79 Scientific Studies that Validate Massage

A 4 hour CEU Course by Dr. Harvey Kaltsas,
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Despite centuries of empirical evidence, the efficacy of massage is still scoffed at by too many who know too little. Although it has been neglected by Western medicine until recently, massage in its various forms has been part and parcel of the healing arts from time immemorial, especially in China, and there is ample proof that it works well there for the treatment of many diseases. However, for some reason that perhaps reflects residual racism, Chinese studies are pretty much disregarded by Americans.

During my first trip to China in 1990 I was surprised when I visited a college of traditional Chinese massage therapy. The massage therapists were treating patients exactly as would an acupuncturist with one difference. They would take a patient’s history, do a differential diagnosis, and arrive at a point formulary for treatment - but with fingers instead of needles! - and their success was remarkable.

The purpose of this course is to counteract the ignorance which surrounds the efficacy of the massage techniques used in an acupuncture practice. It also provides research from respected Western sources to give your acupuncture patients confidence in the effectiveness of the massage techniques you employ. It also seeks to provide talking points from respected Western sources to encourage prospective massage patients/clients to seek massage therapy. This course presents summaries of research studies that have appeared in peer reviewed Western medical journals attesting to how well people with 37 different conditions responded to massage. The summaries include:

- the journal in which each study appears
- the title of the article
- the authors
- the conclusions

These studies cover the following topics:

- Osgood Schlatter’s Disease
- Osteoarthritis
- Oxytocin Levels
- Pain
- Parkinson’s Disease
- Patellafemoral Pain Syndrome - PFPS (Runner’s Knee)
- Perineum tearing
- Peripheral Neuropathy
- Physiological Responses to Massage
- Plantar Fascitis
- Posttraumatic Stress
- Pregnancy
- Premature Births
- Premenstrual Syndrome
- Preschool massage
- Preterm Infants
- Pulmonary Disease
- Renal Disease
- Respiratory Infections
- Restless leg Syndrome
- Rheumatoid Arthritis
- Rotator Cuff Injuries
- Sexual Abuse
- Sleep Disorders
- Smoking
- Spinal Cord Injuries
- Stress
- Surgery
- Tennis Elbow
- Thumb and Trigger Finger Pain
- TMJ
- Torticollis
- Transplants
- Vagal Activity
- Voice Disorders
- Whiplash

Massage is truly more than a luxury, and in many cases it is the most cost-effective way to treat a health problem. You’re welcome to print up the text of this course and leave this documentation in your waiting room.
Osgood-Schlatter Disease

1. **Journal:** Medscape reference (online), May 5, 2010  
**Title:** Osgood-Schlatter Disease in Emergency Medicine  
**Authors:** Andrew K Chang, MD; Chief Editor: Rick Kulkarni, MD  
**Conclusions:** Among adolescents, Osgood-Schlatter's Disease is one of the most common causes of knee pain. According to one Finnish study, Osgood-Schlatter's Disease occurs in about 13% of athletes and is particularly prevalent among teenage boys. It is a painful affliction of the knees which can last months or even years. Since bone growth is faster than soft tissue growth, muscle tendons can become tight across the joint resulting in edema and loss of flexibility. Cortico-steroids are not recommended. The most effective therapy involves quadriceps and hamstring stretching exercises and extending the hip for a complete stretch of the extensor mechanism to reduce tension on the tibial tubercle.

Osteoarthritis

**Title:** Massage therapy for osteoarthritis of the knee: a randomized controlled trial.  
**Authors:** Perlman AI, Sabina A, Williams AL, Njike VY, Katz DL., Perlman AI, Sabina A, Williams AL, Njike VY, Katz DL.  
**Source:** Institute for Complementary and Alternative Medicine, University of Medicine and Dentistry of New Jersey, School of Health Realted Profession, Newark, NJ 07107-1709, USA. a.perlman@umdnj.edu  
**Conclusions:** Sixty-eight adults with osteoarthritis (OA) of the knee were assigned either to a control group or for twice weekly sessions of Swedish massage for 4 weeks, then once weekly for four weeks. Primary outcomes were measured via changes in the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) pain and functional scores and the visual analog scale of pain assessment. Those receiving massage demonstrated a significant reduction in pain and stiffness and the time it took to walk 50 feet and a significant increase in range of movement. Findings indicate that massage therapy is an effective treatment for OA of the knee.

**Title:** Can stimulating massage improve joint repositioning error in patients with knee osteoarthritis?  
**Authors:** Lund, H., Henriksen, M., Bartels, E.M., Danneskiold-Samsoe, B., Bliddal, H.  
**Conclusions:** Nineteen (19) patients with osteoarthritis of the knee who suffered from joint repositioning error of the knee were treated with 10 minutes of massage to the quadriceps femoris, sartorius, gracilus, and hamstrings muscles on the affected leg. The mean age of these patients was 73.1 years. After one massage therapy session, there was
no significant change in their joint repositioning error. [This is asking a lot from one 10 minute massage session!]

4. **Journal:** *Journal of the Autonomic Nervous System, 56, 26-30.*  
**Title:** Massage-like stroking of the abdomen lowers blood pressure in anesthetized rats: influence of oxytocin  
**Conclusions:** Massage-like stroking for one minute of the ventral area of the abdomen anaesthetized rats lowered their blood pressure, and more so than if the lateral sides of the abdomen were massaged. Blood pressure returned to its initial level one minute after stroking stopped. [Important information when massaging hypertensive rats]

**Pain**

5. **Journal:** *Complementary Therapies in Clinical Practice, 16, 92-95.*  
**Title:** Effect of massage therapy on pain, anxiety, and tension in cardiac surgical patients: a pilot study.  
**Conclusions:** Two to five days after undergoing cardiovascular surgical procedures, patients were given a 20 minute session of massage therapy. Compared to those who received standard care, those patients receiving massage exhibited significant decreases in pain, anxiety, and tension.

6. **Journal:** *Journal of Bodywork and Movement Therapy, 11, 141-145.*  
**Title:** Lower back pain and sleep disturbance are reduced following massage therapy.  
**Authors:** Field, T., Hernandez-Reif, M., Diego, M., & Fraser, M. (2007)  
**Conclusions:** Thirty adults with a mean age of 41 years who had lower back pain for at least six months were treated with massage therapy twice weekly for five (5) weeks. Sessions were 30 minutes long. Their results were contrasted with a control group who used progressive muscle relaxation therapy which involved tensing and relaxing large muscle groups. Those in the massage group reported having less depressed mood, less anxiety, and less pain. Their results were better than for those in the relaxation group.

7. **Journal:** *Psychother Psychosom., 73, 17-24.*  
**Title:** A randomized clinical trial of the treatment effects of massage compared to relaxation tape recordings on diffuse long-term pain.  
**Authors:** Hasson, D., Arnetz, B., Jelveus, L., & Edelstam, B. (2004)  
**Conclusions:** The purpose of this study was to determine if, among those with long term musculoskeletal pain, massage were more effective than listening to relaxation tapes at significantly improving patients’ self-rated health, levels of muscle pain, and mental energy. 129 patients were divided into two groups, and improvements in these areas were
only observed in the massage group.

8. **Journal**: *Journal of Bodywork & Movement Therapies, 12, 146-150.*  
**Title**: Massage therapy reduces pain in pregnant women, alleviates prenatal depression in both parents and improves their relationships.  
**Conclusions**: Forty-seven depressed and pregnant were either assigned to a control group or were massaged by their partners twice a week from 20 weeks of pregnancy until their delivery. Those receiving the massages reported less back pain, leg pain, depression, anger, and anxiety than those in the control group. Also, the partners giving the massages reported less anger, anxiety, and depression. Moreover those involved in the massage group reported that their relationships improved. [Massage works! Who knew?]

9. **Journal**: *Complementary Therapies in Nursing & Midwifery, 6, 25-32.*  
**Title**: Effect of cutaneous stimulation on pain reduction in emergency department patients.  
**Authors**: Kubsch, S.M., Neveau, T., & Vandertie, K. (2000).  
**Conclusions**: Fifty emergency room patients were treated with massage (tactile stimulation) to relieve pain. Thereafter the patients reported less pain, and objective findings were that heart rate and blood pressure dropped.

**Title**: A randomized controlled trial of massage therapy in children with sickle cell disease.  
**Conclusions**: Children were assigned at random either to a control group or to be massaged nightly by their parents. Those receiving massage showed less pain, depression and anxiety and were able to function at a higher level.

**Title**: Long-term results of vibratory stimulation as a pain relieving measure for chronic pain.  
**Conclusions**: Two hundred sixty-seven (267) patients were treated with vibratory stimulation for 18 months to relieve chronic musculoskeletal and neurogenic pain. More than half of those treated - 59% - reported that their pain was reduced by more than 50%. Of this group of 59% that reported significant pain relief, after 12 months of home treatment with a vibratory massage stimulator, 72% increased their social activity and more than 50% reduced their intake of pain killing drugs.

12. **Journal**: *Scandinavian Journal of Rehabilitation Medicine, 20, 149-159.*  
**Title**: Effect of vibratory stimulation on experimental and clinical pain.
Conclusions: Vibratory stimulation was performed on the left and right extensor carpi radialis longus muscles of 16 healthy patients and 18 patients who suffered from chronic epicondylitis of the right elbow. Thereafter there was no difference in pain thresholds among the healthy patients, but those suffering epicondylitis the pain thresholds increased by 120% to 230%. Twelve of the epicondylitis patients reported pain relief for a span of 1 to 7 hours.

Title: Vibratory stimulation increase the electro-cutaneous sensory detection and pain thresholds in women but not in men
Authors: Dahlin, Lund, Lundeberg, Molander
Conclusions: Although this study conformed that electro-vibratory stimulation is useful at treating pain, the beneficial effects were surprisingly limited only to women.

Title: Vibratory stimulation compared to placebo in alleviation of pain.
Conclusions: In a double-blind crossover trial using a vibrator and a "placebo unit" vibratory stimulator on 72 patients to study the placebo effect with chronic pain syndromes, it was determined that 48% of the patients reported pain relief using the real vibrator and 34% reported relief using the placebo vibrator.

Title: Expanding the nursing repertoire: The effect of massage on post-operative pain.
Conclusions: Nineteen patients with post-operative pain were treated with massage and compared to a control group of twenty people. Those massaged reported a significant reduction in pain for 24 hours after their massage.

Title: Massage as adjuvant therapy in the management of acute postoperative pain: a preliminary study in men.
Conclusions: After major operations, 202 patients were treated randomly with either massage, focused attention, or routine care to assess the impact of each intervention on pain relief. Perceived amount of post-op pain declined significantly in those treated with massage, however they still took the same amount of opioid analgesics.

Title: A trial into the effectiveness of soft tissue massage in the treatment of shoulder pain.
Conclusions: In a single blinded, randomized controlled study of 29 patients with shoulder pain, soft tissue massage significantly improved range of motion, level of pain, and function.

Title: Efficacy of massage therapy in chronic pain: A pragmatic randomized trial.
Conclusions: This study compared standard medical care (SMC) to massage for patients with chronic pain of head, neck, back, shoulders, and limbs. Ten patients were given SMC, and nineteen were treated with massage. Both groups experienced pain relief and decreased depression and anxiety, but only in the massage group did the reduction in pain, depression, and anxiety last till the follow up at three months.

Title: Foot and hand massage as an intervention for postoperative pain.
Conclusions: Postoperative patients in pain were given foot and hand massages for 20 minutes (five minutes per extremity). They reported less pain thereafter, and objective findings were reduced heart and respiratory rates.

20. Journal: *Medscape*
Title: Effectiveness of Massage Therapy for Chronic, Non-malignant Pain: A Review: Discussion
Authors: Jennie C.I. Tsao, Pediatric Pain Program, Department of Pediatrics, David Geffen School of Medicine at UCLA, USA
Conclusions: According to a Cochrane review, there is strong evidence that massage is effective in treating lower back pain. There is also strong evidence that massage is effective at relieving shoulder pain. There was less evidence of pain relief for following ailments, in descending order of effectiveness: headache pain, fibromyalgia, mixed chronic pain, neck pain and CTS. The study also discusses three main hypotheses for why massage is effective at relieving pain: gate theory, the serotonin hypothesis, and the restorative sleep hypothesis.
**Parkinson’s**

21.  
**Journal:** Journal of Bodywork and Movement Therapies, 6, 177-182.  
**Title:** Parkinson's disease symptoms are reduced by massage therapy and progressive muscle exercises.  
**Conclusions:** Sixteen Parkinson’s patients were given massage for 30 minutes twice a week for five weeks or else given sessions of progressive muscle relaxation. Those who received massage reported that they had improved their daily functioning and also slept better. Moreover, their physicians reported that the massage patients had improved in daily living activities.

**Patellafemoral Pain Syndrome - PFPS (Runner’s Knee)**

22.  
**DOI:** 10.1002/14651858.CD003375  
**Title:** Therapeutic ultrasound for treating patellofemoral pain syndrome  
**Authors:** Brosseau L, Casimiro L, Welch V, Milne S, Shea B, Judd M, Wells GA, Tugwell P.  
**Conclusions:** The Cochrane database search retrieved 85 articles on treatment of Patellafemoral pain syndrome of which only one was appropriate for review. This study was focused on the efficacy of treating this syndrome with Ultrasound in addition to ice massage which is the standard mode of care. There were 53 participants in the study. All patients underwent an exercise protocol. Four of the thirteen patients (31%) treated with ice massage alone reported less patellafemoral pain and/or quadriceps/hamstring strengthening compared with 6 of 16 (46%) who received both ultrasound and ice massage. Clearly the ice massage was of some benefit, but the improvement with ultrasound was only 15% more, not enough to meet the international standard of 20% for clinically important improvements in the treatment of osteoarthritis.

23.  
**Title:** Massage therapy protocol for post-anterior cruciate ligament reconstruction patellofemoral pain syndrome (PFPS): a case report.  
**Author:** J. Zalta  
**Conclusions:** In this case study, one patient with PFPS was treated with various massage techniques including  
• neuromuscular therapy with trigger point release  
• myofascial release  
• lymphatic drainage  
• cross-fiber friction  
• and muscle energy techniques.  
To chart changes in range of motion in the knee and patella-femoral function, the doctor
used orthopedic physical assessment tests including
• Pre- and post-massage heel-height difference, measuring degree of hamstring flexion contracture.
• Anthropometric measurements tracking effusion and atrophy pre- and post-surgery
• pre- and post-massage pain level (PL) on a scale of 1 to 10 for each session

These tests documented a decrease in hamstring flexion contracture, a decrease in lateral tracking of the patella, and a decrease in pain level – all indicating that massage therapies are effective modalities for the treatment of PFPS.

Perineal Massage

24. 
**Title:** Prenatal perineal massage: preventing lacerations during delivery.
**Authors:** Davidson, K., Jacoby, S., & Brown, M.S. (2000).
**Conclusions:** In a study of 368 expectant women, prenatal perineal massage was the one factor – other than frequency of births – which determined favorably how serious a mother’s perineum tore during childbirth.

25. 
**Title:** Women's views on the practice of prenatal perineal massage.
**Authors:** Labrecque, M., Eason, E., & Marcoux, S. (2001).
**Conclusions:** 763 pregnant women received perineal massage and reported the following:
1. the massage had a positive effect on their preparation for birth
2. the more their husbands participated the better effect it had on their relationships
3. most women said they would recommend perineal massage to other pregnant women and would do it if pregnant again

Peripheral Neuropathy

26. 
**Title:** Massage therapy for the treatment of painful peripheral neuropathy in HIV+ individuals.
**Authors:** Acosta AM, Chan RS, Jacobs J; International Conference on AIDS.
**Conclusions:** Massage therapy was used to treat peripheral neuropathy in five non-diabetic patients with HIV and two diabetic patients with HIV positive who previously had little or no positive response to pharmacologic therapy. It significantly decreased foot pain in all five of the non-diabetic patients, but the diabetic patients showed no improvement.
Physicians’ Perspectives

27.  
**Journal:** Canadian Family Physician, 44, 1018-1040.  
**Title:** Physicians’ perspectives on massage therapy.  
**Conclusions:** 162 Canadian family physicians were questioned about massage therapy; and 68% said they had minimal or no knowledge about it. Of those 32% who indicated some knowledge about massage, 83% said it was a useful adjunct to their practice of medicine; 72% said their patients were asking more and more for massage therapy; and 71% had referred to a massage therapist. Those who referred to massage therapists had more positive views about massage and more knowledge about massage therapy. Half of the physicians questioned supported laws to regulate massage therapy.

Physiological Responses to Massage

28.  
**Title:** The short-term effects of myofascial trigger point massage therapy on cardiac autonomic tone in healthy subjects.  
**Conclusions:** Thirty healthy subjects were treated with myo-fascial trigger point massage to the head, neck, and shoulders. Their blood pressure was taken before and after the sessions, and they rated their levels of muscle tension and emotional states. After massage their heart rates dropped, as did their systolic and diastolic blood pressures. They also reported improvements in their levels of muscle tension and emotional states.

29.  
**Journal:** International Journal of Neuroscience, 114, 31-44.  
**Title:** Massage therapy of moderate and light pressure and vibrator effects on EEG and heart rate.  
**Conclusions:** 36 healthy adults were treated with three types of massage and randomly assigned to three groups: light massage, moderate massage, and vibratory stimulation. Although all groups reported a decrease in anxiety, those receiving the moderate pressure experienced the greatest reduction in stress, heart rate, and EEG changes – the latter showing a decrease in beta and alpha wave activity and an increase in delta wave activity, indicative of relaxation. The light massage and vibratory groups showed increased levels of arousal as indicated by increased heart rates and beta levels. The vibratory group also showed increased levels of alpha and theta wave activity.
Plantar Fasciitis

30.  
**Journal:** *Am Fam Physician. 2001 Feb 1;63(3):467-475.*  
**Title:** Treatment of Plantar Fasciitis  
**Authors:** Craig C. Young, M.D., Darin S. Rutherford, M.D., Mark W. Niedfeldt, M.D.,  
**Conclusions:** This report in the journal American Family Physician surveys the various treatments for plantar fasciitis and reports that stretching is considered the most effective as it can correct risk factors such as weakness of the foot muscles and tightness of the gastrocnemius muscles. The authors recommend that, before getting out of bed in the morning, patients do self cross-fiber friction massage above the plantar fascia and stretch with a towel. They also recommend the following stretching techniques:  
- wall stretching  
- curb or stair stretches  
- using a slant board  
- placing a 2”x 4” piece of wood in workplaces where the patient stands for long periods of time so they patient can stretch his/her calf muscles  
- rolling the foot over a tennis ball or a 15 oz. can

Posttraumatic Stress

31.  
**Journal:** *Journal of Applied Developmental Psychology, 17, 37-50.*  
**Title:** Alleviating posttraumatic stress in children following Hurricane Andrew  
**Authors:** Field, T., Seligman, S., Scafidi, F., & Schanberg, S. (1996).  
**Conclusions:** Following Hurricane Andrew, sixty students from grades 1-5 with behavior problems in the classroom who exhibited Posttraumatic Stress Disorder by their scores on the PTSD Index were randomly assigned to two groups: one received massage, the other watched videos. Those receiving massage reported they were happier and less anxious, and their saliva showed reduced levels of cortisol after massage than the levels exhibited by the video group. Those massaged also had lower scores for depression and anxiety and were more relaxed.

Pregnancy

32.  
**Journal:** *Journal of Psychosomatic Obstetrics & Gynecology, 20, 31-38.*  
**Title:** Pregnant women benefit from massage therapy  
**Conclusions:** For five weeks, 26 pregnant women were either massaged twice a week for 20 minutes or assigned to a relaxation group. Although women from each group reported less leg pain after the first and last sessions, after the last session only the women in the massage group reported:  
- reduced anxiety  
- improved mood
- less back pain
- better sleep
- low levels of norepinephrine (urinary stress hormone levels)
- fewer complications during labor
- fewer premature births
- fewer postnatal complications

   Title: Acupressure treatment of morning sickness in pregnancy. A randomized, double-blind, placebo-controlled study.
   Conclusions: 97 pregnant women were studied during their 8th to 12th weeks of gestation to determine if acupressure could alleviate symptoms of morning sickness. Of those women massaged, 71% reported less intense nausea and vomiting and for reduced duration.

   Title: Effect of acupressure on nausea and vomiting during pregnancy. A randomized, placebo-controlled, pilot study.
   Conclusions: Pregnant women experiencing morning sickness were divided into two groups. A pressure band with a button was applied to acupuncture point Pericardium 6 (P6) in one group and to a placebo point in another group. Those in the P6 group reported continuing relief from nausea symptoms through the 14th day of the study. Those in the placebo group experienced relief only through the 6th day.

   Title: Newborns of depressed mothers who received moderate versus light pressure massage during pregnancy.
   Conclusions: Sixty-four babies, average age 6.8 days, born of two groups of depressed pregnant women were massaged during their 5th through 8th month of pregnancy. One group was massaged with light stimulation; the other with moderate stimulation. After childbirth, their newborn babies (average age of 6.8 days ) were examined for 15 minutes and for their performance on the Brazelton Neonatal Behavior Assessment Scale. Those infants of mothers who received moderate pressure massage received better scores on the Brazelton Scale on depression, excitability, motor, and orientation clusters and were observed to spend more time smiling and vocalizing.
**Title:** Temperature Increases in Preterm Infants During Massage Therapy
**Authors:** Miguel A. Diego, Tiffany Field, and Maria Hernandez-Reif

**Conclusions:** Preterm babies are at risk for hypothermia (low body temperature) and are kept in isolettes with the portholes closed to preserve their body heat. There has been much research which shows that neonatal massage is highly beneficial. Preterm newborns receiving massage are hospitalized 3-6 days less than those preterms not receiving massage. Also, they gain 21-47% more weight than their non-massaged counterparts. As a result, massage therapy is practiced in 38% of the neonatal Intensive Care Units around the country. (Field, Hernandez-Reif & Diego, 2006). This study was performed to determine if massage to preterm babies (which necessitated opening the portholes) would lower their body temperatures unduly. In this study 72 preterm infants were assigned either to a massage group or to a control group. The massage group received three 15 minute sessions a day, comprising of:

1. 5 minutes of massage with moderate pressure to the neck, shoulders, along the spine and back, waist, and arms and legs
2. 5 minutes of moving the limbs
3. A repeat of step 1.

Those in the massage group actually exhibited increased temperatures over those in the control group, confirming that massaged pre-term infants are not at risk for increased temperature loss.

**Title:** Prenatal, perinatal and neonatal stimulation: a survey of neonatal nurseries.
**Authors:** Field T, Hernandez-Reif M, Feijo L, Freedman J.

**Conclusions:** 82 staff members from Neonatal Intensive care Units (NICU’s) were surveyed to discover what types of stimulation pregnant mothers and babies received. These were the results:

- breastfeeding in the NICU (100%).
- kangaroo care (98%);
- non-nutritive sucking during tubefeedings in the NICU (96%);
- containment (swaddling and surrounded by blanket rolls) in the NICU (86%);
- rocking in the NICU (85%);
- skin-to-skin following birth in the delivery room (83% of hospitals);
- music in the NICU (72%);
- preterm infant massage in the NICU (38%).
- labor massage (30%);
- the Doula (assistant who comforts during labor and delivery) (30%)
- waterbeds in the NICU (23%); and
- pregnancy massage (19%);
Conclusions: Massage and other alternative therapies are effective at reducing pregnancy related depression, nausea, premature births, leg and back pain, pain during childbirth, and concomitantly reduced need for medication.

Premature Births

Conclusions: Several factors contribute to premature birth, and these are examined in this article. Among them are high levels of cortisol, and the study identifies massage therapy as way to reduce cortisol levels in pregnant and thus to reduce the incidence of premature birth.

Conclusions: Compared to a control group, premature newborns with very low birthweight who had received massage by their mothers scored a bit higher on Psychomotor Development and Mental Development Indexes.

Premenstrual Syndrome

Conclusions: Symptoms of premenstrual syndrome are relieved by massage therapy. This conclusion was the result of a study of 24 premenstrual women who were randomly assigned either to a massage or a relaxation therapy group. Following their massages, those in the massage group experienced less

- anxiety
- pain
- depressed mood
- water retention
Preschool Massage

42.  
**Journal:** *Early Child Development and Care, 120*, 39-44.  
**Title:** Preschool children's sleep and wake behavior: Effects of massage therapy.  
**Conclusions:** For five weeks some preschool children received 20 minute sessions of massage therapy twice a week. Compared to those children in a control group who did not receive massage, by the end of the study the massage group children were observed to have  
- better behavior ratings for activity, cooperation, and vocalization  
- better behavior ratings from teachers  
- less aversion to touch and more extroversion as judged by their parents  
- less time needed to fall asleep during naptime

43.  
**Journal:** *Early Child Development and Care, 143*, 59-64.  
**Title:** Preschoolers' cognitive performance improves following massage.  
**Conclusions:** Following a 15 minute massage, preschool students exhibited increased scores for abstract reasoning on the Block Design test of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI). Those children who were judged to be high strung and anxious benefited the most from massage.

44.  
**Journal:** *Pre and Perinatal Psychology Journal, 11*, 73-78.  
**Title:** Oil Versus No Oil Massage  
**Conclusions:** A comparison study was done massaging infants – with oil and without oil. When massaged with oil, the infants showed less grimacing and clenching of fists (both stress behaviors) and lower levels of cortisol (a stress hormone).

Preterm Infants

45.  
**Journal:** *Pediatrics, 77*, 654-658.  
**Title:** Tactile/kinesthetic stimulation effects on preterm neonates.  
**Conclusions:** 20 preterm infants with a mean gestational age of 31 weeks and a mean birth weight of 1,280 grams who had spent a mean time of 20 days in NeoNatal Intensive Care Units (NCIU) were given massage and kinesthetic stimulation for three 15 minute periods per day for 10 days. For 5 minutes they were massaged with moderate pressure, for five minutes their limbs were moved, and for five minutes they were massaged again with moderate pressure. Compared to a control group the infants who were massaged gained an average of 47% more weight per day, were more alert and active, and on the
Brazelton scale showed more mature habituation, motor, orientation and range of state behavior than those neonates not massaged. Their hospital stays averaged six days less at a savings of about $3,000 per child.

46.  
**Journal:** *Pediatric Nursing, 13, 385-387.*  
**Title:** Massage of preterm newborns to improve growth and development.  
**Authors:** Field, T., Scafidi, F., and Schanberg, S. (1987).  
**Conclusions:** Preterm newborns who received massage therapy persisted for six months in maintaining more weight gain and better performance on development tests than those preterms not massaged.

47.  
**Journal:** *Advances in Touch. Skillman, N. J.*  
**Title:** Massage alters growth and catecholamine production in preterm newborns.  
**Authors:** Field, T. & Schanberg, S. M. (1990).  
**Conclusions:** This study appears in the book, Advances in Touch, and documents the progress of 40 preterm infants who received three 15 minute sessions of massage, kinetic exercise, and massage for three consecutive hours for ten days. Compared to a control group receiving the same caloric intake, these infants gained an average of 21% more weight during the ten days. Also, they spent less time sleeping, grimacing, mouthing/yawning, and clenching their fists. This study was repeated by Scafidi, F.A., Field, T.M., Schanberg, S.M., Bauer, C.R., Tucci, K., Roberts, J., Morrow, C., & Kuhn, C.M. (1990) – “Massage stimulates growth in preterm infants: A replication.” Infant Behavior and Development, 13, 167-188. Their results confirmed the earlier findings. Also, those infants massaged were discharged from the hospital 5 days earlier than those in the control group.

48.  
**Journal:** *Journal of Developmental & Behavioral Pediatrics , 14, 176-180.*  
**Title:** Factors that predict which preterm infants benefit most from massage therapy.  
**Authors:** Scafidi, F. A., Field, T., & Schanberg, S. M. (1993).  
**Conclusions:** 70% of pre-term infants who received massage therapy were considered high weight gainers compared to only 40% of infants in the control group were high weight gainers. Those preterm infants who had experienced obstetric complications benefited the most from massage therapy.

49.  
**Journal:** *Journal of Developmental & Behavioral Pediatrics, 14, 318-322.*  
**Title:** Massage effects on cocaine-exposed preterm neonates.  
**Conclusions:** Thirty pre-term infants who had been exposed to cocaine and had a mean gestational period of 30 weeks were divided into two groups. Fifteen served as a control group, and 15 received a combination of massage-kinetic activity-massage for 15 minutes for three hours in a row for ten days. Compared to the control group, those receiving the massage...
1. gained on average 28% more weight per day
2. exhibited better motor behaviors on the Brazelton scale at the end of ten days
3. exhibited statistically significant less complications after birth and fewer stress behaviors

Title: The effect of parent training in music and multimodal stimulation on parent-neonate interactions in the neonatal intensive care unit.
Author: Whipple, J. (2000)
Conclusions: Twenty sets of parents received one hour of instruction in the use of music and massage techniques to treat their premature infants borne with low birth weights. Observations were done of the interactions between parents and children and the infants’ stress and non-stress responses. Parents who received the training acted and responded more appropriately to their infants, and the infants exhibited significantly less stress behavior. Also these parents spent significantly more time in the NCIU than parents of the control group who did not receive such training.

Title: Massage therapy facilitates weight gain in preterm infants.
Conclusions: Premature newborns who received three 15 minute sessions of massage-kinetic activity-massage three times a day for 5 to 10 days were observed to have significantly greater weight gain (31% to 47%) compared to a control group receiving standard medical care. Explanations for this positive reaction include
- decreased levels of cortisol resulting in increased levels of oxytocin
- stimulation of the vagus nerve which extends from the cranium to the abdomen where it promotes the innervation of the viscera, enhances gastric motility, and increases release of hormones such as insulin which in turn increase nutrient absorption.

Title: Massage therapy by mothers and trained professionals enhances weight gain in preterm infants.
Conclusions: For ten days, healthy preterm infants were divided into three groups. One, the control received no massage therapy. Another group was massaged by female massage professionals. The third was massaged by their mothers. Those infants receiving massage from both professionals and mothers gained significantly more weight than those in the control group.
53. **Journal:** Holistic Nursing Practice, 16, 1-7.
**Title:** Infant massage as a component of developmental care: past, present, and future.
**Authors:** Mainous, R.O. (2002).
**Conclusions:** This study provides an overview of the use of infant massage. It has been used for centuries in parts of Africa, the Far East, and South America, but its use as a modality in North America is relatively new. Many studies have documented its efficacy with newborns in decreasing their stress levels, promoting weight gain, and improving motor function. Recent research has been conducted on the benefits of infant massage for those children with HIV, exposure to cocaine, and other illnesses.

54. **Journal:** Indian Pediatrics, 2001 Oct; 38(10):1091-8
**Title:** Effects of tactile-kinesthetic stimulation on preterms: A controlled trial.
**Conclusions:** 48 healthy preterm infants who weighed between 1000 and 2000 grams were assigned randomly to control and massage therapy groups. Those being massaged received infant massage and guided kinetic exercises from the third day of life to their term corrected age. In the hospital, their following vital parameters were observed:
- Oxygen saturation
- Temperature
- Heart rate
- Respiration

When they got home, they continued to receive the massage/kinetic therapy. Compared to the control group, the massaged infants exhibited improved scores on the Brazelton scale on:
- Autonomic stability
- Orientation
- Range of state
- Regulation of state

They also showed increased weight gain of 4.24 more grams per day than the controls and an increase in heart rate, within normal range.

**Title:** Stable preterm infants gain more weight and sleep less after five days of massage therapy.
**Authors:** Dieter, J., Field, T., Hernandez-Reif, M., Emory, E.K., & Redzepi, M. (2003).
**Conclusions:** Preterm babies who received five days of massage therapy gained 47% more weight than preterms who did not.
56. 
**Journal:** Journal of Perinatology, 24, 305-309.  
**Title:** Physical activity combined with massage improves bone mineralization in the premature infants: A randomized trial.  
**Conclusions:** Premature infants suffer increased risk of mortality in part because of osteopenia, inability to form bones, and resorption of bones. In this study, thirty preterm neonates were divided into two groups, one a control and one which received massage and kinetic activity. The control group experienced decreased bone formation and increased bone resorption. The massage group experienced increased bone formation yet continued to have bone resorption as evidenced by Serum type I collagen C-terminal propeptide (PICP) and urinary pyridinoline crosslinks of collagen (Pyd) as indices.

**Pulmonary Disease**

57.  
**Journal:** Journal of Advanced Nursing, 45, 252-259.  
**Title:** Effectiveness of acupressure in improving dyspnoea in chronic obstructive pulmonary disease [COPD].  
**Conclusions:** 44 patients with COPD were divided into two groups. One was given acupressure at a true acupoint, the other to a sham acupoint. Both programs were five sessions a week for 4 weeks for a total of 20 treatments. Each session lasted 16 minutes. Before and after the program, both groups were measured on the Pulmonary Functional Status and Dyspnea Questionnaire-modified scale and the Spielberger State Anxiety scale and given a six minute walking test.  
Those in the true acupoint group showed significant improvement compared to those in the sham acupoint group.

**Renal Disease**

58.  
**Title:** Acupoints massage in improving the quality of sleep and quality of life in patients with end-stage renal disease.  
**Authors:** Tsay, S.L., Rong, J.R., & Lin, P.F. (2003)  
**Conclusions:** Patients with end stage kidney disease have trouble sleepin and have a diminished quality of life. In this study, 98 patients were randomly assigned to one of three groups:  
1. an acupressure group  
2. a sham acupressure group  
3. a control group  
Compared to the control group, those in the acupuncture group slept better, longer, and with significantly decreased time waking as measured by the Pittsburgh Sleep Quality Index, Sleep Log, aand the Medical Outcome Study –
Short Form 36. These indices also documented that patients in the acupressure group had improved quality of life.

**Respiratory Infections**

59.  
**Title:** A clinical investigation on massage for prevention and treatment of recurrent respiratory tract infection in children.  
**Conclusions:** After three to six months of massage therapy on a group of healthy children and children susceptible to respiratory infection, it was found that massage produced a statistically significant benefit to those children massaged. All of their immunological indexes were about normal, their general constitution improved as did their immune functions. Massage was found to prevent and treat respiratory conditions.

**Restless Leg Syndrome**

60.  
**Journal:** *Journal of Bodywork and Movement Therapies*  
Volume 11, Issue 2, April 2007, Pages 146-150  
**Title:** Massage therapy and restless legs syndrome  
**Author:** Meg Russell LMBT,  
**Conclusions:** This paper is a case study on the effects of massage therapy done on a 35 year old woman suffering from Restless Leg Syndrome (RLS). The following modalities were used twice weekly for three weeks in a 45 minute massage to the leg, focusing on the hamstring and piriformis muscles:  
- myofascial release  
- trigger point therapy  
- deep tissue  
- sports massage techniques  

Before, during, and after the study, the patient completed a Functional Rating index assessing her intensity level, frequency, and duration of RLS symptoms, and she also kept a log of hours slept, nocturnal waking, intensity and manner of RLS symptoms, intake of stimulants and medications, and level of stress. The patient’s symptoms of sleeplessness, urge to move legs, and tingling sensations all decreased after just the first two treatments and continued to improve for the rest of the three week study.

**Rheumatoid Arthritis**

61.  
**Journal:** *Journal of Pediatric Psychology, Vol. 22, No. 5, 1997, pp. 607-617*  
**Title:** Juvenile Rheumatoid Arthritis: Benefits from Massage Therapy  
**Authors:** Tiffany Field, Maria Hernandez-Reif, Susan Seligman, Josh Krasnegor, and William Sunshine
Conclusions: 20 children with JRA were divided into two groups. One received 15 minutes of massage per day from their parents for 30 days, first in the supine position, then in the prone position. The other group was engaged in relaxation therapy.

A pediatric rheumatologist assessed the children before and after the sessions on the first and last days of the 30-day study using the following:
• The State Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970)
• Behavior Observation of the Child's Anxiety Level to assess behavior following relaxation therapy classes
• Cortisol Samples.

The neurologist determined that those children in the massage group had significantly lower levels of stress, anxiety, cortisol, and pain compared to the relaxation group.

Title: *Hand arthritis pain is reduced by massage therapy*
Authors: Tiffany Field, Miguel Diego, Maria Hernandez-Reif, Jean Shea
Conclusions: Researchers from the University of Miami School of Medicine randomly assigned twenty adult patients with rheumatoid arthritis of the wrist and hand either for massage therapy or to a control group. Those in the massage group received therapy once a week for four weeks and were taught to massage the afflicted hand/wrist daily at home. Compared to the control group those patients doing massage showed lower levels of anxiety and depression, less pain, and greater grip strength.

Rotator Cuff Injuries

63. Journal: unpublished research paper presented to Dr. Consuelo Romanski, Ph.D.
Title: *Conservative Treatment of Rotator Cuff Injuries to Avoid Surgical Repair*
Authors: Jill Schuldt, LMT
Conclusions: The author reviews research studies, clinical findings and experimental data to conclude that for those with rotator cuff injuries without tears, conservative treatment with massage therapy results in
• Pain reduction
• Increased flexibility
• But no increase in strength
For those with tears, although the tears may not heal, they often become symptom free with massage and without the need for surgery. If after six months of conservative treatment with massage there is insufficient improvement, then surgery is indicated.
Sexual Abuse

64.
Title: Sexual abuse effects are lessened by massage therapy.
Conclusions: This study evaluated whether women who had been sexually abused (mean age 35) would benefit from massage therapy compared to a control group which underwent relaxation techniques. They were given massage twice a week for one month. Following each of their sessions they reported less anxiety and depression, and their salivary cortisol levels dropped. After one month, both groups reported decreases in depression and anxiety, but the massage group also reported decreases in stress hormone levels and in life event stress, whereas the relaxation group had increasingly negative feelings about being touched.

Sleep

65.
Journal: *Early Child Development and Care, 120*, 39-44.
Title: Preschool Children's Sleep and Wake Behavior: Effects of Massage Therapy.
Conclusions: Compared to children who received no massage, preschool children who received 20 minutes of massage twice weekly for five weeks exhibited the following results:
- better behavior ratings on activity, cooperation, state, vocalization
- better ratings on behavior by their teachers
- less touch aversion
- more extraversion
- less time to fall asleep during naptime

66.
Critically ill patients.
Conclusions: Critically ill patients often have difficulty sleeping which impairs their recuperation [anabolism occurs during periods of sleep]. Nonpharmacological techniques to assist sleep had never been evaluated before this study which assessed the efficacy of the following methods on a random assortment of 69 critically ill men:
1. back massage
2. a combination of muscle relaxation, mental imagery, and a music audiotape
3. normal nursing care
Only those in the back massage group showed statistically significant evidence of improvement of quality of sleep.
Smoking

67.  
**Journal:** Preventive Medicine, 28, 28-32.  
**Title:** Smoking cravings are reduced by self-massage.  
**Authors:** Hernandez-Reif, M., Field, T., & Hart, S. (1999).  
**Conclusions:** In a study of twenty smokers assigned to either a massage therapy group or a control group, those receiving massages were taught to do self massage to their hands or ears three times a day for a month. By the last week of the study, those in the massage group were smoking fewer cigarettes per day than those in the control group. They also reported less withdrawal symptoms, less anxiety, and improved mood.

Spinal Cord Injuries

68.  
**Journal:** International Journal of Neuroscience, 112, 133-142.  
**Title:** Spinal cord patients benefit from massage therapy.  
**Conclusions:** Twenty patients who had received spinal cord injuries to vertebrae C5 through C7 were randomly assigned either to an exercise group or to a massage therapy group. For five weeks, those in the massage group received two 40 minute massages twice a week. Patients in the exercise group targeted their arms, back, neck, and shoulders with range of motion exercises twice weekly for five weeks. Both groups benefited, but only the massage group demonstrated:  
- lower levels of anxiety  
- lower levels of depression  
- significantly greater range of motion in the wrist  
- significantly greater muscle strength

Stress

69.  
**Journal:** Journal of Alternative and Complementary Medicine, 15, 981-985.  
**Title:** Endocrinological evaluations of brief hand massages in palliative care.  
**Conclusions:** In this study, 34 terminally ill cancer patients were treated with a 5 minute massage to the hands. Saliva was collected from each patient before and after the massage to assess levels of chromogranin A (CgA), a biomarker for levels of stress. The brief massage did result in reduced levels of chromogranin A (CgA), indicating reduced levels of stress, and a statistically significant number of patients reported satisfaction with the experience.
Stroke

70.  
**Journal:** Complementary Therapies of Nursing Midwifery, 10, 209-216.  
**Title:** The effects of slow-stroke back massage on anxiety and shoulder pain in elderly stroke patients.  
**Authors:** Mok, E., & Woo, C.P. (2004).  
**Conclusions:** Slow stroke back massage (SSBM) was performed for 10 minutes seven evenings in a row on 102 elderly patients who had suffered a stroke and been hospitalized. The group consisted of 102 patients who were split into two groups, one being massaged and the other a control. The two groups were evaluated for heart rate, blood pressure, and self-reported levels of anxiety and pain. Findings were that in the SSBM group there were significantly lower levels of pain and anxiety. Also, patients in the SSBM group relaxed as evidenced objectively by lower levels of systolic and diastolic blood pressure and heart rate. These benefits persisted for three days after the massages, and the patients felt positively about SSBM.

Surgery

71.  
**Journal:** Journal of Cataract & Refractive Surgery, 27, 884-890.  
**Title:** Effects of hand massage on anxiety in cataract surgery using local anesthesia.  
**Authors:** Kim, M.S., Cho, K.S., Woo, H., & Kim, J.H. (2001).  
**Conclusions:** Patients undergoing surgery experience anxiety, and this can be quantified by measuring blood pressure; heart rate; levels of epinephrine, norepinephrine, blood sugar, cortisol, lymphocytes, and neutrophils; and using the Visual Analog Scale. This study employed those measurements on 59 patients before and after having cataract surgery. They were divided into two groups – a control and those having 5 minutes of hand massage before surgery. Five minutes after surgery, those in the control group had elevated levels of epinephrine, norepinephrine, and cortisol – all signs of increased anxiety. However, those levels did not increase for patients in the massage group, and all other indices of anxiety decreased in the massage group.

72.  
**Journal:** Likarska Sprava, 93-96.  
**Title:** Effect of neck massage therapy on the soft tissues after thyroid surgery.  
**Authors:** Antoniv, V.R. (2002)  
**Conclusions:** After thyroid surgery, patients were given neck massage to improve skin and muscle tone of the neck. In 85% of cases there was improvement. Also, 48% of patients reported reduced swelling and edema.
Tennis Elbow

73.  
**Journal:** Physical Therapy, October 2011, Volume 91, Issue 10  
**Title:** Manipulation of the Wrist for Management of Lateral Epicondylitis: A Randomized Pilot Study  
**Authors:** Twenty-eight patients with lateral epicondylitis were assigned to one of two groups:  
1. This group received manipulation of the wrist.  
2. This group received friction massage, muscle stretching, and ultrasound.  
After three weeks patients in Group 1 had a 62% success rate compared to 20% for those in Group 2. After six weeks, on a pain scale of 1 to 11 patients in Group 1 reported an improvement in pain of 5.2 versus 3.2 in Group 2. Manipulation of the wrist appeared to be the more effective therapy.

Thumb and Trigger Finger Pain

74.  
**Title:** The conservative treatment of Trigger Thumb using Graston Techniques and Active Release Techniques®  
**Authors:** Scott Howitt, DC, FCCSS(C), FCCRS(C),* Jerome Wong, DC, and Sonja Zabukovec, DC  
**Conclusions:** This is a case study of the treatment of one patient with trigger thumb (“fibrocartilagenous metaplasia and hypertrophy of the surrounding structures of the flexor tendon resulting in a painful and debilitating restriction of motion”) using the Graston Technique®, which involves augmenting soft tissue mobilization with stainless steel instruments used in a stroking motion applied to the skin at a 30-60 degree angle. This enables the clinician to detect abnormalities in the underlying soft tissue, remove scar tissue adhesions, and enhance the proliferation of fibroblasts. Active Release Techniques (ART) were also used to remove adhesions and promote normal soft tissue growth. This patient was relieved of his pain and had increased range of motion after having eight treatments of Active Release Techniques® and Graston technique.

TMJ

75.  
**Journal:** J Orofac Pain. 2003 Summer;17(3):224-36.  
**Title:** Use of complementary and alternative medicine for temporomandibular disorders.  
**Authors:** DeBar LL, Vuckovic N, Schneider J, Ritenbaugh C.  
**Conclusions:** 192 patients with TMJ were surveyed to see if they used complementary and alternative methods to treat the disorder. 120 reported yes, and of that number, massage therapy was the most commonly used and reported to be the most effective.
Torticollis

76.  
**Journal:** *Free Papers Download Center*  
**Title:** Massage treatment of children with muscular torticollis in 32 cases of clinical experience  
**Authors:** unknown  
**Conclusions:** A group of 32 infants ranging in ages from 20 days to 18 months with muscular torticollis were treated with massage to relieve the condition. There were 18 males and 14 females.

The children were treated in a sitting or lying position, and to prevent skin damage, talc was used as a lubricant. The following massage techniques were employed:

- **Anrou law:** the doctor rubbed the affected side with the thumb pulp at the Feng-chi point, and then from the top down along the sternocleidomastoid muscle. This was repeated several times, focusing on the local mass.

- **(2)** The doctor placed his/her thumb on the tumor (muscle mass) and repeatedly plucked the surrounding tissue. This was repeated 3 to 5 times.

- **(3) Traction Rotation Law:** the doctor put one hand on the ipsilateral or affected side shoulder and one hand on the ipsilateral head and gradually stretched the contralateral head and shoulder. Then the doctor gradually lengthened the mastoid ipsilateral sternoclavicular muscle, ranging from small mounting. Then the doctor rotated the head to the ipsilateral side 5 to 10 times.

- **(4) The doctor used the thumb to press on the ipsilateral shoulder a few times, and then used the hypothenar eminence of the thumb to press the shoulder and neck and finally pushed at acupressure points Stomach 12 and Gall Bladder 21.

Transplants

77.  
**Journal:** *Alternative Therapies, 9, 40-49.*  
**Title:** Outcomes of touch therapies during bone marrow transplant.  
**Authors:** Smith, M.C., Reeder, F., Daniel, L., Baramee, J., & Hagman, J. (2003).  
**Conclusions:** Compared to a control group, 58 patients receiving bone marrow transplants who received massage therapy or therapeutic touch every third day starting with the commencement of chemotherapy until discharge from the program showed significantly lower amounts of central nervous system or neurological complications. However no benefit was noted from among ten other categories of possible complications.

Vagal Activity

78.  
**Journal:** *Biomedical Research, 29, 317-320.*  
**Title:** Facial massage reduced anxiety and negative mood status, and increased sympathetic nervous activity.
Conclusions: Thirty-two healthy women were treated with a 45 minute facial massage to evaluate the effects on their autonomic nervous systems, mood, and level of anxiety via an assessment of heart rate variability (HRV) with spectral analysis. The State Trait Anxiety Inventory (STAI) and the Profile of Mood Status (POMS) were also given to determine psychological status, and both were significantly reduced after the massage. The low- to high-frequency ratio (LF/HF ratio) of heart rate variability was also lowered. Researchers concluded that facial massage reduced psychological distress and activated the sympathetic nervous system and might thereby refresh the patients.

Voice Disorders

79.
Journal: Logopedics, Phoniatrics, Vocology, 25, 146-150.
Title: An effect of body massage on voice loudness and phonation frequency in reading.
Conclusions: Researchers investigated the effect of massage on the fundamental frequency of the voice and sound pressure level. Thirty-one patients were recorded reading a 3 minute passage of prose from a book. Sixteen patients were then massaged for 30 minutes while 15 control subjects rested. Thereafter both groups were asked to read the same 3 minute passage from a book. Those in the massage group evidenced lower fundamental frequency and sound pressure level.

Bonus Study – Whiplash – Mechanical Neck Disorders

+1.
Title: Massage for Mechanical Neck Disorders: A Systematic Review
Authors: Ezzo, Jeanette PhD, CMT; Haraldsson, Bodhi G. RMT; Gross, Anita R. MSc; Myers, Cynthia D. PhD, LMT; Morien, Annie PhD, PA-C, LMT; Goldsmith, Charlie H. PhD; Bronfort, Gert PhD, DC; Peloso, Paul M. MD, MSc
Conclusions: This study provides an overview of the results of 19 studies on the use of massage for whiplash and mechanical disorders of the neck. The researchers noted that massage is often used for the treatment of neck pain, but 12 of the 19 studies were poorly designed and not useful for determining the efficacy of massage. Six studies examined massage as a treatment by itself, not used in conjunction with other therapies, but the results were inconclusive. In 14 studies in which massage was used along with other therapies, the study designs were flawed in that one could not assess how much massage contributed to the patient’s recovery as apart from the other therapies. Thus no recommendations could be made, except that further studies are needed which specify the frequency of massage treatments, their duration, number of sessions, and specific technique employed.