Red Light Therapy

Red Light can be incorporated into a massage session for any type of imbalance, injury, disease or stress that a dog may incur. When applied correctly it can accelerate the healing process by 60-80%, provide pain relief and comfort.

Why Red Light?

Red light therapy is the most widely researched up to date. Visible light ranges are from 400-700nm which is where most of the research has been focused. Wavelengths below 400nm (ultraviolet) do not have the ability to penetrate the tissues very well and can contribute to melanoma formation. Wavelengths above 700nm are considered infrared. Infrared photons have less energy , requiring longer application time and additional risks.
The power output of the light source is also extremely important. Not enough will limit results but too much power also limits benefits.

How It Works

Red light wavelengths within a very specific nanometer range that comes in contact with skin will activate the mitochondrial respiration chain. This results in the release of nitric oxide (NO) from the cytochrome c oxidase (CCO). This respiration chain supplies the cell with energy in the form of adenosine tri-phosphate (ATP). This causes blood vessel's inside walls to relax and widen resulting in more blood flow to the tissues. With increased ATP, damaged cells can accept nutrients faster and eliminate toxins. ATP also triggers the body to release endorphins, enkephalins, anti-inflammatories, serotonin and more. It also induces phagocytosis, where an M1 turns to an M2 and goes from being pro-inflammatory to anti-inflammatory . Phagocytes overtake and eliminate microorganisms, foreign antigens and cellular debris.

Part of the respiration chain where ATP is produced improves serotonin. Serotonin plays a part in wound healing since it is a growth factor for some types of cells. It aids in muscle release, wound healing, blood clotting and increased well being. As a monoamine neurotransmitter, 80% of serotonin is found in the enterochromaffin cells in the gut, which regulates intestinal movement. The other 20% in synthesized in the neutrons in the central nervous system. Once in the central nervous system, serotonin can regulate mood, control appetite, sleep and muscle contraction. Memory and learning are also effected by serotonin levels. Serotonin can end up in the bloodstream once secreted from enterochromaffin cells in the gut and stored by platelets. The discharge of serotonin occurs when platelets bind to a clot, helping to regulate homeostasis and blood clotting.

The endothelium in our blood vessels release nitric oxide (NO). We have good levels of NO through exercise and low cholesterol. NO is beneficial for dilating blood vessels, increasing blood flow, decreasing plaque growth and blood clotting. A healthy immune system depends on NO which is released when our white blood cells eat pathogenic

microbes in the body. Higher levels of NO result in white blood cells able to fight off virus and bacteria more efficiently.
Gastrointestinal function ,smooth muscle function and erectile function rely on neurones that are stimulated by the release of NO.

Collagen within damaged tissue can also become excited with red light application, allowing body to repair faster. Representing 70% of the protein in the body, it connects and supports skin, bones, tendon, muscles and cartilage. Without collagen the body would fall apart.

Red light therapy can be a very effective tool for injured, diseased or unbalanced tissue.

How is red light therapy used

Red light therapy be used to relax muscles, fascia, and vessels of the body. It is most beneficial to assist in the relaxation of body parts that are tight. For instance, the muscle belly, or the origin or insertion of a muscle, tendons or ligaments. This will bring energy, circulation, pain relief and faster recovery. The fascia is a huge system of the body that can constrict and cause pain imbalances throughout the body. Red light can be used to soften these restrictions. Two of the most powerful and impactful fascial release areas are the front fascial release and rear fascial release points.
Often illuminating two key areas at the same time can “bridge” energy and accelerate results and impact a larger area. Use use of two lights can connect meridians and clear energy channels.

You can get great results from simply applying the light where the pain or injury is. It is also beneficial to illuminate the opposite part of the body that is experiencing pain in addition the side that is painful. For instance if the left front leg is sore then you should also apply the light to the right front or both sides of back should be addressed not just the injured side. This helps prevent injury to the opposite leg or body part that is taking on more stress or weight otherwise known as compensation.
Acupuncture points can also be illuminated. Using light is ideal for this and areas that may not be possible to stimulate with a needle. Acupuncture points have been mapped out for certain conditions such as arthritis and are one of the most effective ways to use light therapy.
By creating an increase in blood flow to any given area of injury or imbalance, the body can heal itself.

Some of the proven benefits of Photonic Red Light Therapy:
-reduce pain within minutes
-strengtens anti-viral properties
-increases cellular regeneration and healing
-anti-inflammatory
-increases collagen production
-increases lymphatic drainage and circulation