



Response to the New Zealand Position Paper on Thermography

Differentiating Physiological Tests from Diagnostic Tests

The current 2005 position statement on thermography by the National Screening Unit, the Cancer Society of New Zealand and the New Zealand Breast Cancer Foundation states that it does “not support the use of thermography as a breast screening or diagnostic tool as there is insufficient evidence to do so”. This statement however does not reflect the purpose for which this breast modality was intended by Clinical Thermography Ltd. Consequently, both physicians and the general public have been left somewhat confused about its application and role in breast health.

Clinical Thermography Ltd opened in New Zealand in 2009 and has never advocated or promoted the use of thermograms as a diagnostic tool; it is only through histological evaluation that one can unequivocally determine the presence of a carcinoma.¹

As a physiological test, dynamic infrared imaging provides information about heat patterns which can indicate breast abnormality. Both the temperature and vascularisation of tissue can be influenced by three key factors; hormones, inflammation and tumours.¹ Thermograms are like a fingerprint in that heat conductivity remains remarkably constant in healthy breast tissue.^{2,3} As such, serial thermography can be a non-invasive tool to assess tissue changes over time. A healthy initial thermogram can serve as a control to compare future images against.

Supporting Conventional Screening

Clinical Thermography Ltd has never promoted thermal imaging as an alternative to mammography or routine screening modalities. Website material and patient reports clearly state that thermography is a physiological test that “does not replace or discourage clinical findings on mammography and any suspicious lesions should be followed up with additional testing or medical evaluation”. The clinic also advocates that clients share their thermography reports with their acting physician and (with written permission) sends a copy of the results directly to their GP.

Taking a Closer Look at the Breast Cancer Detection Demonstration Project

The early withdrawal of thermography in the Breast Cancer Detection Demonstration Project (BCDDP) was due to a number of technical challenges including inconsistent procedures and protocols, inadequate staff training, insufficient experience in interpretation of the images and a lack of standardization of equipment.⁴ Given the methodological flaws and subsequent low sensitivity and specificity, The Working group of the BCDDP did not find infrared imaging to be an acceptable stand alone tool for the detection of breast cancer.⁵ Because thermography was prematurely withdrawn and no comparative data were collected, no conclusions could be made about the possible value of thermal imaging as a risk indicator for breast cancer or a prognostic marker in women with abnormal mammograms who ended up being diagnosed with breast cancer.⁴

Evaluating Thermography in the Correct Context

The systemic review conducted by the NZHTA was in fact a Tech Brief that reviewed “the evidence for the effectiveness of infrared thermography for population screening and diagnostic testing of breast cancer”. As such, all research that evaluated thermography in any other capacity (such as a complementary modality, risk indicator or prognostic marker) was omitted. While 1,154 abstracts were identified, the evidence against the use of infrared imaging as a screening and diagnostic tool was based on three papers only.

Thermography as a Complementary FDA Approved Procedure

Neither mammography or thermography can diagnose breast cancer, rather they are adjunctive tests that provide information on the different aspects of the disease process and identify the need for further investigations.¹ Since 1982, thermography has had the approval of the US Food and Drug Administration as an adjunct screening procedure for the detection of breast cancer.⁵

To reiterate, thermography is a physiological test and given physiological changes are known to precede pathological changes, it can provide complementary information to clinical breast exam and mammography.⁶

References

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