

Reflexology and the Cardiovascular system

Where did we leave off? Oh, yes, your nervous, endocrine and respiratory systems are struggling because you're sleep deprived and woke up with a headache.

Unless you're on life support, the heart powers the show, and life support simulates the action of the heart. We have a four-minute window of existence if we stop breathing before there is tissue death.

The heart and blood vessels of the body make up the circulatory system. The heart is the machine responsible for pumping blood through our 60,000 miles of twisting and turning blood vessels. 60,000 miles!

About the size of a fist, and located slightly off-centre to the left side of the body, **the heart beats about 100,000 times every 24 hours.** This is our transportation system for blood.

What is **blood** doing? Produced in the bone marrow, red blood cells carry hemoglobin and oxygenated blood. The **blood delivers oxygen to the cells, picks up the carbon dioxide and brings it back to the lungs.** It's a gas exchange going all the time. Our blood also carries plasma: white blood cells; lymphocytes involved in the immune response. They fight infection and clean up debris.

Arteries take oxygen enriched blood to the cells. The arteries branch off, becoming smaller and smaller and go to the capillaries. This is where the gas exchange takes place. Capillaries turn into small veins and venules. They are picked up and go to larger and larger veins. At this point, the oxygen has been dropped off and carbon dioxide is picked up from the cells as metabolic waste. **The blood transports nutrients, oxygen, wastes, and carbon dioxide.**

All cells require oxygen. The cells of the heart are no different. It needs its own blood supply. The aorta sends off two coronary arteries that circle the heart. Their many branches bring oxygen and needed nutrients directly to the hard-working cardiac muscle.

The arteries are the part that governs blood pressure. There's a difference between arteries and veins. Arteries have a middle muscular wall which the veins don't have. They are capable of contraction and act to regulate pressure by how tight this muscle wall is set. If it's slack, it's low blood pressure, if it's tight, it narrows the channels and creates higher blood pressure. **The aorta is the largest artery, about the size of your thumb!** The aorta leaves the heart and splits into the femoral arteries and then divides.

Unlike the heart, veins don't have a pressure mechanism – a pump. That means they can't push the blood. So, the mechanism to deal with that, is uni-directional valves which prevent back-flow. Remember, **veins bring blood back to the heart.** When the valves are under too much pressure, the blood can back up. For example, varicose veins in the legs. Veins work uphill, against gravity. We don't want blood flowing back down and

pooling into the feet. **The veins, especially in the legs, require exercise to facilitate return of the blood to the heart. Exercise is important for blood and lymphatic return from the legs.** In the upper body, it doesn't seem to be as much of a problem because gravity helps the veins drain downward, but we need those large muscles to contract to help move blood from below the knees.

Lastly, there are two little shunts for the pulmonary and portal systems. The pulmonary shunt is like an off-shoot out of the main system. This is where the blood supply goes to the lungs to pick up oxygen and bring it to the heart – re-oxygenate the blood before it's dumped back into general circulation. The portal system is a shunt that goes to the liver. It's a digestive and detoxification shunt. Everything we digest is filtered through the portal system before going into general circulation.

There are many things that can go wrong. When stressed, the heart rate increases. Medications are often prescribed to slow down or speed up the heart-rate. Pace-makers or ablation is performed to steady an irregular heart-beat. So, that sleepless night and headache? affects the cardiovascular system as well as the nervous, endocrine, and respiratory systems.

There is such emphasis placed on the heart: emotional, spiritual, physical, which can bring its own types of stressors, and we all know the importance of self-care - eat right, get plenty of exercise, drink lots of water, and all will be well. This isn't always the case, and, it's easier said than done, right?

At the end of the day, we do the best we can. Breathing exercises, journaling, meditation, walks in the forest or along the sea-shore, a reflexology treatment. All these things help the cardiovascular system.

There is only the heart reflex. A reflexologist will always do a full treatment because blood is everywhere. It permeates every part of our body.

Next month we look at the digestive system – it's a really big deal!