

COMPLEX REGIONAL PAIN SYNDROME

Philip Getson, D.O.
International Pain Summit
November 15, 2019

- ▶ “Holmes and Watson are on a camping trip. In the middle of the night Holmes wakes up and gives Dr. Watson a nudge. “Watson” he says, “look up in the sky and tell me what you see.”

“I see millions of stars, Holmes,” says Watson.

“And what do you conclude from that, Watson?”

Watson thinks for a moment. “Well,” he says, “astronomically, it tells me that there are millions of galaxies and potentially billions of planets. Astrologically, I observe that Saturn is in Leo. Horologically, I deduce that the time is approximately a quarter past three. Meteorologically, I suspect that we will have a beautiful day tomorrow. Theologically, I see that God is all-powerful, and we are small and insignificant. Uh, what does it tell you, Holmes?”

Watson, you idiot! Someone has stolen our tent!



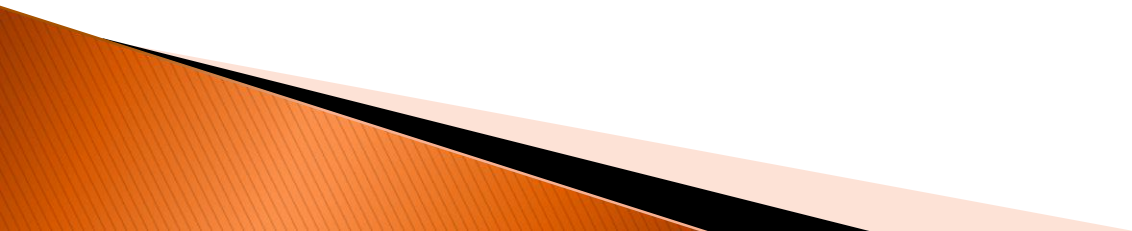
NOMENCLATURE

- ▶ Causalgia
- ▶ Sudek's Atrophy
- ▶ Post traumatic Pain Syndrome
- ▶ Post traumatic Painful Arthrosis
- ▶ Sudek's Dystrophy
- ▶ Post Traumatic Edema
- ▶ Reflex Dystrophy
- ▶ Shoulder Hand Syndrome
- ▶ Chronic Traumatic Edema
- ▶ Algodystrophy
- ▶ Peripheral Trophoneurosis
- ▶ Sympathalgia
- ▶ Reflex Sympathetic Dystrophy
- ▶ Reflex Neurovascular dystrophy

SIGNS AND SYMPTOMS

- ▶ Pain that is described as deep, aching, cold, burning, and/or increased skin sensitivity
- ▶ An initiating injury or traumatic event such as a sprain, fracture, minor surgery etc. that should not cause as severe a pain as being experienced or where the pain does not subside with healing
- ▶ Moderate to severe pain associated with allodynia (pain responses from stimuli that do not normally evoke pain)
- ▶ Continuing pain with hyperalgesia (heightened sensitivity to painful stimuli)
- ▶ Abnormal swelling in the affected are
- ▶ Abnormal hair or nail growth
- ▶ Abnormal skin color changes
- ▶ Abnormal sweating of the affected area
- ▶ Limited range of motion, weakness or other motor disorders such as paralysis or dystonia

BUDAPEST CRITERIA

1. Continuing pain, which is disproportionate to any inciting event
 2. Must report at least one symptom in *three of the four* following categories:
 - Sensory: Reports of hyperalgesia and/or allodynia
 - Vasomotor: Reports of temperature asymmetry and/or skin color changes and/or skin color asymmetry
 - Sudomotor/edema: Reports of edema and/or sweating changes and/or sweating asymmetry
 - Motor/Trophic: Reports of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and or trophic changes (hair, nails, skin)
- 

BUDAPEST CRITERIA

3. Must display at least one sign at the time of evaluation in *two or more* of the following categories:
 - Sensory: Evidence of hyperalgesia (to pinprick) and/or allodynia (to light touch and/or deep somatic pressure and/or joint movement)
 - Vasomotor: Evidence of temperature asymmetry and/or skin color changes and/or skin color asymmetry
 - Sudomotor/edema: Evidence of edema and/or sweating changes and/or sweating asymmetry
 - Motor/Trophic: Evidence of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and or trophic changes (hair, nails, skin)
4. There is no other diagnosis that better explains the signs and symptoms

Complex Regional Pain Syndrome: Practical Diagnostic and Treatment guidelines,
4th Edition. Pain Medicine 2013 – Harden et al.

EXACERBATING FACTORS

Stress

Cold

Changing Barometric Pressure

Infection (Especially dental)

Humidity

Poor diet

Vaccinations

Toxins (Aluminum & Fluoride)

Certain Prescription Medications

Candida

Lyme disease

VASOMOTOR CHANGES



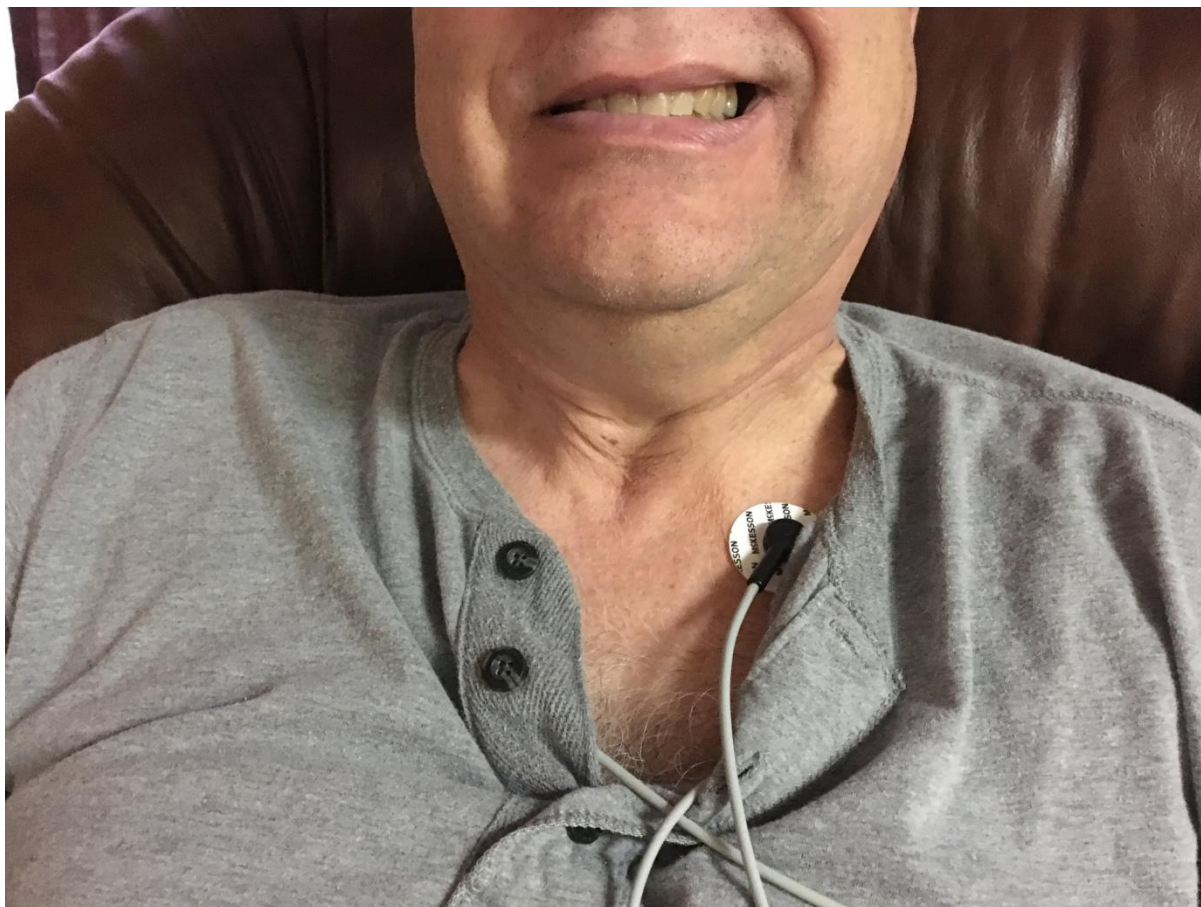
ABNORMAL SWEATING



MOTOR DISTURBANCE- DYSTONIA



FACIAL DYSTONIA



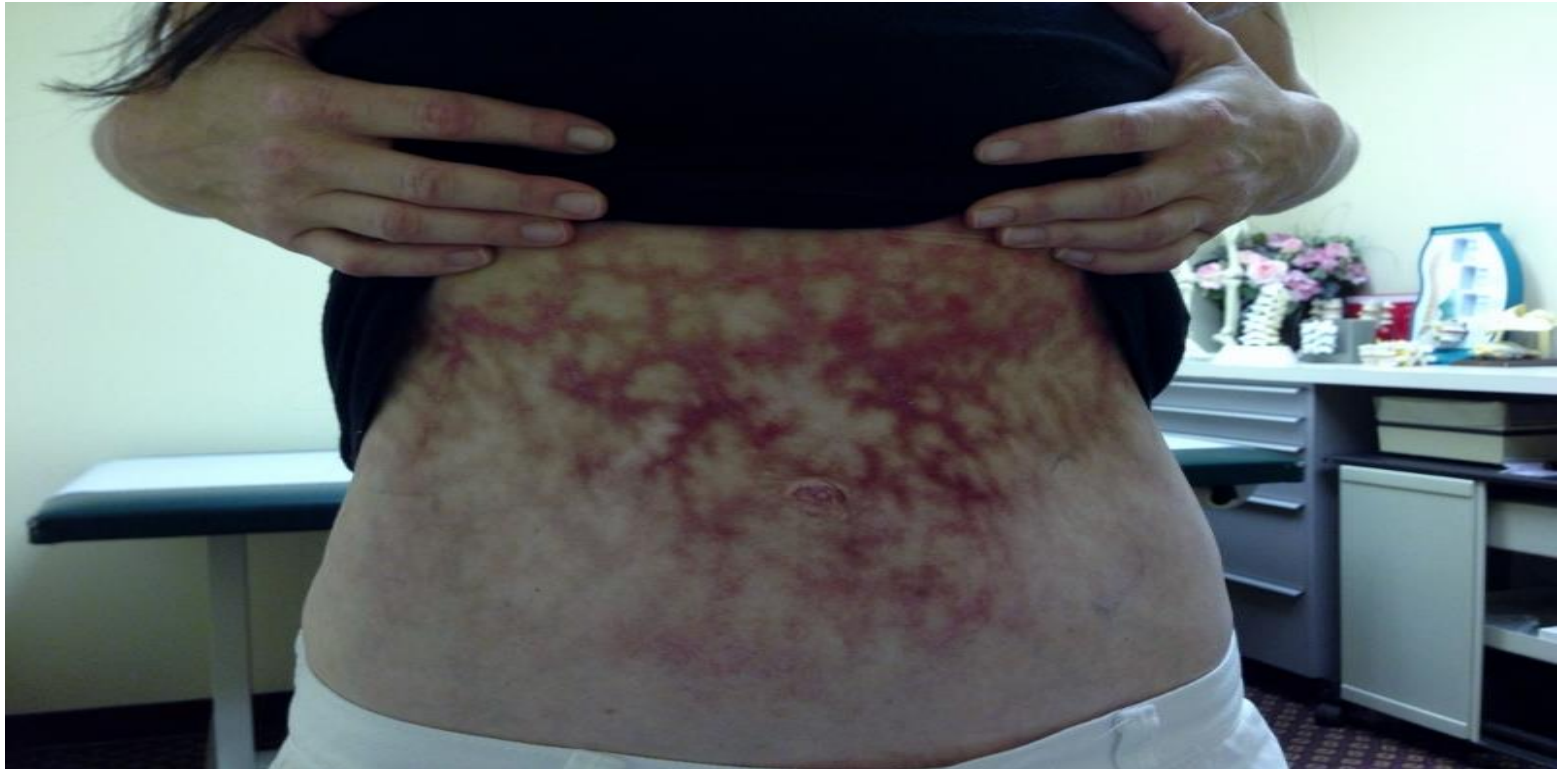
NEUROGENIC EDEMA



ERYTHEMA



LIVIDO RETICULARIS

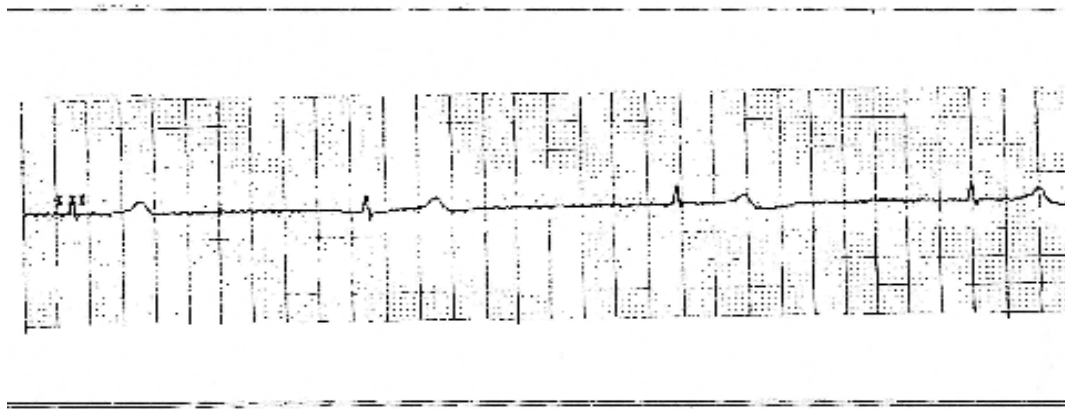


STASIS DERMATITIS



SYSTEMIC MANIFESTATIONS OF C.R.P.S.

CARDIAC

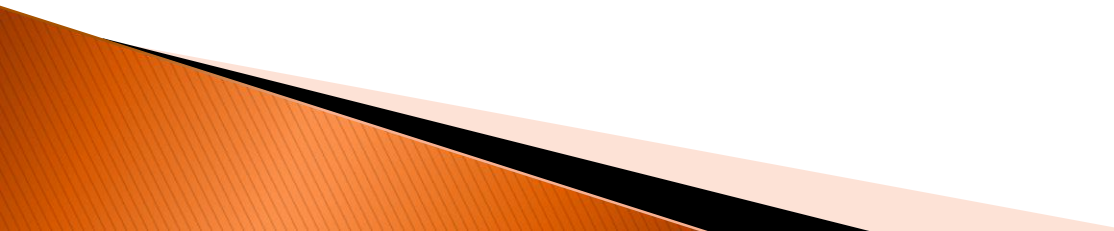


Gastrointestinal

Acid Peptic Disease
Irritable bowel symptoms
Nausea and vomiting.
Gastroparesis

We have had great success with the endoscopic administration of Botox into the pyloric sphincter. In many instances one to three such injections have stopped the vomiting for prolonged periods of time.

**Dysphagia,
Indigestion
Constipation (frequently opioid induced)
Biliary dyskinesia**



Urinary

Incontinence, dysuria or inability/difficulty voiding.

The condition is usually misdiagnosed as Interstitial Cystitis

Botox injections into the pelvic floor have helped a great number of sufferers.

Additionally, I have found that lumbar epidural infusions of bupivacaine over a 5 day period works very well.

Ketamine has resolved this to a small degree as well.

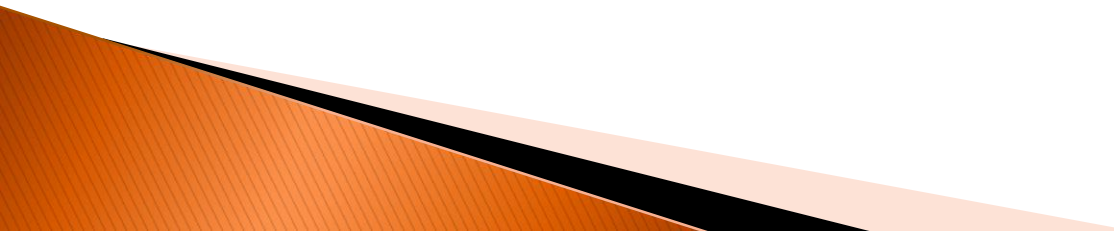
HEADACHES

MIGRAINES(?)
TENSION HEADACHES
GREATER OCCIPITAL NEURALGIA



VISUAL DISTURBANCE

DOUBLE VISION
BLURRED VISION
OCCULAR MIGRAINES
VISION LOSS
PHOTOPHOBIA
BURNING OF THE EYES



OTORHINOLARYNGOLOGIC

Patients report significant otophobia.

Recently there has been an increase in individuals reporting significant discomfort from vibration, specifically the bass of stereos even through walls and from adjacent motor vehicles while travelling.

Intermittent and transient hoarseness comes from the effect of the disease on the branchial plexus and is frequently misdiagnosed as immune compromise

DENTAL

Unfortunately dental disease is rampant in patients with CRPS

Part of this stems from dietary indiscretions, part from immune system compromise and part from the disruption of the dental nerve roots.

Perhaps the greatest reason is that the side effects of **common medications prescribed for chronic pain lead to a change in lifestyle, poor oral hygiene, poor nutrition and a loss of saliva (dry mouth) that result in decay, periodontal disease and ultimately tooth loss**

DERMATOLOGIC

- ▶ The most common finding apart from dry skin or hyperhydrosis is neurodermatitis. This can occur randomly on any area of the body. Lesions have the appearance of small acne-type eruptions that itch for hours to days and disappear spontaneously. There is no specific etiology apart from the CRPS and no treatment save for topical low potency steroids or anti-histamines to reduce the itch. If scratched they will scar



DERCUM'S DISEASE

Dercum's disease, is a rare condition characterized by multiple, painful lipomas. These lipomas mainly occur on the trunk, the upper arms and upper legs. The understanding of the cause and mechanism of Dercum's disease remains unknown. Possible etiologies include: nervous system dysfunction, mechanical pressure on nerves, adipose tissue dysfunction and trauma.



OTHER SYMPTOMS

- ▶ Shortness of breath
- ▶ Inability to take a deep breath
- ▶ Neurogenic edema
- ▶ Muscle weakness/atrophy
- ▶ Endocrine dysfunction – adrenal, thyroid, hormonal imbalance
- ▶ Gardner Diamond Syndrome – spontaneous bruising in uninjured areas
- ▶ Lethargy
- ▶ Fatigue
- ▶ Sleep Disturbance
- ▶ Vertigo & Syncope
- ▶ Cognitive Dysfunction – STML


“Systemic Complications of Complex Regional Pain Syndrome” –
Robert J. Schwartzman –*Neuroscience & Medicine*, 2012,3,225–242

MEDICATIONS

Antidepressants
Anti-anxiety agents
Antispasmodics
Calcium Channel Blockers
Antihypertensives
Anti-epileptics
Muscle Relaxants
Anti-inflammatories
Analgesics

Pamidronate
***Neridronate**
Lenalidimide
Mexilitine
Capsaicin
DMSO
Topical Compounds
Dextromethorphan
Amantadine
Ketamine
IVIG

OPIOID- INDUCED HYPERALGESIA

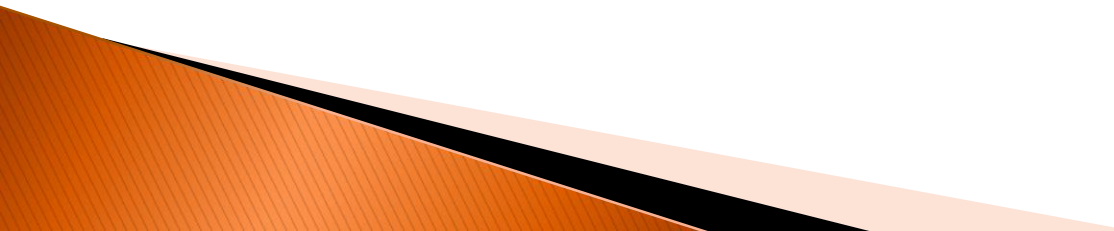
- ▶ Opioid-induced hyperalgesia is a phenomenon observed in patients treated with opioids, who paradoxically demonstrate an increased sensitivity to painful stimuli.
 - ▶ Pain is associated with hyperalgesia, allodynia or both and may be experienced in a different location; and of a different quality than the original pain.
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THERMOGRAPHY

“HEAT PICTURE”

WHAT IS THERMOGRAPHY?

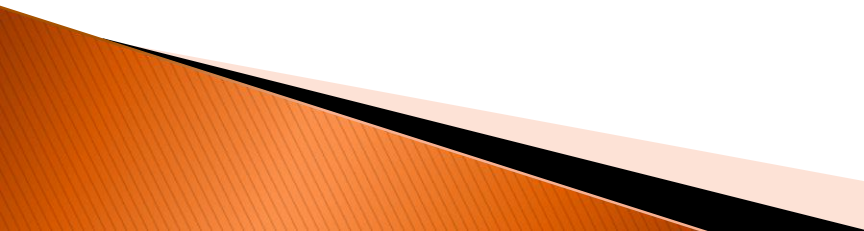
Thermography uses state of the art, FDA approved infrared technology to provide an image of the body's physiologic responses. This is a totally safe, non-radiologic, non-invasive painless test with absolutely NO known adverse effects and NO contraindications. It can be used at any age and provides a screening tool far superior to others in the early stages of some diseases.



Autonomic Disturbed Function In The Case Of CRPS

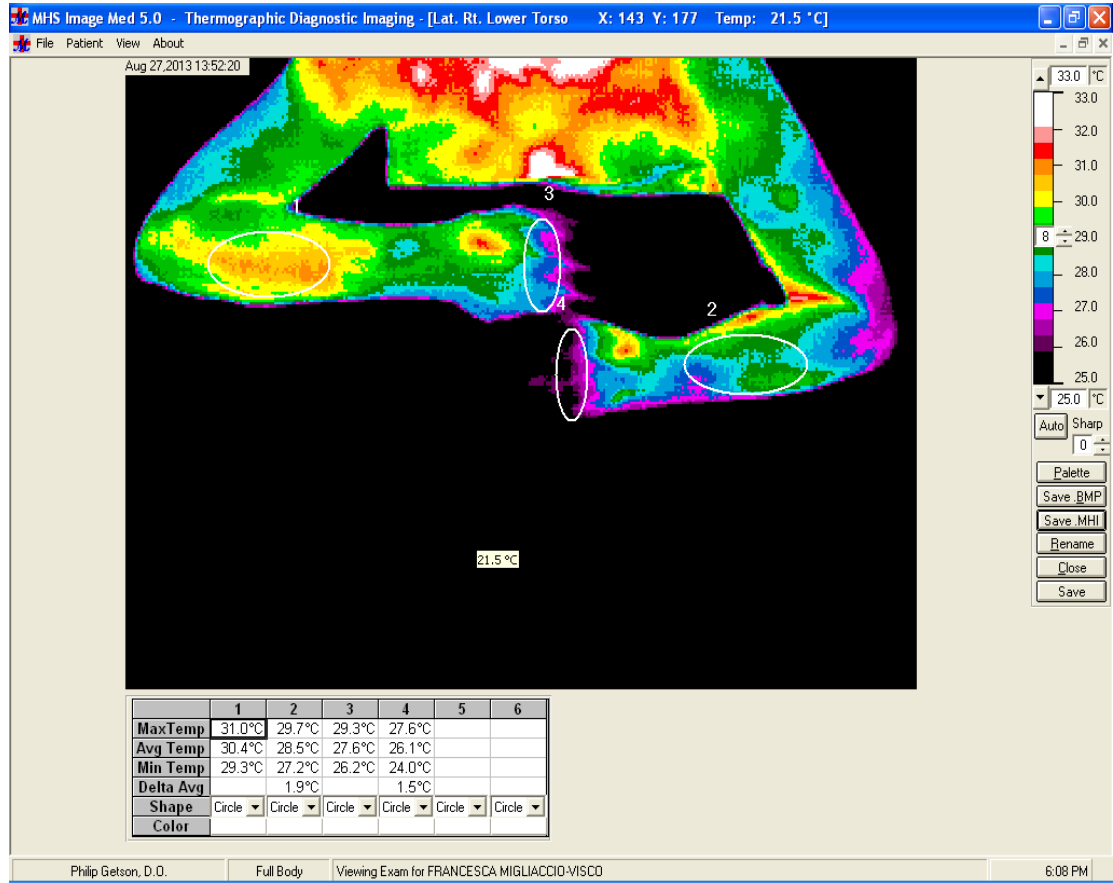
A hallmark of CRPS is an excessive vasoconstriction of blood vessels that can cause cold hands and feet.

Because CRPS produces these neurovascular changes, infrared imaging, in a number of studies, has demonstrated a high degree of accuracy picking up these symptoms.

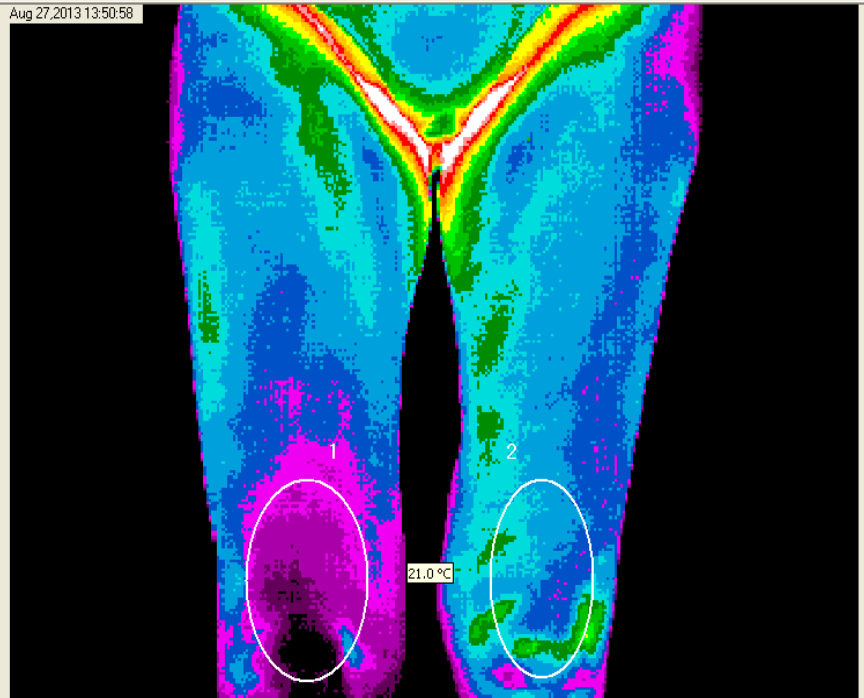


CASE HISTORY

A 58 Y/O FEMALE PRESENTS WITH A HISTORY OF A FALL WITH THE LEFT ARM OUTSTRETCHED. THIS CAUSES A FRACTURE OF THE RADIUS AND THE ULNA (AND A MISSED BRACHIAL PLEXOPATHY). SHE DEVELOPED CRPS WITH A DYSTONIC LEFT UPPER EXTREMITY AND NO OTHER PAIN COMPLAINTS



Aug 27, 2013 13:50:58



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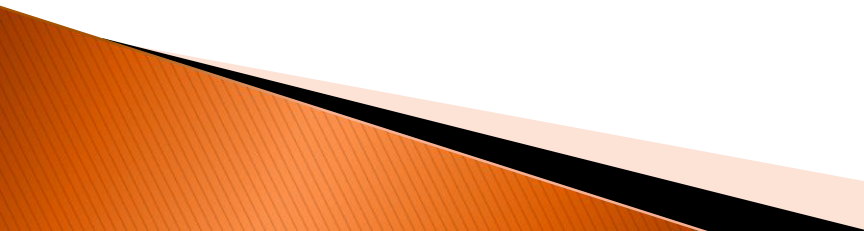
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Avg Temp	27.0°C	28.5°C				
Min Temp	25.8°C	27.5°C				
Delta Avg		-1.5°C				
Shape	Circle	Circle	Circle	Circle	Circle	Circle
Color						

TREATMENT

- ▶ Physical Therapy
 - ▶ Occupational Therapy
 - ▶ Medications
 - ▶ Interventional Pain Management
 - ▶ Implanted Devices
 - ▶ Infusions
 - ▶ Surgery
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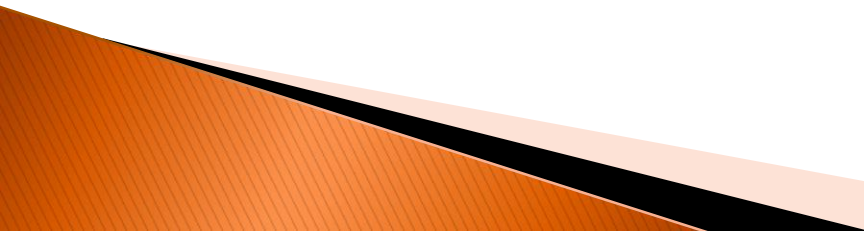
INTERVENTIONAL PAIN MANAGEMENT

- ▶ Injections – Epidurals, SGB, LSB, Facet blocks, local blocks (Bier, Sural)
 - ▶ Infusions– epidural, intra–pleural–therapeutic and pre–pump trials
 - ▶ Infusions – IV– Lidocaine
 - ▶ Stimulators
 - ▶ Intra–thecal Pumps
- 

KETAMINE

Ketamine was introduced in 1963 following a search for the “ideal” anesthetic, the name being derived from the “keto” derivative of an amine. The S or positive isomer has a four-fold greater affinity for the NMDA (N-methyl D-aspartate) receptor in the brain.

INITIAL USES

- ▶ Subanesthetically in burn victims during wound debridement and in removing staples from skin.
 - ▶ A frequent use was in children for procedural pain especially in patients with congenital heart disease, asthma, trauma, hemodynamic instability burns or poor IV access
 - ▶ Chronic non-malignant pain (especially in oral form)
 - ▶ Cancer pain
 - ▶ Dental sedation
- 

MODES OF ADMINISTRATION

- ▶ IV
 - ▶ Oral
 - ▶ Topically –patch, gel, cream
 - ▶ Intra–nasal
- 

KETAMINE & SURGERY

- ▶ In cases of known or suspected RSD/CRPS Ketamine should ALWAYS be used Intravenously during the surgery to lessen the likelihood of spread of the disease.
- ▶ “The major findings of this study are that Ketamine, used as adjunctive anesthesia in refractory CRPS patients undergoing surgery was successful in reducing pain, and blocking spread in severely affected, long standing patients” –

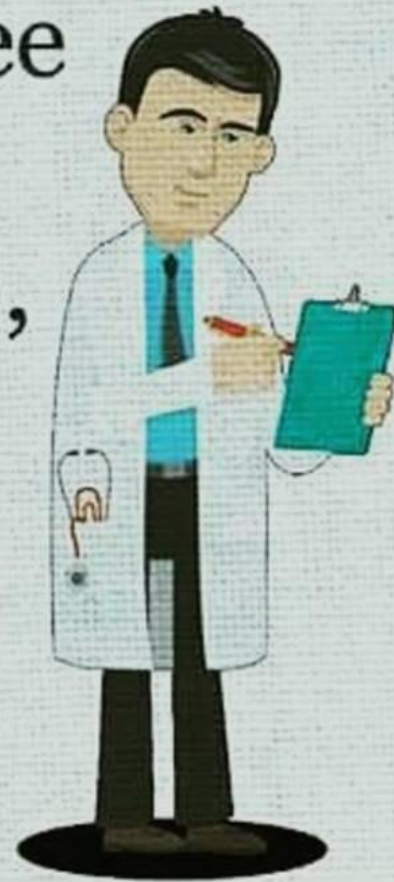
Schwartzman, Getson, et. al – J Clinical Case reports – Volume 2 – Issue 12

Hippocrates, the father of
medicine said:

“Let food be thy medicine
and medicine be thy
food”

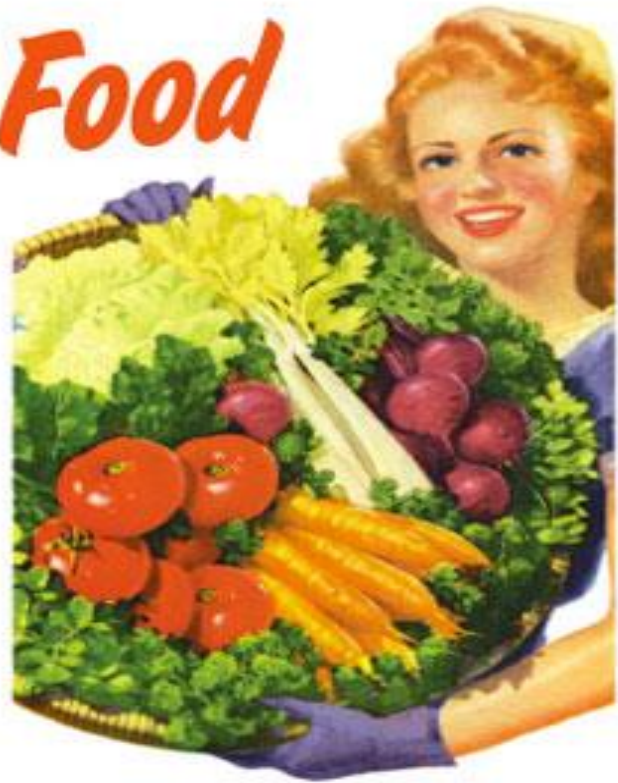


If you think eating healthy is expensive... just wait till you see the medical bills from eating cheap, crappy food.



Try Organic Food

***...or as your
grandparents
called it,
“Food”***



WHAT DOES ORGANIC MEAN?

Food from all major food groups are available in organic form. Organic meat poultry, eggs and dairy products come from animals that have not been given antibiotics or growth hormones. Animal feed must also be organic. Organic fruits vegetables and grains come from fields that have been free of synthetic fertilizers and pesticides for at least three years. These foods must be grown without treated sewage sludge, which is commonly used as fertilizer. Organic farmers use animal manure composted plant materials, etc.

NATURE VS. GMO

Another reason to eat organic is to avoid genetically modified organisms (GMO's). A GMO is any organism in which the genetic material has been altered in a way that does not occur in nature. This technology allows individual genes to be transferred from one organism to another.



THE DREADED E-WORD

Most people know that exercise is good for you but they don't put it into practice. Just 20–30 minutes of simple walking can tone the muscles, accelerate the elimination of body weight, clear the lymphatics and burn calories.

Whenever possible walk outdoors to get the added benefit of sunlight—still the best source of Vitamin D.

Also, being out in nature has a very calming effect on the body.



WHAT IS THE BEST KIND OF EXERCISE?

ONE THAT YOU CAN & WILL DO!



BASIC SUPPLEMENTS

Fish Oil (Omega 3)

Probiotics

Multivitamins / multiminerals

Vitamin D3

Magnesium & Calcium

Digestive Enzymes

SEVEN “FOODS” TO AVOID

Aspartame (nutrasweet)

Additives like MSG & Nitrates

Sugar, fructose and simple carbohydrates

Caffeine

Yeast & Gluten

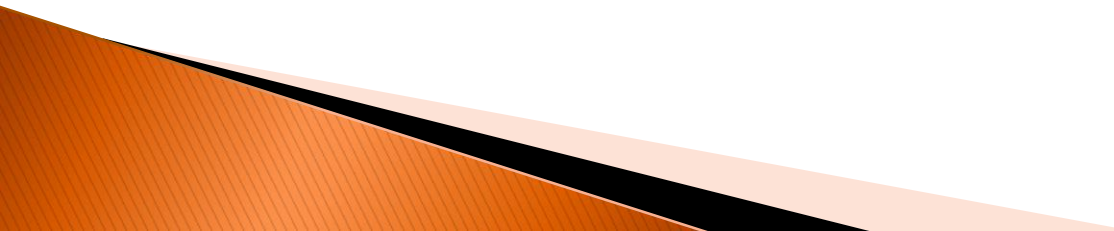
Dairy

Nightshades (tomatoes, potatoes, eggplant)



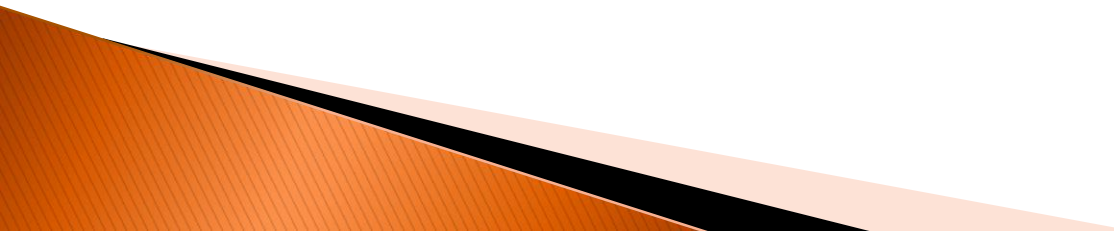
GLUTEN

Gluten is a protein found in some grains which can **irritate, inflame and rupture** the lining of the digestive tract to the point that nutrients from food do not get absorbed well and sometimes not at all. In addition to digestive distress, associated disorders include bowel problems, headaches, increased risk of colon cancer, diabetes, depression & bi-polar disease because the nutrients responsible for controlling our moods cannot be absorbed.



GLUTEN SENSITIVITY

Gluten sensitivity is actually an autoimmune disease that creates inflammation throughout the body, with wide-ranging effects across all organ systems including your brain, heart, joints, digestive tract, and more. It can be the single cause behind many different "diseases." To correct these diseases, you need to treat the cause--which is often gluten sensitivity--not just the symptoms.



DISEASES ASSOCIATED WITH GLUTEN

A review paper in *The New England Journal of Medicine* listed 55 "diseases" that can be caused by eating gluten. These include osteoporosis, irritable bowel disease, inflammatory bowel disease, anemia, cancer, fatigue, canker sores, rheumatoid arthritis, lupus, multiple sclerosis, and almost all other autoimmune diseases. Gluten is also linked to many psychiatric and neurological diseases, including anxiety, depression, schizophrenia, dementia, migraines, epilepsy, and neuropathies such as CTS, sensory ganglionopathies and **fibromyalgia**. It has also been linked to autism.

THE DISEASE

The pain is profound, chronic and widespread. It can migrate to all parts of the body and vary in intensity. The pain has been described as stabbing and shooting pain and deep muscular aching, throbbing, and twitching. Neurological complaints such as numbness, tingling, and **burning** are often present and add to the discomfort of the patient. The severity of the pain and stiffness is often worse in the morning. Aggravating factors that affect pain include cold/humid weather, non-restorative sleep, physical and mental fatigue, excessive physical activity, physical inactivity, anxiety and stress.

Additional symptoms may include: irritable bowel and bladder, headaches and migraines, restless legs syndrome (periodic limb movement disorder), impaired memory and concentration, skin sensitivities and rashes, dry eyes and mouth, anxiety, depression, ringing in the ears, dizziness, vision problems, Reynaud's Syndrome, neurological symptoms, and impaired coordination, sleep disturbance and fatigue

The preceding two slides are directly from the

National Fibromyalgia Website

GLUTEN FREE DIET

INCLUDED:

Beans, seeds nuts in unprocessed form

Fresh eggs (preferably organic)

FRESH meats, fish & poultry (organic or free-range preferred)

Fruits & vegetables (preferably organic)

Most dairy products (preferably organic)

Amaranth, Arrowroot, Buckwheat, Flax, gluten-free flours, Millet, Quinoa, Rice, Tapioca



GLUTEN FREE DIET

AVOID

Beer
Pasta
Matzo
Bread
Cakes & Pies
Candy
Cereal
Cookies & Crackers
Croutons French Fires
Gravy
Imitation meats or seafood

Food Additives such as malt flavoring
Medications & Vitamins bound with
gluten
Processed meats
Salad dressing
Sauces & Soy sauce
Seasoned Rice mixes
Snack foods (potato & tortilla chips)
Self-basting poultry
Soups
Vegetables in sauces

Mayo Clinic

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Mayo Clinic

PAIN AND NUTRITIONAL SUPPLEMENTS

5HTP– acts as a painkiller and antidepressant

DLPA –has opiate agonist qualities

Methionine – helps reduce pain in the manner of anti-histamines– good in arthritis, Parkinson's disease and depression

Fish oil – acts similar to ibuprofen

B6, zinc and manganese – aid in pain relief

NEUROTRANSMITTERS

Neurotransmitters are chemical messengers that facilitate communication between neurons. This affects every cell, tissue and organ system within the body. When neurotransmitters are out of balance this communication is altered causing a wide variety of physical, mental and emotional clinical symptoms.



NEUROTRANSMITTERS

COMMON CONDITIONS RELATED TO NT DYSFUNCTION:

Depression

Migraine

Anxiety

Obesity

Insomnia

PMS

Irritable bowel disease

ADHD

Hypertension

Fibromyalgia



MAJOR NEUROTRANSMITTERS

Glutamate (High in Parkinson's, Alzheimer's)

GABA (low in anxiety and sleep problems)

Serotonin (low in Depression, migraines OCD)

Epinephrine (high in fear & anger, fight or flight)

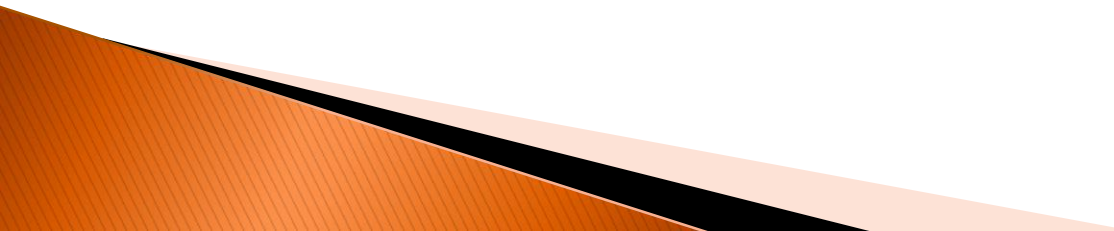
Norepinephrine (High in anxiety & stress)

Dopamine (low in fatigue, poor memory)

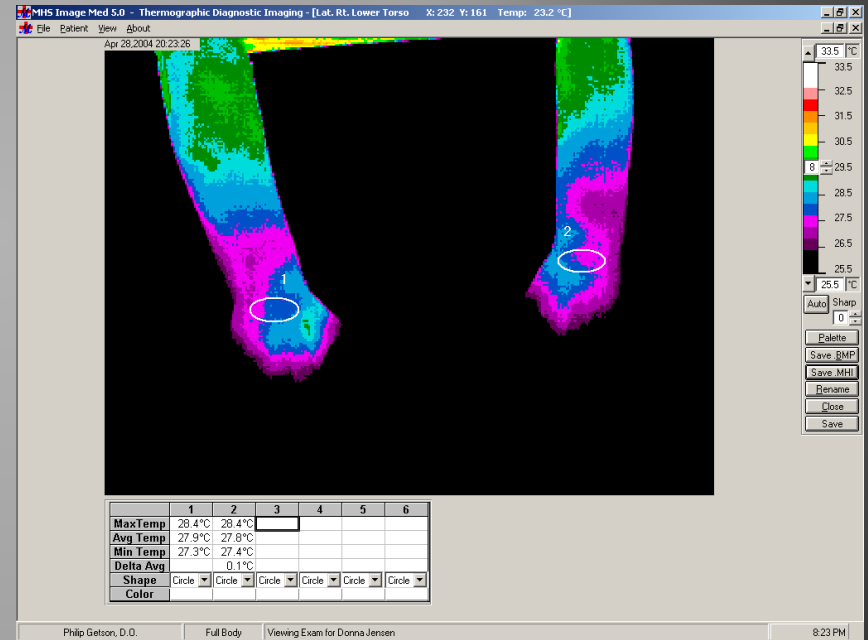
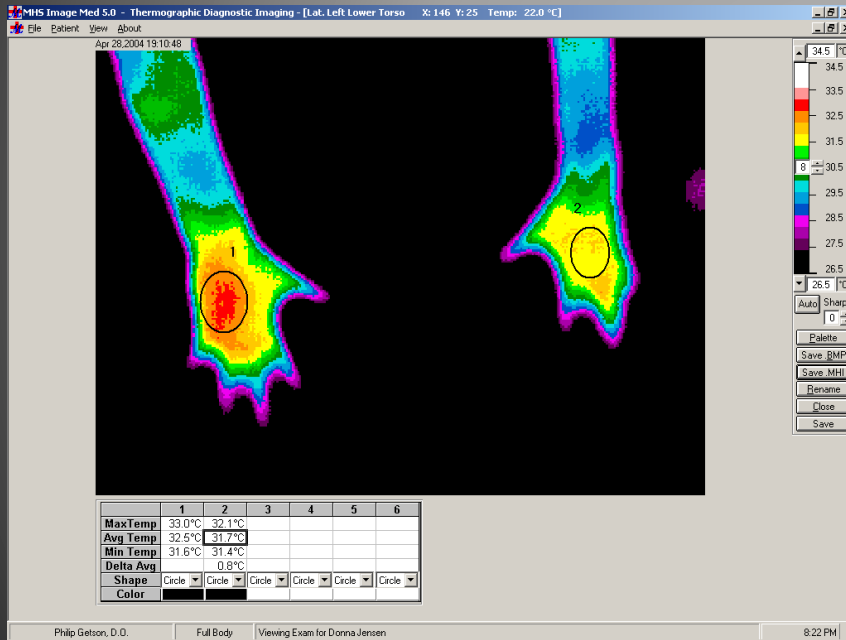
Histamine (low in nausea, anxiety memory loss)

PEA (Beta-phenylethylamine) - (low in depression)

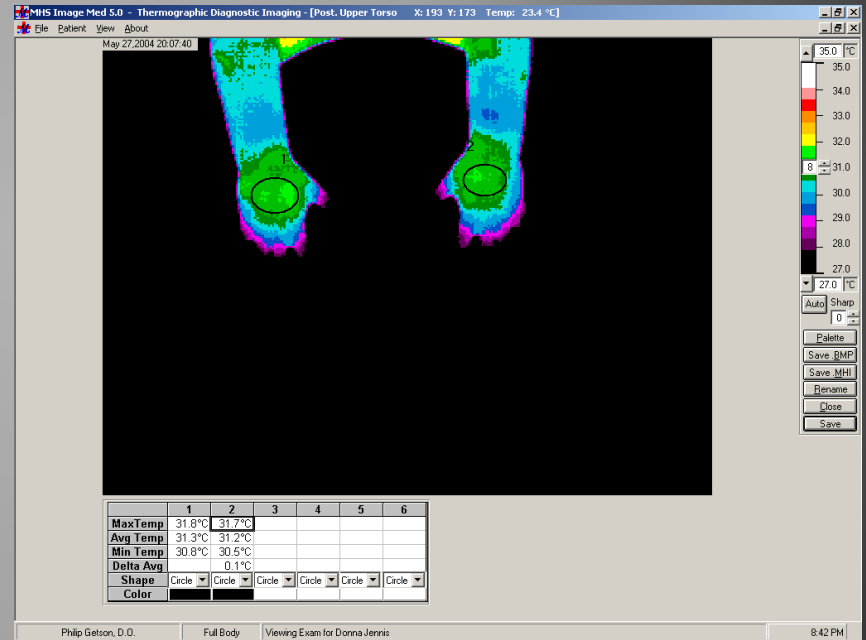
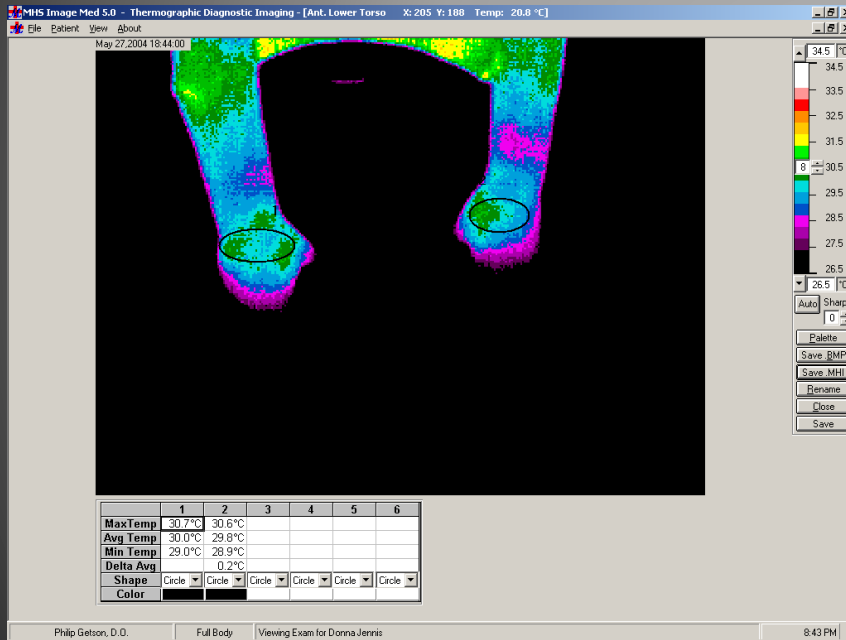
ALTERNATIVE TREATMENTS

- ▶ REIKI
 - ▶ MASSAGE
 - ▶ YOGA
 - ▶ CHIROPRACTIC
 - ▶ ACCUPUNCTURE
 - ▶ QI GONG
- 

Pre & Post REIKI-Week 1



WEEK FIVE



Some Diet & Lifestyle modifications

- ▶ **EAT ORGANIC FOODS– CONSIDER GLUTEN FREE**
- ▶ **ELIMINATE PROCESSED FOOD, WHITE SUGAR, WHITE FLOUR, WHITE SALT**
- ▶ **ELIMINATE COMMERCIAL HOUSEHOLD CLEANING PRODUCTS AND TOXIC GARDEN PESTICIDES**
- ▶ **DRINK PURE FILTERED WATER**
- ▶ **REFUSE SYNTHETIC HORMONE TREATMENTS**
- ▶ **SEEK NATURAL APPROACHES TO HEALTHCARE**
- ▶ **DETOXIFY THE BODY**
- ▶ **EMPOWER YOURSELF WITH A POSITIVE OUTLOOK – ADOPT AN ATTITUDE OF GRATITUDE**
- ▶ **SUPPLEMENT YOUR DIET WITH APPROPRIATE VITAMINS AND NUTRITIONAL SUPPORT**
- ▶ **EXERCISE**
- ▶ **FIND A HEALTHY AVENUE FOR STRESS RELEASE SUCH AS MEDITATION, YOGA, GARDENING READING ETC.**
- ▶ **MAINTAIN HEALTHY RELATIONSHIPS**
- ▶ **EXPLORE YOUR SPIRITUALITY**

The Optimist Creed

Promise Yourself

To be so strong that nothing can disturb your peace of mind.

To talk health, happiness and prosperity to every person you meet.

To make all your friends feel that there is something in them.

To look at the sunny side of everything and make your optimism come true.

To think only of the best, to work only for the best, and to expect only the best.

To be just as enthusiastic about the success of others as you are about your own.

To forget the mistakes of the past and press on to the greater achievements of the future.

To wear a cheerful countenance at all times and give every living creature you meet a smile.

To give so much time to the improvement of yourself that you have no time to criticize others

To be too large for worry, too noble for anger, too strong for fear, and too happy to permit the presence of trouble.

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