflexology with The Alternative Healing Academy is teaching classes with curriculum very similar to the Reflexology Practitioner Course and the Basic Aromatherapy at her local community college.

Our holistic health courses were developed by professionals in the Holistic Health Care field trained in the following modalities: Aromatherapy, Advanced/Master Aromatherapy, Reiki, Tuning Fork Therapy, Color and Crystal Therapy, Homeopathy, Herbalism, and Advanced Reflexology.

Furthermore, since we at the Alternative Healing Academy also realize that not everyone wants to make alternative medicine a career choice, we also offer [basic courses](#) as well as several [Mini Courses](#) which will teach you the skills you need to help improve the health and quality of life for yourself, your family and your friends.

[Check out our Affordable Payment Plans!](#)



All graduates of an Alternative Healing Academy home study course will receive a 20% discount off [AHHA Practitioner Membership](#) if they meet qualifying criteria and join within six months of their graduation date.

About Our Courses

Would you like to learn accurate, detailed aromatherapy, reflexology and/or color & crystal therapy information at your own pace in the comfort of your home? Would you like to become certified in Reflexology, Aromatherapy or Color and Crystal Therapy? An Alternative Healing Academy Distance Learning Course could be what you're looking for...

If you own or work for one of the following:

Natural Foods Store, Aromatherapy Store,
New Age Retail Store, Gift Shop, Herb Store,

Aromatherapy Manufacturer,
Massage Center, Holistic Center, Day Spa, or any type of Salon

If you are a practitioner:

Massage Therapist, Esthetician, Chiropractor, Nurse, Herbalist,
Acupuncturist, Bach Flower Therapist, Body Worker, Reiki,
Doula, Midwife, Energy Worker

If you are interested in personal development or improving the health of yourself and your family - these courses are also for you!

[Advanced Color/Crystal Reflexology Practitioner](#) | [Basic Anatomy & Physiology](#) | [Basic Reflexology Practitioner](#)
[Basic Aromatherapy Practitioner](#) | [Advanced Reflexology Practitioner](#) | [Advanced Aromatherapy Practitioner](#)
[Basic Color/Crystal Therapy Practitioner](#) | [Mini Courses](#) | [Advanced ReflexAromatherapy Practitioner](#)

Common Questions Asked About Holistic Health Distance Learning Courses:

What is Certification?



Most schools will offer an exam that tests the student's knowledge of the material taught in the respective course. Upon successful completion of this exam, a Certificate or Diploma will be issued by the school attesting that the student has successfully met the requirements as specified by that school. The only governmental recognition of Aromatherapy in North America is the occupational title designation granted to the BCAA under the Societies Act of British Columbia.

What is a Certified Aromatherapist or Reflexologist?

Most prospective students want to know whether taking our courses will lead to their becoming 'Certified' in that healing modality, thereby leading to the title of Certified Aromatherapist, Certified Reflexologist or Certified Color/Crystal Therapist. The answer to this really depends on what you mean by 'Certified.' We believe it can be misleading to purport that completing a course in a healing modality such as reflexology, aromatherapy or color/crystal therapy will lead to a designation of 'Certified' Therapist. These are not official

title designations nor are they ones which are recognized by any country's governmental body. All that these titles mean is that this is what an Individual Instructor, School or Institution decided to put on the Diploma it awards those who successfully complete their course.

What is an accredited course in Aromatherapy or Reflexology?

The answer to this will depend on who you are asking. At the present time, British Columbia is the only government to recognize Aromatherapy as a distinct profession and has granted Occupational Title Protection to the members of the BCAA (British Columbia Alliance of Aromatherapy) with the exclusive right for its members to call themselves Registered Aromatherapists (R.A.).

At this time, neither Reflexology nor Color/Crystal Therapy have such occupational designations in any country although one prominent Reflexology school in Colorado, The Modern Institute of Reflexology, has gained occupational designation for their institution in that state. MIR has been designated by the Colorado State Division of Private Occupational Schools - Dept. of Higher Education as an approved school. Our Reflexologist who developed the reflexology modules for our courses was trained at MIR as a Certified Reflexologist, a Master Reflexologist and a Dr. of Reflexology.

In the United States, the NAHA (National Association for Holistic Aromatherapy) has put into place their Approved Standards for Aromatherapy Training. The Alternative Healing Academy's Advanced Aromatherapy course meets and exceeds these standards and we are in the application process of becoming an approved program through the NAHA.

In Canada, there are a number of different Associations including the BCAPA (British Columbia Association of Practicing Aromatherapists) and the CFA (Canadian Federation of Aromatherapists). Time will tell if one authoritative body or association becomes the standard by which to judge and govern the educational offerings of these alternative healing modalities.

It has to be noted that NO form of aromatherapy "certification" is currently recognized in the USA by anyone other than those in the trade, nor is aromatherapy (or essential oils in the aromatherapy trade) regulated by any governmental body.

Some information about the courses we offer:

1) You can receive the course in one of two ways: A cd with the modules and tests in PDF format can be shipped to you; or, The modules can be emailed to you three at a time. Each time you complete the tests for the current three modules, a new set of three modules will be emailed to you.

2) All modules are clearly explained, are in pdf format and fully

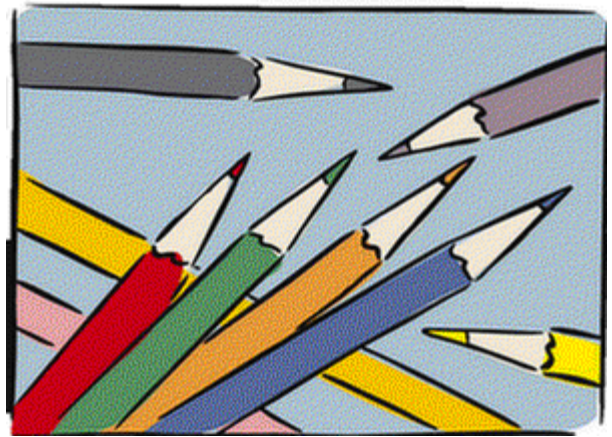
illustrated.

3) The Advanced Aromatherapy Practitioner and the Advanced Reflexology Practitioner courses are designed to meet the National Association for Holistic Aromatherapy (NAHA) guidelines.

4) A tutor will be available via email to answer any questions you may have.

You will be contacted after purchase to find out how you would like your course delivered. All tests for the course can be either emailed or snail-mailed to The Alternative Healing Academy.

Upon successful completion of any full diploma or certification course (with a score of 80% or higher), you will receive a beautiful Diploma, suitable for framing.



Course Testimonials

"I'm done! Going through the final and the case studies and having such amazing experiences and opportunities to help people, I truly feel blessed and honored to have had the intense education that came with this course. I discovered in me a new ability to serve others, not only through education but through the power of healing that comes with the use of essential oils. I am continuing to train personally with Alexandria Brighton and have begun work toward opening an aromatherapy practice. Thank you so much for your patience and knowledge. Most of all thank you for this new way of living and enjoying Life."

-A. Lindquist - Advanced Aromatherapy Practitioner

"I am finding the course great. It is written very well so even people like me can understand the human body a whole lot better. I just hope that I can remember it all. I don't think I have a chance of remembering the names of everything in the muscular system or the movement system. But, I do have more of an understanding of how everything works now. I find it just amazing. Thanks Heaps."

-M. Oliver - Basic Anatomy & Physiology

"This information is great that you are teaching. I would really like to talk my oldest daughter into taking your course. It really goes into detail which is very informative."

-Debbie F. - Basic Reflexology

"Seven years ago I started to see a reflexologist for migraines and sinus problems. I was amazed that I finally found relief without medication. I decided this year to search out a course in reflexology so I could help family and friends and show them the benefits of reflexology. I researched various courses on the internet and decided to go with the basic course through the Alternative Healing Academy. I was impressed with course material and the ease of receiving the course material."

"I was given an choice of having a CD sent to me or to receiving and sending back the assignments through email. I choose email. I received 3 lessons at a time that I could read and study on my own time frame and return the lessons when I was done. Everything was sent in a very timely manner and communication was open and quick. If I needed help, I knew it was only a click away and the response time was very quick. The techniques used also came in a video mode in the email that I could replay as much as I needed to."

"I felt I learned a lot and am able to help myself and others. Being able to log 20 hours of treatment time and writing the case histories for the final exam was extremely rewarding and helpful. I would recommend this course to others interested in reflexology because the course material was very informative and complete and written in easy to understand language."

-Jean Russell - Basic Reflexology Course

"I'm so excited about (the Advanced Aromatherapy course) and I'm particularly excited about the possibility of making custom blends for people! I hadn't anticipated having that opportunity when I took the course so I'm excited to have everything done! I'm very excited to have finished. I really enjoyed this course and really appreciate all the work you've put into it! This has been a fabulous jumping off point for me and I'm so glad I took it."

"p.s. I know the boys are much slower at the Reflexology, but my son is loving the classes."

-Megan P. - Advanced Aromatherapy Course

Our Associations

Organizational Member of the American Holistic Health Association - <http://www.ahha.org/>

Professional & Business Member of the National Association of Holistic Aromatherapy - <http://www.naha.org/>

Professional Member of the International Reflexology Association - <http://www.holisticbenefits.com/ima/international-reflexology-association.html>

Professional Member of the International Aromatherapy Association - <http://www.internationalaromatherapyassociation.com/>

Payment plans are available, please [Click Here for More Info](#)

Sales & Refund Policy

We will, within 30 days, refund the purchase price of any course you purchased ***MINUS* the cost of the modules you have already received**. This policy does ***NOT*** apply to our informational Mini Courses. Please see the [Mini Courses page](#) for more information on those. Please [email support](#) if you wish to be refunded or have questions about our refund policy.