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**IS THERE ANY DIFFERENCE IN THE EFFECTS OF  
QI THERAPY (EXTERNAL QIGONG) WITH AND  
WITHOUT TOUCHING? A PILOT STUDY**

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The aim of this study was to evaluate differences in the effects of Qi therapy without touching or with touching on anxiety, mood, neurohormones, and cellular immune function. Twenty-four healthy male subjects were randomly assigned to either QTN ( $n = 12$ ) or QTT ( $n = 12$ ). They received Qi therapy (external Qigong) without touching (QTN) or with touching (QTT). Nonparametric statistical tests revealed no significant differences between the effects of QTN and QTT (all  $p > .05$ ). Separate Wilcoxon signed rank tests for each intervention revealed significant effects on anxiety, alertness, depression, fatigue, tension, cortisol levels, and NK cell cytotoxicity for both QTN and QTT, and on neutrophil function for QTN only. These findings suggest that there are few differences between the effects of QTN and QTT. However, the reproducibility of the findings should be tested with multiple sessions, and long-term follow-up tests.

**Keywords** cortisol, mood, neutrophil, NK cell, Qigong, Qi-therapy, touch

## INTRODUCTION

Qi training (internal Qigong) and Qi therapy (external Qigong) constitute an oriental complementary therapy for preventing and curing disease, protecting and strengthening health, and improving human potential through the regulation of body, breathing, and mind. The functional basis of Qi therapy lies in the direction of flow of original vital Qi through the hands, eyes, and whole body of a Qi master to the recipient, who may then internalize vital Qi, use it to restore balance, and thereby self-heal. Although neither Qi therapy itself nor the mechanism of its effects is understood or explicable within any paradigm of modern medical science, its effects on the human body are apparent, as is its effectiveness in many clinical and psychological illnesses (Lee et al., 2003a). For example, in a previous pilot study, two weeks of Qi therapy significantly reduced pain levels and improved mood in elderly subjects compared with a general-care control group (Lee et al., 2001c). However, this study did not include a placebo control group. One recent randomized placebo-controlled study showed that Qi therapy modulates hormone levels, increases immune function, and improves mood (Lee et al., 2001a). In elderly subjects, Qi therapy acutely decreases systolic and diastolic blood pressures, anxiety, depression, pain, and fatigue levels compared with those of placebo-treated controls (Lee et al., 2003b).

Recent *in vitro* studies have shown that the emitted Qi or master's intention affects the activity of natural killer (NK) cells, neutrophil function, and human prostate cancer in a positive manner (Lee et al., 2001b; Yu et al., 2003). Furthermore, it may be possible to store information about emitted Qi in the media used for cell culture (Fukushima et al., 2001). These results show that Qi might be transferred over short or long distances without touch and transferred

with intention or thought in the same way as it is by touch. However, there has been no study of the differences in the effects of Qi therapy without touch (QTN) or with touch (QTT). The aim of this study was to evaluate the effects of QTN and QTT and to evaluate the differences between them in the transfer of Qi. The idea was explored that the same amount of Qi is transferred with or without touch. It was examined whether there is any difference between the effects of QTN and QTT on anxiety state, mood, neurohormones, or cellular immune functions.

## **MATERIALS AND METHODS**

### **Participants**

All subjects were recruited as volunteers from 6 small cities within a 20–30 min drive by car from Wonkwang University in Korea. Advertisements were placed on the bulletin boards of six local public offices for one week. Volunteers were offered 2 weeks of free Qi-therapy with monetary incentives. Only volunteers between 20 and 35 years of age were recruited. Because of hormonal variation in women, only men were recruited. Forty-five men volunteered to participate.

Before the study began, volunteers completed medical history questionnaires and reported their experiences with other complementary therapies. Respondents who had experienced other therapies (8 subjects) such as relaxation training, therapeutic touch, acupuncture, or massage therapy or who reported a history of medical treatment for psychological, neurohormonal, or immunological disease (1 subject) were excluded from the study. After hearing that the experimental procedure required blood sampling, 12 subjects declined to participate. Twenty-four men met the criteria and agreed to participate. They were randomized to a QTN group ( $n = 12$ , mean age  $25 \pm 5$  years, weight  $66 \pm 10$  kg, height  $176 \pm 7$  cm) or a QTT group ( $n = 12$ , mean age  $26 \pm 3$  years, weight  $67 \pm 7$  kg, height  $175 \pm 4$  cm). Subjects were randomly assigned using block randomization with random table by a secretary who was blind to the experimental procedures.

The study received institutional approval from the Human Investigation Committee of Wonkwang University Hospital and School of Medicine, and administrative approval from the facility before patients and residents were approached for written consent. All subjects agreed to participate in the study and signed an informed consent form from the Human Subjects Review Board of Wonkwang University Hospital and School of Medicine. To minimize the possible impact of monetary incentives on results, all subjects were postpaid 50,000 won (approximately US\$40) for their participation (Porter, 2004).

## Measurements of Anxiety State and Mood

Anxiety state was defined as including both temporary anxiety and anxiety specific to a particular stimulus. To measure the acute effects of Qi therapy on anxiety, the Korean version of the Spielberger Anxiety Inventory State (STAI-X1) was administered before, 10 min after, and 1 h after treatment.

Tuckman's mood indicator was used to estimate five mood levels (Tuckman, 1988). The five mood states measured were tension, confusion, anger, fatigue, and depression. The instrument rates the mood states on a scale of 0 to 100: 0 represents an absence of symptoms and 100 represents an extreme level of symptoms. Some are upside-down to reduce any response set. This five-item instrument quickly and accurately measures subjective feelings at any particular moment. The instrument was developed on the premise that mood represents one's awareness of well-being and lack of well-being. The mood device has good concurrent validity, and correlates with the Profile of Mood Scale.

## Hormone Assays

Commercial radioimmunoassay kits were used to determine serum levels of cortisol (RIA; Diagnostic Products, Los Angeles, CA, USA) and melatonin (RIA; Elias USA, Inc., WI, USA). The means of duplicated measurements were used in all calculations. The intra- and interassay coefficients of variation were 6% and 8% (sensitivity, 0.17 mg/dl) for cortisol, and 4% and 6% (sensitivity, 1.5 pg/ml) for melatonin. The assays were performed at the Center of Clinical Pathology in Wonkwang University Hospital.

## Measurement of Immunological Function

Superoxide anions produced by neutrophils were measured with a six-channel Biolumant LB9505 bioluminometer (Berthold, Bad Wildbad, Germany). Methods for neutrophil isolation and measurement of superoxide ions have been described previously (Ryu et al., 1997).

NK cell activity was measured by lactate dehydrogenase release from the cytosol into the culture medium of the target human erythroleukemia cell line, K562 (CCL-243; American Type Culture Collection, Rockville, MD). Cytotoxicity was measured by taking an aliquot of the medium at various time points over 16 h and measuring the lactate dehydrogenase activity by using a kit (product no. DG1340-K, Sigma Chemical Co., USA). To assess cell damage, lactate dehydrogenase activity was determined using the fluorometric technique of Green et al. (1984) with minor modifications. The methods for NK

cell isolation and measurement of cytotoxicity have been described previously (Lee et al., 2001b).

## Interventions

In this experiment, Korean Qi therapy (called ChunSoo Energy Healing) was performed by a Qi therapist in the Ki Health International in Korea. Aged 35 years, the Qi master was a man who had received Qi training for 10 years. Qi therapy was administered by the standard procedures outlined in the textbook for Qi (Ki Health International, 1997).

The subjects received QTN for 10 min according to the procedures described in the following standard sequence (*italicized text describes the differences in the QTN and QTT techniques*). Qi therapy with touching of several acupoints (QTT) was administered by the same Qi master, who pressed several important acupoints with effort or intention to insert Qi through them.

1. The Qi master centers himself, forming a conscious intention to help the subject, while becoming mentally aware of himself as one with the cosmos.
2. The hand is moved about *3–10 cm from the body* in a pattern from the head to the toes, with the master becoming aware of changes in sensory cues (QTN).
3. The hand is moved while *softly pressing* the GV-20 (Pai Hui), GV-24 (Shen T'ing), CV-6 (Ch'i Hai), CV-17 (Shan Chung), LI-4 (Ho Ku), LI-16 (Chū Ku), LI-11 (Ch'ū Ch'ih), ST-36 (Tsu San Li), and KI-1 (Yung Ch'üan) to introduce Qi while relieving the stiffness at those acupoints (QTT).
4. The Qi master concentrates on areas of perceived accumulated tension in the subject's body and subjectively "projects" Qi from the hand.
5. The Qi master then concentrates his attention on specific perceived directions of energy flow (sensory cues), finishing by holding the subject's feet.
6. The subject is turned over and receives the same procedure for 5 min on the other side of the body (QTN).
7. The subject is turned over and receives the following procedure for 5 min on the other side of the body. The palm of the hand is moved, *pressing softly*, over the GV-20 (Pai Hui), T-16 (T'ien Yu), SI-11 (Tien Tsung), the governor meridian, and the bladder meridian (QTT).

The Qi therapist followed these experimental schedules and attempted to emit Qi with positive intention to restore harmony and balance to the energy systems of the subjects in both sessions. He was not involved in any other

aspect of the study. Only one Qi therapy practitioner was used in this study to maintain consistency in the intervention protocols and to minimize practitioner bias that may come from trained periods, skills, and experiences.

## **Procedure**

Before the intervention, all subjects visited the experimental room to familiarize themselves with the experimental conditions and procedures. They also scheduled their experimental session. Subjects were asked to refrain from food, coffee, tea, and smoking for at least 4 h before the assessment and to refrain from alcohol for at least 24 h before the experiment. To avoid diurnal changes in hormone levels and immunity, all experimental procedures were performed between 10 a.m. and 1 p.m. Two QTN subjects and two QTT subjects participated in the study on each day. The treatment order was randomly determined and subjects were blind to their treatment.

When a subject arrived for the experiment, his anxiety state was measured and his moods were assessed with Tuckman's mood thermometer. He was taken to the experimental room and seated on a bed. About 10 ml of blood was drawn and divided into a 3 ml specimen for hormone analysis and a 7 ml sample to assay neutrophil function and NK cell activity. After 5 min rest (Pre), the subject received vital Qi to the front of the body in a supine position for 5 min and to the back for 5 min (total treatment of 10 min). Qi therapy was followed by 10 min of rest (Post I). Subjects then completed the second STAI-X1 form and mood thermometer to estimate any changes in anxiety or mood, and 10 ml of blood was drawn. After 1 h of rest in another room (Post II), the subject's anxiety state and moods were assessed again. Another 10 ml of blood was drawn for analysis of hormone levels, neutrophil function, and NK cell activity. All assays or reading were performed in a masked fashion by technicians and a secretary who did not know the experimental procedures.

## **Statistical Analysis**

The data were not normally distributed and results are presented as medians and 95% confidence intervals (CIs). The CIs were calculated using standard software (CIA version 2.12, [www.soton.ac.uk/cia](http://www.soton.ac.uk/cia)). All outcomes were compared using nonparametric Mann-Whitney U-test between two groups and Friedman's test across treatment time for each group. Follow-up tests performing multiple comparisons of pairs of times were performed using Wilcoxon signed rank tests. The software package SPSS ver. 11.0 (SPSS Inc., Chicago, IL, USA) was used for all statistical calculations.

**Table 1.** Changes in psychological variables induced by Qi-therapy with and without touching

Variables	Time			P
	Pre	Post I	Post II	
Total mood				
No touching	34.0 (32.4–40.2)	26.0 (21.0–31.0) <sup>a</sup>	25.0 (20.9–29.8) <sup>a</sup>	<.001
Touching	34.0 (31.5–39.8)	28.0 (19.0–29.4) <sup>a</sup>	26.0 (10.0–26.0) <sup>b</sup>	<.001
State anxiety				
No touching	35.0 (34.1–39.9)	27.5 (25.2–30.3) <sup>a</sup>	27.0 (24.2–28.4) <sup>a</sup>	<.001
Touching	35.0 (32.1–43.3)	27.0 (23.3–30.5) <sup>a</sup>	27.0 (23.0–30.3) <sup>a</sup>	.002

All results are presented as median (95% CI). Pre indicate before QT; Post I, 10 min after QT; Post II, 1 h after QT. P: Friedman’s test.

<sup>a</sup>*p* < .005, <sup>b</sup>*p* < .01 by Wilcoxon signed rank test compared with Pre.

## RESULTS

A nonparametric Mann-Whitney U-test revealed no significant effects between the QTN and QTT (all *p* > .05).

Total mood in the times (Pre, Post I, and Post II) were significantly different from one another (QTN, *p* < .001; QTT, *p* < .001) as shown in Table 1. Subsequent Wilcoxon signed rank tests revealed an improvement in mood levels at Post I (QTN, *p* < .005; QTT, *p* < .005), and Post II (QTN, *p* < .005; QTT, *p* < .01) compared with Pre in both group. Likewise, state anxiety different among the times (QTN, *p* < .001; QTT, *p* = .002). Follow-up test revealed reduced anxiety level at Post I (QTN, *p* < .005; QTT, *p* < .005), and Post II (QTN, *p* < .005; QTT, *p* < .005) compared with Pre in both groups.

Table 2 presents the medians and 95% CI of plasma cortisol and melatonin concentrations. Difference among times in each group were significant (*p* < .001 for QTN, *p* = .039 for QTT). Subsequent Wilcoxon signed rank tests revealed a decrease in cortisol levels for QTN (*p* < .005) and QTT (*p* < .005) at Post II compared with Pre, and compared with Post I in both group (*p* < .05 for QTN and *p* < .01 for QTT). However, there was no significant time effect on melatonin concentrations.

The superoxide generation by neutrophils and NK cell cytotoxicity are shown in Table 3. A significant difference was apparent for neutrophil function in QTN (*p* < .001) but not of QTT. Follow-up test revealed enhanced superoxide generation at Post I compared with Pre (*p* < .005) and at Post II compared with Post I (*p* < .005) in QTT. NK cell cytotoxicity changed over time in both groups (QTN, *p* < .001; QTT, *p* < .01). Wilcoxon signed rank tests revealed enhanced

**Table 2.** Changes in neurohormonal variables induced by Qi-therapy with and without touching

Variables	Time			<i>P</i>
	Pre	Post I	Post II	
Cortisol (g/dl)				
No touching	7.4 (6.1–8.5)	5.8 (5.4–7.2)	4.4 (4.1–5.6) <sup>a,b</sup>	<.001
Touching	7.2 (5.9–7.8)	7.1 (6.0–7.5)	5.0 (4.6–5.7) <sup>a,c</sup>	.039
Melatonin (pg/ml)				
No touching	26.9 (20.8–28.3)	28.6 (22.6–31.4)	26.8 (20.8–33.5)	NS
Touching	29.7 (25.1–30.6)	27.43 (26.0–29.6)	30.1 (26.4–31.0)	NS

All results are presented as median (95% CI). Pre indicate before QT; Post I, 10 min after QT; Post II, 1 h after QT. *P*: Friedman's test. NS: No significance.

<sup>a</sup>*p* < .005 versus Pre by Wilcoxon signed rank test.

<sup>b</sup>*p* < .05 versus Post I.

<sup>c</sup>*p* < .01 versus Post I.

**Table 3.** Changes in immunological variables induced by Qi-therapy with and without touching

Immunological variables	Time			<i>P</i>
	Pre	Post I	Post II	
Superoxide generation (10 <sup>7</sup> cpm)				
No touching	3.7 (2.9–4.1)	4.3 (3.4–5.4) <sup>a</sup>	3.5 (2.9–4.3) <sup>b</sup>	<.001
Touching	3.5 (2.7–3.6)	3.4 (2.9–4.0)	3.2 (2.7–3.9)	NS
NK cell cytotoxicity (%)				
No touching	44.2 (40.5–51.1)	66.9 (54.2–78.6) <sup>a</sup>	49.9 (45.0–61.3) <sup>a,b</sup>	<.001
Touching	44.8 (37.3–58.1)	55.9 (46.5–70.5) <sup>a</sup>	49.4 (40.6–52.8) <sup>c</sup>	<.01

All results are presented as median (95% CI). Pre indicate before QT; Post I, 10 min after QT; Post II, 1 h after QT. *P*: Friedman's test. NS: No significance.

<sup>a</sup>*p* < .005 versus Pre by Wilcoxon signed rank test.

<sup>b</sup>*p* < .005 versus Post I.

<sup>c</sup>*p* < .05 versus Post I.

NK cell cytotoxicity at Post I versus Pre (QTN, *p* < .005; QTT, *p* < .005) and at Post II (QTN, *p* < .005, versus Pre and Post I; QTT, *p* < .05 versus Post I).

## DISCUSSION

Although these data are drawn from a small sample, the results are consistent with the hypothesis that there is no difference between the effects of QTN



and QTT on the psychological, neurohormonal, or immunological functions of the body. There were no significant group-by-time interactions for any of the variables.

The present study shows that anxiety is reduced and mood improved after treatment with QTN or QTT. Secondly, cortisol concentrations were significantly altered over time with both treatments. A third and very interesting immunological finding was that QTN increased neutrophil function and NK cell cytotoxicity much more than did QTT, although there was no significant difference between the interventions. These results suggest that Qi is transferred over short or long distances without touch and is transferred with intention or thought to the same degree as it is with touch.

Potential limitations of this study are that only one trial was used with only male subjects to test the treatment efficacy. More objective clinical measures are needed in addition to the self-reported improvement found using the mood questionnaire alone. Further randomized studies that include more objective measures, measurements after multiple sessions, and long-term follow-up are needed to convincingly show the effects of Qi-therapy on well-being or other psychological variables in more general populations. The reproducibility of the findings should be tested with a larger sample in a randomized controlled study.

In summary, the data suggest that there are few differences in the psychoneuroimmunological effects of Qi therapy with touch relative to Qi therapy without touch. However, the possibility cannot be completely discounted that a placebo effect during each intervention was responsible for the improvements produced by both treatments. Further study using a systematic experimental design will enable the examination of possible placebo effects and assessment of the clinical effectiveness of the application of Qi therapy in patients.

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