

Understanding the TH Scale

TH1 The first classification category in the Marseille system, defines a normal thermal profile of the breasts that is devoid of any of the Thermology signs or criteria associated with risk for malignant breast disease. All thermal features demonstrate normal and adaptive response to the autonomic challenge. Normal contours are discerned and no significantly hyperthermic focal or vascular features are presented. Some patients will demonstrate distinct and significantly hypothermic patterns that are frequently associated with established cysts and or fibro-adenomas. This will modify the classification as a TH1F. Annual comparative restudy is recommended.

TH2 The second category in the Marseille system, defines a thermal profile of the breasts that features symmetrical, non-complex and moderately hyperthermic vascular patterns. All thermal features demonstrate normal and adaptive response to the autonomic challenge. The TH2 score indicates no thermal signs or criteria for malignant breast disease. However, while very unlikely, it is possible that some small malignant tumors may be in a quiescent state and their vascular development could be minimal. In this event, the very minor thermal characteristics may evade discernment, especially in an initial study. This Thermology category is frequently associated with benign changes, such as glandular hyperplasia and the development of cysts and fibroadenomas. This will modify the classification as TH2F. Annual comparative Infrared Mammogram is recommended and more frequent restudy may be clinically indicated.

TH3 The third category of the Marseille system, defines a single Thermology sign and indicates an atypical metabolic or vascular process. This may be based upon the discernment of an asymmetric and hyperthermic vascular or focal pattern, an asymmetric, diffuse and hyperthermic pattern involving a peri-areolar area or most of one breast, a discrete area in a vascular pattern that does not attenuate from the challenge procedure or an asymmetric physical distortion with local hyperthermia. This atypical category is associated with a minor or equivocal (<10-20%) risk of confirming malignant breast disease. It is likely that these atypical thermal features represent benign changes such as inflammation, acute cysts and or fibroadenoma development, infection or personal variant, especially in an initial study. An Infrared Mammogram in 60 to 90 days usually provides a differentiation. Clinical correlation is indicated for an association with a mass or abnormal skin changes that would have an additive effect on the overall risk for malignant disease. Strong familial or personal risk factors for Breast Cancer are also additive. Other objective means of evaluating the breasts may be indicated. Experience demonstrates a

targeted Ultrasound as the most effective means of following-up on atypical or abnormal Infrared Mammogram. Blood markers such as CA15-3, CA125 and creatin-kinase-BB may be useful and X-Ray Mammography and Ductal Lavage may be indicated.

TH3M or TH3L The post-surgical woman receives a special modifier "M", designating Mastectomy or "L", designating Lumpectomy. These are frequently used with the third category of the Marseille system on an initial study when any atypical thermal features are evident. The surgical procedures, radiation treatments, and chemotherapy typically produce significant tissue inflammation, edema, abnormal tissue metabolism, nerve damage, and revascularization that will likely impede the normal regulation of blood flow in the breast and results in artifact of the thermal patterns. These forms of artifact limit the value of Infrared Mammography for approximately three months post-procedural when their influence usually has abated. Infrared Mammography can be a very useful means of monitoring the post-surgical woman for indications of persistent or recurrent malignant disease, especially in the axillary or sternal regions. The initial study may be of limited value and its best value obtained as a baseline for comparative restudy.

TH4 The fourth category in the Marseille system defines two or more Thermology signs or a single Thermology criterion. This must be considered a positive Infrared Mammogram and represents a significant (65-85%) risk for malignant breast disease. Benign processes and personal variant are possible but unlikely as a basis for this abnormal classification, especially on an initial study. A clinical correlation is indicated for regional masses or abnormal skin changes and all available means of objective evaluation are indicated. However, it must be considered that a positive Infrared Mammogram may precede positive results from other objective testing by 5-8 years. An Infrared Mammogram in 60-90 days should be an important part of a comprehensive follow-up testing panel.

TH5 The fifth category in the Marseille system defines two or more Thermology criteria. This category indicates a very high (approx. 96%) probability of confirming malignant breast disease. Benign processes or personal variant are very unlikely. A clinical correlation is indicated for regional masses and abnormal skin changes. Clearly, a patient with such a score is indicated for a comprehensive panel of objective evaluation with all possible alacrity. An Infrared Mammogram in 60-90 days should be a part of this evaluation if these other methods do not demonstrate malignant breast disease, as Infrared Mammography may precede other abnormal features by 5-8 years.