

How does BIOPTRON Light Therapy help the immune system?

Light therapy is believed to reduce pain in several ways.

- Activation of cells that target bacteria.
- Activation of cells that digest microbes.
- Activation of cells that attack viruses and tumours.

Is BIOPTRON Light Therapy the same as laser therapy?

No, light therapy is not the same as laser therapy.

- BLT contains light from a wide range of wavelengths.
- BLT emits light that is of low-energy so there is only a minimal heating effect, making the treatment safer.
- BLT devices emit light with a wide beam to allow exposure of larger treatment area.

Is BIOPTRON Light Therapy expensive?

BLT is cost-effective.

Is BIOPTRON Light Therapy safe?

Yes, light therapy with BLT is safe. To date, there are no known adverse effects associated with BLT.

Where can I get more information on BIOPTRON Light Therapy?

Comprehensive information on all aspects of BIOPTRON Light Therapy is available from:

Please add local contact details here:



BIOPTRON Pro 1



BIOPTRON 2



BIOPTRON Compact III

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BIOPTRON Light Therapy is a treatment which serves to boost the immune system and is not a curative measure in the treatment of autoimmune diseases. **BIOPTRON Light Therapy** is best used in the prevention of health problems.

What is the immune system?

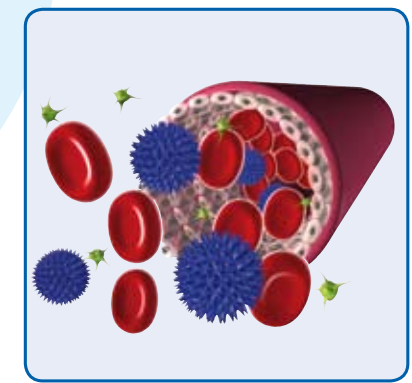
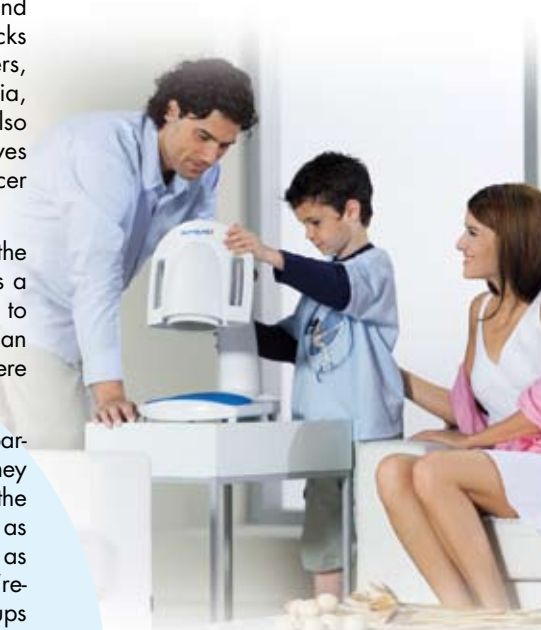
The immune system consists of specialized cells and organs that protect the human body against attacks by 'invaders' from outside the body. These invaders, also called microbes (or 'germs'), include bacteria, viruses, parasites and fungi. The immune system also monitors cells inside the human body and removes any that are damaged (e.g. infected cells, cancer cells, etc.).

There are many different types of immune cell; the cells are divided into groups and each group has a slightly different function. The immune cells 'talk' to each other by releasing special chemicals that can activate other immune cells and direct them to where they are needed.

When invading microbes enter the body, such as particles of influenza virus inhaled into the throat, they meet special types of immune cells that 'patrol' the tissues. These cells identify the invading microbes as being 'foreign' (or 'non-self') and destroy as many as they can. Meanwhile, another type of immune cell 'reports' what is happening and 'recruits' other groups of immune cells to come and fight the invading microbes. Eventually, the microbes are destroyed and their remains are removed. If the immune system did not react in this way, the microbes would cause a massive infection which would be fatal within a few days.

Immune cells can recognize and remember millions of different microbes; a particular group of immune cells (called B-cells) produces special proteins (called *antibodies*) that target known microbes. Each antibody is specific to one type of microbe (e.g. common cold virus).

Many immune cells are made in an organ in the neck called the thymus. The thymus is most active in babies and children, and starts to degenerate after puberty. Other important sites of immune cell production are the bone marrow, lymph nodes and the spleen.



What problems can occur with immune function?

Immune disorders fall into two main types; 1) reduced immunity and 2) overactive immune response.

Reduced immunity occurs when the immune response is impaired or ineffective. This means a person is more likely to get an infection and for the infection to be more severe.

Overactive immune response occurs when immune cells attack healthy body tissues (called autoimmune disease), or when the normal immune reaction becomes massively exaggerated (e.g. allergy, asthma).

What causes reduced immunity?

Reduced immunity can occur for several reasons. Sometimes people are born with genetic disorders that affect their immune system (called congenital immune disorders). Other people acquire immune deficiency, e.g. after becoming infected with HIV (human immunodeficiency virus) and developing AIDS (acquired immunodeficiency syndrome).

Certain types of medication can suppress immune function, e.g. anti-cancer drugs, corticosteroids and anti-rejection medication (given to prevent rejection of transplanted organs).

Reduced immune function can also be caused by poor eating habits (e.g. vitamin/mineral deficiencies), drinking too much alcohol, cigarette smoking, lack of exercise, lack of sleep, mental stress or depression, and increased age. The presence of certain diseases can also decrease immune function, e.g. cancer (including leukaemia and lymphoma), diabetes, viral infection, liver disease and lung disease.

What are the common symptoms of reduced immunity?

The exact symptoms depend on how severely immune function has been impaired and which type(s) of immune cells are affected.

Mildly reduced immune function often results in an increased susceptibility to infection, e.g. colds, sore throat, influenza. More severely impaired immunity can allow infection by microbes that the body would normally destroy, such as fungal and parasitic infections. Severe depression of the immune system can result in overwhelming infection from many types of microbe (e.g. pneumonia, tuberculosis, diarrhoea, severe ulcers of the mouth, skin or gut) and the development of tumours (particularly in the lymph nodes/spleen and skin).



Apply for 4–10 minutes, 1–2 times per day

Can anything be done to improve immune function?

Unfortunately, there are no drugs that increase the activity of the immune system. The only course of action is to try to keep the immune system in good condition by eating a balanced diet, taking regular exercise, not smoking cigarettes, taking alcohol in moderation, etc.

A new and innovative type of treatment that may help to stimulate immune function is the use of LIGHT THERAPY.

What is light therapy?

Light is a form of energy and has 'wave-like' properties; the difference between the various colours of light is determined by their wavelength (Figure 1). Light has been used as a healing tool since ancient times. Scientists now have a better understanding of which components of natural light are useful in the stimulation of healing. This has led to the development of optical devices to produce various types of 'medically useful' light, such as the **BIOPTRON Light Therapy (BLT) System**.

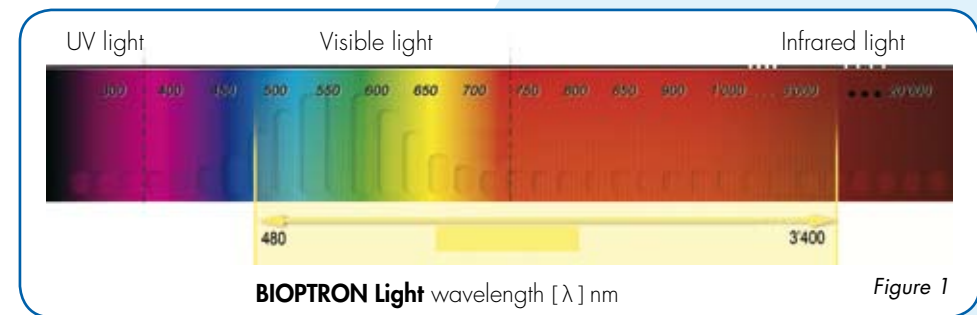


Figure 1

What effect does light therapy have on the human body?

BIOPTRON Light Therapy devices emit light containing a range of wavelengths that correspond to visible light plus infrared radiation, both of which have been reported to stimulate biological reactions. Importantly, no harmful ultraviolet (UV) radiation is present in **BLT**.

When the **BLT** device is held over the skin surface, energy from the emitted light penetrates the underlying tissues (Figure to the right).

This produces a biological response, called photo-biostimulation, causing various reactions within these tissues that may result in the promotion of healing.

