

## **FAR INFRARED**

### **WHAT IS FAR INFRARED (FIR)**

It is a specific wave length of light from the sun. Among the rays coming from the sun, the FIR waves are the safest and the most beneficial.

What exactly is radiant heat? No need to worry it has nothing to do with either ultraviolet Radiation (which gives you sunburn and damages your skin) or atomic radiation (the kind from a nuclear bomb). Radiant heat is simply a form of energy that heats objects directly through a Process called conversion, without having to heat the air in between. Radiant heat is also called infrared energy (IR). The infrared segment of the electromagnetic spectrum is divided into three segments by wavelength measured in microns or micrometers (amicron = 1/1,000,000 meter);.076-1.5microns = near or close; 1.5-5.6=:middle or intermediate; 5.6-1000 far or long-wave infrared. The infrared segment of the electromagnetic spectrum occurs just below or "infra" or red light as the next lowest energy band of light. This band of light is not visible to human eyes but can be seen by special cameras that translate infrared into colors visible to our eyes. We can, however, feel this type of light which we perceive as heat.

Our sun produces most of its energy output in the infrared segment of the spectrum. Our atmosphere has a "window" in it that allows FIR rays in the 7-14 micron range to safely reach the earth's surface. When warmed, the earth radiates infrared rays in the 7-14 micron band with its peak output at 10 microns.

The sun is the principal source of radiant energy that we experience daily. Have you ever been outside on a partly cloudy spring day of about 50 deg. And felt quite comfortable until suddenly the sun was obscured by a cloud? Although the air temperature had not had time to drop, you felt chilled; as the cloud would not let the warming infrared rays through to reach you. The infrared heat in the Hot House is just like the heat from our sun or that which our own bodies produce as they burn fuel to keep us warm. These rays are selectively absorbed by the tissues needing a boost in their output. The internal production of infrared energy that normally occurs within our tissues is associated with a variety of healing resources. After boosting a tissue's level to maximum, the remaining rays pass onward harmlessly. This phenomenon is called "resonant absorption."

## **WHAT DOES IT DO**

- Elevates the temperature of subcutaneous layers thus expanding blood capillaries, stimulating blood circulation, increasing metabolism between blood and tissue, promoting tissue regeneration and reducing cramping.
- Penetrates 4-5 centimeters into the dermis (middle layer of skin) from muscles into blood vessels, lymphatic glands and nerves.
- Affects every living cell and produces warmth. Through this cell tissue "micro Friction" and the vibration of molecular resonance, chemicals within cells are activated.

- The warming effect is helpful in eliminating such things as the waste products generated by aging, heavy metals and toxic substances, which are then secreted by the sweat and dermis-layer fat glands.
- Adjusts the autonomic nerve function and reduces the over-stimulation of sensory nerves.

## **HOW THE PROCESS EVOLVES**

- FIR waves reach into the cell and create water molecule resonance
- The waves then produce atomic molecule resonance
- Energy conversion occurs through absorption
- It forms an effect on the heart
- It enters to the subcutaneous cell layer
- Temperature is elevated
- Capillary dilation takes place
- Extravasated blood and congested toxins are excreted
- Cells are activated
- Organ cells are repaired and protected
- The formation of enzymes is promoted.

When FIR penetrates our bodies it can be converted into the appropriate energy. This activates the self-regulating systems in our living tissue so as to alleviate the bodily

imbalance and lead to recovery. It is not only a beneficial health therapy, but can also be a substitute for other therapeutic modalities. Because of its heat penetration property, FIR radiates to the meridian points of the body.

Treatments generally last 20 minutes to an hour, but it does not hurt to use it longer. Initially, relief is only temporary, but with repeated treatments the duration of relief becomes longer and eventually becomes lasting.

Today, scientists and physicians are studying specific wavelengths of light, such as Far Infrared, to understand their therapeutic effects on our bodies. The human body is nourished directly by the stimulation of sunlight or nourished indirectly by eating foods, drinking fluids, or breathing air that has been vitalized by the sun's light energy.

If certain wavelengths are missing in the light we receive the body cannot fully absorb certain nutrients. The result is that even with adequate nutrition~ the body is malnourished without exposure to sufficient light. Sunlight increases the ability of the lungs to absorb more vital oxygen, as well as the blood's capacity to carry and deliver it. Oxygen deficiency has been readily linked to a host of illnesses and discomforts ranging from chronic fatigue to cancer. When near infrared (NJR) waves heat organic substances the surface gets hotter than the interior and the interior gets heated by conduction from the surface. By contrast, far infrared (FIR) penetrates deeply with a very uniform warming effect. Recent studies show that not enough illumination contributes

to fatigue, depression, suppressed immune function, hair loss, skin damage. Lack of a balanced spectrum of light contributed to loss of muscle tone and strength.

### **FAR INFRARED DOME BENEFITS**

- Far Infrared emits photons
- Photons help release enzymes
- Enzymes stimulate macrophage activity increasing the elimination of damaged and diseased tissues
- Nitric oxide is released which expands capillaries and Increases circulation

Infra-Red photons produce enzymes that activate macrophages, which help eliminate damaged and diseased tissue. Macrophages work on a cellular level.

Nitric oxide is released and expands capillaries. It also increases circulation and carries toxins to the lymph system and out of the body.

Why is this Infrared system unique? It uses infrared radiant energy to directly penetrate the body's tissues to a depth of over 1-11/2". Its energy output is tuned to correspond so closely to the body's own radiant energy that our bodies absorb close to 93% of the infrared waves that reach our skin.

One of the reasons FIR has beneficial results in a variety of illnesses is the ability of FIR waves to remove toxins, which are often at the core of many health problems. Numerous toxins are

stored in our bodies. Toxic gases may be encapsulated by clusters of water. Where these toxins are accumulated, blood circulation is blocked and cellular energy is impaired. When a 10 micron FIR wave is applied to these large water molecules, the water begins to vibrate, which reduces the ion bonds of the atoms which are holding together the molecules of water. As the breakdown of the water molecules occurs, encapsulated gases and other toxic materials are released.

## **RESEARCH**

Dr. Tsu Tsair Oliver Chi summarized the effect of infrared rays on the body in these words: "These rays are selectively absorbed by tissues needing a boost in their output. The internal production of infrared energy that normally occurs within our tissues is associated with a variety of healing responses and may require a boost to a maximal level to ensure the fullest healing response possible in a tissue which is being repaired. After boosting a tissue's level to its maximum, the remaining rays pass onward harmlessly."

Success reported with Infrared treatments by Japanese researchers in Musculoskeletal eases:

TMJ

Accel-Decel Injury Sequelae

Traumatic Arthritis

Brain Contusion – accelerated healing

Low Back Pain relieved

Muscle Spasms – reduced or eliminated

Disc Protrusion – related Neuralgia

Brain Contusion–accelerated healing

Tight Shoulders – relaxed

Muscle Tension – relaxed

Bursitis – eliminated

Shoulder Pain – relieved or eliminated

Spinal Cord Shock – reversed

Post-exercise Muscle Pain

Arthritis: Gouty, Rheumatoid – each substantially relieved or improved

"Medical practitioners make use of Infrared radiant heat to treat sprains, bursitis, peripheral vascular diseases, arthritis and muscle pain," according to McGraw-Hill Encyclopedia of Science and Technology.

Summary from Therapeutic Heat and Cold, 4<sup>th</sup> Ed., ED Justus F. Lehmann M.D. Generally it is accepted that heat produces the following desirable therapeutic effects:

1. It increases the extensibility of collagen tissues.
  - Tissues heated to 45 C exhibit an increase of length in tissues when stretched.
  - This effect would be especially valuable in working with ligaments, joint capsules, tendons, fascia and synovium that have become scarred, thickened or contracted.
  - Such stretching at 45 C caused much less weakening in stretched tissues than a similar stretching at normal temperatures.
  - The experiments cited clearly showed that low-force stretching can produce significant

residual elongation when heat is applied together with stretching or range-of-motion exercises, and is also safer than stretching tissues at normal tissue temperatures.

- This safer stretching effect is crucial in properly training competitive athletes so as to minimize their “down” time from injuries.
2. It decreases joint stiffness directly.
  3. It relieves muscle spasms.
  4. It produces pain relief.
  5. It increases blood flow.
  6. It assists in resolution of inflammatory infiltrates, edema, and exudates.
  7. More recently, it has been used in cancer therapy.

Otto Warburg was nominated for the Nobel Prize in 1944 for research concerning photosynthesis in connection with the chemotherapeutics of cancer and the use of x-rays. His research has shown that infrared impacts cancer.

Dr. Masao Nakamura of the O & P Medical Clinic in Japan has reported great success with the use of Infrared treatment for:

Whiplash  
Shoulder stiffness  
Rheumatism  
Sciatica  
Arthritis  
Insomnia  
Acne  
Ear diseases

## Gastroenteric problems

Researchers reported over 90% success in a summary of Chinese studies that assessed the effect of Infrared on:

Soft tissue injury  
Lumbar strain  
Sciatica  
Eczema with infection  
Tinea  
Neurasthenia  
Periarthritis of the shoulder  
Cholecystitis  
Pelvic infection  
Neurodermatitis  
Pediatric pneumonia  
Facial paralysis (Bell's Palsy)  
Post-surgical infections  
Diarrhea  
Menstrual pain  
Frostbite with inflammation

Far Infrared produces nitric oxide. (White cells use nitric oxide to defend against tumors. Nitroglycerine and other related compounds act by releasing nitric oxide.)

The scientific mechanism of FIR was strongly suggested in the 1998 Nobel Prize in Medicine Award. Scientists Murad Furchgott and Ignaro found that nitric oxide gas which is released into the blood from the hemoglobin turns on the immune system and allows healing to take place. Dr. Valentino Puster, a past president of the American Heart Association, called the

nitric oxide discovery “one of the most important discoveries in the history of cardiovascular medicine because it promotes expansion of the capillaries and allows the blood to get into the area to Increase circulation and reduce the risk of strokes and heart attacks.”

It has been demonstrated by Dr. Lon R. Horwitz that a FIR energy modality increases nitric acid in the blood and plasma of normal adult subjects. A 1999 publication by Dr. Horwitz strongly suggests that Far Infrared produces nitric oxide gas, which aided in the recovery of the five patients in a study, who could not get healing conventionally. They had various diabetic problems and were not able to heal, but they received the nitric oxide technology produced by the FIR, and healing took place for all of them. Augmentation of Wound Healing Using Monochromatic Infrared Energy; Advances in Wound Care; author’s unpublished research.

When you apply the FIR technology, you see the healing results from the production of nitric oxide from the hemoglobin by the reaction of the photons of the FIR on the enzymes, which produce the nitric oxide gas. The immune cells get into the area and the circulation is increased. Pain is reduced, and the area now has the immune cells necessary to get complete healing.

The wide-ranging results nitric oxide may pay off in new treatments for:

- Atherosclerosis (a thickening of artery walls)
- Septic shock (a dangerous drop in blood pressure)
- Cancer

The Infrared protocol was instituted after conventional management protocols were shown to be ineffective in wound healing. The rate and quality of healing of these previously refractory wounds following use of FIR energy, may be related to local increases in nitric oxide concentration. Increases in nitric oxide previously have been demonstrated to correlate with vasodilatory and anabolic responses.

Substances harmful to the human body are excreted through sweat and oil glands, such as carcinogenic heavy metals, toxic substances from food processing, lactic acid, nonesterified fatty acids, fat and subcutaneous fat which cause fatigue and aging, as well as hypertension caused by sodium ions which trigger uric acid pain.

## **FIR HEAT IS FELT TO PRODUCE THERAPEUTIC EFFECTS IN THE FOLLOWING:**

### **BRAIN**

Short-term memory improved  
Accelerated repair in brain contusions  
Cerebral hemorrhages healing both speeds up and is significantly enhanced

### **COLLAGEN TISSUES**

Ligaments  
Joint capsules  
Tendons  
Fascia

Synovium

Increases range of motion

Scarred, thickened, or contracted tissues

Increases extensibility of collagen tissues

### **BODY ACIDITY**

Reduces acidity in the body (FIR causes fruit to ripen faster by reducing acidity)

### **NERVES**

Neuresthenia

Adjusts autonomic nerve function

Reduces over-stimulation of sensory nerves

### **CELLS**

Attracts calcium ions to the cellular level

Promotes adhesion and osmosis of water molecules across the cellular membrane

Stimulates enzyme activity

### **JOINTS**

Assists in reduction of swelling and inflammation by improving lymph flow

Decreases joint stiffness directly

### **PAIN RELIEF**

Neuralgia

Headache

Pain during menstruation

May lead to increased endorphin production, which reduces pain

## **CONDITIONS AFFECTED BY CIRCULATION**

Increases blood flow by promoting dilation of capillaries

Clogged capillary vessels

Hypertension

Arteriosclerosis

High blood pressure

Arthritis

Low blood pressure

Sciatica

Coronary artery disease

Hemorrhoids

Nervous tension

Varicose veins

Neuritis

Diabetes

Bursitis

Rheumatism

Strained muscles

Fatigue

Stretch marks

Menstrual cramps

Upset stomach

Piles

Poor peripheral circulation

## **CARDIOVASCULAR**

Atherosclerosis (thickening of artery walls due to fatty deposits)

Septic shock (dangerous drop of blood pressure)

Due to the deep penetration over 1-1/2" into the skin of the infrared rays generated by the FIR dome, there is a healing effect deep in the muscular tissues and the internal organs. The body responds to this deep healing affect as a

hypothalamic-induced increase in both heart volume and rate. Research by NASA in the early 1980's led to the conclusion that in the Infrared stimulation of cardiovascular function would be the ideal way to maintain cardiovascular conditioning in American astronauts during long spaceflights. As the body works to cool itself, there is a substantial increase in heart rate, cardiac output and metabolic rate, and blood flow rises.

### **INFLAMMATORY INFILTRATES, EDEMA, AND EXUDATES**

Edema of the joints  
Inflammation of joints  
Tendinitis  
Sprain  
Joint stiffness  
Peripheral Occlusive Disease  
Gout

Speeds up healing - treatment with infrared has been so successful that hospital stays were reported to have been reduced by 25%.

### **CANCER**

Cancer therapy  
Cancer of the tongue  
Radiation sickness -relieves signs &.symptoms  
Cancer pain –relieved in later stages of cancer  
FIR heat can penetrate through the body and kill cancerous cells

Cancerous cells cannot exist if blood circulation is smooth. Good circulation in the capillaries leaves no

room for a cancerous cell to settle down. (A cancerous cell has to settle down so it can proliferate.) FIR helps capillaries to expand, improving circulation. The cancer cell also has a weakness: heat above 42 deg C can kill it. FIR heat can penetrate through the body and kill cancerous cells. FIR treatment raises body temperature. FIR therapy can alleviate pain and prolong life when conventional cancer treatment fails. Surgery, radiotherapy, and chemotherapy are considered detrimental to health – they are invasive treatments. FIR therapy and immunotherapy are regarded as non-invasive. FIR is extremely beneficial.

## **DENTISTRY**

Dr. John Tate, DDS, says "I have used the FIR dome with over fifty high risk surgical cases without complication or dry sockets on 92% of the patients. The dome is placed over the patient In my office a half hour before surgery and then a half hour after surgery to promote an immune response. The patient then takes the dome home and applies the technology at home for two hours a day for the next three days. They get what we call complete healing. The macrophages produce collagen necessary to stimulate the fibroblasts and the tissue of the fibroblasts then will stimulate the osteoblast, which is bone. That is where the bone forms –and it starts in the first three days-but it takes about six months for complete healing. The two main cells we need in dentistry and in surgery around the bone area are the macrophages and the neutrophils." (which are activated by far infrared heat).

"The macrophage is called the "pac man"of the immune system. The macrophage is a cell that engulfs

and digests microorganisms. Everything starts with the macrophage - “macro” meaning big and “phage” meaning eater. So we have a big eater here. The tentacle on the macrophage grabs the staphylococci and a bacillus rod, and that macrophage extends a pseudopaw to get the bacteria that is now invading our blood!”

“I elected to use the FIR dome for these reasons:

1. Safety. The FIR produces a wavelength that is identical to the body's own wavelength by body heat, and that is at the 8-to-10 micron level, so it is safe.
2. Penetration. FIR penetrates 1-1 ½” so this is an advantage to the dental surgeon who deals with bone as well as soft tissue.
3. Area covered. The unique ceramic construction of the FIR dome covers a large area of the body, with a large coverage in a short period of time. Since there is a 160-degree angle, the penetration and the intensity of the dome produces a strong effect. One hour's use of the FIR dome for five days would produce a large body production of nitric oxide gas. It will also increase circulation, reduce pain and swelling and promote faster healing. That has been my observation with about 50 patients now. They tell me, ‘Doc, I don't need any more antibiotics; I am healing; I feel good; I don't have any swelling.’”

## **IMMUNE SYSTEM**

Pelvic infection

Post-surgical infection

Toe-and-finger-nail fungus

Scleroderma (an autoimmune disease where collagen builds up and healing cannot take place because the circulation can't get to the area due to the buildup of the collagen)

Infrared energy appears capable of potentiating functions of white blood cells. More white blood cells means greater immune function and resistance to disease and viruses.

There is an immune response facilitated by the photons of the FIR technology that turns on the enzyme system) particularly the nitric oxide synthase enzyme. It is well established medically that this is the mechanism involved in the FIR technology.

## **PROBLEMS THAT OFTEN ACCOMPANY AGING**

Menopause

Cold hands & feet

High Blood Pressure

Rheumatoid arthritis

Radiation sickness

Sequelae of strokes

Leg ulcers

Rheumatism

Insomnia

Benign prostatic hypertrophy

Pain which affects ability to sleep

Pain from a metal joint implant  
Speeds healing of joint implants  
Compression fracture pain

### **DISEASES OF ORGANS**

Duodenal ulcers  
Hepatitis  
Gastritis  
Asthma  
Cirrhosis of liver  
Bronchitis  
Hemorrhoids Crohn's Disease  
Post-surgical adhesions  
Cystitis  
Gastric and duodenal ulcers  
Heartburn  
Stomach ache  
Nephritis  
Gastroenteric  
Reduces density of uric acid Cholecystitis

### **EAR, NOSE, THROAT CONDI'UONS**

Sore throats  
Earache  
Nosebleeds  
Tinea

Chronic middle-ear inflammation & infection  
Tinnitus- chronic, severe case cleared with 10 FIR  
treatments

### **RESPIRATORY**

Chest colds  
Bronchitis  
Pneumonia

## **SKIN CONDITIONS**

Clogged Pores  
Poor skin tone  
Open wounds  
Laceration  
Body Odor  
Loosens dead outer skin

Eczema  
Psoriasis  
Aging skin  
Chapping  
Chillblains  
Frosbite

Rashes  
Removes roughness  
Improves skin tone

Nettle rash  
Neurodermatitis

Leg & Decubitus ulcers improved when previously resistant to other care

Dandruff – due to increased blood flow through the scalp

Burns – Scars and pain from burns and wounds are decreased in severity and extent. FIR therapy is used routinely in burn units throughout Asia.

Keloids – significantly softened and in some cases completely gone

Acne – FIR may open pores that have not been functioning in years

Sunburn – FIR radiations are the only antidote to excessive ultraviolet radiation according to Clayton's Electrotherapy, Ninth Ed.

## **MUSCULOSKELETAL**

Arthritis

Accel-decel injury sequelae

Brain contusion

Lumbago

Relieves muscle spasms TMJ arthritis

Cramping

Whiplash

Lumbar strain

Muscle tension

Spinal cord shock

Post-exercise muscle pain

Bursitis

Muscle spasms

Knee injuries

Paralysis

Sciatica

Neuralgia

Abnormal nerve functions

Back, shoulder, neck and muscle pain

Facial paralysis (Bell's Palsy)

Reduces muscle spasms as muscle fibers are heated

Great for warming up before exercise

### **SOFT TISSUE**

Soft tissue injuries- promotes relief in chronic cases

Accelerated healing in newer injuries

Auto accident-related soft tissue injury

Cellulite

Aids in regeneration of tissue

Reduces soreness through direct action on nerve endings in tissues and on periphery

### **WEIGHT LOSS**

Direct excretion of fat

Burns calories

Increases metabolism

Weight loss can come through the energy use needed to produce sweating

Cellulite (a gel-like substance made up of fat, water, and wastes which are trapped in pockets below the skin) A FIR dome will assist this condition, as profuse sweating helps clear it from the body. FIR heat can be significantly more effective than other heat methods due to the heat penetration being twice the depth into cellulite.

As a FIR dome is an unsurpassed expeller of toxins, it is also a great way to get rid of any fat our bodies are using to dilute toxins we are storing.

Two of the highest caloric output forms of exercise are rowing and marathon running. Peak

Output in these sports burns about 600 calories in 30 minutes. Infrared use may better this effect

by burning some 900 calories in a 30-minute session.

Thus infrared might stimulate the

consumption of energy equal to that expended in a 6.9 mile run during only a single session.

The cleansing and purifying benefits attributed to the traditional sweat lodges are now available for daily purification without the time-consuming set-up process that a sweat lodge requires.

### **EXERCISE AND CONDITIONING EFFECT**

An infrared system can play a pivotal role in both weight control and cardiovascular conditioning. The Infrared dome makes it possible for people in wheelchairs, or those who are otherwise unable to exert themselves or who won't follow through on an exercise and conditioning program to achieve a cardiovascular training effect. This also allows for more variety in any ongoing training program. "Regular use may be as effective, as a means of cardiovascular conditioning and burning of calories, as regular exercise,"

For athletes, the FIR dome helps the oxygen-debt to be repaid more quickly. The FIR dome is great for warming up before stretching or starting any vigorous activity. Allow the FIR rays to pour right through your clothing until you just begin to break a sweat. Now you are pre-warmed for stretching, running, skiing in cold weather. This should help to prevent injuries.

## **CASE STUDY**

Rheumatoid arthritis in a 14-year-old Swedish girl who couldn't walk comfortably downstairs due to knee pain since she had been eight years old. Her rheumatologists told her mother that she would be in a wheelchair within two years. However, after three infrared treatments she began to become more agile and subsequently took up folk dancing, without the aid of the conventional approach in her recovery.

## **CAUTION**

If you have a disease or are using any prescription drugs, be certain to consult with a primary care physician before use. Some authorities consider its use inadvisable with systemic lupus, erythematosis, chronically hot and swollen joints, enclosed infections, predisposition to hemorrhage, multiple sclerosis, or during pregnancy. If you have a recent (acute) joint injury it should not be heated for the first 48 hours after an injury. If you have metal pins, rods, artificial joints or other surgical or silicone implants, consult your surgeon prior to using FIR. (Metal pin rods, etc. generally reflect infrared rays.) FIR use must be discontinued if you experience pain near any implants. Heating of the low back area of women during the menstrual period may temporarily increase their menstrual flow. The data presented herein is offered for reference purposes only and to stimulate further observation. No implication of Infrared to cure or treat any disease is implied nor should it be inferred.

## **METAL TOXICITY TESTIMONIAL**

A Doctor's Experience With the FIR Dome.

Two weeks ago I examined the blood of a student of the Institute where I work under Ultra Darkfield to determine the extent of metal toxicity. In Ultra Darkfield) heavy metals reflect within their characteristic spectral index and they can be observed in either low or high density, whichever the case may be. This student was observed to have a very high degree of copper, aluminum and mercury) and I was very concerned for her.

She asked me to take her blood again, this time before and after using the FIR Hot House. The Manufacturer indicates in its literature that the machine is useful in chelating metals, and she wished to give it a try.

We took a blood sample before the treatment and it showed a tremendous amount of free heavy metal. So much metal was observed that the red blood cells could hardly be made out because of the greater reflectivity of the metals in the sample. She then lay for 15 minutes under the PIR Hot House. We took another sample and observed something that I must admit surprised me greatly. The metals were just as abundant in the second sample but they had been completely sequestered in a thin veil of fat. A line of demarcation was clearly seen and on one side of the line, or veil, of fat, the red blood cells were clearly visible against a black background. On the other side of the line, however, the metal concentration continued to be as it had been in the previous sample.

The red blood cells could hardly be seen. The metals had been clearly sequestered by fat.

My preliminary conclusions are that this sequestering will make it possible for the liver to remove the metals by downloading them with the fat, to the gut for disposal. This experience clearly points to the need for repetition and I plan to do further research on the use of the FIR Hot House as a possible alternative to intravenous chelation and other invasive therapies and procedures for the removal of metals and chemical toxicity.