

# Clinical Roundup

## How Do You Treat Back Pain in Your Practice?

### A “Whole-Person” Approach

Our “whole-person” approach to back pain follows three core principles: (1) mindful awareness; (2) partnership; and (3) integration. Our multifactorial, reflective assessment is highly individualized and therapeutic in itself. Physician and patient then co-create a personalized health plan that typically includes conventional medical, ergonomic, and physical therapy, and the complementary and alternative medicine (CAM modalities) described below.<sup>1</sup>

Acupuncture can be more effective or as effective as routine medical care for reducing chronic low-back pain symptoms and back-related dysfunction.<sup>2</sup> Acupuncture is believed to work, in part, by calming the nervous system, easing muscle tension, and releasing pain-reducing endorphins.<sup>3</sup>

Massage therapy significantly reduces lower-back pain, improves range of motion, and alleviates associated symptoms of anxiety, depression, and sleep disturbance.<sup>4</sup> Massage relieves muscle tension, spasm, and stiffness—all of which contribute to pain—by improving blood circulation and releasing endorphins into the brain and nervous system.

Yoga is an increasingly popular therapy for relieving back pain and yoga’s effectiveness has been demonstrated in clinical trials.<sup>5</sup> One-on-one yoga therapy sessions can be particularly beneficial, as they allow for individualized instruction in breathing and relaxation techniques, postures, and meditation, ensuring that self-care practices are appropriate for each person’s condition, abilities, and goals.

Mindfulness meditation, hypnotherapy, and cognitive-behavioral therapy are mind–body approaches that can alleviate pain by reducing stress and interrupting the cycle of worry, rumination, and catastrophizing that can amplify pain sensations.<sup>6,7</sup>

In our collective clinical experience, individually tailored integrative medicine minimizes patients’ back pain symptoms, maximizes healthy function, fosters ongoing expansion of self-care skills, and optimizes quality of life.

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### Integrating Chiropractic into Primary Care

The goal of The Ohio State University Center for Integrative Medicine (CIM) is to care for the whole patient, incorporating traditional and non-Western techniques into patient treatment.<sup>1</sup> Studies have shown that patients are often unsatisfied with only allopathic medical care received for back pain, compared to chiropractic medicine.<sup>2</sup> In an effort to increase patient satisfaction, while providing optimum care, the chiropractor works in tandem with medical doctors at the CIM.

A thorough history and examination are performed by a medical or chiropractic physician, classifying the patient into 1 of 3 categories: (1) serious disease (e.g. tumor, infection); (2) back pain associated with nerve compression; (3) and nonspecific low-back pain (85%–90% of cases).<sup>3</sup>

If a patient’s condition meets criteria for back pain that can be treated successfully by manipulation<sup>4</sup> or if the patient requests to see a chiropractor, that patient will be referred for chiropractic medicine. With the chiropractor, the patient is reassured of the absence of severe disease and is instructed on resumption of normal activities with modifications to reduce strain.

Treatment usually consists of manipulation, using one or more modalities, such as rehabilitative exercises, myofascial techniques, ultrasound, or muscle stimulation. A typical therapeutic trial of chiropractic care consists of 6–12 visits over a 2–4 week period<sup>5</sup> with the goal of decreasing pain and restoring function.

The patient's progress is monitored using outcome tools such as visual analog pain scale and/or the Oswestry Disability Questionnaire. If the patient does not improve, the team discusses the need for medication, imaging to check for additional pathology, identifying psychosocial factors, or referral to a subspecialist.

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## An Ayurvedic Approach

Lower-back pain affects many people, especially those over 50. Acute pain results from an injury to bone, muscle, or nerve; muscle spasm; or internal origins. Repetitive motions, such as twisting, bending, and slouching, can cause chronic pain. Chronic back pain lasts more than a month and can reoccur as a result of a deteriorated spinal condition. The lumbar (L4–L5) vertebrae are the body parts that are mainly affected. From the Ayurvedic standpoint, the condition results from *Vata* aggravation.

The central treatment for back pain is stress reduction and posture control. One remedy is regular exercise that includes yoga poses, including the cobra, half-cobra, sphinx, spinal twist (lumbar rotation), forward bending, child, cat, and cow based on each patient's condition and abilities. I massage the affected area with *Mahanarayan* oil (Banyan Botanicals), followed by *Marma* point therapy (*Kati, Kukundra*) and cupping.

I also prescribe a *Vata* pacifying diet to help digestion and increase *agni* (digestive force) and improve bowel movements to avoid constipation. Changing sleep habits to achieve 7–8 hours of sleep also helps recovery. I recommend chairs with strong lumbar support for people who spend a large portion of the day sitting. In cases of acute pain, I recommend an ice pad to alleviate pain and swelling. Occasionally, I recommend supplements, such as fish oil, vitamin D, vitamin B complex, magnesium, calcium, and potassium, and/or zinc.

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## Posture Education and Exercise for Nonspecific Low-Back Pain in Office Workers

Low-back pain is one of the most frequent ailments seen in primary care consultations. For most cases (80%) it is difficult to identify the exact origin of this pain. Most general guidelines for nonspecific low-back pain recommend that the patient should remain active in order to return to work as soon as possible. In accordance with this approach, I and my colleagues (Adsuar, Parraca, and Gusi) carried out an innovative program for office workers with nonspecific low-back pain to improve these workers' health-related quality of life and to decrease episodes of pain disability caused by nonspecific low-back pain.

We applied a workplace web-based bio-psychosocial program (with 90 workers in an exercise group) in real-time with a focus on posture education and specific exercises to improve endurance in back muscles. The program was of 3 months' duration, and it included three 10-minute sessions per week. We compared the exercise group with a control group that received usual care.

First the workers in the exercise group adjusted their posture based on a 3-minute postural reminder. Then they followed a 7-minute exercise for that day. Finally, the workers readjusted their posture based on the same 3-minute-postural.

In this trial, only 30 minutes per week produced an important reduction of the patients' disability index, as measured with the Roland Morris Questionnaire. The patients also had a significant reduction of painful episodes during the participation in the program. This economical program could be used in a large population with a public-health program focus for workers who have nonspecific low-back pain

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## A Neuromuscular Therapy Approach

The first step in treating back pain is to conduct a comprehensive health history, postural assessment, and range of motion (ROM) evaluation. There are three basic recognized levels of back pain: (1) acute; (2) recurrent; and (3) chronic. The level of severity and stage of inflammation should direct and dictate the treatment plan and technique selection with the following goals in mind:

- Decrease swelling and inflammation.
- Decrease muscle spasm, muscle contracture, and muscle adaptation.
- Decrease local and referred pain.
- Restore ROM and overall function.
- Reduce scar-tissue formation and help realign scar tissue.
- Decrease depression, anxiety, and somatization.
- Improve core strength.

Treatment for acute low-back pain would include gentle circulatory massage techniques that would facilitate lymphatic drainage with the intent of decreasing pain, inflammation, and swelling at the injured site and associated structures.

Treatment for recurrent low-back pain would include fascial release and cross-fiber friction techniques to help break up and realign scar tissue formation. Strain-counterstrain techniques can be applied to reduce tender-point formation and correct inappropriate proprioceptive activity in the injured tissues.

Treatment for chronic low-back pain would include trigger-point release techniques to reduce local and referred pain patterns and post-isometric relaxation techniques to restore normal resting length and strength to the core musculature and injured tissues.

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## A Treatment-Based Approach

When a patient presents with back pain, we look for potential “red flags” and conduct a screening examination, based on a systems approach, to determine if the patient’s back pain is, in fact mechanical in nature. If this is the case, our initial focus is to choose physical-therapy management based on where the patient’s pain falls into one of several diagnostic subgroups.

Reflecting the predominant evidence-informed paradigm, we use two complementary diagnostic classification approaches: (1) a treatment-based system that uses a cluster of signs and symptoms from the patient’s history and (2) a physical examination derived from a clinical-prediction rule<sup>1</sup> and other relevant research. These approaches enable us to classify patients into subgroups with specific implications for management.<sup>2</sup>

In our clinic, we use the University of Pittsburgh treatment-based system for patients with low-back pain. This system is used to classify patients into four groups for which research has shown a positive response to the following treatments: (1)

repeated endurance exercises; (2) trunk strengthening and stabilization exercises; (3) joint manipulation; or (4) traction and endurance exercises.<sup>2</sup>

Based more on clinical expertise, authoritative knowledge, and extrapolation from basic sciences, this mechanism-based classification system centers on the premise that dysfunctions identified during examination are the cause of pain and decreased function. Using this system, we seek to identify the joint(s) and/or soft tissues implicated, but the system also involves collecting information on stage, severity, and reactivity to guide treatment interventions that include physical modalities.

These modalities include electrotherapy, acupuncture, traction, thermotherapy, specific exercise interventions, joint and soft-tissue manipulation and mobilization, dry needling, patient education, ergonomic adaptations, taping and bracing, and orthotics fabrication, as indicated by the subcategory the patient’s condition falls into.

We acknowledge the role of potential neuroplastic changes and psychosocial influences in the transition from (sub)acute to chronic pain states, but, even in managing patients with chronic back pain, we still see a role for addressing underlying causative or contributory dysfunctions. However, in this patient population we also recognize the need for medical-pharmaceutical comanagement, for identifying and addressing personal and environmental barriers to recovery, and for a greater emphasis on education and exercise (the latter in an attempt to stimulate endogenous analgesic mechanisms).

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## Traditional Chinese Medicine

According to the theory of Traditional Chinese Medicine (TCM), treatment of back pain depends on the chronicity of the condition. After excluding possible bony fractures and compressions of the nerve roots or spinal cord, back pain of acute onset is seen as an injury of the meridians, which lead to stasis of the *Qi* and Blood and results in localized pain and stiffness. Chronic back pain often carries a history of previous trauma, albeit minor, and is commonly associated with Deficiency of the *Qi*, *Yin*, and Blood of the *Zhong-Liver* and

*Zhong-Kidney*. It was also written in an ancient TCM textbook that repetitive movements and improper postures can cause or worsen back pain.

In general, treating back pain with TCM is best achieved with a combination of *tu-ina*, herbal compress, acupuncture, and *t'ai-chi chuan*. In the context of acupuncture, for treating back pain without sciatica, I use the following acupoints: *Shuigou* (DU26); *Yaoyangguan* (DU3); *Mingmen* (DU4); *Shenshu* (BL23); *Dachangshu* (BL25); *Xiaochangshu* (BL27); *Weizhong* (BL40); *Zhishi* (BL52); and *Kunlun* (BL60). With sciatic involvement, I will add *Huantiao* (GB30), *Yinmen* (BL37), and *Yanglingquan* (GB34).

I use 0.25 mm x 50 mm needles for the points on the Bladder meridian and point GB30, and I use 0.20 mm x 20 mm needles for the other acupoints. To enhance the results, I would apply 3 Hz electrostimulation to BL23, BL25, BL27, GB30, and GB34. I do find DU26 very useful for treating acute low-back pain, using firm pressure with a finger for a few minutes.

Finally, if the patient presents with signs of *Qi* or *Yang* Deficiency, I will co-administer indirect moxibustion to DU3, DU4, BL52, and GB34, using a moxa stick. Duration for each acupuncture (with or without moxa) treatment should be 30–35 minutes, repeated two to three times weekly, for a period of 2–4 weeks. This regimen often relieves low-back pain significantly in more than 85% of patients.

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## Acupuncture

Back pain is a complex issue, which should be treated with a variety of adjunctive therapies, including acupuncture, exercise, and manual therapy.<sup>1</sup> Treatment of back pain using acupuncture can be clinically determined using anatomical and neuroscience principles to underpin acupuncture point selection, and duration and stimulation of treatment parameters.

The acutely sensitized lower back is best treated using distant points that are innervated through different spinal segments, to avoid additional aggravation of dorsal-horn spinal-segment sensitization affected by injury. The four gates of bilateral LI4 and LR3 can be needled for 20–30 minutes, with the myotomes innervated by spinal segments C8/T1 and S2/3, respectively. This provides strong hypothalamic activation, via extrasegmental and autonomic pathways to facilitate descending pain inhibition. Correspondingly, a Bladder/Kidney divergent meridian combination, such as BL10 (C2/3/Cranial XI), BL40 (S1/2), and KI10 (S1/2), or an Extraordinary Meridian such as *Yang Chiao Mai* BL62 (S2/3) and TE5 (C7/8) can be used for similar purposes.

These suggested treatment combinations can be used to address a chronic low-back problem, but the addition of spinal segmental Bladder, *Huato-Jiaji*, or Governing Vessel points

should be used to strengthen spinal inhibition of pain and relief of corresponding muscle spasm, for example, BL23 for L2 problems.

In these ways, traditional acupuncture combinations can be clinically determined and applied, using supporting anatomical and neuroscientific knowledge. However, the underlying issues must also be addressed by manual therapies to promote joint and soft-tissue mobility, improve posture, and strengthen associated muscles to prevent recurrences.

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## Shiatsu

Shiatsu is a form of bodywork that originated in Japan. Literally translated, *shiatsu* means “finger pressure.” In shiatsu, the thumbs (and, actually, the palms, elbows, knees, and fingers) are used to manipulate the flow of *qi* or energy in the body to prevent and treat many conditions. The theories of shiatsu and acupuncture are almost identical as they both use the principles of Traditional Chinese Medicine (TCM). In fact, shiatsu is sometimes referred to as *acupressure*. The difference in the duration and depth of pressure applied will change the way the *qi* flows in the client, which rebalances the body and leaves the client feeling healthier, with less pain and stress.

Not all back pain is identical. Even though there are common patterns, and typical causes almost always play a role in their development, pain in the lower back arises from a singular concrete life-situation, with individual emotional and physical (or, in other words, energetic) patterns. In my experience, it is the understanding of the specific situation of each person concerned that makes the treatment more sensitive and more effective.

According to TCM, chronic back pain is caused by two main different pathogenic factors:

1. Pathogenic influence of external factors (Wind, Cold and Damp)—can include attack by one of the following:
  - (a) Pathogenic Wind involves pain that migrates all around the lumbar area and can be referred elsewhere also. It often comes and goes and is alternately severe and light. It is difficult to pinpoint the exact location of the pain.
  - (b) Pathogenic Cold involves pain that is fixed and extreme in nature. It feels as if the muscles are contracting and

the whole area feels tight and cold. This pain is often relieved by warmth.

- (c) Pathogenic Damp involves pain that feels heavy and aches. It usually affects the lower limbs also.

Shiatsu treatment for these pathogenic influences often involves the Gall Bladder channel (especially when Wind is the cause).

2. Kidney Deficiency—This type of pain has a gradual onset. It is usually worse upon exertion or under strain and stress and in the early morning. It is rarely very sharp and is often accompanied by feelings of weakness in the back and knees.

Shiatsu treatment for Kidney Deficiency involves Kidney and Urinary Bladder channels mainly.

It is important that the client lie in a way that the lumbar area can relax. In a supine position, this can be achieved by placing one pillow under the thighs and knees, and another pillow under the head. If a client lays in a prone position, I put a folded woolen blanket under the patient's abdomen and lower ribcage.

I also ask clients to turn their heads from one side to the other fairly regularly during the treatment. It might be necessary to choose the side position in the first treatments of a client in pain, maybe even with the knees drawn tightly to the body. Often, clients do not lay down straight. I ask them to lie in whatever position makes them feel most comfortable. The position they choose to lay down in is an expression of their energetic and physical situations.

If the pain is very strong, and the emotional experience seem dominant and on the surface, or there are other indications of an unstable situation, then it makes sense to give two or three shorter treatments per week in the beginning. This gives me the advantage of flexibility to react to changes from the prior treatment, and to possibly catch "changes for the worse" early on. The client, in addition, feels safer, which increases the effectiveness of the treatment.

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## Clinical Yoga

Our practice includes clinical yoga,<sup>1</sup> which involves evidence-based yoga-techniques, such as *asana* and meditation in medical practice<sup>1,2\*</sup> and in integrative and holistic treat-

ment.<sup>2</sup> *Bhujangasana*<sup>3-10</sup> or Cobra Pose<sup>4</sup> is used to strengthen and benefit spinal function,<sup>11</sup> and variations of this posture are used by therapists to treat chronic low-back pain.<sup>12,13</sup> In a single session,<sup>8</sup> supported prone back extension has been shown to reduce low-back pain effectively and increase lumbo-pelvic mobility.

*Bhujangasana* is a prone extension that may improve spinal flexibility<sup>6</sup> and extensor strength<sup>3</sup> as well as reducing symptoms associated with acute or chronic low-back pain,<sup>12</sup> including sciatica.<sup>11</sup> This pose may also promote autonomic regulation,<sup>14,15</sup> regional blood flow,<sup>15</sup> and lymphatic drainage,<sup>16</sup> and improve peripheral nervous function.<sup>17,18</sup>

Variations<sup>3,8,9</sup> for beginners, elderly people, or infirm patients involve: lifting just the forehead off the floor; lifting the head and chest while resting the elbows on the floor (Sphinx Pose<sup>4</sup>) or doing the Easy Cobra pose<sup>3</sup>; or inhaling to lift the head, chest, and abdomen while keeping the pelvis on the floor and supporting the torso on the arms before exhaling to return to the floor.

Yoga includes the notion of counter-poses,<sup>3</sup> therefore, *Bhujangasana* is often preceded by and/or succeeded by spinal flexion, to ensure appropriate spinal movement.<sup>19</sup> *Shashank-Bhujangasana*<sup>3</sup> (Striking Cobra pose) starts from a kneeling position with the torso resting on the thighs, the forehead on the floor, and the arms extended forward (*Shashankasana*). The head and chest then come forward into *Bhujangasana* while breathing in, then return to *Shashankasana* while breathing out. With clinical instruction from a yoga-trained medical or allied-health professional, more specific benefits<sup>20-24</sup> can be achieved from client-specific variations.

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## Yoga Therapy

Most back pain is functional and results from muscular strain and stiffness. The pain is caused simply by muscular insufficiency and inadequate flexibility of muscles and tendons. The most common site of back pain is the lower back, followed by the neck and the region between the shoulder blades. A daily practice of simple yoga postures provides relief very effectively.

Yoga therapy for back pain involves practice of selected *asanas*/body postures along with synchronized breathing for 15 minutes daily. The aim is to strengthen the spine, spinal muscles, and ligaments, and the muscles where the upper and lower extremities are attached to the back; and to improve the elasticity and flexibility of the spine.

The recommended yogic postures mainly involve bending backward, bending to the right side and to the left side and twisting body postures. All forward-bending body postures are avoided until the back pain subsides, as this position would strain/stretch the back muscles vertically rather than relaxing them and thus precipitate the recurrence of back pain. Relaxation of the back muscles by flexion helps to regain their strength and vitality.

The practice of breathing techniques (called *pranayamas*)—such as *Ujjayi*, *Anulomaviloma*, *Bhastrika*, *Suryabhedhana*, and *Sheetali* /*Sheetkari*—helps to balance the three *doshas* to improve health. The *doshas* are *Vata*, *Pitta*, and *Kapha* (Wind, Bile, and Phlegm, respectively).

Selected *asanas*/body postures have been used effectively for back pain. *Poorvatanasana* stretches the anterior side of the body and relaxes the posterior side. *Makarasana* involves lying on the stomach; this is a resting posture that relaxes the back muscles passively. *Bhujangasana*, *Shalabhasana*, and *Dhanurasana* contract the back muscles and relax the spine slowly. *Tadasana* and *Trikonasana* involve stretching of the extremities of the hands and legs and the muscles of the back, which are massaged passively, relieving them of any stiffness. *Vajrasana* and *Supta vajrasana* help to keep the back straight. Twisting postures such as *Katiparivartana* and *Vakrasana* strengthen the surrounding muscles of the back. *Pavana Muktasana*, a posture performed lying down on the back, gently stretches the lower back. *Shavasana*, a relaxation technique helps overcome fatigue of the spine and back muscles.

All these postures are simple and very easy to perform and provide relief from back pains. These postures also increase the functional capacity of the back muscles, strengthening and bringing back vitality to a patient.

Back pain caused by pathologic conditions, such as arthritis, spondylitis, and osteoporosis, leads to restricted movement, limited mobility, and strength. In such cases, yogic postures are taught under proper care and guidance and special attention is given to individual capacities. Here, the aim is to improve the range of movement of the body and improve quality of life.

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## Reflexology

Back pain is the second most common symptom-related reason for clinician visits. Most cases are attributed to musculo-ligamentous injury or skeletal degenerative changes, although the differential diagnosis is broad. This suggested low-back pain treatment refers to musculoligamentous injury or skeletal degenerative changes.

Integrative medical reflexology (IMR) is defined as reflexology integrated with other complementary treatments

in one unified session. The most-used additional complementary method is transdermal electrical meridians stimulation (TEMS). TEMS is defined as an alternative electroacupuncture treatment, in which an electrode is used on the acupuncture points and electricity (of 10 mA) is provided transdermally.

Although an exact therapeutic plan is highly individualized, there is a basic program that can be altered individually for each patient. Reflexology uses various pressure techniques (alternative, stable, caterpillar, and circular pressure, as well as rolling and tipping) applied by fingers and palms on specific reflex points. The suggested session lasts from 45 to 60 minutes, with a frequency of 10–12 sessions over an 8–10 week period. Suggested points include:

- *On feet*—reflex points of the lungs, kidneys, pituitary and suprarenal glands, intestines, solar plexus, and vertebral column (with emphasis on the lumbar region).
- *On hands*—the same reflex points as on the feet, plus macro-zone reflexology with an emphasis on the first zone, and acupressure on H3 and Di4.

- *Acupoints*—B60, B54, B50, B34, B31, B26, G30, LG (GV) 2–5. ■

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*For this interactive feature column, Clinical Roundup, a new question is posed and then answered by experts in the field. For our upcoming issue, we are seeking your contributions on how you treat **irritable bowel syndrome** in your practice for possible publication in the next issue of the Journal.*

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