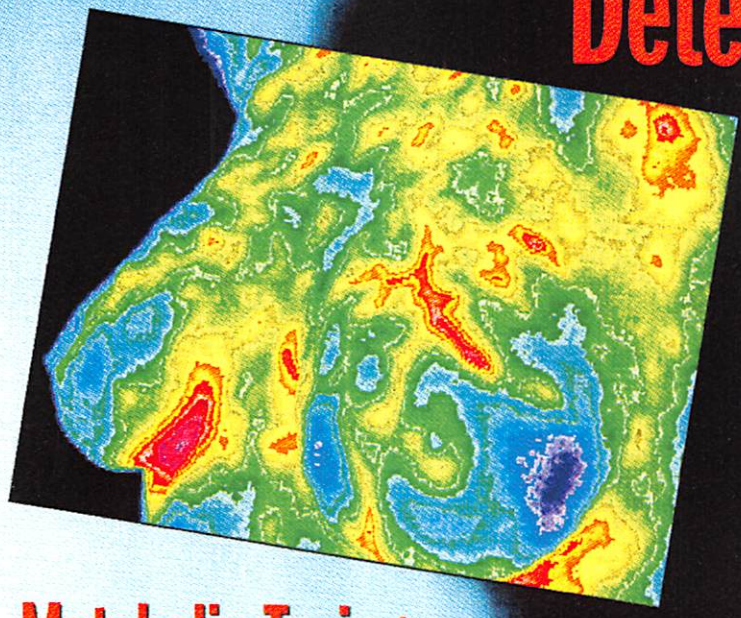
MAINTAINING MALE SEXUAL VITALITY ■ ANTI-AGING SKIN REPAIR

Alternative Medicine™

The Voice of Alternative Medicine®



Detect Breast Cancer Years Earlier

Bach Flower Essences Easing Life's Difficulties

Everything You Wanted to Know About PROGESTERONE CREAMS

Metabolic Typing– The Latest Skinny on LOSING WEIGHT

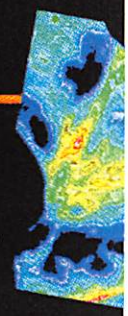
Politics of Medicine
DRUGS 'R' U.S.

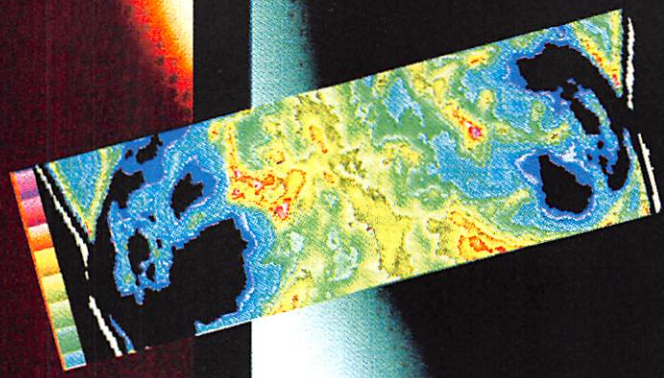
How Mammography Causes Cancer

ISSUE 31
SEPTEMBER 1999

Teenage Violence
CAUSES AND CURES

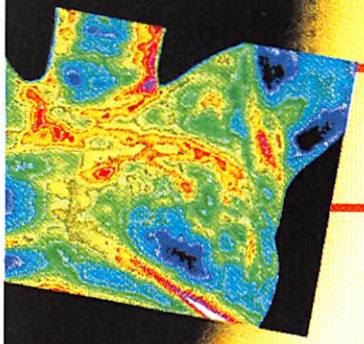
BY TOM KLABER



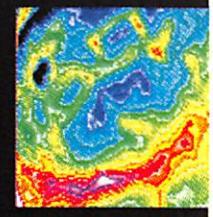


THERMAL IMAGE PROCESSING

Breast Cancer Detection Years Earlier



BALES SCIENTIFIC'S state-of-the-art infrared system is able to read functional changes in the breast at the beginning stages of angiogenesis—when the tumor begins to receive its own blood supply—before it can grow to size, and before malignant cells have a chance to spread. By pushing back "early detection" by years, women can choose alternative therapies to cure their own cancer without surgery, radiation, or chemotherapy—accurately monitoring their progress all the while.



American women are well aware of the frightening statistics of the chances of contracting breast cancer.

What many American women are not aware of is the tragic fallacy of "early detection," as defined by the National Cancer Institute and conventional medicine in general. In 95% of cancer diagnoses, by the time a malignant tumor is able to be detected by physical examination or mammography, it has existed for eight years, and has already had ample opportunity to metastasize (spread to other parts of the body). By this time many women feel they have no choice but to undergo surgery, radiation, and chemotherapy.

Many women are also unaware of how inaccurate mammography is. According to Dr. Charles B. Simone., MD, MMS, a former clinical associate in immunology and pharmacology at the National Cancer Institute, and founder of the Simone Protective Cancer Center, "About 5% of screening mammograms are positive. Of these, however, about 80% to 90% are false positives that require excessive workups, such as unnecessary surgical biopsies, and even needless mastectomies." Meanwhile, negative mammography readings provide false assurances in 10% to 15% (some say up to 20%) of women who actually do have cancer.

Many women are also unaware that mammography itself—the standard diagnostic technique—is universally acknowledged as causing cancer in a small but significant percentage of women who use it. (See the sidebar, "How Mammography Causes Cancer.)

But there is an alternative. It is a quantum leap in the use of infrared technology—commonly referred to as thermography—that allows a physician to diagnose cancer through observing functional changes in the breast at least two or three years before a malignant tumor could be detected by any other means.

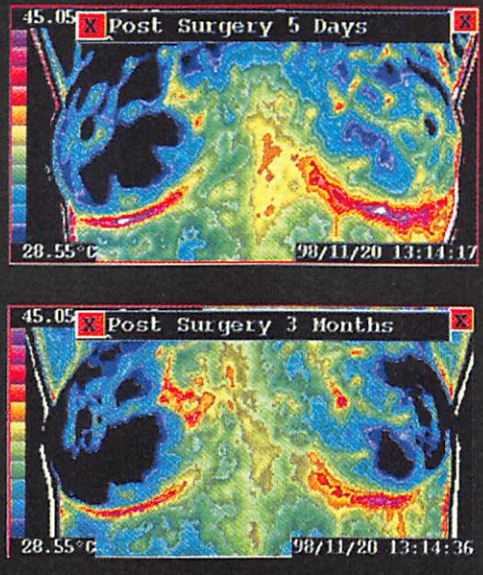
This alternative is called the Thermal Image Processor (TIP), developed by Maurice Bales and manufactured by his company, Bales Scientific Inc. in Walnut Creek, California. TIP is approved by the FDA, but the technology is so new that only 15 systems are presently in clinical use in the U.S. (Medical Centers using TIP are listed at the end of this article.) Technically, TIP is a form of thermography—in the same sense that the space shuttle is a type of aircraft.

This space shuttle analogy is apt, because Maurice Bales got started in this field in the 1970's while working at the University of California at Berkeley—developing equipment to test the integrity of materials for the space shuttle. Bales was responsible for programming the electronics for mass spectrometers, and, later, thermographic optical analyzers. These devices were used to scan materials for imperfections—weaknesses—in their structure.

Bales started his own company in 1979. He spent years upgrading every aspect of his own thermographic system. Finally, he put everything together into one integrated system—a complete workstation—that was able to take precise thermal data, translate it into remarkably detailed structural images, and manipulate, store, print, and transfer the information in a myriad of ways.

He successfully sold his device to the government, aircraft manufacturers, and computer companies (which used them to test circuit boards). And this same equipment excelled in another application: it was able to see abnormalities in the human body on an extremely sensitive level. Bales was soon approached by various doctors who wanted to use the equipment to pinpoint musculo-skeletal problems, such as stress fractures and myofascial pain. Bales took the algorithms he had devised to interpret thermal data on the corrosion of metals, and adapted them to the human body.

Both regular thermography and the TIP system are based on the same principle: they measure infrared radiation and convert it to



This is the image of a woman who had been diagnosed with breast cancer, and had had a lumpectomy performed five days previously. The area from which the tumor was removed is still "hot." The second image is the same woman three months later. It shows that so far the surgery was a success. The area that was "hot" is reduced, meaning that the blood supply which fueled the tumor is continuing to diminish. Furthermore, the whole breast area shows smoother contours in temperature variations, which is a sign of healthy tissue.

The Alternative Medicine Definitive Guide to Cancer shows how cancer can be reversed using clinically proven complementary and alternative therapies. It includes an overview of the disease in its many forms; the successful cancer treatment plans of 23 eminent physicians, with their complete protocols; a guide to other innovative approaches. Future Medicine Publishing, 1997. Tel: 888-333-HEAL (4325).

THERMAL IMAGE PROCESSING

temperature. But that is where traditional thermography stops, and the TIP system just begins. Usually, thermography only displays a live image, which might be captured on videotape. Single frames can then be printed from the videotape. The TIP system, in contrast, has a very high resolution imager, which is part of a complete workstation. The workstation has the ability to capture multiple frames of high resolution data over a precisely timed sequence. This provides an enormous amount of data, for which Bales has developed mathematical algorithms that enable the data to be analyzed and interpreted in a number of ways.

The way the TIP system is used for breast cancer screening is simple. A patient sits in front a camera that records thermal (heat) data, and uncovers the upper torso. Thermography usually places the patient in a cold room; with TIP the patient is usually in a room temperature or slightly warm place, and the camera starts recording the normal state of the breasts. Then cold air is blown onto the patient. This creates a stress on the sympathetic nervous system, which responds by decreasing the flow of blood to the surface.

The heat that is radiated from the surface of a body contains information about its interior structure. The TIP system collects a series of frames recording the changes in the sympathetic response. Having the frames precisely timed is critical, because the time indicates depth, and this provides an accurate picture of the structure in the body.

The optics of the camera in the system must be very fine (i.e., have "high spatial resolution"), and operate in the long wavelength region (8 to 12 microns) in order to see precise anatomical detail over a large area (*e.g.,* both breasts). The TIP system's optics are program- mable, and its standard resolution of 500 by 500 pixels is three times greater than normal thermographic imaging.

The Economics of Mammography

How Mammography Became the Standard Diagnostic Tool—and How to Change This

With all of mammography's defects and dangers, why did it, and not thermography, become the standard medical breast cancer diagnostic tool?

Thermography gets its name from "Thermo," meaning heat. It uses infrared radiation to spot abnormalities in the human body by measuring temperature variations. Mammography (which, of course, gets its name from the mammary glands) uses X-rays to reveal anatomical structures of differing densities.

The modern use of both thermography and mammography dates back to the late 1950's and early '60's. Mammography eventually superceded thermography for a simple reason. There were very few doctors practicing alternative medicine at this time. Then, as now, conventional doctors thought the only ways they had to deal with breast cancer were with radiation, chemotherapy, and surgery. Early thermography would register suspicious temperature variations in the breast, but it wasn't able to provide a precise pinpoint location from which a surgeon could operate.

Thermography has become much more advanced since that time, but back then thermography and mammography had about the same degree of success in detecting cancer—although when used together, the detection rate went up to 95%. The radiologists involved were reluctant to go to the considerable expense of investing in both types of equipment, however. So they thought that if they were going to have to spend $50,000 for a piece of equipment, they would rather spend it on X-ray equipment that in one procedure provided information that surgery could proceed on. The potential for doing harm through the effects of the X-ray radiation and through physically squeezing the breasts was not considered.

Thermography also lost out on another economic front. Thermographic images were being used in court to prove musculo-skeletal injuries, such as whiplash or spinal injuries in automobile accidents, and insurance companies were taking it on the chin. The insurance industry used its considerable clout to influence doctors and legislators to discourage the use of thermography—just because of its high efficiency in this application—and this also contributed to the industry's decline.

Philip Hoekstra, Ph.D., a pioneer in the use in thermography, has scanned over 50,000 women since 1971. In almost all conditions now, he claims, thermography is superior in detecting breast cancer earlier than mammography, especially in premenopausal women. He and many other authorities are convinced that mammography should not be used as an initial screening device—it should be employed only as a last resort, after a diagnosis of breast cancer is made, and the woman feels she needs it confirmed with a surgical biopsy or surgically removed.

Of course, radiologists have major investments in mammographic equipment, they are familiar with their use, and consider surgery an imperative in virtually all cases. One needn't be a radiologist to operate thermographic equipment, and therefore thermography is viewed as competiton, rather than as an invaluable technology to be embraced. Only when women themselves start demanding this form of non-toxic screening technique from their physicians will there likely be a change.

How Mammography Causes Cancer

The use of mammography for women under 50 years of age has been a subject of controversy. According to the highly regarded British medical journal, *The Lancet*, even for women over the age of 40 it does more harm than good. That is because, of the 5% of mammograms that suggest further testing, up to 93% are false positives—*i.e.*, follow-up biopsies indicate no cancer. Regarding mammograms for women in this age group, the researchers concluded, "The benefit is marginal, the harm caused is substantial, and the costs incurred are enormous, [so] we suggest that public funding for breast cancer screening in any age group is not justifiable."[1] Despite the evidence and expert arguments, the American Cancer Society and many conventional doctors continue to recommend that all women over age 39 be screened by mammography.

No Significant Benefits

The *Lancet* report also noted that, even among women over age 50, the presumed benefits—a 30% reduction in mortality—were based on early trials, with scant attention paid to later trials showing no significant benefit in any age group. In addition, the report presented a compelling case for more restricted use of mammograms, given the following facts: "(a) the great majority of positive screenings are false positives; (b) screening leads to many unnecessary investigations and useless surgery; (c) a 'negative' screening does not mean the absence of breast cancer; (d) in the large majority of women whose breast cancer is diagnosed by screening, the outcome is unchanged."[2]

Regarding this last point, *Lancet* authors stated that, in most cases, breast cancer has been present for many years before it is detected by mammography. Moreover, in general, about 40 replications or doublings of the breast cancer cells create a potentially lethal burden, yet mammography cannot detect a mass until 25-30 such doublings have already occurred.[3] By this time, the cancer is far less treatable than it would have been after 15-20 doublings.

Radiation Exposure

The potential damage incurred by low-level radiation exposure (typically from medical X-rays) directly to the breast tissue is another area requiring further scientific scrutiny. Mammograms involve low doses of ionizing radiation, but its proponents still like to say that the benefits of mammograms outweigh radiation-related risks.

However, based on 40 years of studying the effects of low-dose radiation on humans, John W. Gofman, M.D., Ph.D., a renowned authority on the health effects of ionizing radiation, estimates that 75% of breast cancer could be prevented by avoiding or minimizing exposure to the ionizing radiation from mammography, X-rays, and other medical sources.[4] Dr. Gofman believes strongly that there is no "safe threshold" for exposure to low-level ionizing radiation.

Spreading Cancer Cells

Another potential concern about the mammogram is that it may, on occasion, even help spread an existing mass of cancer cells. During the procedure, considerable pressure is placed on the woman's breast, as the breast is firmly squeezed between two flat plastic surfaces by the mammography technologist. According to Lorraine Day, M.D., a pathologist and former breast cancer patient, this compression could cause existing cancer cells to move (metastasize) from the breast tissue. "When you have a mammogram, the breasts are squashed down fairly hard. If there are cancer cells, they are more likely to spread to other parts of the body, because you now have cancer cells circulating in the bloodstream." A woman can and should request reduced compression if it becomes too intense or painful, Dr. Day adds.

"Mammograms increase the risk for developing breast cancer and raise the risk of spreading or metastasizing an existing growth," says Dr. Charles B. Simone, a former clinical associate in immunology and pharmacology at the National Cancer Institute, and founder of the Simone Protective Cancer Center. "By some estimates, one per 10,000 women screened get breast cancer as a result of mammography."

"Early Detection" Does Not Mean Longer Life

Even the National Cancer Institute and National Academy of Sciences admit that mammography promotes cancer.[5] Their justification for continuing to endorse mammography as a regular screening method is that the relatively small number of cancers caused by this procedure make it worthwhile when considering the number of cancers that are detected using the procedure. But Dr. Simone says, "Mammograms can detect a cancer earlier, but earlier detection has not translated to a longer life. If breast cancer is a 15-year disease, the mammograms of the older technology were able to detect the cancer at about year 11 or 12, so the patient lived 3-4 more years. Now mammograms can detect the cancer earlier, at about year 7 or 8, so the patient *appears* to live longer, but actually does not."

This subject was addressed in *The Lancet* in April 1994, where J. P. van Netten of the Royal Jubilee Hospital in London reported that mammography can rupture in-situ cysts in the breast and spread cancer cells into surrounding tissue. They based this conclusion on a study of 110 women, average age of 39, noting that this type of tissue injury could account for the development of "overt invasive cancer" and metastases.[6] Since mammographic screening was introduced in 1983, the incidence of ductal carcinoma in situ (DCIS), which represents 12% of all breast cancer cases, has increased by 328%, and 200% of this increase is due to the use of mammography, reported *The Lancet* in July 1995.

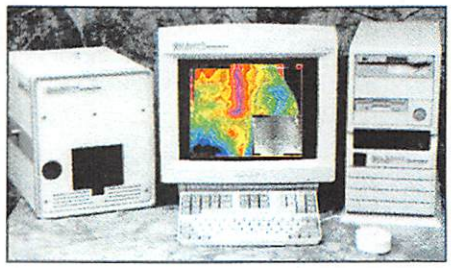
Inaccurate and Cost Ineffective

Mammograms are grossly cost ineffective. They range in price from $50 to more than $200, and it would be necessary to screen 20,000 women annually at an estimated cost of $1.2 million to benefit even one woman in terms of accurate early detection of breast cancer, according to *The Lancet* (July 1995). Similarly, Russell Harris and Linda Leininger of the University of North Carolina at Chapel Hill reported in the *Annals of Internal Medicine* (April 1995) that the annual mammographic screening of 10,000 women aged 50-70 will extend the lives of, at best, 2-6 of them; and annual screening of 10,000 women in their 40s will extend the lives of only 1-2 women per year.

Reprinted from the Alternative Medicine Definitive Guide to Cancer. *1997. Future Medicine Publishing Inc., Tiburon, CA.*

1 Wright, C.J., and C.B. Mueller. "Screening Mammography and Public Health Policy: The Need for Perspective." The Lancet *346 (July 1995), 29-32.*
2 Ibid.
3 Spratt, J.A. et al. "Mammographic Assessment of Human Breast Cancer Growth and Duration." Cancer *71 (1973) 2020-2026.*
4 Gofman, J.W. Preventing Breast Cancer *(San Francisco: Committee for Nuclear Responsibility, 1995)*
5 National Cancer Institute. Personal communications with biostatisticians (1996).
6 Peterson, Norma. "Mammograms May Rupture In Situ Cysts, Causing Invasive Cancer. Breast Cancer Action Newsletter *38 (October/November 1996), 9.*

It is not the TIP system's ability to see physiological detail that is its real edge in early breast cancer diagnosis, however. Besides getting a picture of anatomical structures—veins, growths, etc.—the infrared radiation shows how the sympathetic nervous system responds to the cold stress. By applying mathematical algorithms developed by Bales, it is possible to observe the sympathetic response with amazing clarity. This gives the system the ability to observe functional change in the development of cancer cells—a process called angiogenesis. Angiogenesis is when cancer cells begin getting their own direct blood supply, whereupon they can develop into a sizeable tumor. Angiogenesis also provides a route for cancer cells to spread.



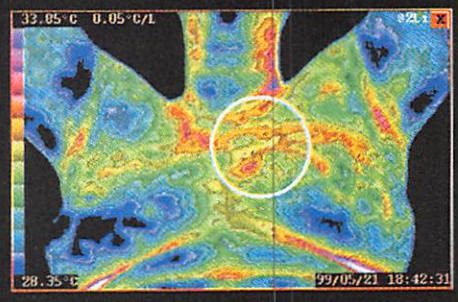
Bales Scientific Inc.'s Thermal Imaging Processing System is a complete workstation. It consists of (left) a high spatial resolution camera, with programmable frame cycle rates, spectral response (wavelength sensitivity), and focus options. Monitor choices range from 15" to 21." The computer (right) contains Bales' proprietary software and image processing features, including high precision pixel temperature measurement; algorithms (mathematical formulas) to interpret thermal data and translate it into structural maps; and the ability to simultaneously display images in color, grey, reverse grey, and real-time subtraction modes. Not shown: cool air diffuser to evoke patient's sympathetic nervous system response.

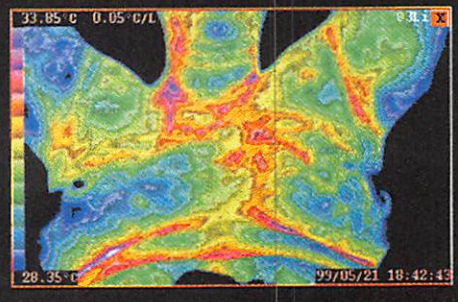
It is believed that everyone has cancer cells. The theory is that they are created from normal cells through the effect of carcinogens (cancer-causing substances), viruses, or radiation. When the cancer cells just exist, and do not divide and grow rapidly, or spread to other parts of the body (metastasize), they are described as *in situ*. Normally a person's immune system will keep any such activity under control (a state of homeostasis). But when a person's immune system is weakened—through environmental and food toxins, an unbalanced, stressful lifestyle, genetic predisposition, or other causes—the cancer cells can begin to proliferate. No one is yet sure just what triggers this.

For the most and very latest clinical information on alternative medical treatments for breast cancer—as well as a myriad of other health conditions—visit *Alternative Medicine*'s website: www.alternativemedicine.com.

Initially the cancer cells receive their nourishment from "stealing" it from the surrounding cells. But when they are "turned on," the first thing they do is to begin angiogenesis to obtain their own direct blood supply. The first step in this is to secrete chemicals (tumor angiogenesis factors) that "loosen" (degrade the basal lamina of) neighboring endothelial cells (flat cells lining blood vessels), and start them migrating toward the tumor. This immediately creates a small pooling of blood near the tumor. As the endothelial cells move toward the tumor they begin to form tiny simple capillaries, branching out and forming loops, eventually connecting to the tumor, supplying oxygen and nutrients. The tumor can then grow at an explosive rate, and cancer cells can migrate into the circulatory and lymph systems to other parts of the body.

The normal response of the sympathetic nervous system to cold is to reduce blood circulation near the surface to conserve heat. But areas of angiogenesis in the breast are not under control of the sympathetic nervous system, and are not affected. They will therefore, in contrast to normal breast tissue, give off a "heat signature" visible to a thermographic device. Obviously, the more sensitive the equipment, the earlier angiogenesis can be detected. The TIP system is uniquely able to detect the very beginnings of angiogenesis, giving a two-to-three-year headstart for treatment of the disease over any other diagnostic device available today. (The pooling of blood and the



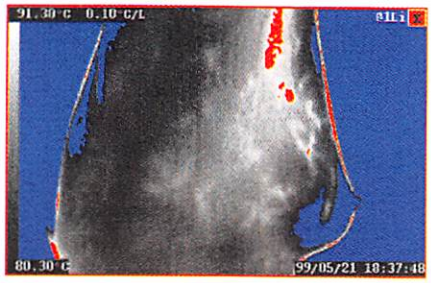


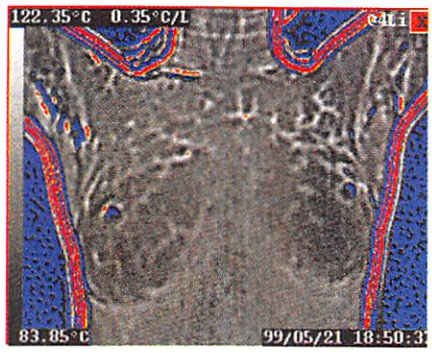
This first image is of a woman with a suspicious-looking area in her left breast. The area indicated by the circle could be showing the beginning of angiogenesis. This is the process in which a cancer tumor begins to create its own direct blood supply. When the breast is exposed to cold air, the healthy tissue will respond normally by receiving less blood. But the blood supply to a malignant tumor, not being under control of the sympathetic nervous system, will be unaffected by the sympathetic response, and clearly stand out as a hot spot. The second image, taken three months later, confirms the diagnosis: the angiogenesis has increased, and the entire breast is even hotter. Unfortunately, this woman did not pursue alternative medical treatment, and underwent a mastectomy.

tiny blood vessels are invisible to mammography.)

The TIP system can detect breast cancer earlier than any other system, because it is able to detect sympathetic abnormalities and structures on a much smaller level—and much earlier—than other devices, and without any of the radiation side effects of mammography. Further, the TIP system can differentiate between malignant tumors and fibrocystic growths, because the latter contain no thermal signature, as opposed to cancer cells beginning angiogenesis.

Even conventional medicine does not recommend mammography for women under forty—the density of younger breasts is too similar to a tumor, and so it is extremely difficult to detect malignancies with X-rays. In TIP thermography, the heat signature of angiogenesis stands out against normal breast tissue in young women, just as it does in older women. If younger women—or women of any age—start getting an annual thermogram using the TIP system, they will establish a baseline against which any abnormality will immediately be detected. And, unlike mammography—with its painful procedure, limited use and reliability, emotional and physical trauma due to false positives, and increased cancer risk—thermal imaging has no side effects. The TIP system can keep a woman's records stored in the computer indefinitely; can reinterpret it in a number of modes; and can transfer the data and images to any doctor or medical facility in the world that has a computer.





Top image: This image shows a fibrocystic growth in this side view of a woman's breast. No biopsy is needed to confirm the diagnosis, because while the anatomical shape of the growth does not indicate whether it is malignant or not, the lack of a heat signature (thereby indicating normal blood flow in the area) shows that it is benign. *Bottom image:* This image shows a woman with a particular kind of vein pattern called "Serpentine" veins, which puts her at great risk for breast cancer. To clearly show the veins, a high-pass filter was used to remove subcutaneous blood flow imaging from the original thermographic image. Then a number of frames from the entire scan were averaged to further lower functional "noise." The appropriate algorithms were applied and the image was displayed in the gray mode, making it easier to see the vein pattern.

> The TIP system can detect breast cancer earlier than any other system, because it is able to detect sympathetic abnormalities and structures on a much smaller level—and much earlier—than other devices, and without any of the radiation side effects of mammography.

Of course, the greatest benefit is that if the beginning of cancer is detected, with this headstart, women have the time to use alternative therapeutic techniques to reverse their condition. They can detoxify their bodies, boost their immune systems and balance and strengthen their entire organism, and cure the cancer—without resorting to invasive, toxic, maiming procedures. And all the while during their cure, the TIP system can monitor their progress. As natural anti-angiogenesis factors reverse their disease, the heat signature will diminish and finally disappear. If the cancer ever reappears it will be immediately apparent and new measures can be taken.

There are currently only 15 medical centers using the Bales TIP system. Most of them do not specialize in breast cancer, but also use them as diagnostic tools in treating musculo-skeletal conditions, complex regional pain syndrome, and diabetic neuropathy (in which lack of blood flow to extremities can necessitate amputation).

In the meantime, as Maurice Bales himself will tell you, don't just sit and hope you never contract breast cancer. Be proactive and adjust your diet and lifestyle to achieve a high level of health, so that any cancer cells never have a chance to overcome your body's safety mechanisms. Then, when you are able to have access to regular Thermal Image Processing, you will go not in fear but in confidence. AM

Contact:

Note: Bales Scientific Inc. is not a medical clinic. It designs, manufactures, and sells its equipment to doctors. The company works closely with physicians in further research and development, but not with the lay public. Physicians interested in the TIP system may contact Bales Scientific Inc. by fax at 925-945-0147. Mailing address: 1620 Tice Valley Blvd., Walnut Creek, CA 94595.
E-mail: *info@BalesScientific.com.* ***Website:*** *www.balesscientific.com.*

Reprinted with permission from *Alternative Medicine*, issue #31.
800-333-HEAL www.alternativemedicine.com