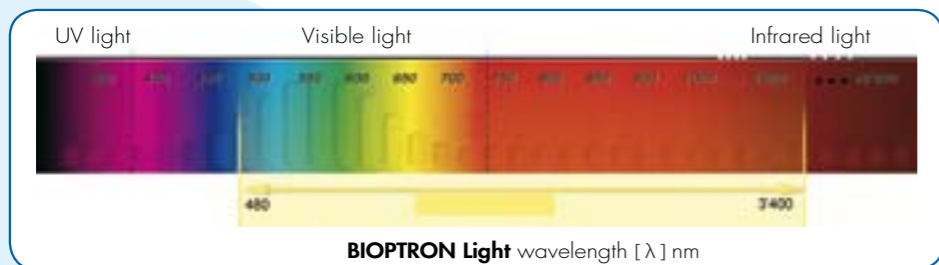


What is BIOPTRON Light Therapy?

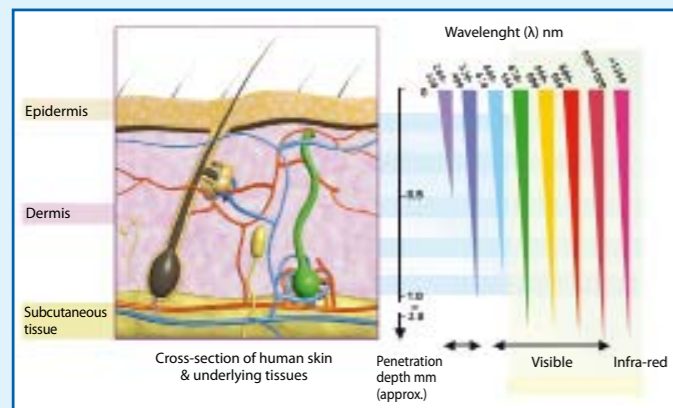
Light is a form of energy and has 'wave-like' properties; the difference between the various colours of light is determined by their *wavelength*. Light has been used as a healing tool since ancient times. Scientists now have a better understanding of which components of natural light are useful in the 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*.



What effect does BIOPTRON Light Therapy have on the 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. This produces a biological response, called *photo-biostimulation*, causing various reactions within these tissues that may result in the reduction of pain and promotion of healing.



Is BIOPTRON Light Therapy the same as laser therapy?

No, light therapy is *not the same* as laser therapy. Light emitted by a BLT device differs from laser light in several ways.

- BLT contains light from a *wide range* of wavelengths (vs. the narrow bandwidth of laser light).
- BLT emits light that is of *low-energy* so there is only a minimal heating effect, making the treatment safer (vs. the high-energy beam from a laser that may generate a great deal of heat).
- BLT devices emit light with a *wide beam* to allow exposure of *larger treatment area* (vs. the usually much narrower beam from a laser).

Is BIOPTRON Light Therapy expensive?

BLT is cost-effective - **ADD COST INFORMATION HERE.**

Is BIOPTRON Light Therapy safe?

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

Please add local contact details here:



BIOPTRON Pro1



BIOPTRON 2



BIOPTRON Compact III

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BIOPTRON Light Therapy has been used to promote wound healing and to relieve pain and inflammation in several types of disease affecting bone and muscle in children. These include various types of arthritis affecting children, deformities of the spine and/or bones in the legs and feet, and injuries such as bone fractures, surgical wounds, etc.

Juvenile arthritis

Juvenile chronic arthritis is a group of conditions of unknown cause that result in joint inflammation in children under 16 years old. The conditions are classified according to the number of joints affected;

- **Inflammation of 4 joints or less**
 - The commonest type (50% cases); usually affects the larger joints (knees, ankles, wrists); often affects one side of the body but not the other (asymmetric); in some cases the spine and pelvis is affected
- **More than 4 joints inflamed**
 - Affects approximately 20% of cases; affects small (hands, feet) and large (knees, ankles, wrists) joints; joint involvement is usually symmetrical; a minority of children have inflammation of the jaw joint, spine, hips and/or shoulders
- **Joint inflammation plus fever and skin rash (called systemic onset)**
 - Spiking fevers accompanied by a bright pink skin rash (mainly on the body trunk); swelling of the liver and spleen often occurs; some children also experience muscle pain

The symptoms and signs include joint pain, stiffness (particularly in the morning) and swelling of the joint area. If the legs are affected, the child may limp.

Non-drug treatment includes physical therapy to maintain joint function and prevent deformity, gentle exercise and hydrotherapy. Children with arthritis and their families need a lot of support from healthcare professionals, both physically and emotionally, in order to cope with the condition. Modifications to the home may be required.

Drug therapy is concerned with controlling pain and reducing joint swelling. Drugs used include pain-killers (such as non-steroidal anti-inflammatory agents), disease-modifying drugs (hydroxychloroquine, penicillamine, etc), immune suppressants (cyclosporin, azathioprine, etc), and corticosteroids (only used in severe disease due to the side effects).

Up to 80% of children with arthritis regain normal joint function and the disease gradually resolves over the years. However, the course of the disease varies in each child and is extremely unpredictable; although most children make a full recovery, some are left with permanent joint damage. Prognosis is worse in children who develop arthritis before the age of 5 years.



Bone deformities present at birth

These conditions are called *congenital deformities* and they usually affect the spine, legs and feet. They include the following;

Spinal curvature – scoliosis

- Scoliosis refers ‘sideways’ curvature of the spine (i.e. from left to right, or right to left, in an S-shape); it can occur at birth or develop during childhood; it may be due to bone abnormalities, bone disease or muscle spasm.

Symptoms include pain and impaired breathing; treatment is usually by bracing the spine to hold the body in the correct position.

Congenital hip dislocation (CHD)

- In this condition the bones of the hip do not fit together as tightly as they should; the cause is unknown; CHD occurs in approximately 3 children in every 2000 live births in Europe.
- If this condition is detected soon after birth and treated promptly, the outcome is usually a completely normal hip; delayed diagnosis can result in severe damage to the hip joint as the infant grows older and starts to weight bear; treatment is via splinting the hips into the correct position to allow normal hip joint development.

Foot disorders – Talipes equinovarus (‘clubfoot’)

- The foot is fixed turning inwards and downwards; this condition occurs in around 1 child per 1000 live births but is far more common if a close relative has had the condition; boys are more likely to have the condition than girls, and half of children affected have the deformity in both feet.
- Treatment is a combination of gradual manipulation, application of strapping/plaster cast and surgery; treatment may take 5 years or more to place the foot in the correct position.

Traumatic conditions

Traumatic wounds can include those made intentionally during surgical procedures (surgical incisions) and those made ‘accidentally’ (cuts & bruises).

Surgical wounds

- The edges of a surgical incision are closed using sutures or staples (or sometimes even special glue!); this helps the wound to heal more quickly and with less risk of scarring; complications include wound infection, delayed healing and scarring.

Non-surgical traumatic injuries

- These include incisions (cuts), lacerations (rough tears) and contusions (bruises), sprains (injury to a ligament) and strains (injury to a muscle or tendon).
- The main symptoms are pain and swelling (+/- bleeding); there may also be difficulty in movement if the injury involves a joint; these types of injury are very common in children.



Apply for 2-3 mins. 2 times a day.



BIOPTRON LIGHT THERAPY is a new and effective treatment for relieving the symptoms of allergic eczema in children.

BIOPTRON Light Therapy in children

- Studies carried out in various hospitals and clinics found that BIOPTRON Light Therapy was effective, safe and simple to use in children.
- Because BIOPTRON Light Therapy is quiet and painless, children were not afraid of it
- Parents were happy with BIOPTRON Light Therapy and with the results obtained.

What effect does light therapy have on the body?

Polarized light therapy has been shown to stimulate the complex process of wound healing. The biological effects reported include stimulation of cell proliferation (fibroblasts), release of various growth factors, stimulation of collagen synthesis, acceleration of wound closure, increased wound epithelialization and improved tensile strength of scar tissue.

Polarized light therapy is believed to reduce pain sensation in several ways.

- Improving local blood supply & reducing muscle spasm, thus reducing stimulation of pain receptors.
- Reducing the release of chemical messengers that stimulate pain receptors (anti-inflammatory effect).
- Inducing the release of natural pain-killing agents.
- Direct action on nerve fibers to prevent transmission of pain impulses.

How do I use BIOPTRON Light Therapy if my child has a musculoskeletal disorder?

It is so simple! BIOPTRON Light Therapy is completely safe and easy to use.

The BIOPTRON Light Therapy device can easily be positioned so the healing light shines on any areas affected (spine, arm, leg, hand, foot, etc). Treatment should be applied to each affected area for 4 to 6 minutes per session and for 1 to 2 sessions per day for as long as required until improvement is observed.

