Advanced Thermo Clinical Imaging, Inc.

"Specializing in Infrared Thermoscan Evaluation"

Patient: Ms. Smith **Birthdate: Age 43**

Clinic: Integrative Medical Specialists, LLC – Dr. Diehn, ND

Date of Thermogram: **Date of Report:**

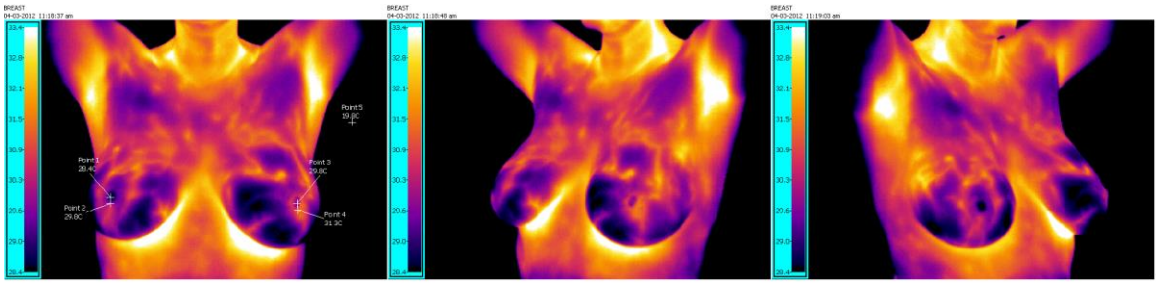
Examination: Breast Thermography

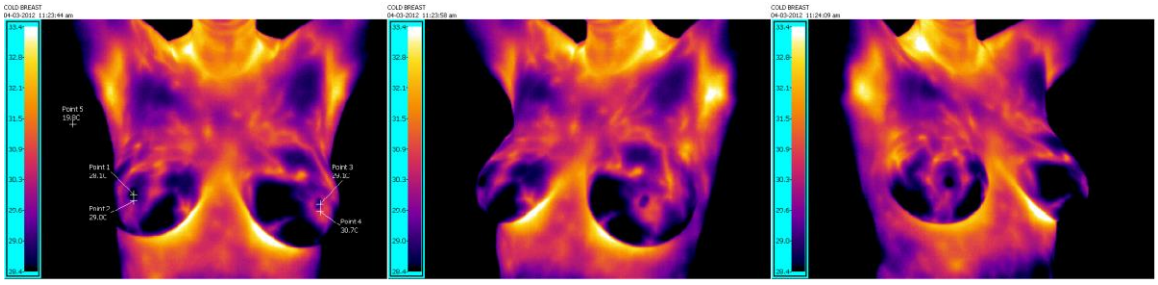
Complaints/History: This is Ms. Smith's fourth thermographic evaluation at this clinic. The results for the studies are as follows:

- May 2010 - TH-2 (65 points), right breast; TH-4 (125 points), left breast;
- September 2010 - TH-2 (40 points), right breast; TH-3 (105 points), left breast;
- June 2011 – TH-2 (45 points), right breast; TH-3 (80 points), left breast.

Her history remains unchanged. Presently, she is not using any hormone replacement, and is taking GTA Forte II for thyroid and supplements. Currently, she still have the hard lump located approximately at the 2 o'clock area of the upper outer quadrant of her left breast, but does not have any other complaints.

Objective: Baseline Thermographic Evaluation





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CTA-Reporting System

The CTA Reporting system utilized to evaluate these thermograms is based on twenty-six (26) standard thermological signs and quantitative measurements that were established during the course of this examination. Specific numerical values were assigned to each finding and were recorded separately. The actual scoring was developed based on the statistical frequency of occurrence and its association with breast pathology.

The TH scoring system is based on original research conducted by M. Gautherie, A. Kotewicz, and P. Gueblez, often referred to as the CBT system. Since Gautherie's original research, additional signs and numerical values have been added to establish the CTA Breast Analytical System (as used for this report). These additional signs, quantification measurements, and numerical values are based on extensive thermal imaging and clinical work separately performed by G. Chapman and W. Hobbins.

Thermographic Report

Thermography is utilized to view the amount of heat emitted from the skin's surface. This provides a territorial analysis of the surface temperature with specific quantitative measurements taken of questionable regions. As a general note, the wavelength observed is at the infrared end of the light spectrum. Special instrumentation is required for this examination, noting that infrared rays are invisible to the unaided human eye. The thermograms demonstrate these heat emissions as colors or as black and white images. The colors or shades of black and white will differ in various parts of the body, but in a normal healthy individual the temperature changes should be relatively symmetrical.

This patient was evaluated with IRIS Thermographic System®. Examination provided six (6) high-resolution digital thermographic images. Standard equilibration is reported to have been established.

Thermographic Findings

Series One: Baseline Study

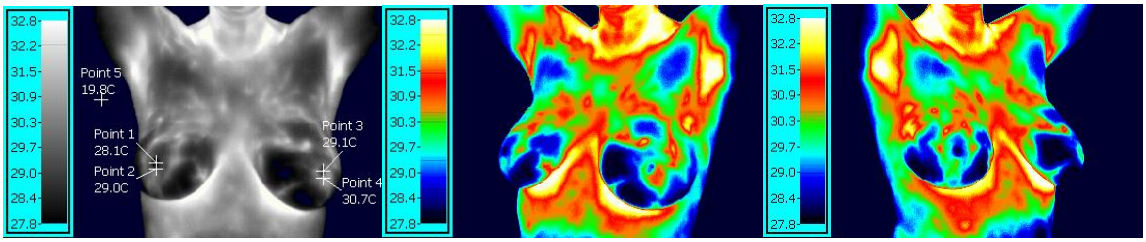
The first series was performed following a fifteen (15) minute equilibration at an ambient room temperature of 19.8° Celsius. (*Quantitative analysis of temperature is in Celsius)*

Nipple……	Right = 28.4°C	Left = 29.8°C
Periareolar……	Right = 29.8°C	Left = 31.3°C

Series Two: Functional Study

The second series was performed following a fifteen (15) minutes post onset of examination with ambient room temperature at 19.8° Celsius following a sixty (60) second hand soak in 10° Celsius (50° Fahrenheit) water. This is called a provocative test or autonomic challenge test. The skin's microcirculation shuts down and we are able to contrast any non-responsive blood vessels that may be associated with malignant neoplasm. This includes the neo-angiogenic blood vessels and those that are dilated because of nitric oxide. (*Quantitative analysis of temperature in Celsius)*

Nipple……	Right = 28.1°C	Left = 29.1°C
	ΔT = 1.0°C	
Periareolar……	Right = 29.0°C	Left = 30.7°C
	Δ T = 1.7°C	



Based on Gautherie's research "...carcinoma, regardless of tumor size and histological type, the average thermal score was found to be higher than 80. The in situ carcinomas, the micro-invasive carcinomas (< 5mm), and T1 Cancer (< 2 cm) had average scores of 87, 92 and 129 respectively."

Thermal Score Summary

Right Breast:	TH-2, Score = 65	Within normal limits regarding thermal emission. Most frequently associated with benign disorders, such as cystic and fibrocystic breasts.
Left Breast:	TH-3, Score = 95	Equivocal regarding thermal emission. Possibly benign, but considered at-risk and a short interval follow-up thermographic evaluation is recommended (9 months).

Impression:

Right Breast:

- Regular thermovascular pattern — Score = 20
- Thermovascular network — Score = 10
- Regional hyperthermia — Score = 20
- Regional hypothermia — Score = 15

Total Score = 65

Left Breast:

- Thermovascular network — Score = 10
- Regional hyperthermia — Score = 20
- Regional hypothermia — Score = 15
- Asymmetrical thermal patterns — Score = 15
- Nipple hyperthermia involving one breast with a $\Delta T \geq 1.0°C$ when compared with the contralateral breast — Score = 35

Total Score = 95

Comments:

The area on the upper outer quadrant of the left breast (approximate location of 2 o'clock) is still hyperthermic, but does cool after the cold-water challenge, as normal tissue would respond. The temperature difference between the nipples is still within scoring range (actual temperature difference of 1.0°C, the left being the warmer). The curvilinear vascular pattern appears to be milder in this study when compared to June 2011's study and is not being scored. The area on the upper outer quadrant of the left breast still needs to be monitored. It is recommended to have another study conducted within six (6) months to a year.

General Information:

Thermography provides a physiological assessment of the microcirculation and is quite sensitive for the detection of risk factors associated with several pathological conditions. However, results of this study should not preclude further evaluation of any clinically suspicious or palpable density. A small percentage of palpable lesions are not visualized with thermography, ultrasound, or mammography.

Thank you for utilizing ADVANCED THERMO CLINICAL IMAGING, INC.
Dictated and Electronically Authenticated by:

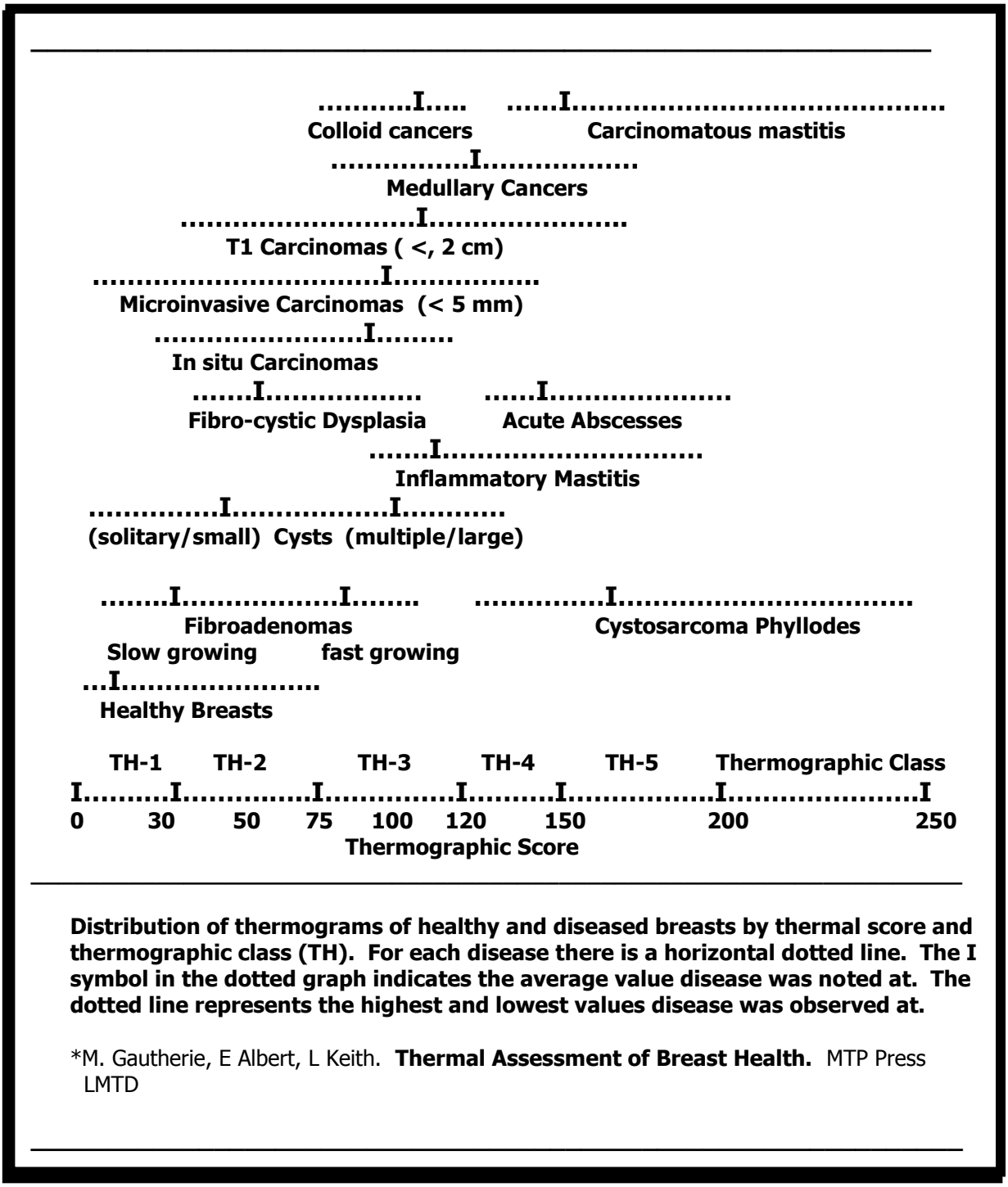
John M. Tolmosoff, D.C., C.C.T., D.B.E.S.T.
Certified Clinical Thermologist

CTA Scoring System

TH-1……	**Score of 0-29** Within normal limits
TH-2……	**Score of 30-74** Within normal limits regarding thermal emission. Most frequently associated with benign disorders, such as cystic and fibrocystic breasts.
TH-3……..	**Score of 75-119** Equivocal regarding thermal emission. Possibly benign, but considered at-risk and a short interval follow-up thermographic evaluation is recommended (6 months to a year).
TH-4……..	**Score of 120-149** Abnormal, moderate risk. Additional diagnostic work is suggested, including a short interval follow-up thermographic evaluation is recommended (3-6 months).
TH-5……..	**Score ≥ 150** Severely abnormal, significant risk. Additional diagnostic work is strongly recommended with a short interval follow-up thermographic evaluation (every 2 to 3 months).
Modifier……	**-A** Need additional imaging evaluation, current study is incomplete
Modifier……	**-B** Known biopsy, proven malignancy
Modifier……	**-C** Previous diagnosis of breast cancer, removed by surgery or had undergone specific treatment for condition

References used to establish TH factors included:

G Chapman, B Britt. **Clinical Thermography I: Technique Manual.** CTA Publishers
M. Gautherie, E Albert, L Keith. **Thermal Assessment of Breast Health.** MTP Press LMTD
G Chapman, B Britt. **Clinical Thermography III: Diagnostic Manual.** CTA Publishers
M Gauthrie, E Albert. **Biomedical Thermology.**Published by Alan R. Liss, Inc. New York 269-328
E.F. Ring, B Phillips. **Recent Advances in Medical Thermology.** Published by Plenium Press, Inc. New York and London. 549—622
G Chapman, B Britt. **Clinical Thermography VIII: Infrared Diagnostic Manual for Breast Evaluations.** CTA Publishers, 2006



Distribution of thermograms of healthy and diseased breasts by thermal score and thermographic class (TH). For each disease there is a horizontal dotted line. The I symbol in the dotted graph indicates the average value disease was noted at. The dotted line represents the highest and lowest values disease was observed at.

*M. Gautherie, E Albert, L Keith. **Thermal Assessment of Breast Health.** MTP Press LMTD