



EMERALD WELLNESS
Integrative Pain
Therapies

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This book is provided to educate one about the health benefits
of **Integrative Pain Therapies**

Please take it, read it, and pass it along.



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Integrative Pain Therapies

EMERALD WELLNESS

Chronic Pain is a complex problem that afflicts millions of individuals all around the world. In fact, it is the most prevalent public health problem in North America, affecting over 100 million adults. Conventional medical practices are able to help many individuals whom suffer from chronic pain, but unfortunately there are countless people who do not receive adequate relief from conventional medicine alone. Furthermore, reliance on painkillers and invasive surgeries can have adverse effects on patient health. At **Emerald Wellness**, we recognize the importance of conventional intervention for pain management, but also some of its current limitations. There are several well-researched and powerful integrative corrective treatments which can facilitate lasting pain relief and healing, without the dangers of painkillers and surgery. Some of these **Integrative Pain Therapies** include **Shockwave Therapy**, **Low Level Laser Therapy**, and **Prolozone Therapy**. This book will examine these therapies and discuss their therapeutic effectiveness for addressing acute and chronic pain.

A medical doctor, whom is well-versed in conventional medicine and integrative health treatments, can make the use of integrative pain therapies a vital tool in optimizing functionality of the human body and improving quality of life. Many Integrative Pain Therapies can be used as an adjunct to conventional medical practices or as the sole treatment solution, depending which treatment model is discerned to be most optimal for the patient's health. What makes many integrative Pain Therapies so powerful, is their ability to stimulate the body's own natural healing mechanisms in order to reduce pain, fight inflammation, and restore proper function. Chronic pain can be a severely debilitating condition and the more tools we have to fight it the better.

Introduction

The causes for acute and chronic pain conditions are multifaceted and complex. There are several effective clinical treatment strategies which can be employed to target difficult to treat pain.

Pain can be an extremely debilitating and frustrating condition which affects multiple aspects of an individual's life. What could have begun as a 'normal' painful response to an injury or illness sometimes persists long after the affected tissue or bone has healed. In some cases, pain may seem to arise out of nowhere, in the absence of any perceived trauma to the body. This could be due to an immune condition, neurochemical changes in the brain, or many other conditions, but it is still painful nonetheless. When one suffers from chronic pain there are often many distressing emotions such as anxiety, grief, sadness, fear, resentment, and feelings of powerlessness the individual must constantly contend with. Furthermore, pain can negatively affect one's sleep quality, appetite, energy, concentration, sex life, ability to exercise, and functioning in everyday life. So, pain while being a problem in itself, also has the ability to negatively affect our emotional and physical health.

Fortunately, there are many excellent treatment options available for addressing acute and chronic pain conditions. The possible treatments for chronic pain can be as diverse as the causes. They can range from over-the-counter and prescriptions drugs, to mind/body techniques, physiotherapy, acupuncture, or even surgery. The first step in pain management should always be to schedule an appointment with a qualified doctor to determine the cause of your pain and learn

which pain management approach is often the most effective for addressing it.

Today more and more doctors are beginning to seek out integrative pain management strategies which do not rely as heavily on pharmaceutical and surgical interventions. While painkillers can be effective for masking symptoms of pain they often do very little to rectify the actual cause of the pain. Furthermore, opioids and benzodiazepines (commonly prescribed painkillers) are extremely addictive and often require higher and higher doses to remain effective at relieving pain in patients. The over prescribing of painkillers in North America has led to an opioid addiction epidemic, which is forcing the medical community to seek safer and more effective pain management solutions for the population.

Often there are lifestyle changes an individual may undertake to mitigate chronic pain. This can include anti-inflammatory diets, decreasing refined sugars, practicing yoga and pain reducing exercises, cognitive behavioral therapies, meditation, and much more. Simple things like supplementing with natural anti-inflammatory compounds, such as curcumin, instead of constantly taking Tylenol can be extremely beneficial for your health. Over the counter pain killers have their uses but overuse is associated with many health problems and reduced effectiveness. Since, pain is both an unpleasant sensory and emotional experience, strategies which help the patient

relate to their feelings of pain in different ways can have great therapeutic effects. There are many great lifestyle changes an individual can make to combat issues of pain. Often a combination of life-style modifications and different clinical treatments have the greatest patient outcomes for eliminating chronic pain.

Sometimes conventional medical interventions fail to provide lasting pain relief because they do not address the root cause of what is causing the pain in the first place. Painkillers can have great analgesic (pain relieving effects) but more often than not simply mask the symptoms of the real problem. In order to achieve true healing and lasting relief from pain it is important to utilize medical interventions which work to facilitate the body's own healing mechanisms and remedy the source of the pain. There are several effective healing technologies which are able to do just this.

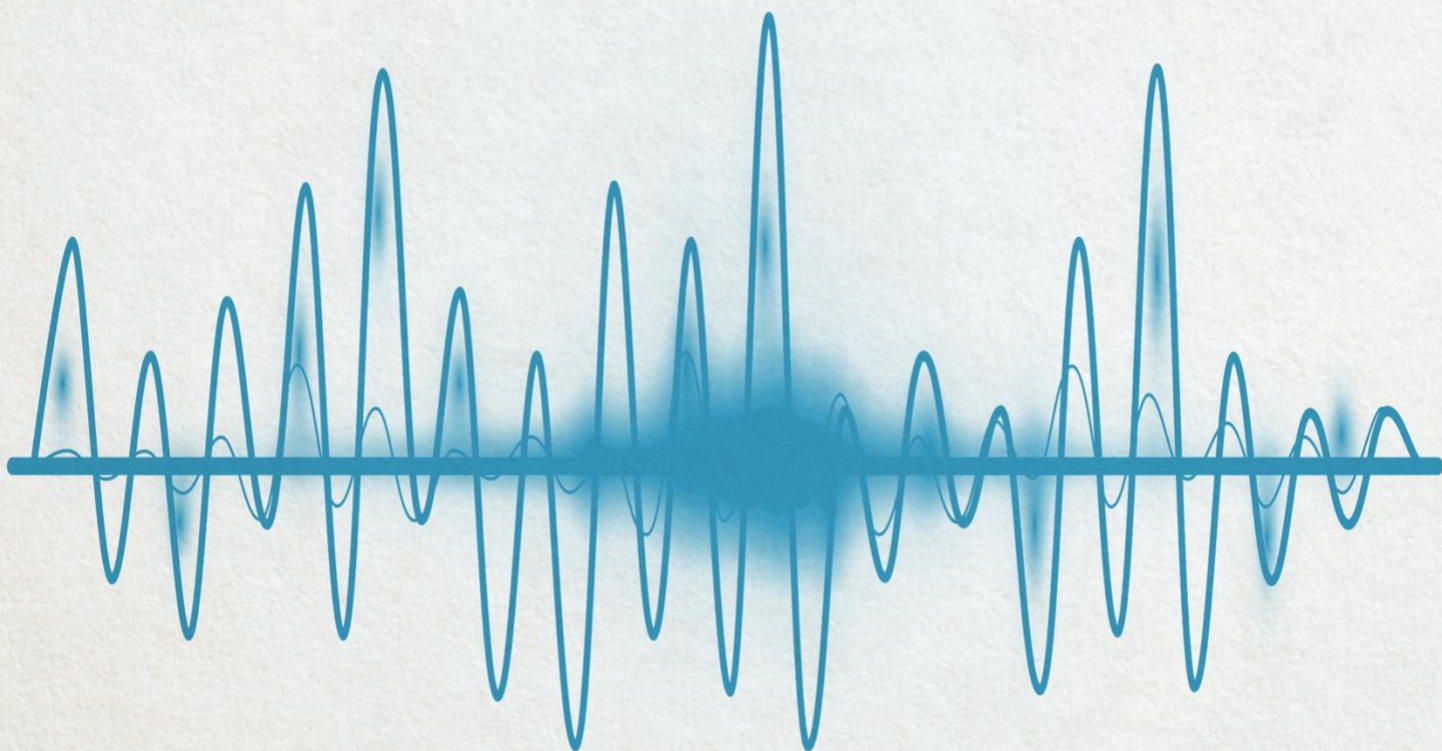
Some treatments involve introducing therapeutic energy to the cells, and tissues in the body in order to stimulate positive biological reactions and eliminate pain. Examples of this include Shockwave Therapy and Laser Therapy. **Shockwave Therapy** utilizes acoustic soundwave energy, and **Laser Therapy** utilizes specialized light energy, in order to produce regenerative and pain reducing effects at the affected area. Other therapies involve the administration of therapeutic compounds into the body such as medical ozone in **Prolozone Therapy**. Ozone is able to stimulate the regeneration of tissue, is anti-inflammatory, and increases oxygen and blood flow to the affected area, which all work to heal and reduce pain.

What these three treatment modalities have in common is that they seek to remedy the source of the pain while at the same time providing pain relief; instead of just the latter. They are also non-invasive procedures with almost non-existent adverse side effects and do not require dependence on pharmaceutical drugs. Shockwave, Laser, and Prolozone have an excellent track record for providing positive patient outcomes across a wide array of pain conditions. This book will examine the effectiveness and application of these integrative pain management strategies.

These three integrative pain management strategies are by no means the only beneficial treatment options available to chronic pain sufferers today. They do however stand out in their effectiveness, safety, researched clinical applications, and ability to improve pain conditions for individuals all around the world. They can be used as the sole treatment option, synergistically, or in conjunction with other treatment modalities for pain.

Whether your pain is from arthritis, cancer treatments, fibromyalgia, an old injury, or any other reason, steps need to be taken to manage, and ideally, eliminate that pain. As stated before pain can negatively disrupt many aspects of daily life and health. Working with a qualified doctor to develop a comprehensive treatment strategy which addresses the specific healing requirements for your condition is of paramount importance. Chronic and acute pain can cause needless suffering in the lives of many individuals. Fortunately, there are many effective strategies to help relieve this suffering and facilitate proper healing.

SHOCKWAVE THERAPY



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Extracorporeal Shockwave Therapy

Extracorporeal Shockwave Therapy (ESWT) is a very efficient, non-surgical treatment for acute and chronic pain which utilizes high energy soundwaves to stimulate healing deep within the body.

Shockwave Therapy is an excellent integrative approach to pain which yields great results in clinical practice. Most patients with chronic pain issues have been through various unsuccessful treatments, whether this be prescription medications or other therapies. This being said, as many as **80%** of the same patients worldwide report that Shockwave Therapy has helped them eliminate their pain problems. 80% patient satisfaction in relieving chronic pain issues is quite an impressive feat.

Shockwave Therapy is a multidisciplinary therapy used in orthopedics, physiotherapy, sports medicine, urology and veterinary medicine. Its primary functions are to provide fast pain relief and mobility restoration to affected areas in the body. The fact that it is also non-surgical and can help the patient reduce reliance on painkillers, can make Shockwave Therapy an ideal treatment to speed up recovery and cure various indications causing acute or chronic pain.

This therapy works by introducing high-energy acoustic sound waves to painful areas and triggering therapeutic biological reactions in the body which reduce pain and stimulate healing. As Shockwaves deliver energy to painful musculoskeletal tissues, they promote regeneration and reparative processes of the bones, tendons and other soft tissues. Shockwave Therapy is one of the most advanced and effective non-invasive treatment methods for pain cleared by the FDA and government of Canada.

Shockwave therapy can be used to treat a wide variety of pain conditions and improve patient quality of life. Beneficial effects are often experienced after only 1 or 2 treatments, with many conditions requiring around 3-5 treatments for complete healing. This powerful pain management therapy works to provide analgesic effects, while treating the underlying causes of the pain at the same time. We will now delve into how it is exactly that acoustic soundwaves are able to stimulate healing in the body.

Medical Effects of Shockwave Therapy

Acoustic sound waves with high energy peak used in Shockwave Therapies are able to interact with tissue causing positive medical effects, such as accelerated tissue repair and cell growth, mobility restoration, and analgesia. The therapeutic effects to be examined are typically received simultaneously during treatment.

New Blood Vessel Formation

Adequate blood flow is required to stimulate and maintain the repair processes of damaged tissue structures. Without sufficient blood flow critical oxygen and healing factors, such as nutrients, are unable to saturate the injured area and facilitate restoration. The introduction of acoustic waves to the body creates capillary micro-ruptures (tiny tears) in tendon and bone. These tiny micro-ruptures in turn trigger the area to produce an increased amount of growth factors such as VEGF, eNOS, PCNS and BMP. This increased supply of growth factors allows for existing blood vessels to be remodeled and repaired, and completely new blood vessels to be formed. New blood vessels improve blood supply and oxygenation to the treated area which supports faster healing.

Reversal of Chronic Inflammation

Chronic inflammation occurs when the body's inflammatory response is not appropriately halted. This can lead to the damage of healthy tissues and result in chronic pain conditions. A fundamental component of appropriate inflammatory response is the production of Mast Cells. Using pervasive acoustic soundwaves on the body is able to increase the activity of Mast cells, which results in the production of chemokines and cytokines. These are pro-inflammatory compounds which initially enhance the inflammatory process and then work to halt the runaway inflammatory response and restore normal healing.

Stimulation of Collagen Production

Producing sufficient amounts of collagen is a necessary precondition for the facilitation of repair processes involving damaged musculoskeletal tissues and ligament structures. Shockwave therapy is able to accelerate procollagen synthesis. The newly created collagen fibers are forced into a special structure which makes newly formed tendon fibers more robust and firm.

Reduction of Calcified Fibroblasts

Quite often calcium build-ups occur as a result of micro-tears or trauma to a tendon and can prevent proper healing. Acoustic Shockwaves are able to break up existing calcifications into tiny particles and help treat the damaged tendon. The tiny particles of calcium are removed from the affected area and disposed of by the lymphatic system.

Reduces Pain Signaling to the Central Nervous System

“Substance P” is a neurotransmitter which communicates pain information throughout the body. The presence of this neuropeptide is often associated with intense, persistent, and chronic feelings of pain. It is critical in relaying pain messages to the central nervous system which can be a useful thing, but not for chronic pain sufferers. Lowering the concentration of Substance P in an area is able to reduce pain by limiting the stimulation of afferent nociceptive fibers. The acoustic waves generated by Shockwave therapy are an effective means for lowering Substance P concentrations and thus has an analgesic effect (relieves pain).

Releases ‘Trigger Points’

‘Trigger Points’ are often the primary cause of pain felt in the back, neck, shoulders, and limbs. A trigger point is associated with physical nodules in tight bands of muscle fibers and they have severely contracted sarcomeres. The muscle tissue contracts so tightly that this begins to cut off blood supply to the area, which causes waste products and toxins to build up. This further irritates the sensory nerve ending in the muscle tissue and causes even more contraction. The result is a vicious cycle which continuously reduces blood supply, increase irritation, and causes pain. Shockwave therapy is able to use Acoustic waves to release these painful trigger points and bring an end to the vicious cycle.



-Painful Trigger Points in Muscle Fibers
which can be Released using Shockwave Therapy-

Who Can Benefit from Shockwave Therapy?

Extracorporeal Shockwave Therapy has positive patient outcomes for a large number of pain and mobility conditions. Whether you have suffered an acute injury and want to ensure speedy and effective healing, or are suffering from a more chronic condition such as persistent neck and back pain which requires relief, Shockwave Treatment can be an excellent non-invasive therapy.

Common Conditions Treated by Shockwave Therapy:

- ✓ Stress Fractures
- ✓ Knee Pain
- ✓ Elbow Pain (Tennis Elbow)
- ✓ Shoulder Pain (Shoulder Calcifications)
- ✓ Shin Splints
- ✓ Whiplash
- ✓ Plantar Fasciitis (Heel Pain/Heel Spur)
- ✓ Achilles Tendon Pain
- ✓ Patellar Tendonitis (Jumper's Knee)
- ✓ Myofascial Trigger points
- ✓ Chronic Neck and Back Pain
- ✓ Sprains and Strains
- ✓ Release of Trigger Points
- ✓ Bursitis
- ✓ TMJ
- ✓ Non-Healing Ulcers
- ✓ Scar Tissue Treatment
- ✓ Rotator Cuff Tendonitis
- ✓ Hip Pain
- ✓ Insertional Pain
- ✓ Tendon Injuries
- ✓ Hamstring Issues
- ✓ Frozen Shoulder
- ✓ Wrist Pain
- ✓ Sports Injuries
- ✓ And more

As you can see Shockwave Therapy is indicated for the treatment of many painful conditions. Instead of examining every single condition treated we will delve into a few examples which highlight how this therapy is effective.

Tennis Elbow

Unfortunately, Tennis Elbow, also known as epicondylitis, is a common condition occurring in as many as 10 percent of the population. This painful condition is often treated by resting the joint for lengthy periods of time, or with the repeated use of pain killers and steroid injections. Shockwave Therapy on the other hand has been shown to be a relatively quick and effective treatment which provides pain relief and actually cures the affect area. In a study examining people between 40 and 50 years old with persistent tennis elbow problems, and whom had received no satisfactory relief from classical treatments, up to 70% of the patient's experienced prompt pain relief and cure within a maximum of 5 treatments.

Heel Spur

Heel Spurs can be a very painful business and significantly impact one's daily life. They involve a pesky calcium deposit on the underside of the heel bone and are often closely associated with scarring or inflammation on the plantar fascia. Either of these problems can limit a patient in their daily activities. Shockwave therapy is able to treat both these health problems simultaneously. Studies have found that acoustic waves are able to remove the calcium deposit, stimulate healing, provide fast recovery, a return to daily routine, and long-lasting effects in up to 88% of patients treated.

Painful Shoulder

There are multiple possible causes of shoulder pain such as calcifications, impingement syndrome, or frozen shoulder. All of these conditions are a source of dull to severe pain which often limit patient's in their daily lives. Shockwave therapy is an effective treatment modality for all of these conditions. For example, in cases of calcific tendonitis treated with acoustic waves the problematic calcification is completely eliminated in more than 85% of patients. Significant pain reduction and improvement in shoulder mobility is often reported after 4 weeks. When other treatment options usually involve steroidal injections or surgery, Shockwave therapy is an effective way to address shoulder pain in a much safer way.

Hip Pain

As a natural condition of aging and use the cartilage in our hips can wear down and become damaged. Critical muscles and tendons can get overused, or the hip bone itself can be fractured during an injury. Unfortunately, hip replacements are quite a popular occurrence in the regular population as a means to remedy these problems. Hip replacement surgery is a major surgery which requires extensive downtime and rehabilitation. Shockwave Therapy is able stimulate the healing process, fight inflammation, eliminate pain and tenderness, and can often prevent the need for hip replacement surgery. It is always better to treat symptoms of pain and deterioration sooner than later.



**-Shockwave Therapy is an Effective Treatment
for Several Causes of Shoulder Pain-**

What is it like to Receive Shockwave Therapy?

Shockwave therapy should always be performed by a trained medical professional whom is well-versed in energy treatments and pain management. Generally, the treatment can be a relaxing and rejuvenating experience.

The Treatment Procedure

Shockwave Therapy involves a simple 3 step procedure. First, the technician detects the area to be treated using palpitation in order to deliver the therapy precisely to the painful location. Next, a layer of lubricating gel is applied to the affected area. This gel application is necessary to transfer the acoustic waves efficiently and smoothly into the body. Finally, the technician gently applies the Shockwave applicator to the affected area and allows the acoustic waves to penetrate the skin.

How many Treatments does a Patient Require?

The number of treatments varies depending on the condition being addressed and the patient's tissue response. The effect of the treatment is thought to be cumulative, so one will typically need more than one treatment. Most conditions benefit from 3-5 treatment sessions which are staggered 3-10 days apart, depending on the patient's tolerance and tissue response. Pain relief is often experienced after the first treatment.

Is the Treatment Painful?

It is possible to experience a slight feeling of discomfort during the treatment, depending on the level of pain the patient is already experiencing in the affected area. This being said, the treatment time for each affected area is usually around 5 minutes and patient's do not find it very difficult to handle the slight discomfort. Furthermore, the technician is able to adjust the intensity of the treatment should there be any discomfort. Most patients will experience an immediate relief in pain directly following the procedure. Some patients may experience soreness in the treated are 2-4 hours following treatment. This soreness is generally reported as tolerable and subsides fairly quickly.

Are there any Restrictions after the Treatment?

Compared to many conventional pain therapies Shockwave therapy requires minimal down-time. Generally, patients are able to bear weight on the affected area immediately. It is recommended that patients refrain from extensive physical activity, especially activity that would involve the treated area, for around 48 hours following each treatment session. This allows the affected area to better facilitate the healing process after therapy.

Is Shockwave Therapy Safe?

Shockwave therapy is an extremely safe treatment modality which has been received by millions of patients all around the world. There are no adverse or dangerous side effects, which make it an excellent choice compared to more invasive treatment methods.

Summary

Extracorporeal Shockwave Therapy has a proven success rate that is equal to, and often greater than, conventional pain treatments without having the same risks, complications, and lengthy recovery times. An up to 80% patient satisfaction rate for addressing chronic pain issues is quite impressive, as chronic pain can be notoriously hard to eliminate. Furthermore, Shockwave therapy is generally quite cost effective compared to many other pain therapies. If your experiencing any sort of chronic or acute pain Shockwave Therapy can be an excellent tool for correcting the root cause of the pain and not just addressing painful symptoms.

Benefits of Shockwave Treatment:

- ✓ Non-Invasive
- ✓ No anesthesia required
- ✓ Can limit dependence on painkillers
- ✓ 80% Patient Satisfaction
- ✓ Virtually no downtime
- ✓ No scarring
- ✓ Stimulates the body's own healing
- ✓ Cost Effective
- ✓ Fast, Safe, and Effective
- ✓ Decreases pain and increases function

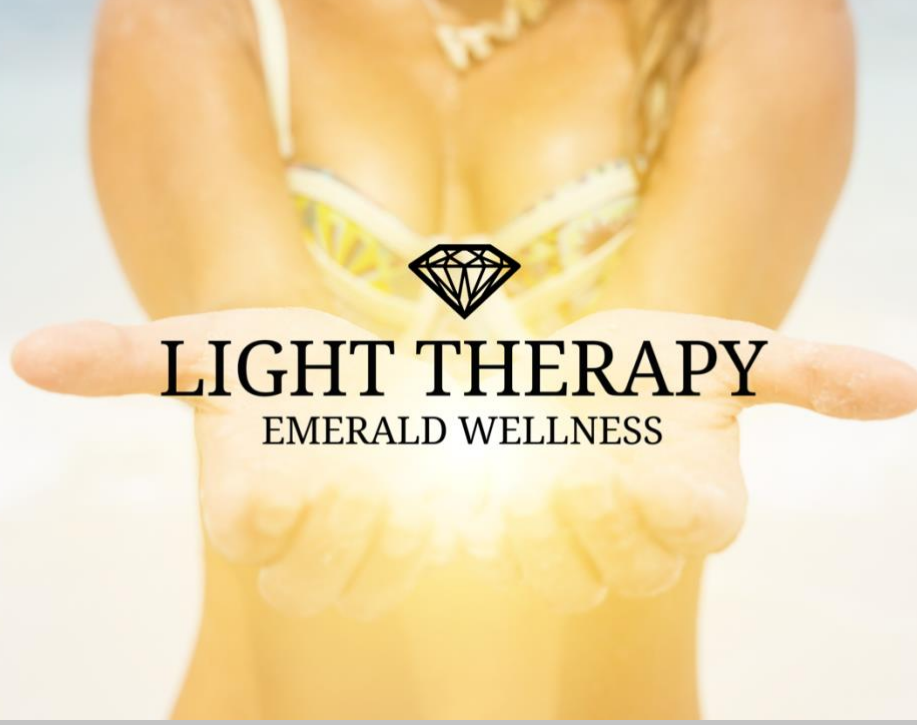


-Patient Receiving Shockwave Therapy-

LOW LEVEL LASER THERAPY



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LIGHT THERAPY

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The Healing Power of Light

Low Level Laser Therapy (LLLT), also known as **Light Therapy**, is a powerful and diverse treatment modality which can bestow many therapeutic health benefits across a wide range of conditions. Before examining this therapy's application specifically for pain, it can be useful to have a more comprehensive understanding of light's many positive effects on the body.

Harnessing the power of certain types of light can have amazingly therapeutic effects on the body. It might seem strange to think of something as simple as light being able to impact biological processes and induce healing mechanisms within our bodies, yet 100s of peer-reviewed clinical studies have shown that it is able to do just this. Clinical research investigating the medical application of light-emitting diodes (LEDs) have proven that certain wavelengths of light when applied to the body have a wide variety of benefits, from improving skin tone and complexion to reducing inflammation. Medical and cosmetic practices involving light therapies have come to be known by many names such as Low-Level Laser therapy (LLLT), Photobiomodulation, Cold Laser Therapy, and Red-Light therapy. The FDA has already approved light therapy for conditions such as pain, arthritis, and the reduction of wrinkles. In the near future, one can expect further FDA approval for many more conditions since there is such strong evidence indicating LLLT's abilities to

increase immunity, repair tissue, fight aging, improve joint health, and more. Emerald Medical Wellness Centres are proud to provide a wide variety of Low-Level Laser Therapies for both medical and cosmetic applications. We are strong believers in the healing power of light because we have seen first-hand it's amazing health benefits.

How does LLLT Work?

The human body needs light in order to function properly. Without sunlight, we would become seriously deficient in vitamin D and be plagued with a multitude of physiological and emotional health challenges. It is helpful to think of light as similar to the nutrients in whole foods, with each colour of light having its own unique effect on our bodies. Natural sunlight is a combination of the entire visible light spectrum (400-700 nanometers/nm) in addition to ultraviolet light/UV (300-400 nm) and infrared light (700-1000 nm). Most of us are aware of the potential health hazards of being exposed to

too much sunlight due to damaging UV rays. However, research has shown that the human body has specific **positive** responses to light in the 600-900 nm wavelength range. The most therapeutic wavelengths being light in the mid-600 nm and mid 800 nm ranges as these wavelengths have been proven to provide the most optimal biological responses in humans. Essentially light energy at these special wavelengths are absorbed by the body and this stimulates **adenosine triphosphate (ATP)**: the primary means of chemical energy transportation at the cellular level. The biological result of this being that cells which are receiving this rejuvenating, anti-aging energy boost are able to perform their natural functions at a heightened level. If your cells are operating at their best then so are you.

Some Therapeutic effects of Low Level Laser Therapy

Reduced Depression and Fatigue- light therapy has been shown to increase cognitive functioning, self-confidence, positivity, joyfulness, social awareness, conversation skills, improve energy levels, and sensory stimulation in many patients.

Anti-Aging Effects for Skin and Hair loss- Patients treated with LLLT experience significantly improved skin complexion, tone, and texture, with reduced signs of wrinkles and fine lines due to increased collagen density as measured through ultra-sonographic testing. For similar reasons LLLT has been shown to be effective in reversing hair loss and stimulating follicle growth.

Increased Immunity and Reduced Side Effects of Cancer treatments- clinical studies show that LLLT therapy has powerful immune system bolstering effects and can successfully reduce symptoms experienced by cancer patients, including painful side effects caused from radiation or chemotherapy.

Improved Joint and Musculoskeletal Health- LLLT is excellent for treating arthritis symptoms and joint pain thanks to its ability to stimulate collagen production, rebuild cartilage, and reduce inflammation.

Additional Uses of Light Therapies:

- ✓ Treatment of Acne, Rosacea
- ✓ Pain relief from various syndromes
- ✓ Enhanced muscle recovery and athletic performance
- ✓ Increasing testosterone in males
- ✓ Improving bone density
- ✓ Increased circulation
- ✓ Reducing Candida infections
- ✓ Faster healing of wounds and injuries
- ✓ Aiding with Alzheimer's
- ✓ Reduced joint pain, inflammation, and arthritis
- ✓ Treating Neuropathy
- ✓ Activates the lymphatic system for improved immunity
- ✓ Lower Back Pain
- ✓ Carpel Tunnel Syndrome
- ✓ Forms New Capillaries (small blood vessels)
- ✓ Parkinson's Treatment
- ✓ Lowers effects of oxidative stress
- ✓ Autoimmune Conditions
- ✓ Improves Digestive health
- ✓ Alleviates Anxiety and Depression

Types of Light Therapies

There are numerous light therapy devices on the market which differ drastically in terms of application and effectiveness. Although low level laser therapy is considered perfectly safe when administered by a trained medical professional one should be wary of purchasing therapies and devices which are not endorsed by reputable science and medical safety standards. There are far too many devices out there which range from being simply ineffective to actually being dangerous. At **Emerald Medical Wellness Centres** we pride ourselves in offering the most effective and well researched light therapies in the medical industry, as well as having the knowledge of which light devices will be most applicable to your medical or cosmetic needs. We will now examine **MLS Laser Therapy**, an LLLT treatment designed specifically for pain.



MLS Laser Therapy

MLS Laser Therapy is a form of **Light Therapy** that is specifically designed to address acute and chronic pain conditions within the body. It involves directing low energy lasers deep into the affected area in order to stimulate healing and provide pain relief.

The Innovative **Multiwave Locked System (MLS) Therapy Laser** was developed in order to produce an efficient and simultaneous effect on pain, inflammation, and edema which exceeded some of the limits of Low Level Laser Therapy Devices. Many LLLT devices are excellent for treating conditions close to the surface level of the skin but fail to penetrate deep enough for some conditions. The MLS Laser technology is able to deliver therapeutic wavelengths of light, 808nm (anti-edemic and anti-inflammatory) and 905nm (analgesic), which penetrate 3-5 cm into human tissue. This allows the technology to be utilized effectively on a much wider range of problematic pain sites. Focused light energy is able to enter the damaged cells and stimulate inter-cellular activity, which speeds the recovery of these cells and reduces pain. Once the cells recover, the healing process is complete.

Furthermore, an energetic synergy is created when delivering these 2 wavelengths of light to the patient at the same time, which produce greater anti-inflammatory and pain-relieving effects. MLS Laser Therapy is a patented, FDA cleared

technology which has been proven to effectively treat pain, contracture, inflammation, and edema within a short period of time. The unique delivery method of the differing wavelengths of light- where the 808nm is provided continuously and the 905nm is intermittently pulsed- is able to reciprocally reinforce each other's therapeutic effects while eliminating risk of thermal damage possible with other high-powered laser devices. The medical operator is able to deliver meticulously controlled doses of laser light to affected areas which relieves pain, stimulates healing, and restores patient's lives.



-MLS Laser Therapy Device-

Medical Effects of MLS Laser Therapy

MLS Laser Therapy is rapidly becoming the standard of care for alleviating both acute and chronic pain in many medical practices around the world. This FDA cleared integrative pain technology boasts an 85-95% efficacy rate in relieving pain and inflammation, eliminates risk from surgery and prescription pain killers, has no negative side effects, and improves quality of life for many patients.

Analgesic (Pain relief)

MLS Laser therapy has a positive effect on our nerve cells. It is able to block pain transmitted by these cells to the central nervous system which can decrease nerve sensitivity. Furthermore, due to the decreased inflammation achieved by laser therapy, there is less edema and consequently less pain. MLS Laser therapy is also able to increase production of pain reducing chemicals in the body such as endorphins and enkephalin from the brain and adrenal glands.

Anti-Inflammatory

This therapy is able to encourage an anti-edema effect because it causes vasodilation (the dilatation of blood vessels). It is also able to activate the lymphatic drainage system which drains swollen areas. As a result of these multiple abilities, there is a significant reduction in swelling caused by bruising or inflammation.

Accelerated Tissue Repair and Cell Growth

Photons of light from the lasers penetrate deep into human tissue and accelerate cellular reproduction and growth. This therapeutic laser light is able to increase the energy available to the cells so that they can utilize critical nutrients faster and eliminate waste products. As a result, damaged cells which are exposed to laser light are able to repair faster. Since tissues are made of collections of cells, tissues can repair faster as well.

Increased Metabolic Activity

MLS Laser therapy is able to create higher outputs of beneficial enzymes, greater oxygen and food particle loads for our blood cells.

Improved Vascular Activity

Therapeutic wavelengths of laser light are able to significantly increase the formation of new capillaries in damaged tissue which accelerates the healing process, closes wounds quickly, and reduces scar tissue. Furthermore, it is able to accelerate angiogenesis (the formation of new blood vessels from pre-existing vessels), which causes temporary vasodilation and positively increase the diameter of blood vessels. Improving blood flow to an affected area is always critical for proper healing and the reduction of swelling and pain.

Improved Nerve Functioning

The slow recovery of nerve function in the body's damaged tissues can result in feelings of numbness and impaired limbs. Laser light is able to encourage the process of nerve cell reconnection and increase the amplitude of action potentials in order to optimize muscle healing.

Faster Wound Healing

MLS Laser therapy is able to stimulate fibroblast development in damaged tissues. Fibroblasts are the essential building blocks of collagen, and collagen is critical for replacing old tissue or for repairing tissue injuries. Consequently, laser light is an effective therapy post surgically and in the treatment of wounds and burns to accelerate the healing process.

Immune System Regulation

Laser light therapy is able to have a direct effect on the immune system by stimulating immunoglobulins and lymphocytes. Laser emissions are absorbed by chromophores (molecule enzymes) that react to laser light. Upon exposure to the laser, the enzymes activate and start the production of ATP (adenosinetriphosphate), which is the major carrier of cell energy and the energy source for all chemical reactions in the cells. Often chronic inflammation is the body's immune system over reacting, laser therapy can help bring this exaggerated immune response back into balance.

Trigger Points

MLS Laser therapy can be used to stimulate muscle trigger points in a non-invasive way in order to provide musculoskeletal pain relief. Trigger points are often the primary cause of pain felt in the back neck, shoulders, and limbs.



-MLS Laser Therapy can Accelerate recovery
from Sports Injuries-

Who Can Benefit from MLS Laser Therapy?

MLS Laser Therapy has positive patient outcomes for a large number of pain and mobility conditions. The fact that it is a quick, non-invasive procedure which can eliminate the need for surgery and painkillers makes it a powerful integrative pain management strategy.

Some Common Conditions Treated by MLS Laser Therapy:

- ✓ Sports Injuries
- ✓ Arthritis
- ✓ Back and Joint Pain
- ✓ Neuropathies
- ✓ Neuromas
- ✓ Tendon and Ligament Injuries
- ✓ Muscle Sprains & Strains
- ✓ Tendonitis
- ✓ Wounds
- ✓ Post-Surgical Swelling
- ✓ Disc Disease
- ✓ Plantar Fasciitis
- ✓ And more

Essentially, any painful condition which requires pain relief and inflammation reduction can benefit from MLS Laser Therapy. These conditions can be acute, such as a recent sports injury, or chronic such as rheumatoid arthritis. The therapy uses the same biological responses to stimulate the body's own healing mechanisms.

There is a vast collection of clinical studies which demonstrate the effectiveness of MLS Laser therapy for several different health indications. In order to receive FDA approval for many of these health conditions the technology had to be stringently tested in vitro on cellular structures, then by means of controlled clinical trials run by major state-of-the-art-health organizations for treating traumatic and degenerative painful diseases. Instead of examining how MLS therapy works to benefit all of these conditions, we will examine a few case studies.

Disc Herniation

A herniated disc can be extremely debilitating and notoriously difficult to treat. Often extensive surgery and the use of painkillers are employed to treat symptoms. A 17-year-old female who suffered from severe lumbalgia and radiculopathy into the left leg (disc herniation) was treated with MLS Laser therapy for 7 months. The patient noticed significant pain relief and improvement in mobility after the first treatment, and continued to do so during successive treatments. The frequency of treatments was reduced over the 7-month period as the patient presented with less and less pain. The patients progress was measured using the Visual Analogue Scale (VAS). 9 months after the first session the patient reported a completed elimination of pain and was able to function normally in daily life.

Craniofacial Pain and TMJ

TMJ and Craniofacial pain can also be quite difficult to treat. Some patients experience pain so bad they cannot sleep, or mobility restrictions they prevent them from even being able to chew. A study involving 65 patients with craniofacial and TMJ pain found that 3 treatment sessions only 8 minutes long were able to have dramatic therapeutic results. After the 1st treatment patients on average reported a 49.9% reduction in pain. After the 2nd treatment a 25.2% reduction, and after the 3rd treatment a 9% reduction in pain symptoms. Some patients reported complete elimination of their TMJ and craniofacial pain after 3 quick treatments.

What is it like to Receive MLS Laser Therapy?

MLS Laser Therapy should always be performed by a trained medical professional whom is well-versed in laser energy treatments and pain management strategies. Treatments are often a quick and enjoyable experience for the patient.

The Treatment Procedure

The patient is able to comfortably situate themselves on a bed or padded chair so that the affected area can easily be placed under the laser light. The technician will determine the best placement of the MLS laser light to treat the painful area. Generally, each problem area will receive a meticulously dosed 8-minute laser treatment.

How many Treatments does a Patient Require?

The majority of patients experience positive results in 1-3 treatments, with the average course of treatment being 7-10 sessions. The patient's condition and response to treatment can be highly variable with some conditions requiring fewer, or more, treatments. Acute conditions generally subside quickly, often with a single phase of treatments, while more chronic conditions can be controlled with more frequent sessions. The therapeutic effects of laser therapy are cumulative, so a patient can expect to see increasing improvements as they proceed through their treatment plan. It is important that once a patient starts a treatment plan, they complete the course of treatments recommended by the doctor to achieve optimal results and limit the possibility of a relapse in symptoms.

Is MLS Laser Therapy Painful?

Generally, MLS Laser therapy is a completely painless procedure. In fact, many patients experience a comfortable sensation at the area being treated by the laser light during the treatment. After a single treatment patients often report analgesic effects, which are improved with each successive treatment.

Are there any Restrictions After Treatment?

Patients are able to return to light activities involving the treated area immediately. There is virtually no downtime. It may be recommended to take precautions to not overexert the affected area to help facilitate faster healing and not aggravate the injury.

Is MLS Laser Therapy Safe?

In the majority of the population laser light therapy is a completely safe procedure with no known long-term side effects. Other than averting your eyes from the bright laser, the FDA has found no adverse effects from using MLS laser therapies. Eye protection is provided to the patient when required. This being said, people with certain health conditions should speak with their doctor before using laser therapy. For example, patients with thyroid conditions or in the early stages of pregnancy should make this aware to their doctor. While there is no evidence to suggest MLS Laser therapy during pregnancy is harmful, there is not enough research and evidence yet to suggest otherwise.

Summary

MLS Laser Therapy is an extremely powerful integrative pain therapy which is able to harness the healing power of light and improve quality of life for countless patients. Many MLS laser practitioners claim that 90% of their patients are achieving over 90% relief in symptoms during treatment, which is quite astounding. Any pain therapy which is able to quickly heal, mitigate the need for invasive surgery, and reduce dependence on painkillers is an extremely valuable tool for dealing with acute and chronic pain conditions.

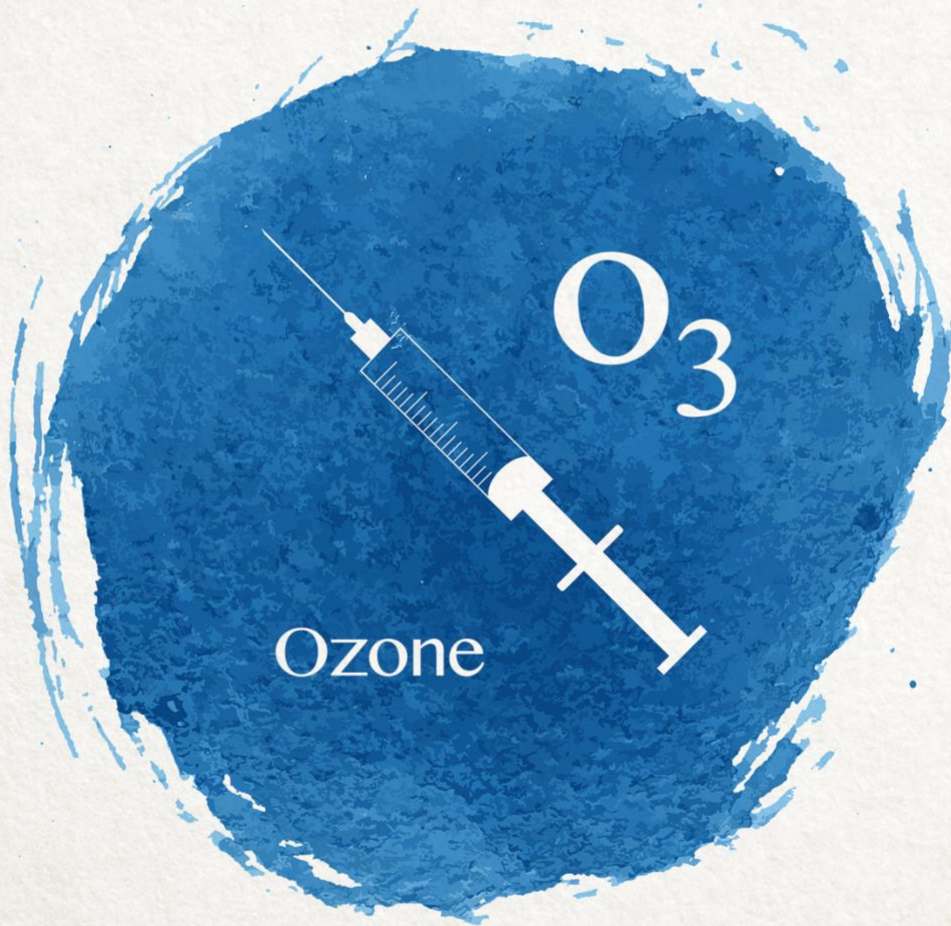
Benefits of MLS Laser Therapy:

- ✓ Rapid relief of pain
- ✓ No use of addictive painkillers
- ✓ Non-surgical and non-invasive
- ✓ No negative side effects
- ✓ Cost-effective treatment
- ✓ Timely healing of sprains & strains
- ✓ Rapid resolution of swelling
- ✓ Rapid recovery of the structural integrity of the injured area
- ✓ Immediate improvement of local blood circulation
- ✓ Quick reparation of superficial injuries such as wounds and ulcers
- ✓ Well researched and effective treatment



-MLS Laser Therapy can be utilized
to Treat Various Painful Areas on the Body-

PROLOZONE THERAPY



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Prolozone Injection Therapy

Prolozone Injection Therapy, also known as **Ozone Joint Therapy (OJT)**, is a technique that combines the principles of Neural therapy, Prolotherapy, and Ozone Therapy. It often involves injecting combinations of procaine, anti-inflammatory medications, vitamins, minerals, and ozone gas into degenerated or injured joints, and areas of pain.

When a patient is presenting with symptoms of aching joints, sore back, ripped ligaments, or other physical pain in a specific area of the body an Ozone injection can be very helpful. At **Emerald Wellness** Joint injections are performed where a dose of Ozone is administered directly into the joint space or affected area. This approach to joint pain can stimulate regeneration and rebuilding of new ligaments and cartilage tissue. Inflammation is decreased and the weaker areas of the joint are strengthened. Quite often a degenerated or injured joint will take a series of 3-5 injections over 8-10 weeks to see significant healing. One can generally expect a 15%-25% improvement with each local injection. Prolozone Therapy is a powerful localized way to treat specific areas of the body with the therapeutic benefits of Ozone.

Before delving into the therapeutic benefits of ozone specifically for pain it can be useful to

understand why the administration of Ozone to the body has positive health effects.

What is Ozone?

Ozone gas is an inorganic chemical compound comprised of 3 oxygen molecules bonded together and is most well-known for its presence in the earth's atmosphere. In the human body Ozone or '**O3**' forms an **energetic molecule** which easily donates its third oxygen atom to free radicals that are often causing cell damage through oxidation. When there is ozone present in the body, **oxidation damage** caused by these free radicals is **greatly reduced** because they are made **stable/non-destructive** by the extra oxygen atom given off by the Ozone. Many health problems are caused by oxidative damage and Ozone therapy is able to mitigate this.

Furthermore, at low concentrations, ozone becomes medically active, which triggers several useful biochemical mechanisms and reactivates

the antioxidant system, without any toxicity or side effects. Therapeutic Ozone is extremely beneficial for addressing immune system dysfunction because it is such a potent **regulator of the immune system**. This truly unique ability makes Therapeutic Ozone an extremely powerful health tonic. Ozone also kills bacteria and viruses on contact, increases the oxygen level of your cells, detoxifies your body, reduces inflammation, kills cancer cells, increases energy, reduces acidity, and is anti-aging. Although ozone is extremely useful for treating chronic and acute health problems, healthy individuals can reap its health promoting benefits as well.

Some Therapeutic Benefits of Ozone

Ozone is able to strengthen the Immune system: Ozone is an extremely potent regulator of the immune system - when the immune system is overactive (as in auto-immune diseases), Ozone will calm it down. Conversely, if the immune system is underactive as seen in chronic infections, Ozone will help stimulate it. This unique property of Ozone is derived from its activation of immune related messenger molecules (Cytokines) such as interleukin-2, TNF-alpha, and gamma interferon, to name a few

Increases the Oxygen Level in your Cells: Without oxygen, our cells are unable to make energy, and without adequate energy our cells cannot perform their necessary functions. Ozone therapy is able to increase the total amount of oxygen delivered to our cells by means of our red blood cells. It also works to make our red blood cells more malleable so they can travel along skinnier blood vessels much easier. This makes our system more efficient at supplying tissues and organs with blood and oxygen.

Kills Pathogens, Bacteria and Viruses on Contact: Ozone is able to disrupt the metabolism of bacterium-cells, most likely through inhibiting the operation of the enzymatic control system. Sufficient amounts of Ozone break through the cell

membrane and destroy bacteria. Viruses differ from bacteria in that they only multiply within the host cell, and transform the protein of the host cell into proteins of their own. Ozone is able to diffuse through the protein coat into the nucleic acid core, which results in damaging the viral DNA.

Able to Destroy Cancer Cells: The way that Ozone is able to target and kill unhealthy cells, while leaving healthy cells alone, is through enzymes. All healthy cells have three enzymes that protect them from being oxidized. Furthermore, all healthy cells crave oxygen and require it to function properly. In fact, every cell is really an oxygen burning machine. Unhealthy cells do not have the important enzymes required to protect them from being oxidized. This makes all unhealthy cells, including cancer cells, defenseless against contact with the correct dose of Ozone.

Reduces Inflammation: High levels of inflammation in the body is one of the greatest causes of symptoms in chronic disease. Ozone's ability to alter immune function, by causing a controlled oxidative effect, mobilizes the body's antioxidant defenses and resolves inflammation.

Has Anti-Aging Mechanisms: To derive anti-aging benefits in the body it is critical to raise the amount of oxygen within your blood and in your cells. Ozone therapy is arguably one of the most powerful ways to do this. When used correctly, ozone has been coined a "wonder drug" that has the potential to revolutionize anti-aging medicine.

The Ability to Increase Energy: We breathe oxygen so that it can be utilized to create energy for our cells. Illness and aging can often cause this fundamental process to lose efficiency, especially after the age of 30. Ozone helps to "revitalize" the process so that we are able to convert more energy from the oxygen we are breathing. Similar to fine tuning a car's engine in order to derive more power out of gasoline.

Ozone Injection Therapy for Pain

Prolozone Injection Therapy, also known as **Ozone Joint Therapy (OJT)**, should always be practiced by a medical professional, preferably in a clinical setting. This procedure takes advantage of the therapeutic effects of ozone, combined with the effects of other medical substances, by injecting them directly into the affected area.

What is Ozone Joint Therapy/Prolozone?

Ozone Joint Therapy (OJT) is a non-surgical reconstructive treatment for ligament and joint damage pioneered by Dr. Frank Shallenberger, the “father” of Medical Ozone in North America. It is a powerful treatment for several forms of musculoskeletal and joint pain, including chronic neck and back pain, degenerative and arthritic areas of the body, degenerated discs, and shoulder and elbow pain, to name a few. According to the American Academy of Ozonotherapy, because **OJT** therapy actually corrects the pathology of the disorder there is a 75% success rate, in which the chronic pain sufferer is able to become completely pain free.

Common Causes of Musculoskeletal and Joint Pain

Some injuries are able to heal faster than others because they have more adequate blood flow to the affected area. This allows healing factors and nutrients to better saturate the site of injury and repair the region. Injuries can be acute, or develop gradually from the natural degeneration of the moving parts of the body due to ongoing mechanical stress, and failures of tissue to repair. When there is poor blood circulation this can lead to decreased oxygen, nutrients, and healing factors reaching the site of injury, which causes impaired healing and a buildup of lactic acid. Increased lactic acid contained within injured tissue results in inflammation and pain. Poor circulation, limited oxygen, decreased supply of nutrients and healing factors, and a buildup of lactic acid around an affected area can make it very difficult for the immune system to effectively repair and heal. A pain-inflammation cycle is triggered which leads to further degeneration of the area and chronic pain. This problem can often be reversed permanently with Prolozone Injection Therapy

How does OJT/Prolozone Injection Therapy Work?

This injection therapy works through three primary mechanisms. The first is that the introduction of oxygen facilitates the healing of damaged tissues. The second mechanism is due to Ozone’s unique molecular structure and reactivity which we have previously discussed. Ozone acts as a therapeutic oxidant which immediately improves oxygen uptake in the damaged tissue, stimulates growth factors for injury regeneration, and neutralizes damaging free radicals. Thirdly, the introduction of injected anti-inflammatory compounds, vitamins, and minerals improves blood flow to the affected area and reduces inflammation. This promotes better healing and the regeneration of damaged tissues. So, each component of Prolozone Therapy has a specific biological purpose. Procaine acts to re-establish cellular membrane potentials. Anti-inflammatory substances decrease edema and swelling. The use of vitamins and minerals provide necessary substrates for oxygen utilization, which in damaged tissues are usually deficient. And finally, oxygen uptake is directly stimulated by Ozone.

The Treatment Process

Prolozone injections should take place in a clinical setting by a trained medical professional. Generally, the doctor combines a precise mixture of ozone, procaine, anti-inflammatory compounds, vitamins, and minerals into a syringe and slowly injects this into the affected area with a needle. The mixture is able to quickly saturate the injured area, reduce pain, and begin to facilitate healing. The procedure is quite painless, besides from the initial poke of the needle, and is extremely safe. Other than the rare possibility of an allergic reaction to one of the liquid components, there are no contraindications to its use.

What the Patient Can Expect

Quite often a degenerated or injured joint/area will take a series of 3-5 injections over 8-10 weeks to see significant healing. One can generally expect a 15%-25% improvement with each local injection. This being said, every patient's body and healing response is unique. Some may require fewer or more injections depending on their specific condition and how they respond to treatment. It is not uncommon for an individual to notice dramatic results after a single Prolozone injection. Sometimes it is recommended that, both during and following treatment, patients undergo rehabilitative practices with a physiotherapist to correct any weaknesses that may have developed in the affected area.

Common Conditions that Respond well to OJT/Prolozone Therapy:

- TMJ
- Tennis Elbow
- Sports Injuries
- Carpal Tunnel Syndrome
- Chronic Back pain
- Chronic Neck Pain
- Degenerated Discs
- Degenerative & Arthritic Ankles
- Degenerative & Arthritic Hips
- Degenerative & Arthritic Knees
- Dental Infections
- Heel Spurs
- Neuromas
- Non-Union Fractures
- Painful Scars
- Pelvic Disorders
- Plantar Fasciitis
- Post-op Pain
- Rotator Cuff Injuries
- Sciatica
- Sinus Infections



Summary

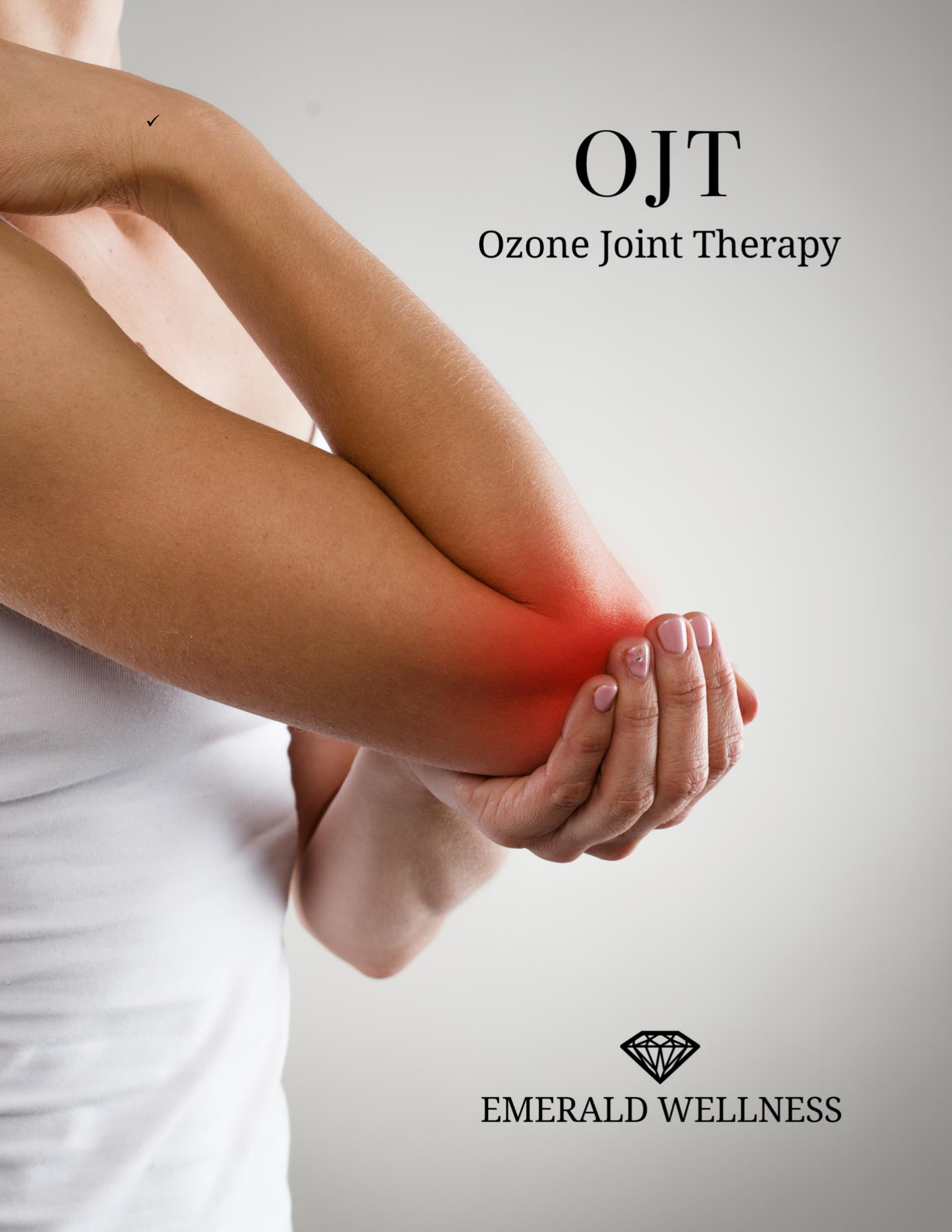
Prolozone Therapy (OJT) is an excellent way to harness the therapeutic effects of ozone and facilitate healing in acute and chronic pain conditions. The fact that this treatment can mitigate the need for surgery, is relatively non-invasive, and boasts a 75% patient satisfaction rate with chronic pain sufferers, makes Prolozone a powerful integrative pain management tool. Injecting Ozone directly into patient tissue, and joint spaces is an extremely effective way to reap the many benefits of medical ozone.

Benefits of Prolozone Therapy:

- ✓ Delivers benefits of Ozone directly to affected area
- ✓ Stimulates the body's own healing mechanisms
- ✓ Minimal Downtime
- ✓ Excellent adjunct to physiotherapy
- ✓ Regenerates tissue and restores mobility
- ✓ Rapid relief of pain
- ✓ No use of addictive painkillers
- ✓ Non-surgical and non-invasive
- ✓ No negative side effects
- ✓ Cost effective



-Prolozone Therapy is Excellent
for Relieving Chronic Joint Pain-



OJT

Ozone Joint Therapy



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Conclusion

Hopefully after reading this book one has a more comprehensive understanding of the science behind a few key integrative pain therapies and their application in the field of health and wellness. If you are interested in learning whether **Shockwave Therapy, MLS Laser Therapy, or Prolozone Therapy** may be right for you please contact one of our medical staff to book a **free consultation**. The discussed procedures only represent a few of the more popular integrative pain therapies provided at our clinics. Chronic pain can be an extremely frustrating and debilitating condition to deal with. In our modern society, we are truly fortunate to have so many effective medical interventions at our disposal to help reduce its negative effects on our daily lives. At **Emerald Wellness**, we believe that the synergistic union of conventional medicine and well-researched integrative health therapies can be the best way to achieve positive patient outcomes. We are dedicated to educating our patients, and only recommend specific treatments when we firmly believe they are the right course of action for improving patient health and wellbeing. If we do not deem that a therapy is appropriate for your case we will let you know. Our main concern is doing everything within our means to help you find your healthiest self.

We are very proud to be able to provide Canadians, right here at home, the numerous health benefits of integrative pain management strategies. If a therapy is deemed right for your condition we will do everything possible to make your treatment an informative and enjoyable experience.

-Dr. Adeleye Lemi Adebayo
Medical Director



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Find your Healthiest Self

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