

## Introducing Brazilian Thermology Society, ICGMT and PAJMT

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### 1. INTRODUCTION

The interests and objectives of the Brazilian Medical Thermology Association are from the academic point of view until the thermologists professional regulations and the population health care.

In Brazil, thermography is accepted by the medical profession. Medical applications of thermography have been recognized by the Brazilian Medical Association (AMB, in Portuguese) since 1990. Namely as cutaneous thermometry (code 4.15.01.13-6), it was reviewed recently by the Brazilian Hierarchical Classification of Medical Procedures (1). CBHPM represents the minimum parameter for payment of medical fees recommended by Federal Council of Medicine (CFM) and established by the AMB, which stands for a big step forward to value medical activities. Thermography may be utilized in the study of any disease process or the investigation of any thermally related pathophysiologic phenomenon. There are more than 70 medical centers, 9 hospitals and 7 biomedical research institutes using infrared thermography at this time. Standardization of medical thermographic medical practice is under the control of the Brazilian Thermology Association which recently has discussed minimum technologic requirements for infrared thermographic equipment and guidelines for breast, neuromusculoskeletal, dental-oral and systemic health investigation in conjunction with American Academy of Thermology - AAT (2,3,4). In Brazil also have a specific Legal

Medicine Department to discuss thermography applications in forensic medicine.

It is also important to highlight the 2 years specialty in Medical Thermology and Thermography conducted by University of Sao Paulo Faculty of Medicine (FMUSP) which recently is in its third edition and has trained more than 60 medical doctors in this specialty. It is coordinated by Prof Marcos Brioschi and Prof Manoel Jacobsen Teixeira, Chief of the Pain Clinic, Department of Neurology of Hospital das Clinicas FMUSP.

### 2. STATUS OF THE BRAZILIAN THERMOLOGY ASSOCIATION (ABRATERM)

Brazil's first applications of medical thermography were, begun in 1977 when professor J.A. Pinotti and cols. introduced contact thermography in the diagnosis of breast cancer (5). The Brazilian Thermology Association, founded in 2000, has held three international meetings, five annual meetings and more than hundred tutorial symposia (6,7,8).

There are more than 400 active members distributed all over Brazil. Professor Marcos Brioschi of São Paulo University is the actual President of the Association. The ABRATERM attracts a broad range of members including anesthesiologists, neurologists, neurosurgeons, internists, physiatrists, occupational physicians, chronic pain and rehabilitation medicine physicians, general and vascular surgeons, dermatologists, orthopedists, otolaryngologists, ophthalmologists, pediatricians, dentists,

physicists, infectologists, oncologists, gynecologists, mastologists, Oriental medical practitioners, gastroenterologists, physiotherapists, osteopaths, veterinarians, and clinical engineers.

### **3. INTERNATIONAL CONSENSUS AND GUIDELINES ON MEDICAL THERMOGRAPHY (ICGMT)**

In 2010, was realized the first International Consensus and Guidelines on Medical Thermography (ICGMT) devoted to scientific-based discussions amongst chairpersons, speakers and the audience in an exciting debate forum and finally a new actualized official statement signed by the attendees (6). It was create to improve complementary diagnosis, enhance communication and collaboration between many professionals involved in medical thermography and those in a position to decide healthcare policy and provide funding. The ICGMT is attended by the International Working Group for Medical Thermography (IWGMT), a global network of experts, comprising of representatives from many countries and thermology societies. One of the objectives of the IWGMT will be to develop guidelines from time to time to increase the medical thermography applications through quality and cost-effective healthcare, based on the principles of evidence-based medicine, augmented with the expert's opinion. The principles set out in the Consensus are being implemented throughout the world. They will be adapted for local use, taking into account differences in socio-economic circumstances and access to healthcare. The International Consensus is being established by a group of experienced physicians that collectively have done and published medical thermography for more than years and implemented thermography protocols and information technologies to grow its scientific value, helping achieve diagnostic, monitoring and prognostic goals in the field of neuromusculoskeletal, breast and vascular diseases, among others. It is involving varied medical specialties and subspecialties. Prof Ho-Yeol Zhang (Korean Society of Thermology) reported his works in neurosurgery and Prof Hisashi Usuki (Japanese Society of Thermology) in breast oncology applications. In 2011 was done the second thermology meeting in Brazil at Iguacu Falls (7) and recently with more than 6,000 subscriptions was possible with a free

online ICGMT2015 meeting (8) with the support of Brazilian Medical Thermology Institute (IBTM) (9).

### **4. PANAMERICAN JOURNAL OF MEDICAL THERMOLOGY (PAJMT)**

PanAmerican Journal of Medical Thermology (PAJMT), the medical indexed official journal of the ABRATERM and AAT, has been published quarterly since 2014. The head editor-in-chief is Prof Eduardo Borba Neves. The issues contain papers from the members of ABRATERM and AAT and their Annual Meeting. Although most the contents are written in Portuguese, titles and summaries are translated into English and the next issues will be totally in English. It is open to organizations of the scientific community nationally and internationally. This journal provides immediate open free access to its content on the principle that freely available scientific knowledge to the public supports a greater global democratization of knowledge (10).

### **5. RESEARCH AND DEVELOPMENT IN THERMOGRAPHY IN BRAZIL**

Recently the main thrust of clinical thermographic applications in Brazil has been directed toward investigation of chronic pain and rehabilitation medicine, including sport medicine, occupational medicine, diabetic foot diseases, peripheral vascular disorders, musculoskeletal and neurological applications and preventive sport and work related injuries. Also breast disease, dermatologic and cosmetic surgical applications are investigated. A great deal of basic physiologic research is in progress at this time in the main universities.

The advent of new computerized thermographic instrumentation with 1024x768 pixels, thermal sensivity <0.02oC and super-resolution image processing that improves resolution with up to 4x reaching 3.1 megapixels as well as combined with multi-spectral dynamic imaging for visible detail extracted holds promise for expansion of the field of biomedical thermographic. Also the telemedicine system is already implemented at Brazil for the transmission of thermal images from clinics and hospitals from Brazil, Netherlands, Portugal and Poland to a thermology center at Brazil with medical specialists for the purposes of sharing

studies and solves cases in far locations. Progress is being made in the integration of these new methodologies to improve patient care by allowing diagnostic services without actually having to be at the location of the patient.

10. PanAmerican Journal of Medical Thermology (PAJMT)  
<http://www.abraterm.com.br/revista/index.php/PAJMT/issue/archive>

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