



**Micro-immunotherapy**  
International Medical Experience

# Micro-immunotherapy & Epstein-Barr virus infections

Glandular fever  
(mononucleosis)

Chronic fatigue syndrome

Pain disorders

Autoimmune  
diseases

Cancer

Detect and keep the virus in check

More and more people are suffering from persistent and largely unexplained symptoms such as chronic malaise accompanied by fatigue, recurrent sore throat, partly swollen cervical (neck) lymph nodes, migratory joint and muscle pain and unexplained temperature spikes. The real causes are often undetected. Do you also have a wide range of similar symptoms? Have you or your doctor ever considered the potential impact of the Epstein-Barr virus (EBV)?

## A closer look at the Epstein-Barr virus

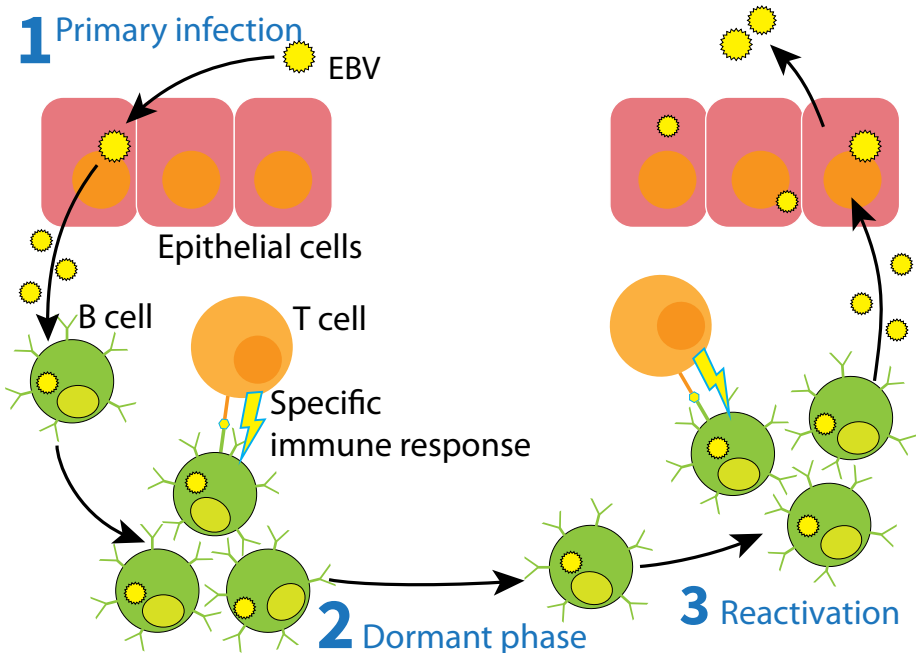
More than 90 percent of people around the world are infected with the Epstein-Barr virus<sup>1</sup>.

The primary infection usually occurs during childhood and the virus is mainly transmitted by saliva or airborne infection. The clinical course is generally asymptomatic or completely harmless. If the infection first occurs during adolescence or adulthood, it can sometimes manifest as glandular fever, also known as mononucleosis. Mononucleosis is accompanied by symptoms such as sore throat, swollen cervical lymph nodes, feverish episodes and severe fatigue.

The tricky feature of the Epstein-Barr virus is that, like many other herpesviruses, it remains in the body for a lifetime after the initial infection. To be more precise, it enters a “dormant state” inside certain immune cells, namely B cells (Fig. 1). EBV is normally kept under control by the body’s own defence mechanisms<sup>1</sup>.

## When EBV evades immune control

However, various factors such as individual predisposition, chronic infections, persistent stress or malnutrition can trigger imbalances of the immune response. Chronic stress in particular adversely affects the body’s defence mechanisms. Studies show that, in periods of psychological stress, e.g. during exams, the immune system is weakened and the risk of EBV transitioning from the “dormant state” to the active replication phase (reactivation) increases<sup>2</sup> (Fig. 1).



*Fig. 1: Simplified diagram of the EBV replication cycle*

- 1. Primary infection:** The Epstein-Barr virus enters the body and replicates in specific host cells, the so-called epithelial cells in the mouth, nose and throat. It goes on to infect certain immune cells – the B cells. These rapidly proliferating, infected cells are largely eliminated by specific defence mechanisms.
- 2. Dormant phase:** Some viruses evade immune control and remain in a kind of “dormant state” inside the B cells following the initial infection.
- 3. Reactivation** (switch to active replication phase): Triggered by various factors, the virus can transition once again from the “dormant state” into the active replication phase. It then infects other cells or is transmitted to other persons. The immune system is also a key factor in bringing the virus under control at this point.

EBV exposure can harm the body on several levels. The infected cells divide more readily and help to spread the virus throughout the body. EBV can also trigger immune disorders by down-regulating the defence mechanisms, for instance, making the body more susceptible to infections. Furthermore, this virus can promote oncological<sup>3</sup> and autoimmune processes<sup>4</sup> via different mechanisms.

Various symptoms (Fig. 2) can appear and the risk of serious diseases (Fig. 3) also increases if EBV remains active over a prolonged period<sup>5</sup>.

	Sore throat and/or swollen cervical lymph nodes		Chronic malaise
	Migratory joint and muscle pain		Severe fatigue
	Unexplained temperature spikes		

*Fig. 2: Symptoms indicative of EBV reactivation*

	Glandular fever (mononucleosis)		Fibromyalgia and other pain disorders
	Recurrent infections		Autoimmune diseases (including multiple sclerosis, Hashimoto's disease, Lupus)
	Chronic fatigue syndrome		Cancer (including Burkitt lymphoma, Hodgkin's disease)

*Fig. 3: Association between EBV and various diseases (a selection)*

## Diagnostic options

If you suffer from unexplained symptoms, it is convenient to rule out diagnostically an EBV reactivation. Doctors and therapists trained in micro-immunotherapy use specific diagnostic methods to establish more precisely whether EBV has entered the active replication phase and if the immune system is responding appropriately.

In addition to a complete EBV antibody test (serology<sup>6</sup>), a specific blood test called lymphocyte typing is generally requested. Various immune cell counts and their ratio are determined in this analysis, that provides a picture of the patient's immune system at a certain point in time. According to the laboratory results and your clinical condition, the appropriate treatment will be chosen in order to regulate your immune system.

## The micro-immunotherapy approach

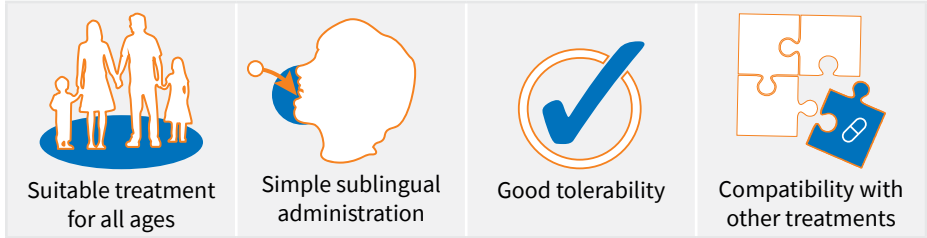
This is precisely where micro-immunotherapy comes into play as it helps to boost the body's own defence mechanisms or self-regulating capacity.

For example, the formula used to treat EBV infections is aimed at inhibiting virus replication and/or infection of other cells via a specific combination of immunomodulatory substances (including cytokines) and nucleic acids in low doses, thereby supporting the function of the immune system at the same time.

Treatment usually lasts for 3 to 6 months, or longer, depending on the patient case, since it takes time to regulate the immune system given its complex structure.

It should also be noted that symptoms may intensify 14 days after onset of treatment due to activation of the immune system. However, once the immune system has regained its strength, it can bring the virus back under control and improve general health in the long term.

Micro-immunotherapy formulas can be used in children, adults and the elderly as they are easy to take sublingually (under the tongue) and have a good safety profile given their low dosage. They are compatible with other therapeutic approaches and can basically be incorporated into any preventive program or treatment plan (Fig. 4).



*Fig. 4: Advantages of micro-immunotherapy formulas*

## Conclusion

EBV reactivation may be responsible for unexplained clinical symptoms you are experiencing. As the related symptoms can be attributed to a variety of clinical conditions, it usually takes a long time to detect the underlying cause. Knowledge is power!

Therefore, ask your doctor or therapist to check whether you are suffering from an EBV reactivation and avoid the risk of repeatedly receiving a wrong diagnosis. If a viral burden is confirmed, micro-immunotherapy is a gentle, sustainable therapeutic option to support the immune system in case of EBV infections and associated diseases.

## Bibliography

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Watch our video:  
“Epstein-Barr Virus, Chronic diseases and Micro-immunotherapy”.



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