Medical Qigong Applied to the Extraordinary Vessels for Breast Pathology: A Thermographic Study and Discussion

Christina Pabers PhD, MA TCM, L.Ac., American University of Complementary Medicine

Shui Yin Lo PhD, Director of Quantum Health Research Center, Pasadena, California

Joan Murray PhD, California School of Professional Psychology, Alliant International University, Los Angeles, California

Brandon Horn PhD, JD, MA TCM, L.Ac., American University of Complementary Medicine

Contact Information:

215 Daily Drive, Camarillo, CA 93010

Phone +1 (805) 383-0636

Fax +1 (805) 384-9091

drpabers@gmail.com

Abstract

There is a need for more effective breast pathology treatment strategies. Chinese medicine has an extensive history of the use of qigong to facilitate healing. Research can identify the most effective variations of this modality for specific conditions and the best ways to conduct investigations. This article presents a synopsis of the Chinese medicine theory of breast pathology and summarizes a thermographic study of medical qigong to benefit breast health, in which a true experimental design was used to study the physiological effects of qigong healing applied to the Governing (Du), Conception (Ren) and Penetrating (Chong) Vessels and the Bladder meridian. A simple pretest-posttest control group was used. Temperature patterns of subjects' breasts were thermographically imaged before and after a single 30-minute qigong treatment. Forty-seven women received treatment and 22 received sham treatments. Compared to the control group, the study found significant changes in irregular temperature spots in the breasts of the treatment subgroups of non-obese women, women taking thyroid medication, women taking hormone replacement therapy and women who menstruate. Significantly greater numbers of spots in the control group were found to increase in temperature, a naturally occurring temperature direction given the positioning of subjects during treatment (i.e., face-down on a treatment table with a cut-out for breasts, with unrestricted blood flow to breasts). Significantly greater numbers of irregular temperature spots in the treatment group were found to decrease in temperature, a temperature direction typically correlated with breast health. The authors conclude that the qigong healing technique used in treatment created statistically significant change, beneficial to breast health.

Keywords

Qigong, Thermography, Breast, Chinese medicine, Extraordinary Vessels.

Introduction

The aim of this study was to identify a treatment strategy to address the broadest possible range of breast pathology patterns whilst encouraging balance in the whole body. In Chinese medicine the condition of the breasts is seen to mirror the health of the entire body, and reestablishing breast health simultaneously requires the generation of whole body health (Chen, 1992; Li, Chen & Du, 2004). Because this project aimed to study breast pathology in its many manifestations, the therapy had to be one that could address multiple pathological patterns. The system of medical qigong employed for this study was chosen because it had the capacity to stimulate meridians and points at multiple depths, and would therefore have significant and measurable effects on breast pathology (see below for in-depth explanation of the mechanism involved).

Description of treatment

According to Chinese medicine theory, disease of the breasts involves imbalances in the meridian system of the body. Qigong healing is a Chinese medical modality that re-establishes balance in this meridian system. The qigong healing system used in this trial, the Harmonyum Healing System (Levry, 2017), involved practitioners projecting qi from their hands to influence the Bladder meridian and the Governing Vessel (Dumai), Conception Vessel (Renmai) and Penetrating Vessel (Chongmai). The specific anatomical location of the treatment ranged from the base of the skull at Yamen GV-15 and Fengfu GV-16, down the spine to the lumbar region at the level of Yaoyangguan GV-3, and included the inner and outer lines of the Bladder meridian. Stimulation of points along this trajectory was intended to influence the posterior branches of the

Conception and Penetrating Vessels. The Liver meridian was influenced via Baihui GV-20 and the five zang and six fu organs were stimulated via their back-shu points along the Bladder meridian.

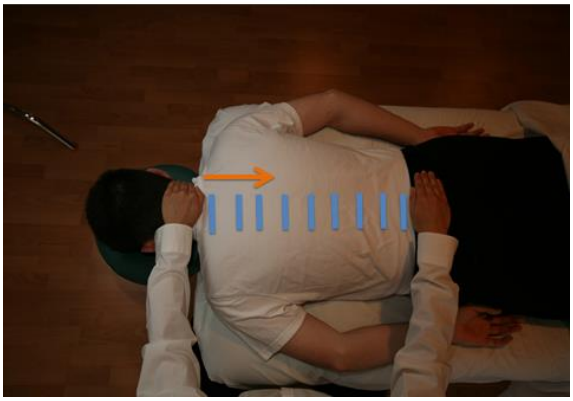


Figure 1: Qigong Technique (photo by Lori Sortino)**Figure 2: Qigong Technique** (photo by Lori Sortino)

Figure 1 depicts the first technique, which stimulated the area between the outer back-shu points from the occiput to the sacrum. As the hand moved progressively from the occiput to the sacrum (left to right on the photo), the hand was moved back and forth laterally (up and down on the photo) to stimulate points along the inner and outer back-shu points of the Bladder meridian, the Huatojiaji (M-BW-35) points and the Governing Vessel. Figure 2 depicts the second technique – which stimulated the same area in spiral movements. Both techniques were done repeatedly. The last phase of the treatment started by centreing both hands on the top of the head at Baihui GV-20 and then running the thumbs along the back of the head and neck along the Governing Vessel and continuing downwards to swipe the entire length of the spine. All three techniques were performed very gently and slowly.

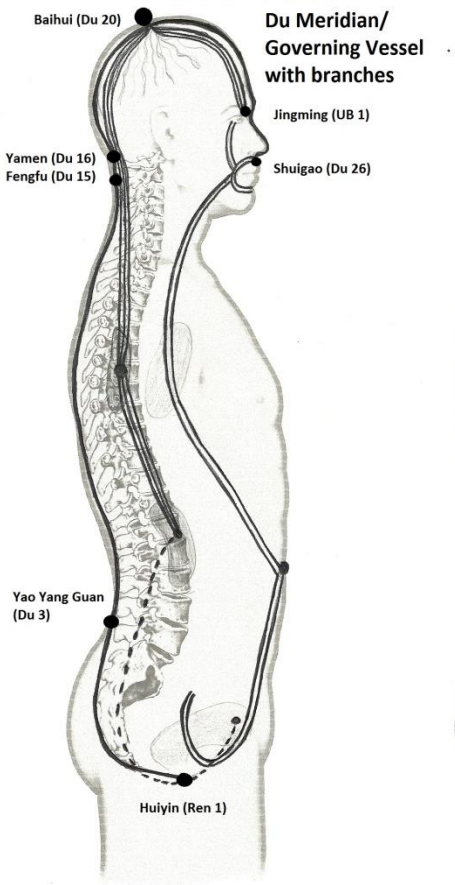
Regardless of the depth, the outer back-shu points received the least stimulation, the inner back-shu points received more, and the midline received the most stimulation. The points that

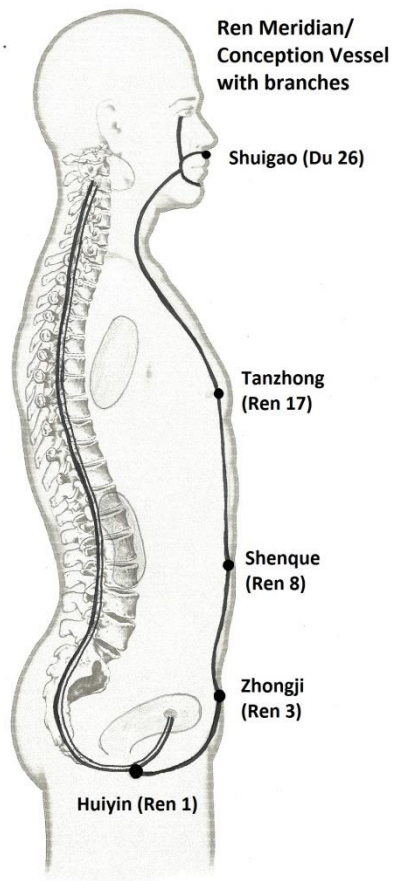
received the most stimulation in all three techniques were Baihui GV-20, Yamen GV-15 and Fengfu GV-16. Although the physical movements appear not to change appreciably, as the treatment progresses the practitioner mentally shifts their focus to move deeper through the various physical and energetic layers of the patient. According to the design of this therapy, the direction and shape of the hand techniques help to affect the different aspects of the body; the lines that run perpendicular to the spine resonate with the more physical aspects of the body while the spirals resonate with the subtle body. Although this qigong therapy involves specific physical techniques, the most important aspect of the therapy is the mental and energetic effort of the practitioner that is developed through meditation and practice.

Theoretical framework

Four of the Eight Extraordinary Vessels were directly stimulated through this medical qigong system taught at the American University of Complimentary Medicine by Jeffrey Yuen, an 88th generation Taoist priest of the Jade Purity School. In Yuen's lecture series on the Eight Extraordinary Vessels (personal communication, J. Yuen, 11th, March, 2011), he teaches that the Eight Extraordinary Vessels are associated with the constitutional energetics of yuan (original) qi, and that their treatment can benefit the constitution and thereby deal with mutations to DNA and RNA. He thus recommends treating the Eight Extraordinary Vessel for conditions such as hereditary breast cancer. In Figures 3, 4 and 5 the Governing, Conception and Penetrating Vessels are shown with their internal branches. From these diagrams it is apparent that stimulation of the posterior midline at multiple depths would have a far-reaching influence on the face, brain, chest, breasts and reproductive system (Wu & Wu, 1997).

The breasts are closely associated with the lymphatic system (Fregnani & Macea, 2009; Larre, Rochat de la Vallee & Hill, 1997). The largest lymphatic vessel, the thoracic duct, starts close to the second lumbar vertebra and travels along the anterior spine close to the Conception, Governing and Penetrating Vessels (Fu & Yang, 2002 ; Gray, 1974; "Number stages of breast cancer," 2017). According to Chinese medicine theory, breast pathology usually relates to yin stagnation and yin deficiency and, to a lesser extent, qi stagnation and blood deficiency (Gaudin, Jones, Cotanche & Ryan, 1989; Zhu, 1993). A common pathological combination of stagnation and yin deficiency results in damp-phlegm and accumulation of heat toxins in the breasts. In orthodox medical terms "yin" might be seen to correlate with hormones and thick substances such as lymphatic fluid, whereas yin stagnation and deficiency might be seen to correlate with hormone irregularities and fluid pathologies.





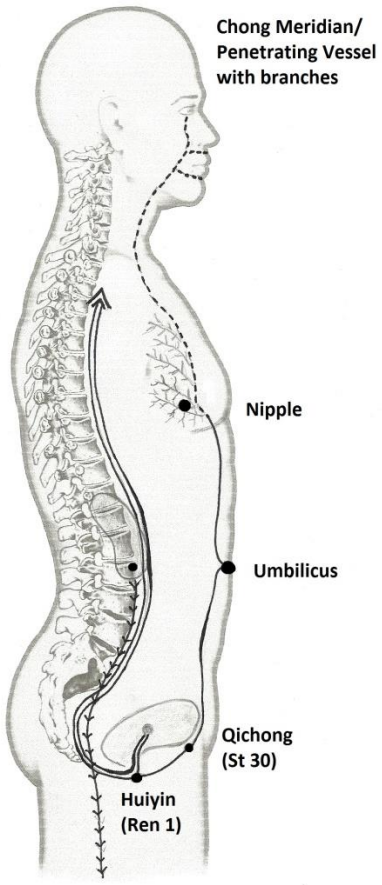


Figure 3: Governing (Du) **Figure 4: Conception (Ren)** **Figure 5: Penetrating (Chong)**

(illustrations adapted from images by Stihii, n.d.)

Governing Vessel

The Governing Vessel is composed of several branches that reach the head, brain, spine, Kidneys, lower burner and genitals. It is closely connected to the Bladder meridian, which has the role of general distribution of yuan qi around the entire body (Low, 1985; Maciocia, 1989). Although the Governing Vessel represents yang, it also has a close relationship with yin via the brain and reproductive system (Larre, Rochat de la Vallee & Hill, 1997), as well as a direct connection to the Conception Vessel and Kidney meridian. It overlaps with the central and autonomic nervous systems, which have a direct effect on the endocrine system. In her book, *The*

Eight Extraordinary Meridians, Elizabeth Rochat de la Vallée explains that the influence of the Governing Vessel is seen everywhere: it is the first to differentiate yin and yang, which gives it the designation of the first of the Extraordinary Vessels (Larre, C. & Rochat, E. 1997). The *Nan Jing* (Classic of Difficulties), in the 28th Difficulty, states, "Du mai rises from the yu of the lower ridgepole; it doubles the spinal column on the inside; it raises to fengfu and penetrates the brain with which it takes a belonging relationship" (Larre, C. & Rochat, E. 1997., p. 27). Rochat de la Vallée explains that in the time of the *Nan Jing,* the expression "ridgepole" referred to the point of attachment for everything that exists, and that the supreme ridgepole of the universe referred to what existed before the first division of yin and yang (Larre, C. & Rochat, E. 1997., pp. 27-31). In their respective translations of the *Nan Jing,* Ting Te-yung (as cited in Unschuld, 1986) and Matsumoto and Birch (1986) state that the Governing Vessel originates in the central pole. If the Governing Vessel is the central functional vessel of the human body, it stands to reason that treating it could stimulate a cascade of healing throughout the body.

Penetrating Vessel

The Penetrating Vessel represents the connection between pre- and post-heaven qi through its connections to the Kidney and Stomach meridians (and thus jing-essence and qi/blood production). The breasts are influenced by the pre-heaven reproductive cycle and jing-essence. The Kidney rules the seven-year cycles, which strongly influence the development, function and structure of the breasts throughout a woman's life (Wu & Wu, 1997; Matsumoto & Birch, 1986).

The Penetrating Vessel is labeled the "Sea of Blood" because of its role in governing blood circulation in the luo-connecting vessels of the uterus (Maciocia, 2011). Milk production comes from blood, whilst qi provides the transformative force to make milk (Fu & Yang, 2002). The

blood in the Penetrating and Conception Vessels becomes menstrual blood when it descends, and milk when it ascends (Maciocia, 2011). Thus the breasts bridge the functions of pre- and post-heaven. When blood is mobilized during menstruation or when a woman gives birth, the breasts become larger and tender and the relationship between blood and the breasts can be more directly observed and felt. This is often when pathology is seen because these transitional stages are particularly dependent upon a healthy supply and movement of qi and blood. Thus pathology of the breasts can be the result of deficiency or stagnation of qi and blood.

As it traverses the Kidney meridian in the abdomen, the Penetrating Vessel spreads though the chest and abdomen, and is thus referred to in the 33rd Chapter of the *Ling Shu* (Divine Pivot) as the "Sea of the 12 Channels." These spreading branches in the chest represent the major blood arteries that supply the breasts for milk production and that connect with Shanzhong CV-17, the "Sea of Qi" ("China Zhen Jiulogy," 1990-2011; Cheng, 1996).

According to Giovanni Maciocia, the Penetrating Vessel is connected to the Liver, Spleen and Kidney meridians—it flows along the medial aspect of the legs down to the big toe and connects to the Stomach meridian at Qichong ST-30 (Maciocia, 2011). Zhu Dan-Xi, in his books *Ge Zhi Yu Lun (Extra Treatises Based on Investigation & Inquiry)* and *Dan Xi Zhi Fa Xin Yao (The Heart and Essence of Dan-xi's Methods of Treatment),* describes the complex relationship between the Liver and Stomach meridians. He states that the breasts are where the Yangming passes, and the nipples are where the Jueyin (which includes the Liver meridian) settles, and that these meridians are thus causative factors in the development of breast pathology (Zhu, 1993; "China Zhen Jiulogy," 1990-2011). It should be noted that the Penetrating Vessel passes through Rugen ST-18 at the nipple and spreads through the chest (See Figure 5). Zhu states that emotions such as anger and/or resentment create counterflow and obstruction in the nipple, a region

influenced by the Liver, Stomach and Penetrating Vessel, causing pain in the breasts. In such cases the Stomach begins to "boil," creating heat, pus, pain and fullness in the region. To remove stasis in the Jueyin, Zhu suggests using Qing Pi (Pericarpium Viridis Citri Reticulatae), which goes to the Liver and Stomach meridians to break up hardness (Zhu, 1993). Thus the Liver meridian has a functional relationship with the Stomach meridian, especially in terms of the development and treatment of damp-heat and stagnation in the breasts. Matsumoto and Birch, in their book *Extraordinary Vessels,* describe several Penetrating Vessel treatment protocols that address damp-heat Liver pathology (Matsumoto & Birch, 1986). While the direct connection between the breasts, the Liver and Stomach meridians and the Penetrating Vessel is not always explicit in Chinese medicine texts, other sources strongly allude to their connection (Cheng, 1996; Maciocia, 1989, 2011). Lastly, the master point of the Penetrating Vessel, Gongsun SP-4, can be used to address fibrocystic breast pathology, premenstrual engorgement of the breasts, dampness and chest congestion due to Spleen and Liver imbalance (Wu & Wu, 1997). When Liver qi stagnation develops during the premenstrual phase, the Spleen is often weakened and unable to perform its job of fluid regulation, resulting in the above conditions (Wu & Wu, 1997).

Conception Vessel

The Conception Vessel governs all of the yin meridians of the body and is responsible for conception. The Kidney meridian and Conception vessel have a strong influence on pregnancy, growth, maturation, conception and menopause, all of which strongly influence the breasts' function and structure. Additionally, the two "Seas of Qi" points located along the Conception Vessel at Tanzhong CV-17 and Qihai CV-6 strongly influence the qi of the entire body (Zhu & Yang, 1999). Matsumoto and Birch state that Lieque LU-7, the

Conception Vessel Master point, can be used to treat swelling, pain or masses along the side of the breasts and for dispersing abscesses and lumps (Zhang, 1995).

Because the breasts fill and empty with fluids during the menstrual cycle, pregnancy and lactation, their pathologies typically involve accumulation of abnormal fluids and eventually, tissue (Matsumoto & Birch, 1986). One of Jeffrey Yuen's recommended treatment strategies for pathologies of the breasts is based upon the idea that the Governing Vessel – representing yang – is capable of breaking up yin accumulations and can therefore be used therapeutically for this purpose (personal communication, J. Yuen, 4th, September, 2004).[42] This treatment strategy is typically accompanied by supporting the body's ability to resolve damp-heat and phlegm, clear heat, tonify the Spleen and clear qi and blood stagnation.

Patterns of disharmony

A brief literature review of the various possible breast disease patterns resulted in the following list (Pan, 1992; personal communication, J. Yuen, 4th, September, 2004):

- Liver depression and qi stagnation
- Phlegm damp due to Spleen deficiency
- Disharmony of Penetrating and Conception Vessels
- Accumulation of stasis and heat toxins
- Depletion of qi and blood
- Yin deficiency
- Spleen-Stomach disharmony with insufficiency of Liver and Kidneys

- Depletion and deficiency of Spleen and Kidneys with qi stagnation and blood stasis

A treatment strategy that balances the Governing, Conception and Penetrating Vessels and the Bladder meridian has the potential to address all of the above pathological patterns affecting the breasts. The influence of these vessels and meridians on the hormonal and reproductive systems, as well as general vitality, makes them fundamental in the treatment of breast pathology.

The study

According to foundational Chinese medical texts, differentiating heat and cold is an essential aspect of recognising pathology (Li, Zhiqiang & Xiuping, 2004; Mitchell, Feng & Wiseman, 1999). Through palpating and observing deviations of normal temperature patterns, a great variety of pathologies (e.g. yin deficiency, yang deficiency, qi stagnation, phlegm stagnation, fever, cold, fire toxins) can be identified and understood. This study employed thermography to provide a more objective tool for assessing changes in the breasts. Thermography is a technology that detects temperature variations on the surface of the body emanating from within, and therefore provides a way of detecting physiological changes in the breasts before and after a qigong treatment. The purpose of this study was to determine whether the application of qigong to the Governing, Conception and Penetrating Vessels and the Bladder meridian would produce measurable thermographic changes to irregular temperature spots on the breasts.

Methodology

Thermographic images were taken immediately before and after a 30-minute session of qigong therapy or sham treatment. Strict imaging protocols were followed by a certified thermography

technician (Cockburn, 2006). Qigong practitioners were formally certified in the therapeutic methodology used in the study (Levry, 2017). The control group's sham treatment involved infrequently touching a small rubber ball at random locations on the back while the individual lay prone. The subjects were thus blinded as to whether treatment was real or a sham.

Design, equipment and subjects

A true experimental design with a simple pretest-posttest control group was used. The measurement of temperature change in breast spots was performed with a Flir Systems Thermography Camera (model A320). ThermoVision® ExaminIR thermal analysis software was used in the data analysis. Of 69 randomly assigned subjects, 47 received qigong treatment and 22 received sham treatment. Inclusion criteria were as follows: (1) Subject was over 21 years of age, and (2) Subject had a self-reported or professionally-diagnosed breast pathology including - but not limited to – cancer, cysts, prolonged breast pain, breast infection and/or injury.

Principles of measurement

Two thermographic images were recorded and analyzed, as shown in Figures 6 and 7. The first measurement was of the direction of change of any irregular temperature spot - whether it went up, down, or remained the same. The second was of the amount of change, measured in degrees Celsius. The process involved the following steps:

1. Using pre-treatment thermographic imaging data, the temperature of each abnormal spot was subtracted from the temperature of its surrounding tissue to determine the pre-treatment relationship of spot-to-normal tissue temperature;

2. Using post-treatment thermographic imaging data, the same process was performed to determine the post-treatment relationship of spot-to-normal tissue temperature;
3. Pre- and post-test relationships were compared to determine the amount of change in absolute terms - that is, without regard to whether subtractions yielded numerical differences that were positive or negative. The process of comparing before and after temperatures was conducted in a manner similar to research conducted by Carlak, Gencer, and Besikci (2011).

In East-Asian and orthodox medicine alike, increases and decreases in temperature are seen as evidence of healing (e.g. fever as a healthy immune response to virus; the reduction of inflammation manifesting as cooling in recovering tissue) or as evidence of a pathological process (e.g. a hot, red inflamed rash due to an allergic response or cooling due to reduced blood circulation). The goal for breast health is minimal differentiation of temperature throughout the breast. Short of direct sampling of tissue, temperature analysis offers the practitioner—Eastern and Western—an indirect means of finding and treating pathology. A capacity to influence temperature change through energy healing would suggest a promising relationship between energy healing and breast health. In this study a difference in the relationship of spot-to-normal tissue temperature following treatment represented a shift in the relationship between any irregular spots and the surrounding normal tissue. Such shifts provide evidence that energy healing techniques produced statistically significant physiological change. While it would be premature to attribute these shifts in relationship to healing, finding evidence of change after one 30-minute treatment establishes encouraging rationale for further study.

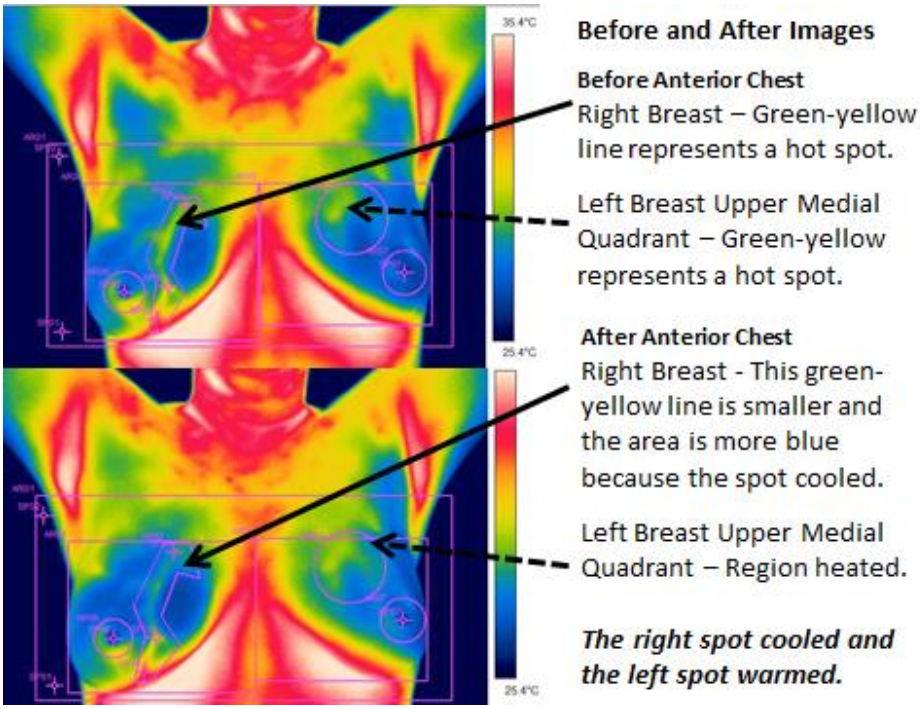


Figure 6: Image patterns before and after qigong therapy in the same patient

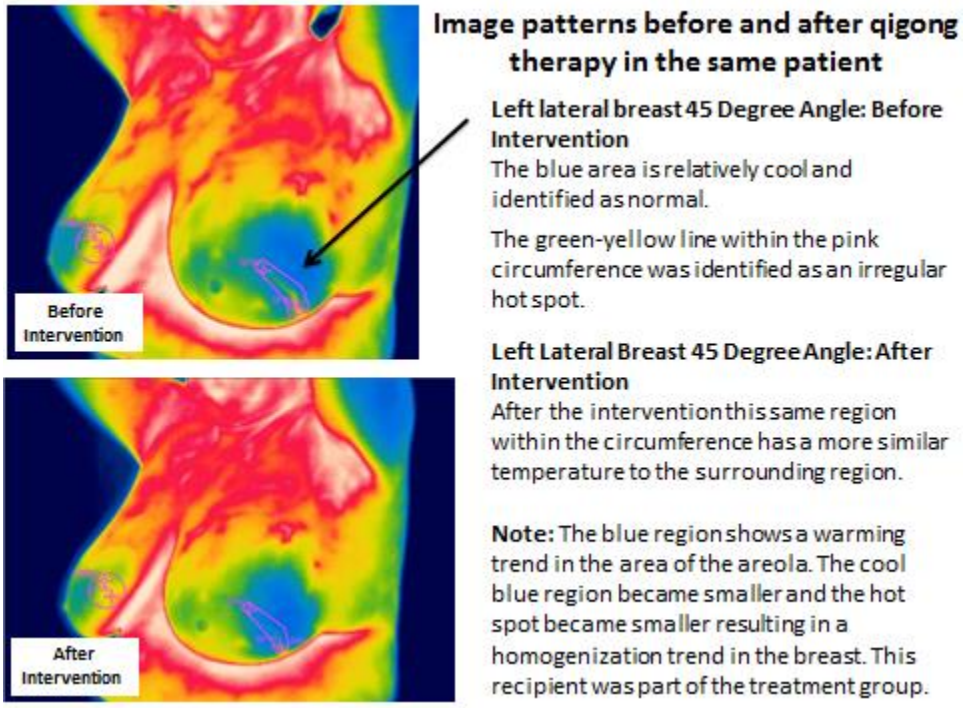


Figure 7: Image patterns before and after qigong therapy in the same patient

Statistical analysis

In each subject between one and five irregular spots were identified in the breasts. The response to the qigong or sham treatment of the various spots within each subject was not always uniform. In other words, in one person a specific spot could heat up after treatment while another might cool down. Researchers identified a total of 219 abnormal spots (156 in the treatment group and 63 in the sham group). The statistical analysis used was chi square without Yates Correction with a one-tailed p value.

Temperature direction data analysis for all participants and all spots

The temperature direction analysis studied whether the average temperatures of the irregular areas were reduced, elevated or unchanged after the intervention was administered. In the total sample, when looking at the total number of spots for all participants, there was a significant difference between the temperature direction in the treatment and control groups. In the treatment group, 76.9 per cent of irregular spots decreased in temperature compared to 50.8 per cent in the control group, while 19.2 percent of irregular spots in the treatment group increased in temperature compared to 38.1 per cent in the control group. Only 3.8 percent of the spots remained the same temperature in the treatment group compared to 11.1 per cent in the control group. These results showed a high degree of significance (p=.0005) (See Figure 8).

Total Sample: Average Change in Temperature Direction							
A Control 63 spots			B Treatment 156 spots			Absolute Change	Relative Change
Direction	Raw #	%	Direction	Raw #	%	% A-B	% B-A/Ax100
Same	7	11.1	Same	6	3.8	7.3	65.76
Down	32	50.8	Down	120	76.9	26.1	51.38
Up	24	38.1	Up	30	19.2	18.9	49.6

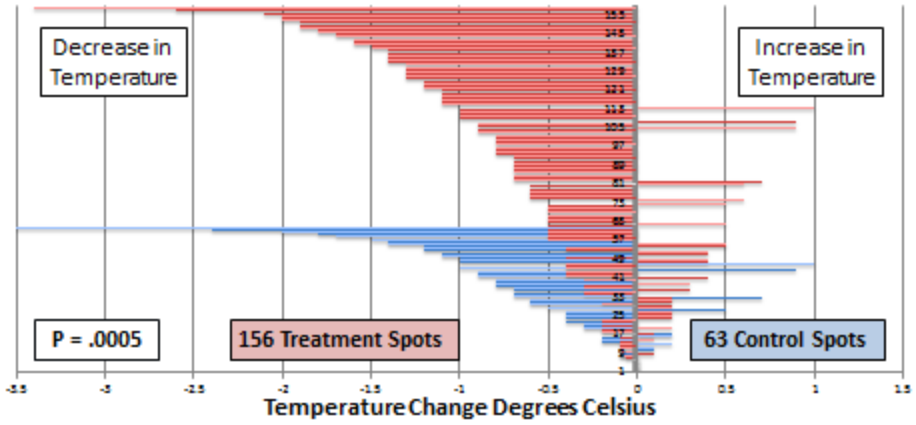


Figure 8: Total Sample Average Change in Temperature Direction

Temperature change data analysis

Through the process of analyzing data, a statistically significant treatment effect for four subgroups was identified (statistical highlights in Figure 9). Significance was established when non-menstruating women who were not on HRT and obese women were excluded from the data set (see p values in Figure 9). It is hypothesized that women in these groups experience more volatile temperature patterns, and that this volatility disrupted the reliability of before-and-after measurements of temperature that more temperature-stable participants exhibited. While some level of temperature fluctuation is natural for women, it is hypothesized that the four subgroups in which treatment significance was identified had steadier temperature patterns, which enabled determination of whether change had occurred. In our data obese women showed a higher degree of temperature volatility than non-menstruating women who were not on HRT, and therefore the

methods employed in this thermographic study would not reliably indicate pathology for women in either category.

Subgroup	Number of control group breast spots	Number of treatment group breast spots	Range of temperature change	Percentage of control group spots that changed within this range	Percentage of treatment group spots that changed within this range	Difference between control and treatment group	Percentage of increase in the number of variances in the treatment group	p Values
Non-Obese Women	44	137	Between .5 – 1º Celsius	59.1%	69.9%	+10.8	18.3%	p=.05
Taking Thyroid Medication	21	69	Between .5 - 1º Celsius	47.6%	71%	+23.4	49.2%	p=.02
Women Who Menstruate	17	61	Between 1 – 2.6 º Celsius	17.6%	26.2%	+8.6	48.9%	p=.05
Taking Hormone Replacement Therapy	20	34	Between 1.0—2.1 º Celsius	30%	50%	+20	66.7%	p=.0555

Figure 9: Total temperature change (regardless of direction)

Discussion and conclusion

The results of the data suggest that qigong treatment of subjects in four subgroups (non-obese women, women who menstruate, women taking thyroid medication, and women on hormone replacement therapy) produced a biologic effect (i.e. change in temperature) in the breasts, with irregular temperature spots changing at a significantly greater rate than the control group/sham recipients. The data provided enough evidence to reject the null hypothesis.

In this study, qigong-induced changes in temperature were established in certain groups, however, future research should examine the question of what constitutes evidence of healing from a thermographic perspective. Additionally, improvements in the design should be made,

such as increasing the sample size, longevity and total number of sessions to better duplicate a typical treatment regime. In future studies, a “no treatment” group should be added to further demonstrate how the breasts look thermographically with no stimulation at all. Sefton et al. conducted a study on the effects of massage therapy on the neck and shoulder, using thermography to observe peripheral blood flow in the upper torso. This study was used to inform a likely outcome including a third “no treatment” group. Significant differences were found between the treatment group and the other two groups (Sefton, Yarar, Berry & Pascoe, 2010). When comparing the light touch/sham group to the control “no treatment” group, no significant difference was noted. While the breasts were not the focus of the Sefton study, the results still suggest that a “no treatment/no touch” group in this qigong study could have had the same results, which is no difference.

Modest yet significant changes occurred in the treatment group of this qigong study. This is important especially given that the treatment duration was 15 minutes shorter than a typical session of qigong therapy and the treatment was only provided once. On the strength of this, more sophisticated and specific research questions might be developed and studied in future research projects. Correlation of health status to temperature data would also provide corroborating evidence for more confident interpretation of thermographic images.

The results of this study suggest that the qigong method employed may have therapeutic potential and is worth undergoing further research.

Disclosure statement

The authors attest that there are no competing financial interests. Further information on the details of this study is available by contacting Christina Pabers at drpabers@gmail.com.

Christina Pabers PhD, MA TCM, L.Ac. has served in the field of health and fitness for over 21 years. She was awarded her PhD in Classical Oriental Medicine from the American University of Complementary Medicine, a Master's Degree in Chinese Medicine from Yo San University, and a Bachelor's degree in Kinesiology and Exercise Physiology from California State University Northridge. She teaches anatomy and Chinese medical physiology for global Naam Yoga and Harmonyum certification programmes. She has practised Chinese medicine as a classical herbalist and acupuncturist for 17 years in Camarillo, California specialising in women's health, pain and digestion. In her practice, she facilitates awareness of self-healing by giving patients the experience of qi within their body through Harmonyum and meditation education.

Shui Yin Lo PhD

Dr. Shui Yin Lo is a particle physicist and researcher in quantum health. He obtained his PhD (1966) from the University of Chicago, and was successively Prof. of Physics at the University of Melbourne, Australia; Prof. of Research in Chinese Medicine at the American University of Complementary Medicine; Director of Quantum Health Research Center, Pasadena, California; visiting faculty at the Department of Chemistry, Caltech; visiting faculty at more than ten international centres of excellence including Oxford University, Free Berlin University, Stanford, McGill University and Academia Sinica of Beijing. Professional publications include four books, over 100 peer-reviewed articles and more than 30 patents.

Joan Murray PhD

Joan Murray has a B.A. from the University of Pennsylvania and a Ph.D. in clinical psychology from UCLA. She is an associate professor and the statistical consultant at the California School of Professional Psychology, Alliant International University, Los Angeles. She has thirty-five years of experience as consultant in the area of statistics, has published widely, and was first editor of the ground-breaking book *Bias in Psychotherapy.* Dr. Murray's doctoral dissertation was the first research ever conducted on gender bias among psychotherapists.

Brandon Horn PhD, JD, MA TCM, L.Ac.

Dr. Brandon Horn, PhD, JD, L.Ac., FABORM is a lecturer, researcher and clinician in the fields of acupuncture, herbal medicine and nutrition. He received his bachelor's degree and juris doctor degree from the Ohio State University, his master's degree in oriental medicine from Samra University and his PhD in classical Chinese medicine from the American University of Complementary Medicine, where he currently serves as the Chief Academic Officer. Dr. Horn is also on faculty at UCLA Medical School and is a clinical supervisor and the deputy director of the acupuncture programme at the Children's Hospital of Los Angeles.

References

Carlak, H. F., Gencer, N. G. & Besikci, C. (2011). Medical thermal imaging of electrically stimulated women breasts: a simulated study. *Conference proceedings of the 33rd annual international conference of the IEEE EMBS*, Boston, MA, June 30th, 2011.

China Zhen Jiulogy. (2011). Number 16. Acupuncture School Online. Chinese Medical Audio-Video Organization Meditalent Enterprises LTD.

Cockburn, W. (2006). *Academy of medical infrared training manual*, California.

Fregnani, J.H.T.G. & Macea, J.R. (2009). Lymphatic drainage of the breast: From theory to surgical practice. *International journal of morphology 27*(3): 873-878.

Gaudin, A., Jones, K. C., Cotanche, J. G. & Ryan, J. (1989). *Human anatomy and physiology.* San Diego, CA: Harcourt Brace Jovanovich, pp. 619-620.

Gray, H. (1974). *Gray's anatomy*. Philadelphia, PN: Courage Books, pp. 624-625.

Jin, Y. (1998). *Handbook of obstetrics & gynecology in Chinese Medicine: An integrated approach.* (C. Hakim, Ed., Trans.). Seattle, WA: Eastland Press, p.160.

Larre, C., Rochat de la Vallee, E. & Hill, S. (Eds.). (1997). *The Eight Extraordinary Meridians*. London, England: Monkey Press, pp. 41, 95.

Levry, J. M. (2017). *The divine doctor, healing beyond medicine.* New York, NY: Rootlight, pp. 195-210.

Low, R. (1985). *The Secondary vessels of acupuncture: A detailed description of the meridians of acupuncture beyond the twelve principal ones*. New York: Thorsons Publishers, pp.150-151, 170-171.

Maciocia, G. (2011). *Obstetrics and gynaecology in Chinese Medicine* (2nd Ed.). London: Churchill Livingstone.

Maciocia, G. (1989). *The foundations of Chinese Medicine: A comprehensive text for acupuncturists and herbalists*. Philadelphia, PN: Churchill Livingstone, pp. 40-42.

Matsumoto, K. & Birch, S. (1986). *Extraordinary vessels.* Brookline, MA: Paradigm Publications, pp. 40, 87-92.

Mingji, P, Xiuzhuang, C. & Jinfen, C. (1992). *Cancer treatment with Fu Zheng Pei Ben Principle*. Edited by Chen, Xiuzhuang. Fujian Science and Technology Publishing House: Beijing & St. Albans pp.225-238

Mitchell, C., Feng, Y. & Wiseman, N. (1999). *Shang Han Lun: On cold damage.* Brookline, MA: Paradigm Publications, pp. 9-16.

Number stages of breast cancer. (2017). Retrieved from http://www.cancerresearchuk.org/about-cancer/type/breast-cancer/treatment/number-stages-of-breast-cancer.

Peiwen, L., Zhiqiang, C., & Xiuping, D. (2004). *Management of cancer with Chinese Medicine.* Edited by T. Ward,, (Shuzhang, M. & Liling, B. trans.) Donica Publishing: UK, pp.435-447

Sefton, J. M., Yarar, C., Berry, J. W. & Pascoe, D. D. (2010). Therapeutic massage of the neck and shoulders produces changes in peripheral blood flow when assessed with dynamic infrared thermography. *The Journal of alternative and complementary medicine, 16*(7), pp. 723-732.

Shou-Zhong, Y. & Da-wei, L. (2002). *Fu Qing-zhu's gynecology* (S. Yang & D. Liu, Trans.). Blue Poppy Press: Boulder, pp. pp.129-130

Stihii. (n.d.). *Anatomy of human bony system, human skeletal system.* Digital Image. Shutterstock. Image ID 238322035. Retrieved from http://www.shutterstock.com/pic-

238322035/stock-photo-anatomy-of-human-bony-system-human-skeletal-system.html?src=z5_RCP0uZt3GVUsIIXi20g-3-64. Meridian graphics overlay by Pabers, C.

Unschuld, P. U. (1986). *Nan-Ching: The classic of difficult issues*, 28th Difficulty. Los Angeles: University of California Press, p. 292.

Wu, N. & Wu, A. (Ed. & Trans.). (1997). *Yellow Emperor's canon of internal medicine, Original Note Tang Dynasty, Bing Wang*. Shenyang, China: Science & Technology Press, pp. 327-329, 559, 567, 650.

Xinnong, C. (1996). *Chinese acupuncture and moxibustion.* Beijing, China: Foreign Languages Press, pp.462-463.

Xiuzhuang, C. (1992). *Cancer treatment with Fu Zheng Pei Ben Principle*. Fuzhou, China: Fujian Science and Technology Publishing House, pp. 225-238.

Zhang, T. (1995). *A handbook of Traditional Chinese gynecology* 4th Ed. (B. Flaws, Trans.). Boulder, CO: Blue Poppy Press, pp. 201-208.

Zhu, D. (1993). *The heart & essence of Dan-xi's methods of treatment: A translation of Zhu Dan-xi's Dan Xi Zhi Fa Xin Yao* (Shou-zhang, Y. Trans.). Boulder, CO: Blue Poppy Press, pp. 242-244.

Zhu, D. (1999). *Extra treatises based on investigation & inquiry: A translation of Zhu Dan-xi's Ge Zhi Yu Lun* (Shou-zhong, S. & Wu-jin. D., Trans.). Boulder, CO: Blue Poppy Press, pp. 53, 62.