



## Acupuncture & Natural Health Solutions

### WBC Differential Newsletter

Welcome back to week two of our functional medicine summer series on basic lab tests. When I wrote last week's article, I thought I would just go straight down the lab report and that I would be talking about red blood cells today. However, I decided it makes more sense to skip down to the differential portion of the CBC since last week we talked about white blood cells. We will talk about red blood cells next week. I apologize for the length of this article, but I thought it best to discuss all of the differential at once.

The differential portion of the white blood cells tells us what the immune system has been up to. What sort of critters are in your system that the immune system is targeting and trying to eliminate.

The first category of white blood cells are the **neutrophils**. The neutrophils are all about bacteria. Have you ever had strep or staph? Are these bacteria still in the body? The functional, or optimal, range of neutrophils is 40%-60%. If you don't know what the functional range is, please review last week's newsletter that can be found on my website, click the link: [CBC-WBC-Newsletter-1](#).

If the neutrophil percentage is higher than 60% that means there is a bacterial infection somewhere, usually the gut. Often, we see it as candida, SIBO (small intestine bacterial overgrowth) or H. Pylorii in the stomach. Symptoms of SIBO include gas, bloating and sometimes constipation.

If the neutrophil percentage is less than 40% it means you have a repression of the immune system. Your immune system doesn't have the oomph it needs to mount an immune response. Immune support is recommended.

An interesting side note is that an underlying strep infection is the number one issue seen in schizophrenia and other neurological disorders. Strep lays on the neuro receptors of the brain and creates a mimicking effect and the body starts to attack the receptor sites, leading to expressive psychological disorders.

The next section of white blood cells are the **lymphocytes**. The lymphocyte functional range is 25% - 30%. If your lymphocyte percentage is over 30% you are dealing with a virus. Here we need to put on our detective hat. Have you ever had mono? Have you ever had chicken pox or shingles? Have you been diagnosed with HIV, hepatitis, genital warts, CMV or herpes? Most of the time when you get one of these viruses, especially if it is an envelope virus, they

are never completely eradicated, and your body constantly diverts energy to combatting the virus(es).

If the lymphocyte percentage is less than 25% it means you have a repression of the immune system. Your immune system doesn't have the oomph it needs to mount an immune response. Immune support is recommended.

The next category of white blood cells are **monocytes**. The monocytes are also an indicator of an underlying viral infection. The functional range of the monocytes is 4% - 7%. If the count is above 7%, we want to look for history of a viral infection. If the monocyte count is higher than 9%, there is a good chance that you have an activated Epstein Barr Virus aka EBV from having a previous case of mono. Do you see the word mono in monocyte?

**Epstein Barr Virus** (EBV) is an envelope virus and can wreak havoc on the body. Having a chronic EBV infection can feel like a rollercoaster ride. Some months you may feel pretty good, other months you may feel like you were hit by a Mack truck. Fatigue is a huge symptom with EBV. EBV can be triggered to flare by the COVID virus, Lyme disease, any other type of infection, stress, a poor diet and lifestyle.

An interesting side note, the number one contributor to Hashimoto's thyroid disease is an underlying Epstein Barr Virus.

EBV is typically a lifelong battle, and most people don't even know they are dealing with it. There are extensive functional medicine protocols to try and eliminate the underlying EBV infection and really boost your immune system to handle it. EBV steals your nutrition, especially iron. It is important to check your iron levels regularly, even men and post-menopausal women and supplement when necessary.

If the monocyte percentage is less than 4% it means you have a repression of the immune system. Your immune system doesn't have the oomph it needs to mount an immune response. Immune support is recommended.

The next category of white blood cells are **Eosinophils**. The functional range of eosinophils is anything less than 3%. If the eosinophil percentage is 3% or higher, it usually means you have a parasitic infection and probably some accompanying food sensitivities or allergies.

When the eosinophil percentage is high, it is important to do parasite cleanse. **Stop!** Most people cannot just jump into a parasite cleanse. If you have had any of these underlying infections for any length of time, these critters rob you of your nutrition. If they have been taking all the nutrition and getting strong and you have been getting no nutrition, who is going to win the fight?

Are you going to win a boxing match if you cannot even stand in the ring? Probably not. It is critical that we look at the rest of the labs that we will be talking about this summer to see if you have the nutritional status to win this fight. Often, we need to do a couple of months of boosting the immune system and nutritional status before we can jump into doing a parasite cleanse.

I know parasite cleanses are all the rage right now. I see many people jump into these things and wind up feeling sicker because their body didn't have the liver function or nutrition required to eliminate the parasites from the body.

Parasites eat everything in the system, including bacteria and viruses. When you do a parasite cleanse and kill the parasites, they eject all of their contents into the blood stream, including any bacteria or viruses that they ate. This is what makes a person so sick. You have to have a good working liver and good gut health in order to handle riding the body of the dead parasites. I highly recommend, if you think you need a parasite cleanse, to schedule a functional medicine appointment with me to discuss it further. It is important to do it correctly.

The final category of white blood cells found in the differential is the **basophils**. The functional range for basophils is less than 1 (<1). Anything one or higher also indicates a parasitic infection. If you have basophils that are 2 and eosinophils at 2, that still indicates a parasitic infection. Only one of the eosinophils or basophils need to be out of range to indicate this.

If we want to get really fancy, we can do some math and look at the neutrophil to lymphocyte ratio. It should be 2:1. The neutrophil percentage should be twice the lymphocyte percentage. If that ratio is 1:1 this indicates a tendency toward autoimmune disease. If the monocyte count is high, it could be EBV attacking the thyroid leading to thyroid antibodies. The 1:1 ratio also can indicate parasites. I highly recommend a thorough thyroid panel, not just a TSH, and thyroid antibody testing to see what is happening here.

Another math trick we can do is to add all of the components of the differential together. So add your neutrophil % + lymphocyte % + monocyte % + eosinophil % + basophil %. This should equal 100%. If your number is less than 100%, your immune system is struggling and needs support immediately.

Now I want to be clear about these infections. When we talk about functional ranges, we are catching things before they become emergent and you have severe symptoms, enough to go to the hospital. Most people are not this sick, they just don't feel like themselves and have a variety of low-grade symptoms such as fatigue, brain fog, digestive symptoms, etc.

Often, these viruses and parasites can go into hiding and lab tests can come back negative. It is when you are in a flare, and feeling very ill, that we can usually find these infections on the labs. So, if you go to the MD and you are not critically ill, they may not find anything. They are not trained to tighten up the ranges. They are trained to wait until things are out of the normal range and you can be diagnosed with a disease. Don't wait to get this sick.

If the differential numbers are out of balance, the labs are telling us exactly what is going on and sometimes it isn't important to identify the actual culprit. Sometimes it is. The testing to find the infection can get very expensive, and I find sometimes it is better to put that money toward treatment. Boosting your nutritional status and immune system. Making sure the liver and gut are working well. Then go after the critters.

I hope you find this issue of the functional medicine summer series informative. If you have gone to the doctor not feeling well and they sent you home saying your labs are normal, you might want to pull out the lab report and look at the white blood cell count (WBC) and the differential to see if your immune system is targeting bacteria, viruses or parasites. I am here if you need any assistance, please reach out.

Yours In Health and Wellness,

Toni Eatros, AP