



OUR RIVER SYSTEMS—THE BLOOD AND LYMPH

We'll flow out of the liver in the blood stream to have a better look at the blood. Actually let's have a look at both of Human's circulatory systems—the blood and the lymph. Let's start with the lymph. The lymph system is the longer circulatory system—at least twice as long as the vessels carrying blood. Human is 75% water and most of that water is in the lymph system—about 12 quarts or liters of clear lymph fluid compared to about 4 to 5 quarts of blood. The length of the blood vessels with all the capillaries is at least 60,000

miles or 96,600 kilometers. That's more than twice around the earth. The lymph system is more extensive, so if we were to explore all of Human's lymph system it would be a loooong journey.



TIME FOR REPAIRS

released them. Too many toxins eventually clogged and slowed the flow of lymph. That's over with now that Human has a healthy lifestyle as the lymph flows along well.

Feel the subtle twisting motion of these lymph vessels. The heart and blood vessels give a boost in flow to the blood but the lymph relies on muscle action for movement. Two things Human does help to boost the flow of lymph. One is breathing deeply and the other is walking or exercise in some form. As we flow along—valves open to let us through, then close to keep us from flowing backward. Our destination is the blood stream.

One of the main functions of lymph cells or the lymphatic system is transporting toxins from cells throughout Human's body. The fluidity of the liver is only partly a result of all the blood being processed—the liver is also laced with lymph vessels. Remember when we talked about the liver valves handling toxins arriving in the portal vein? The lymph was busy removing toxins after the liver cells

The lymph system is also a key part of Human's immune system. Some of the white blood cells are concentrated in the several hundred lymph nodes located throughout Human's body. White blood cells scavenge and electrocute disease-causing viruses and bacteria. The lymph nodes are cleansing depots as the cells neutralize toxins. They are key players in keeping Human healthy.

We're approaching the meeting place where the lymph is dumped into a vein, the thoracic duct in Human's chest. Lymph from Human's body flows into two veins returning blood to the heart. Yet another function of the lymph cells is transporting two key nutrients to the blood. The lymph has picked up some protein and the fatty acids after they were processed and released. You can feel the vitality of the lymph arriving from the small intestines with the fatty acids. We're invigorated here in the thoracic duct with those blazing fatty acids delivering an awesome supply of electrons!

What type of fat do we need? We need fat that comes with a cloud of electrons. We need a small amount of electron-rich fats. That's why we feel an increase in vitality meeting with this lymph flow. The lymph cells, the blood vessel cells and the heart cells all love essential fatty acids with their spark.

"The haze of electrons gives identity and character to each atom and molecule; if the number of electrons is altered, a valuable molecular citizen may, in a split second, be turned into a destructive hoodlum.

"These hoodlums wreak havoc on artery walls."

The Cholesterol Myths,
Uffe Ravnskov, MD

"The wrong fat inhibits breathing, creates tumors and leads to heart failure and joint degeneration.

"The right fat activates breathing, dissolves tumors and builds a healthy heart and joints."

Flax Oil as a True Aid Against Arthritis, Heart Infarction, Cancer, and Other Diseases,
Johanna Budwig

"... the brain tissue of Americans is different from that of the Japanese. American cell membranes contain much higher levels of the less flexible omega-6 fatty acids; Japanese cell membranes are significantly richer in omega-3.

"Other studies have found that depressed patients and children with ADHD and autism are deficient in omega-3. So some scientists speculate that this change in the fatty acids contained within our brains could be causing the modern rise in psychological disorders."

"Feed Your Brain," Jurriaan Kamp,
Ode Magazine, September 2007

What type of fats does Human send down the digestive tube? Human eats a small amount of unsaturated fats. Unsaturated fats or essential fatty acids have longer chains of molecules so it takes longer to process them. That's no problem as long as Human sends them along with their rich supply of electrons intact to keep us humming electrically. We absolutely love electrically-active foods! That means foods as nature intended. There are two essential fatty acids that are particularly rich in electrons. They're called Omega-3 and Omega-6. In order to get healthy Omega-3 and Omega-6 fatty acids to us cells, Human consumes hemp seeds, pumpkin seeds, walnuts and butter leaf lettuce—all rich in Omega 3 fats. We love avocados too with their nutrients and essential fatty acids. We get another type of fat we love when Human has a little coconut oil. Yummers!

We rejoiced when Human started eating whole foods—especially those vital fruits and veggies. Human avoids poultry from factory farmed chickens that are kept indoors their entire lives. With chickens allowed to range freely to eat greens and insects provided by nature, the fat in the meat is more balanced. That's true with beef too when the cows are allowed to graze on grass or fed hay rather than grains. And wild-caught fish has a better balance of essential fatty acids than farmed fish. All Human's cells want me to remind you that we need very little fat. Given a small amount of the right fats, we keep the lymph moving and the heart and artery walls strong ... and we can better keep the liver working well too!

We're moving faster now that we're flowing in the blood towards the heart. Even though blood in the veins doesn't move as fast as in the arteries, we're flowing faster than we did in the lymph stream.

What are we swimming with? If those red blood cells, let's call them, RBCs weren't so tiny, we could climb on them like a raft and ride along this river. The raft shape gives them more surface to collect oxygen to delight, I mean deliver, to us cells. The RBCs don't look so red

THE BALANCE BETWEEN OMEGA-6 AND OMEGA-3

Omega-6 and Omega-3 are Essential Fatty Acids (EFAs) the body doesn't manufacture so we must get them from foods. Traditional foods eaten by our ancestors gave us these two EFAs in the ratio of 2:1 or 1:1 of Omega 6 to Omega 3.

With a modern diet of processed foods and factory-raised animals, the ratio has shifted to between 20:1 and 50:1. Commercial vegetable oils are also high in Omega-6. This imbalance of Omega-6 over Omega-3 leads to degeneration of body tissues, aging and disease.

Dark leafy green vegetables are a good source of Omega-3 EFAs. Other sources are sardines, flax seeds, with some in beef from cows fed only grass or hay. If cattle are fed grains to fatten them, the ratio of EFAs changes to an excess of Omega-6.

in here. That's why veins look like blue rivers under Human's skin—the RBCs have already given up their load of oxygen and nutrients to cells throughout the body. Our destination, after passing through the heart, is the lungs so they can unload the carbon dioxide they've picked up from us cells and load up on oxygen again. RBCs are different from the rest of us cells but we don't hold any prejudices. Our lives depend on them! These cells don't have a nucleus so they can't replace themselves like we cells usually do. New red blood cells are made in Human's bones. The bones must supply about 7 million new RBCs every second. This replaces Human's RBCs completely about every 4 months.

You'll notice there aren't very many white blood cells (WBCs) compared to the RBCs. There's no threat right now so there's only about one WBC on patrol for every 700 RBCs. When Human's blood was particularly heavy with toxins it was like a sewer in here. Cells inside Human's bones have the responsibility to produce white blood cells as well as RBCs. They worked overtime in an effort to handle the harmful pathogens that kept multiplying because of the pollution. Thankfully, it's much calmer and we are flowing more efficiently.

You'll also see cell fragments floating along. They spring into action if there's a leak. Human could bleed to death if not for them as they're a key part of forming blood clots when the skin and a blood vessel have been cut. And this watery fluid that keeps us moving along is called plasma. After we've visited the lungs, you'll see how the oxygen turns the blood red again.

TYPES OF FATS

A small amount of good fats are crucial to transport oxygen (O_2) and nutrients into the cell and expel wastes out of the cell.

SATURATED FATS: Solid at room temperature. Resist rancidity. Examples are coconut oil and butter.

UNSATURATED FATS: Liquid at room temperature. Examples are oils from seeds—flax seeds, pumpkin seeds, and others. These fats easily become rancid and rancid fats create excess and destructive free radicals in the body. To avoid rancidity, the seeds must be carefully processed and the oils always kept in the refrigerator. These good quality oils will only be found in the refrigerated shelving in stores.

Olive oil is liquid at room temperature yet it is unique. The predominant fat is “monounsaturated”. It also has some “saturated” and “unsaturated” fats. Olive oil can be kept at normal room temperature as it does not go rancid as easily as other oils.

Foods, as found in nature, provide a combination of saturated and unsaturated fats.

Hear that thump, thump, thump? We're getting closer to the heart. Now that the liver doesn't have to shut down valves to slow the flow of blood, we're arriving at the heart with a good flow of blood.

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