

INFORMATION

Inflammatory Neuropathy Support Group of Victoria Newsletter



Issue No.: 117, April 2023

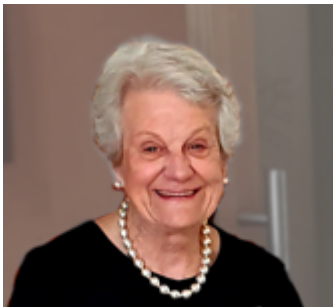
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Newsletter of the 'IN' Group: THE INFLAMMATORY NEUROPATHY SUPPORT GROUP OF VICTORIA INC., supporting sufferers from acute Guillain-Barre` Syndrome (GBS) & Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) and other Inflammatory neuropathies.

Next Meeting

Sunday 21st May 2023 2.00pm
Ashburton Library, 154 High Street, Ashburton

Speaker: *Ben Loh, Physiotherapist* Subject: *Pilates*



FROM THE PRESIDENT

Doug and I were sorry to have missed the last meeting, but we were unable to be in two places at once!

We hear that the address on Blood Groups given by Linda Athans was very well received and a report of Linda's presentation starts on the next page.

Membership Renewal.

This is an early reminder that it is getting near the time to renew membership for 2023/2024 which is due on 1st July 2023. The fee for 2024 has not changed at \$15.00 and we have included a renewal form on the back page of this newsletter for you to use.

I am looking forward to an interesting discussion on Pilates, and meeting up with you all again at our next meeting on 21st May.

With my best wishes to you all.

Margaret Lawrence
President



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FACTS ABOUT BLOOD GROUPS 12 March 2023

Written from speaker notes and a recording taken at the presentation.



Linda Athans

Ms Athans was a Nurse at the Blood Bank (now known as Australian Red Cross Lifeblood) for 26 years. Firstly, monitoring blood donors and later taking up a position in the learning and development section, teaching new staff and leading corporate induction programmes.

Linda has a long family connection to, and interest in, blood through her Great, Great, Great Grandfather who wrote a book about it, and Great Grandfather who was a Melbourne pathologist and Coroner for 55 years and continues to educate through presentations to interested community groups.

Ms Athan’s presentation is information she has gathered from her time at the blood service. She is not a professional but would have loved to have done science in her younger years.

Linda commenced by referring to a chart which showed her blood group and which looked very complex indeed. She then asked members what blood group they belonged to and there was discussion on the various groupings and variations on groupings mentioned.

What is not generally understood is that the blood group for every individual is unique. This is why it is imperative that proper testing and assessment is done prior to administering transfusions which must match your own blood, otherwise there can be strong reactions, sometimes fatal. There are 26 blood group antigens that can cause transfusion reactions.

Linda told us that the human body has 4.5 – 5.5 litres of blood. It is one of the most vital medical commodities. The liquid and its derivatives save millions of lives each year. A liver transplant, for example, requires 50 units of blood. Yet it is a complex resource easily contaminated and bears more than its cultural baggage.

If you consider blood a natural resource, then it must certainly rank among the world’s most precious liquid. A barrel of crude oil sells for about \$98. The same quantity of whole blood in its crude state would sell for more than \$986,000!! Crude oil can be broken down into several derivatives and so can blood when spun in a centrifuge. As with oil and its derivatives, the same quantity of completely processed whole blood would increase its value enormously - a whole blood donation of 1 litre broken down/separated into red cell and plasma units takes the value of that 1 litre into the millions of dollars.

Blood in wartime

No wars have been fought over blood but a major anxiety on D Day (6th June 1944) was whether enough blood could be stored to supply all the projected wounded! Such collections were always secret, since the intelligence service knew that the mobilisation of blood supplies was a sure sign of impending attack.

The Nazis refused transfusions from non-Aryan blood donors, condemning their armies to blood shortages.



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During WW2 as America fought a racist enemy, the military maintained separated blood stocks from black and white blood donors for fear of offending white soldiers’ sensibilities. The New York Times said it all when it stated *“It’s difficult to understand as most southerners were nursed at the breast of their Negro nannies.”*

More recently, the persistent belief that blood products collected from among their countrymen must be inherently pure, contributed to bad decision-making in the tainted blood scandals of France and Japan.

During the first few decades of the twentieth century, medical scientists began to master the resource, learning the techniques for mass collection, storage and the separation of plasma – just in time for the greatest spilling of blood in WW2.

There is an interesting story of co-incidence from the war in the Pacific. A wounded US Navy Gunner, Harry Starner, was receiving some blood plasma, when glancing up at the bottle he saw his name on it. While on leave he had donated blood in Washington DC. That blood had been removed from his arm, separated, freeze dried, packaged, shipped and reconstituted – only to be injected into the same individual, in a completely different form, several months later and half a world away. Amazing.

Information around blood grouping

Anitbody – a protein molecule, produced in response to stimulation by an antigen. Another name for antibodies is immunoglobulins. Antibodies are found in the fluid portion of the blood – the plasma.

Phenotype – an individual’s observable traits, such as height, long legs, blue eyes and blood type. A person’s blood type is determined by both their genotype and environmental factors.

Genotype – your Genotype is your complete heritable genetic identity, the sum of genes transmitted from parents to offspring.

Your blood group – is determined by the genes that you inherit from your parents. Beyond the age of six months, infancy and onwards we all develop natural-occurring antibodies that naturally recognise the blood type that we don’t have – nobody knows why. There are theories that say there is something common in the environment like dust or bacteria that acts as an antigen, because the whole human population makes ABO antibodies without having a transfusion first to stimulate this antibody production.

Blood Groups (ABO) were first discovered in 1901 by Karl Lansteiner and the Rhesus blood group a year or two after.

There have been over 640 blood groups and subgroups discovered now and many are named after the person who discovered them.

See Linda’s blood group chart at right.

My ABO blood group system			My RH Phenotype	My Genotype	
	O		D+C+E-c-e+		R1R1
<u>Kell</u>	<u>Duffy</u>	<u>Kidd</u>	<u>MNSs</u>	<u>P</u>	<u>Lewis</u>
K-k+	Fy(a-b+)	JK(a+b+)	M+N+S-s+	P1+	Le(a-b)
<u>Lutheran</u>			<u>Colton</u>		<u>Wright</u>
Lu(a-)	Bg(a-b)	Kp(a-)	Co(b)	Wr(a-)	

Blood groups do things.



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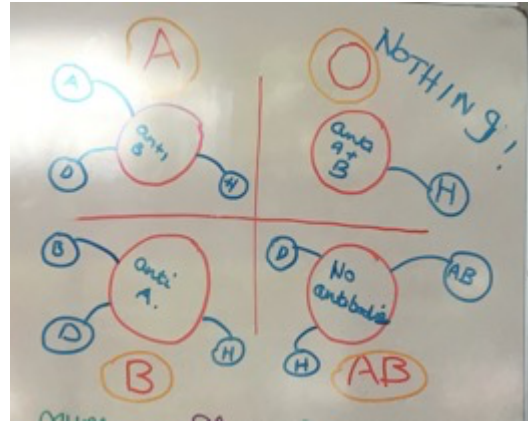


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The ABO blood groups are an important key factor to the body's immune system. It controls the influences of viruses, bacteria, infection, chemicals, stress and the entire assortment of invaders and conditions capable of causing disease and weakening of the immunity. Through its unique antigens it performs as a type of biological gatekeeper.

Antigens

1. Antigens to your blood groups are sugar based and sit on the surface of your red blood cell.
2. For example, if you are blood group A, you are genetically capable of producing an enzyme that can convert the H antigen into the A antigen.
3. In blood group B the H antigen converts it into B blood group.
4. Blood group O only has the H antigen.



Inside the red blood cells (RBC) is your haemoglobin, this substance makes your blood red and is responsible for carrying oxygen round the body to tissues and transports waste products and carbon dioxide from the body cells to the lungs for excretion.

Haemoglobin: HAEM = a form of iron and GLOBIN = a protein.

RBC's are formed in red bone marrow present in the ends of long bones and in flat and irregular bones. If there is a lack of iron there will be a reduction of haemoglobin in the RBC, thus causing anaemia.

It is very interesting to note that many times when people go to donate blood, cancers, heart problems and blood pressure abnormalities are picked up by the staff and donors referred to their doctor for investigation.

Where did the ABO antigens come from?

In ancient populations, that blood group seems to be O.

The Basque peoples between Spain and France, the full-blooded American Indians, the Eskimos, the nomads of the Arabian Peninsula and the Berbers of the Atlas Mountains, the Australian Aborigines and many more old communities are all blood group O.

There are thoughts that blood group A came about with the introduction of the Neolithic Revolution as it introduced new foods and lifestyle and some of the early hunter and gatherers developed a new blood group variation A.

Blood group B is associated with colder climates and appeared around 15,000BC in the areas of the Himalayan Highlands, now part of present day Pakistan and India and it seems to be in response to changes in the environment – it likes cold places. (Linda told us that recently she met an Indian man who said his mother was from the north, and when she asked if his blood group was B he said yes and was quite surprised that she should know that.)



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AB is an intermingling of people with A and B blood groups, is the most recent blood group at the end of the ancient peoples (300AD-800AD) and came about mostly through wars.

It is fascinating to note that virtually all the major infectious diseases that ran so rampant throughout our pre-antibiotic history have ABO blood group preferences.

The Black Plague is especially interesting from a perspective of the ABO group, in this case O.

Malaria, Cholera, Typhus, Smallpox, Influenza and TB have a preferred blood group.

Subgroups

There are subgroups in the system – like different colours of blue.

Subgroups A

20 subgroups of A - including Aint, A3, Ax, Am, Aend, Ael, Abantu, Apae, Alae, Afiin, A1 and A2. Most blood groups of A variants are found in Africa and they probably represent adaptations to local parasites.

Subgroups B

Bv, Bm, Bw, Bx, B5

There are no subgroups of O but there is an interesting thing called Bombay O that has no ABO blood group at all. They don't have the H antigen that is associated with other blood group ABO antigens. Found in India in 1952.

There are over 640 blood group antigens. Whether they belong to a blood group system or not, a blood group can be so common that 99% of us have the antigen in our red blood cells. Or they can be so rare that only a handful of people in the world have the antigen! Never-the-less, all blood group antigens/antibodies share the same characteristics.

- You can make an antibody only if your red blood cells lack the corresponding antigen;
- Apart from the ABO antibodies, blood group antibodies are generally stimulated by blood transfusion or pregnancy;
- Transfusion reaction can be caused by giving incompatible blood and some transfusions can be fatal;
- Some blood groups can cross the placenta and cause destruction of the baby's red blood cells. In severe cases, death can occur.

The Rhesus Blood Group System

- In transfusions, this is the second most important blood group system. It is named Rhesus after the monkey. The antigen on the RBC is the D antigen. There are others as well – C, E and c e. A person who has antigen E must have E negative blood.
- If you are RH+ you have a D antigen on the outside of your RBC = 85% of the world.
- If you are RH- you don't have a D antigen on the outside of your RBC = 15% of the world.

Linda asked who had a negative blood group. Could it be Alien Blood??? This blood group is extremely rare and can kill - why would we have this; where it comes from is not known; is it possible that human beings possessing this blood might be from elsewhere in the universe. What is more, these individuals have been described as having strange personal traits:

- Tend to have green or blue eyes.
- Naturally orange-coloured hair



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- Cool body temperatures and sensitivity to hot temperatures
- Higher level of intuition and psychic abilities
- Easily frightened.
- An extra vertebrae
- Higher than average IQ
- Cannot be cloned!

Because RH(D) Negative people lack the D antigen on their RBC they can produce the antibody, anti D. This can be good for the blood service to make anti D injections, but extremely dangerous for pregnant women. There are two ways this can occur: transfusion and pregnancy. If the female is RH D- and the male is RH D+ and the baby she is carrying is RH D+, then the baby's blood can go through the placenta to the mother. She will commence making antibodies and these can start destroying the baby's RBC and the baby becomes anaemic. This can lead to cardiac arrest in the baby and death. It is called Haemolytic Disease of the Newborn. Luckily today, the woman is given an anti D injection which stops this happening. Females no longer childbearing and males can be given RH blood without endangering their lives. These people make lots of anti D and if they donate blood, 50 injections can be made from one bag.

A Victorian, James Harrison, is called "the man with the golden arm". He was a pioneer of the Anti D programme and has helped 3 million women save their babies! At aged 14 he had major chest surgery; he was given positive blood from many donors and wanted to pay it back. He is RH Negative and made tons of antibodies to D.

Other Blood Group Systems

In one of the minor blood group systems, *Duffy Fya-b-* you won't get one sort of Malaria.

Lewis Blood Group and Secretors

About 80% of the population, secretors are individuals who secrete their blood group antigen in their body fluids such as saliva, mucus, sperm etc. Police can detect the person's blood group if they are a secretor – for example in rape cases.

Even blood group O people can secrete the H antigen.

Lewis a+b- are non-secretors and Lewis a-b+ are secretors.

6% of the white population and 16% of the black population are genetically incapable of manufacturing Lewis in the first place. These people are referred to as "double Lewis negative". These get classed as non-secretors and they are dominant in virtually every human immune system disorder.

Non-secretors

Non-secretors are more prone to:

- Generalised inflammation
- Both type 1 and 2 Diabetes
- Yeast *Candida albicans* in mouth and upper gastrointestinal tracts
- More problems with *Helicobacter pylori*/stomach ulcers
- Increased prevalence of a variety of autoimmune diseases
- Urinary tract infections
- Double Lewis negative individuals have a higher rate of obesity.
- A higher rate of alcohol intake



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Secretor status can influence the accuracy of several common tumor marker tests used to gauge the effectiveness of cancer chemotherapy.

Very rare antigens

Linda gave three examples of very rare antigens:

- Her own – 4 family members in the whole world
- Peters - 9 family members after testing 36,500 people
- Jenson - 1 in 100,000 people

Thalassemia Major, a condition that affects the production of haemoglobin resulting in severe anaemia, is usually diagnosed before a child's 2nd birthday and is treated by regular transfusions. With transfusions every few weeks, the red blood cells must be washed with saline, some as much as 10 times per bag, to remove the counter-antigens which cause transfusion reactions.

Rare blood types have to be frozen and stored for 10 years.

It is imperative that people from all nations donate blood in Australia because of our multicultural society. They have different inherited genes and it is hard to match blood from different ethnic groups.

Blood stores and donations

The Blood bank holds supplies of whole blood, plasma and breast milk, yes, for mothers of premature babies.

Research is conducted on blood crossmatching tissue and blood to assist health professionals - for example if celiac disease is detected that triggers further considerations of appropriate treatment.

There is also a micro bio department for people with severe gut problems where good donor faeces is deposited into diseased patients via colonoscopy.

ABO	Percentage
O+	35%
O-	13%
A+	30%
A-	8%
B+	8%
B-	2%
AB+	2%
AB-	1%

Why a person can or can't donate blood depends on many different grounds including high blood pressure, medication, autoimmune disease and many, many other reasons.

A single blood donation equals 1 litre, it is spun in the laboratory to separate out the plasma which forms 55% of the volume. The Plasma is frozen then cut into sizes appropriate to the future needs. Plasma donation does not deplete iron in blood (red cells).

In concluding a fascinating talk, Linda gave us some final interesting facts:

- All life forms from the simplest virus to humans, possess unique antigens.
- Not every animal has red blood – spiders, lobsters and snails have blue blood.
- The amount of blood in a pregnant woman doubles in the 20th week of pregnancy.
- Our blood contains around 0.2 milligrams of gold as well as iron, magnesium and copper.
- Cows have more than 800 blood groups.
- Mossies are attracted to O blood group.
- A newborn has one cup (250ml) of blood.
- In emergencies, coconut water can be used as a substitute for blood plasma.



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- Autologous blood is that collected from an individual prior to a surgical procedure to be used only for them should they need a transfusion. If this blood is not required by that individual, the blood bank disposes of it, or it might be used in research. It is not given in transfusion to anyone else.
- Blood cells circulate for 100 days before dying, they are 7 microns in size and take just 30 seconds to travel around the body. There are 2.4 trillion red cells in a pint of blood, and manufacture 17 million per second.

John Burke thanked Linda with an appropriate gift. And as usual members mingled over afternoon tea.



FUTURE MEETING DATES TO REMEMBER

Sunday 21st May 2023	2.00pm	Ashburton Library	
	Speaker:	Ben Loh, Physiotherapist	
	Subject:	Pilates	
Sunday 20th August 2023	2.00pm	Ashburton Library	AGM and
	Speaker:	Anne Graham, Blood Matters Project Nurse (SClg)	
	Subject:	Benefits of SClg therapy	
Sunday 10th December 2023	12noon	Ashburton Library	Christmas Lunch

COMMITTEE MEMBERS

President	Margaret Lawrence
Vice President	John Burke
Secretary/Treasurer	Doug Lawrence
Minute Secretary	Mary Clarke
Committee Members	Melva Behr, Gwen McInnes, Brian Boyd




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Membership 01.07.2023 – 30.06.2024

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