

Excerpt from the book
“*Waking the Warrior Goddess: Dr. Christine Horner's Program to Protect Against and Fight Breast Cancer*”

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Thermography uses infrared technology to detect heat. It was first developed by the military in the early 1950s as a way to see enemy forces at night—by sensing their heat and movement. In the early 1960s, thermography was introduced in a very rudimentary form for medical use. It was approved by the FDA in 1982, but unfortunately, this promising technology fell out of favor when it was prematurely, hastily, and haphazardly included in the Breast Cancer Detection Demonstration Project, a large national study of mammography. Poor training, quality controls, and equipment led to misinterpretations and the false conclusion that thermography wasn't a valuable screening tool for breast cancer. But a few individuals, believing in its potential, persevered.

In the last few years, thermography equipment has vastly improved. The digital cameras and computer-software systems that are now available are so sophisticated that their high-resolution images and precise heat-variation calculations generate extremely valuable information. Recent research shows that, unlike mammograms, when thermography suspects something is wrong, it usually is. A study published in the *American Journal of Radiology* in January 2003 concluded that this technology could help prevent most unnecessary breast biopsies: “Infrared imaging (thermography) offers a safe noninvasive procedure that would be valuable as an adjunct to mammography in determining whether a lesion is benign or malignant.”

A breast thermogram is a digital infrared picture that reveals the heat and vascular patterns of the breast tissue. These patterns change when a breast tumor starts to grow. Breast-cancer cells require new blood vessels to feed them nutrients and oxygen. These new blood vessels don't grow like normal blood vessels. Instead, they grow in

characteristically *abnormal* patterns, and they generate increased heat that is detectable by thermography.

Thermography can detect breast cancers much earlier than any other available technology. Because blood vessels ordinarily start to grow *before* any other significant changes and tumor growth, a thermogram can “see” these abnormal physiological processes as early as five to ten years *before* a cancer can be seen by a mammogram, MRI, or ultrasound or felt by a physical exam. What is most exciting is that when these abnormal processes are caught this early, they are *reversible*. The warning patterns seen by thermography have been found to resolve and return to normal after only a few short months of the healthy diet and lifestyle changes presented in this book. Thus, thermography is the first tool we have that shows promise in being able to pick up breast cancers so early—at a stage that involves only precancerous physiological changes—that women can reverse these changes and avoid getting breast cancer by making a few simple diet and lifestyle modifications.

In the near future, thermography may play a dominant role in the screening and prevention of breast cancer. But before that can happen, many well-designed studies must be conducted to understand what the full potential of thermography really is: its precise capabilities and limitations, how it can best be used, where it fits in with other technologies, and how to properly evaluate and interpret the information it generates.