

YOGA FOR A HEALTHY BACK

Yogacharya Dr ANANDA BALAYOGI BHAVANANI

Chairman: International Centre for Yoga Education and Research (ICYER) at
Ananda Ashram, Pondicherry. www.icyer.com and www.rishiculture.org

In the past decade or so, the number of people suffering from musculoskeletal conditions has increased by nearly 25 percent all over the world. Musculoskeletal conditions are currently the most common cause of chronic disability.

Yoga has a great potential in prevention and management of these conditions and also has an effective role in the rehabilitation of these conditions that are a negative side-effect of the modern computer age.

The primary musculoskeletal dysfunctions include osteoarthritis, inflammatory arthritis (principally, rheumatoid arthritis), back pain, musculoskeletal injuries (such as sports injuries), crystal arthritis (such as gout) and metabolic bone disease (principally osteoporosis).

Back pain is one of the most common medical problems and it is said in general that an estimated 8 out of 10 people suffer from it. Acute, or short-term, low back pain generally lasts from a few days to a few weeks and is usually the result of trauma to the lower back or a disorder such as arthritis. Chronic back pain is pain that persists for more than 3 months; it is often progressive, and the cause can be difficult to determine. Symptoms of back pain can include muscle aches, shooting pain, limited range of motion, and an inability to stand up straight.

NATURE AND CAUSES OF MUSCULOSKELETAL CONDITIONS

Osteoarthritis is the most common problem affecting human joints, causing pain, stiffness, weakness, joint instability, and reduced range of motion. The more the use and misuse, the earlier the condition seems to occur and the worse the effects manifest. Sedentary lifestyle with emotional 'binge' eating leads to obesity that is one of the primary aggravating factors leading to the early manifestation.

Rheumatoid arthritis has a prevalence of 1 to 3 % in most countries. Although the exact cause is unknown, evidence suggests that an immune reaction causes inflammation of the joints and other tissues. This then may result in tiredness, fatigue, weight loss, fever, pain, and disability and deformity of the joints. Stress has a role in RA and modern technostress is a precipitating factor in many a person.

Back pain is extremely common in both industrialized and developing countries, with up to half of workers suffering at least one episode each year. More than 80 percent of people in most industrialized countries will have back pain in their lifetime. Back pain is an

important cause of absence from work, resulting in economic losses. Nearly 40 percent of back pain is related to occupational risk factors, such as poor lifting behaviors, many of which can be prevented. Bad posture and un-ergonomic office environment are major factors in the causation and worsening of bad backs.

CAUSES OF BACK PAIN

The back is an intricate structure composed of bones, muscles, ligaments, tendons and disks — the cartilage-like pads that act as cushions between the segments of the spine. Back pain can arise from problems with any of these component parts. In some people, no specific cause for their back pain can be found.

A number of factors contribute to lower back pain, including poor muscle tone, excess weight — especially around the middle — and improper or heavy lifting. Poor posture and sitting or standing in one position for a long time puts extra stress on the back. The main risk factors that can cause or aggravate back pain are smoking, obesity, older age, female gender, physically strenuous work, sedentary work, stressful job, anxiety and depression.

PREVENTION STRATEGIES

Many affordable strategies such as good nutrition and exercise underpin many of the preventive and treatment strategies for musculoskeletal conditions:

- Weight reduction reduces pain and disability from osteoarthritis of the knee and also relieves back pain that is associated with obesity.
- Smoking and excessive alcohol uses are linked to osteoporosis.
- Adequate calcium intake helps to maintain bone density and reduce the risk of fractures.

The best way to prevent these conditions is to:

- Engage in adequate physical activity for fitness and maintain ideal body weight;
- Follow a balanced diet meeting requirements for calcium and Vit D;
- Avoid smoking and alcohol;
- Put in place accident prevention programs related to road traffic crashes, leisure activities, and workplaces.

MANAGEMENT STRATEGIES

Treatment of musculoskeletal conditions starts with pain relief through massage, ice, physical therapy, and/or pain relief medications. Many cases of osteoarthritis, soft-tissue

rheumatism, and inflammatory arthritis require Non steroidal anti-inflammatory drugs or other stronger or more specific drugs.

The best strategy for addressing osteoarthritis in the developing world is pain management, along with education to facilitate self-management and rehabilitative programs to improve function, activities, and participation.

For osteoporosis, a combination of vitamin and mineral supplementation, and specific medications may be needed. Exercise programs, rehabilitation, and education on daily functioning, including encouraging a "bone-healthy" lifestyle to reduce the risk of falls and prevent fractures, are all important. Osteoporosis patients may also need surgical interventions.

Most back pain gets better with a few weeks of home treatment and careful attention. A regular schedule of over-the-counter pain relievers may be all that you need to improve the pain.

A short period of bed rest is okay, but more than a couple of days actually does more harm than good. If home treatments aren't working, the doctor may suggest stronger medications or other therapy. A physical therapist can apply a variety of treatments, such as heat, ice, ultrasound, electrical stimulation and muscle-release techniques, to the back muscles and soft tissues to reduce pain. As pain improves, the therapist can teach specific exercises to increase the flexibility, strengthen the back and abdominal muscles, and improve the posture. Regular use of these techniques will help prevent pain from coming back.

PREVENTING BACK INJURIES

Practicing good posture, supporting the back properly, and avoiding heavy lifting can help in preventing back injuries. If you do lift something heavy, keep the back straight and lift by putting the stress on the legs and hips.

Preventing back injuries entails exercising regularly, maintaining a healthy diet, and practicing good back care. Exercising regularly and keeping the back muscles strong is extremely important in preventing back injuries, because exercises that increase balance and strength can decrease the risk of falling and injuring the back or breaking bones.

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We can avoid back pain by improving the physical condition and learning and practicing proper body mechanics.

To keep the back healthy and strong:

- Exercise. Regular low-impact aerobic activities — those that don't strain or jolt the back — can increase strength and endurance in the back and allow the muscles to function better. Walking and swimming are good choices.
- Build muscle strength and flexibility. Abdominal and back muscle exercises (core-strengthening exercises) help condition these muscles so that they work together like a natural corset for the back. Flexibility in the hips and upper legs aligns the pelvic bones to improve how the back feels.
- Quit smoking. Smokers have diminished oxygen levels in their spinal tissues, which can hinder the healing process.
- Maintain a healthy weight. Being overweight puts strain on the back muscles. If you're overweight, trimming down can prevent back pain.

USE OF PROPER BODY MECHANICS:

- Stand smart. Maintain a neutral pelvic position. If you must stand for long periods of time, alternate placing the feet on a low footstool to take some of the load off the lower back.
- Sit smart. Choose a seat with good lower back support, arm rests and a swivel base. Consider placing a pillow or rolled towel in the small of the back to maintain its normal curve. Keep the knees and hips level.
- Lift smart. Let the legs do the work. Move straight up and down. Keep the back straight and bend only at the knees. Hold the load close to the body. Avoid lifting and twisting simultaneously. Find a lifting partner if the object is heavy or awkward.

PREVENTING BACK INJURIES THROUGH DIET

Maintaining a healthy diet is important in preventing back injuries, because maintaining a healthy weight will help you to avoid putting unnecessary and injury-causing stress and strain on the back. In order to keep the spine strong, you will need to get enough calcium and vitamin D in the diet, which will help prevent osteoporosis. Osteoporosis is responsible for a lot of the bone fractures that lead to back pain. Calcium can be found in products such as Dairy products as well as green, leafy vegetables.

Although the skin makes vitamin D when you are in the sun, you can obtain vitamin D from the diet. Vitamin D is found in milk and foods that are fortified with this nutrient. However, most adults do not get enough calcium and vitamin D in their diet. Therefore, you should talk to the doctor about how much calcium and vitamin D you need per day, and consider taking a nutritional supplement or a multivitamin.

HEALTHY BACK MAINTENANCE

Healthy back maintenance is important, because poor posture can lead to pain and serious injury. The muscles in the back are unlike many other muscles in the body because they are almost always in use; therefore, healthy back maintenance is extremely important.

The muscles in the back are unlike many other muscles in the body because they are almost always in use. The muscles in the back:

- Hold the torso in an upright position throughout the day
- Assist you every time you pick something up, whether it's a pen or a concrete block
- Support the posture while you sit in the chair.
- The back muscles even work at night during the sleep.

The back is composed of three natural curves that form an S-shape. When the three natural curves are properly aligned, the ears, shoulders, and hips are in a straight line. Without support from strong, flexible muscles, the back loses its three natural curves. Poor posture can lead to pain and serious injury.

When you use good posture, the back is aligned in three natural curves supported by strong, flexible muscles. Good posture helps prevent back strain and pain.

LIFTING TECHNIQUES FOR PREVENTING BACK INJURIES

Lifting techniques for preventing back injuries include lifting with the large, strong leg muscles instead of the small muscles of the back. Lifting techniques for preventing back injuries also include getting close to the object you are going to lift and maintaining an upright position while squatting to pick up the object.

Lifting is strenuous and it requires proper training and technique. By lifting with the large, strong leg muscles instead of the small muscles of the back, you can prevent back injuries and reduce lower back pain. Tips to follow when lifting an object include:

- Get close to the load. Get as close to the load as possible, as if you're hugging the object. Having the object close to the body puts less force on the lower back.
- Maintain the curves. Keep the spine upright while squatting to pick up.
- Tighten the stomach muscles. Tightening the stomach helps support the spine. Don't hold the breath while tightening the muscles.
- Lift with the legs. The legs are the strongest muscles in the body, so use them.
- Pivot, don't twist. Turn with the feet, not the back. The back isn't built for twisting from side to side.

- Ask for help with large or heavy loads. If a load is too heavy to lift alone, ask for help. Pick one person to coach the lift, this way you lift and lower at the same time.
- Overhead loads. If a load is above the shoulders, use a step stool for elevation until the load is at least at chest level, but preferably at waist height. Pull the object close to the body and then lift. Remember to maintain the curves, and use the arms and legs to do the work.

YOGA THERAPY FOR THE BACK

Make use of the safe lifting techniques:

- If you must lift anything off the ground, make sure that you bend the knees when bending down to lift it and then straighten the knees as you come up.
- Take someone's help if the object is too heavy.
- Don't overestimate your power!

Adequate rest:

- In acute stages rest is vital
- Warm fomentation of the affected region is helpful
- Don't tire yourself
- When lying down it is best to lie on the side. Avoid sleeping on the face.
- Use a thin and hard pillow to support the head and neck

Dietary habits:

- Take lots of Fruits, green vegetable salads and sprouts.
- Good hydration will help inter-vertebral discs retain their health.
- Avoid refined foodstuffs and junk foods.
- Milk and Green leafy vegetables are important sources of nutrients.
- Vitamin C in citrus fruits will help the healing process.
- Honey in warm water or herbal teas are good for cleansing the bowels and this will help relieve many backaches that are due to constipation.

Self Traction: This is an excellent technique that helps relieve the pain in the entire back by mimicking the traction one gets in the hospitals without the attendant paraphernalia. Turn the head from side to side as if the head is a bottle cap and is being taken off the bottle. Let the head move away from the body pulling the upper part of the spine upwards.

Then move the heels, one by one as if walking away from the body downwards. Hold this self-traction on the entire spine for 30 seconds. Then release and relax for a minute. Repeat at least three times in the morning before getting out of bed and at night before going to bed.

Breath-Body Movements Coordination: These practices help to create a psycho-somatic harmony and this brings about reduction in stress and a healthy re-union of mind and body for health and harmonious healing.

- Sukshma Vyayama
- Vyagraha Pranayama with awareness of the movements at the back with the breath
- Sethu Kriya with awareness of the movements at the lower back with the breath

Yogasanas: Modified versions of the following Yogasanas may be used according to the patients' condition.

- **Back stretching poses:**
 - **Standing:** Tada Asana, Ardha Kati Chakrasana
 - **Sitting:** Danda Asana, Sashanga Asana
 - **Reclining:** Sethubanda Sarvangasana, Jatara Parivartan Asana, Dridha Asana
- **Back strengthening poses:**
 - **Standing:** Ardha Chakrasana
 - **Sitting:** Chatas Pada Asana and Pratipa Hala Asana
 - **Reclining:** Bhujanga Asana, Nouka Asana, Shalaba Asana, Bala Asana
- **Twisting poses:** (Avoid in patients having slipped or prolapsed disc)
 - **Standing:** Trikonasana and Parshava Kona Asana
 - **Sitting:** Vakra Asana and Bharadwaja Asana
 - **Reclining:** Jatara Parivartan Asana
- **Later on:** Pawana Mukta Asana, Nava Asana and Meru Asana

Pranayamas: The healing potential of the person is enhanced by proper use of Pranayamas that produce psycho-somatic harmony and intrinsic healing.

- Vibhagha and Pranava Pranayamas with special emphasis on Adam Pranayama and AAA sound for lower back.

- Savitri Pranayama, Nadi Shuddhi and Bhramari Pranayama help in reducing the stress levels.

Mudras and Bandhas: Uddiyana and Moola Bandha, Brahma Mudra, Aswini Mudra

Relaxation: Shavasana, Tala Kriya, and Kaya Kriya and Yoga Nidra

Dharana and Dhyana:

- Mandala Dharana on all Chakras with emphasis on Mooladhara and Swadhisthana.
- Om Japa and Ajapa Japa
- Chakra meditation

CONCLUSION:

Awareness plays an important role in preventing back pain and in the management of the disability due to such workplace based pain. Adoption of healthy lifting practices, ergonomic work environment and attention to diet and proper exercise and prevent and help manage as well as rehabilitate most conditions. Yoga as a way of life helps one to deal with the stresses and strains of the modern life while the Hatha Yoga practices create a healthy balance of the musculoskeletal system.

RECOMMENDED READING:

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