Our Four Major Blood Types

The ABO Blood Groups

There are four major blood types: A, B, O or AB. Your specific blood type is determined according to what chemicals are in your blood. Type As have an A chemical on their cells. Type Bs have a B chemical on their cells. Type ABs have both A and B chemicals on their cells. Type O have no chemicals on their cells.

Each blood possesses a different antigen with its own special chemical structure. Blood types are named for the blood type antigen found on your red blood cells.

IF YOU ARE	YOU HAVE THESE ANTIGEN(S) ON YOUR CELLS
Blood Type A	A
Blood Type B	B
Blood Type AB	A and B
Blood Type O	No antigens

Visualize the chemical structure of blood types as antennae of sorts, projecting outward from the surface of our cells into deep space. These antennae are made from long chains of a repeating sugar called fucose, which by itself forms the simplest of blood types, Blood O.

- Blood Type A is formed with the O antigen, or fucose plus another sugar called "N-acetyl-galactosamine" is added.
- Blood Type B is also based on the O antigen, or fucose, but has a different sugar named "D-galactosamine" added on.
- Blood Type AB is based on the O antigen, fucose, plus the two sugars, "N-acetyl-galactosamine" and "D-galactosamine".

We should consider our blood type as an "immune type" because the antigens in our blood are affected by the chemicals found in certain foods. Known as lectins, these chemicals can alter our blood properties either in a good or bad way.

How Lectins Affect our Blood

What are lectins?

Lectins are protein substances found in food which are carried through the blood stream. Think of them as "molecular velcro" because of their tremendous capacity for sticking to certain substances. For this reason, lectins are used by molecular biologists as probes because they can be sure that the molecules which are attracted to each other will never separate. The best analogy to describe lectins' "stickiness" is to picture two tennis balls which both have giant patches of velcro attached to them. They will not separate unless you pull extremely hard.

Lectins Attack Foreign Invaders

These protein molecules called lectins travel through our blood saying "I choose to stick or I choose not to stick" as their response to what they perceive as being "foreign". When the wrong foods for your blood type are eaten, the lectins stick to the offensive molecules. They then usually attach themselves to one of two undesirable places: 1) the lining of the digestive system, eg. the walls of our bowels or gut or 2) receptor sites of hormones which means that they take up a spot which blocks our real hormones.

The Harmful Effects of Lectins

When lectins stick to the lining of our bowels, they can be easily damaged and inflammation will undoubtedly set in. This often happens with Type Os who eat the wrong grains which aggravate the colon, eg. crohn's or irritable bowel syndrome. In the case of blocking receptor sites for hormones, a person can expect to suffer from any range of conditions whether it has to do with thyroid hormones or an estrogen imbalance. In any case, it is highly undesirable to have lectins causing clumping of our blood cells.

Food lectins can also interact with the surface receptors of the body's white cells programming them to multiply rapidly. These cells are called mitogens. Instead of causing clumping in the blood by gluing cells together (also known as agglutination) they instead attach themselves to things, likes fleas to a dog.

How Food Lectins Interact in the Blood

Lectins in our food come in a variety of shapes and sizes and attach to a different combination of sugars. The result is that the food is either beneficial or dangerous for the different blood types. Dr. D'Adamo has taken lectins from all of the foods mentioned in his book and added them to blood under a microscope. He then watched the cells "agglutinating" or clumping together in the affected blood type.

To illustrate the full effects of what can happen, consider a Type A person who eats a plate of lima beans. *(Refer to diagram.)* The hydrochloric acid in a Type A person's stomach will break down part of the bean but not the lectin protein as it is resistant to the acid. As it doesn't get digested, it stays intact and interacts directly with the lining of the stomach or intestinal wall, *or* it may get absorbed into your bloodstream along with the digested lima bean nutrients.

Once the lectin protein settles someplace in your body, it literally has a magnetic effect on the cells in that region. The cells clump together and are then targeted for destruction as if they, too, were foreign invaders. This clumping can cause irritable bowel syndrome in the intestines or cirrhosis in the liver or even block the flow of blood through the kidneys.

How Dangerous are the Effects of Lectins?

Although about 95 percent of the lectins we absorb from eating the wrong foods are sloughed off by the body, at least 5 per cent are filtered into the bloodstream where they can destroy red and white blood cells. Your individual susceptibility to the ill effects of lectins will depend upon your history. For example, nervous conditions are worsened, eg. schizophrenia or hyperactivity. Improvements will occur once a person follows an allergy avoidance diet. Arthritis will also improve once a person avoids nightshade vegetables known to be very high in lectins.

In summary, an overabundance of harmful lectins can cause red and white blood cells to die as well as change our blood chemistry in such a way as to accentuate the progress of certain diseases and conditions which we are prone to. To illustrate the two "polar" blood types, A and O, it could make a Type A person hypoglycemic and a Type O hyperglycemic. On the other hand, selecting highly beneficial foods which do not produce harmful lectins can do a lot of good, eg. snails for preventing breast cancer (Type A) and kelp bladder wrack for healing stomach ulcers (Type O).

Other Types of Lectins

The clumping or sticking effect also occurs in lectins found throughout the body which are part of our immune system. For instance, cells in our liver's bile ducts have lectins on their surfaces to help them snatch up bacteria and parasites. Likewise, bacteria and other microbes have lectins on their surfaces which work like suction cups to attach to the slippery mucosal linings of the body. This is why colonics is often recommended after parasite or candida cleansing to dislodge the unwanted invaders.

Lectins and Viruses

At one time or another, you've probably wondered why certain viruses or bacteria seem to sweep through one household but not affect another. Whereas it's true that our susceptibility depends a lot upon the strength of our immune system at the time of an outbreak, the lesser known factor has to do with lectins. Viruses and bacteria have their own lectins which can be blood type specific. This means that a virus which is closer to Type A would make a much stickier pest for Type A individuals. Consequently, it's much more of a challenge for the immune system to rid the body of the virus since it more or less views it as being "self" or "friendly". Now a Type B person wouldn't succumb to the virus so easily because he carries the anti-A antigen. This means that anything which appears to look like an A-antigen would be tagged and carried off by the immune system.

The Indican Test for Bowel Putrefaction

The results that a person is obtaining by following their Blood Type Diet can be determined through a simple urine test called the Indican test. In this test, which has been performed in commercial labs for the past 50 years, bowel putrefaction is measured. Considering that the test is (ironically) now being phased out, Dr. D'Adamo suggests that the Indican test will be revived as people begin to better understand the blood-lectin association.

The Indican test measures dietary indoles which are toxic by-products that occur when the liver and intestines don't properly metabolize proteins. They show up when people are having digestive disorders and as Dr. D'Adamo suggests, eating the wrong foods for your blood type will most definitely produce a higher amount of indoles. The following explains how the test is done.

Indican Test *(cont'd)*

In step one of the Indican test, urine is mixed with hydrochloric acid and iron to produce a smoking reaction. Step two involves letting the mixture sit for two minutes, then adding three drops of chloroform. This produces more smoke ranging from clear to dark blue in colour. Finally in step three the color is measured on the Indican scale. A reading of 1-2 is good; 2 1/2 is problematic; and 3-4 is the danger zone.

Strict adherence to the diet would result in a low reading of 0 or 1 on the Indican scale. Of course Dr. D'Adamo encourages people to follow the diet as closely as possible because indiscretions can sometimes result in significant changes in the Indican level. This depends entirely upon the food you select from the avoidance list.

For example, if a Type A person eats the wrong fruit twice a month, the result might not be noticeable. However, some foods such as those which contain the food additive nitrite can have a magnifying effect on toxins. Looking at this in another way, just eating a little bit of this food is the same thing as say eating enormous amounts every day of the fruit we used in the example above. Dr. D'Adamo points out that a Type A person who eats a cured food like bologna would receive ninety times the negative impact. This is due to two things: the toxic effect of the nitrites as well as the Type As person's susceptibility to stomach cancer.

Dr. D'Adamo says that the average person comes into his office with an Indican reading of 2 1/2 which indicates sufficient toxicity to cause problems. The good news is that after following the diet for only two weeks, that level will drop down to 1 or 0 and the client is on the road to wellness.

IF YOU FOLLOW THE BLOOD TYPE PLAN CAREFULLY, YOU CAN

- avoid many common viruses and infections
- lose weight, as your body rids itself of toxins and fats
- fight back against life-threatening diseases such as cancer, cardiovascular disease, diabetes, and liver failure
- slow down the aging process by avoiding many of the causes of rapid cell deterioration

Why Eat According to your Blood Type?

Dr. D'Adamo says that your blood type can predetermine the strengths and weaknesses of your whole being. For instance, Type Os, known as "the hunter", need protein found in meat to prevent a variety of diseases. They tend to have more bleeding disorders than any other blood type. Their stomach linings are weaker due to over-acidity in the stomach and consequently, they have a higher rate of ulcers over other types and are generally prone to digestive complaints. They also have chronic bowel conditions and suffer from inflammatory conditions such as arthritis.

Type As, on the other hand, are known as the "vegetarian type" which if left to subsist on the average North American diet of meat, dairy, sugar and processed fatty foods will undoubtedly be killed by the two leading diseases. This blood type is biologically predisposed to both cancer and heart disease. To avoid succumbing to these dreaded diseases, it is very important for Type As to eat fresh, organic, unprocessed food.

Beware of Lectins

Getting to know your blood type diet well is as important as following it. You will learn that certain foods in your Blood Type Diet "avoidance list" can do you more harm than others due to how powerful the "lectins" are which they carry. If you have a family history of any particular disease, you should be especially careful to avoid the foods which pose the greatest threat in this regard. For example, Type Bs with a history of heart disease should avoid chicken because of an agglutinating lectin which could attack your bloodstream and potentially lead to a stroke. Similarily other immune disorders such as Multiple Sclerosis would have its own dietary offenders. For the Type B, taking extra precautions is highly advisable.

Responding to Other Foreign Invaders

Whenever foreign antigens appear in the blood, the body's immune system is supposed to respond very aggressively to deal with the "invader". As most people living in North American have immune systems which are triggered much too often

Foreign Invaders *(cont'd)*

due to the abundance of toxins in our environment, the desired aggressive immunological response is not always obtained. Our immune systems "get tired" having to respond to the same invaders day in and day out because we haven't recognized that the cleaning products or chemical bug sprays or even perfume that we put on everyday are overloading our immune system.

The foreign antigens can also be the antigens which stem from receiving the wrong blood type, a virus, a bacteria or even food. When the immune killer cells meet up with the invader, the following questions are asked: "Are you my friend or my enemy? Do I have to kill you or leave you alone?" When a person with Type A blood receives a donation of Type B blood, the B antigen in the donor blood reacts with the recipient's A antigens and this is a life-threatening situation because the Type A person' s immune system is trying to kill the foreign invader.

Blood Chemicals Interacting with Food Chemicals

Consider that Type A blood has an A chemical on the cell and Type B has a B chemical on the cell. Food also has similar chemicals which can interact with your blood type. In other words, with whatever you eat, the blood looks to see if it matches and responds accordingly. In today's presentation, you will hear numerous examples of how specific foods cause different reactions in the various ABO blood groupings.

It is interesting to learn from Dr. D'Adamo that the human blood response to food lectins and other foreign invaders can also be found in nature. For instance, he points out that root vegetables and beans have more lectins in them because these crops have had to protect themselves from a wider range of fungus. This example helps us to think of the lectins in vegetables as being necessary for self-preservation. The lectins themselves act as little antibodies which when coming in contact with a fungus understand it to be "foe" nor "friend". Consequently, it attaches to the fungus molecules and calls in the army (the equivalent to our white blood cells) to try and carry it away.

Eat More Highly Beneficial Foods

We need to eat more foods in the highly beneficial categories. For example, meat protein in the Type O individual makes IAP (intestinal alkaline phosphatase) which helps to break down cholesterol. The Type O who eats a vegan diet can have a higher than normal level of triglycerides because the IAP is lacking.

In the Type A individual, soya is very healing. Dr. D'Adamo says that 3-10% of dry weight soya (which is quite high as tofu is mainly moisture) has been shown to clump cancer cells in homeopathic amounts. This means that eating soya can obtain the same good results one would expect from taking homeopathic remedies.

Type As get breast cancer but it's hard to get rid of it because the cancer cells in two common forms of breast cancer are almost like Type A cells. This means that the immune system does not easily recognize it as something to destroy. The lectins in two types of snails are very powerful in attaching themselves to cancer cells in Type A women with breast cancer susceptibility. These individuals should be encouraged to eat petit gris or burgundy snails.

These are only a few examples of many foods which you will learn about during the presentation and as you become more familiar with Dr. D'Adamo's teachings.

Different Grains for Different Folks

Grains are especially challenging for certain blood types. Wheat germ or whole wheat is the most important grain to watch as it has either an alkalizing or acidic effect on the blood type. For Type Os and Bs, it produces an alkalizing effect when the muscle tissues function best being slightly acidic and for Type As and ABs the wheat germ has an acidic effect when the tissues require more alkaline.

Stop Eating "Poisons" on our Avoid List

We also need to stop eating foods listed in the avoid category. Using the Type O diet, here's a few examples to illustrate why. The gluten in wheat germ locks out insulin in the Type Os and insulin resistance leads to Type II diabetes and obesity.

Because of the tendency of Type O blood to be less able to clot, various bleeding disorders are common in Type Os. Foods such as deep water fish should therefore be avoided because they can thin the blood.

These are only a few examples of why everyone should start following their Blood Type diet now. With your Blood Type diets in hand, each person is advised to take the time to highlight those foods in the blood type diet which you have been eating for a number of years which are on your avoid list. It is best to research the reasons why these foods should be eliminated (or perhaps rotated in the diet) and then apply them to your own health history. You will feel much more empowered to follow your blood type diet if you understand the implications and risks of deviating from it and of course, the true benefits of following it.

A note concerning further reading. There is great value in acquiring Live Right 4 Your Type book because it has introduces the secretor sub-types referred to as "secretor" and "non-secretor" as well as insights into the personality types with emotional equalizers, lifestyle prescriptions, and much more. For those who are interested in specifics on medical conditions and how to match herbal and supplement therapies according to blood type, the Eat Right 4 Your Type Complete Blood Type Encyclopedia is also a must read.

Research Finding on Glucosamine

Most animal species have some ABO activity. An animal study conducted at the University of Manchester on the effects of glucosamine sulfate and chondroiton (two popular natural supplements) on joint degeneration determined varied results for different blood types. Glucosamine (a type of amino sugar) works as a decoy model to attract undesirable molecules away from joint capsules in Type As. Furthermore, the study showed that Chondroiton injections caused inflammation in Type Os but not Type As. In other words, the arthritis cure of glucosamine sulfate and chondroitin will not work in Type Os.

Blood Transfusions

You are marked as a specific blood type according to what chemicals are in your blood much the same way that your major Blood group, either A, B, O or AB determines which type of blood you would be compatible with during blood transfusion. Type As have an A chemical on their cells. Type Bs have a B chemical on their cells. Type ABs have both A and B chemicals on their cells. Type O have no chemicals on their cells.

For blood transfusion purposes, this means that Type As cannot receive Type B blood or visa versa because they carry the anti-antigens for each other's blood type. A Type AB person would only be able to give and receive its own blood type because it requires both antigens. Nick-named the universal donor, Type Os can give blood to all of the other types because there are no offensive antigens but they can only receive their own blood to be sure not to receive any antigens.

Dr. D'Adamo says to consider your blood type as an "immune type" because the antigens in our blood are affected by the chemicals found in certain food. In other words, food also contain chemicals which can alter blood properties.

Research Studies

Most animal species have some ABO activity. An animal study conducted at the University of Manchester on the effects of glucosamine sulfate and chondroiton (two popular natural supplements) on joint degeneration determined varied results for different blood types. Glucosamine (a type of amino sugar) works as a decoy model to attract undesirable molecules away from joint capsules in Type As. Furthermore, the study showed that Chondroiton injections caused inflammation in Type Os but not Type As. In other words, the arthritis cure of glucosamine sulfate and chondroitin will not work in Type Os. This is because the chondroitin molecules are similar to the sugar molecules which make up the Type A blood.