Is the Epstein-Barr Virus a Possible Cause of MS?

by KRYSTINA OSTERMEYER

Epstein-Barr Virus and MS: What's the Connection?

Remember the “kissing disease” from your childhood? Did you have it?

The “kissing disease” is actually called *mononucleosis* – and mononucleosis is an *Epstein-Barr virus* (EBV), or human herpesvirus 4. When Epstein-Barr virus manifests as mononucleosis, it typically occurs in children and adolescents.

And as it turns out, almost 95 percent of adults carry the Epstein-Barr virus (EBV) – but depending on the person, symptoms can vary from *no symptoms whatsoever* to being critically ill. EBV is spread through saliva – hence the nickname, the “kissing disease.”

This all sounds very benign, I’m sure. After all, if it is so common, what does it have to do with multiple sclerosis (MS)?

Well, as it turns out, having mono may increase the risk of developing MS later in life.

What Is the Epstein-Barr Virus?

As we’ve already discussed, the Epstein-Barr virus is the human herpesvirus 4. It is one of eight viruses in the herpes family. There are two strains of the virus – EBV-1 and EBV-2. EBV-1 is thought to cause B-cell growth and proliferation, which is linked to malignant tumors, while EBV-2 is generally a milder form of the Epstein-Barr virus.

Epstein-Barr viruses are spread via the saliva. Kissing is a common means of transmission, but it can also be transmitted through sharing cups, utensils, and toothbrushes. Less common but still possible is transmitted through blood, such as blood transfusions, organ transplants, and through semen.

Once someone has contracted an Epstein-Barr virus, they are a carrier for life – even if it does not make them sick.

The Connection Between Epstein-Barr Viruses and MS

Dr. Annette Langer-Gould, a neuroscience researcher with Southern California Permanente Research Group, noted that “mono consistently increases the risk of developing MS by two- to threefold” in whites, and even more in blacks and Hispanics – up to a fourfold increase.

Dr. Langer-Gould said, “The main theory is that by delaying infection with this common childhood virus into adulthood, it alters the immune system in a way that propagates MS.”

Researchers have believed that mono has increased the risk of MS for decades, and now mono is believed to be

a top risk factor. At this time, Dr. Langer-Gould notes that there is nothing that people who have been exposed to the Epstein-Barr virus can do to mitigate their risk of developing MS.

Epstein-Barr Virus Symptoms

Symptoms of Epstein-Barr viruses include:

- Fever, accompanied by chills.
- Fatigue.
- A sore throat.
- Swollen lymph nodes in the throat.
- Swollen spleen and/or liver.
- Minor aches and pains.
- Loss of appetite.
- Rash.

Do these symptoms seem vague, and a little bit like a cold or a flu? That is because they are very similar. Keep in mind that many people do not have symptoms whatsoever, or that symptoms may be very mild. Those that do experience symptoms may have them very for two to four weeks, but they could last as long as several months.

However, even after you feel better and your symptoms have subsided, the virus has not gone away. It has simply inactivated, “essentially hiding away inside the body’s B-cells.” It is even possible for the virus to reactivate at some point, although it is not very likely.

Epstein-Barr Virus and Other Diseases

We know that Epstein-Barr virus is linked to MS – research has proven this time and again over the years. You may be wondering if it is also linked to other diseases, since it has been linked to MS.

The answer, unfortunately, is yes.

Epstein-Barr virus has been linked to various types of cancers, such as nasopharyngeal cancer, lymphomas such as Burkitt lymphoma and Hodgkin lymphoma, and stomach cancer.

You may be wondering why the Epstein-Barr virus causes cancer and MS in some people, but not in others – after all, it is present in up to 95 percent of people. One would think that it would cause disease in e*veryone* then, right? Fortunately, that is not the case. Unfortunately, scientists have been unable to determine why the virus affects certain people in certain ways.

Prevention of MS (and Other Diseases)

Scientists are hard at work developing a vaccine against Epstein-Barr virus. Developing a vaccine could possibly reduce the risk of MS, as well as various other cancers that are linked to Epstein-Barr virus.

However, creating this vaccine has proven difficult. Why? “A vaccine has been elusive, partly because the virus is so good at hiding.”

There are several vaccines in their clinical trials in Australia, Germany, the United Kingdom, and Hong Kong.

Resources

American Cancer Society (Viruses That Can Lead to Cancer)

Australian Academy of Science (Kissing the Epstein-Barr Virus Goodbye?)

Medscape (Pediatric Mononucleosis and Epstein-Barr Virus Infection)

WebMD (More Evidence Links the ‘Mono’ Virus to MS Risk)