

TREATMENT OF ACUTE LOW BACK PAIN USING ACUPRESSURE TOUCH AND MASSAGE

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ABSTRACT

Applied kinesiological muscle balancing techniques were applied to patients with acute or subacute low back pain to determine if these techniques offered immediate symptomatic relief. Pain level, spinal flexion, and abdominal strength changes were measured in 13 patients who were treated with muscle balancing techniques taught in a basic Touch For Health course, and in 13 patients who received a placebo treatment. Touch For Health balancing significantly decreased pain, increased ability to perform a sit-up, and increased range of spinal flexion. Acupressure touch and massage techniques as taught in a basic Touch For Health class were effective in reducing the symptoms of acute low back pain.

Providing therapy for patients with low back pain dominates the professional time of many physical therapists. Bergquist-Ullman and Larsson analyzed three forms of treatment for the acute symptoms of low back pain. It was concluded that the back school program, teaching several patients at a time, is an advantageous mode of therapy as relatively small resources are needed to achieve the same effects as therapy requiring more time and personnel.¹

The aim of the school approach is to give the patient confidence to cope with his back troubles on his own, to avoid excessive therapy, and to decrease the expense for himself and for society.² This is the same approach adopted by Thie and Marks. They developed an instructional program providing the general public with safe, simple, easy-to-use techniques to treat their own minor illnesses. These techniques, called Touch For Health (TFH), emphasize the prevention of serious disease by promoting optimal health. TFH relies on weakening of muscles and posture changes as signs which can be recognized prior to more serious disablements, such as chronic low back pain.³

TFH is a combination of ancient Oriental principles of acupressure massage and recent Western developments in the field of Applied Kinesiology (AK). AK, primarily developed by Goodheart, is a system of muscle testing techniques used to determine the need for and evaluate the effectiveness of treatment. Goodheart has demonstrated that each of the main acupuncture meridian channels is directly related to a major muscle.⁴ For example, the lung meridian is related to the deltoid, the kidney meridian to the psoas muscle, and so forth. AK uses muscle testing procedures developed by Kendall⁵ to determine how well energy is flowing within the meridian channels of the body. According to AK principles, a muscle which tests weak, or subnormal, indicates some blockage or constriction in the energy flow. The process used to unblock energy and restore balance to the system is called balancing. In TFH, the balancing is accomplished by stimulating acupuncture and nervous system reflex points using a friction type massage or light direct finger pressure to release the energy to the area of need, thus returning to normal, muscles which previously tested "weak." The exact physiological mechanisms of balancing remain unknown. TFH relies on the classical Oriental meridian theory of energy flow in the body when describing muscle balancing as this aids in instruction of the techniques to the lay public. Touch For Health techniques can be

learned in a 12-hour basic TFH course taught by instructors certified by the Touch For Health Foundation, Pasadena, California.

The objective of this study is to evaluate the efficacy of basic TFH techniques as a way to control the symptoms of acute low back pain.

If TFH balancing techniques are effective in reducing low back pain, physical therapists could efficiently use their professional time instructing several patients simultaneously to recognize and treat their own minor back discomforts, and hopefully assist in preventing the disabling effects of chronic low back pain syndromes.

Needle and electrical acupuncture have been shown to be effective in reducing low back pain.⁶ It is postulated that the effects of needle or electrical acupuncture and acupressure are similar in that with both methods the suspected mechanisms causing pain relief are closely related.⁷ However, there is no precedent for testing acupressure in a controlled clinical setting.

This investigator has used TFH techniques to successfully return muscles to normal strength and reduce pain in numerous individuals. It is expected that a treatment using TFH techniques will produce a greater reduction in the symptoms of patients with low back pain than a placebo treatment. The three dependent variables to be measured will be the variables found to be most significantly different from normals at the initial examination of patients in Bergquist-Ullman and Larsson's study. These include pain as measured by a "pain index," ability to flex the spine, and ability to perform a sit-up.¹

METHOD

Twenty-six consecutively referred patients with acute or subacute low back pain served as subjects. This study used Bergquist-Ullman and Larsson's criteria for acute or subacute low back pain and also for screening patients from the study. Briefly, this included patients with pain localized in the lumbosacral region in which the onset of pain was not greater than three months prior to entering the study and excluded patients with conditions such as radiculopathies, back surgery, and fractures.

The subjects were divided into two groups. The first subject was placed in the TFH treatment group by the toss of a coin and all succeeding subjects were placed alternately into either the group receiving the TFH techniques or the group receiving the placebo treatment.

Data were collected by direct observation by the investigator immediately before and after both TFH balancing and placebo treatment procedures. For measuring the level of pain, this study used a modification of the "pain index" developed by Bergquist-Ullman and Larsson.¹ Modifications were necessary because this investigation did not address questions, such as sleep disturbances or pain with riding in a car, in which the immediate assessment of pain was unattainable. The "pain index" for this study will consist of the questions presented in the data collection form (Table 1). Motions which were shown less likely to increase pain in Bergquist-Ullman and Larsson's subjects at the initial examination were performed prior to those more likely to produce an increase in pain, thus following the order presented in the data collection form. In completing the "pain index", the subjects were asked to fully complete their active range of motion. Motions causing an increase in pain were recorded. Measurement of back flexion and ability to perform a sit-up were taken at the same time pain was assessed.

Moll and Wright's modified Schrober technique measuring trunk flexion was used. The distance between two marks, one 10 cm above and one 5 cm below a line connecting the

posterior superior iliac spines, were measured in erect standing, then in maximal flexion. The difference between the distances represented the ability to flex the spine.⁸

Kendall, Kendall, and Wadsworth's trunk raising muscle test and its corresponding strength grades were used to measure sit-up ability.⁵

The placebo treatment simulated the traditional Chinese acupuncture technique of performing a pulse diagnosis to determine meridian imbalances and then stimulating the necessary acupuncture points to bring the body into balance. Six specific areas of the radial pulse of each wrist were palpated for approximately five minutes followed by 15 minutes of acupressure on insignificant points of the forearm, wrist, and hand. No actual attempt was made to correct any imbalances. However, the subject was not aware of this fact. During the placebo treatment, any questions asked regarding the treatment were answered in a positive manner, expressing confidence in the techniques.

TFH balancing used AK muscle testing procedures, rather than pulse palpation, to assess meridian imbalances. Only TFH balancing techniques which are normally taught in a 12-hour basic class were used. This includes muscle strengthening techniques which use neuro-lymphatic massage points, neuro-vascular holding points, meridian tracing, and acupressure holding points, following the fix-as-you-go method outlined on p. 111 of Touch for Health.³ The treatment time involved for a TFH balancing varies depending upon the number of "weak" muscles detected, the number of acupressure or massage points needed to restrengthen the muscles, and the work rate of the individual performing the balancing. The total treatment time in this study was limited to 25 minutes with the majority of the subjects requiring less than 20 minutes.

All treatments for both groups were given by the investigator. During both treatments, the subjects were supine, except for when the gluteus maximus or sacrospinalis needed to be tested during TFH balancing. The standardized balancing procedure previously outlined was able to be completed in a time comparable with the placebo treatment because the investigator was familiar with all the muscle test positions and treatment points. An individual just learning the techniques will necessarily need more time as he refers to Touch for Health³ for specific test positions or treatment points. Immediately following both treatment procedures, measurements were taken in exactly the same manner as the pretest measurements.

Nonparametric analysis using Tukey's quick test was applied to determine significant differences in pain level and sit-up ability. A t-test was used to analyze the differences in pre and posttest changes in spinal flexion between the TFH and placebo treatment procedures at a .05 (two-tailed) significance level. The above analyses were also used to check for initial differences between the two treatments groups.

RESULTS

Prior to treatment the two groups did not differ significantly. The TFH balancing significantly reduced pain level and increased sit-up ability. Ability to flex the spine was also significantly increased ($t = 3.01$). The placebo treatment had no significant effects. Figure 1 and Tables 2 and 3 summarize the results.

DISCUSSION

A principle basic to AK is that muscles which are tight, or in spasm, causing pain and pulling the spine, are actually a secondary manifestation of weak muscles on the opposing side of the body. Muscles may become "weak" for many reasons, such as interferences with lymphatic drainage, vascular circulation, or acupuncture meridian flow.^{3,4} AK muscle activation techniques are used in TFH to restrengthen "weak" muscles. In this

study seven of nine subjects with less than normal sit-up ability improved their sit-up performance following TFH balancing. Three of the four subjects who had normal sit-up strength, but with accompanying pain, could perform a pain-free sit-up following TFH balancing. This is consistent with the reported ability of AK techniques to strengthen "weak" or subnormal muscles.^{3,4} None of the subjects treated with placebo showed an improved sit-up ability.

In EMG studies on normals, electrical silence was observed with 70 to 90 degrees of trunk flexion. However, in chronic back pain patients, muscle activity has been observed to persist during full trunk flexion.⁹ After completion of the posttest data collection period the investigator asked the subjects how their backs felt. Almost uniformly, the subjects treated with TFH balancing related a feeling of relaxation of muscle tension. The increase in forward flexion and sit-up performance observed may be a result of a relaxation of tight back musculature allowing flexion of the spine to a length more closely approximating ligamentous and bony limits. Further EMG studies pre and post balancing of abdominal and paraspinal musculature are needed to confirm the actual mechanism of the observed increase in flexion and sit-up ability.

A physical therapist, or his assistant, can easily spend 12 hours of his professional time providing symptomatic treatment for one patient with an acute episode of low back pain. The same time could be used more efficiently teaching 12 to 20 patients to care for themselves, not only for the initial episode, but for subsequent episodes of illness. Ideally, individuals could be taught to recognize the early symptoms of muscle weakness and posture changes and initiate immediate treatment,³ possibly preventing recurring episodes of low back pain and the development of a disabling chronic condition.

Only a long-term controlled study, such as Bergquist-Ullman and Larsson's, can adequately assess significant socio-economic findings such as duration and recurrence of symptoms, total sick leave time; cost effectiveness of therapist's time, and number of patients who progress to chronicity, radiculopathy and lumbar insufficiency.

CONCLUSION

Basic TFH balancing was found to decrease the symptoms associated with acute low back pain.

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TABLE 1
DATA COLLECTION FORM

	<u>Pretest</u>		<u>Posttest</u>	
	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>
<u>Current Pain While Standing:</u> (For all question No = 0.)				
Yes = 15				
Intense Pain				
Yes = 5				
Mild Pain				
 <u>Increase in Pain With:</u>				
Yes = 5				
Left Rotation				
Yes = 5				
Right Rotation				
Yes = 5				
Left Lateral Flexion				
Yes = 5				
Right Lateral Flexion				
Yes = 10				
Extension				
Yes = 10				
Flexion				
Yes = 10				
Doing Backlifts				
Yes = 10				
Doing Sit-ups				
Pain Index Total:	=====		=====	
Amount of Flexion	_____	cm	_____	cm
Grade of Strength	_____		_____	

TABLE 2

CHANGES IN LEVEL OF PAIN AND SIT-UP ABILITY FOLLOWING
TWO TREATMENT PROGRAMS

TFH Balancing Group		Placebo Acupressure Group	
"Pain Index" Score	Sit-Up Grade	"Pain Index" Score	Sit-Up Grade
-25	+20	-20	NC
-10	+30	-15	NC
-60	+40	NC	NC
NC ¹	NC	NC	NC
-15	NC	NC	NC
-10	NC	-5	NC
-35	NC	NC	NC
-30	NC	+10	NC
-20	NC	-10	NC
-40	+20	+15	-10
-10	+20	-10	NC
-15	+20	-10	NC
-15	+20	NC	NC

¹No change

TABLE 3
 MEANS, STANDARD DEVIATIONS, AND RANGE OF "PAIN INDEX",
 SIT-UP ABILITY, AND SPINAL FLEXION SCORES

	MEAN		SD		RANGE	
	<u>Pretest</u>	<u>Posttest</u>	<u>Pretest</u>	<u>Posttest</u>	<u>Pretest</u>	<u>Posttest</u>
"Pain Index":						
Placebo	40	35	17	22	15 - 55	0 - 65
TFH	47	24	14	15	15 - 65	0 - 50
Spinal Flexion:						
Placebo	4.7 ¹	4.5	1.7	1.8	1.3 - 6.8	1.4 - 6.9
TFH	4.2	5.0	2.1	2.3	0.8 - 6.8	1.6 - 8.3
Sit-Up Ability:						
Placebo	66 ²	65	23	24	40 - 100	40 - 100
TFH	72	85	20	14	50 - 100	60 - 100

¹Centimeters
²Percent Grade