ELEMENTARYUNLOCKING THE MYSTERY OF CRPS

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"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

DEFINITION

Complex Regional Pain is a neuropathic/inflammatory pain disorder characterized by:

- Severe pain that extends beyond the injured area and is <u>disproportionate</u> to the inciting event.
- 2. Autonomic dysregulation
- 3. Edema usually neuropathic in nature
- 4. Movement disorders
- 5. Atrophy and/or dystrophy

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

<u>Vasomotor:</u> Reports of temperature asymmetry and/or skin color changes and/or skin color asymmetry

<u>Sudomotor/edema</u>: Reports of edema and/or sweating changes and/or sweating asymmetry

<u>Motor/Trophic:</u> 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:

<u>Sensory</u>: Evidence of hyperalgesia (to pinprick) and/or allodynia (to light touch and/or deep somatic pressure and/or joint movement

<u>Vasomotor:</u> Evidence of temperature asymmetry and/or skin color changes and/or skin color asymmetry

<u>Sudomotor/edema:</u> Evidence of edema and/or sweating changes and/or sweating asymmetry

<u>Motor/Trophic:</u> 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

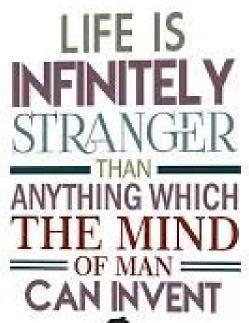
Stress

Cold

Changing Barometric Pressure Infection (Especially dental) Humidity Poor diet

Vaccinations

Toxins (Aluminum & Fluoride)
Certain Prescription Medications
Candida
Lyme disease





THERMOGRAPHY

A great benefit of infrared imaging is its ability to image the function of the nervous system, especially with chronic pain conditions.

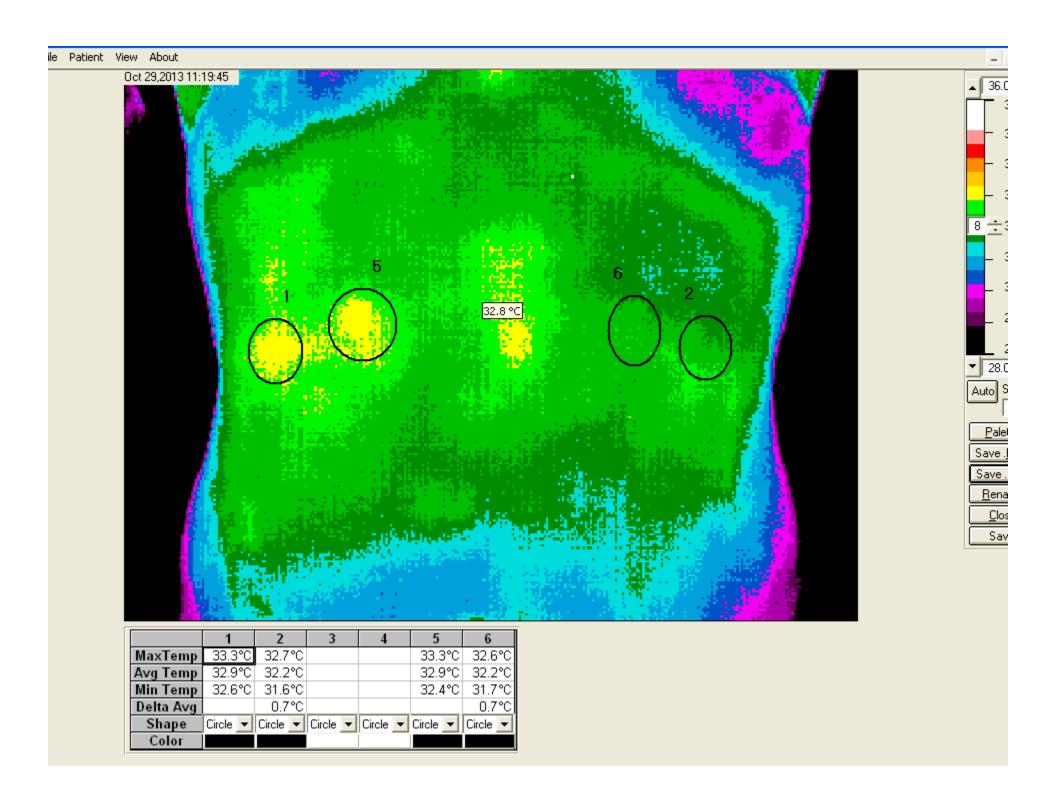
The Nervous System along with the blood vessels creates most of the heat patterns we see using thermal imaging.

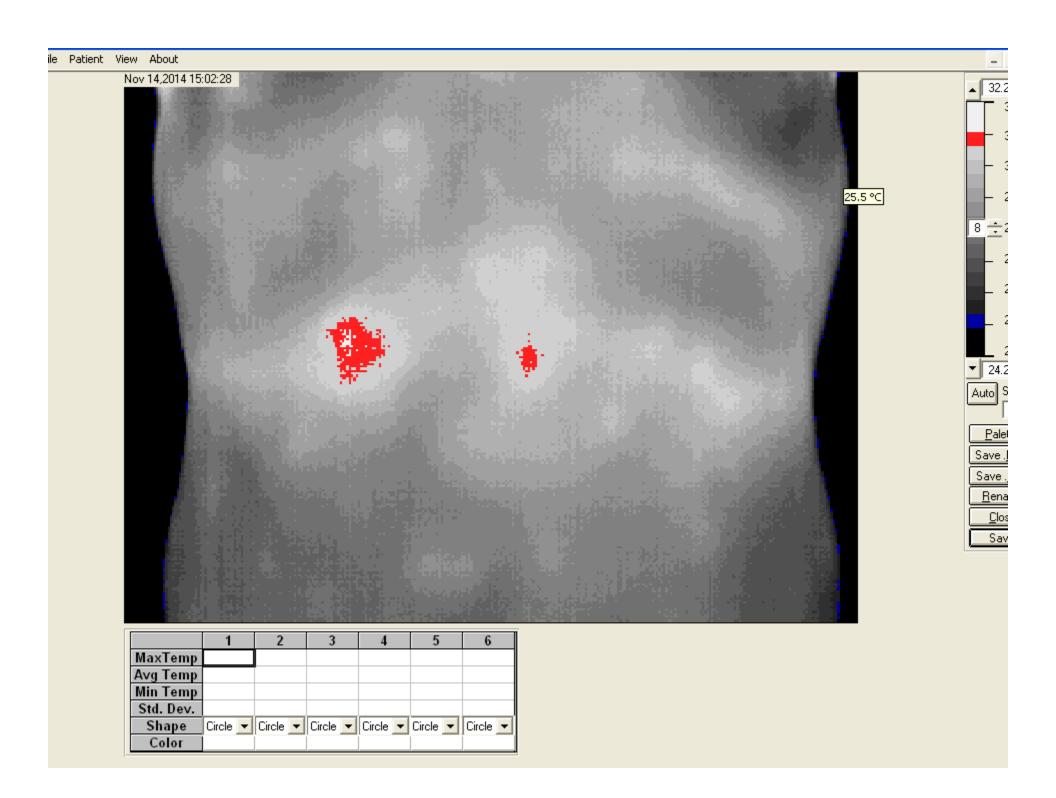
A hallmark of CRPS is an excessive vasoconstriction of blood vessels that can cause cold hands and feet.

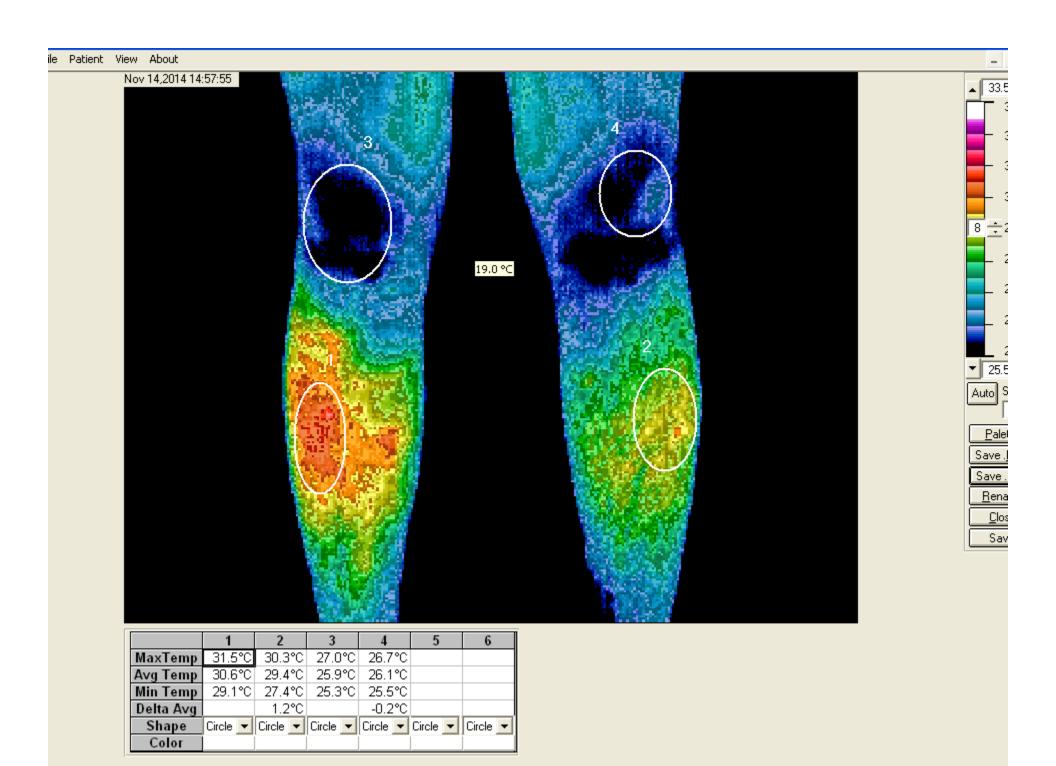
Thermography provides images of the sympathetic nervous system and given that CRPS is considered by some to be a disease of sympathetic origin, it is the perfect tool for the corroboration of the clinical diagnosis

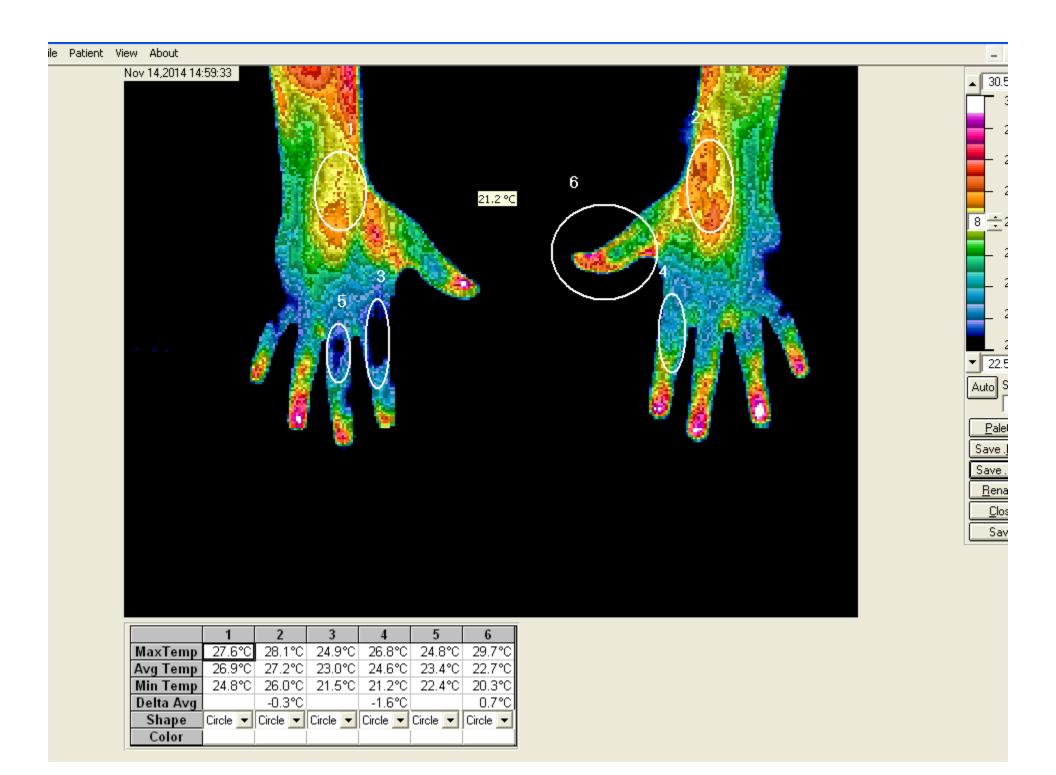
CASE HISTORY

This is a 19 year old male who presented with pain beneath the right side of his rib cage so severe that he was acutely short of breath. There was no history of trauma. He was otherwise perfectly healthy. He had no other areas of pain.



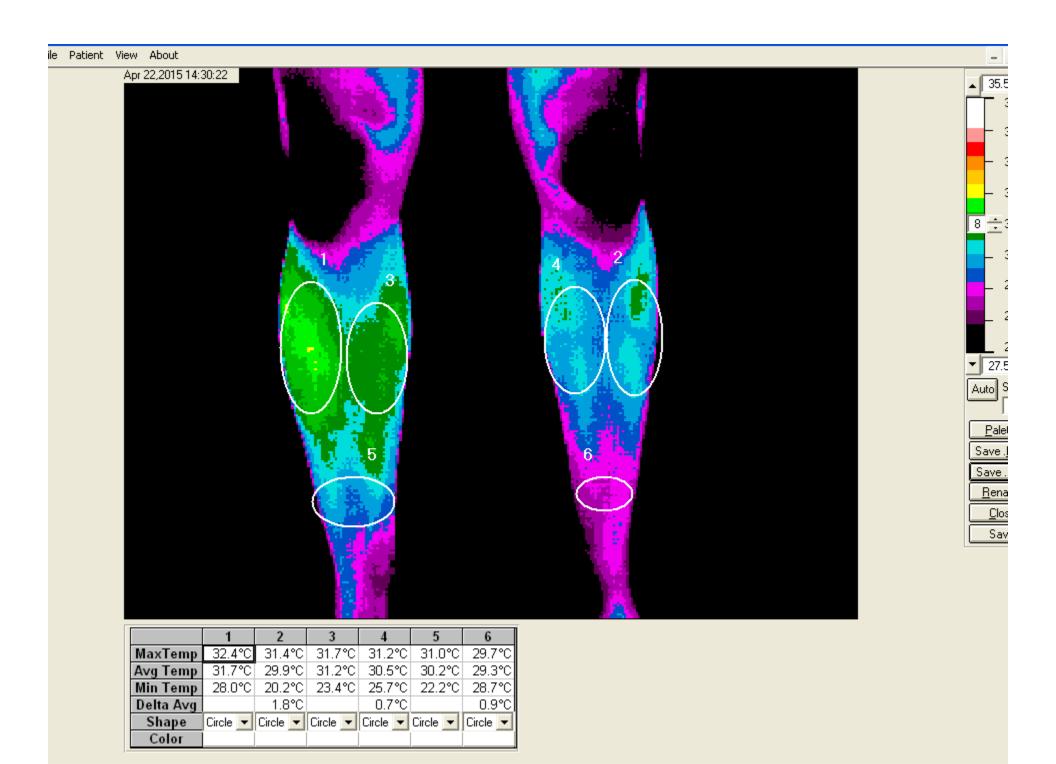


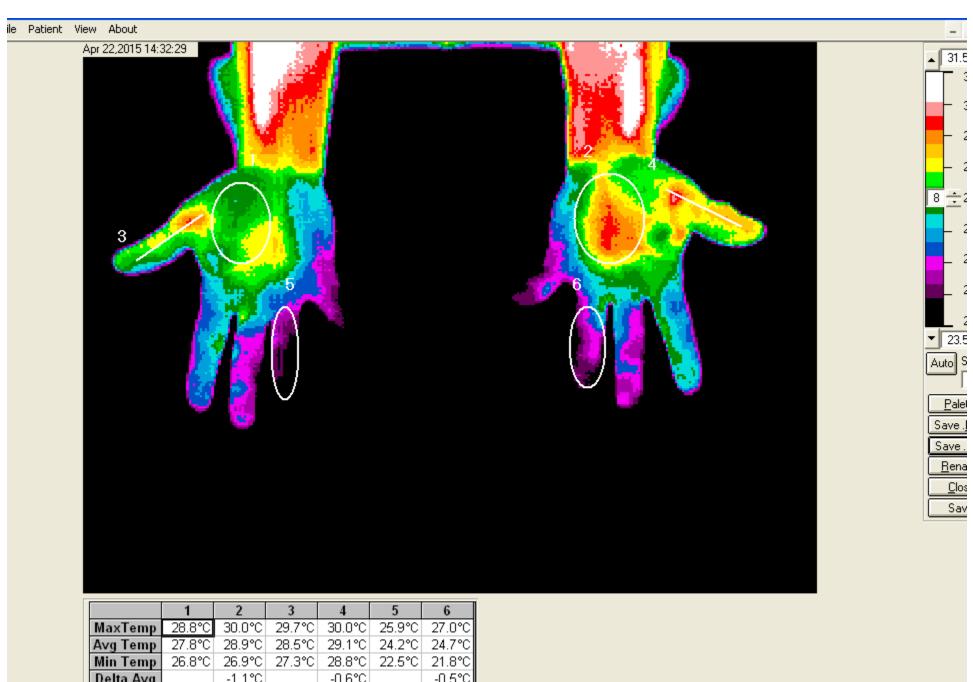




CASE #2

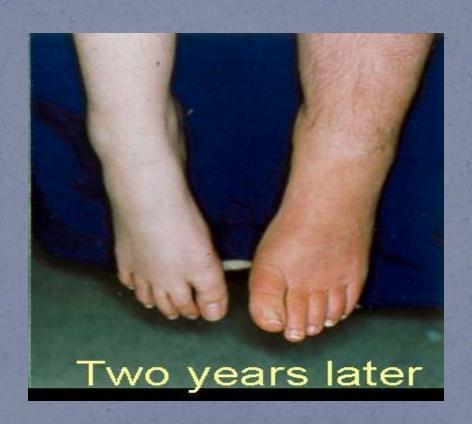
• This is a 45 year old male, working construction in work boots who stepped on a long nail. The nail went up through the boot, the sock and into the foot. It necessitated surgical repair. He then developed a Morton's neuroma in the foot. He could not bear weight or walk, The surgeon wanted to re-operate.

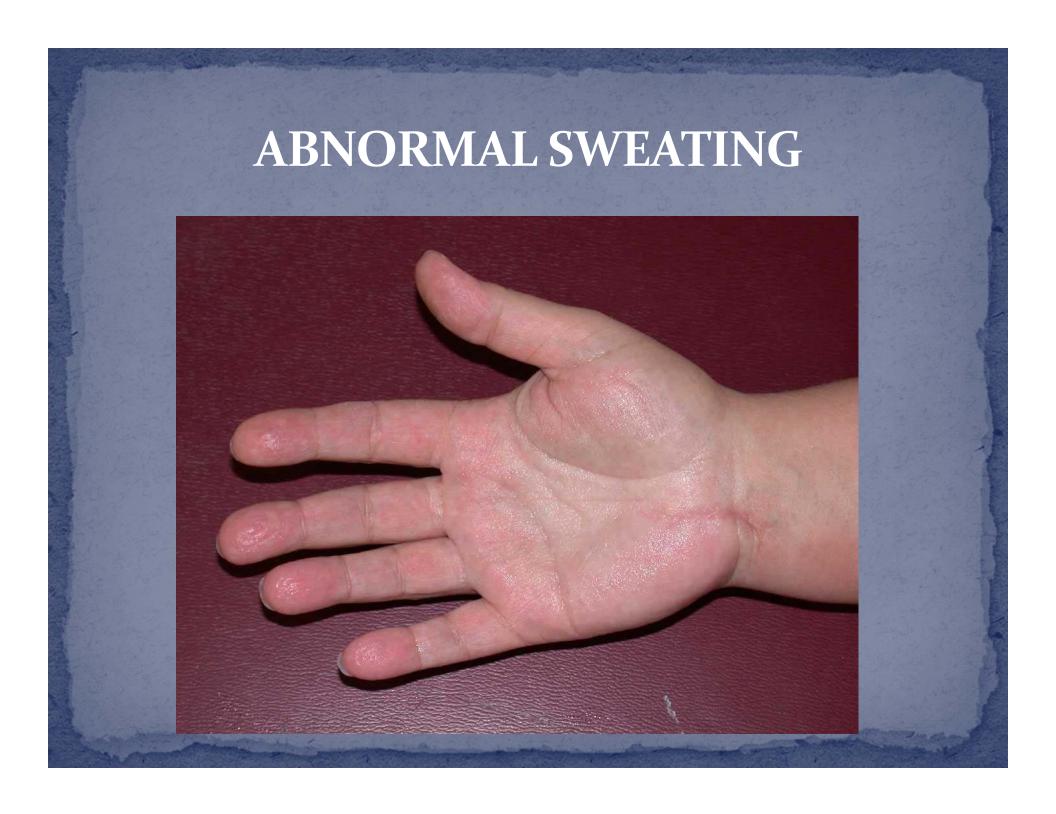




		1	2	3	4	5	6
П	MaxTemp	28.8°C	30.0°C	29.7°C	30.0°C	25.9°C	27.0°C
	Avg Temp	27.8°C	28.9°C	28.5°C	29.1°C	24.2°C	24.7°C
П	Min Temp	26.8°C	26.9°C	27.3°C	28.8°C	22.5°C	21.8°C
	Delta Avg		-1.1°C		-0.6°C		-0.5°C
	Shape	Circle 💌	Circle 💌	Line 💌	Line 💌	Circle 💌	Circle 💌
П	Color						

VASOMOTOR CHANGES

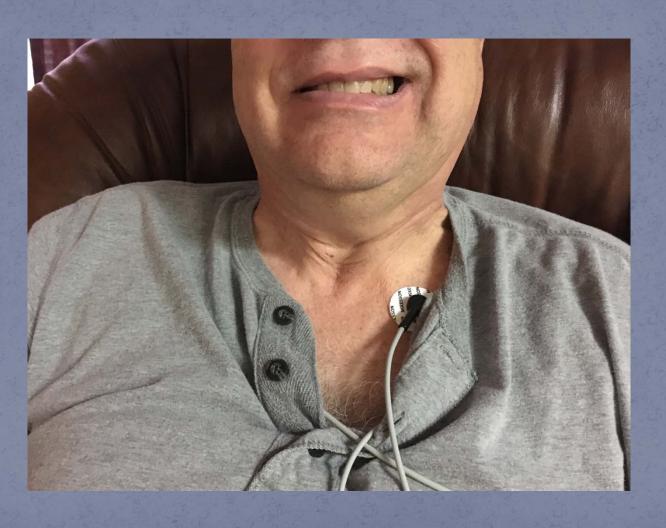




MOTOR DISTURBANCE- DYSTONIA



FACIAL DYSTONIA





AFTER 5 DAYS OF KETAMINE



NEUROGENIC EDEMA

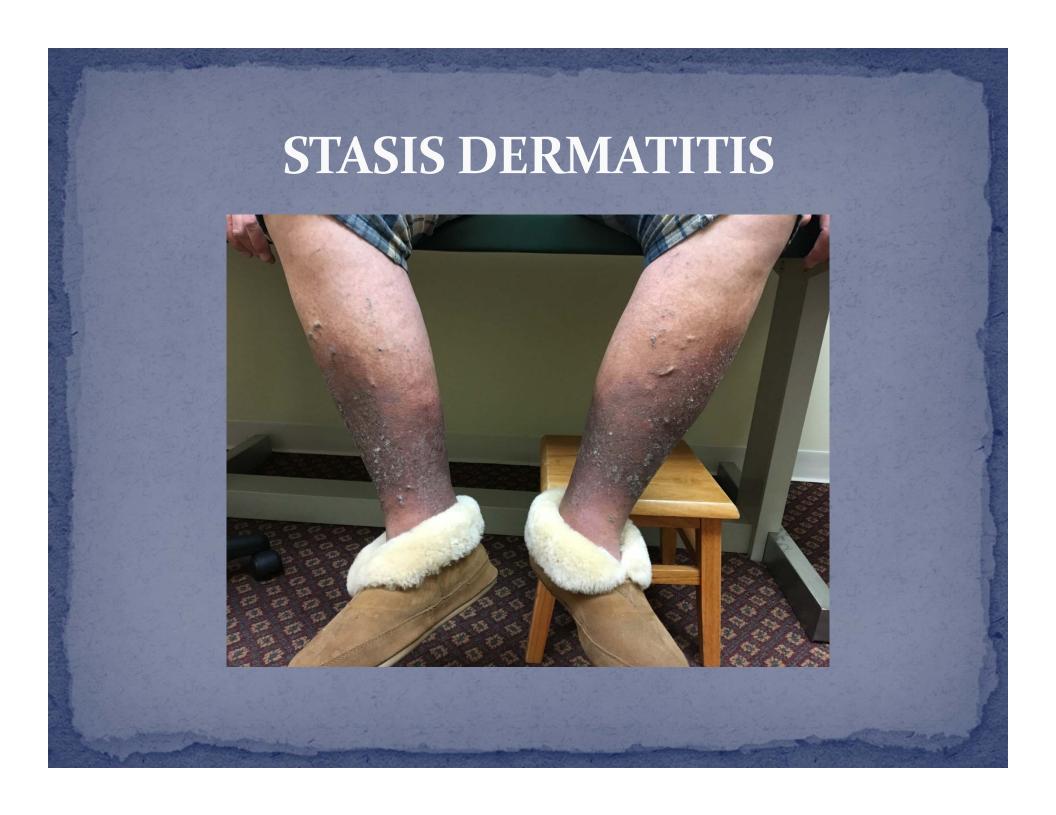






LIVIDO RETICULARIS

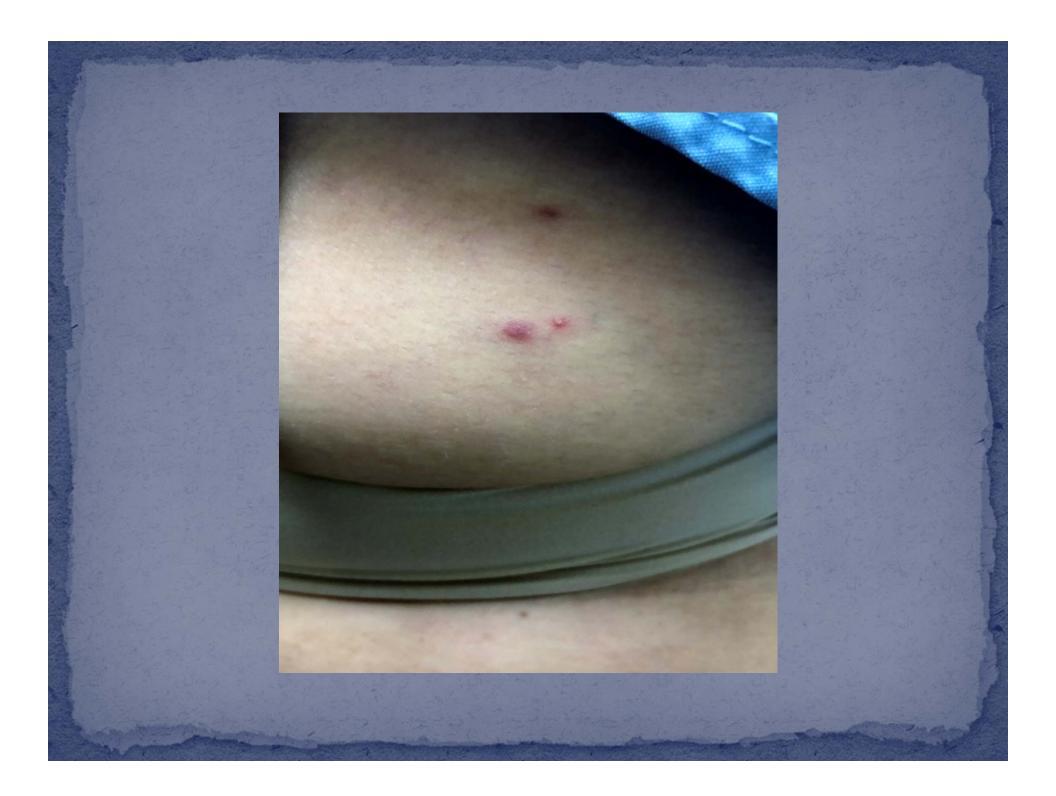




GASTROPARESIS?







You see but you do not observe.....the distinction is clear

Sherlock Holmes



SYSTEMIC MANIFESTATIONS OF C.R.P.S.

Gastrointestinal

Apart from the obvious acid peptic and irritable bowel symptoms, we have to deal with intractable nausea and vomiting. Endoscopically there may be some mild gastric irritation but generally the findings are minimal. Conventional treatment is rarely effective. The etiology is clearly gastroparesis and objectively identified via gastric emptying studies.

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.

Another interesting finding is a number of patients with clinical and laboratory confirmed pancreatitis with no other etiology evident save for their CRPS

Other G.I. symptoms include:

Dysphagia, indigestion
I.B.S
Constipation (frequently opioid induced)
Biliary dyskinesia

Urinary

Commonly, patients experience urinary incontinence, dysuria or inability/difficulty voiding. The condition is usually misdiagnosed as <u>Interstitial Cystitis</u>. The problem has responded marginally to conventional medications. Bladder pacemakers have been somewhat useful. Again, Botox injections into the pelvic floor have helped a great number of sufferers. Additionally, I have found that lumber epidural infusions of bupivicaine over a 5 day period works very well. Ketamine has resolved this to a small degree as well.

VERTIGO

Vertigo is common as an early symptom Sometimes it is positional but mainly it is movement related

Treatment is based upon reducing the CRPS symptoms and occasionally meclizine helps make the vertigo tolerable pending the improvement of the disease process

SYNCOPE

"Syncope is common in patients with CRPS especially with lower limb involvement. Autonomic dysregulation of the lower extremities leads to sympathetic vasoconstriction and venous pooling which can predispose these patients to syncope."

Syncope in Complex Regional Pain Syndrome – Smith et al. – *Clinical Cardiology* 34.4; 222-225 (2011)

Syncope-Case presentation

A 44 year old female with long standing history of CRPS is involved in a MVA which accelerates her symptoms. She further injures her brachial plexus in the accident and has classic symptoms of that sub-division of CRPS. However she begins to have "drop attacks" with increasing regularity.

Comprehensive work up with brain MRI, EEG, laboratory testing and carotid ultrasound all prove negative.

The solution proved to be immobilization in a soft cervical collar. Here is how that transpired......

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 <u>vibration</u>, 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 <u>branchial</u> 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



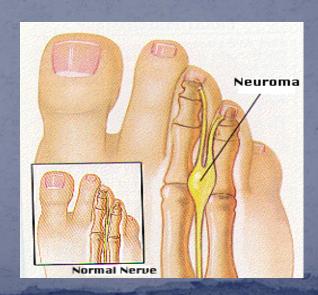
DERCUM'S DISEASE

Dercum's disease, is a rare condition characterized by multiple, <u>painful</u> 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.



PODIATRIC

Morton's neuroma is a mechanically induced degenerative neuropathy predominantly affecting the second and third common digital nerves. It is not actually a tumor but a thickening of the tissue that surrounds the nerves leading to the toes. It is eight to ten times more likely to occur in women than in men and most prevalent in middle aged women



COGNITIVE DYSFUNCTION

There have been an increasing number of CRPS patients with cognitive issues. Mostly these are STML, word retrieval & difficulty with expression. It has been theorized that this is medication related but it occurs in individuals who take virtually no meds. Current thoughts abound with no single answer surfacing as being definitive.

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

"Systemic Complications of Complex Regional Pain Syndrome"-Robert J. Schwartzman -Neuroscience & Medicine, 2012,3,225-242

GENETICS

A 37 year old female casino worker is struck by a "money cart" in the left lateral thigh and subsequently develops CRPS in that limb. It later migrates to the left arm.

One year later, her sister, a 35 year old police officer was broadsided in her patrol car while driving. The door handle impacts her left lateral thigh and SHE develops CRPS in the left leg which within months migrates to the left arm!

MEDICATIONS

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

Pamidronate
*Neridronate
*Neridronate
Lenalidimide
Mexilitine
Capsaicin
DMSO
Topical Compounds
Dextromethorphan
Amantadine
Calcitonin
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.

• KETAMINE

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

OTHER TREATMENTS

Diet and Lifestyle Alteration

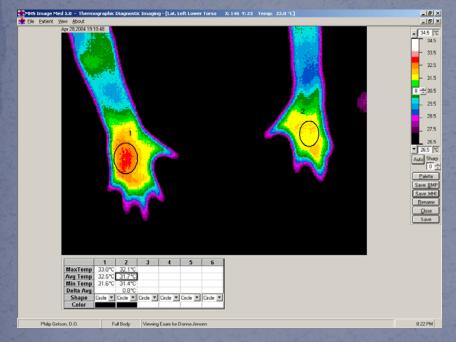
Alternative Therapies

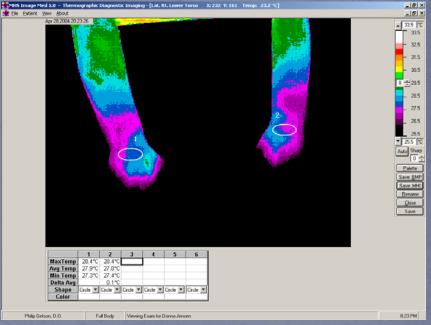
Reiki

Manipulation/Massage
Acupuncture
Vitamins and Neutraceuticals
B-12 and intrinsic factor
Hormonal & Neurotransmitter balancing

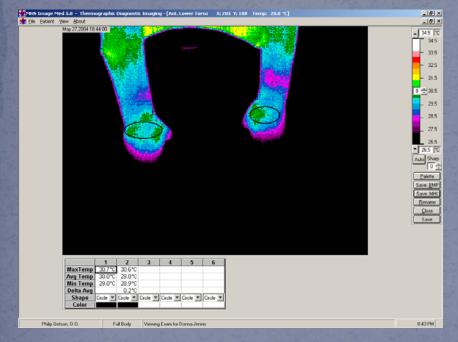
If you think eating healthy is expensive... just wait till you see the medical bills from eating cheap, crappy food.

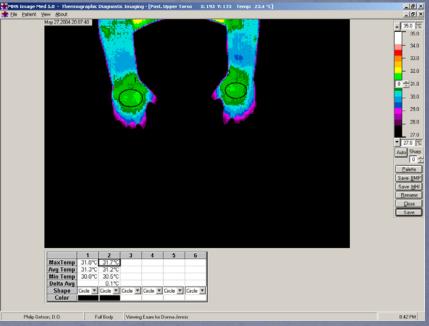
Pre & Post REIKI-Week 1





WEEK FIVE





Diet & Lifestyle modification

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

SEVEN "FOODS" TO AVOID

Aspartame (nutrasweet)
Additives like MSG & Nitrates
Sugar, fructose and simple carbohydrates
Caffeine
Yeast & Gluten
Dairy

Nightshades (tomatoes, potatoes, eggplant)

Eliminate (or limit)

GLUTEN

Caffeine

Alcohol

Sugar

Processed food

Stress

Smoking



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.

GLUTEN FREE DIET

AVOID

Beer

flavoring

Pasta

Matzo

Processed meats

Cakes & Pies

Candy

Cereal

Cookies & Crackers

French Fires

Gravy

Imitation meats or seafood

Food Additives such as malt

Medications & Vitamins bound

with gluten

Bread

Salad dressing

Sauces & Soy sauce

Seasoned Rice mixes

Snack foods (potato & tortilla

chips) Croutons

Self-basting poultry

Soups

Vegetables in sauces

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.

DETOXIFICATION

Do something to work up a sweat every day. Sweating is a natural way to detoxify

Infrared saunas

Take a fiber supplement containing both soluble and insoluble fiber which helps the body secrete excess estrogen and other substances

Drink at least half of your body weight in water daily Practice deep breathing

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.



HORMONES

- Cortisol
- DHEA
- Estradiol
- Estrone
- Estriol
- Progesterone
- Testosterone
- Melatonin



B-VITAMINS

Low levels of folic acid B 12, Thiamine, Riboflavin, and B6 have all been associated with mood disorders. Excessive B6 has actually been shown to <u>create</u> pain.

The brain requires lots of B vitamins for repair and permanent maintenance of proper brain neurotransmitter and adrenal function.

Stress causes the B vitamins to be quickly depleted.



BASIC SUPPLEMENTS

- Fish Oil (Omega 3)
- Probiotics
- Multivitamins/multiminerals
- Vitamin D₃
- Magnesium & Calcium
- Digestive Enzymes
- Hydrochloric Acid

PAIN AND NUTRITIONAL SUPPLEMENTS

5HTP- acts as a painkiller and antidepressant

DLPA –has opiate agonist qualities

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

Fish oil - acts similar to ibuprofen

B6, zinc and manganese - aid in pain relief



- Make Smart Choices
- Do Not "own" your disease
- Educate yourselves and your family and friends
- Remove toxic people from your life
- Take as little medicine as possible
- Eat healthy
- Get outside
- Do not set limits on yourselves and do not let others do so either

YES CAN

- Sammy Davis Jr.

- Happy Talk
- Keep Talkin Happy Talk
- Talk about things you'd like to do
- You gotta have a dream
- If you don't have a dream
- How you gonna have a dream come true?

South Pacific 1949

- You gotta know when to hold 'em
- Know When to fold 'em
- Know when to walk away
- Know when to run!

Kenny Rogers



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