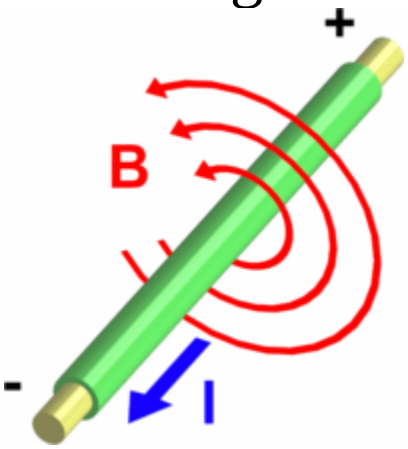
# PEMF Usage Guide




A guide to experimental exposure of
biological tissue to pulsed magnetic fields.

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# Pulse Magnetic Field User Guide

Pulsed magnetic fields are widely documented have significant beneficial effects on biological tissue. PEMF Research Portal provides rapid access to a wide range of topics and peer reviewed articles published in the National Institute of Health database.

This document does not name any PEMF device. This guide is generally applicable to the several forms of high intensity PEMF devices on the market. A high intensity device generates a pulsed magnetic field with intensity in the range of 20,000 gauss or 5 Tesla.

The key attribute of these more powerful devices, as opposed to lower intensity devices, is the tendency to produce a rapid, if not immediate physiological response. Significant responses occur with in minutes.

The material here reflects about 20 years of worldwide experience using these devices, with limited use in the United States.

This document shows probe placements only for experimental application.

## *General Guidelines*

Pulse machines are powerful. They make a clicking or popping sound when electricity discharges across an internal spark gap, much like a spark plug in a car.

The instantaneous discharge creates a brief very intense current in the probe, which in turn causes a rapid rising and falling magnetic field, typically called a pulse.

The electricity in the wire creates a "tendency" to induce electricity in the surrounding space. When the probe is near a conductor, like biological tissue, it induces brief bursts of energy into the tissue.

Most tissues absorb some of this energy and can use it for biologically useful and often necessary purposes.

Pulse machines can be very powerful. There is typically a sensation that accompanies each pulse that feels like a mild shock. Often there is a tendency for muscles to twitch.

## *Cautions and Limits*

The main cautions using these devices:

- *Always have users fill out the pain survey and release*. These devices are experimental and are not approved for treatment of any medical condition whatsoever.
- *Do not use with implanted electronic devices*. Dental work, and metal implants are okay.
- *Limit early exposure to ten minutes for frail individuals and 15 minutes for others*, and increase by five minutes each exposure until 30 minutes. Pulsed magnetic fields cause electroporation. Electroporation can cause cells to release significant amounts of toxins, which in turn can overload the detoxification systems.
- A*pproach the face and lower back slowly*. Pulse intensity can cause significant and unnecessary discomfort.

- *Remove all metal necklaces and bracelets.* The pulsed fields will cause large reverse currents and will weld the joints of these devices together. They may also cause over-heating and burns to the user.
- *Remove wallet and credit cards.* These pulse machines will erase magnetic strips on all identification cards very quickly.
- *Remove car keys with electronics.* Pulse machines will quickly and permanently damage electronic keys.
- *Beware of teeth, sinuses and lower back.* These areas tend to be quite sensitive to pulses. Always approach slowly, or give the probe, or the intensity control to the user.
- *Keep at least ten feet away from computers and other sensitive electronics.* Pulse machines can damage electronic equipment.

## *Detoxification Support*

**Give Water.** Water helps to eliminate toxins released by treatment. It's best to give a glass of water before treatment, and one afterwards.

Always remind the value of drinking ½ the person's weight in ounces i.e. a person who weighs 160 lbs. divided in half equals 80 ounces of water.

## *Intensity Management*

Many pulse machines have an intensity control knob. It is often useful to:

1. Turn the intensity control to the lowest position;
2. Start the PEMF device;
3. Place the probe on the user;
4. Show the user the control knob;
5. Have the user increase the intensity to the level they prefer.

This protocol puts the user in direct control of the intensity of their treatment. This avoids accidental discomfort from over-intensity.

When the user has control, fear is less likely, and a beneficial experience is more likely.

## *Neat is better*

When wrapping the torso or any joint, neat, snug but not constrictive loops deliver more energy to tissue. Space between the tissue and the probe reduces the transfer efficiency of energy to the body.

## *Pulse Frequency*

Most PEMF devices have a variable pulse frequency.

Intensity on most PEMF devices is inverse of frequency. This means that the faster the pulses, the lower the intensity. Slow pulses mean that there is more energy in each pulse. Fast pulses mean less energy in each pulse.

## *Pulse Frequency Variance*

Pulse frequency and intensity tend vary for most PEMF devices – even on the same setting. This is a useful characteristic that increases the biological effect of the devices.

The pulse frequency varies for several reasons:

- Input power from the plug varies around 120 volts. This variance results from the local power grid and results in small changes to the energy, and therefore internal charging time for the device.
- The dielectric breakdown for the spark gap tends to vary due to variance in both atmospheric and local space position of the machine.

Some devices also exhibit a small variance in pulse intensity.

These variances are useful and tend to increase the biological effects of the devices.

## Expectations

Be very careful creating expectations with users. Generally a three to six minute exposure will create a decrease in pain and increase mobility. Areas with discomfort generally show a reduction of two to six points during a 10-15 minute session.

The pain survey contains graphics which request the user to provide pain scoring for common areas in the body.

- About 5 of 10 will experience a pain reduction of 3-4 points in all treated areas.
- About 3 of 10 will experience a pain reduction of 7 points in all treated areas.
- About 1 of 10 will experience a pain reduction of 2 points in treated areas
- About 1 of 20 will experience no pain reduction in treated areas.
- About 1 in 500 will experience an increase in pain in treated areas.

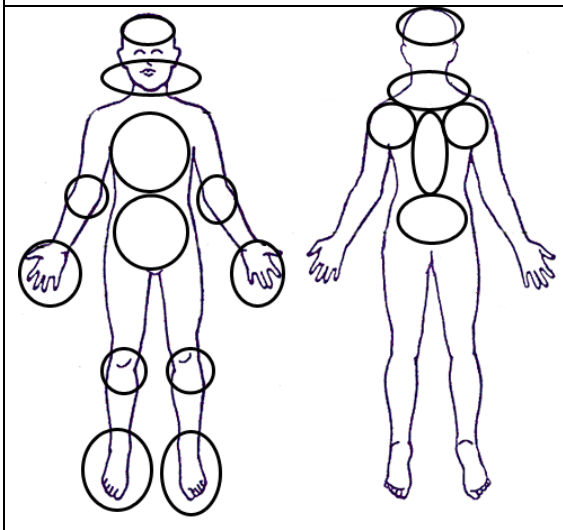
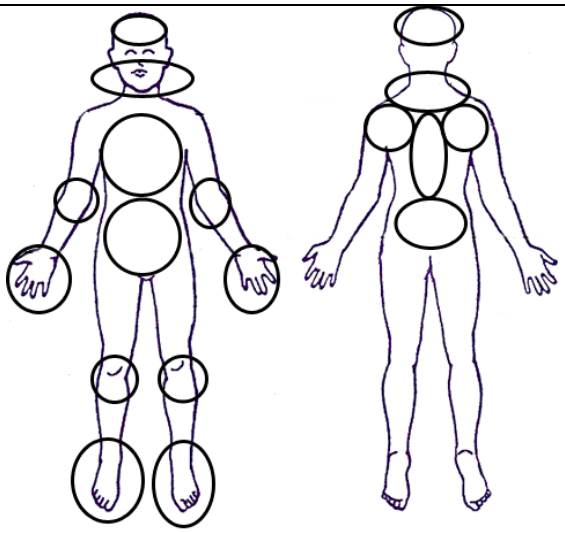
The pain score system is useful for several reasons:

- It causes the user to think about and rank their discomfort;
- The areas with pain become the areas to treat;
- Reduction in pain scores enables the user to assess the effectiveness of the pulses.

Please think about the areas marked then and indicate two areas that hurt most in the **Before** panel.

Record pain for each area with a 0-10 pain scale. *Zero,0,* is no pain and a *ten, 10,* is unbearable.

Please record the **After** pain level for the pulsed areas.

| **Before** | **After** |
|---|---|
|  |  |
| **Before Total:** | **After Total:** |

## *Floating Pain*

Some users will perceive different or new pain in different areas after treatment

The brain blocks all but top-priority pain. It's the reverse of getting rid of a headache by hitting your hand with a hammer.

When an area stops hurting, then the brain often begins to recognize pain in another area.

To a user it may seem like the treatment caused the pain to move elsewhere. Explain to the user that the brain blocks pain. When a bad pain goes away, the brain allows perception of pain that was always there, but blocked.

This makes it seem like the pain moves around. Explain that the brain blocking phenomenon. When a major pain stops, the brain starts to perceive other pains. Over time, and presuming exposure limits aren't exceeded.

Follow pain areas toward head.

## *Exposure Frequency*

Most users will benefit from 3x weekly exposures for the first month.

Recent injuries, burns, sprains and broken bones often benefit from near continuous exposure. For local/joint trauma 2-3 exposures per week support active healing.

Use as needed for pain relief. Other than systemic detoxification challenges there are no known issues from over-exposure.

The typical pain relief lasts from 1-4 days depending on the severity and age of the trauma. Long term spinal pain often takes up to 15 applications to produce a result.

Response duration tends to increase over time. The increase in durable response likely results from healing.

Expect 40% durable response in 2 weeks for joint and injury trauma. Expect a 20% durable response per month for long term trauma.

If the user does not experience responses in this range, refer to Membrane Power.

## *Die off Reactions*

Pulses kill bacteria and often release hitchhiker viruses. About one in four individuals will experience a viral infection, cold, flu or other symptoms early in the treatment sequence.

This is a natural reaction and is part of the healing cycle. Limiting exposure, especially in the torso area, helps to limit the die-off and reduces immunological challenge.

Too much viral load from too much early exposure can overwhelm the immune system causing an outright cold or flu, or other active illness.

# Pulsed Magnetic Fields

Pulsed magnetic fields are a powerful catalyst in healing cell membranes. Pulsed fields in the range of 50,000 gauss, or 5 Tesla produce immediate and durable therapeutic responses. The characteristics of these responses are most likely attributable to improvements in cell membrane performance.

## *Mode of Action*

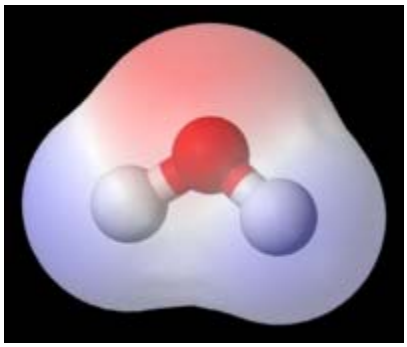


**Figure 1 - Polar water Molecule**

Cell membranes are stacked polar lipids. High intensity pulsed magnetic fields insert molecular energy to polar lipids that constitute the cell membranes. Polar lipids have molecular an electron imbalance which causes them to respond, or wiggle, when exposed to strong brief intense electromagnetic forces.

Lipids or fats are polar. They have two ends, one is fat soluble, or lipophilic, and the other is water soluble or hydrophilic. Fatty molecules self organize in water. The polar structure occurs because there is a net electron deficiency at one part of the molecule and an excess at the other.

Powerful electric fields, caused by the impulse creation and destruction of magnetic fields, transversely push and pull on the "polar" regions of polar molecules, exciting them on a molecular scale without significantly adding to entropy.

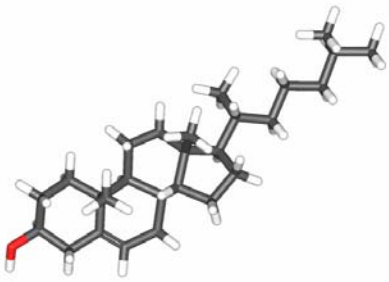
More importantly fat, like the cholesterol molecule at the left, both polar and long. When exposed to a magnetic field, there is spin moment where the field pulls on one end and pushes on the other. This enables a tug/nudge effect which gently shakes the polar lipids. Cell membranes often have toxins which prevent tight stacking, or create chemically or electrically leaky cell membranes by disrupting organization of polar lipids, typically caused by toxins or other molecules.

This disorganization decreases the cell membrane's ability to maintain electricity and enables power leakage across the cell membrane creating a cellular power deficiency which underlies may diseases and syndromes.

Shaking the lipids with pulsed magnetic fields tends to improve organization in the cell membrane, which in turn often creates an improvement in the electrical integrity, and hence membrane's power production performance.

Moreover the improving the organization of the lipids also decreases the tendency for structured synthetic toxins to fit within the lipid matrix, producing a mild detoxification effect.

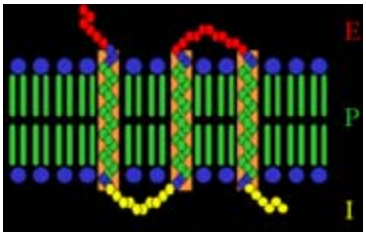
Powerful Pulsed magnetic fields also cause temporary electroporation of the cell membrane. Electroporation accelerates the cellular metabolism and causes cells to dump toxins and absorb nutrients at an accelerated rate. Both phenomenons tend to be therapeutic and further enhance cellular metabolism. The electroporation effect of pulsed magnetic fields lasts from one to four



hours.

## *Enhance Anabolic Metabolism*

Anabolic Metabolism is the portion of the cellular cycle that supports healing and regeneration. This author asserts that anabolic metabolism is driven by anabolic energy production when sodium and oxygen merge in the cell membrane producing cellular energy and potassium.




Successful anabolic metabolism requires an adequate transmembrane potential because anabolic energy production requires strong electrostatic forces, in the range of 23 Million Volts/Meter to drive the quantum reactions which support anabolic metabolism. An adequate transmembrane potential is also required to drive many cell membrane receptor functions.

This author further asserts that deficiency in transmembrane potential is the cause of autoimmune and hormone related dysfunctions that manifest as chronic diseases.

Repairing anabolic metabolism is therefore the essential element in restoring health in individuals subject to a wide range of degenerative, hormonal and autoimmune diseases.

Anabolic performance is critical to healing. Individuals with suppressed anabolic metabolism tend to sleep poorly, age rapidly, and lack the ability to recover from injuries. They also exhibit a wide range of pathologies usually associated with systemic potassium deficiency.

## *Enhance Catabolic Metabolism*

Pulsed magnetic fields tend to balance catabolic metabolism. The US army documented the effect where two ATP, Adenosine Triphosphate, molecules wrap around a magnesium molecule producing a quantum reactor which produces a large amount of energy, and calcium.

Pulsed magnetic fields, combined with oxygen, magnesium, and sulfur, tend to improve energy in individuals with anabolic imbalance. Most likely by supporting complementary cellular energy production.

The specific methods of actions remain undocumented in public scientific literature, but the author suggests:

- Electroporation elevates the intracellular magnesium, sulfur and oxygen concentrations;
- Pulsed magnetic fields catalyze the performance of ATP structures, and cofactors, that produce metabolic energy;
- Supporting the easily observable tendency to normalize oxidative catabolic performance in catabolic suppressed individuals.

Catabolic inhibited individuals exhibit an absence of daytime energy, or lethargy. They also tend to exhibit calcium metabolism dysfunctions.

## *Clinical and Research Support*

The assertions above are supported by a huge body of scientific literature.

Curiously, there is little material that articulates the cause and effect relationships of pathologies, magnetic fields, energy production, and the cell membrane. The real story remains beyond "enhanced ion transport" remains untold. A few references cite enhanced ion transport, but the methods do not account for persistent atomic concentration imbalances.

It is unlikely that this publication represents original discovery. It seems likely that this information has not been publicly promoted to avoid both political and social consequences, endured by the individuals who originally presented and verified the science supporting these models 50 years ago.

A clear example of the cellular effects of pulsed magnetic fields is in non-union joint fractures. Click here to review 110 NIH research articles discussion non-union fractures and magnetic fields. Cellular regeneration capability is illustrated in the non-union clinical examples but is NOT limited to bone tissue.

Most tissue including nerves, organs, and even brain, respond favorably to pulsed electromagnetic stimulation. Click here to review 424 NIH research articles discussion non-union fractures and magnetic fields.

## *Sensitivity to magnetic fields*

Many individuals are sensitive to magnetic fields. They become disturbed near power lines, cell phones, and near electromagnetic sources.

Power companies, cell phone vendors, and the industries which move power and information strongly prefer to avoid publication of information which shows negative health effects from commercial EMF industries to preserve their economic well being.

Individuals who experience these disturbances strongly disbelieve popular assertion that electromagnetic influences are biologically neutral. A large body of scientific and popular data supports the assertion that electromagnetic fields are very biologically active.

On one hand, many electromagnetic devices are documented to provide significant health effects; while on the other; commercial sources of electromagnetic pollution fervently claim that their emissions have any effect on biological systems whatsoever.

If you want to prove that electromagnetic emissions have an effect on living systems, put a mouse in a microwave oven.

## *Separating Sensitive from Insensitive*

There is a strong tendency for people with poor cell membrane integrity to be significantly more sensitive to electromagnetic radiation than individuals with high cell membrane integrity and optimal membrane power.

Weaker cells naturally absorb energy from wherever they can, including from stray electromagnetic sources. Electrically weak individuals are more sensitive than electrically strong individuals.

## *Knowing Good from Bad*

The difference between beneficial and detrimental exposure boils down to the tendency for an exposure to impose an unnatural resonance pattern on the cell or on the body. The unnatural resonance disrupts the natural biological processes which require the natural harmonics to operate optimally.

In other words, electromagnetics which draw tissues away from their natural harmonics induce disturbances which may to disrupt cellular or systemic function.

This is why cell phones (MHz), and power lines (60 Hz) tend to produce discomfort in certain individuals. These individuals generally lack the ability to resist stray harmonics, and the stray harmonics draw them into an unnatural resonance.

## *Resonant Therapies*

Certain frequency devices tend to reinforce potentially weak biological functions. Royal Rife, Fritz Popp, and many others have spent a lifetime studying biological resonance phenomenon, and developing ways to use varying forms of energy to beneficially influence biological systems.

These strategies tend use resonant strategies to enhance biological performance of a host entity, or to disrupt the biological performance for pathogens.

## *Pulsed Therapies*

Pulsed magnetic fields supply raw energy to cells.

An example is like striking a bell. The bell rings at its own tone, as long as the strikes are timed far enough apart. Striking the bell at closer intervals increases the average volume of the ringing, but does not damage the bell.

## *Pulses and Ringing*

The resonance of the bell, ringing, tends to cause dirt, and rust, to fall off because the non-bell particles to vibrate at a different frequency at the bell. This resonance differential causes the bell and the dirt to try to move in different directions and stresses the bonds that hold them together. The net effect is that loose dirt will fall off of a ringing bell.

## *Ringing and Pathogens*

Biological tissues stimulated with raw pulse energy resonate at their natural frequency.

Reinforcing the natural resonance strengthens the dominant organism. Similarly, strong master resonance creates an often debilitating strong energetic disadvantage for pathogenic organisms, by disrupting non-harmonic, pathogenic elements.

PEMF exposure also provides anti-pathogenic effects most clearly documented in the ability to use PEMF as a sterilization and pasteurization technique, NIH References Here. It's very handy to be able to do in-vivo sterilization, and to strengthen the host organism.

## *Pulsed Magnetic Fields and Biology*

The situation in biological organisms is similar. The pulse is the ringer, causing the body to ring strong at its natural frequency. Anything which doesn't ring along, like pathogens, experience stress, and encounter an environmental disadvantage.

## *Electromagnetic Sensitivity Explained*

Electrically weak individuals will ring loudly. This potent ringing creates strong sensations.

Individuals with electrically weak cells tend to be more sensitive to pulsed fields because their cells respond more readily to both beneficial and harmful radiation.

They tend to gain energy rapidly from pulsed fields which supports cellular metabolism. Likewise they tend to resonate with harmful radiations. Use of pulsed magnetic fields tends to decrease sensitivity to detrimental electromagnetic radiation by strengthening the native bio-field.

## *Typical Biological Responses*

In terms of therapeutic response, pulsed therapies substantially accelerate healing, usually reducing recovery time to about 1/3 of the normal time. There is a frequent tendency to provoke pathogenic die-off, and hydrophilic detoxification.

In conditions where the body lacks the ability to recover from injury or effects of chronic stressors, energetic intervention with pulsed devices frequently enables healing in conditions which would not heal.

Enhanced healing responses are consistent with a wide range of physical conditions. Click the links in the list below to review NIH articles that document therapeutic effects of pulsed fields:

- Recovery from non-union bone fractures and degenerative bone conditions;
- Traumatic injury, burns, broken bones, sprains, and pain;
- Chronic injury, back, neck, sciatica, osteoarthritis;
- Autoimmune Disorders, rheumatoid arthritis, multiple sclerosis, Lupus
- Metabolic dysfunction, liver recovery, digestive dysfunction,
- Ischemic injury, stroke and heart attack;
- Neurological injury, spinal.

The alert reader will recognize a high correlation between cellular regenerative properties of pulsed magnetic fields, and the theme of this publication.

The alert reader should also note the prevalence of data indicating tendency for beneficial effects with “incurable” and “chronic” conditions.

Pulsed magnetic fields clearly benefit cellular metabolism. Benefits spanning such a wide range of conditions strong suggest pulsed fields help cells heal better and faster, and often enable healing beyond natural metabolism, or other known modalities.

## *Why PEMF Works*

Here is a summary of documented benefits from pulsed magnetic fields which suggest why electromagnetic fields create a spectral beneficial response:

- Enhance or balance cellular metabolism, often enabling cells in acute distress to return to biological competency.

- Decrease in-vivo viability of pathogenic microorganisms in a host without harming the host or beneficial symbiotic organisms;
- Decrease inflammation by improving lymphatic flow;
- Aid detoxification by stimulating elevated cellular respiration, or electroporation;
- Facilitate structural reorganization of cell-membrane lipids resulting in better cell membrane integrity.

## The Toxic Inversion Test

Rare individuals will have a toxic inversion. A toxic inversion occurs when an individual's intra-cellular fluids are very polluted.

Electroporation opens the cells, and instead of releasing toxins, causes the cells to take-back toxins. When this occurs, pain increases.

If an individual has two or more of the following telltales:

- In Pain over 3 months
- Grey haze over iris
- Green or yellow tongue
- Yellow eyes, Yellow skin, Jaundice
- Grey Iris Ring
- Anyone with long term RA/MS/Lupus diagnosis

Use the toxic inversion test:

1. Pick a joint, typically a knee, wrist or ankle;
2. Ask the user to give a pain score for that joint;
3. Use the pulse machine on that joint for 3 minutes;
4. Wait 15 minutes;
5. Ask the user to give a pain score for the joint;
6. If the pain is greater, then the user has a toxic inversion.

### *Toxic Inversion Support*

The main challenge with a toxic inversion is the clearance of lymphatic fluids, liver flow and systemic detoxification. This is often a quite involved process.

Be very cautions with the user. Reduce maximum exposure to three minutes for the first time, increasing at most three minutes for each exposure thereafter.

Use the Metabolic Series protocol because it will support the liver and detoxification organs. It is very likely the user will need to implement significant detoxification processes to regain health.

Please review the liver flush techniques in: Membrane Power.

## Legal

NEVER make any medical claims. These devices are not approved for use as a medical device in the US.

The use of medical claims is tempting, but if you feel you need to use them, then you probably need to study your client's health problem. Medical claims map to symptoms instead of causes.

Durable symptom relief requires removal of the cause. "Medical interventions" do not seek cause. This makes credible differentiation possible, if you know enough to identify the cause of underlying symptoms.

A medical claim is any "statement", direct or implied, "that a device will treat, cure, prevent, or mitigate any specific disease or specific medical condition".

Any time you use a sentence with a "medical condition" beware. Always generalize statements to "health". Fortunately, the topic of medical condition always overlooks "cause", so it's generally possible to re-class medical conditions as an inadequate healing response, and hence a health discussion. Most people understand the lingo.

Always phrase descriptions toward improvements in health and structure or function – "Improves joint health" is a structure/function assertion, and is generally legal, appropriate and correct.

## Introduction Sequence

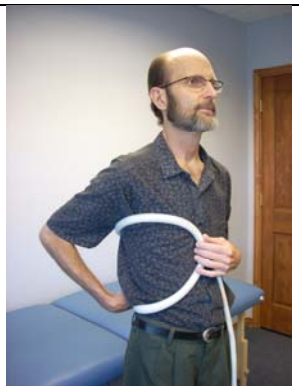
The introduction sequence enables the user to gradually experience the pulse sensation.

If the machine is started in direct contact with the user can cause surprise and discomfort. This technique enables the user to experience first contact without discomfort or surprise.

| | |
|---|---|
| 1. Start the machine pulsing at a moderate level;<br>2. User holds probe at arms length; |  |
| 3. User gradually probe toward the chest; |  |
| 4. If it becomes too intense, move it away. |  |
| 5. Closest position is maximum intensity |  |

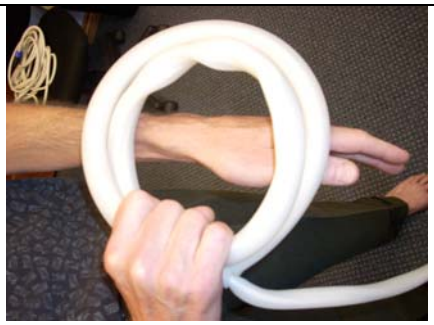
## Metabolic Series

The metabolic series covers the major organ groups

| | |
|---|---|
| 1. Lower Abdomen Digestive System |  |
| 2. Crown - Brain |  |
| 3. Collar – Thyroid, Thymus, Heart, Lungs |  |
| 4. Mid Back - Kidneys, Adrenals, Heart, Lungs |  |
| 5. Under Right Arm - Liver |  |

## Joint Application

Tissues respond best when the probe is applied in 3 dimensions.

| | |
|---|---|
| 1. X dimension |  |
| 2. Y dimension |  |
| 3. Z dimension |  |

## XYZ to Knee

This series illustrates probe locations for three dimensions for a knee. The same principles apply for other joints, elbows, ankles, wrists, etc.

| | |
|---|---|
| 1. Parallel to floor |  |
| 2. Down through knee |  |
| 3. Knee through loop |  |

## Sit Position

Sitting on the probe is a useful position for treatment of the torso area.

| | |
|---|---|
| 1. One Loop |  |
| 2. Two Loops |  |
| 3. Sit on loop |  |

## Head Introduction

The head tends to be very sensitive. If the probe is placed near the head, then the excess sensitivity may overwhelm the user. The head introduction enables the user to control the probe position, and hence intensity of the experience.

Tell them to hold it at a distance and

| | |
|---|---|
| 1. User holds probe at a distance. |  |
| 2. Bring it slowly toward the head. |  |
| 3. Pull away if intensity is too great. |  |

## Double Probe Technique

The double probe technique enables more intense application to a smaller area. This technique helps considerably

| | |
|---|---|
| 1. Hold probe flat |  |
| 2. Twist into figure 8 |  |
| 3. Fold figure 8 back onto itself |  |
| 4. Hold both loops together |  |
| 5. Use doubled probe as needed. |  |

## Joint Wrap Technique

This technique is useful for application to any joint, knee, ankle, elbow, wrist, etc.

- Wrap snug, but not tight;
- Should be comfortable and should not interfere with circulation;

| | |
|---|---|
| 1. Hitch the first loop to hold in place |  |
| 2. Wrap loops tight and neat |  |
| 3. Finish wrapping with a hitch to hold wraps in place. | |

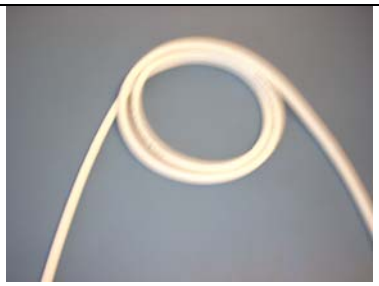
## Water Application

Tissues respond best when the probe is applied in 3 dimensions.

| | |
|---|---|
| 1. Put about 2 inches of water in a plastic pan |  |
| 2. Place probe in pan |  |
| 3. Put Feet in pan |  |
| 4. Double Loop Option |  |

## Long Probe Loops

The long probe can be used in situations where the lasso probe is too intense to apply one or more loops to a sensitive area.

| | |
|---|---|
| 1. One Loop |  |
| 2. Two Loops |  |
| 3. Three Loops |  |
| 4. Multiple loops in use |  |

## Torso Wrap

Experienced users may want to use torso positions. We advise deference of torso wraps until users have used a machine about 5 times. Torso wraps produce significant effects with internal organs.

| | |
|---|---|
| 1. High Chest |  |
| 2. Mid Chest |  |
| 3. Upper Abdomen |  |

| | |
|---|---|
| 4. Lower Abdomen |  |

## Other Useful Wrapping Techniques

| | |
|---|---|
| Caduceus – intense field at the intersection can concentrate on a specific area |  |
| Use caduceus loop to target any small area |  |
| Caduceus on Ear |  |
| Caduceus on Thyroid |  |
| Caduceus wrap on a joint |  |

## Use on Face, Ears & Teeth

The face, particularly the sinus and teeth tend to be sensitive. Doubling the probe tends to decrease the discomfort of application to these areas.

| | |
|---|---|
| Double the Loop |  |
| Nose, Sinuses & front teeth |  |
| Left Eye & Sinus, Mandibular joint |  |
| Right Side |  |
| Ear |  |