



SCOLIOSIS RESEARCH SOCIETY

ALTERNATIVE TREATMENTS FOR SCOLIOSIS

**REPORT FROM THE
BRACING AND NON-OPERATIVE COMMITTEE**

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Introduction

The Bracing and Non-Operative Management Committee of the Scoliosis Research Society has reviewed a substantial body of scientific and lay literature regarding complementary and alternative medicine for the management of idiopathic scoliosis. After extensive review, it is our opinion that bracing and surgery are the only scientifically proven methods of treatment for idiopathic scoliosis. There is no scientific rationale for any other methods of treatment.

We have listed the methods that have been reviewed with comments regarding some of these methods.

Methods reviewed include, but are not limited to the following:

- Bracing
- Chiropractic
- Copes System
- Surface Electrical Stimulation
- Exercise and Physical Therapy
- Acupuncture
- Alexander Technique
- Aromatherapy
- Asco Treatment
- Ayurveda
- Biofeedback
- Color Therapy
- Cranio-Sacral Therapy
- Feldenkrals
- Herbalism
- Holistic Medicine
- Homeopathy
- Magnet Therapy
- Massage Therapy
- Meditation
- Pilates
- Polarity Therapy
- Rebirthing
- Reiki
- Rolfing
- Sensory Deprivation
- Therapeutic Touch
- Yoga

Members of the Scoliosis Research Society are encouraged to refer interested colleagues and patients to the book: *Voodoo Science: The Road From Foolishness to Fraud* by Robert Park, Ph.D. This book is published by Oxford University Press, Oxford and New York, 2000. In the preface to this book Dr. Park observes, ". . . many people choose scientific beliefs the same way they choose to be Methodists, or Democrats, or Chicago Cubs fans. They judge science by how well it agrees with the way they want the world to be." This book can give patients the tools to understand the validity of scientific study and to identify useless, unfounded, unscrupulous, and fraudulent alternatives for managing scoliosis.

ACUPUNCTURE

No effectiveness for scoliosis.

Origin: Ancient China

Treatment theory: Inserting very thin needles in the skin at key points to help regulate energy flow in the body. Vital life force or energy-chi is carried through 14 channels, called meridians, keeping the chi flowing through the body providing nourishment and strength. 12 of the channels are bilateral-exist on each side of the body. 2 channels run along the midline-one in front/one in back. These channels connect the interior and the exterior of the body. Specific organs are influenced. Placing needles at key points along meridians affects the related internal organs. Chi is strengthened, calmed or unblocked.

Presumed effect:

Many of the key points are located at cross sections of the autonomic nervous system-can explain why it helps to ease pain in the body even if it is far from the key point.

Scientific studies show effectiveness in lower back pain, other pain, and relieving pain that may occur after surgery.

Uses other than needles to the key points; (1) Acupressure-applying pressure through massage, touch..., (2)Heat-applying heat, cupping, (3) Electricity-applying electrical current, (4) Moxibustion-applying a burning herb-mugwort leaf.

ALEXANDER TECHNIQUE

No effectiveness for scoliosis

Origin: F.M. Alexander was an actor who had laryngitis. He noticed he had excess tension when speaking. He reduced the neck tension by the way he held his head so that the head no longer compressed the spine and the spine was free to lengthen.

Treatment: Change movement habits in our everyday activity. Use balance, support and coordination. Use proper amount of effort for each activity-no more, no less. Do everyday activities like sitting, lying down, standing, lifting with a minimum amount of strain. Change habits such as slumping, sitting improperly at a desk, etc. Stiffening of the head on the spine caused by these activities will be released.

Presumed effects:

Improve ease and freedom of movement.

Releases tension in the muscles.

Ease pain from habitual tightening of the muscles.

AROMATHERAPY

No effectiveness for scoliosis.

Origin: Ancient

Treatment: Practice of using plant essences to promote health and well being using pure essential oils. These oils are steam distilled or cold pressed from flowers, fruit, bark, and roots. Essential oils

can be sedating or stimulating and have antibacterial and antiviral qualities. They do not leave behind dangerous toxins.

Presumed effect:

Eases aches, pains and injuries.

Restore physical and emotional well being.

Helps central nervous system relieve depression and anxiety and reduce stress.

Relaxing.

Uplifting.

AYURVEDA

No effectiveness for scoliosis.

Origin: India

Treatment theory: Combines physical, psychological, and spiritual as one system to promote health, disease prevention and personal growth. Cares for the whole person not isolated problems. Believes illness comes from stress, imbalances in our life and disharmony between ourselves and our surroundings. Determines dominant constitution or dosha. Three types of dosha; (1) Vata-physically active with thin body type, insecure fearful and anxious under stress, digestive problems especially colon, (2) Pitta-moderate body size and physical activity, short tempered, irritable and aggressive under stress, skin problems and irritations, (3) Kapha-content, healthy, calm, large body type, trouble losing weight, become possessive, greedy, envious under stress, cold, flu and allergies. Goal is to keep all three doshas in balance. Believe you can enhance vital energy through yoga, meditation, and herbs.

Presumed effect:

Relieve stress

Restore balance and harmony in life.

Reduce illness.

ASCO TREATMENT (ANTI-SCOLIOSIS VIBRATION-DECOMPRESSION METHOD)

No proven effect for scoliosis

Origin: Vladimir Yenin, reported to be a Russian surgeon specializing in manipulative therapy and sports medicine

Treatment: Includes vibration and decompression, spinal manipulation, isometric gymnastics, massage therapy, acupuncture, diet therapy, electrical stimulation, thermal-magnet therapy, biofeedback, and "biomechanical correction of lifestyle"

Reported effect:

Improve spinal mobility

Eliminate pain

Improve scoliosis

Eliminate the need for bracing or surgery

There is no rational scientific basis for this treatment program

BIOFEEDBACK

No effectiveness for scoliosis.

Origin: 1960's lab procedures to train subjects to alter body activities that are not voluntary.

Treatment theory: Behavior, thoughts and feelings affect the physical body. Alter behavior, thoughts and feelings that create negativity by using relaxation exercises, avoiding stress, and modifying behavior.

Presumed effect:

Help ease pain.

Help movement disorders.

CHIROPRACTIC AND ADOLESCENT IDIOPATHIC SCOLIOSIS

The population is increasing selecting complementary and alternative medicine (CAM) therapies for treatment of a wide variety of health related problems. In 1997 it was estimated that 42.1% of the adult population accessed alternative therapies (Eisenberg 1998), up from 33.8% in 1990 (Eisenberg 1993). And parents are increasing accessing CAM treatments for their children (Spiegelblatt 1994). In 1997 there were 628 million visits for alternative therapies, compared to 385 million to primary care physicians. Of the various forms of CAM interventions, chiropractic remains by far the most frequently accessed. In 1997, 11.0% of the US population accessed chiropractic treatment, accounting for 30.5% of all visits to CAM providers. Additionally, patients are seeing both primary care physicians and CAM practitioners (31.8%) for co-management of specific health problems. Chiropractic, with 68,000 practitioners in North America remains the third largest primary contact profession, after medicine and dentistry.

Patients accessing chiropractic treatment typically do so for musculoskeletal problems. Ninety-four percent of patients attending a chiropractor are assessed and treated for head, neck and back pain (Aker 1990). The remainder received care for a wide variety of conditions, including asthma, dysmenorrhea, dizziness, nutritional disorders, extremity injuries, etc. (NBCE 1993). Exact data regarding the frequency of patients accessing chiropractic care for scoliosis is unknown. In 1993 the National Board of Chiropractic Examiners surveyed the practice patterns and attitudes of 4835 chiropractors in the US. When reviewing types of conditions seen, respondents reported "often" seeing patients for treatment of scoliosis or scoliosis related complaints (NBCE 1993). This may account for up to 2,000,000 chiropractic visits per year to chiropractors for scoliosis. Because most patients typically present to chiropractors for treatment of neck and back pain, and because back pain remains prevalent in scoliosis, it may be reasonable to suggest that a considerable number of patients with scoliosis present for treatment of scoliosis and scoliosis related problems. However, given the AIS is often an asymptomatic condition, the number of AIS cases seen by chiropractors is unknown.

Chiropractic Treatment Rationale

Historically, chiropractic treatment has been based on the elimination or reduction of subluxation (Palmer 1910), or as it has been described more recently, the vertebral subluxation complex (VSC). Because the neural supply of visceral organs and somatic tissue is derived in whole or in part from specific spinal levels, it has been suggested that subluxation can cause visceral or end organ disease and musculoskeletal disorders (Palmer 1910). Removing subluxation from the spine is hypothesized to normalize function of the nervous system, thereby allowing the body to heal itself (Waagen and Strang 1992). The classical

model of chiropractic has the chiropractor detect and treat removal of this "nerve interference" is proposed to alleviate disease at the end organ. In scoliosis, the historical perspective suggests that the subluxation, when displaced laterally, weakens the ligaments of the spine while secondary nerve pressure degrades the spinal muscles and affects the metabolic processes occurring within the bone, leading to spinal curvature (Palmer 1910). Early osteopathic literature parallels that of chiropractic and claims similar relationships between spinal lesions and disorders of the somatic and visceral tissues (Wilson 1946, Kippenbrock 1992, Siragusa 1993).

While the theory of subluxation as a cause of disease has been advanced by both the chiropractic and osteopathic professions, there remains a paucity of sound scientific research to confirm its existence. In fact, recent studies of asthma and dysmenorrhea have not supported the role of subluxation in these disorders (Balon 1998, Hondras 1999). Additionally, other theories have recently been developed to attempt to explain the effects of manipulation, both for mechanical joint conditions and other general health problems. It has been shown that joint mobilization and manipulation reduces pain and improves function in numerous clinical trials (Shekelle 1992, Cassidy 1992). The efficacy of manipulative therapy for acute low back pain has been well established (AHCPR 1994). And recent studies suggest its possible benefit for acute neck pain (Hurwitz 1996) and chronic low back and neck pain (Hurwitz 1996, van Tulder 1997). While it remains unknown whether manipulative therapy will reduce, halt or reverse curve progression, this form of treatment may be helpful in reducing impairment and disability associated with back pain and in improving quality of life for individuals with moderate to severe spinal curvatures.

Previous Studies

To date, there are no published, well-designed clinical trials investigating the effects of chiropractic treatment on curve progression in patients with AIS. In 1995, Lantz reported preliminary results of a longitudinal study of forty patients with AIS who were managed with Gonstead/Diversified chiropractic manipulative therapy (Lantz 1995). The investigators suggested that study participants with milder curves responded more favorably to manipulative therapy than those with moderate and severe curves. Several subjects reported a decrease in headaches and spinal pain following treatment. Final results of the study remain unpublished.

The remainder of the reported benefits of manipulative therapy have been published in case reports. Aspergen and Cox reported on a patient with AIS who was managed with manipulation and electrical stimulation. Follow-up at nine months demonstrated cessation of curve progression (Aspergen 1987). Eriksen reported the case of a nine year old male treated with manipulation of the upper cervical spine. The patient's 17-degree thoracic curve and 12.5-degree lumbar curve were reduced to zero degrees and three degrees, respectively, following the treatments over a five-month period (Erikson 1996). Similarly, Sallahian reported reduction of a spinal curve from 22 degrees to 16 degrees following three months of chiropractic care (Sallahian 1991). Other practitioners report similar clinical phenomena (Siragusa 1992, NBCE 1994). The validity of these results should be viewed with caution, because these retrospective cases are poorly controlled. Authors fail to account for confounders such as natural history, measurement error and treatment co-intervention when reporting their results.

Ted Crowthers, D.C.

Dale E. Rowe, M.D.

Comment: Chiropractic treatment currently lacks any scientific evidence that manipulations can influence the final outcome of scoliosis – SRS Bracing and Non-Operative Management Committee

COLOR THERAPY

No effectiveness for scoliosis.

Origin: Ancient, Atlantis

Treatment theory: Sun's rays had healing qualities when the rays passed through a spectrum-color. Use panes of colored glass, filters, lamps to provide light and color. Use relaxing colors in food, surroundings and clothes.

Presumed effect:

Relaxation

Lift up spirits and ease depression.

COPEs SCOLIOSIS BRACING PROGRAM: SUMMARY

Mark F. Abel, M.D.

Introduction: The program has 7 elements, including bracing, electrical stimulation, exercises, chiropractic manipulations, “ocular-vestibular” therapy, a specialized diet and hydrotherapy. Although the bracing theory has some merit, no peer-reviewed evidence is available to support any of the claims. Information provided to the public regarding the causes and treatments of scoliosis is misleading at best and preys on public fears: “...scoliosis is a multi-faceted...disease...Left untreated, it often results in crippling...deformities.” The system is promoted for any curve and for virtually any patient including infants and senior citizens. It claims to be effective (90-95% correction in 80-100% of patients) in correcting scoliosis up to 65 degrees in 12-36 months. Note: the success rates and wearing parameters vary in the advertising. Information on the system comes mainly from the internet at [//www.scoliosis.com](http://www.scoliosis.com).

Historical Background The treatment system is the brainchild of Arthur L. Copes, an orthotist who is said to have received his degree (PhD) from Northwestern in Chicago. The brace, which is the primary treatment element, is composed of 4mm thermoplastic (polypropylene) and has up to 6 pneumatic bladders embedded beneath an inner foam lining. These bladders are strategically placed to exert pressure when injected with air, thus influencing spinal alignment. NASA is given credit for some design features of the brace. Air pressure within the bladders and position of the bladders is changed periodically based on radiographic measures of the spine (Cobb method). Consequently, Dr. Copes claims this system is “dynamic”, unlike the static conventional braces, because modifications of the brace are performed every 4-6 weeks. Furthermore, the information from Copes continually emphasizes that conventional brace treatment (mentioning the Boston and Milwaukee braces) aims only to prevent progression and that minimal correction (1-4 degrees) is to be expected. The Copes system, on the other hand, is touted to be 80-100% effective at correction of scoliosis. The “wait and see” approach for smaller curves is criticized for “invariably result[ing] in protracted treatment and possible surgery.” Copes offers seminars in which one can become a “casting center physician”.

Case reports are featured in the web pages in which patients with mild curves (20 degrees) are disabled with pain and become cured with 24 months of treatment. Another patient with a 38 degree curve presents with restricted breathing, pneumonia and pleurisy, but is cured by the Copes system. In other case reports, no real change in the Cobb measurements are found but success is still achieved in terms of rotational correction (measurement technique unclear) and complete pain relief. The alternative to the Copes system is stated to be “conventional” bracing which does not work and surgery to fuse the spine with metal rods.

With surgical correction there is “sometimes regression in correction and the cost of surgery can run from \$50,000 to \$100,000 – more than 10 times the cost of the bracing program”. The implications are that orthopaedic surgeons have no vested interest in correcting scoliosis and are only interested in making money through surgery. These derogatory points are frequently found in the advertising.

How the other components of the system come into play is not clear and they are emphasized less in the advertising. The advertised rationale states “Continuous improvement and enduring correction can only be attained through a disciplined regimen of bracing, exercise, chiropractic care, muscle rehabilitation, nutritional support and hydrotherapy”. Details of the protocols are vague.

Methods and Techniques:

- 1) Early detection and treatment recommended
- 2) All scoliosis of any magnitude and in any patient treated
- 3) Polyethylene brace made from plaster mold and equipped with pneumatic bladders
- 4) Radiographic documentation of correction at fitting
- 5) Serial radiographic assessment with AP, lateral and bending views every 3 to 4 months (although details not clear)
- 6) Exercises
- 7) Diet
- 8) Electrical stimulation
- 9) Chiropractic manipulation – 2 to 3 times per week for the first year
- 10) Hydrotherapy – daily soaks in baking soda and alpha Keri lotion

Note: Parameters, rationale and impact on scoliosis of #6-10 not detailed in any advertising.

Evidence of Effectiveness

The system proposed by Copes has never been subjected to peer-review. Claims in advertising are supported by anecdotal stories, accompanied by misleading information about standard medical treatment. Conventional bracing and surgery are portrayed as ineffective, counterproductive and designed only to increase physician revenues.

Concepts of the Copes system with possible application

- 1) Earlier detection and treatment is worthy of study to determine factors predictive of progression. The goal would be to exclude patients with low probability of progressing while catching those at greatest risk early.
- 2) Use of pneumatic bladders in lieu of foam pads
- 3) Meticulous evaluations of bracing correction and more frequent adjustments of the brace and loading pads (bladders).

Note: Typically the orthopaedic surgeon does not fabricate the brace. Therefore the person making the brace is different from the person checking its effectiveness. There is no guarantee of maximal correction on delivery. The patient and physician generally accept that the brace is “as good as can be”.

CRANIO-SACRAL THERAPY

No effectiveness for scoliosis.

Origin: William Sutherland, Osteopath

Treatment theory: Manipulation of the skull bones and sacrum to restore energy harmony, balance, rhythm, and flow. Use hands to detect rhythm in listening stations.

Presumed effect:

Relieve pain.

Reduce stress.

THE ROLE OF EXERCISE AND PHYSICAL THERAPY IN THE TREATMENT OF IDIOPATHIC SCOLIOSIS

Charles d'Amato, M.D

Families seeking alternatives for the treatment of idiopathic scoliosis frequently inquire about the use of exercise. *The preponderance of evidence suggests* [Most orthopaedic surgeons in North America believe] that exercise or physical therapy alone cannot prevent the progression of deformity. Exercise therapies have also been used as an adjunct to bracing, to improve strength and flexibility, and to improve pulmonary function.

Paradoxically, recreational exercise has been, in the past, forbidden⁶ at times and also employed as a therapy to treat or prevent progression of idiopathic scoliosis. The scoliotic spine has been treated since ancient times with stretching, traction, and bending exercises in order to reverse the deformity. Dickson and Leatherman, in 1978, conducted a randomized controlled trial of traction and exercises before application of an elongation, derotation, and flexion (EDF) cast. They found that exercises and not traction improved the flexibility of the spine². Exercises and physical therapy have been used as an adjunct to bracing and electrical stimulation attempting to prevent progression of scoliosis³. Carmen et al. studied two matched groups of patients who were under treatment with the Milwaukee Brace¹. One group did exercises in the brace as prescribed by Moe. No significant difference in curve progression was observed. Success was felt to be due to the effects of bracing alone.

Stone, Beekman et al, prospectively studied the prevention of curve progression in patients with exercises alone⁷. They used leg lifts, pelvic tilts, partial sit-ups, and lateral trunk bending in order to strengthen the trunk and improve upright posture. They did not find that exercise prevented curve progression in 42 patients instructed in exercises compared to 57 controls who were evaluated after one year in the program. Weiss reported success using in-patient exercise therapies to prevent the progression of scoliosis⁹. This study employed the Katharina Schroth method from Germany and involves intensive physical therapy sessions using a technique of fixation, elongation and derotation of the spine¹¹. Although the Schroth method may employ bracing and other forms of treatment, this study was confined to those treated with exercises alone. The patients were immature Risser < 3,4; (average 1.4) with an average age of 12.7 years and curve magnitude of 27 degrees by Cobb measurement. It was claimed that no cases of relative curve progression of five degrees or more occurred. A follow up worst-case analysis study was published on this same cohort of patients. That study demonstrated prevention of curve progression compared with the known natural history of scoliosis even if all of the dropouts from the study were considered failures¹⁰. Similar results have not been published in the English literature.

Physical therapy and exercise training is used for other reasons than for prevention of curve progression. Nachemson, Bjure et al. studied the ventilatory function of young women with idiopathic scoliosis with curves between 30 and 150 degrees Cobb measurement. They found that conditioning exercises improved oxygen uptake and decreased heart rate in all but those with severe curves. Forced vital capacity was not changed, however⁴. Weiss showed increases in both vital capacity and rib mobility with the exercise program used at the Katharina Schroth Hospital in Germany⁸. Schneerson and Madgwick studied twenty patients with idiopathic scoliosis⁵. Half underwent a six to ten week exercise program prior to surgery. There was no difference in the result of lung function and exercise tests administered before spinal fusion.

They concluded that pulmonary complications would not therefore be diminished by preoperative exercises.

Most orthopaedists who treat scoliosis are familiar with physical therapy used for the treatment of back pain. In the English literature, there is little information of scientific value that addresses the use of exercises and physical therapy for pain specifically caused by scoliotic deformity.

In conclusion, the ability of physical therapy alone to prevent the progression of scoliotic deformity has not been documented in the English language literature. The available evidence from Germany suggest that further studies are warranted^{9;10}.

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FELDENKRALS

No effectiveness for scoliosis.

Treatment theory: Type of stretching used in some yoga classes. Awareness through movement decreases muscular tension and increases flexibility, strength and energy.

Presumed effect:

- Relieve pain.
- Reduce stress.
- Increase energy.

HERBAL MEDICINE

No effectiveness for scoliosis.

Origin: Ancient traditional Chinese Medicine

Treatment theory: Herbal combinations are prepared from leaves, stems, roots, bark of plants. These herbs can be steeped in hot water to form a tea or infusion, boiled to produce a stronger solution-decoction, made into powders, pills or syrups, or made into plasters or poultices to be applied to the skin.

Presumed effect:

- Help the body correct imbalances of energies (chi, yin or yang).
- Treat a variety of acute and chronic problems.

HOLISTIC MEDICINE

No effectiveness for scoliosis.

Origin: Ancient combined with conventional.

Treatment theory: Cooperative relationship between all involved leads toward the attainment of physical, mental, emotional, social and spiritual aspects of health. Looks at the whole person. Also known as Complementary or Alternative Medicine.

Presumed effect:

- Achieves balance and well being.

HOMEOPATHIC MEDICINE

No effectiveness for scoliosis.

Origin: German physician in the 1790's.

Treatment theory: Like cures like, homeo-similar. Pathy-diagnosing disease. Diluted natural remedies in water or alcohol to minimize side effects and enhance efficiency. Reportedly, treats emotional and mental aspects also.

Presumed effect:

- Reduces ailments and sickness.
- Naturally heals the body with little side effects.

Comment: Dilutions are so extreme that homeopathic medications are essentially placebos.

MAGNETIC THERAPY BIOMAGNETIC HEALING

No effectiveness for scoliosis.

Origin: Ancient Greece, Egypt and China. Veterinarians, Sports Medicine.

Treatment theory: Magnets emit a magnetic field. Polarity is used for different purposes specific to the diagnosis. Size, strength, placement and duration of magnets vary from case to case. The magnets are placed on the area of the body where the problem is occurring.

Presumed effect:

- Aids in lower back pain and arthritis.
- Greater energy.
- Healing.
- North Pole relieves pain, reduces swelling. Produces restful sleep, increases tissue oxygenation and calms the nervous system.
- South Pole is the opposite effect.

MASSAGE THERAPY

No effectiveness for scoliosis.

Origin: Ancient

Treatment theory: Increase circulation of blood and flow of lymph by rhythmically applying manual pressure and movement. Stimulate nerve receptors. Increase oxygen in blood. Balance muscles to promote posture and movement and keep tissues elastic. Equal mind and body.

Presumed effect:

- Helps fight illness.
- Helps keep muscles strong and working correctly.
- Helps with posture.
- Eases pain.
- Reduces stress.

MEDITATION

No effectiveness for scoliosis.

Origin: India

Treatment theory: Combine mental, physical and social well being through awareness. Use veda, pure knowledge, and vedic vibrations and teachings. Relaxation and rhythmic breathing.

Presumed effect:

- Mental clarity.
- Relaxation.
- Reduce stress.
- Energy.

PILATES

No effectiveness for scoliosis.

Origin: Joseph Pilates

Treatment theory: Non impact exercise for the deeper muscles to achieve efficient and graceful movement. Improve alignment, breathing, increase body awareness. Simultaneous stretch and strengthen improves posture, spinal flexibility.

Presumed effect:

- Increased strength.
- Increased flexibility.
- More energy.
- Stress reduction.
- Ease pain.

POLARITY THERAPY

No effectiveness for scoliosis.

Origin: Dr. Stone

Treatment theory: Art and science of stimulating and balancing the flow of life energy within the human being. Body has positive, negative and neutral poles. Balance energy system by taking care of the disturbance that blocks the energy flow using body work, nutrition, exercise, and counseling.

Presumed effect:

- Balanced body poles.
- More energy.

REBIRTHING

No effectiveness for scoliosis.

Origin: Ancient

Treatment theory: Use of breathwork, counseling, discussion, merging of conscious and subconscious breathwork focuses awareness and releases blocked emotions. Emotions are easily and safely released. Dry sessions first and move to wet sessions under water with a snorkel.

Presumed effect:

- Unblocked release of negative emotion.
- Reduce stress.
- Help reduce illness.

REIKE

No effectiveness for scoliosis.

Origin: Ancient, practiced for thousands of years, reintroduced in Japan.

Treatment theory: Healing method to channel energy from the hands of the healer through chakras or energy centers. Balancing of energy, chi or prana in the body improves the ability of the body to naturally heal itself. Rest hands on head, abdomen, legs, back and feet creating a warm sensation. Body takes in the energy and heals within.

Presumed effect:

- More energy.
- Healing.
- Balance.
- Reduced stress.

ROLFING

No effectiveness for scoliosis.

Origin: Dr. Ida Rolf

Treatment theory: Soft tissue manipulation and deep massage. Movement education. Organize the whole body in gravity, alter posture and structure. Efficient use of muscles conserves energy.

Presumed effect:

- Ease pain.
- Ease chronic stress.

SENSORY DEPRIVATION

No effectiveness for scoliosis.

Treatment theory: Floating in 10 inches of water in a tank with 800 pounds of dissolved epsom releases tension from muscles, joints, tendons, and the skeleton. Releases endorphins and decreases stress producing neurochemicals. Art and music can be included in the treatment.

Presumed effect:
Eases pain.
Eases stress.

SURFACE ELECTRICAL STIMULATION

Numerous well-documented clinical trials as early as 1980 have repeatedly demonstrated that surface electrical stimulation is ineffective for the management of idiopathic scoliosis.

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THERAPEUTIC TOUCH

No effectiveness for scoliosis.

Origin: Contemporary interpretation of ancient practices for healing.

Treatment theory: Process of energy exchange between people by the use of hands as a focus to facilitate healing. Body energy is altered by the interaction of the person performing the touch resulting in the restoration of the natural flow of energy in and around the body.

Presumed effect:
State of deep relaxation.
Reduces stress.
Restores energy.
Eases pain.

YOGA

No effectiveness for scoliosis.

Origin: India

Treatment theory: There are eight levels of yoga. On the physical level the rhythmic breathing and stretching exercises condition the body making it supple, flexible and healthy.

Presumed effect:

- Total relaxation.
- More energy.
- Reduced stress.
- Ease pain.

From an article, *Yoga for Scoliosis*, by [Elise Browning Miller](#) which originally appeared in *The Spinal Connection* the news letter of the National Scoliosis Foundation, Spring/Summer 1997

What is Yoga

Yoga, meaning yoke or union is an ancient physical, mental and spiritual practice designed to cultivate inner peace, an open heart, a calm mind, and a strong relaxed body. In the West, yoga is most commonly associated with the physical discipline known as hatha yoga, one of several branches of yoga. The roots of yoga go back over 3,000 years to India and was first introduced into the United States in 1893. Today, an estimated 5 million Americans practice yoga and the number is rapidly growing. Hatha yoga is the practice of physical postures (asanas), the practice of breathing techniques (pranayama) and relaxation (sivasana), and was developed to relax, detoxify, strengthen and stretch the body. Within hatha yoga there are many different schools, such as Iyengar, Kripalu, Ashtanga, and Viniyoga. Iyengar yoga, named after its founder B.K.S. Iyengar, is renowned for its precise attention to alignment, and anatomical detail. Individual attention is given to special physical problems such as scoliosis.

Yoga for Scoliosis

In the practice of doing the yoga postures, there is an emphasis on postural alignment, particularly in the Iyengar system. One becomes more aware of imbalances throughout the body and learns methods of improving one's posture. For someone with scoliosis it is very important to both lengthen and strengthen the muscles that support the spine in order to relieve tightness and pain. There are many postures where the spine is simultaneously being lengthened and the paraspinal muscles (longitudinal muscles down the spine) and other supporting muscles of the back are strengthened which together help offset further lateral curvature and rotation. Standing poses strengthen the legs which creates a solid foundation from which the spine can stretch and become freer. This enables the legs, rather than the spine, to carry the weight of the body. At the same time, it is very important to create flexibility in the legs and mobility, particularly, in the hips. There are many yoga postures that stretch the hamstrings, hip flexors, and quadriceps which are the key muscles that not only create more mobility and strength but which can help improve posture. Many yoga postures also loosen the upper back particularly the trapezius muscle (large muscle from neck to base of shoulder blade). Yoga also emphasizes breath awareness while doing the postures. With scoliosis, there is often decreased breathing capacity particularly on the concave side, because the intercostal muscles (muscles between the ribs) have decreased in their elasticity and strength. By sending the breath into a collapsed ribcage on concave side, one can actually stretch the intercostal muscles and create more lung capacity as well as more evenness of the sides of the body.

Suggested Yoga Poses for Scoliosis

More information, including suggested poses, may be found on Ms. Miller's web site, www.ebmyoga.com.

Please Note:

We encourage all readers treated for scoliosis to advise their physician about their intent to use yoga. We caution all readers to remain within their limits and adhere to the advice of their doctors.

Yoga may be good for general health and well being, and may help manage the affects of scoliosis. There is no known scientific evidence however to show that yoga corrects or halts abnormal spinal curvatures.