



Clinical Thermography Response to Sunday Star Times Article, 7 November 2010 'The Heat is On'

The specialist staff and management team at Clinical Thermography are disappointed that the Sunday Star Times (SST) article has presented such a one sided report on Thermography.

As the reporter, Adam Dudding, was aware, a research review looking at over thirty years of research and presenting a wholly different position, backed up by facts and figures has recently been released and shows that breast thermography, which is used to help manage breast health, is a valuable tool for predicting breast cancer risk.

We provided Adam Dudding with a copy of the research review released by the New Zealand Breast Thermography Association (www.nzbta.org.nz) looking at the research available in support of thermography, but none of this information made it to print. We would encourage anyone interested in breast thermography to read a synopsis of this research review, on the New Zealand Breast Thermography Association website at www.nzbta.org.nz.

The research review confirms the Breast Cancer Foundation's position that there is not currently enough research to support thermography as the *only* tool a woman uses for breast cancer screening, and shows that there is good evidence to support thermography as an adjunctive tool (used alongside mammography screening), and as an independent risk marker (assessing any abnormal tissue activity).

Comments in the SST by radiologists Dr Mike Baker and Dr Deborah McMurtrie, indicate to us that they do not fully understand thermography's place in breast health assessment. Dr McMurtrie commented,

"Nobody gives a toss if their breasts are healthy. They want to know if they have got breast cancer".

This is surprising to read and we can only assume that Dr McMurtrie was misquoted or quoted out of context. If a warning of abnormal (or unhealthy) breast tissue development can warn of breast cancer before it has developed, as the recent review of research has indicated, then we suggest many, if not most, women would "give a toss" if their breasts are healthy.

A recent case study with "Maria" (not her real name) has shown that lifestyle changes can return breast health to "normal" after an abnormal thermogram. If persistent abnormal thermograms are the best indicator of breast cancer risk, surely monitoring breast health to reduce risk and therefore reduce incidence, cannot be and should not be dismissed.

Please [click here](#) for a PDF which graphically illustrates how a thermogram can alert a woman to potential problems and how a change in lifestyle can reduce the risk of potential problems and breast cancer with positive changes to lifestyle, as happened in Maria's case.

Breast cancer identified through x-ray mammography (radiology) is generally the result of between 5 - 10 years of unhealthy / abnormal tissue activity, culminating in a cancer the size of a pea that can then be identified through mammography. Women who want to be proactive about the health of their breasts, and who want to take steps to try to reduce their chances of

developing breast cancer, do "give a toss" if their breasts are healthy.

Likewise, Dr Mike Baker's comments that thermography "is being promoted as an examination that looks after breast health. But if it doesn't pick up breast cancer, why use it?". This again indicates to us that Dr Baker doesn't understand the place of thermography as a breast cancer risk indicator, identifying changes at a stage when women can be proactive and reduce the chances of a problem developing further. Dr Baker's inference that thermography doesn't pick up breast cancer is also misleading (see details of studies relating to this, later in this document).

Breast thermography is a service that has been helping New Zealand women understand their breast cancer risk since 2002.

Further to this, we would like to reiterate our thanks to and support of Allison Roe, health advocate and the public face of Clinical Thermography. She is an intelligent and professional woman who is (by the paper's own admission), very careful when it comes to who and what she supports, making her decisions after robust investigation and consideration.

Additional information regarding Thermography and the SST article:

- Thermography looks for abnormal heat in the breast tissue (breast cancers generate a higher heat than surrounding tissue), which may (or may not) be cancerous.
- Thermography has the ability to identify abnormal blood vessel and tissue activity before a lump is large enough to be seen through mammography.
- Thermography should not be used *instead of* mammography and in fact should be used alongside it. A lump needs to be approximately the size of a pea before it can be seen through mammography, often representing 5 - 10 years growth. In this way, thermography is a test that is added to mammography to find out whether a woman is at risk of the development of cancer, based on tissue metabolism and activity.
- When added to mammography, thermography can increase detection of existing breast cancers. Mammography alone can miss up to 15% of Breast Cancers in women over 50, up to 25% in women in their 40s, and more than this in women younger than this. This is because the breast tissue of younger women is too dense for mammography's x-ray to 'see' through, resulting in a higher rate of missed cancers. This is where thermography comes in. In two studies that have combined thermography with mammography and physical exam, 95 - 98% of breast cancers were identified.
- Breast thermography has had the American Food and Drug Administration's (FDA) approval for 'adjunctive diagnostic screening for the screening of breast cancer' since 1982 to be used in this way.
- Why would I want to know about my breast cancer risk? Although surgery is one of the only options once a cancer has been identified through mammography (often representing 5 - 10 years growth), if caught early enough, precancerous and early changes to breast health can often be reversed through lifestyle, diet and other interventions. A number of women who have been through Clinical Thermography and had an abnormal thermogram, have managed to reverse abnormal tissue activity by looking very closely at their lifestyle and other risk factors. In this way women have the ability to keep a closer eye on what's going on with their breast health before finding out that they have a potentially life threatening cancer large enough to be seen through mammography.
- Click [here](#) for the case study of Maria (not her real name) who reversed abnormal tissue

activity by improving her lifestyle and health choices.

- Studies to support thermography using modern thermography technology have been small; however, have shown thermography to be extremely promising for breast cancer detection. For example, a study in 2003 looked at 875 lesions (lumps) identified through mammography, and before biopsy thermography looked at these areas to assess them for unusual heat, which could indicate blood vessel activity, and therefore malignancy. The lumps were then biopsied, revealing 187 malignant, and 688 benign findings. Thermography identified the malignant masses with 97% accuracy. The study concluded that "Infrared imaging offers a safe noninvasive procedure that would be valuable as an adjunct to mammography in determining whether a lesion is benign or malignant". This is a similar conclusion to a study by the American Society of Breast Surgeons in 2008 that concluded that "DITI (Digital Infrared Thermal Imaging - also known as Medical Infrared Imaging and Medical Thermography or Medical Thermology) is a valuable adjunct to mammography and ultrasound, especially in women with dense breast parenchyma." These studies, however, cannot be extrapolated to a larger population for breast cancer screening for two reasons, firstly, because they started with a symptomatic population (women that already had a lump identified through mammography) and secondly that they were relatively small studies. That said, it clearly demonstrates the ability of thermography to identify heat associated with breast cancers and makes Baker's comment that thermography can't pick up breast cancer misleading. Larger studies do need to be done before it can be recommended that thermography be used as a stand-alone tool; however it is clear that thermography has value and has the ability to identify heat associated with breast cancers.
- In response to Monique Farmer, the SST reporter who reported on her experience with thermography; we wonder if she is aware that due to breast tissue density, women in her age group (39 years old) have up to 25% of breast cancers missed through mammography screening? If she did know this, we wonder if she would consider adding thermography to her current mammography screening to reduce the chances that something is missed?
- Unlike mammography, thermography is not affected by tissue density, and can be used by women as young as 20 years old. Although cancer is rare this young – in New Zealand, 25 breast cancers occur in women in their 20s per year - by the time women are in their 30s, the rates increase dramatically - over 225 breast cancers are diagnosed in NZ per year in women in their 30s. Radiologist Dr Deborah McMurtrie says in the SST article that mammography is "far from perfect", and that it is "particularly poor at finding cancers in young women and dense breasts". Thermography can be used successfully these age groups, identifying women that need to be monitored more closely. Surely this is at least worthy of acknowledgment.
- Dr McMurtrie also says that thermography has "an unacceptably high level of false positives and false negatives". False positives are where thermography will indicate abnormal tissue activity, where there is no cancer discernible through mammography. A number of studies have noted that a high percentage (greater than 30%) of women with a persistently abnormal thermogram, but normal mammogram go on to develop breast cancer within the following ten years. This is a rate six times higher than would be expected from a normal population, and shows that whilst called 'false positives', thermography is often identifying precancerous changes or cancers before they are large enough to be seen through other testing.
- In response to false negatives, giving the all clear when in fact there is a cancer present, thermography, like all other screening tests, is not perfect, and is subject to false negatives. Large-scale trials with modern equipment have not been completed to ascertain the exact number of cases this applies to, however trials to date indicate this

may be between 10 – 20%. For this reason it is always recommended that thermography is used alongside other testing. Again, it is this that thermography is approved for through the FDA in America.

- Although large studies with promising results have been conducted on thermography, all of the larger studies were conducted in the late 70s and 80s, using older thermography technology. For example, one study of over 58,000 women in 1980 that looked at both mammography and thermography, demonstrated a 90% detection of breast cancer using thermography in an asymptomatic population. In this same study, it demonstrated that an abnormal thermogram, but a clear mammogram put a woman at a high risk for the development of breast cancer. Because these studies used older thermography technology, we can't leverage from these studies, and it is not until large trials have been conducted with modern thermography technology that thermography can be used and promoted in this way.

In conclusion, we hope this provides the balance that was missing in the SST article about thermography. It has been shown to be a valuable breast cancer risk indicator, and to increase detection of breast cancers when used alongside other testing.

If you would like to know more about thermography, please read the research review on the New Zealand Breast Thermography Association website (<http://www.nzbta.org.nz>), or feel free to contact us directly.

The team at Clinical Thermography