

It's time to take a good look at Thermography

As a reliable method of recording
physiological changes, it is a vital piece of the diagnostic
puzzle.



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THE ROLE OF THERMOGRAPHY in the Diagnosis and Management of **Pain Syndromes** Physiological Monitoring



Through the unique qualities of medical thermography, the medical practitioner is provided critical diagnostic input that has not been utilized until now. This objective information enhances clinical assessment and rational decision-making in the development of patient treatment strategies.



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Understanding Thermography

In the past, thermographic infrared technologies' contribution to medical applications has been frequently misunderstood as a visual thermometer. Through an increased presence in the field, training, and practitioner awareness, medical thermography is emerging as a break through technology that's providing real results.

The infrared technology is so unique that there are only a limited number of manufacturers worldwide capable of providing this sophisticated technology for medical applications. Med-Hot Thermal Imaging is the leading manufacturer providing high-definition medical renderings today. As an industry leader, Med-Hot is dedicated to the advancement and development of high quality medical imaging solutions, training, and on-going support.

Physiology

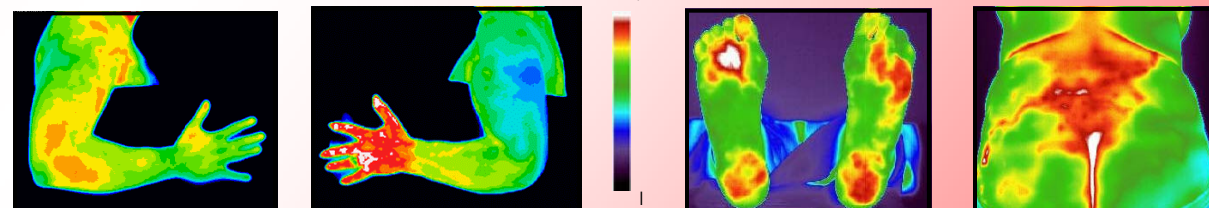
Thermography has been used effectively as an objective test in the assessment of pain. Cutaneous temperature at rest is largely controlled by the sympathetic nervous system (vasoconstrictor nerves) which closely parallel the somatic sensory nerve distribution. Therefore, when pain syndromes are present and they affect the sympathetic nervous system, changes in cutaneous blood flow reflects the physiologic response to pain, creating an altered skin temperature that is recorded by the infrared imaging device.

Thermography has been found to be a useful tool for the objective documentation of sensory and sympathetic dysfunction in peripheral nerves with cutaneous projections, as malfunctioning areas can be reliably demonstrated and documented.

While the skin provides clues to diagnose systemic diseases, it is also a window that allows us to monitor the health of our blood vessels and nerves.

Thermography expands the diagnostic ability of our eyes

Source:
"Rehabilitation Medicine and Thermography"



The Sympathetic System

Is largely responsible for the control of surface skin, innervating all tissue including muscle, the ligament, synovium, tendon, fascia, dura, disc & peripheral nerve fibers, interosseous membrane neuro-lymphatic sphincters.

Diseases affecting the vascular system, nerves and connective tissue will result in temperature changes detected by thermography.

Criteria for Significance

Identifying areas of pain with thermography has traditionally been performed by the comparison of one side of the body to its corresponding site on the contra lateral side, using the side without pain as the patient's "control". Body areas are then determined to be symmetric or asymmetric to each other with regards to temperature.

What is important from a thermographic perspective is whether the resultant vasomotor response is great enough to create a change in skin temperature of greater than 1 ° C compared to the contra lateral side or to the surrounding tissue (dermatome, sclerotome or vasotome)

Sensitivity and specificity of thermography in the assessment of pain has been reported within the 80 percentile range.

Clinical Indications

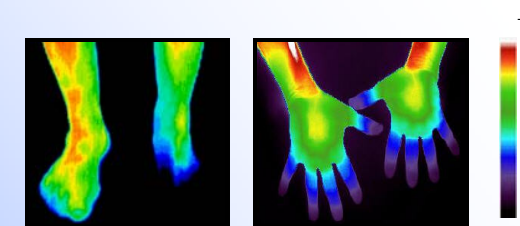
Thermography is the test of choice for mapping vasomotor instability and asymmetry. Findings provide important clinical insights into these structures that can generate sympathetic responses for the following pain syndromes:

CRPS/RSD

Most likely, CRPS develops and is maintained by abnormalities in the peripheral NS, CNS and ANS. Physiological factors also alter the entire nervous system and musculoskeletal system during and after the development of the condition.

There are no known specific laboratory abnormalities for diagnosing CRPS.

Because early diagnosis is always essential to successful treatment, and as CRPS has often been an elusive diagnosis, over the past decade there has been an increased recognition and appreciation of the value of thermography.



Myofacial Pain Syndrome

Thermography represents the first objective measure capable of documenting trigger points which can be visualized by using thermography. Findings support the use of thermography as an evaluation method for the efficacy of laser treatments with MPS.

Decubitus Ulcers

A pressure ulcer can result in irreversible tissue damage which emphasizes the need for early identification and prevention. Thermography's value in evaluating pressure ulcers lies in its ability to measure reactive hyperemia.

Clinically, thermography can help determine patients at risk of developing pressure ulcers and can evaluate wound severity and depth.

Neuropathic Ulcerations

As the clinical changes that precede ulceration may be subtle in persons with diabetes, the infrared thermography can be useful to detect early skin temperature changes that may not be palpable and may be predictive of new ulceration. Thus early intervention can be employed. It can also be used to monitor skin temperature on subsequent visits. In addition, thermal imaging can be useful in monitoring the progression of Charcot's fractures through the clinical phases to prevent patient's premature return to activity that could trigger damage to the foot.

Other Indications for Rehabilitation

- Barre-Lieou
- Entrapment Neuropathies
- Fibromyalgia
- Headaches
- Inflammatory Conditions
- Low Back Pain/Radiculopathy
- Monitor Burn Recovery
- Orofacial Pain
- Osteoarthritis
- Peripheral Nerve Injuries
- Repetitive Sprain Injury
- Reynauds Phenomenon
- Scleroderma
- Tempromandibular Joint Disorders
- Thoracic Outlet Syndrome (TOC)

Other Applications

- Breast Health Monitoring
- Cardio-Vascular monitoring
- General Health Screening and Monitoring
- Blood Profusion Monitoring

Source:
"Rehabilitation Medicine and Thermography"