

Yoga and the Back and Neck

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The contents of this bibliography do not provide medical advice and should not be so interpreted. Before beginning any exercise program, see your physician for clearance.

NOTE: See also the “Yoga Injuries and Contraindications” bibliography.

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and exploring how energy flows through the body to create the forms and shapes at the heart of the choreography of Yoga Theatre.”

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“... Eric Ebbeson, 57, ... says he fit the typical male profile of being hesitant to try yoga.

“There’s a perception out there that yoga is an esoteric, slightly weird, kind of female type of thing. The type of thing where real guys don’t do yoga,” he says. ‘I never would have done yoga without an up-close look at it, seeing how much it helped my wife, and it still took me six years to try it.’

“Six years with a major pain in the back, that is. Five years after having back surgery, Ebbeson was seeing significant signs of sciatic flare-up. His doctor gave him a choice: rehabilitation or yoga. He chose yoga.

“I couldn’t drive to Portsmouth without pain getting in the way,’ he said. ‘A couple months ago I drove to Cleveland to visit our son. Twelve hours in the car without a problem.’”

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“*The Yoga of Healing*, an anthology of articles published in *The Hindu* examines eight systems of healing—allopathy, Ayurveda, homeopathy, acupuncture, pranic healing, Reiki, Yoga, and psychoanalysis—their approach to sickness, their intrinsic healing power, and their limitations. Yoga expert T. K. V. Desikachar and allopathic surgeon Dr. Arjun Rajgopalan anchor a series of dialogues with specialists in the various fields. What emerges is the need for a synthesis—a mixing and merging of the positive aspects of all the systems, a need to discover a cohesive path towards holistic healing.” The second part of the book focuses on four common chronic conditions (asthma, backache, headache and high blood pressure), and panels of practitioners from the various disciplines outline how they would begin to treat these problems.

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Galantino, Mary Lou, Todd M. Bzdewka, Jamie L. Eissler, Matthew L. Holbrook, Eric P. Mogck, and John Farrar. The impact of modified hatha yoga on chronic low back pain: A pilot study. Unpublished, 2002.

Abstract: Purpose: The purpose of this pilot study was to determine the effects of a six-week modified hatha yoga protocol for chronic low back pain patients. Subjects: Twenty-two subjects (M=4; F=17), between the ages of 30 and 65, with chronic low back pain (CLBP) were randomized to either the control or yoga-based intervention. Methods: A specific CLBP yoga protocol designed and modified for this population by a certified yoga instructor was administered for one hour, twice a week for six weeks. Primary functional outcome measures included the forward reach (FR) and sit and reach (SR) tests. All participants completed Oswestry Disability Index (ODI) and Beck Depression Inventory (BDI) questionnaires. Guiding questions were used for qualitative data analysis to ascertain how yoga participants perceived the instructor, group dynamics, and the impact of yoga on their life. Analysis: Data were analyzed using chi-square to examine differences between the groups. Qualitative data were analyzed through frequency of positive responses. Results: An uneven dropout of subjects and larger than expected baseline scores limited the power of the analysis and no statistical significance was found. Trends in the functional measures showed improved balance and flexibility and decreased disability and depression for the yoga group. Significant limitations included a high dropout rate in the control group and large baseline differences in the secondary measures. Analysis of the qualitative data revealed the following

frequency of responses: 1) group intervention motivated the participants and 2) yoga fostered relaxation and new awareness/learning.

Conclusion: Patients with CLBP may benefit from a modified yoga-based intervention. The impact on depression and disability may be a primary outcome for further study. Additional functional outcome measures should be explored. This pilot study supports the need for further research in the effect of yoga for this population.

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Summary: Provides an evidence summary and concludes that the use of Yoga is consistent with recommendations for activity for patients with low back pain. It cautions, however, that the literature evaluating the effectiveness of Yoga for this condition is scant and thus that it is unclear if Yoga is equivalent to, or superior to, standard therapies.

Grilley, Paul. The myth of the ideal neck. *My Yoga Mentor*, Aug 2005, no. 22. Article available online: http://www.yogajournal.com/teacher/1651_1.cfm.

"It's a myth that the neck has an ideal form or shape. As yoga teachers, it is not our job to realign our students' spines to form some ideal curve. Our job is to help them move as needed."

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The author is a licensed physical therapist and certified Iyengar Yoga teacher. Her recommendations in this article were endorsed by Jim Baltzell, M.D., in a follow-up letter to the editor in the Source 2001 issue of *Yoga Journal*.

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“Are there one or more students in your yoga class with the following characteristics? Long-term pain and tension in the neck and shoulders which is temporarily relieved by stretching and relaxing, but which is resistant to long-term improvement. Round-shouldered ‘slouch’ appearance with the head held forward. Protruding and weak-looking abdomen; Small and/or flat bottom. Short and tight hamstrings—difficulty with forward bends. Pelvis held very far forward, usually with the tailbone tucked under.” The author provides recommendations for correcting these imbalances [which she refers to as “teenage posture.”]

It's all in the spine. *Yoga Today*, no. 1., pp. 17.

Iyengar, B. K. S. Backache; Coccyx (pain and displacement); Displacement of the spinal discs; Hunch-back; Sciatica. In B. K. S. Iyengar, *Light on Yoga*. Rev. ed. New York: Schocken, 1979, pp. 490; 492-493; 495; 499; 504.

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“You’ve been practicing yoga for awhile. You’ve started to feel a sense of accomplishment in many of the poses. You can get through a couple rounds of the sun salutation without collapsing. So, why is downward facing dog pose still so difficult? Does your teacher seem to make you hold it forever? Or maybe you’re an advanced student and down dog is a breeze for you. But you’re trying to learn headstand or (are they kidding?) handstand, and you feel as though you’re never going to be strong enough (not to mention brave enough) to get up into, much less hold, these challenging inversions. The issue in all these (and many other) poses may be learning to use your arms and shoulders as a team.”

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Khalsa, Nirvair Singh. *Heal Your Back Now! Through Emotional Awareness, Affirmations, & Kundalini Yoga & Meditation as Taught by Yogi Bhajan*. 1998. A 50-minute video also available.

Kiley, Ellen. *ScoliYoga* DVD and book. Forthcoming 2005. URL: <http://www.scoliyogi.com>.

From the website: “Ellen Kiley is a graduate of Brown University . . . and a Jivamukti certified Yoga Instructor, teaching classes and workshops in Maine, Georgia, and throughout the US. She has had extensive spine-fusion surgery for scoliosis, and is experienced in creating modified yoga practices for people with special needs, especially the conditions which accompany scoliosis. The ScoliYoga program is designed to work in conjunction with medical advice to improve the effectiveness of appropriate medical treatment . . .

“Nowadays, many people with scoliosis are turning to yoga as either an alternative or supplement to physical therapy, bracing and/or surgery. So far nobody claims to have completely reversed a scoliosis curvature with yoga, but many have increased strength, decreased pain, and reduced their curvatures. Certainly there is widespread agreement that yoga helps people with scoliosis live fuller, happier, more physically engaged lives, and may prevent the further progression of a curve . . .”

Klinck, Melany. Yoga: An ancient path to wellness. Written for Mercantile Bank. Article available online: <http://cybrary.mercantilebk.com/mercantile/e-news/health.asp>. (The author begins the article by telling how Yoga helped to eliminate her searing back pain.)

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Kozak, Sandra Summerfield. Banish back pain: The pelvic stabilization series. *Yoga International*, Feb/Mar 2001, pp. 90-97. See also follow-up letters to the editor and Sandra Summerfield Kozak’s reply in the Jun/Jul 2001 issue of *Yoga International*, pp. 12-14.

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Kraftsow, Gary. Neck and shoulders; Upper and lower back [includes scoliosis]. In Gary Kraftsow, *Yoga for Wellness: Healing with the Timeless Teachings of Viniyoga*. New York: Penguin/Arkana, 1999, pp. 143-158; 159-183. (Case studies for kyphosis, lower back, and scoliosis.)

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“A yoga-based regimen can help dramatically decrease recovery time for lower back injuries.

Lakshmi, D. Integrated approach of yoga therapy of asthma, back pain, cervical spondylosis, GI disorders, and headache. Vivekananda Kendra Yoga Research Foundation, 1991.

Lasater, Judith. Down in the back: Poses for lower back pain. *Alternative Therapies*, Nov 1995, 1(5):72-82.

_____. Stability regained: Realigning the sacrum in asana. *Yoga International*, Apr/May 1999, pp. 43-47.

_____. Sit up & take note: If you’re having difficulty meditating because of back pain, you could be sitting incorrectly. *Yoga Journal*, Jul/Aug 2000, pp. 74-77.

_____. Out of joint. *Yoga Journal*, Sep/Oct 2001. Article available online:
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“This student [described by another poster to Kin-yoga] has a condition called spinal stenosis, of which there are different types, and the frequently recommended exercise program is forward flexion exercises.

“It has been my experience that, although forward bending (these people tend to favor that position anyway because it relieves pain) is generally prescribed, it does not work (in the long term) and does not really solve the problem. Stenosis is similar to spondylolisthesis for which flexion is usually recommended and extension contraindicated.

“The problem with all of this, as I see it, is that, although the back is the symptom, it is not the cause of the problem and we are treating symptoms and not causes. Complicating the issue is that a significant number of people with stenosis, spondylolisthesis, or any of it will also have osteoporosis. NOW, what are we to do? Flexion contraindicated in one and extension in the other and the person has both conditions. Not only that, but in a significant number of people, ALL of these conditions are “silent,” and we do not know if they have any pathology in the back at all.

“One of the ways that I have dealt with this dilemma is to work on hip mobility. Almost to a person, most people, including some very young ones, will have limited hip mobility, especially hip extension and internal rotation. Because the muscles of the hips are connected to the pelvis and the lower back, restriction in various muscles causes a change in back alignment that may be manifested as an increased lumbar lordosis (in standing), stenosis, spondylolisthesis, herniated discs, and so on. I have found clinically that if I can relieve the hip restriction, the alignment of the back is improved, frequently the person is now asymptomatic, and then I do neither flexion nor extension exercises but concentrate on lumbar stabilization—strengthening of the transversus abdominis and back extensors primarily during all movement, including Yoga—general strength, flexibility, and balance.

“Now, how to deal with these issues on a practical basis. What I would recommend is don’t teach your students anything you are unsure of. When in doubt, don’t. Err on the side of caution. It takes just one movement, sometimes very slight, to cause an injury from which the person will need several months to recover. I, and other PTs, can tell you that our clinics are full of such people. For persons with known osteoporosis, spinal stenosis, spondylolisthesis, or other back pathology, I would like to suggest that you send them to a medical professional (usually a PT) who is a geriatric specialist and who can assess the person on an individual basis so that whatever exercises they are given are more likely to be safe and therapeutic. As I say that, I know that there are many PT’s who are not aware of contraindicated movement for osteoporosis, so that is not necessarily the answer either.

“I might suggest that you read an article just published in the April 2005 IDEA Fitness Journal, ‘Designing a Yoga Program for Active Seniors by Leigh Crews.’ She addresses arthritis, hypertension, and osteoporosis as conditions about which to be aware.”

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This workshop “combines the most effective back-care principles of body alignment, somatic awareness movements, and medical research with the healing, nurturing qualities of Kripalu Yoga. In this workshop, you’ll learn to: adapt Yoga postures to your body’s needs; slow down and listen to your body; relax body and mind through restorative (supported) yoga poses and breathwork. This program is particularly helpful for people who want to do Yoga and other activities but find them painful.”

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“Sandra Safadirazieli began exploring yoga when she was searching for ways to reduce pain associated with scoliosis. She found that the precision and awareness of an Iyengar-based practice helped ease her pain and helped her better understand the various imbalances created by scoliosis. She continues to study with Elise Miller and is a graduate of the PYS Advanced Studies Program.”

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From Vijay Vad, M.D.: This prospective randomized trial evaluated the efficacy of the Back Builders exercise program on patients with discogenic low back pain. Inclusion criteria : MRI documented evidence of disc herniation with at least 3 months symptoms of low back and/or leg pain. Exclusion criteria : prior history of back surgery. The patients were randomized into two groups. Group 1(n=25) underwent 15 minutes three times a week of the Back Builders program utilizing principles of yoga(mind-body principles) and Pilates designed for patients with disc origin low back pain with exercise poses minimizing disc pressures combined with a back cryobrace to be worn 15 minutes before bedtime daily. Group 2(n=25) underwent medication treatment with Celebrex 200 mg daily with Vicodin for breakthrough pain with a back cryobrace to be worn 15 minutes before bedtime daily. Both groups were age and sex matched. Average age for Group 1 was 31.4 years and for Group 2 was 30.9 years (p>0.05).

Outcome measures included Roland-Morris scale, pain score, patient satisfaction and distance from finger to floor measured in centimeters. A successful outcome was defined as greater than 50% pain reduction with good or better patient satisfaction. At minimal 3 months of follow up with an average follow-up of 3.3 months (range 3 to 4 months), Group 1 had 80% successful outcome with Group 2 reporting 44% successful outcome (p=0.001). In Group 1, 3 out of 25 (12% of patients) reported recurrence of acute symptoms versus 14 out of 25 (56% of patients) in Group 2 reported recurrence of acute symptoms (p=0.001).

The initial results at 3 months follow-up suggest that a well-designed program for patients with disc problems that minimizes disc pressures while restoring flexibility, strength, endurance and posture may yield superior results to oral medications alone when combined with use of a back cryobrace. It further suggests that a properly designed program minimizes chances of recurrence of acute low back pain episodes. The study needs further follow-up of minimal one-year duration before further scientifically solid conclusions can be made.

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_____, **J. Petronis, D. Smith, D. Goodrich, J. Wu, N. Ravi, E. J. Doyle, Jr., R. Gregory Juckett, M. Munoz Kolar, R. Gross, and L. Steinberg.** Effect of Iyengar yoga therapy for chronic low back pain. *Pain*, May 2005; 115(1-2):107-117.

Abstract: Low back pain is a significant public health problem and one of the most commonly reported reasons for the use of Complementary Alternative Medicine. A randomized control trial was conducted in subjects with non-specific chronic low back pain comparing Iyengar yoga therapy to an educational control group. Both programs were 16 weeks long. Subjects were primarily self-referred and screened by primary care physicians for study of inclusion/exclusion criteria. The primary outcome for the study was functional disability. Secondary outcomes including present pain intensity, pain medication usage, pain-related attitudes and behaviors, and spinal range of motion were measured before and after the interventions. Subjects had low back pain for 11.2+/-1.54 years and 48% used pain medication. Overall, subjects presented with less pain and lower functional disability than subjects in other published intervention studies for chronic low back pain. Of the 60 subjects enrolled, 42 (70%) completed the study. Multivariate analyses of outcomes in the categories of medical, functional, psychological and behavioral factors indicated that significant differences between groups existed in functional and medical outcomes but not for the psychological or behavioral outcomes. Univariate analyses of medical and functional outcomes revealed significant reductions in pain intensity (64%), functional disability (77%) and pain medication usage (88%) in the yoga group at the post and 3-month follow-up assessments. These preliminary data indicate that the majority of self-referred persons with mild chronic low back pain will comply to and report improvement on medical and functional pain-related outcomes from Iyengar yoga therapy.

_____, **Lois Steinberg, and John Petronis.** Therapeutic application of Iyengar Yoga for healing chronic low back pain. *International Journal of Yoga Therapy*, 2003, no. 13, pp. 55-67.

Abstract: Low back pain is a significant public health problem that has reached epidemic proportions. It places a substantial burden on the workforce and the health care system. It has proven very difficult to treat, and it is one of the most commonly reported reasons for the use of complementary and alternative medicine. Many different methods of Yoga exist and each has its own technique for preventing and treating disease. This article describes the rationale and method for the therapeutic application of Iyengar Yoga for chronic low back pain. Preliminary results are also presented from a pilot study evaluating the efficacy of a 16-week program of Iyengar Yoga therapy in persons with non-specific chronic low back pain.

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Yoga for a Better Back video series. 2 videos. 90 minutes.

“Combines ancient yoga asanas with the latest in biomechanical techniques, this unique series presents a range of exercises to help give relief to chronic back pain sufferers. Taught by a Kripalu yoga instructor and a sports rehabilitation specialist, the first video is an hour long educational session for learning the exercises, while the second is a daily 30-minute routine.”

Yoga for a Strong and Healthy Back DVD. Yoga Zone. 40 minutes. (Beginner to intermediate.)

From a review by Olivia Voigts at Amazon.com: “. . . warrior pose and forward bends are just a few of the postures performed here that can improve spinal flexibility and help to avoid future back injuries. Beginners should find the first set easy to follow (the postures within this section are modified versions of what is yet to come). The second set incorporates some back bends and deeper poses that require greater agility and strength. Despite the increased difficulty here, participants of all levels can improve their flexibility without being overwhelmed by impossible poses . . .”

Yoga for Scoliosis video. Viewable online:
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Yoga for the back. *Bindu*, no. 9.

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[In Spanish.]

Yoga has helped where traditional medicine failed. *Independent*, 7 Oct 2000, p. 10.

“AS AN alternative to painkillers, physiotherapy or a consultation with an orthopaedic surgeon, patients of GPs in north-west London with back pain can now choose a course of yoga on the NHS instead.

“The Yoga Therapy Centre, based in the Royal Homoeopathic hospital in London, has contracted to provide treatment to the Harrow and East Kingsbury Primary Care Group, covering 100,000 patients, and will run sessions at Edgware Community Hospital. Patients referred by their GPs will be entitled to a course of eight sessions paid for by the NHS.”

Yoga may help alleviate back pain: Study pits yoga against painkillers. *Click2Houston.com*, 24 Sep 2002.

“‘What I’ve noticed, people, especially in the Eastern cultures, have very little low back problems. And I started investigating into why and realized there was a lot of incorporation of yoga into their culture and I thought maybe we could bring that concept to the West,’ Dr. Vijay Vad said.

“Vad is conducting a study to see which works best for lower back pain: yoga or prescription painkillers and anti-inflammatory drugs. After three months, almost twice the patients doing yoga felt better than the patients taking medicine.

“Michelle Ruggieri is one of Vad’s patients. She has a herniated disc and arthritis of the spine.

“‘I have a stabbing pain in my lower right side and just general pain in my lower back. And it hurts every day,’ Ruggieri said.

“Yoga has made a major difference in her pain.

“‘On a scale of one to 10, it was probably a nine, at times a stabbing pain of 10. Now, I would say it’s about four to five,’ Ruggieri said.

“‘This is very different from regular yoga. We’ve taken out a lot of the traditional yoga postures, which really put tremendous pressures on the disc,’ Vad said.

“Along with yoga expert Jennifer Walker, Vad’s created a program that can best be called ‘medical yoga.’

“‘Dr. Vad and I modified a lot of the poses so that they were easy and accessible for people with back pain,’ Walker said.

“The more flexible you are, the less pressure on the disc and eventually it’s building abdominal strength. The greater strength you have on the abdominals, the less pressure on the disc,” Vad said.”

Yoga Therapy for Knees and Shoulders. Yoga International Reprint Series. Honesdale, Pa.: Yoga International. Tel.: 717-253-4929, email: yimag@epix.net.

This booklet includes the following articles: Know Your Knees: A Therapeutic Approach to Asana; Giving Your Knees Support: Therapy in Action; Wings of the Heart: Working with the Shoulders; Yoga Therapy for Shoulders; Don’t Let Osteoarthritis Get the Best of You.

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Abstract: In 70 children with mild idiopathic scoliosis I degree by the method of Cobb, participating in two or several rehabilitation camps, and in the control group of 22 healthy children ventilatory lung parameters: vital capacity—FVC, FVC%pred., Maximal forced expiratory volume one sec.—FEV1, FEV1%pred., FEV1% FVC, and Maximal Mid Expiratory Flow—MMEF, MMEF%pred. and Maximal Voluntary Ventilation—MVV were determined. Tests were carried out with use of the Vitalograph and Jaeger Spirometer after several four-week rehabilitation camps. Intensive movement rehabilitation with breathing exercises and relaxation with Yoga was used in children. The mean values of spirometric parameters were correlated between the examined groups and statistically significant increased values of parameters MMEF% pred., MVV were defined in the group of children with scoliosis.

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Of Related Interest

Aldridge, Susan. Lower back pain affects those in less-developed countries. *Health and Age*, 20 Jan 2003. Article available online: <http://www.phayul.com/news/print.asp?id=3039>.

“A new study shows that lower back pain is a serious problem in rural communities in Tibet . . . They investigated a group of 500 adults from 19 Tibetan villages. One third had lower back pain at the time of the interview, while 40 percent had experienced lower back pain in the previous 12 months. Of those with back pain, 20 percent had significant disability—being unable to carry out key tasks like fetching water or harvesting. Researchers noted that people tended not to bend their knees when doing ground level tasks, . . . so local health workers will now advise people after safer lifting and bending. And a ‘back happ’ tap-stand has been introduced so people can fill heavy water containers without straining their backs.”

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“Common movement habits keep clients returning with complaints of low-back pain. Once these are identified, these clients can be instructed in how to help themselves.”

Cardon, Greet M., Dirk L. R. De Clercq, and Ilse M. M. De Bourdeaudhuij. Back education efficacy in elementary schoolchildren: A 1-year follow-up study. *Spine*, 1 Feb 2002, 27(3):299-305.

Abstract: DESIGN: A control group–designed 1-year follow-up study involving 9 to 11-year-old schoolchildren who followed back education. OBJECTIVES: To evaluate the efficacy of a back education program, consisting of six sessions of 1 hour each, in elementary school. SUMMARY OF BACKGROUND DATA: In surveys among children and teenagers during the past few years, as many as half of all children in a community report a history of low back pain. Although several authors advocate the implementation of back education in elementary school, no guidelines exist and little is known about the efficacy of such a program. METHODS: A total of 198 children (subjected to back education) and 165 controls performed a practical test, evaluating the use of back care principles while sitting, taking off shoes, picking up a pen, and handling a load and a book bag. Post-tests were performed within 1 week after the intervention, after 3 months, and after 1 year. The week prevalence of back and neck pain was evaluated at these test moments in extended samples of intervention children (n = 347) and controls (n = 349). To evaluate habit changes, a limited group of intervention pupils (n = 38) and controls (n = 31) was additionally evaluated in a candid camera observation at the last post-test. RESULTS: At all post-tests intervention pupils scored significantly higher ($P < 0.001$) than controls for all practical test items. Candid camera evaluation scores were higher in the intervention group sample compared with the control group sample for four of the eight evaluated items. Following back education significantly decreased the week prevalence of back and neck pain. CONCLUSIONS: Back education in elementary schoolchildren is efficacious up to 1 year. The role of early back education in preventing back pain at the adult age merits further attention.

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“Fifty years ago, researchers at Johns Hopkins University, in Baltimore, began to track medical students to find out what triggers back pain. After studying 1,135 students, the researchers found that those who smoked or had high cholesterol or high blood pressure—the primary causes of heart disease—were twice as likely to complain of lower-back pain or suffer degeneration of disks in their backs. That's because the conditions cause blood vessels to clog, which decreases blood supply to the lower back and could lead to back degeneration and pain.”

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“Almost one child in 10 shows signs of back problems before puberty, a new British study finds.

“Using magnetic resonance imaging (MRI), researchers found that about 9 percent of 10-year-olds studied already showed signs of an abnormality in at least one disc in their spine.

“‘The observation that 14 [out of 154] 10-year-olds had signs of asymptomatic disc degeneration was a surprise. Previous thinking was that disc degeneration occurred after puberty,’ says study author Dr. Francis Smith, a consultant radiologist and sports medicine physician at Woodland Hospital in Aberdeen, Scotland.”

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“For fragile, chronically painful backs or for elderly, very stiff backs. Can be used by person confined to bed.”

_____. *Somatic Exercises™ for Rounded Shoulders and Depressed Chests* audiocassettes. Novato, Calif.: Novato Institute for Somatic Research.

“Reverses stooped, imbalanced posture that begins in middle years; also relieves depressed breathing.”

_____. *Somatic Exercises™ for the Lower Back* audiocassettes. Novato, Calif.: Novato Institute for Somatic Research.

“A graduated program for relaxing and gaining control of the lumbar spine and trunk.”

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“Specially programmed for sufferers of chronic soreness, frequent tension headaches, and TMJ problems.”

Hayden, Jill A., Maurits W. van Tulder, and George Tomlinson. Systematic review: Strategies for using exercise therapy to improve outcomes in chronic low back pain. *Annals of Internal Medicine*, 3 May 2005, 142(9):776-785. Author email: jhayden@iwh.on.ca.

Abstract: Background: Exercise therapy encompasses a heterogeneous group of interventions. There continues to be uncertainty about the most effective exercise approach in chronic low back pain. Purpose: To identify particular exercise intervention characteristics that decrease pain and improve function in adults with nonspecific chronic low back pain. Data Sources: MEDLINE, EMBASE, PsychInfo, CINAHL, and Cochrane Library databases to October 2004 and citation searches and bibliographic reviews of previous systematic reviews. Study Selection: Randomized, controlled trials evaluating exercise therapy in populations with chronic (>12 weeks duration) low back pain. Data Extraction: Two reviewers independently extracted data on exercise intervention characteristics: program design (individually designed or standard program), delivery type (independent home exercises, group, or individual supervision), dose or intensity (hours of

intervention time), and inclusion of additional conservative interventions. Data Synthesis: 43 trials of 72 exercise treatment and 31 comparison groups were included. Bayesian multivariable random-effects meta-regression found improved pain scores for individually designed programs (5.4 points [95% credible interval (CrI), 1.3 to 9.5 points]), supervised home exercise (6.1 points [CrI, -0.2 to 12.4 points]), group (4.8 points [CrI, 0.2 to 9.4 points]), and individually supervised programs (5.9 points [CrI, 2.1 to 9.8 points]) compared with home exercises only. High-dose exercise programs fared better than low-dose exercise programs (1.8 points [CrI, -2.1 to 5.5 points]). Interventions that included additional conservative care were better (5.1 points [CrI, 1.8 to 8.4 points]). A model including these most effective intervention characteristics would be expected to demonstrate important improvement in pain (18.1 points [CrI, 11.1 to 25.0 points] compared with no treatment and 13.0 points [CrI, 6.0 to 19.9 points] compared with other conservative treatment) and small improvement in function (5.5 points [CrI, 0.5 to 10.5 points] compared with no treatment and 2.7 points [CrI, -1.7 to 7.1 points] compared with other conservative treatment). Stretching and strengthening demonstrated the largest improvement over comparisons. Limitations: Limitations of the literature, including low-quality studies with heterogeneous outcome measures and inconsistent and poor reporting; publication bias. Conclusions: Exercise therapy that consists of individually designed programs, including stretching or strengthening, and is delivered with supervision may improve pain and function in chronic nonspecific low back pain. Strategies should be used to encourage adherence. Future studies should test this multivariable model and further assess specific patient-level characteristics and exercise types.

Journal editors' notes: Context: Which types of exercise therapy are most beneficial to patients with nonspecific chronic low back pain? Contribution: This Bayesian meta-regression of 43 trials suggests that the most effective exercises for improving pain and function in adults with chronic low back pain are stretching and strengthening, respectively. Exercise performed over longer periods of time seemed more effective than exercise performed less than 20 hours total. Supervised programs that were individually tailored seemed to be more effective than other delivery modes. Cautions: Trials used various measures to assess pain and function, and many were small and of low quality.

_____, **Maurits W. van Tulder, Antti V. Malmivaara, and Bart W. Koes.** Meta-analysis: Exercise therapy for nonspecific low back pain. *Annals of Internal Medicine*, 3 May 2005, 142(9):765-775. Author email: jhayden@iwh.on.ca.

Abstract: Background: Exercise therapy is widely used as an intervention in low back pain. Objective: To evaluate the effectiveness of exercise therapy in adult nonspecific acute, subacute, and chronic low back pain versus no treatment and other conservative treatments. Data Sources: MEDLINE, EMBASE, PsychInfo, CINAHL, and Cochrane Library databases to October 2004; citation searches and bibliographic reviews of previous systematic reviews. Study Selection: Randomized, controlled trials evaluating exercise therapy for adult nonspecific low back pain and measuring pain, function, return to work or absenteeism, and global improvement outcomes. Data Extraction: Two reviewers independently selected studies and extracted data on study characteristics, quality, and outcomes at short-, intermediate-, and long-term follow-up. Data Synthesis: 61 randomized, controlled trials (6390 participants) met inclusion criteria: acute (11 trials), subacute (6 trials), and chronic (43 trials) low back pain (1 trial was unclear). Evidence suggests that exercise therapy is effective in chronic back pain relative to comparisons at all follow-up periods. Pooled mean improvement (of 100 points) was 7.3 points (95% CI, 3.7 to 10.9 points) for pain and 2.5 points (CI, 1.0 to 3.9 points) for function at earliest follow-up. In studies investigating patients (people seeking care for back pain), mean improvement was 13.3 points (CI, 5.5 to 21.1 points) for pain and 6.9 points (CI, 2.2 to 11.7 points) for function, compared with

studies where some participants had been recruited from a general population (for example, with advertisements). Some evidence suggests effectiveness of a graded-activity exercise program in subacute low back pain in occupational settings, although the evidence for other types of exercise therapy in other populations is inconsistent. In acute low back pain, exercise therapy and other programs were equally effective (pain, 0.03 point [CI, -1.3 to 1.4 points]). Limitations: Limitations of the literature, including low-quality studies with heterogeneous outcome measures inconsistent and poor reporting, and possibility of publication bias. Conclusions: Exercise therapy seems to be slightly effective at decreasing pain and improving function in adults with chronic low back pain, particularly in health care populations. In subacute low back pain populations, some evidence suggests that a graded-activity program improves absenteeism outcomes, although evidence for other types of exercise is unclear. In acute low back pain populations, exercise therapy is as effective as either no treatment or other conservative treatments.

Journal editors' notes: Context: Many experts recommend exercise therapy for nonspecific low back pain. Contribution: This meta-analysis summarizes data from 61 randomized, controlled trials that compared exercise therapy with placebo, no treatment, conservative management, or another exercise group. Exercise therapy decreased pain and improved physical function by modest amounts in adults with chronic low back pain. In adults with acute low back pain, exercise therapy, conservative management, and no treatment had similar effects on pain. Trials used various measures to assess pain and function, and many were small and of low quality.

Ivanhoe Newswire. Straightening scoliosis. Dallas: Ivanhoe Newswire, 7 Jan 2002. Article available online: www.ivanhoe.com.

On a new surgical procedure for straightening the spine in even the most extreme cases of scoliosis.

Jacob, Tamari, Mario Baras, Aviva Zeev, and Leon Epstein. Physical activities and low back pain: A community-based study. *Medicine & Science in Sports & Exercise*, Jan 2004, 36(1):9-15. Author email: tamar@ycariel.yosh.ac.il.

Abstract: Purpose: Very little is known about the relationship between physical activity and low back pain (LBP) in general populations. This study aimed to evaluate the relationship between different dimensions of physical activity and LBP among all adults of a defined community. Methods: A cross-sectional survey addressed all adults aged 22-70 of a single town. Inhabitants were asked to complete a self-administered questionnaire regarding physical activities, LBP, and related characteristics. The Beacke Physical Activity Questionnaire evaluated physical activity, and the Modified Roland and Morris Disability Questionnaire, a pain severity scale, and the Pain Symptoms Frequency and Bothersomeness Indices evaluated LBP. Results: High occupational activity demands contributed to increased LBP prevalence, and, conversely, high sporting activity participation contributed to a decline in all LBP measures. Subjects free of LBP and subjects who participate in sporting activities are more likely not to smoke and not to participate in high occupational activity demands. Type of sporting activity was not associated with LBP prevalence or severity. Conclusions: Different dimensions of physical activity yield different relationships to LBP. There are several shared characteristics of those participating in sport on a regular basis and those free of LBP. Both groups present a healthier lifestyle. Although LBP was less frequent among those who participate in sporting activities, participating in sporting activities did not contribute independently to a lower prevalence of LBP. However, once LBP was established, participating in sporting activities contributed indirectly to its severity.

Low back pain (LBP) is the primary cause of activity limitation in both men and women (12) and the second most frequent reason, after upper respiratory infections, for physician visits (7). Evidence of the contribution of physical activity to the prevention and management of LBP is still inconclusive. In a review of both randomized trial and observational studies (8,14), the authors concluded that there is limited evidence that exercises to strengthen back and abdominal muscles and to improve overall fitness can decrease the incidence and duration of LBP episodes. These conclusions should be viewed cautiously as they are based on studies conducted in the workplace rather than in clinical settings or among general populations. LBP was less frequent among those participating in sporting activities in a study conducted in a clinical setting (6) and among industrial workers (23), but this relation was not established in a community-based study (13) and in another study of industrial workers (16). Campello et al. (4) suggested that the relationship between level of activity and LBP follows a U-shape curve (too little or too much activity is equally hazardous for the back). There is evidence of indirect association between LBP and sports physical activities (1), and of direct association between LBP prevalence and physical load during work (1,13). In a review of the literature regarding low-status jobs and their relationship to health risks (17), the authors claimed that physically monotonous or repetitive work, which is very common in low-status jobs, are associated with an increase in neck, shoulder, and low back problems.

Possible explanations for the inconsistent conclusions of previous studies might be differences between populations, inappropriate sampling, or the use of inappropriate measures of physical activity. Most of the above-mentioned studies addressed LBP patients in clinical settings or in workplace. Evidence stemming from the general population that represents workers and nonworkers, participants and nonparticipants in regular sporting activities, participants in various types of sporting activities, and its relationship with LBP prevalence and severity is quite rare if it exists at all. In addition, most available studies did not use a valid measure of physical activity in the context of back pain and therefore should be interpreted cautiously. In fact, studies in which physical activities were evaluated globally (17,18) failed to detect a relationship between physical activity and LBP, whereas a study (13) that used a measure that differentiated between different types of physical activities succeeded in finding such a relationship. An association between leisure time physical activities and LBP has not been demonstrated in previous studies to date (13).

The International Paris Task Force on back pain (1) confirmed that the apparently contradictory results can be partially explained by lack of uniformity in the measurements of physical activity and by the wide range of populations studied (e.g., athletes and nonathletes). Recognizing evidence for different effects of occupational and nonoccupational activities on LBP, the task force recommended the use of measurements that differentiate between three types of activity: activities of daily living, occupational activities, and recreational and sport-related activities, because these may not be associated with LBP in the same way.

Following the task force recommendations, and because of the paucity of information regarding physical activity in a general population and methodological flaws in most previous studies in this area, we chose to investigate occupational, sporting, and leisure time physical activities among all adults of a defined community (nonathletes) and their relation to LBP prevalence and severity. We hypothesized that different types of sporting activities might relate differently to LBP prevalence and therefore evaluated this potential relationship as well.

Gathering information about the relationship between the different dimensions of physical activities and LBP in a defined community, and not only among those who sought care or among subjects in working places, as was done in most previously published work in this area, may

strengthen the validity of the present study results and therefore contribute important knowledge to the existing ambiguous evidence. Thus, the aim of the study was to evaluate the relationship between LBP prevalence and severity and three dimensions of physical activity in a defined community.

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Massey, Patrick B, M.D., Ph.D., and Adam Perlman, M.D., M.P.H. Lasting resolution of chronic thoracic neuritis using a martial-arts–based physical therapy. *Alternative Therapies*, May 1999, 5(3):103-104. (See also letter to the editor “Martial-arts–based physical therapy one of several techniques to alleviate muscle spasms” in the September 1999 issue, 5(5):99, which includes reference to the cat pose.)

Nahit, Elizabeth S., Christina M. Pritchard, Nicola M. Cherry, Alan J. Silman, and Gary J. Macfarlane. The influence of work related psychosocial factors and psychological distress on regional musculoskeletal pain: A study of newly employed workers. *Journal of Rheumatology*, Jun 2001, 28(6):1378-1384. Abstract available online: <http://www.jrheum.com/abstracts/abstracts01/1378.html>.

“The study has shown that adverse work related psychosocial factors, in particular aspects of job demand and control, influence the reporting of regional musculoskeletal pain [including back, shoulders, arms, and knees]. This occurs even after only short term exposure. The odds of reporting these adverse exposures are increased when pain is reported at multiple sites.”

Polatin, P., R. K. Kinney, R. J. Gatchel, et al. Psychiatric illness and chronic low-back pain. *Spine*, 1993, 18:166-171.

Ponte, David Joseph, Gail J. Jensen, and Barbara E. Kent. A preliminary report on the use of the McKenzie Protocol versus Williams’ Protocol in the treatment of low-back pain. *The Journal of The International Association of Yoga Therapists*, 6:1-9.

Sarno, John E., M.D. *Healing Back Pain: The Mind-Body Connection*. New York: Warner Books, 1991.

From Dean Hudson, Kripalu Yoga Teachers mailing list: “I would highly recommend John Sarno’s *Healing Back Pain*. I used to suffer from periodic back pain and underwent numerous treatments which never seemed to help very much, but reading *Healing Back Pain* did. When I began to experience a flair-up, I would pull the book out again and review and relief would soon follow. I did not find the book to be condescending to psychotherapists either. In fact, as a psychotherapist myself, I found the logic and guidance behind the book to be pretty sound. The central premise of the book is that most back pain is not caused by structural problems but related to a syndrome triggered by repressed anger and stress. The pain is real and has a physiological basis, but the remedy lies in addressing the underlying psychological issues. At first I was skeptical and most people will naturally initially feel some resistance to the idea, but how do you

argue with success? I haven't experienced back pain in so long now that I had almost forgotten about the book . . .”

Schechter, David. *The MindBody Workbook*. 5th ed. URL: <http://www.mindbodymedicine.com>.

From IAYT member Matt Taylor: [This] ninety-page workbook . . . offers a systematic, thirty-day program to work through the emotional issues that may be underlying your client's back pain or other illnesses . . . Dr. Schechter is a student and colleague of Dr. John Sarno, M.D., who has introduced the concept of the emotional connection to so many types of pain connections. [I would like to thank Dr. Schechter for his] part in raising awareness in the medical community [regarding] the important role our emotions play in supporting others with pain. Bringing such a practical tool to the clinic goes a long way toward letting our practice catch up with our science of bodymind integration.

Taimela, S., C. Diederich, M. Hubsch, and M. Heinricy. The role of physical exercise and inactivity in pain recurrence and absenteeism from work after active outpatient rehabilitation for recurrent or chronic low back pain: A follow-up study. *Spine*, 2000, 25(14):1809-1816.

Tetley, Michael. Instinctive sleeping and resting postures: An anthropological and zoological approach to treatment of low back and joint pain. *British Medical Journal*, 23-30 Dec 2000, 321:1616-1618.

Turner, Chris A. The doctor's office: Acute back pain: Here today, here tomorrow! *Bixby Knolls Health Online Newsletter*, 2 Apr 2002. URL: <http://www.bixbyknollshealth.org/doctorsoffice.shtml>.

“Many believe acute back pain ‘will go away’ on its own in about 4-6 weeks with or without treatment. During 1998, an article published in the *British Medical Journal* suggested this was incorrect. The study involved 409 patients with acute low back pain who were observed for one year.

“About 90% discontinued treatment within 3 months suggesting most were doing just fine. That wasn't the case though. Only 25% did so because symptoms resolved. The remaining 75% reported persistent back pain throughout the year.

“Bottom Line - A clear majority continue to experience flare-ups and remissions long after acute onset. Simply stated, these folks are well down the path in becoming chronic pain patients.

. . .

“Whichever [alternative] treatment you select, make sure it includes a back management training program, sometimes referred to as Back School where one learns to play a more active role in the recovery process.

“Instruction is either one-on-one or in small group settings. The program includes learning proper body mechanics when performing different activities of daily living (i.e., bending and lifting, sitting at the computer, reaching, etc.), along with increasing endurance, and performing exercises to enhance flexibility and strength.”

Ongoing Research

Courtney Buck

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Physical therapy graduate student conducting research on Yoga and back pain. Contacted IAYT 3/01.

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Investigating relaxation-related CAM therapies for chronic back pain. Funded by NIH (NCCAM)

Vickie Colapietro, M.D.

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Interested in doing a clinical trial comparing Yoga practice to standard physical therapy exercises (presented in a “sham yoga” fashion) for patients with chronic musculoskeletal neck and back pain. Contacted IAYT 12/13/01.

Priti Parmar

Pritiparmar55@hotmail.com

Is doing a dissertation as part of the final year of an acupuncture degree program comparing Yoga and acupuncture as treatment for sciatica. Contacted IAYT 3/8/01.

Robert B. Saper, M.D.

RSaper@moderncontinental.com

Dr. Saper is a family physician with a long-standing interest in Yoga. He began a 3-year NIH-funded fellowship in Complementary and Alternative Medicine Research at Harvard Medical School in June 2001 under the direction of Dr. David Eisenberg and is studying Yoga for chronic low back pain.

Karen J. Sherman, Ph.D., M.P.H.

Asst. Scientific Investigator

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URL: <http://www.clinicaltrials.gov/show/NCT00056212>

Dr. Sherman is an epidemiologist specializing in research on complementary and alternative therapies. She has obtained a grant from NIH (National Center for Complementary and Alternative Medicine) for a study comparing the effectiveness of yoga classes, exercise classes,

and a self-care book in the management of pain and function for people with low back pain. The study will run from July 1, 2002 – approx. July 1, 2004.

Further details: Back problems are among the most prevalent conditions affecting adults and are a leading reason for using complementary or alternative medical (CAM) therapies. Despite the common use of CAM therapies for back pain, little is known about how they compare with conventional treatments. This study will lay the groundwork for a full-scale trial that compares yoga with conventional exercise and usual care for chronic low back pain.

This study will randomize 30 people with chronic low back pain to each of the following groups: yoga, a conventional therapeutic exercise program, and usual care. There will be 12 weeks of weekly treatment and follow-up assessments via phone at 6, 12, and 26 weeks to measure each treatment's impact on symptoms, function, quality of life, and utilization and costs of back pain related care.

Vijay Vad, M.D., Ronald Mackenzie, M.D., and Leon Root, M.D.

Role of Back Builders program in treating discogenic low back pain
Hospital for Special Surgery, 535 East 70th Street, New York, NY 10021
Email: vadv@hss.edu

From Vijay Vad, M.D.: A prospective randomized trial evaluated the efficacy of the Back Builders exercise program on patients with discogenic low back pain. Inclusion criteria : MRI documented evidence of disc herniation with at least 3 months symptoms of low back and/or leg pain. Exclusion criteria : prior history of back surgery. The patients were randomized into two groups. Group 1(n=25) underwent 15 minutes three times a week of the Back Builders program utilizing principles of yoga(mind-body principles) and Pilates designed for patients with disc origin low back pain with exercise poses minimizing disc pressures combined with a back cryobrace to be worn 15 minutes before bedtime daily. Group 2(n=25) underwent medication treatment with Celebrex 200 mg daily with Vicodin for breakthrough pain with a back cryobrace to be worn 15 minutes before bedtime daily. Both groups were age and sex matched. Average age for Group 1 was 31.4 years and for Group 2 was 30.9 years (p>0.05).

Outcome measures included Roland-Morris scale, pain score, patient satisfaction and distance from finger to floor measured in centimeters. A successful outcome was defined as greater than 50% pain reduction with good or better patient satisfaction. At minimal 3 months of follow up with an average follow-up of 3.3 months (range 3 to 4 months), Group 1 had 80% successful outcome with Group 2 reporting 44% successful outcome (p=0.001). In Group 1, 3 out of 25 (12% of patients) reported recurrence of acute symptoms versus 14 out of 25 (56% of patients) in Group 2 reported recurrence of acute symptoms (p=0.001).

The initial results at 3 months follow-up suggest that a well-designed program for patients with disc problems that minimizes disc pressures while restoring flexibility, strength, endurance and posture may yield superior results to oral medications alone when combined with use of a back cryobrace. It further suggests that a properly designed program minimizes chances of recurrence of acute low back pain episodes. The study needs further follow-up of minimal one-year duration before further scientifically solid conclusions can be made.