

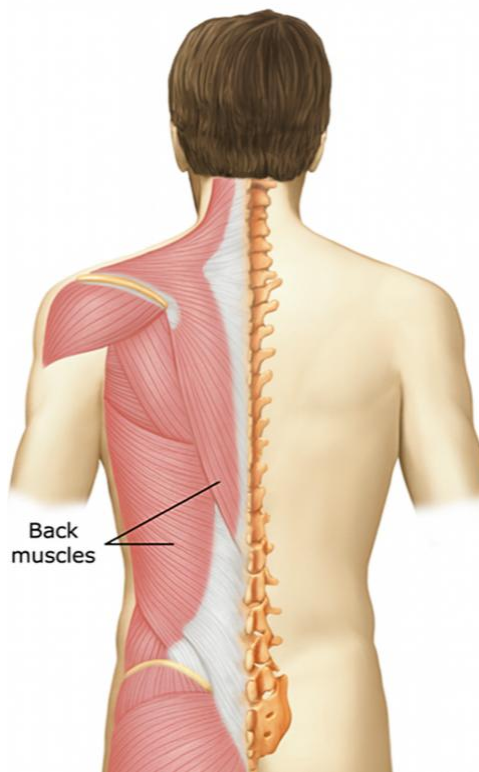
Low Back Pain

Dr Mehdi Mousavi: www.drmousavimd.com, Instagram: @drmousavimd, Whats App: 647-998-3184

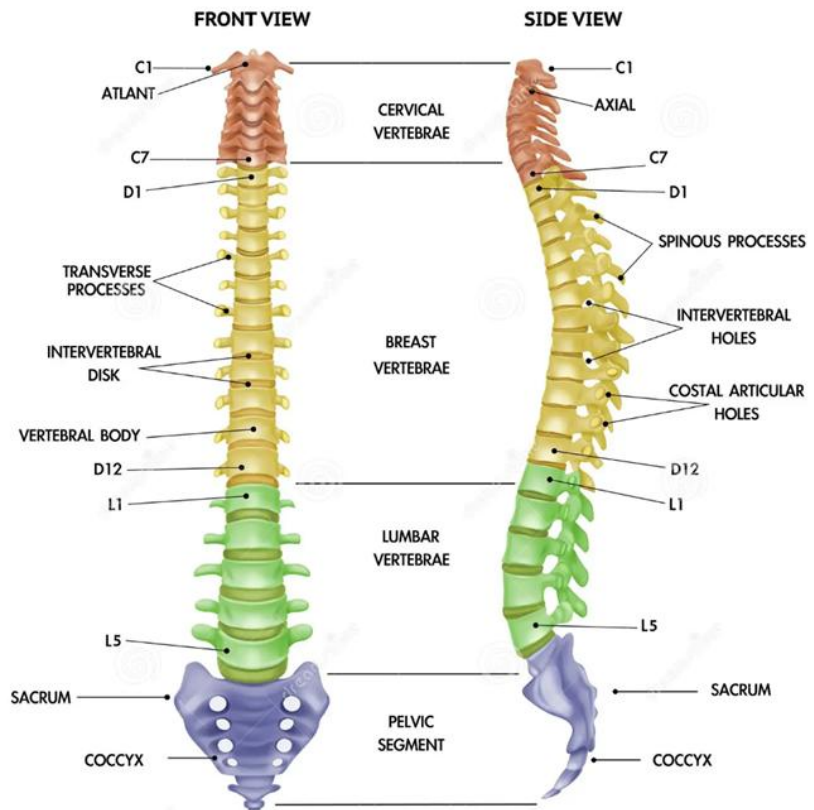
LOW BACK PAIN

OVERVIEW

Low back pain is extremely common, affecting more than 80% of people at some point in their lives. Although it typically is not a sign of a serious medical condition and often improves on its own, it can be very frustrating when it disrupts daily activities. Most acute episodes resolve within about four weeks, but some individuals may continue to experience longer-term pain.



Your back is made up of bones, muscles, nerves, and other supporting tissues that work together to allow you to stand upright and move.



Your spine has three natural curves that balance and support one another. When these curves fall out of proper alignment, extra stress is placed on the vertebrae and discs, which can lead to back pain.

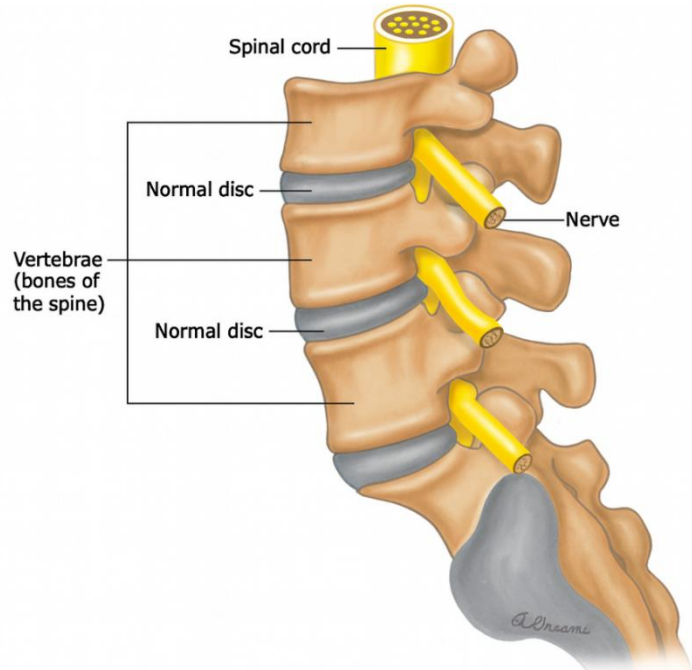
The bones in the back are called vertebrae, and together they form the spinal column. This column protects the spinal cord, which is part of the central nervous system and is responsible for sensation and movement

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Between each pair of vertebrae sits a **disc** made of a tough outer layer and a gel-like inner core. These discs function as cushions or shock absorbers, helping to protect the bones. Ligaments and tendons hold the vertebrae together, allowing them to move in coordination as the spine bends forward, backward, and side to side.

The vertebrae are stacked vertically. The spinal cord runs through a central canal within these bones, and small nerves—called nerve roots exit through openings on the sides of the vertebrae.



CAUSES OF LOW BACK PAIN

Nonspecific back pain

Most people (more than 85 percent) have "nonspecific" low back pain, which means that the pain is not clearly caused by a specific disease, abnormality, or serious injury of the spine. People sometimes refer to "throwing out" their back, meaning they had sudden-onset pain following physical activity (such as lifting a heavy object, shoveling, or bending). This type of pain most often represents a strain in one or more of the muscles in the lower back, and it can be severe.

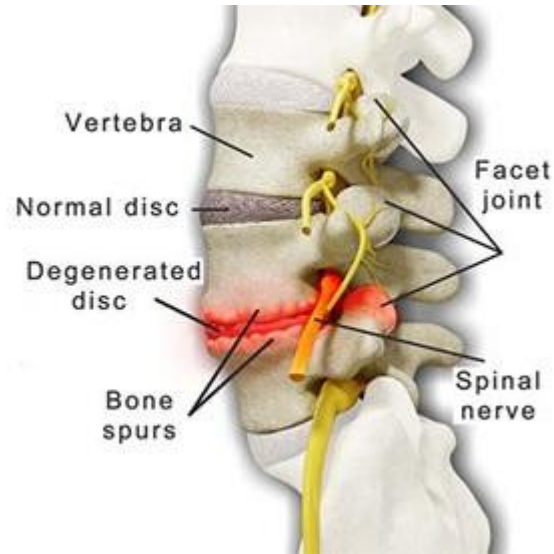


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Degenerative disc disease

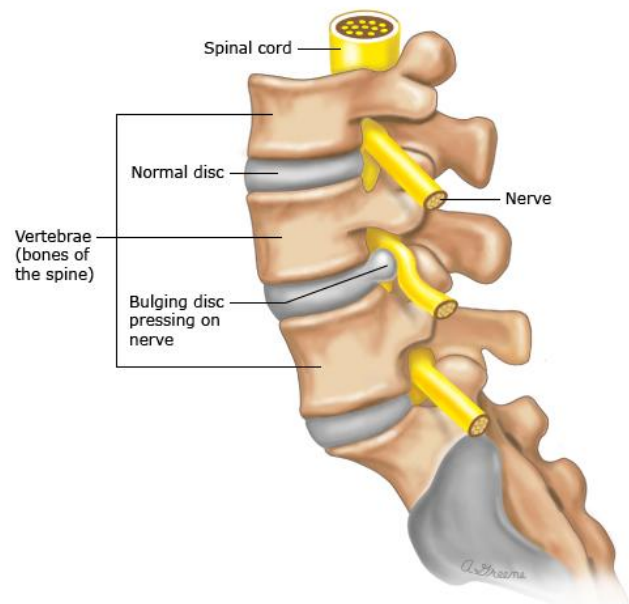
As we age, normal wear and tear can cause the spinal discs to develop small cracks or tears, or to lose some of their internal fluid. These changes may also affect the surrounding vertebrae, sometimes leading to bone spurs (bony overgrowths). Although these disc changes can contribute to back pain, many older adults with degenerative disc disease experience no symptoms at all.



Bulging and herniated discs

With age and repeated strain, the outer layer of a spinal disc can weaken, allowing the disc to bulge outward and press on a nearby nerve root. When the inner material pushes through the outer layer, this is called a herniated disc. Herniated discs can cause pain that radiates down the leg.

Radiculopathy occurs when a spinal nerve root becomes irritated or compressed — from a protruding disc, spinal arthritis, or even a tight or spasming muscle. Symptoms include low back pain that radiates into the leg, along with numbness, tingling, or muscle weakness in the area supplied by the affected nerve root, often in the lower leg.



Sciatica is a specific form of radiculopathy. It happens when one of the nerve roots that contribute to the sciatic nerve is compressed or irritated. The pain is often sharp or burning, traveling down the back or side of the thigh and sometimes reaching the foot or ankle. Numbness or tingling may also be present.

💡 ***It is important to note that many people have bulging discs on imaging studies yet experience no back pain at all.***

Other causes of low back pain are osteoarthritis, spinal canal stenosis (by bone spurs in people with osteoarthritis), spondylolisthesis (a condition in which one of the vertebrae of the lower spine "slips" forward in relation to another), ankylosing spondylitis (an inflammatory condition seen in young people) and rarely, infection or tumor.

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FACTORS THAT CONTRIBUTE TO LOW BACK PAIN

- 🚩 **Fitness Level:** Weak abdominal and back muscles increase the chance of back pain.
- 🚩 **Obesity:** The extra weight puts stress on the spine. A high calorie diet combined with an inactive and sedentary lifestyle can lead to obesity and low back pain.
- 🚩 **Smoking:** Smoking inhibits the body's ability to supply nutrients and oxygen to the spinal discs, which can cause their aging and deterioration.
- 🚩 **Age:** Back pain becomes more common as people age. The discs between the vertebrae dry out and lose some of their cushioning ability as the spine becomes stiffer.
- 🚩 **Female gender:** Women are at higher risk of low back pain
- 🚩 **Mental health:** Conditions such as anxiety, depression, job-related stress, and job dissatisfaction can contribute to the development or worsening of low back pain.

WHEN TO SEEK HELP

Most of the time, an episode of back pain will get better on its own and does not require extensive testing or treatment. However, it is recommended to see your doctor if you have:

-
- 🚩 New loss of control of bladder and/or bowel, inability to urinate, sexual function or loss of feeling or numbness between your legs at groin or genital area (cauda equina syndrome).
-
- 🚩 Back pain accompanied by progressive weakness in one or both legs, foot drop, or worsening radiculopathy despite treatment is in favor of structural or severe neurologic deficit and damage to nerve.
-
- 🚩 Cancer-related concerns including history of cancer (especially breast, prostate, lung, thyroid, kidney), unexplained weight loss, night pain unrelieved by rest, new onset low back pain and age of 70 years or older
-
- 🚩 Back pain with an Infection risk including fever or chills, unexplained weight loss, history of IV drug use, recent bacterial infection, Immunosuppression (HIV, long-term steroids, chemotherapy)
-
- 🚩 Back pain that is a result of falling or an accident, in people who have a history of long-term corticosteroid use or osteoporosis especially seen in people more than 50 years (Fracture suspicion)
-
- 🚩 Pain that is worse at night
-
- 🚩 Back pain that does not get better within four weeks.
-

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GENERAL RECOMMENDATION OF MAINTAINING HEALTHY BACK

Reduce Your Chances of Back Pain

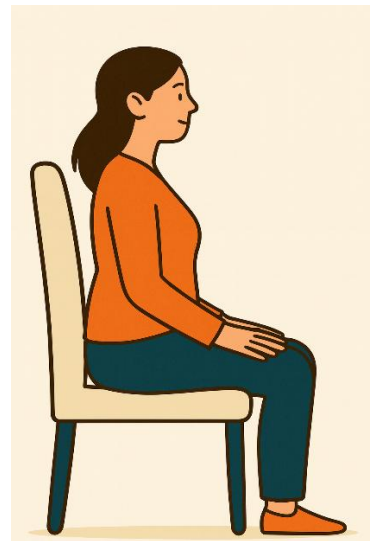
Practice good back care habits to keep your spine in proper alignment. Use correct standing, sitting, and walking postures, as well as proper lifting and carrying techniques.

Aerobic exercises that improve cardiovascular fitness—such as walking, jogging, or swimming—are beneficial.

Good spine care also involves strengthening the muscles of the back, abdomen, and hips. The abdominal (core) muscles are particularly important in supporting the lower back and preventing back pain. Studies show that well-balanced core muscles stabilize the spine and provide support for all movement.

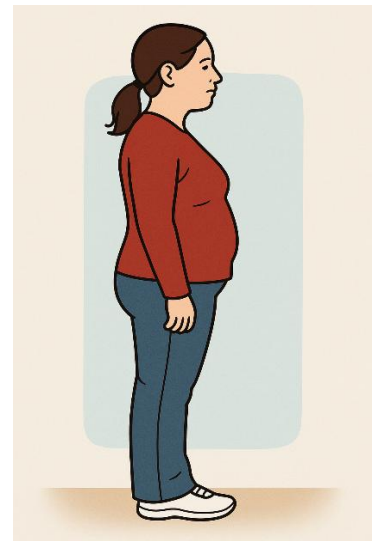
Proper Sitting Posture

- ✓ Keep neck, shoulders, and upper back muscles relaxed
- ✓ Sit with shoulders gently drawn back
- ✓ Keep feet flat on the floor
- ✓ Bend knees at a 90° angle
- ✓ Keep thighs level with the hips
- ✓ Sit with the back comfortably supported by the chair
- ✓ Use a small lumbar support at the lower back for additional support



Proper Standing Posture

- ✓ Keep the chest lifted
- ✓ Hold shoulders back and relaxed
- ✓ Gently engage the abdominal and gluteal muscles
- ✓ Keep the chin and knees relaxed
- ✓ Stand with feet slightly apart, distributing weight evenly on both feet



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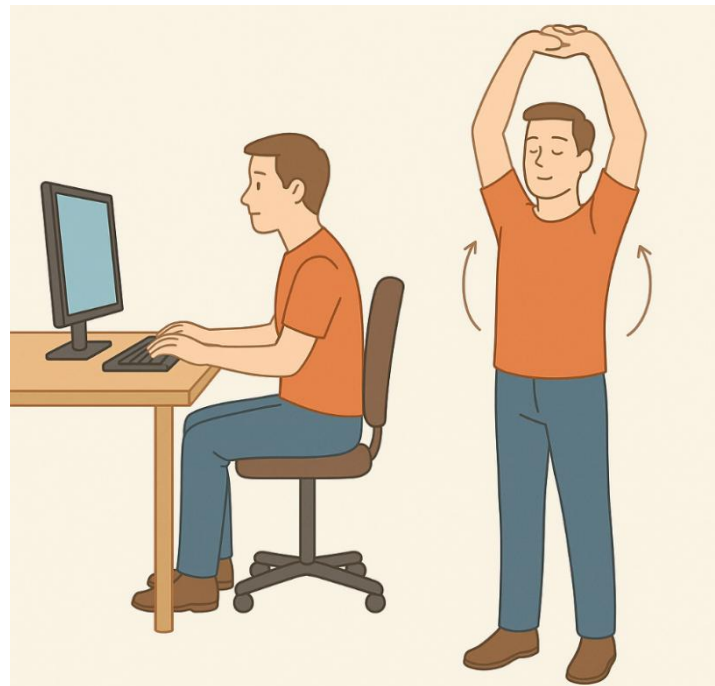
Proper form of lifting heavy objects

When lifting heavy objects, bend your knees and engage your abdominal muscles to avoid straining the weaker muscles of the lower back.



Take regular breaks

- ✓ If you sit or stand for long periods, it is important to take regular breaks. This may include simple stretching exercises.
- ✓ Alternate between sitting and standing positions when possible.
- ✓ Take brief but frequent walks to help prevent discomfort associated with prolonged sitting or standing.



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Change your position while seating

Adjust your office chair periodically throughout the day to avoid staying in the same posture for too long.



Change your position while standing

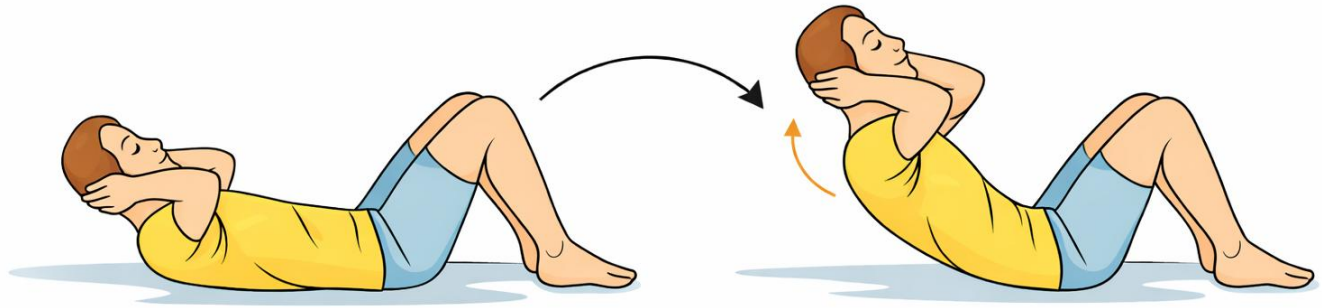
If you must stand in one place for extended periods, place a small block under one foot and alternate stepping on and off every few minutes to help reduce strain.



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EXERCISES TO INCREASE MUSCLE STRENGTH



◆ Partial Sit-up (Crunch) – Abdominal & Core Strengthening

📋 Instructions

- ✓ Lie on your back with knees bent and feet flat on the floor.
- ✓ Cross your arms over your chest or place hands lightly behind your head (do not pull the neck).
- ✓ Tighten your abdominal muscles.
- ✓ Slowly lift your head and shoulders until the shoulder blades are just off the floor.
- ✓ Keep your lower back in contact with the floor.
- ✓ Hold briefly at the top, then slowly lower back down with control.

📄 Exercise Prescription

Begin with:

- 10 repetitions
- 1–2 sets

Progress to: 2–3 sets of 10–15 repetitions
Hold at top position: 1–2 seconds
Frequency: 3–4 sessions per week

📈 Progression

- Increase repetitions gradually as strength improves
- Focus on slow, controlled movement
- Progress only if pain remains well controlled

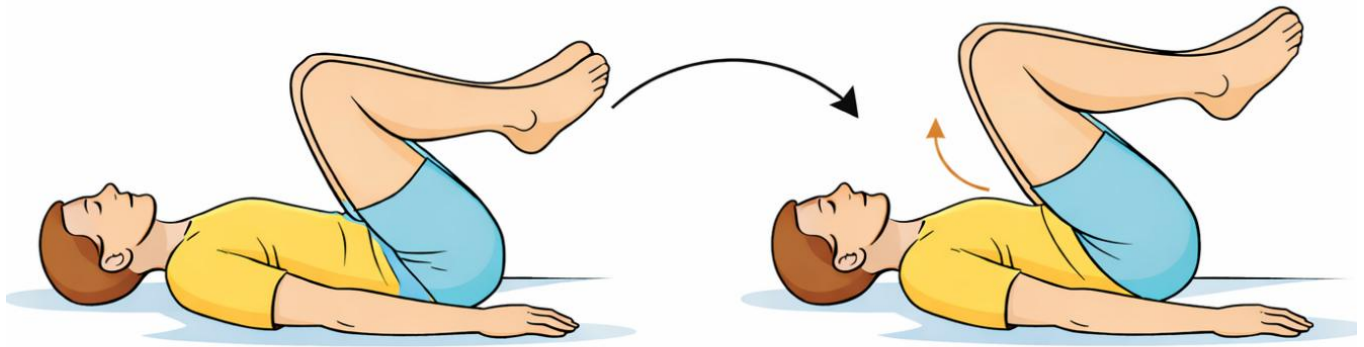
🩺 Clinical Notes

- ✓ Strengthens abdominal muscles that support the spine
- ✓ Improves core stability and posture
- ✓ Helps reduce strain on the lower back during daily activities
- ✓ Appropriate for most patients when performed correctly

- ⚠️ Avoid pulling on the neck
- ⚠️ Do not lift too high — small movement is sufficient
- ⚠️ Stop if sharp back or neck pain occurs
- 💡 Quality and control are more important than height of lift.

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◆ Reverse Crunch – Abdominal (Lower Core) Strengthening

📋 Instructions

- ✓ Lie on your back with arms resting at your sides.
- ✓ Bend your knees and lift your feet off the floor so hips and knees are at about 90 degrees (ankles may be crossed).
- ✓ Tighten your abdominal muscles.
- ✓ Slowly lift your tailbone and hips slightly off the floor, bringing the knees gently toward your chest.
- ✓ Avoid swinging or using momentum.
- ✓ Hold briefly, then slowly lower back down with control.

📄 Exercise Prescription

Begin with:

- 8–10 repetitions
- 1–2 sets

Progress to: 2–3 sets of 10–15 repetitions

Hold at top position: 1–2 seconds

Frequency: 3–4 times per week

📈 Progression

- Increase repetitions gradually as strength improves
- Focus on slow, controlled lifting and lowering
- Progress only if pain remains well controlled

🏥 Clinical Notes

- ✓ Targets lower abdominal muscles that support the lumbar spine
 - ✓ Improves core stability and posture
 - ✓ Helps reduce stress on the low back during daily activities
 - ✓ Often easier on the neck and upper back than standard crunches
 - ⚠️ Avoid jerking or swinging the legs
 - ⚠️ Keep movement small and controlled
 - ⚠️ Stop if sharp pain or worsening leg symptoms occur
 - 💡 If difficult, begin by lifting only one knee at a time before progressing to both legs.
-

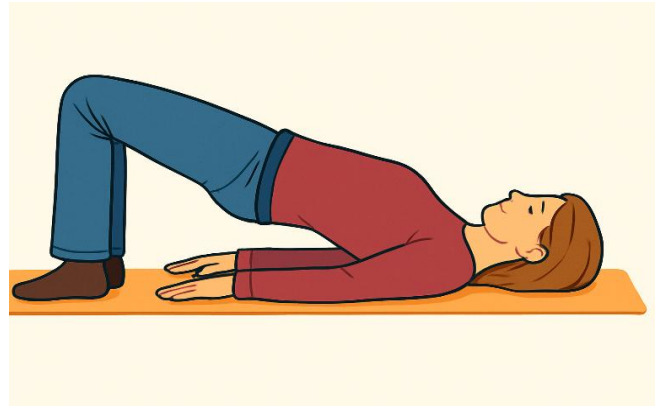
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◆ Pelvic Lift (Bridge) – Gluteal & Core Strengthening

📋 Instructions

- ✓ Lie on your back with knees bent, feet flat on the floor, and arms at your sides.
- ✓ Slowly raise your hips upward, avoiding arching the lower back.
- ✓ Keep your body in a straight line from the shoulders to the knees.
- ✓ Hold briefly, then lower slowly with control. ✓



📄 Exercise Prescription

Begin with:

- 8–10 repetitions
- 1–2 sets

Progress to: 2–3 sets of 10–15 repetitions

Hold each repetition: 5–10 seconds

Frequency: 3–5 times per week

(May be performed daily if well tolerated)

📈 Progression

- Increase hold time gradually to **10–15 seconds**
- Increase repetitions to **15–20 per set** as strength improves
- Progress to single-leg bridge only when pain-free and stable

🏥 Clinical Notes

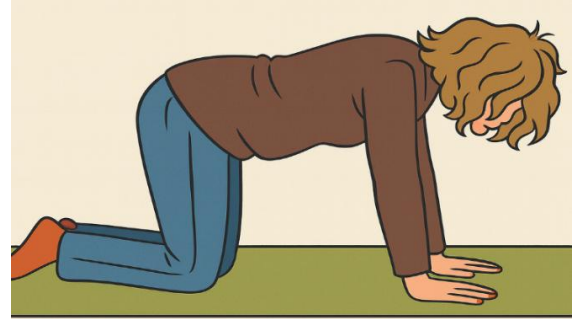
- ✓ Strengthens gluteal muscles, hamstrings, and core stabilizers
 - ✓ Improves spinal stability and posture
 - ✓ Reduces mechanical stress on the lumbar spine
 - ✓ Helpful in both acute recovery and chronic low back pain prevention
 - ⚠️ Avoid excessive arching of the lower back
 - ⚠️ Move slowly and with control
 - ⚠️ Stop if sharp pain or worsening symptoms occur
 - 💡 Start with smaller lifts if full height is uncomfortable.
-

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◆ Arm and Leg Reach (Bird Dog) – Core Stability & Back Support

- ✓ Begin on your hands and knees with your neck in a neutral position, parallel to the floor.
- ✓ Keep your back straight, knees hip-width apart, and weight evenly distributed.



- ✓ Slowly extend one arm straight forward while maintaining balance and a stable core.
- ✓ Keep spine neutral (no sagging or arching)
- ✓ As you get stronger, progress by extending the opposite leg straight back, keeping hips level and raise opposite arm at the same time.

- ✓ Next, lift one leg straight and hold for some seconds

📄 Exercise Prescription

Begin with:

- 8–10 repetitions per side
- 1–2 sets

Progress to: • 2–3 sets of 10–15 repetitions per side

Hold each repetition: 5–10 seconds

Frequency: 3–5 times per week

📈 Progression

- Increase hold time gradually as strength improves
- Focus on slow, controlled movements
- Progress only when pain is well controlled

🏥 Clinical Notes

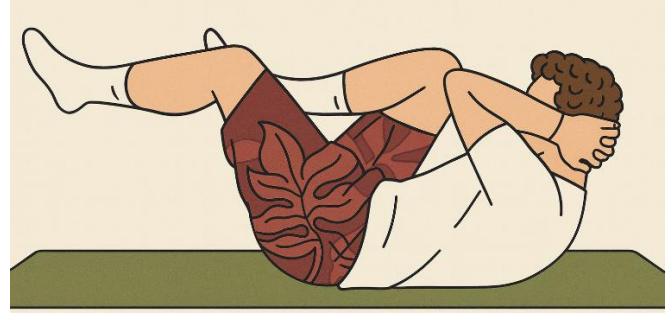
- ✓ Strengthens deep core stabilizers and gluteal muscles
- ✓ Improves spinal control and posture
- ✓ Reduces strain on the lumbar spine during daily activities
- ✓ Excellent for both early rehab and long-term prevention

- ⚠️ Keep spine neutral — no sagging or over-arching
- ⚠️ Avoid quick or jerky movements
- ⚠️ Stop if sharp pain or worsening leg symptoms occur

💡 If difficult, start by lifting only the arm or leg separately before combining.

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◆ Bicycle Exercise – Core, Gluteal & Shoulder Strengthening

📋 Instructions

- ✓ Lie flat on your back and place your hands lightly behind your head.
- ✓ Engage your abdominal muscles and lift your knees to approximately a 45-degree angle.
- ✓ Lift your shoulders off the floor and rotate your upper body to the left, bringing the right elbow toward the left knee while extending the right leg in a cycling motion.
- ✓ Switch sides, bringing the left elbow toward the right knee.
- ✓ Continue alternating sides in a controlled, smooth motion.
- ✓ Focus on core engagement rather than neck or leg speed
- ✓ Keep lower back gently supported against the floor

📄 Exercise Prescription

Begin with:

- 8–10 repetitions per side
- 1–2 sets

Progress to:

- 2–3 sets of 10–15 repetitions per side

Frequency:

- 3–4 times per week

📈 Progression

- Increase repetitions gradually as tolerated
- Maintain slow, controlled movement
- Focus on core engagement rather than speed

🏥 Clinical Notes

- ✓ Strengthens abdominal muscles and hip stabilizers
- ✓ Engages shoulder and upper trunk muscles for coordination
- ✓ Improves core endurance and spinal support
- ✓ Enhances functional movement control

- ⚠️ Avoid pulling on the neck
- ⚠️ Keep movements slow — no swinging legs
- ⚠️ Keep lower back gently supported against the floor
- ⚠️ Stop if sharp pain or worsening symptoms occur
- 💡 If difficult, keep feet closer to the floor or reduce range of motion.

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◆ Exercise Ball Crunch – Abdominal Strengthening & Balance Training

📋 Instructions

- ✓ Sit on the exercise ball with feet flat on the floor, about hip-width apart.
- ✓ Slowly roll the ball backward until the thighs and hips are parallel to the floor.
- ✓ Place your hands lightly behind your head.
- ✓ Keeping the lower body stable, engage the abdominal muscles by contraction.
- ✓ Slowly flex forward, lifting the shoulders off the ball in a controlled manner.
- ✓ Return slowly to the starting position. Keep feet firmly planted for balance

📄 Exercise Prescription

Begin with:

- 8–10 repetitions
- 1–2 sets

Progress to: 2–3 sets of 10–15 repetitions

Hold at top position: 1–2 seconds

Frequency: 3–4 times per week

📈 Progression

- Increase repetitions gradually as strength improves
- Add longer holds (up to 3–5 seconds) if pain remains controlled
- Progress by moving feet slightly farther away to increase balance challenge

🏥 Clinical Notes

- ✓ Strengthens abdominal muscles supporting the spine
- ✓ Improves balance and core coordination
- ✓ Enhances spinal stability during daily activities
- ✓ Lower neck strain compared to floor crunches

- ⚠️ Keep feet firmly planted to avoid slipping
- ⚠️ Move slowly — no jerky movements
- ⚠️ Stop if dizziness or sharp back pain occurs
- 💡 If balance is difficult, keep feet wider apart or perform near a wall for safety.

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TREATMENT OF LOW BACK PAIN

Remaining active

If your back pain becomes severe, short-term rest for a day or so may be helpful. Many people find it most comfortable to lie on their back with a pillow placed under the knees and the head and shoulders slightly elevated. When sleeping, lying on your side with the upper knee bent and a pillow between the knees can also provide relief. However, extended bed rest is not advised.

While you should avoid strenuous activities and sports during painful periods, it is appropriate to continue your usual daily activities and engage in light exercise such as walking. If a particular activity increases your back pain significantly, modify it or choose an alternative that is more comfortable. Some individuals worry that staying active might worsen their condition or slow their recovery, but this is not the case. Research shows that people with low back pain tend to improve more quickly when they stay active. Movement helps ease muscle spasms and prevents weakening of the back muscles.

Pain medications

You can try taking an over-the-counter medication to help relieve your pain. Nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen (Advil, Motrin) and naproxen (Aleve), are often more effective for low back pain than acetaminophen (Tylenol).

Importantly, NSAIDs are not only pain relievers — they also reduce inflammation. By decreasing inflammation around a bulging or herniated disc, NSAIDs may help reduce pressure on the affected nerve root and improve symptoms.

If you take an NSAID, it is often more effective to use it on a regular schedule for three to five days rather than only taking it when the pain becomes severe. A common over-the-counter example is ibuprofen 200 mg every 4 to 6 hours; if symptoms do not improve, the dose may be increased to 400 mg every 4 to 6 hours. Another option is naproxen: 200 to 400 mg once, followed by 200 mg every 8 to 12 hours. Your physician may prescribe higher doses if appropriate.

People with kidney disease, heart disease, or a history of stomach or duodenal ulcers should avoid using NSAIDs without consulting their doctor. Individuals with hypertension should be aware that NSAIDs can sometimes raise blood pressure. The most well-known side effects of these medications include gastrointestinal irritation, inflammation, ulceration, and bleeding.

Muscle relaxants

Muscle relaxants, such as methocarbamol (Robaxin), cyclobenzaprine (Flexeril), or baclofen, may help reduce low back pain because much of the discomfort is often related to muscle spasm. These medications can cause drowsiness, so they are usually most helpful when taken at bedtime and are generally recommended only for short-term use (about one to two weeks). Individuals who must remain alert—such as those who drive or operate machinery—should avoid using muscle relaxants. The dose of methocarbamol is about 1.5g (3 tablets) 3 to 4 times daily for 2 to 3 days (up to 8 g/day may be given in severe conditions), then decrease dose to ≤ 4.5 g/day in 3 to 4 divided doses (eg, 1.5 g 3 times daily or 750 mg 4 times daily).

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Opioids (drugs derived from or related to morphine)

Opioids such as codeine, oxycodone, morphine, and hydromorphone are generally not recommended for most cases of back pain. In rare circumstances, a healthcare provider may prescribe them for a few days when severe pain does not respond to other treatments. However, opioids are usually no more effective than NSAIDs and carry significant risks, including side effects, dependency, misuse, addiction, and overdose.

Heat

Applying heat—such as with a heating pad or heated wrap—can be helpful for low back pain, particularly during the first few weeks. Some commercial heating pads also release medications, which may provide additional relief. The benefits of cold therapy are less clear, although some people find that using ice can offer short-term pain reduction.

Physiotherapy

Physiotherapy is one of the most evidence-based treatments for low back pain. It helps reduce pain, restore mobility, strengthen the supporting muscles of the spine, and prevent future episodes. Early and consistent participation in a physiotherapy program is associated with faster recovery and better long-term outcomes.

Physiotherapy can decrease pain through targeted stretching, therapeutic exercises, and other modalities. It also focuses on correcting posture and teaching exercises that strengthen the core and back muscles, improving overall spinal stability and reducing the risk of recurrence.

Exercise

Beginning a new exercise program right after an episode of acute low back pain does not appear to accelerate recovery from the immediate flare-up. However, there is strong evidence that regular exercise is highly beneficial for individuals with chronic low back pain, helping to improve function, reduce symptoms, and prevent future recurrences.

To choose the right exercises, you first need to identify which pattern of low back pain you have. In this pamphlet, we will later show exercises for each of the four types of low back pain.

👉 **Pattern 1 Low Back Pain (Mechanical Low Back Pain):**

- ♣ Pain is mainly felt in the lower back, buttocks, upper thigh, or groin, and may sometimes radiate into the legs.
- ♣ Pain may be constant or intermittent.
- ♣ Pain is often worse with sitting or bending forward.
- ♣ Pain may be relieved by bending backward.
- ♣ Walking and standing are usually better tolerated than sitting.

👉 **Pattern 2 low back pain:**

- ♣ Pain is worst in the lower back and may spread to buttocks or legs.
- ♣ Pain is always intermittent.

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- ⚠ Pain is worse when bending backward and when standing or walking for extended periods.
- ⚠ Pain may be eased by bending forward or sitting.

👉 Pattern 3 low back pain:

- ⚠ Pain is mainly in the legs but back pain may be present.
- ⚠ Pain is constant.
- ⚠ Pain is often worse when sitting or bending, but in the acute stage can be made worse by any movement.
- ⚠ Pain may be lessened in some rest positions.
- ⚠ The best position is the one that most reduces the leg pain.

There is no place for exercise or repeated movements in this pattern of low back pain.

👉 Pattern 4 low back pain:

- ⚠ Pain is worst in legs and can be described as heaviness or aching.
- ⚠ Pain is intermittent and is made worse by activity (often walking).
- ⚠ Pain is relieved by a change in position, usually by bending forward.

Spinal manipulation

“Spinal manipulation” is a technique used by chiropractors, physical therapists, osteopaths, massage therapists, and other trained professionals to help relieve back pain. It involves carefully moving the joints of the spine beyond their usual range of motion. Research suggests that spinal manipulation can provide modest short-term pain relief and improved function, and it is generally considered safe when performed by an experienced practitioner. If you are interested in this treatment option, discuss it with your health care provider to determine whether it is appropriate for you and how to incorporate it into your overall care plan.

Massage

There is limited scientific evidence to support massage as an effective treatment for acute low back pain. However, many people find that massage can be relaxing and may provide temporary relief or improved comfort, even if it does not address the underlying cause of the pain.

Acupuncture

Acupuncture involves placing very thin needles into specific points on the body, based on traditional Chinese concepts of energy pathways. Evidence for its effectiveness in acute low back pain is not consistent, but some individuals do report meaningful symptom relief.

Psychologic therapy

In certain situations, mental health factors can play a role in the development or persistence of low back pain. Many individuals also struggle with the emotional and psychological impact of dealing with pain. Although psychological therapies have been studied primarily for chronic back pain, they may also provide benefit for some people experiencing acute symptoms.

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Injections

Some clinicians may recommend injecting a local anesthetic (numbing medication) into painful “trigger points” within the soft tissues of the back. While trigger-point injections can help certain individuals with chronic back pain, they are generally not advised for treating acute low back pain.

For people who have had low back pain for more than six weeks along with sciatica or radiculopathy, injections containing a glucocorticoid (steroid) may be considered. These injections can reduce inflammation around the affected nerve root and may provide temporary relief in appropriately selected patients.

Corsets and braces

While wearable supportive garments may claim to help relieve or prevent low back pain, these are typically not effective.

Surgery

Only a small percentage of people with low back pain ultimately need surgery. Surgical treatment becomes necessary when there are signs of cauda equina syndrome (compression of the nerves at the base of the spinal cord causing leg weakness and bowel or bladder dysfunction), or when another serious condition such as a tumor, infection, or significant nerve compression leads to severe weakness. Fortunately, these situations are uncommon.

Surgery may also be an option for individuals with ongoing radiculopathy caused by a herniated disc or spinal stenosis that has not improved with appropriate nonsurgical treatments. There remains some debate regarding the benefit of surgery for people who have degenerative disc disease without other complications.

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Dr Mehdi Mousavi: www.drmousavimd.com, Instagram: @drmousavimd, Whats App: 647-998-3184

EXERCISES FOR LOW BACK PAIN PATTERN # 1 (MECHANICAL BACK PAIN)

SYMPTOMS

- ♣ Pain is mainly felt in the lower back, buttocks, upper thigh, or groin, and may sometimes radiate into the legs.
- ♣ Pain may be constant or intermittent.
- ♣ Pain is often worse with sitting or bending forward.
- ♣ Pain may be relieved by bending backward.
- ♣ Walking and standing are usually better tolerated than sitting.

COMFORT POSITIONS

The following rest positions may be used at home to support the spine, rest the back, and reduce pain.

When your pain is severe:

- ✓ Continue your normal activities as much as you can tolerate.
- ✓ Modify your routine and take more frequent rest breaks.
- ✓ Change positions often — try not to sit for long periods.
- ✓ When sitting or lying flat, place a rolled-up towel or small cushion behind the curve of your lower back for support.
- ✓ Try gentle positions and exercises specifically designed for back pain.

◆ “Z” Lie (90–90 Supported Position) – Spinal Decompression & Pain Relief

📖 Instructions

- ✓ Lie flat on your back on a firm but comfortable surface.
- ✓ Place your lower legs on a chair, stool, or large pillows so that:
 - Hips are bent to about 90 degrees
 - Knees are bent to about 90 degrees
- ✓ Your thighs should be vertical and your lower legs horizontal, forming a “Z” shape when viewed from the side.
- ✓ Support your head and neck with a small pillow if needed.
- ✓ A pillow under the buttocks or lower back may be used for additional comfort and support.
- ✓ Relax your back and allow the lower spine to gently flatten.
- ✓ Breathe slowly and comfortably.



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Prescription

Frequency: Several times daily as needed

Duration: Hold for 5–15 minutes per session. May increase up to 20 minutes if comfortable

Best used:

- During acute pain episodes
- After prolonged standing or sitting
- Before or after exercise sessions

Clinical Notes

- ✓ Reduces pressure on lumbar discs and joints
- ✓ Helps relax tight back muscles
- ✓ Often beneficial for flexion-sensitive or acute low back pain
- ✓ Promotes neutral spinal alignment
- ⚠ Stop if symptoms worsen or leg pain increases.
- 💡 If chair height is too high or low, adjust with pillows for comfort.

◆ Supine Lie (Hook-Lying Comfort Position) – Pain Relief & Spinal Support

Instructions

- ✓ Lie flat on your back on a firm but comfortable surface.
- ✓ Place one or more pillows under your knees so hips and knees are slightly bent.
- ✓ Support your head and neck with a small pillow for comfort.
- ✓ Allow your lower back to relax into a neutral, supported position.
- ✓ Keep arms resting comfortably at your sides or on your abdomen.
- ✓ Breathe slowly and relax.



Prescription

Frequency: Several times daily as needed for pain relief

Duration: Hold for 5–15 minutes per session. May be extended up to 20 minutes if comfortable

Use especially: During pain flare-ups or after activity or exercise

Clinical Notes

- ✓ Helps reduce muscle spasm and lumbar strain
 - ✓ Promotes neutral spine alignment
 - ✓ Useful in acute and chronic low back pain
 - ✓ Can be combined with diaphragmatic breathing for relaxation
 - ⚠ If symptoms worsen or leg pain increases in this position, discontinue and try an alternative comfort position.
-

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◆ Prone Lie (Lumbar Relief / Extension Support) – Pain Reduction & Spinal Positioning

📋 Instructions

- ✓ Lie on your stomach on a firm but comfortable surface.
- ✓ Place a small pillow or folded towel



under your abdomen or pelvis for gentle support (if more comfortable).

- ✓ Turn your head to one side or rest it on your arms.
- ✓ Relax your back muscles and allow your lower spine to gently settle into extension.
- ✓ Breathe slowly and comfortably.

📄 Prescription

Frequency: Several times per day as needed for symptom relief

Duration:

- Maintain position for 5–15 minutes per session
- May progress up to 20 minutes if comfortable

Best used:

- During pain flare-ups
- After prolonged sitting or bending activities

🩺 Clinical Notes

- ✓ Often helps patients whose pain improves with extension-based positions
- ✓ May reduce disc-related or flexion-sensitive low back pain
- ✓ Helps relax lumbar muscles and improve posture awareness
- ⚠️ Discontinue if pain significantly increases, numbness worsens, or leg pain spreads.
- 💡 If uncomfortable initially, start without a pillow and add support gradually as tolerated.

◆ Knees to Chest – Lumbar Stretch & Pain Relief

📋 Instructions

- ✓ Lie on back with knees bent and feet flat on the floor
- ✓ Slowly bring one knee toward your chest, then the other, as tolerated. Bringing the legs up one at a time may be easier and more comfortable.



- ✓ Wrap your hands behind your thighs or over the knees and gently pull the knees toward the chest until a comfortable stretch is felt in the lower back.

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Prescription

Begin with: Hold for 10–20 seconds; Repeat 5–10 times per session

Progress to: Hold for 20–30 seconds as tolerated

Frequency: 2–4 times per day, especially during pain or stiffness

Clinical Notes

✓ Gently stretches lower back muscles and ligaments

✓ Helps reduce muscle tension and stiffness

✓ Often beneficial for flexion-sensitive low back pain

✓ Improves lumbar mobility

⚠ Avoid bouncing or pulling forcefully.

⚠ Discontinue if leg pain worsens, numbness increases, or sharp pain occurs.

💡 May be performed one leg at a time if double-leg position is uncomfortable.

◆ Lumbar Roll (Sitting Support) – Postural Support & Pain Relief

Instructions

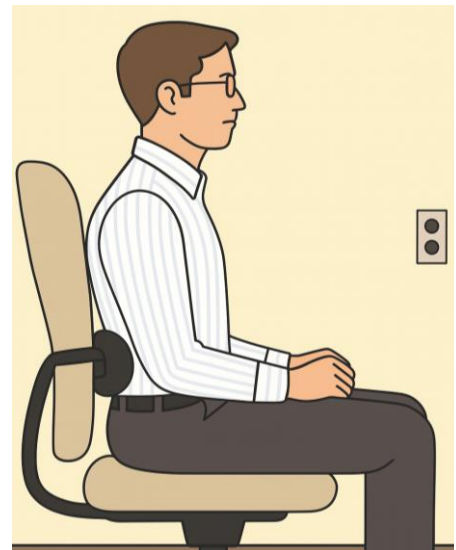
✓ Sit upright in a chair with feet flat on the floor and hips positioned fully back in the seat.

✓ Place a rolled towel, small pillow, or lumbar roll behind your lower back at belt-line level.

✓ The roll should fit into the natural curve of your lower spine.

✓ Gently sit back so your lower back rests against the roll.

✓ Keep shoulders relaxed and head upright (avoid slouching).



Prescription

Use:

- During prolonged sitting (work, driving, watching TV)

Duration:

- As long as sitting is required
- Take posture breaks every 30–60 minutes

Frequency: Daily, especially during flare-ups or long sitting periods

Clinical Notes

✓ Helps maintain neutral lumbar spine alignment

✓ Reduces strain on discs and back muscles

✓ Often beneficial for posture-related or sitting-induced low back pain

✓ Can decrease fatigue and stiffness

⚠ Roll should be supportive but not uncomfortable.

⚠ Avoid excessive arching of the lower back.

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💡 A commercial lumbar roll or a tightly rolled towel both work well.

◆ Lumbar Roll – Night (Sleeping Support) – Spinal Alignment & Pain Relief

📋 Instructions

✓ When sleeping, place a lumbar roll under the mid-back to support the natural curve of the spine. Lie on your back in a comfortable sleeping position.

✓ Place a rolled towel or small lumbar pillow under your lower back at the natural curve (belt-line level).

✓ Ensure the roll gently supports the curve without pushing the back into excessive arching.

✓ Support your head and neck with a pillow as usual.

✓ Relax and allow your spine to rest in a neutral, supported position.

📄 Prescription

Use: Every night or during periods of increased pain

Duration: Throughout sleep as tolerated

Frequency: Nightly, especially during flare-ups or stiffness

🏥 Clinical Notes

✓ Maintains neutral lumbar spine alignment during sleep

✓ Reduces strain on spinal joints and discs

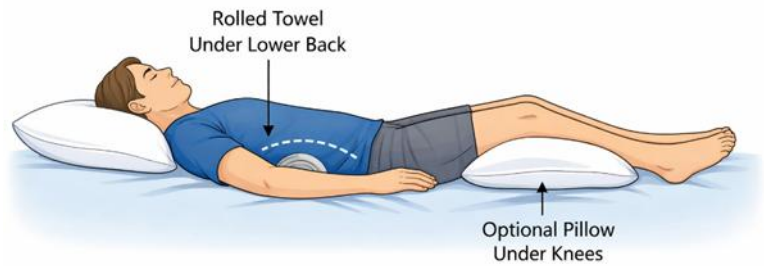
✓ May decrease morning low back stiffness and pain

✓ Helpful for patients who sleep on their back

⚠️ If discomfort increases, adjust roll size or remove it.

⚠️ Avoid excessive arching of the lower back.

💡 A firm rolled towel works well if a lumbar pillow is unavailable.



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EXERCISE FOR THE FIRST FEW DAYS

For the first few days, you may only be able to lie on your stomach (see Prone Lie). As tolerated, progress to prone extension using your arms.

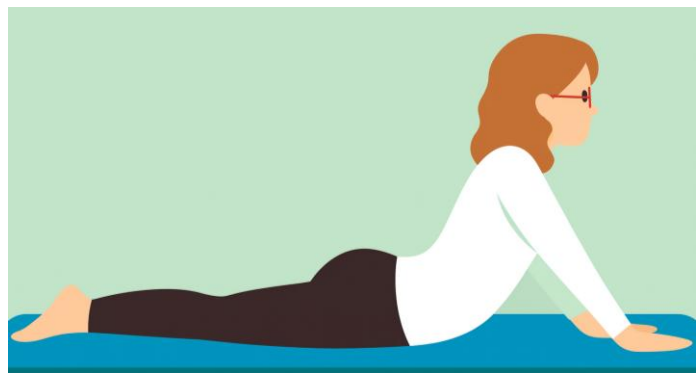
If any exercise makes your pain significantly worse and the pain lasts longer than 30 minutes afterward, adjust how you perform the exercise—for example, reduce the number of repetitions, decrease the range of movement, or try a different exercise to find what works best for you.

- 💡 The key is to keep moving in a way that does not increase your pain.
- 💡 Your back will feel better when you walk or stand rather than sit. Schedule walking.
- 💡 Avoid rolling your spine forward. This may put more pressure on the painful areas and increase your discomfort.

◆ Sloppy Pushup (Prone Press-Up) – Lumbar Extension & Pain Relief

📄 Instructions

- ✓ Lie on your stomach with your hands placed on either side of your head.
- ✓ Keep your lower body relaxed and in contact with the floor.
- ✓ Slowly press through your arms to raise your upper body.
(You may need to place your hands slightly



higher to fully straighten your elbows while keeping your pelvis on the floor.)

- ✓ Keep your back and hip muscles relaxed throughout the movement.

📄 Exercise Prescription

Begin with:

- 8–10 repetitions per session
- Hold each press-up for 1–2 seconds

Progress to:

- 10–15 repetitions
- Hold up to 3–5 seconds as tolerated

Frequency: 3–6 times per day (especially during pain flare-ups)

🏥 Clinical Notes

- ✓ Encourages lumbar extension movement
- ✓ Often reduces disc-related or flexion-sensitive low back pain
- ✓ May help centralize pain (move pain from leg/buttock back toward the low back)
- ✓ Improves spinal mobility and posture

- ⚠️ Keep hips on the floor — do not lift pelvis
- ⚠️ Movement should be slow and relaxed, not forced
- ⚠️ Stop if leg pain worsens, numbness increases, or sharp pain occurs

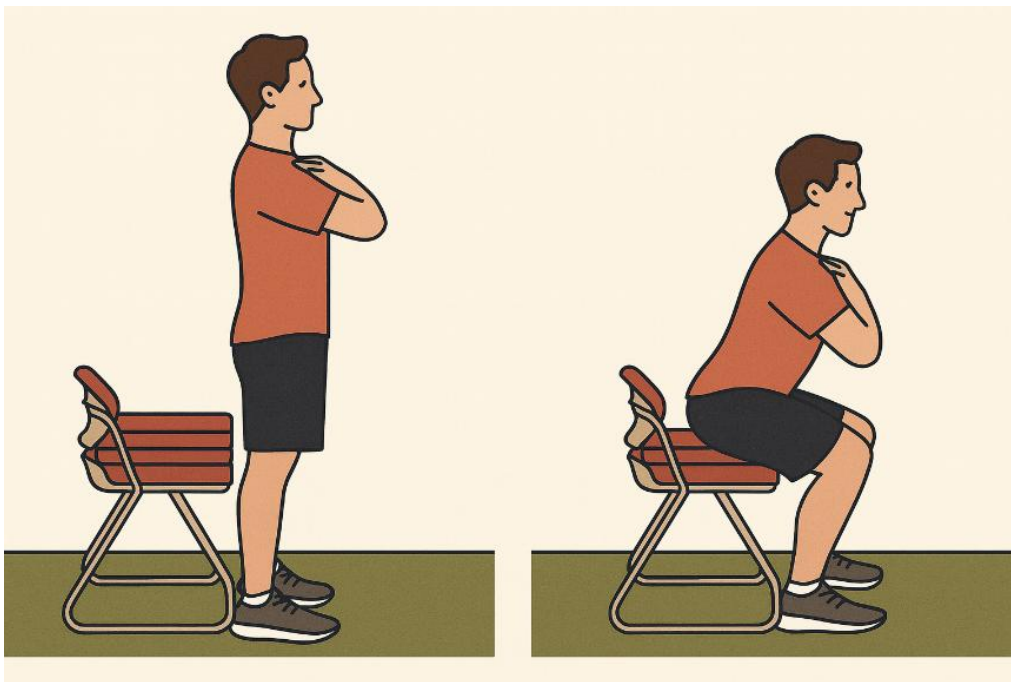
💡 If full press-up is uncomfortable, start with **prone on elbows** (forearms on floor) and progress gradually.

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EXERCISES WHEN YOUR PAIN IS MORE MANAGEABLE

- ✓ It is normal for pain to fluctuate. As long as it remains mild or manageable, it is safe to continue moving and exercising.
 - ✓ Modify your work and daily activities as needed to stay comfortable.
 - ✓ Stay active and include endurance activities such as walking, treadmill use, or aquafit **3–5 times** per week, for **10–30 minutes** per session.
 - ✓ Use a lumbar roll or small cushion to support the natural curve of your lower back when sitting.
 - ✓ If you sit for long periods, use a sit-to-stand desk or take movement breaks at least **every 30 minutes**.
-



◆ Beginner Partial Squat – Lower Body & Core Strengthening

📋 Instructions

- ✓ Stand with feet shoulder-width.
- ✓ Gently tighten your abdominal muscles (“brace your core”).
- ✓ Slowly bend your hips and knees to perform a partial squat.
- ✓ Keep your chest upright and knees aligned over your toes.
- ✓ Return to standing in a controlled manner.
- ✓ As strength and comfort improve, gradually progress toward a deeper (full) squat, as tolerated.

📄 Exercise Prescription

Begin with:

- 8–10 repetitions
- 1–2 sets

Progress to: 2–3 sets of 10–15 repetitions

Frequency: 3–5 times per week

Hold at bottom position: 1–2 seconds

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Progression

- Increase repetitions gradually as tolerated
- Lower slightly deeper as strength improves (without pain)
- Add light support (holding a chair or wall) initially if balance is difficult

Clinical Notes

- ✓ Strengthens thighs, buttocks, and core muscles
- ✓ Improves functional movements (sitting, standing, lifting)
- ✓ Reduces strain on the lower back during daily activities
- ✓ Safe starting exercise for most low back pain patients
- ⚠ Avoid rounding the back
- ⚠ Do not allow knees to collapse inward
- ⚠ Stop if sharp back or knee pain occurs
- 💡 Pain-free range only — depth is not important early on.



◆ Bird Dog (Arm and Leg Reach) – Core Stability & Back Support

Instructions

- ✓ Start on your hands and knees with your spine in a neutral position and neck aligned with your back.
- ✓ Tighten your abdominal muscles to stabilize your core.
- ✓ Slowly lift one leg straight behind you while keeping hips level.
- ✓ **Beginner:** Hold briefly, then return to the starting position.
- ✓ **Progression (Harder):** Lift the opposite arm and leg at the same time. Keep your back flat and avoid rotating or arching.

Exercise Prescription

Begin with:

- 8–10 repetitions per side
- 1–2 sets

Progress to: 2–3 sets of 10–15 repetitions per side

Hold each repetition: 5–10 seconds

Frequency: 3–5 times per week

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Progression

- Increase hold time gradually as strength improves
- Focus on slow, controlled movements
- Advance only if pain remains well controlled

Clinical Notes

- ✓ Improves core stability and spinal control
- ✓ Strengthens lower back, buttocks, and shoulder muscles
- ✓ Reduces stress on lumbar spine during daily activities
- ✓ Excellent for both acute recovery and long-term prevention
- ⚠ Keep back flat — no sagging or arching
- ⚠ Move slowly, not quickly
- ⚠ Stop if sharp pain or worsening leg symptoms occur
- 💡 If difficult, begin by lifting only the arm or leg separately before combining.



◆ Bridge (Pelvic Lift) – Gluteal & Core Strengthening

Instructions

- ✓ Lie on your back with your knees bent and feet flat on the floor, hip-width apart. Keep your arms relaxed at your sides.
- ✓ Gently pull your belly button in toward your spine to engage your core muscles.
- ✓ Squeeze your buttocks and slowly lift your hips off the floor. ✓
- ✓ Keep your body in a straight line from your shoulders to your knees.
- ✓ Avoid arching your lower back.
- ✓ Hold briefly at the top, then slowly lower back down with control.

Exercise Prescription

Begin with:

- 8–10 repetitions
- 1–2 sets

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Progress to: 2–3 sets of 10–15 repetitions

Hold at top position: 5–10 seconds

Frequency: 3–5 times per week

(May be done daily if well tolerated)

Progression

- Increase hold time gradually up to **10–15 seconds**
- Increase repetitions to **15–20 per set** as strength improves
- Progress to single-leg bridge only when pain-free and strong

Clinical Notes

- ✓ Strengthens buttocks, hamstrings, and core muscles
- ✓ Improves spinal stability and posture
- ✓ Reduces strain on the lumbar spine during daily activities
- ✓ Helpful for both acute recovery and long-term prevention
- ⚠ Keep lower back neutral — avoid over-arching
- ⚠ Move slowly and with control
- ⚠ Stop if sharp pain or worsening symptoms occur
- 💡 If difficult, start with smaller lifts and shorter holds.



◆ Plank – Core Stability & Spinal Support

Instructions

- ✓ Lie face down on the floor.
- ✓ Place your forearms on the ground with elbows directly under your shoulders.
- ✓ Extend your legs straight behind you with toes on the floor.
- ✓ Tighten your abdominal muscles and squeeze your buttocks gently.
- ✓ Lift your body off the floor, forming a straight line from head to heels.
- ✓ Keep your neck relaxed and back flat (do not sag or arch).
- ✓ Breathe normally while holding the position.

Exercise Prescription

Begin with:

- Hold for 10–20 seconds
- 2–3 repetitions per session

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Progress to:

- Hold for 30–60 seconds
- 3–5 repetitions

Frequency: 3–5 times per week



Progression

- Increase hold time gradually as tolerated
- Maintain perfect form before increasing duration
- Progress to side planks only when standard plank is pain-free



Clinical Notes

- ✓ Strengthens deep abdominal and back stabilizing muscles
 - ✓ Improves spinal control and posture
 - ✓ Reduces risk of recurrent low back pain
 - ✓ Enhances overall core endurance
 - ⚠ Stop if back sags or pain increases
 - ⚠ Avoid holding breath
 - ⚠ Modify by performing plank on knees if too difficult
 - 💡 Quality of posture is more important than length of hold.
-

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EXERCISES FOR LOW BACK PAIN PATTERN # 2

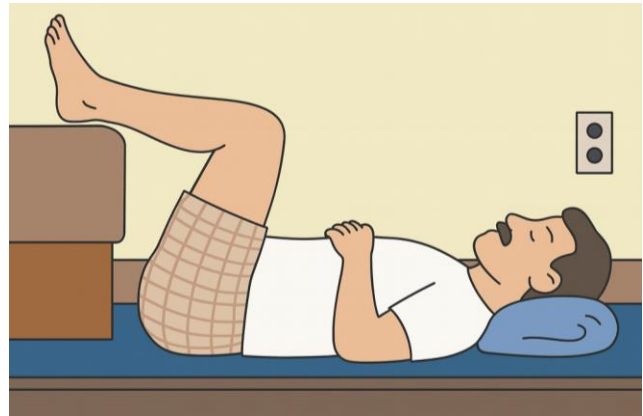
Symptoms in pattern 2 low back pain:

- ▲ Pain is worst in the lower back and may spread to buttocks or legs.
- ▲ Pain is always intermittent.
- ▲ Pain is worse when bending backward and when standing or walking for extended periods.
- ▲ Pain may be eased by bending forward or sitting.

COMFORT POSITIONS

◆ “Z” Lie (90–90 Supported Position) – Spinal Decompression & Pain Relief

For further information see “Exercises for low back pain pattern 1.”



◆ Knees to Chest – Lumbar Stretch & Pain Relief

For further information see “Exercises for low back pain pattern 1.”



◆ Sitting Flexion – Lumbar Stretch & Pain Relief

📖 Instructions

- ✓ Sit with feet flat on the floor, about hip-width apart.
- ✓ Slowly bend forward from the hips, allowing your chest and abdomen to rest on your thighs.
- ✓ Let your head, neck, and arms relax and hang down toward your feet.
- ✓ Hold the position while breathing comfortably.



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✓ To return to sitting, place your hands on your knees or thighs and use your arms to assist in raising your upper body back to an upright position.

Exercise Prescription

Begin with:

- Hold for 5–10 seconds
- Repeat 5–10 times per session

Progress to: Hold for 15–30 seconds as tolerated

Frequency: 2–4 times per day, especially during stiffness or pain flare-ups

Progression

- Increase hold time gradually as comfort improves
- Bend slightly further forward only if pain allows
- Maintain slow, controlled movement

Clinical Notes

- ✓ Gently stretches lumbar muscles and ligaments
- ✓ Helps reduce stiffness and muscle tension
- ✓ Often beneficial for flexion-sensitive or arthritic low back pain
- ✓ Improves lumbar mobility

- ⚠️ Avoid bouncing or forcing the movement
- ⚠️ Stop if sharp pain, numbness, or worsening leg pain occurs
- ⚠️ Not ideal for patients whose pain worsens with bending forward
- 💡 May be combined with deep breathing for added relaxation.

EXERCISES WHEN YOUR PAIN IS SEVERE

- ✓ Continue your usual activities as much as you can tolerate.
- ✓ Modify your daily routine and take more frequent rest breaks.
- ✓ Change your position often — try to limit standing for long periods.
- ✓ Alternate between sitting, standing, and short walks throughout the day.
- ✓ Avoid bending backward or reaching overhead if these movements increase your pain.
- 👉 If any exercise makes your pain much worse, and the pain lasts longer than 30 minutes after, then change how you do the exercise (do less or make movement smaller) or try a different exercise to see what works best for you.
- 👉 The key is to keep moving in a way that does not make things worse.

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◆ Cat Stretch into Flexion (Cat Pose) – Spinal Mobility & Pain Relief

📋 Instructions

- ✓ Begin on your hands and knees with hands under shoulders and knees under hips.
- ✓ Keep your head and neck in a neutral position.
- ✓ Slowly round your back upward toward the ceiling, tucking your chin toward your chest and tightening your abdominal muscles (cat position).
- ✓ Hold the rounded position while breathing normally.
- ✓ Slowly return to the starting neutral position.
- ✓ Perform the movement in a slow, controlled manner.

📄 Exercise Prescription

Begin with:

- Hold for 5–10 seconds
- Repeat 5–10 times per session

Progress to: Hold for 15–20 seconds as tolerated

Frequency: 2–4 times per day, especially during stiffness or discomfort

📈 Progression

- Increase hold time gradually as flexibility improves
- Focus on slow, smooth motion
- Do not force the stretch

🩺 Clinical Notes

- ✓ Improves spinal flexibility and mobility
- ✓ Helps reduce muscle tightness and stiffness
- ✓ Often helpful for flexion-responsive low back pain
- ✓ Encourages relaxation of back muscles

- ⚠️ Avoid quick or jerky movements
 - ⚠️ Stop if sharp pain or worsening leg symptoms occur
 - ⚠️ Not ideal for patients whose pain worsens with flexion
 - 💡 May be paired with slow breathing for better relaxation.
-

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◆ Trunk Flexion Stretch (Sustained Flexion / Child's Pose) – Lumbar Stretch & Pain Relief

📋 Instructions

✓ Begin on your hands and knees with your hands under your shoulders and knees under your hips.



✓ Gently tuck your chin toward your chest and round your back into flexion.

✓ Slowly sit your hips back toward your heels while allowing your shoulders and chest to drop toward the floor.

✓ Keep your arms relaxed and breathe normally while holding the stretch.

✓ Return to the starting position slowly and with control.

📄 Exercise Prescription

Begin with:

- Hold for 10–20 seconds
- Repeat 3–5 times per session

Progress to: Hold for 20–30 seconds (up to 60 seconds if comfortable)

Frequency: 2–4 times per day, especially during stiffness or pain flare-ups

📈 Progression

- Gradually increase hold time as flexibility improves
- Relax deeper into the stretch only if pain allows
- Focus on slow breathing and muscle relaxation

🏥 Clinical Notes

- ✓ Gently stretches lumbar spine and surrounding muscles
- ✓ Reduces muscle tension and stiffness
- ✓ Often helpful for flexion-sensitive or arthritic low back pain
- ✓ Promotes relaxation and stress reduction

- ⚠️ Avoid forcing the stretch
 - ⚠️ Stop if sharp pain, numbness, or worsening leg pain occurs
 - ⚠️ Not ideal for patients whose pain worsens with bending forward
 - 💡 Can be combined with diaphragmatic breathing for additional pain relief.
-

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◆ Knees to Chest – Lumbar Stretch & Pain Relief

For further information see “ Exercises for low back apin pattern 1.”



◆ Pelvic Tilt (Beginner) – Core Activation & Lumbar Control

📋 Instructions

- ✓ Lie on your back with your knees bent and feet flat on the floor, hip-width apart.
- ✓ Relax your hips and buttocks.
- ✓ Gently pull your belly button in toward your spine to tighten your abdominal muscles.
- ✓ Flatten your lower back against the floor by tilting your pelvis backward.
- ✓ Hold the position while breathing normally, then slowly relax.



📋 Exercise Prescription

Begin with:

- Hold for 5–10 seconds
- Repeat 8–12 times per session

Progress to:

- Hold for 10–15 seconds
- Repeat 12–15 repetitions

Frequency: 2–3 times per day

📈 Progression

- Increase hold time gradually as strength improves
- Focus on slow, controlled movements
- Combine later with bridging or leg movements once pain improves

🏥 Clinical Notes

- ✓ Activates deep abdominal muscles that support the spine
 - ✓ Improves awareness of neutral spine position
 - ✓ Reduces excessive lumbar arching
 - ✓ Excellent starting exercise for acute low back pain
 - ⚠️ Avoid holding your breath
 - ⚠️ Do not push with feet or hips — movement should come from the core
 - ⚠️ Stop if sharp pain occurs
 - 💡 A hand placed under the lower back can help feel the flattening motion.
-

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◆ Pelvic Tilt Progression (Marching) – Core Stability & Lumbar Control

📋 Instructions

- ✓ Lie on your back with knees bent and feet flat on the floor.
- ✓ Begin by performing a pelvic tilt, flattening your lower back gently into the floor.
- ✓ Maintain this abdominal contraction by keeping your belly button pulled in toward your spine.



- ✓ Slowly lift one foot a few inches off the floor, then lower it back down with control.
- ✓ Alternate legs while keeping the pelvis and lower back stable throughout the movement.
- ✓ Breathe normally and avoid arching the lower back.

📋 Exercise Prescription

Begin with:

- 8–10 repetitions per side
- 1–2 sets

Progress to: 2–3 sets of 10–15 repetitions per side

Frequency: 3–5 times per week

📈 Progression

- Lift the leg higher as control improves
- Slow the movement for greater core challenge
- Progress only if pain remains well controlled

🏥 Clinical Notes

- ✓ Strengthens deep abdominal stabilizers
 - ✓ Improves control of pelvic and spinal position
 - ✓ Prepares for more advanced core exercises (bridge, plank)
 - ✓ Reduces strain on the lumbar spine during movement
 - ⚠️ Keep lower back flat on the floor at all times
 - ⚠️ Avoid arching or rocking the pelvis
 - ⚠️ Move slowly — no jerky motions
 - ⚠️ Stop if pain increases significantly
 - 💡 If difficult, start by lifting the foot only a few centimeters.
-

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◆ Crunch (Abdominal Curl-Up – Modified) – Core Strengthening & Spinal Support

📋 Instructions

- ✓ Lie on your back with your knees bent and feet flat on the floor.
 - ✓ Gently pull your belly button in toward your spine to engage your abdominal muscles.
 - ✓ Slowly lift your head and shoulders off the floor, bringing your chest slightly toward your knees.
 - ✓ Keep your lower back in contact with the floor and avoid pulling on your neck.
- If needed, lightly support your head with your hands while keeping your elbows open.
- ✓ Lower back down slowly with control.



📋 Exercise Prescription

Begin with:

- 8–10 repetitions per side
- 1–2 sets

Progress to: 2–3 sets of 10–15 repetitions per side

Hold at top position:

- 1–2 seconds

Frequency: 3–4 times per week

📈 Progression

- Increase repetitions gradually as strength improves
- Focus on slow, controlled motion
- Progress only if pain remains well controlled

🏥 Clinical Notes

- ✓ Strengthens abdominal muscles that stabilize the lumbar spine
 - ✓ Reduces strain compared with full sit-ups
 - ✓ Helps improve posture and functional core control
 - ✓ Often better tolerated than traditional crunches in back pain patients
- ⚠️ Avoid pulling on the neck
 - ⚠️ Keep movement small — do not perform a full sit-up
 - ⚠️ Maintain controlled breathing
 - ⚠️ Stop if sharp back or neck pain occurs
 - 💡 Quality of movement is more important than height of lift.
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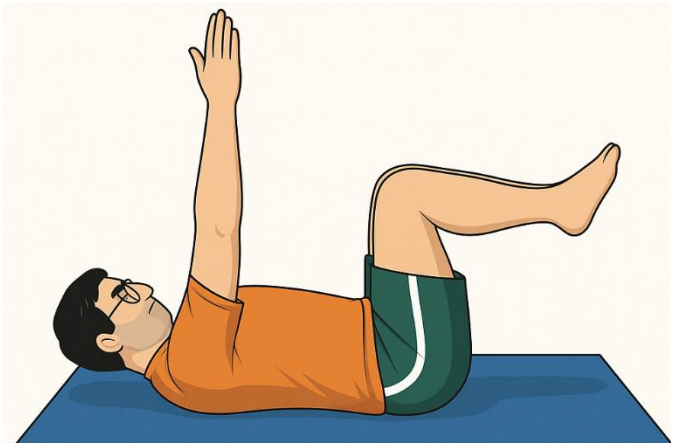
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◆ Dead Bug (Start Position) – Core Activation & Spinal Stability

📋 Instructions

- ✓ Lie on your back with your knees bent and feet flat on the floor.
- ✓ Begin by performing a pelvic tilt, gently flattening your lower back into the floor.
- ✓ Maintain this abdominal contraction by keeping your belly button pulled in toward your spine.
- ✓ Lift both arms straight up toward the ceiling.
- ✓ Lift both legs so hips and knees are bent to about 90 degrees, keeping your lower back flat against the floor.
- ✓ Hold this position while breathing normally, maintaining a stable pelvis and spine.



📋 Exercise Prescription

Begin with:

- Hold for 10–20 seconds
- Repeat 3–5 times per session

Progress to: Hold for 20–30 seconds as tolerated

Frequency: 3–5 times per week

(May be done daily in early rehab if comfortable)

📈 Progression

- Increase hold time gradually while maintaining perfect control
- Progress to moving one arm or leg at a time only when pain is well controlled
- Always keep lower back gently pressed into the floor

🏥 Clinical Notes

- ✓ Activates deep core stabilizing muscles (transversus abdominis)
- ✓ Improves spinal control and awareness
- ✓ Reduces strain on lumbar spine during movement
- ✓ Excellent foundation before advanced core exercises
- ⚠️ Do not allow lower back to arch off the floor
- ⚠️ Breathe normally — avoid holding breath
- ⚠️ Stop if pain increases significantly
- 💡 If difficult, keep one foot lightly touching the floor for added support.

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◆ Dead Bug (End position)

📋 Instructions

- ✓ Start lying on your back in the Dead Bug start position: knees bent, feet off the floor, arms toward ceiling, and pelvis gently tilted to flatten the lower back.
- ✓ Slowly lower one arm and the opposite leg toward the floor, keeping your lower back pressed into the floor and maintaining the pelvic tilt.



- ✓ Stop lowering if your back begins to arch or you feel pain.
- ✓ Return slowly to the starting position and repeat on the opposite side.
- ✓ Perform the movement slowly and with control, focusing on core stability.

📋 Exercise Prescription

Repeat 8–10 per side, 1–2 sets, 2–3 seconds down, 2–3 seconds up
Rest between sets for 30–60 seconds
Frequency: 3–5 days per week

📈 Progression

- Only perform this progression if the Dead Bug start position can be held comfortably.
- Progress by increasing repetitions, range of motion, or holding slightly longer if tolerated.

🩺 Clinical Notes

- ✓ Activates deep core stabilizing muscles (transversus abdominis)
 - ✓ Improves spinal control and awareness
 - ✓ Reduces strain on lumbar spine during movement
 - ✓ Excellent foundation before advanced core exercises
 - ⚠️ Keep the movement slow to avoid compensatory lumbar arching.
 - ⚠️ Focus on maintaining abdominal engagement and controlled breathing.
 - ⚠️ Breathe normally — avoid holding breath
 - 💡 Stop if pain increases significantly
-

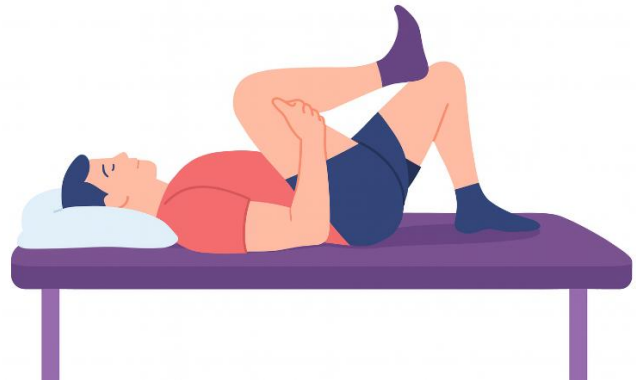
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◆ Single Leg Flexion (Supine Knee-to-Chest – One Leg at a Time) – Lumbar Stretch & Pain Relief

📄 Instructions

- ✓ Lie on your back with knees bent and feet flat on the floor.
- ✓ Keep your pelvis in a neutral or slightly tilted position (as in pelvic tilt).
- ✓ Slowly bring one knee toward your chest, keeping the other foot flat on the floor.
- ✓ Wrap your hands around the raised knee and gently pull it toward your chest until a comfortable stretch is felt in the lower back and hip.
- ✓ Keep your head and shoulders relaxed on the floor.
- ✓ Hold, then slowly lower the leg back down and repeat with the opposite leg.



📄 Exercise Prescription

Begin with:

- Hold for 10–20 seconds
- Repeat 5–10 times per side

Progress to: Hold for 20–30 seconds as tolerated

Frequency: 2–4 times per day, especially during stiffness or pain flare-ups

📈 Progression

- Gradually increase hold time as flexibility improves
- Perform smoothly with slow breathing
- May progress to double knee-to-chest stretch if well tolerated

🏥 Clinical Notes

- ✓ Gently stretches lumbar muscles and soft tissues
 - ✓ Helps reduce muscle tension and stiffness
 - ✓ Often helpful for flexion-responsive low back pain
 - ✓ Improves spinal mobility in a controlled way
 - ⚠️ Avoid pulling forcefully
 - ⚠️ Stop if sharp pain, numbness, or worsening leg pain occurs
 - ⚠️ Not ideal for patients whose pain worsens with flexion
 - 💡 Keeping the opposite leg bent may increase comfort if hamstrings are tight.
-

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◆ Single Leg Flexion (Seated Knee-to-Chest) – Lumbar Stretch & Pain Relief

📋 Instructions

- ✓ Sit on a sturdy chair with your feet flat on the floor, about hip-width apart.
- ✓ Maintain an upright posture with your shoulders relaxed.
- ✓ Slowly lift one knee toward your chest, using your hands to assist if needed.
- ✓ Keep your back straight as much as possible; avoid rounding excessively.
- ✓ Hold the position for a gentle stretch in your lower back and hip.
- ✓ Slowly lower the leg back to the floor and repeat with the other leg.



📄 Exercise Prescription

Begin with:

- Hold for 10–20 seconds
- Repeat 5–10 times per side

Progress to: Hold for 20–30 seconds as tolerated

Frequency: 2–4 times per day, especially during stiffness or pain flare-ups

📈 Progression

- Increase hold time gradually as flexibility improves
- Gently lift the knee higher only if pain allows
- Maintain slow, controlled breathing

🏥 Clinical Notes

- ✓ Gently stretches the lower back and hip muscles
 - ✓ Helps reduce stiffness and muscle tension
 - ✓ Useful for flexion-responsive or posture-related low back pain
 - ✓ Easy to perform at home, work, or while traveling
 - ⚠️ Avoid pulling forcefully on the knee
 - ⚠️ Stop if sharp pain, numbness, or worsening leg pain occurs
 - ⚠️ Not recommended if bending forward significantly worsens symptoms
 - 💡 If difficult, place hands behind the thigh instead of the shin for comfort.
-

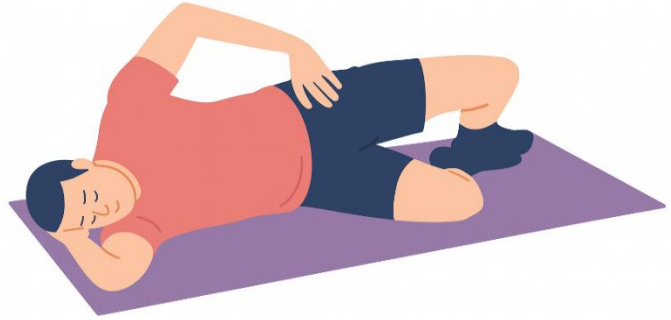
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◆ Clamshell (Beginner) – Hip & Core Stabilization

📋 Instructions

- ✓ Lie on your side with your knees bent at approximately 90 degrees and your feet together.
- ✓ Perform a pelvic tilt to gently flatten your lower back and engage your core.
- ✓ Keeping your feet together, slowly lift the top knee upward while maintaining pelvic stability.
- ✓ Avoid letting the top hip roll backward or forward—keep the hips stacked.
- ✓ Lower the knee slowly back to the starting position.
- ✓ Repeat on the other side.



📄 Exercise Prescription

Begin with:

- 10–12 repetitions per side
- 1–2 sets

Progress to: 2–3 sets of 12–15 repetitions per side

Hold at top position: 2–3 seconds

Frequency: 3–5 times per week

📈 Progression

- Increase repetitions gradually as strength improves
- Add longer hold (up to 5 seconds) as tolerated
- Progress to resistance band when pain is well controlled

🏥 Clinical Notes

- ✓ Strengthens hip stabilizers (gluteus medius)
 - ✓ Improves pelvic and spinal alignment
 - ✓ Reduces stress on the lower back during walking and standing
 - ✓ Important for posture and gait mechanics
 - ⚠️ Avoid rolling hips backward
 - ⚠️ Move slowly and with control
 - ⚠️ Stop if sharp hip or back pain occurs
 - 💡 A pillow between knees may improve comfort initially.
-

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◆ Clamshell with Resistance Band – Hip & Core Strengthening Progression

📋 Instructions

- ✓ Lie on your side with your knees bent at approximately 90 degrees and feet together.
- ✓ Place a light resistance band around your thighs, just above your knees.
- ✓ Perform a pelvic tilt to gently flatten your lower back and engage your core.
- ✓ Keeping your feet together, slowly lift your top knee outward against the resistance of the band, maintaining pelvic stability.
- ✓ Avoid letting the top hip roll backward or forward—keep the hips stacked.
- ✓ Lower the knee slowly back to the starting position.
- ✓ Repeat on the other side.



📄 Exercise Prescription

Begin with:

- 10–12 repetitions per side
- 1–2 sets

Progress to: 2–3 sets of 12–15 repetitions per side

Hold at top position: 2–5 seconds

Frequency: 3–5 times per week

📈 Progression

- Increase band resistance gradually
- Increase hold time up to 5 seconds
- Increase repetitions as tolerated
- Maintain perfect form before increasing difficulty

🏥 Clinical Notes

- ✓ Strengthens hip abductors (gluteus medius) crucial for spine stability
 - ✓ Improves pelvic control during walking, lifting, and standing
 - ✓ Reduces mechanical strain on lumbar spine
 - ✓ Key exercise for preventing recurrence of low back pain
 - ⚠️ Avoid rolling hips backward
 - ⚠️ Move slowly — no snapping the band
 - ⚠️ Stop if sharp hip or back pain occurs
 - 💡 Start with a light resistance band and progress gradually.
-

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EXERCISES FOR LOW BACK PAIN PATTERN # 3

Symptoms in pattern 3 low back pain:

- ✓ Pain is mainly in the legs but back pain may be present.
- ✓ Pain is constant.
- ✓ Pain is often worse when sitting or bending, but in the acute stage can be made worse by any movement.
- ✓ Pain may be lessened in some rest positions.
- ✓ The best position is the one that most reduces the leg pain.
- ✓ There is no place for exercise or repeated movements.

Positions and Exercises

The best treatment is to schedule rest periods throughout the day. Find the rest position that best reduces leg pain. Long-term bed rest is not recommended and can hinder recovery.

◆ “Z” Lie (90–90 Supported Position) – Spinal Decompression & Pain Relief

For further information see “Exercises for low back pain pattern 1.”



◆ Prone Lie (Lumbar Relief / Extension Support) – Pain Reduction & Spinal Positioning

For further information see “Exercises for low back pain pattern 1.”



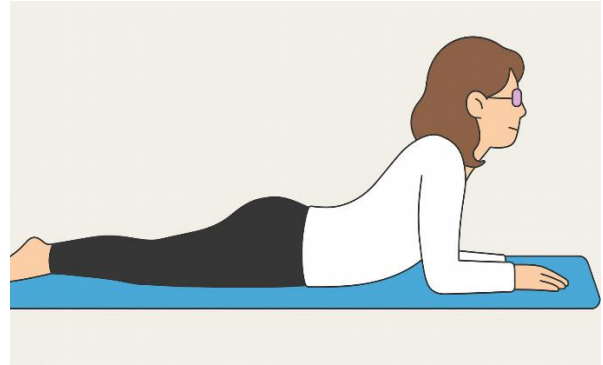
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◆ Prone Lie on Elbows – Lumbar Extension & Pain Relief

📋 Instructions

- ✓ Lie flat on your stomach on a firm but comfortable surface.
- ✓ Place your elbows directly under your shoulders with forearms resting on the floor.
- ✓ Relax your hips, thighs, and lower back into the floor.



- ✓ Slowly lift your upper body by propping up on your elbows. ✓ Allow your lower back to gently arch (do not force the movement).
- ✓ Keep pelvis and legs relaxed on the floor.
- ✓ Breathe normally and hold the position comfortably.

📅 Exercise / Position Prescription

Begin with:

- Hold for 10–20 seconds
- Repeat 5–10 times per session

Progress to: Hold for 30–60 seconds as tolerated

Frequency: 3–6 times per day, especially during pain flare-ups

📈 Progression

- Increase hold time gradually as comfort improves
- Progress later to **Sloppy Pushups (Prone Press-Ups)** if pain is well controlled
- Always keep movement gentle and pain-free

🏥 Clinical Notes

- ✓ Encourages lumbar extension and spinal mobility
 - ✓ Often reduces disc-related or flexion-sensitive low back pain
 - ✓ Helps centralize pain (move pain from leg/buttock toward low back)
 - ✓ Relaxes lumbar muscles and improves posture awareness
 - ⚠️ Do not push into sharp pain
 - ⚠️ Stop if leg pain worsens, numbness increases, or symptoms spread
 - ⚠️ Movement should feel gentle and relieving, not forced
 - 💡 If uncomfortable initially, start lying flat (Prone Lie) before progressing to elbows.
-

Low Back Pain

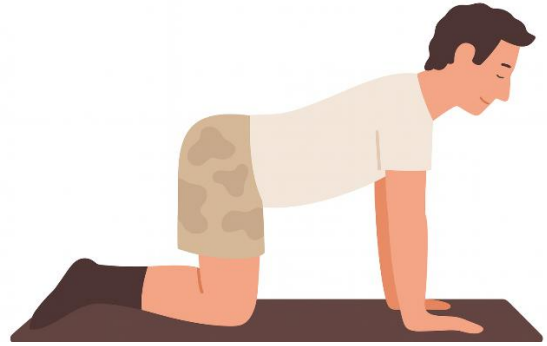
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◆ Rest on Hands and Knees (Quadruped Rest Position) – Spinal Unloading & Pain Relief

📋 Instructions

- ✓ Start on your hands and knees on a comfortable surface (such as a mat or carpet).
- ✓ Place hands directly under shoulders and knees under hips.
- ✓ Keep your back in a neutral, flat position (not arched or rounded).
- ✓ Relax your neck and look slightly down toward the floor.
- ✓ Allow your abdominal muscles and lower back to relax.
- ✓ Breathe slowly and comfortably while holding the position.

(Optional: You may gently rock slightly forward and backward for comfort if tolerated.)



📄 Position Prescription

Begin with:

- Hold for 20–30 seconds
- Repeat 3–5 times per session

Progress to: Hold for 1–2 minutes as tolerated

Frequency: 2–5 times per day, especially during pain flare-ups or stiffness

📈 Progression

- Increase hold time gradually
- May progress into **Cat Stretch**, **Bird Dog**, or **Child's Pose** when pain improves
- Maintain neutral spine at all times

🏥 Clinical Notes

- ✓ Reduces pressure on lumbar spine and discs
 - ✓ Relaxes back and hip muscles
 - ✓ Useful during acute pain episodes
 - ✓ Serves as a starting position for many rehab exercises
 - ⚠️ Avoid if wrist or knee pain is severe (use padding if needed)
 - ⚠️ Stop if pain worsens significantly
 - 💡 Placing a pillow under knees may improve comfort.
-

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◆ Lumbar Roll – Night (Sleeping Support) – Spinal Alignment & Pain Relief

For further information see “Exercises for low back pain pattern 1.”



◆ Lumbar Support When Sitting – Posture Control & Pain Relief

📋 Instructions

Use a straight backed chair and a lumbar roll to support curve of back.

📄 Prescription

Use: During prolonged sitting (work, driving, watching TV, studying)

Duration: As long as sitting is required; Take posture breaks every 30–60 minutes

Frequency: Daily

📈 Progression / Habit Training

- Aim to maintain supported posture for longer periods
- Combine with brief standing or walking breaks
- Add gentle stretching if stiffness develops

🏥 Clinical Notes

- ✓ Maintains natural lumbar curve (neutral spine)
- ✓ Reduces disc pressure and muscle fatigue
- ✓ Helps prevent slouching-related back pain
- ✓ Improves comfort during prolonged sitting

⚠️ Support should feel firm but comfortable

⚠️ Avoid excessive arching of the lower back

💡 A rolled towel works just as well as commercial lumbar rolls.



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EXERCISES FOR LOW BACK PAIN PATTERN # 4

Symptoms in pattern 4 low back pain:

- ▲ Pain is worst in legs and can be described as heaviness or aching.
- ▲ Pain is intermittent and is made worse by activity (often walking).
- ▲ Pain is relieved by a change in position, usually by bending forward.

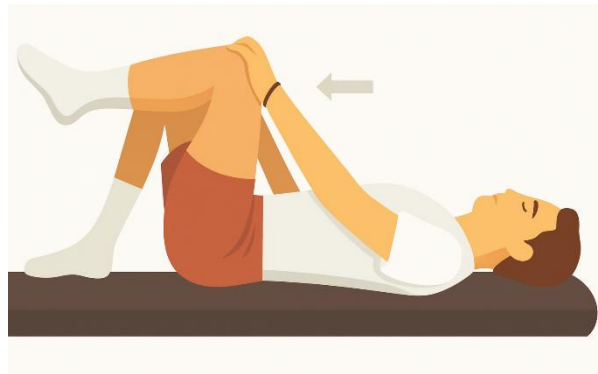
Positions and Exercises

Pain should be relieved quickly with proper rest and flexion. When pain occurs in your legs, sit in a chair and lean forward until it subsides (see Sitting Flexion). Your health care provider will check the boxes next to the positions and exercises recommended for your condition.

◆ Single Leg Abdominal Press – Core Stabilization & Lumbar Control

📋 Instructions

- ✓ Lie on your back with both knees bent and feet flat on the floor.
- ✓ Keep your lower back in a neutral position and gently tighten your abdominal muscles.
- ✓ Lift one leg so the hip and knee are bent to about **90 degrees**.
- ✓ Place one hand on the front of the raised knee.
- ✓ Press your hand against the knee while simultaneously pushing the knee toward the hand (elbow stays straight).
- ✓ Keep your trunk still and core tight — no movement should occur.
- ✓ Hold the contraction, then relax and repeat.
- ✓ Switch legs after completing repetitions.



📄 Exercise Prescription

Begin with:

- Hold for 5–10 seconds
- 8–12 repetitions per side

Progress to:

- Hold for 10–15 seconds
- 12–15 repetitions per side

Frequency:

- 2–3 times per day in early rehab
- Progress to 3–5 times per week for strengthening

📈 Progression




- Increase hold time gradually
- Increase pressing force slightly as strength improves
- Progress to **double-leg abdominal press** or **dead bug exercises** when pain is well controlled

🩺 Clinical Notes

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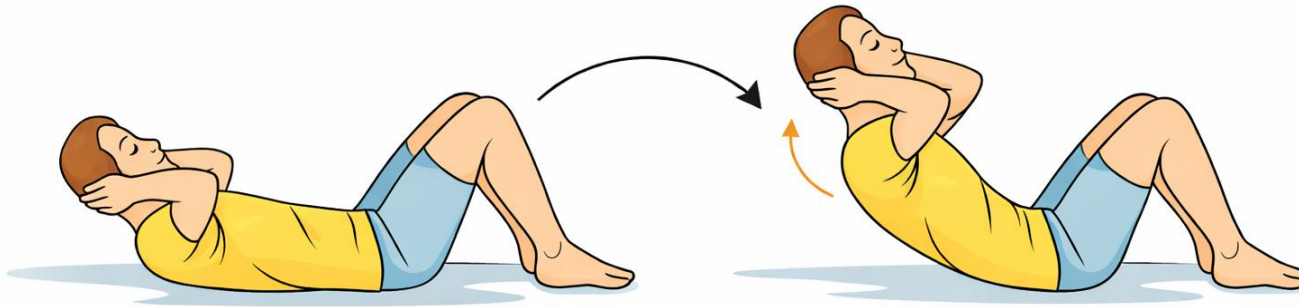
- ✓ Activates deep abdominal stabilizers (especially transversus abdominis)
- ✓ Improves pelvic and lumbar spine control
- ✓ Reduces excessive spinal movement during activity
- ✓ Excellent early-stage core exercise for low back pain
- ⚠ Do not hold your breath — breathe normally
- ⚠ Keep lower back neutral (no arching)
- ⚠ Stop if sharp pain or symptom worsening occurs
- 💡 The contraction should feel firm and controlled, not forceful.

✓	✓
<p> Exercise Prescription</p> <p>Begin with:</p> <ul style="list-style-type: none">• Hold each position for 5–10 seconds• Perform 5–10 repetitions per session <p>Progress to:</p> <ul style="list-style-type: none">• Hold each position for 10–20 seconds• Perform 10–15 repetitions <p>Frequency:</p> <ul style="list-style-type: none">• 2–4 times per day, especially during stiffness or pain flare-ups <p> Progression</p> <ul style="list-style-type: none">• Increase hold time gradually as comfort improves• Move more smoothly and with better control• Stay within pain-free range of motion <p> Clinical Notes</p> <ul style="list-style-type: none">✓ Improves spinal flexibility and mobility✓ Reduces muscle tension and stiffness✓ Enhances circulation to back muscles✓ Helpful for both acute and chronic low back pain⚠ Avoid quick or jerky movements⚠ Do not force into painful ranges⚠ Stop if sharp pain or worsening leg symptoms occur💡 Coordinate movement with breathing:<ul style="list-style-type: none">• Exhale while rounding (Cat)• Inhale while sagging (Camel)	

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EXERCISES TO INCREASE MUSCLE STRENGTH

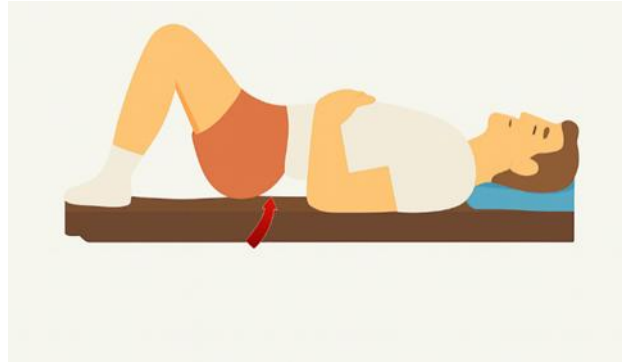


◆ Partial Sit-up (Crunch) – Abdominal & Core Strengthening

For further instructions see “Exercises to increase muscle strength.”

◆ Pelvic Tilt (Beginner) – Core Activation & Lumbar Control

For further information see “Exercises for low back pain pattern 2.”



◆ Sitting Flexion – Lumbar Stretch & Pain Relief

For further information see “Exercises for low back pain pattern 2.”



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◆ Cat and Camel – Spinal Mobility & Muscle Relaxation

📋 Instructions

✓ Start by kneeling on your hands and knees with hands under shoulders and knees under hips.

➤ Cat Position (Flexion)

- ✓ Slowly arch your back upward toward the ceiling.
- ✓ Let your head drop slightly.
- ✓ Tighten your abdominal and buttock muscles gently.
- ✓ Hold for a few seconds.

➤ Camel Position (Extension)

- ✓ Slowly let your back sag downward toward the floor.
- ✓ Keep arms straight and weight evenly distributed between hands and knees.
- ✓ Lift your head slightly and relax your abdomen.
- ✓ Hold for a few seconds.
- ✓ Move slowly and smoothly between the two positions.

📄 Exercise Prescription

Begin with:

- Hold each position for 5–10 seconds
- Perform 5–10 repetitions per session

Progress to:

- Hold each position for 10–20 seconds
- Perform 10–15 repetitions

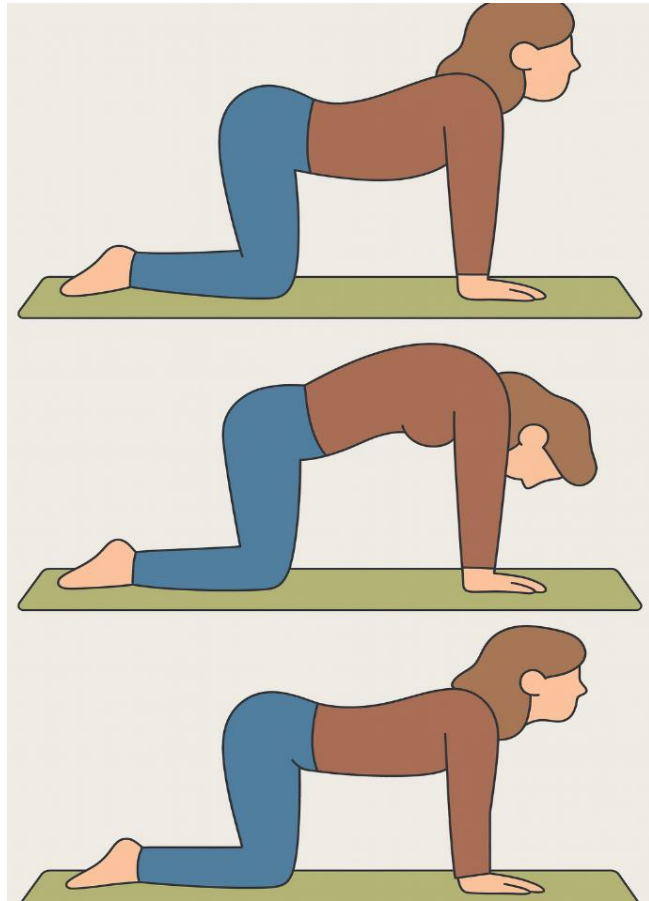
Frequency: 2–4 times per day, especially during stiffness or pain flare-ups

📈 Progression

- Increase hold time gradually as comfort improves
- Move more smoothly and with better control
- Stay within pain-free range of motion

🏥 Clinical Notes

- ✓ Improves spinal flexibility and mobility
- ✓ Reduces muscle tension and stiffness



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- ✓ Enhances circulation to back muscles
 - ✓ Helpful for both acute and chronic low back pain
 - ⚠ Avoid quick or jerky movements
 - ⚠ Do not force into painful ranges
 - ⚠ Stop if sharp pain or worsening leg symptoms occur
 - 💡 Coordinate movement with breathing:
 - Exhale while rounding (Cat)
 - Inhale while sagging (Camel)
-

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