



A Clinician's Guide

Essential Exercises for
LOW BACK PAIN

*A complete step-by-step guide to
rehabilitation and exercise
prescription for the lumbar spine*

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PART 1 - WHY THESE EXERCISES?

We know exercise is an essential tool in the treatment of lower back pain. But what are the best exercises for back pain? And how do we know which exercises to prescribe for each unique and individual patient?

This can be tricky, because despite what YouTube and TikTok want us to believe, back pain is just too complex to expect that a generic set of exercises will solve each and every episode of lower back pain.

Because not all back pain is the same.

Back pain can be acute, chronic, recurrent, mechanical, or neurogenic. Some patients will display strong psychosocial or cognitive-emotional drivers, but others will not. And there are many different tissues that can become injured that may need to be rehabilitated. Or in some cases it is difficult to identify a specific tissue that is causing the problem.

So how do we know what exercises to prescribe for each individual patient?

Well, helping to understand that very question is the goal of this eBook. In the pages that follow my hope is to help clarify much of the confusion surrounding these questions.

Here I'm not only going to review many of the go-to exercises that I routinely use and have developed over my 20 years of study and clinical practice. But I'm also going to lay out my clinical reasoning as to why I consider these ***essential exercises for the lumbar spine***.

So let's get started.

The problem with traditional lower back exercises

Let's begin with a brief review of some of the more "traditional" exercises that are prescribed for lower back pain. Many of these exercise programs are centered around trying to create a more "stable" spine.

This line of thinking often equates stability to preventing or limiting unwanted motion.

The thought here is that excessive or unstable movements of the spine will cause tissue damage and injury. So exercises are prescribed to strengthen the "core". To build strength or endurance of the muscles surrounding the lumbar spine.

Here we see exercises like planks, side-planks, bird-dogs, and bridges as the primary staple in so many rehab plans. Add some abdominal hollowing, or maybe some bracing, and now we're on our way to a better back.

But as well intentioned as this may be, there are several problems with this approach.

First, this line of thinking assumes there is an optimal or ideal alignment of the spine, and too much deviation outside of this posture is unsafe. So these traditional isometric-based exercises aim to train the spine in a static, "ideal", neutral position.

The belief here seems to be that if the muscles that surround the spine get stronger they hold the spine in these "safer" postures during movement and activity.

But just because we train and strengthen the muscles of the spine in one specific position does not mean the body will somehow automatically start to adopt and utilize these postures with real-world activities. Movement is far more complicated than that.

We also need to keep in mind that the back is designed to move. That is why the spine evolved as a moveable column and not a single rigid segment. Attempting to solely train static, rigid, "idealized" positions is not only limited in its effectiveness, but it goes against the intended function of the spine.

"It is often thought that if the spine muscles get stronger they will be able to hold and maintain the spine in a neutral, "safer" posture... unfortunately this is not how movement works"

But that's not the only problem.

We also need to keep in mind that the body will adapt to training and exercise, but these adaptations only occur within the ranges and positions used in training. This is the S.A.I.D. principle (Specific Adaptation to Imposed Demands).

This means if we are training the lower back only in a "neutral" position as outlined above, the muscles will adapt and get stronger—but only in that specific posture. These strength and performance gains won't necessarily carry over to other positions. They are only specific to the narrow postures and positions used during the exercise.

But what happens when we find ourselves outside of that neutral range (which is inevitable because remember the spine needs to move)? In this scenario the body will be less prepared to deal with or tolerate these positions.

This is the more likely scenario to cause injury.

Here's another way to think of it. It's not so much that too much flexion or extension in and of itself that is bad. It's more likely that injury occurs when the spine is under trained and thus unprepared for these positions. So, instead of training the spine to avoid these "dangerous" postures, perhaps a better and more realistic approach is to train the spine to control and better tolerate these positions!

It's About Control. Which Means It's About the Nervous System

Here's another problem.

The use of these isometric-based exercises also assumes stability to be primarily related to muscle strength or endurance. But this is a poor understanding of what stability is.

Stability is not so much about brute strength as much as it is about the ability to control the joints.

“Stability is really less about muscle strength as much as it is about the ability to control the joints”

Remember, the spine is going to move. It needs and it's supposed to. What's most important is for each of these spinal joints to be controlled throughout the range of movements they perform. This concept of motor control is really more about the nervous system.

If the CNS cannot contract and control the deep muscles of the spine as the intervertebral joints flex, extend, and rotate then these joint segments will be unprotected and more vulnerable to injury.

But traditional isometric-based "core" exercises place little to no demand on the nervous system. At least not from a joint control perspective. There are contraction and force-production demands, but no movement demands. So there is minimal communication between the sensory and motor systems. There is no need for the CNS to adjust muscle tension and stability as the joints move, which is really what's needed for joint health and protection.

Remember the S.A.I.D. principle. If we are not performing exercises that tap into and challenge movement and muscle control then this aspect of the nervous system will not improve and adapt.

Use It Or Lose It Applies To More Than Just Muscles

We know movement is a critical stimulus to maintain function. This is the “use it or lose it” principle we are all familiar with. We typically think of this with respect to muscle size and strength. But this principle applies to virtually every tissue in your body.

So movement and exercise has the ability to strengthen muscles. But the stress and strain of movement and exercises is also critical to promote and maintain the integrity of tissues like tendons, ligaments, and joint capsules. And with respect to the lower back, regular movement and exercise is especially important for the intervertebral discs and joint cartilage, which have no direct blood supply and receive critical nutrition through joint movement and imbibition.

The specific mechanisms that underlie these “use-it-or-lose-it” processes are driven by *mechanotransduction*. These processes can get a bit complicated so we’ll save the details for another time. Just know that through mechanotransduction the cells within the body are able to sense movement and convert mechanical stimuli such as stretch, shear, and compression into biochemical signals. This signaling dictates the structure and function of the cell by controlling critical functions such as protein synthesis, gene expression, and calcium influx through stretch-activated membrane channels.

Here’s why this matters.

Mechanotransduction is not a systemic response. It’s not like aerobic exercise where the heart is similarly stimulated with cycling, running, swimming, or rowing. The individual cells are only stimulated when they receive a specific and direct mechanical stimulus.

In other words, if the spinal joints aren’t regularly stressed and don’t regularly move through a full ROM, the cells are deprived of the critical signaling needed to maintain tissue health. If this continues for any extended length of time the tissue starts to break down. A process known as immobilization degeneration.

This is the “lose-it” part of the equation.

So training isometrically may strengthen the muscles, but without moving the spinal joints through a full ROM only a limited group of cells with the spinal ligaments and intervertebral discs will experience this critical load and stress. Without this regular stress the tissues get weaker and less capable of resisting strain, making them more vulnerable to injury.

Traditional Stretching Isn't Enough

Based on the discussion above it should be clear that regular joint motion is critical to develop and maintain a healthy spine. Given this fact some may suggest that stretching the lower back is helpful.

But just as traditional “core” exercises were not the best way to train the spine, I would also suggest there are several shortcomings of traditional lower back stretches.

Perhaps the most obvious is the problem of specificity.

Remember, the back is composed of a series of individual joints that form a moveable column. So when we say that the spine needs to move, what we really mean is that each individual joint segment needs to move. So to be effective, we need to move and target these individual joints as much as possible – not just the back as a general area or region.

But traditional stretches don't do this.

Think of a knee-to-chest or spinal rotation stretch. Or common yoga movements such as a cat-camel or child's pose. All of these may create spine motion, but which specific joints are moving and experiencing the movement stimulus?

The fact is, we just don't know. Because none of these traditional stretches attempt to create focused or deliberate motion at the individual joints of the lumbar spine.

“Just as traditional “core” exercises are not the best way to train the spine, there are also several shortcomings of traditional lower back stretches”

When you bend forward to touch your toes, or pull the knee towards the chest the spine will flex. But this does not necessarily create flexion at the specific joint segment we want to target. This is a major limitation of these traditional stretches.

To be clear, I'm not necessarily suggesting that these stretches are inherently bad, or for that matter that exercises like side-planks or bird-dogs can't be helpful or should never be done.

But I do think if the goal is to promote optimal movement and maximize health and physical function of the lower back, I don't think these types of traditional stretches are going to cut it. They're not enough.

The fact is, when it comes to flexibility, as well as strength and stability, I think we need better options.

That is where we need to turn to next.



PART 2 - CRITICAL MOVEMENTS FOR EVERY LUMBAR SPINE

To be clear, I'm not suggesting these traditional stretches or exercises are inherently bad or need to be avoided in all cases. I just think that for most back pain patients they aren't the best options. We need to utilize exercises that can create segmented movement of the individual spinal joints. We also want the exercises to be progressive in terms of the ROM and intensity (this is critical so we can match the specific exercise to the current need to each individual patient). And with strength and contraction based exercises we need to move beyond isometric strength and train within ALL the postures and positions that the spine will inevitably find itself in.

For these purposes, we can utilize a pelvic tilt type motion for much of our exercise prescription.

Now hear me out because I know what you're thinking. I know you've seen pelvic tilts before and at this point I know it's hard to believe that these simple little movements can be the key to lower back health and rehabilitation.

But believe me, you haven't seen them like them the way we're going to use them here. The motions we're going to talk about are not your typical pelvic tilts or basic cat-camel exercises.

The exercises that we're going to review here allow us to check all the critical boxes. When done correctly they create targeted and focused movement directly at the intersegmental joints of the lumbar spine. And being active motions they can be very effective at developing motor control, stability, and motor control. In other words, they'll also train the nervous system.

But they can be graded (done in many different ways, in various positions, and at varying intensities) to match the needs of individual patients.

So as we go through the exercises themselves we'll review how we can utilize these baseline motions for acute low back pain and for patients who are sensitive to almost any form of movement or exercise. But we'll also discuss how we can use these same base motions (with some important changes in how we're prescribing and performing the movements) to target more of a mobility and motor control focus. Following that we'll even review how to create additional load and resistance to these movements to turn them into strength exercises. While these may seem simple on the surface these advanced exercises will challenge even the fittest of athletes and fitness enthusiasts.

But first we need to review the basic movements themselves to provide context for the specific exercise prescriptions to follow.

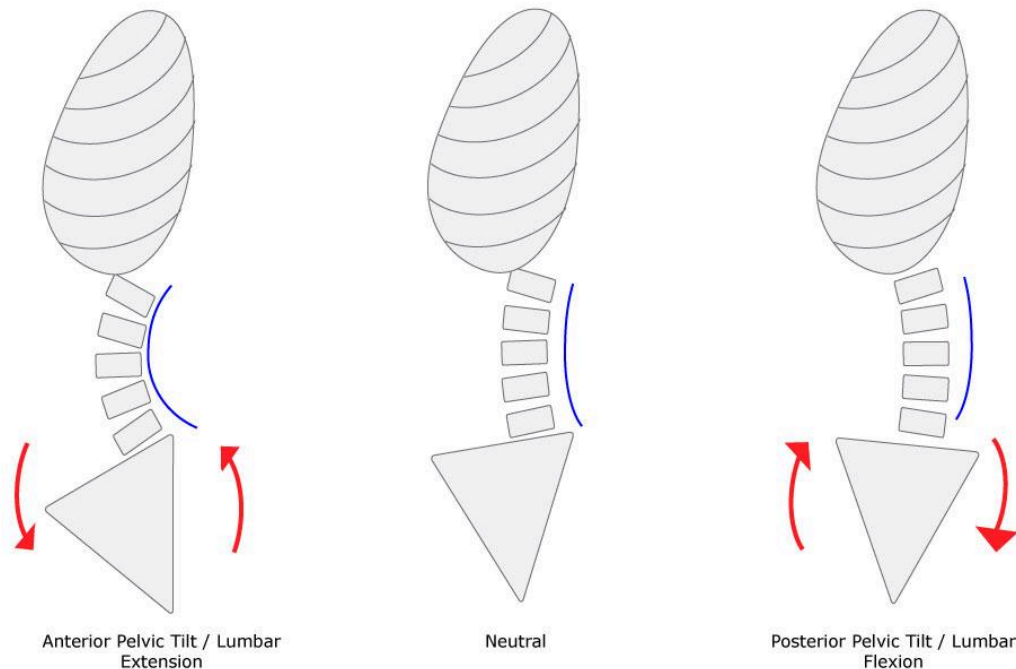
The Basic Fundamental Movements Of The Lumbar

Remember the spine is a column of block-like vertebrae connected through a series of mobile intervertebral joints. This column makes a direct anatomical connection into the pelvis via the sacrum (L5-S1 articulation).

So anatomically we can view the sacrum as an extension and another segment of the spine. This movement of the pelvis will also produce corresponding motion of the lumbar segments. For example, as the sacral base rotates back during a posterior pelvic tilt the lumbar joints will flex as a component of this motion. This will create stretch and tension through the posterior aspect of the intervertebral disc, joint capsules, spinal ligaments, and paraspinal muscles.

Likewise, an anterior pelvic tilt will create extension of the lumbar joints. When done properly (more on this later) we can isolate the movement to the individual joints and muscles of the lumbar spine itself. And that's the key.

Furthermore, because these are active movements it creates a control challenge for the nervous system. It trains the CNS to create and control lumbar motion. (How the motion occurs and the patterns of muscle contraction is critical here. We'll talk about that later as well).



Pelvic Tilts with a Lateral Flexion-Rotation Bias

Traditional pelvic tilts in the sagittal plane create flexion and extension of the lumbar spine. This is how we typically think of pelvic tilts.

But pelvic tilts can also be performed in the frontal plane as well. This will create intersegmental lateral flexion (and because coupled motion rotation occurs as well) through the lumbar segments.

Lateral flexion to the right will create stretch and tension through the disc, joint capsules, spinal ligaments and deep intersegmental muscles on the left side of the spine. Lateral flexion to the left will cause the right side to stretch and open.

And again, because the motion is active it creates a control challenge and trains the CNS to better control this lateral motion and communicate with these lateral trunk muscles.

These pelvic tilts form the basis for many of the exercises we're going to prescribe for our lower back pain patients. But the exercises themselves will need to encompass much more than that. We also need to consider key variables such as the specific posture and position we will perform these pelvic tilts in, how much ROM we'll use, how forcefully we'll contract the muscles, and how long to hold these positions and muscle contractions. We'll need to consider exercise volume and frequency as well.

We're going to cover the specifics in the coming pages. But before we get to that there's one more thing to consider. Which is how to prioritize treatment objectives and the order in which we will need to prescribe the exercises.

This brings us to a concept I refer to as the "*Movement Hierarchy*".



The Movement (and Treatment) Hierarchy

Exercise prescription is a primary treatment with back pain. But as we said in our introduction, we can't just prescribe the same exercises to each patient? We need the exercises to be matched to the specific needs of each individual patient.

So where do we begin?

Here it is helpful to think about our movement and exercise objectives as following a hierarchy, like the order-of-operations rules we see in mathematics.

Remember the BEDMAS rule: Brackets first, then exponents, division/multiplication, then addition/subtraction. Failure to follow these results in an undesired outcome.

The same is true with back pain treatment and rehabilitation. Here, the order of operations we need to follow is:

- 1) Develop tolerance to movement
- 2) Develop motor control and segmental mobility.
- 3) Then—and only then—we move to training strength and endurance.

Let's look at each of these steps in more detail.

Step 1: Develop basic movement tolerance first

Access to basic pain-free motion is the most basic (and absolutely critical and non-negotiable) step in our movement hierarchy.

Think about it. You can't live your life without moving your spine. So, if we cannot perform basic motions without hurting, every aspect of our day-to-day existence will be affected. We'll either hurt all the time, or our bodies will be continually looking for compensatory movements to limit movement through the affected joints.

In the short term some of these changes may be advantageous and necessary. They allow continued participation in life's required pursuits. However, when left unchecked, over time these same compensations can have significant consequences. This can be one of the biggest drivers of chronic lower back pain.

Think of it this way. If a patient comes into your office with elbow pain, and during your exam they get pain from simply flexing and extending their elbow, it's going to be very difficult for them to use the arm. My absolute first priority here is to desensitize this motion.

Sure, the arm may be weak, but it doesn't mean we give them a dumbbell and have them do heavy bicep curls. We need start them off with lower-intensity movements to reduce the sensitivity of the movement first.

I would also point out that as important as strength, mobility, and motor control/coordination and are, if basic movements evoke symptoms it is difficult to gain an accurate assessment of these other fundamentals.

This is the chicken vs egg debate. In the presence of pain how can we know if mobility or strength deficits are a cause of the pain, or a downstream reaction. So, clearing this sensitivity and building basic movement tolerance needs to be the top priority.

Step 2: Develop spine control and mobility

If basic spine motion does not provoke symptoms the focus shifts to developing control and mobility of the spine. To clarify, this doesn't mean the patient doesn't have any pain or symptoms. It means the patient can perform basic pelvic tilt movements without causing pain. In other words, the patient/client can access end range spinal positions.

Developing mobility and motor control of the spine is one of the most critical areas of spine health. But it's often overlooked. The percentage of lower back patients that I see that have no idea how to move their spine in a controlled and coordinated way is astonishing.

This is a big deal and absolutely needs to be addressed.

Let's go back to our elbow example from above. Imagine I asked a patient with arm pain to bend their elbow, but instead of the elbow flexing, they shrugged their shoulder, or their whole arm moved instead of motion occurring just at the elbow.

We would all instantly recognize this as a major problem.

It tells us that the sensory-motor areas of the brain that are responsible for moving and controlling the body are not properly communicating with the muscles that surround the elbow. More specifically, these motor centers cannot contract the elbow muscles independently. Instead there is co-contraction with the shoulder or scapular muscles. elbow.

Again, we wouldn't prescribe bicep curls to this patient. How effective will it be to strengthen a muscle that your brain can't properly access and control? The priority here is developing motor control and coordination of the elbow and surrounding muscles. We need to take this approach to our lower back pain patients as well.

Step 3. Develop Strength and Endurance

Of course, the spine also needs to be strong. This relates to muscle strength and endurance of the muscles that move, control, and protect the spine. But remember, strength also applies to passive tissues like discs, ligaments, and fascia as well. These connective tissues need adequate “tensile strength” to withstand and tolerate the tensile and compressive loads they will inevitably be subjected to. Simply stated, weaker tissue is more likely to suffer damage and injury.

But I’m only focusing on developing muscle/tissue strength when the patient develops tolerance to basic movements and as the patient or client can appropriately control motion and muscles of the lumbar spine. Like BEDMAS, If we skip steps and get the order wrong we won’t get the desired result.

And when we progress into our strength phases we’re not just using isometrics like planks, bridges, and bird-dogs. I want to train the spine to move under load. Going once again back to our arm example, once the patient can move their elbow in a controlled way without hurting, then I’m going to add the weight.

PART 3 - EXERCISES FOR ACUTE LOW BACK PAIN

In the previous section we outlined some critical concepts as to why creating focused, intersegmental motion at the lumbar joints is critical. Now we need to move into the exercises themselves.

We're going to start with focusing on exercises for acute lower back pain. These are the patients whose symptoms will be relatively short lived—typically days to weeks. Here there will often be a precipitating event that has caused the problem. In some cases this could be obvious (like a fall or accident), but it doesn't necessarily have to be. It could also be something simple and mundane like bending over to pick up a shoe from the ground. Or it may be that pain shows up after a basic or routine activity like golfing or running, or doing some yardwork.

In any event, with acute back pain symptoms usually start after doing something.

One of the key hallmarks here is that the patient has pain with basic movement and ROM testing. We would classify these patients as being "***movement sensitive***".

This is a big deal. Clearing this sensitivity and building movement tolerance needs to be the top priority.

The Exercises: Pelvic Tilts for Pain and Movement Tolerance

We know movement is a powerful stimulus to control symptoms and guide tissue healing with acute pain and injury. But to be effective this movement needs to be directed at the right area. As discussed in the previous section, this is a major limitation with many traditional lower back stretches and exercises.

This is where our exercises based on pelvic tilts come in.

Of course, identifying a specific tissue of origin for most lower back pain is difficult. Not only do various tissues present with similar history and pain patterns, but they are also stressed with similar movements.

Flexing the lumbar spine creates tension at the posterior aspect of the intervertebral discs, but also the interspinous ligaments, joint capsules, various deep and superficial muscles, and spinal nerve roots.

Does this really matter?

In most cases I don't think it does. At least not from the perspective of what exercises the patient needs to perform. The fact is that all of these tissues need and respond well to movement as a stimulus for tissue healing. At least if it's the right movement at the right dose and intensity.

That's why these pelvic tilt movements can be applied to virtually any type of lower back pain.

Of course the specific symptom response may be different depending on the specific diagnosis and tissue of injury. Some conditions may be more sensitive with extension. Others with flexion. And some patients may demonstrate symptoms in both directions. So we do need to be aware of this and prescribe/modify these exercises as needed to each patient. But the key point here is that these exercises are applicable to all of these cases to help desensitize the painful and intolerant motions.

Movement and chronic pain

The discussion here has really focused on acute pain and injury. But these same pelvic tilt exercises are a great starting point for chronic back pain as well.

Of course, we know that acute pain is different from chronic pain. While an inflammatory response may be driving the symptoms following injury, long standing pain is often related to a hyper-sensitive pain system. Here the CNS recognizes movement as unsafe and potentially threatening. It is as if the brain has "learned" that a movement is unsafe or potentially threatening. In an effort to protect the body the CNS calls upon the pain system. (I go over this in much greater detail in my [Rethinking Pain eBook - you can download the book for free here.](#))

Here pain serves as a powerful modifier of behavior. A preemptive strike to limit exposure to what is believed to be a potentially dangerous movement, position, or activity.

So where do pelvic tilts fit in here?

Recall that one of the key attributes of pelvic tilts is that they create focal individualized spine motion while minimizing load. So again, we know these movements are safe and any symptoms will be more related to tissue sensitivity (whether from a chemical/inflammatory response or from a hyper-sensitive pain system) as opposed to further damage or injury.

This is powerful messaging for patients. Understanding this can really help the patient understand that pain is not always related to tissue damage. Even though the movements may create some pain, nothing bad happens. It helps the CNS to recognize the movement as less threatening. Over time, as the brain starts to trust the movement it can turn down the hyper-active pain system.

Understanding The Exercise Response

Sometimes prescribing exercise with acute lower back pain patients can be tricky. Because in many cases when the spine is really painful and sensitive almost any movement can be painful.

This often makes patients reluctant or even fearful to perform stretches or exercises.

So to be effective the movements not only need to be safe with minimal chance of further damage or symptom flare-ups, but the patient also needs to be able to control the symptom response.

Here again we see the effectiveness of pelvic tilts. As these movements are performed in non-weight postures they minimize the physical loads (especially compressive loads which is critical for any disc injury or pathology) on the spine. So the force and stress on the injured or irritated tissue is relatively low. That's important. It means any symptoms that may occur during these movements will be more related to tissue sensitivity, not further damage or injury.

This is key messaging that needs to be explained to patients so they understand the exercises and feel safe and in control as they move.

Move to tolerance – It's not no pain no gain!

The movements are safe, but that's not to say we just ignore symptoms or push through pain. The instruction to patients is to "move to tolerance", but not push through or into pain. Some symptoms are OK, and even expected in the initial stages. But working into these symptoms can help reduce pain and swelling.

Explaining to patients that symptoms here are more about tissue swelling and the accumulation of chemicals at the site of injury, and that movement helps push and flush these chemicals out of the area is powerful messaging here.

With that said, let's review the 4 key exercises that we would prescribe with our acute (i.e. "movement sensitive") lower back pain patients.

Please Note: When reviewing the exercises it is recommended you DO THE EXERCISES yourself. This will allow you to better understand the importance of these exercises and understand how they specifically affect the lumbar spine.

You can also [scan or click the QR code](#) to access a video that reviews these exercises. **(This video is from our Online Course: Essential Exercise Progressions For The Lumbar Spine).**



Supine Anterior-Posterior Pelvic Tilt with Pain/Tolerance Focus

Begin supine with the knees up and feet flat on the floor. From here, roll/tilt the pelvis posteriorly—this creates flexion at the lumbar joints. Hold this flexed position for 1-2 seconds, then tilt the pelvis anteriorly to create lumbar extension.

To be effective we want the motion to be isolated to the lumbar spine as much as possible. So as you move don't lift the hips. With the posterior tilt, try to create the motion with the abdominal muscles—don't squeeze the glutes.

With the anterior tilt, try to keep the mid and upper back (thoracic spine) relaxed. There is a common tendency to arch/extend the whole spine instead of isolating the motion at the lumbar spine. This should be avoided.

As you move into flexion and extension move to symptom tolerance. Some mild symptoms are expected and acceptable. Move up to the the outer edge of these symptoms, but not deep into them. The expectation is for these symptoms to reduce with repeated movements.

For programming, a typical prescription would be 10 slow, deliberate repetitions of the movement every few hours.

Supine Pelvic Tilt: Pain/Tolerance Focus (Lumbar Flexion-Extension)



Quadruped Anterior-Posterior Pelvic Tilt with Pain/Tolerance Focus

Pelvic tilt exercises can also be performed from a quadruped posture. In this posture, more motion is available as the spine is no longer restrained by the floor. However, there is also a stronger tendency to move and compensate through the thoracic spine. So care must be taken to keep the motion focused at the lumbar spine by rolling through the hips and pelvis (remember, this is not a cat/camel exercise).

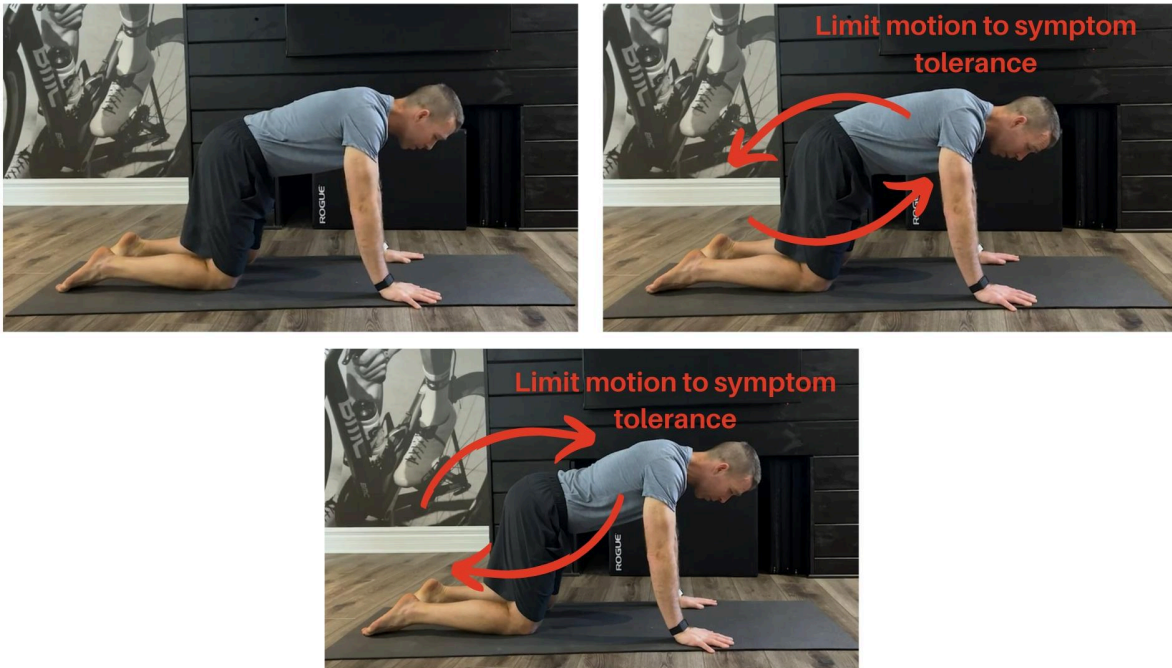
Rocking back and forth is another common compensation often seen that should be corrected.

Again, move to tolerance but don't force the motion.

As the exercises are repeated, over time, the expectation is for these symptoms to improve. This makes this exercise not only therapeutically helpful, but also aids in evaluating the progress of the condition.

For programming, a typical prescription would be 10 slow, deliberate repetitions of the movement every few hours.

Quadruped Pelvic Tilt: Pain/Tolerance Focus (Lumbar Flexion-Extension)



Supine Lateral Pelvic Tilt with Pain/Tolerance Focus

Begin lying supine with the knees up and feet flat on the floor. Now actively pull the hip/iliac crest up towards the lower ribs to create lateral flexion of the lumbar joints. (This also creates rotation due to coupled motion). Hold for 1-2 seconds, then laterally flex in the opposite direction.

The key here is to focus on using the lateral trunk muscles to create the motion. Again, move as far as possible, but limit motion to the onset of symptoms as needed.

For programming, a typical prescription would be 10 slow, deliberate repetitions of the movement every few hours.



Lateral Tilt Variations (Lateral Tilt w/ PPT Holds)

In some cases, lumbar extension may be particularly painful. When this is the case, performing lateral tilts while holding a posteriorly-tilted pelvis can be helpful. This posture opens the facet and allows more motion capacity in this lateral direction. I cover this in depth in our **Essential Exercise Progressions For The Lumbar Spine Course**.

Quadruped Lateral Pelvic Tilt with Pain/Tolerance Focus

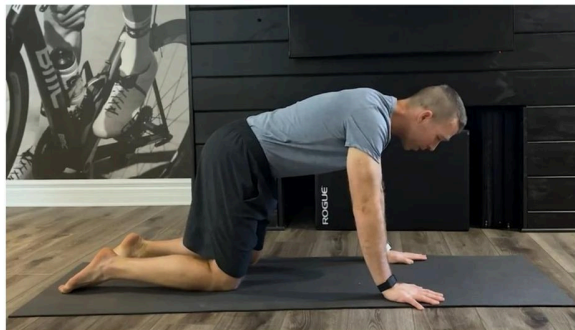
This exercise is performed similar to the supine lateral pelvic tilt, but now from a quadruped posture.

From your hands and knees actively pull the hip/iliac crest up towards the ribs to create lateral flexion of the lumbar spine.

Form is important here. From this posture there is often a strong tendency here to shift the hips side to side instead of rotating laterally through the pelvis. It is helpful for the patient to focus on keeping the sacrum in line with the head during the motion. Feeling the opposite hip pull down as the other side is pulled up is another helpful cue.

For programming, we stay with our prescription of 10 slow, deliberate repetitive movements every few hours.

Quadruped Lateral Pelvic Tilt: Pain/Tolerance Focus (Lumbar Lateral Flexion)



Alternative positions (these can be helpful for really sensitive spines)

The supine and quadruped version of these pelvic tilts are what I prescribe for the vast majority of acute low back pain patients. But keep in mind that these can also be done in a side lying position for anyone who cannot tolerate the base positions.

I won't review those in detail here but I do discuss and demonstrate these in more detail in our ***Essential Exercise Progressions For The Lumbar Spine Course***.

Exercise Programming and Progression Criteria

As far as programming, we want our acute lower back pain patients to perform these exercises just a little at a time, but we want them to repeat these exercises frequently.

So when possible we want to think of these 4 exercises as a movement routine or exercise sequence consisting of 8-10 slow, deliberate repetitions of each movement. But this movement routine can be repeated 3-5 times each day.

Also keep in mind that we don't want our patients to just mindlessly go through the motions. We need them to be slow and deliberate with each repetition. They need to focus on feeling the motion to concentrate on generating tension in the deep muscles of the spine to generate the movement.

Exercise Prescription:
Pain / Movement Tolerance Focus

Movement Routine/Sequence:

1. Supine Anterior-Posterior Pelvic Tilt
2. Supine Lateral Pelvic Tilt
3. Quadruped Anterior-Posterior Pelvic Tilt*
4. Quadruped Lateral Pelvic Tilt*

**substitute side lying pelvic tilts as needed*

Programming:

Sets: 1
Reps: 8-10
Frequency: 4-5x/day

Patient Instructions:

- Go slow, be deliberate, focus on feeling the joints move and the deep muscles around your spine contract
- Move to tolerance. Mild achy symptoms are OK but don't force into pain

PART 4 - EXERCISES FOR MOBILITY AND CONTROL

In the last section we reviewed the 4 essential exercises for acute low back pain. The key there was to control symptoms and develop tolerance to basic spine motion. Now we want to shift our focus to more general back pain cases. These are the patients that present to your office but really don't have any significant symptoms with basic movement testing.

Of course this doesn't mean there's nothing wrong. It means the problem is not likely to be caused by damage or injury of a specific structure or tissue.

With these patients, you won't find specific pain with basic spine motion or orthopedic testing, but you will find dysfunctional muscle or joint movement during your exam. This will come in the form of limited flexibility, strength, or poor control/coordination.

I put these patients in the "things just don't work right" category. This may not be a specific or universally recognized diagnostic label, but I find it helpful (it's just as helpful or accurate as other labels like "mechanical low back pain" or "non-specific low back pain") as it helps convey to the patient the key focus of treatment. Which is to focus on getting the spine healthier and moving better.

How does dysfunctional movement relate to lower back pain?

Of course pain is complicated. And we know there is a poor correlation between specific "faulty movement patterns" and pain syndromes. So when I say the focus is on getting the spine to move better I am not suggesting we need to promote any specific pattern of movement.

We're not trying to prevent excessive flexion, or create better muscle balance, or limit excessive movement of the spine per se. Remember the spine is supposed to move!

What I am saying is we need to build basic fundamental joint health. Simply stated, joints that work right can do more and hurt less. But for this approach to work and be capable of directing our treatment and exercise prescription we can't just say we want our joints to be healthy and work properly. We need to define what these terms actually mean.

Here I would argue that all joints need to have 3 basic things to be considered healthy and function: Flexibility, control/coordination, and a basic level strength. Let's break each of these down. In this section we'll review the importance of flexibility and control. In the next section we'll talk more about strength.

Flexibility

On the most basic level, joints need to move. That is the purpose of a joint. To allow motion between two bones. Sometimes this point gets lost on the spine, so let's first illustrate this with the arm.

For the arm to work properly the elbow needs to fully flex and extend. During an upper extremity exam if we found that an elbow could only flex to 100 degrees instead of the normal 150-160 degrees we would immediately consider this a problem.

But exactly how this limitation would manifest symptomatically will be a little less clear.

Maybe the elbow itself will be painful? Or maybe the symptoms will show up at the shoulder because of a compensatory overload? The truth is you simply cannot consistently predict how a problem at one joint will influence other areas of the body.

But from a treatment perspective I don't think this matters as much as some people would have us believe. Because the goal is to simply normalize the system.

Remember when we say we want better movement what we really want is movement to be more variable and adaptable. And to do this we want to ensure each joint in the kinetic chain is functioning properly to give your body the most movement options.

So if an elbow is supposed to flex, but can't fully flex, we would want to do everything possible to normalize elbow flexion.

The same is true for the spine.

But remember we don't really have a spine in the same way that we have an elbow or hip or knee. These joints are much easier to target and influence as they are single-joint systems.

The spine is different. It consists of a series of intervertebral joints that form a moveable column. It's like we have a whole bunch of hips or elbows stacked together in series. And each of these intervertebral joints needs to contribute to motion of the spine.

So the key is to get each of these individual joints moving in the best way possible.

Control and Coordination

But flexibility alone isn't enough. We also need to access and utilize the available motion. This relates to the ability of your CNS to control and coordinate joint movement.

But movement is an automated process. Sure you can choose to lift your arm, walk, or climb stairs. But when doing so you don't consciously decide how these movements occur. You don't

specify how each individual joint contributes to the overall motion. And you don't consciously dictate which muscles are used, or when, or how hard, or fast they contract. You just move.

The conscious component of movement is task oriented. You are trying to accomplish a specific objective. To reach the glass in the cupboard, pick up the shoe from the floor, or to get from here to over there.

Exactly how movement occurs is determined by your CNS. And this in turn requires effective communication between your brain and your body. It's the mind-body connection. But if this communication isn't there, or isn't as established as it should be, the CNS will have trouble controlling and coordinating motion at the joint.

In other words, the CNS doesn't have full access to the available joint motion.

But here's the thing...

This doesn't mean your body stops working or moving. But it will limit how your body moves, which will affect the overall health and adaptability of the spine.

Exactly what symptoms will this cause? Or how will the body need to "compensate" for these motor control deficits? We don't know. Or at least we cannot predict this in a consistent way across all patients. But what we do know is that the body will have to compensate and alter movement somehow. So we need to train and develop proper control and coordination of the lumbar spine.

Assessing Lumbar Control and Coordination

In addition to basing my lower back rehab and exercise prescription on pelvic tilts, I also use them as a key part of my exam. It is here where these control and coordination deficits are really evident.

On the surface pelvic tilts may seem like a strange test. After all, it's not a natural motion we perform regularly. But when asking a patient or client to perform a pelvic tilt all we're really doing is asking them to move their lumbar spine into flexion and extension (or lateral flexion if we're assessing a lateral pelvic tilt).

When I ask a patient to perform a basic pelvic tilt from a quadruped position what I should see is smooth, effortless motion of the lumbar spine into flexion and extension. It should be easy to perform. And it should be pain free.

But so often with lower back pain, it's not.

It is really common for these motions cause pain. (These are the “movement sensitive patients we talked about when discussing acute lower back pain.) Or they will be significantly limited in ROM.

These are obvious problems. But another common finding is simply an inability to move their lumbar spine in a coordinated way. Instead of nice, smooth, focused motion at the lumbar spine they rock their whole bodies back and forth, press up or down with their arms, or press their whole spine up and down because their CNS can't separate the lumbar and thoracic spines or their hips.

Let's for a moment go back to our elbow example from above. Imagine I asked a patient with arm pain to simply bend their elbow. But instead of the elbow flexing they shrugged their shoulder, or their whole arm moved instead of just bending at the elbow. Here we would instantly and without fail recognize this as a major problem. Here we would conclude that the CNS cannot independently control the elbow.

I think we need to look at the spinal joints the same way. If we cannot move and control these joints through a full ROM in a calm, controlled setting, how can we possibly expect these joints to work properly with the more complicated and stressful movements we perform in our daily lives?

But as I briefly discussed earlier, traditional stretches and exercises simply don't target the spine in this way. There is little attention paid to creating individual and segmental motion of the individual joints. And there is even less attention given to the CNS and developing control and coordination of these motions.

So let's take a look at some better exercise options to train these important aspects of the lumbar spine.

The Exercises - Pelvic Tilts With A Mobility/Control Focus

Once again we will utilize pelvic tilt type exercises to help target mobility and control of the lumbar spine. On surface these may look similar to the exercises we introduced in previous section when we reviewed exercises for acute lower back pain.

But they're not.

While the basic movements may be similar, the focus and execution here is completely different. Here there will be several key variables that we will modify to more specifically build mobility and control (as opposed to developing movement tolerance) of the lumbar joints.

1. Move To End Range

With acute lower back conditions pain will limit the ROM of the spine. In this stage instructions to the patient were to move as far as possible, but limit the motion to symptom onset and tolerance. The goal with those exercises was to “clear” the motion.

But with these progressions the focus is on building lower back flexibility and control. So in this stage as symptoms no longer limit the movement the focus is on moving as far as possible, right to the limit of the available motion. In other words, we’re moving to “end range”.

2. “Squeeze” The Muscles

We’re also going to focus on tensing and squeezing the spinal muscles in these end range positions. Here we’re using the resistance of the end range as a barrier to push against. This creates more muscle tension, helping to not only increase flexibility, but also to start to train muscle control in these end range positions. I refer to these end range contractions as “end range squeezes”.

3. Movement Isolation is Key

Isolating movement at the intended joints is also critical here. We want motion to occur at the lumbar spine and pelvis, *and only the lumbar spine and pelvis!* Not only will this focus the movement stimulus at the lumbar spine, but it also teaches the CNS how to move and control the lumbar spine independently of the thoracic spine and hips.

4. The Movement Needs To Be Deliberate

To be effective it’s critical that the patient/client doesn’t just mindlessly go through the motions. To make changes in how the body works, especially in building control and coordination (remember this relates to the communication between our CNS and body) we need to be attentive and deliberate in our movements.

So while performing the exercises we need to pay conscious attention to how the motions feel, and to visualize the motion as it occurs. To facilitate muscle control we need to be deliberate in communicating with the muscles around the spine and creating muscle tension at the right muscles.

So as you can see, the motions may be similar to what we saw with our acute lower back pain exercises, but the exercises themselves will be very different. With that in mind, let’s review the exercises themselves.

Supine Anterior-Posterior Pelvic Tilt: Mobility/Control Focus



Scan or click the QR code for a full video demonstration of this exercise:

Supine Anterior-Posterior Pelvic Tilt: Mobility/Control Focus

This is the patient video that is included with the **My Rehab Connection Exercise App/software**.

Begin supine with knees up and feet flat on the floor. Now tilt the pelvis posteriorly to create lumbar flexion. As you move focus on using the abdominal muscles to pull the front of the pelvis up towards the lower rib cage.

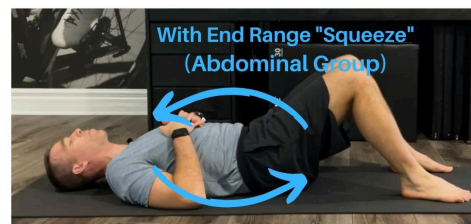
Direct your attention to feeling the abdominal muscles contract, and visualize the spinal joints opening as they press towards the floor.

As you tilt anteriorly, focus on pulling the top of your sacrum/tailbone up towards the back of your head to arch the lower back away from the floor. It is critical to keep this motion isolated to the lumbar spine, so, keep the mid and upper back (thoracic spine) relaxed.

Direct your attention to feeling the deep muscles of your lower spine tense/contract, and visualize the spinal joints opening as they press towards the floor.

Typical exercise prescription is 2x10 slow, deliberate repetitive movements twice daily.

Supine Pelvic Tilt: Control/Mobility Focus (Lumbar Flexion-Extension)



Quadruped Anterior-Posterior Pelvic Tilt: Mobility/Control Focus



Scan or click the QR code for a full video demonstration of this exercise:

Quadruped Anterior-Posterior Pelvic Tilt: Mobility/Control Focus

This is the patient video that is included with the **My Rehab Connection Exercise App/software.**

Begin in a quadruped position. As you tilt the pelvis posteriorly, focus on tucking your tailbone under your hips—the focus is to visualize your lower spine getting longer, as if your tailbone is moving away. Concentrate on using the abdominal muscles to pull the front of the pelvis up towards the lower rib cage as your lower spine lengthens.

It is critical to keep the motion isolated to the pelvis and lumbar spine. It is common here to flex the mid back—this must be avoided. Instead of transferring motion to the adjacent thoracic spine, press into the end range and focus on creating abdominal muscle tension against this resistance. Direct your attention to feeling the abdominals contract, and visualize the spinal joints opening as they press towards the floor.

Developing control of these motions, and being able to communicate with these muscles (i.e., being able to create local muscle tension in these end ranges) is a critical skill that will be needed in our strength and endurance progressions.

As you tilt anteriorly, focus on pulling the top of your sacrum/tailbone up towards the back of your head to arch the lower back away from the floor. Go slow and avoid the lower back simply falling in towards the floor. Maintain control. At the end of the motion, squeeze the deep muscles to create just a little more extension. Focus on isolating this contraction to the lower back itself.

Slowly rotate the pelvis anterior and posterior to create oscillating lumbar flexion and extension, holding each position for 1-2 seconds.

Typical exercise prescription is 2x10 slow, deliberate repetitions performed twice daily.

Clinical Pearl: Use Blocking for Feedback and Better Control

When performing a posterior tilt from a quadruped position, it is critical to avoid moving through the thoracic spine. Remember, this is not a traditional cat/camel exercise. This concept is simple enough, but patients will often have difficulty doing this. One option is to use blocking under the lower ribs. This not only helps promote correct form, but also provides external feedback to the patient as they are learning the movement.

Quadruped Pelvic Tilt: Control/Mobility Focus (Lumbar Flexion-Extension)



Supine Lateral Pelvic Tilt: Mobility/Control Focus



Scan or click the QR code for a full video demonstration of this exercise:

Supine Lateral Pelvic Tilt: Mobility/Control Focus

This is the patient video that is included with the **My Rehab Connection Exercise App/software**.

Begin supine with knees up and feet flat on the floor. From here, pull the hip/iliac crest up towards the lower ribs to create lateral flexion of the lumbar joints.

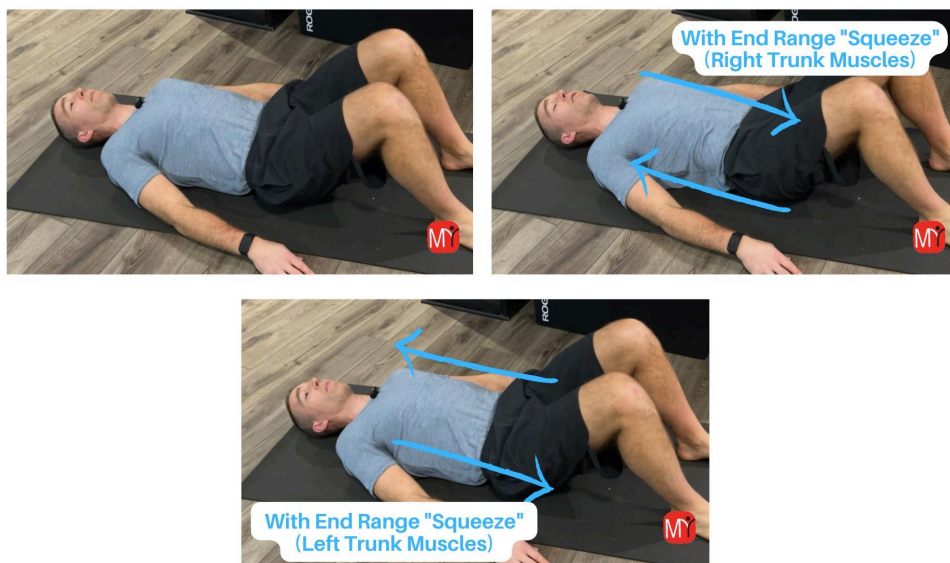
As one hip moves upward, the opposite hip should move down. There should be no movement of the thoracic spine or shoulders. Keep the motion isolated at the lumbar spine and pelvis.

Focus on contracting the lateral trunk muscles to create the motion. Developing the ability to create tension through these muscles will be critical when progressing in the strength/endurance exercise.

Hold for the position for 1-2 seconds, then pull the opposite side hip/iliac crest up towards the lower ribs to create lateral flexion in the opposite direction.

Typical exercise prescription is 2x10 slow, deliberate repetitions performed twice daily.

Supine Lateral Pelvic Tilt: Control/Mobility Focus (Lumbar Lateral Flexion)



Quadruped Lateral Pelvic Tilt: Mobility/Control Focus



Scan or click the QR code for a full video demonstration of this exercise:

Quadruped Lateral Pelvic Tilt: Mobility/Control Focus

This is the patient video that is included with the **My Rehab Connection Exercise App/software**.

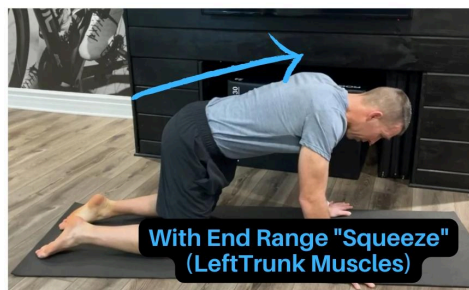
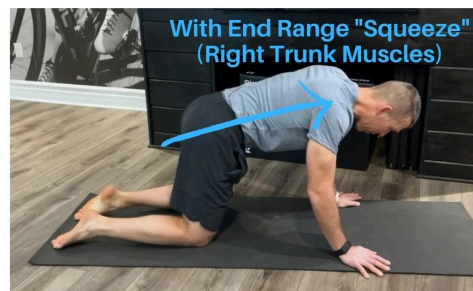
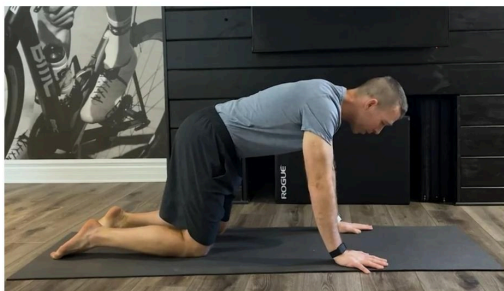
From a quadruped posture, pull the hip/ilium crest up towards the ribs to create lateral flexion of the lumbar spine.

Form is important. It is common for patients/clients to shift the hips side to side instead of rotating the pelvis laterally. This must be avoided. As one hip moves upward, the opposite hip should move down—this will help to keep the sacrum in line with the head during the motion.

Focus on using/contracting the lateral trunk muscles to create the motion. Tense and “squeeze” these muscles at the end ranges of motion.

Hold for 1-2 seconds, then pull the opposite side hip/ilium crest up towards the lower ribs to create lateral flexion in the opposite direction. Typical exercise prescription is 10 slow, deliberate repetitive movements twice daily.

Quadruped Lateral Pelvic Tilt: Control/Mobility Focus (Lumbar Lateral Flexion)



Exercise Programming

To be effective we need to be deliberate not just with what we are doing, but also when. To make change in how the body works we need to provide a regular and frequent stimulus to promote these adaptations.

The key here is developing a focused movement routine that can be repeated 1-2x / day. (I tell patients once for sure. That's non-negotiable. But twice would be better and result in faster gains).

Exercise Prescription: **Lumbar Mobility / Control Focus**

Movement Routine/Sequence:

1. Supine Anterior-Posterior Pelvic Tilt
2. Supine Lateral Pelvic Tilt
3. Quadruped Anterior-Posterior Pelvic Tilt (with Blocking)
4. Quadruped Lateral Tilt

Programming:

Sets: 2-3

Reps: 8-10

Frequency: 2x/day

Patient Instructions:

- Go slow, be deliberate, focus on feeling the joints move and the deep muscles around your spine contract
- Visualize the spine move with each repetition
- Move to as far as possible
- At the end of the motions feel the muscles tense and squeeze

Advanced Mobility-Control Exercises For the Lumbar Spine

Mobility/Control Exercise Progressions

As ROM and control develop with the basic supine and quadruped exercises, the program can progress. Here, we want to transition to more upright postures.

Progressing to weight bearing postures increases the control/coordination demand on the CNS as the brain now has the added task of maintaining an upright posture. These weight bearing postures will also increase the compressive load on the passive structures on the spine, most notably the intervertebral disc. While in the early stages of rehab we wanted to minimize this compression as healing and movement tolerance improve, re-introducing these postures can help provide a progressive stimulus for continued tissue healing and adaptation.

Examples here include pelvic tilts from a seated position, from a standing lunge position which mimics joint postures seen with walking. Forward bent postures are another option. Here, we are mimicking postures associated with bending and lifting.

Again, we go over these more advanced progression in our online course, [*Essential Exercise Progressions For The Lumbar Spine Course*](#).

PART 5 - EXERCISES FOR STRENGTH AND ENDURANCE

Beyond flexibility and motor control, a basic amount of strength and endurance is required for proper joint health and function. So to develop strength of the lumbar spine we need to increase the load and effort of the exercises.

But let's also keep in mind that it's not just muscle strength that's important. We also want to develop stronger ligaments and intervertebral discs that surround and connect the spinal joints. And resistance training improves the strength of these tissues as well.

So in this section let's review the exercises that we can use to target strength of the lumbar spine.

Developing Strength Is Critical.... But Planks, Bridges, And Bird-Dogs Aren't Enough

We know the heavier loads associated with resistance exercises will stimulate stronger muscles, ligaments, tendons, fascia, and intervertebral discs. But as we've seen in earlier sections, we can't just prescribe a generic set of exercises. Here again, we need to remember the SAID principle (Specific Adaptation To Imposed Demands).

Remember tissue growth and adaptation is controlled on a cellular level, through mechanotransduction. Which means only the cells that experience exercise stress will adapt and change.

Keeping this in mind, we can again see the limitations of traditional exercises like bridges, side planks, and bird-dogs. As these are isometric exercises they do not train the spinal joints through their available ROM.

But if we are only training the joints within very limited ranges and positions – like “neutral” spine posture – the effect of that exercise stress is thus confined to these narrow ranges. This means the tissues in the outer ranges and positions are deprived of the stress needed to develop and maintain structural health and resiliency.

To be clear, I'm not suggesting that traditional exercises like planks or side bridges or bird-dogs are bad. These exercises can certainly improve basic muscle strength and endurance. This is good. They may also have powerful effects that influence a patient's symptoms as well. This may occur by affecting pain processing, or by changing a patient's beliefs or mindset. This is also good. But I do suggest that if our goal is to build optimal health and function of the spine, isometric exercises are not enough.

To build optimal lower back strength and endurance we need to move beyond isometric exercise like planks, bridges, and bird-dogs. We need to load the spine through its full range of motion. But we need to do this in a controlled and progressive way. We need to strike a balance between stimulation and loading the spine through the ranges and positions that are needed for normal life and activities of daily living.

And of course to do this we need to utilize a movement that not only incorporates full ROM of the joints of the spine, but we also need a movement that we can progressively load.

This again is where our pelvic tilts can be very effective. But now we'll modify these movements to create more of a strength focus.

More Pelvic Tilts – But Now It's About Strength, Not Mobility

Remember, pelvic tilts and their many variations can create focused and deliberate motion through the individual joints of the lumbar spine. And when done properly they can target and isolate the deep muscles that are so important with spine health, stability, and motor control.

But here the focus is going beyond mobility and coordination. Here we are progressing to more loaded pelvic tilts. By changing variables such as intensity, frequency, and duration, we can change the intended effect of the exercise.

Think of it this way. Under normal circumstances we would target strength by adding more weight or creating more resistance to a movement. This would typically be done by adding a heavier weight or a stronger resistance band. We can do the same thing with our pelvic tilts by using the weight of the lower limbs to create external resistance to these pelvic tilt motions.

For example, instead of performing a supine pelvic tilt with the legs relaxed and the feet resting flat on the floor, we can perform the motion with the legs raised off the floor. Now as the pelvis and lumbar spine move into a posterior pelvic tilt it must do so against the added weight of the lifted leg(s).

And we can use this strategy to train lumbar flexion (posterior pelvic tilt), extension (anterior pelvic tilt), and lateral flexion (lateral pelvic tilt).

Keeping this strategy in mind, let's review the exercises themselves.

Resistance Exercises For Lumbar Flexion (Posterior Pelvic Tilt)

Single Leg Posterior Pelvic Curl



Scan or click the QR code for a full video demonstration of this exercise:

Single Leg Posterior Pelvic Curl

This is the patient video that is included with the **My Rehab Connection Exercise App/software.**

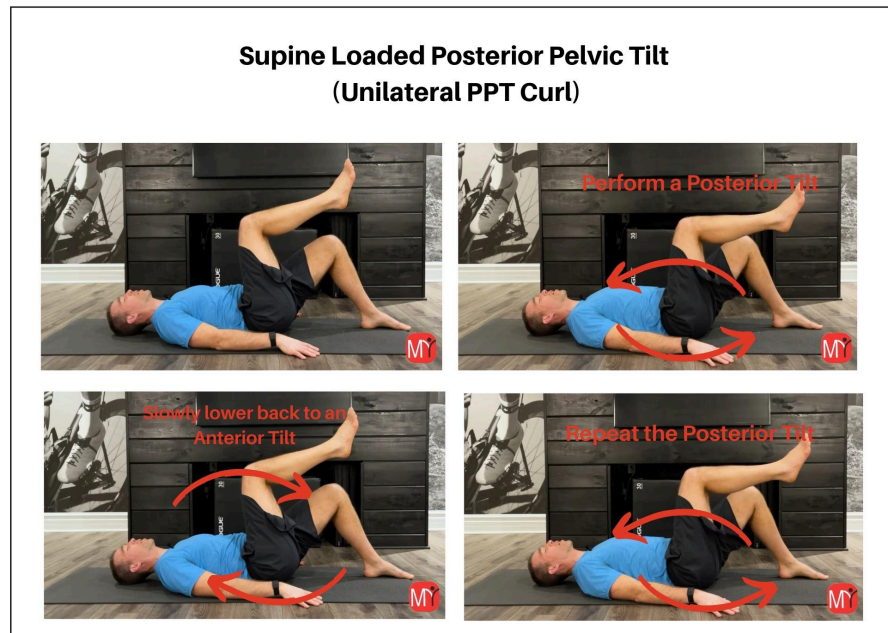
Begin lying on your back with your knees bent and feet flat on the floor. From this position lift one leg into the air. The knee of the lifted leg should be bent 90 degrees and the thigh should be vertical.

Now perform a posterior pelvic tilt. Focus on using your abdominal muscles to pull the front of your tailbone up towards your lower ribs and feel your tailbone tuck under your hips. (Don't push off with your foot from the floor)

Move slowly and visualize bending your lower back into the floor in a bottom-up sequence, starting with your tailbone, then L5, then L4, L3, and so on. Feel your abdominal muscles tense and squeeze at the top of the motion.

Hold this flexed position for 1-2 seconds then slowly "unroll", this time starting from the top then working your way back to your tailbone.

Slowly repeat this rolling motion for 8-10 repetitions. Be sure to go slow and focus on good form.



Bilateral Leg Posterior Pelvic Curl

An effective progression is to perform the exercise with both legs elevated.

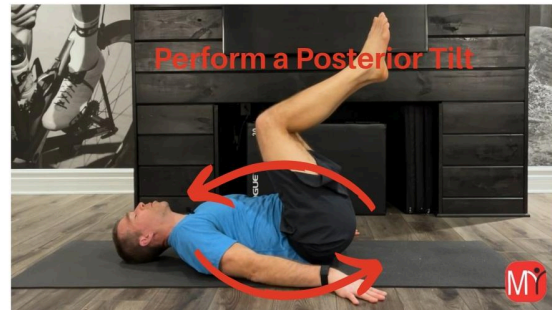


Scan or click the QR code for a full video demonstration of this exercise:

Bilateral Leg Posterior Pelvic Curl

This is the patient video that is included with the **My Rehab Connection Exercise App/software.**

Supine Loaded Posterior Pelvic Tilt (Bilateral PPT Curl)



Resistance Exercises For Lumbar Extension (Anterior Pelvic Tilt)

Prone Single Leg Anterior Pelvic Curl



Scan or click the QR code for a full video demonstration of this exercise:

Prone Single Leg Anterior Pelvic Curl

This is the patient video that is included with the **My Rehab Connection Exercise App/software**.

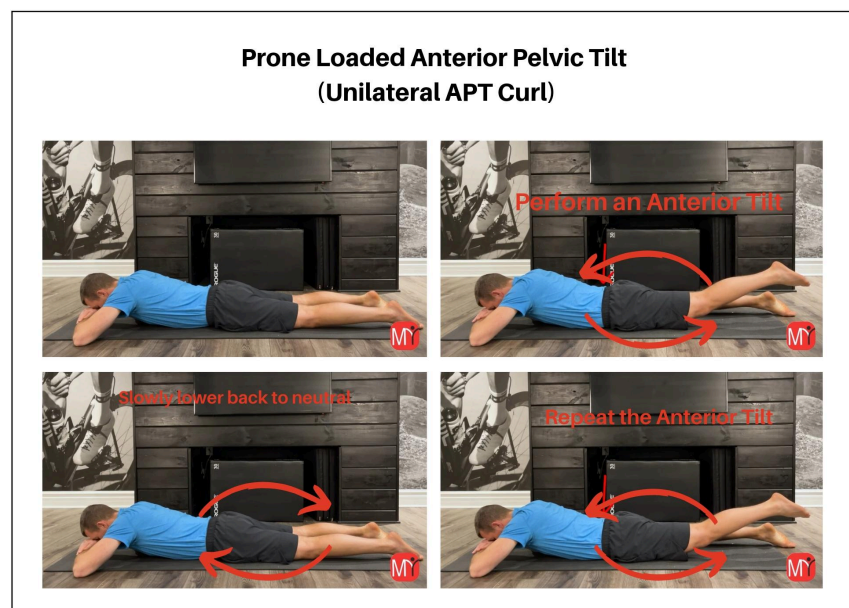
Begin lying on your stomach. Now perform an anterior pelvic tilt - but as you tilt allow one leg to lift off the floor. The idea here is you are using the forward tilting motion of your pelvic to lift the leg as opposed to lifting the leg with your hip/glute muscles.

As you tilt the pelvis forward focus on using the deep muscles of your lower back to create the motion - feel your lower spine arch towards the floor as you lift the lift. Feel your lower back muscles tense and squeeze at the top of the motion.

Hold this position for 1-2 seconds then slowly "unroll" to lessen the arch of the lower back and to bring the leg back to the floor.

Slowly repeat this rolling motion for 8-10 repetitions. Be sure to go slow and focus on good form.

Clinical Pearl: In some cases it will be much more effective to place yoga blocks underneath the ASIS's when in a prone position. This will create more of a flexed starting position for the lumbar spine and train a larger ROM as the pelvis moves into extension.



Bilateral Leg Anterior Pelvic Curl

An effective progression is to perform the exercise with both legs elevated.



Scan or click the QR code for a full video demonstration of this exercise:

Bilateral Leg Anterior Pelvic Curl

This is the patient video that is included with the **My Rehab Connection Exercise App/software**.

Prone Loaded Anterior Pelvic Tilt (Bilateral APT Curl)



Resistance Exercises For Lumbar Lateral Flexion (Lateral Pelvic Tilt)

Side Lying Lateral Pelvic Curl - Single Leg



Scan or click the QR code for a full video demonstration of this exercise:

Lateral Pelvic Curl - Single Leg Lift

This is the patient video that is included with the **My Rehab Connection Exercise App/software.**

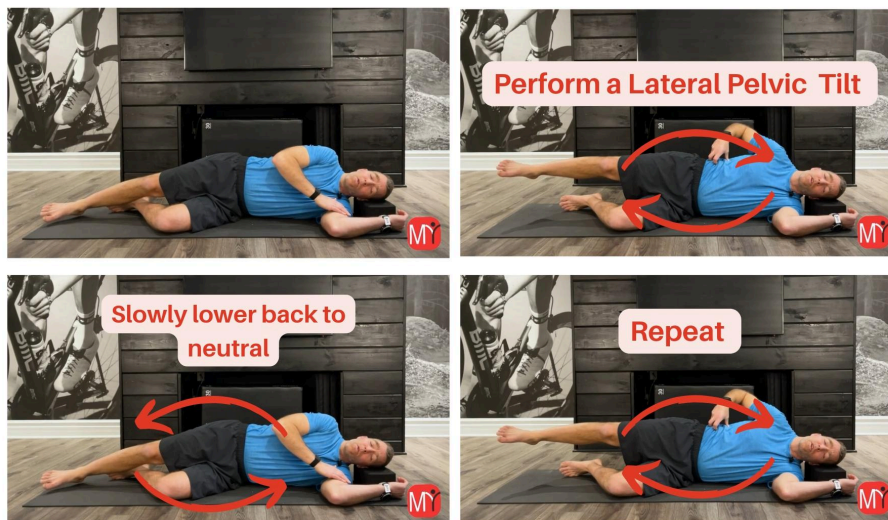
Begin lying on your side with your top leg extended and in line with your trunk. Your lower leg can be straight or flexed, whichever is most comfortable.

Now slowly pull your hip/iliac crest up towards your lower ribs, but as you move pull your top leg up off the floor. The idea here is you are using the lateral tilting motion of your pelvic to lift the leg as opposed to lifting the leg with your muscles on the side of your hip.

As you tilt the pelvis laterally, focus on using the deep muscles along the side of the lower trunk to create the motion and feel your lower spine arch towards the floor as you lift the lift.

Hold this position for 1-2 seconds then slowly "unroll" to lessen the arch of the lower back and to bring the leg back to the floor.

Side Lying Lateral Pelvic Tilt with Unilateral Leg Lift (Lateral Pelvic Curl)



Side Lying Lateral Pelvic Curl - Bilateral Leg Lift

An effective progression is to perform the exercise with both legs elevated.

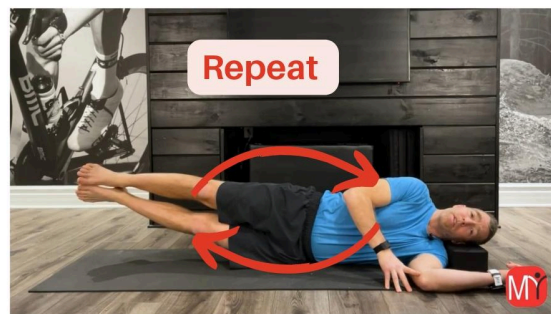
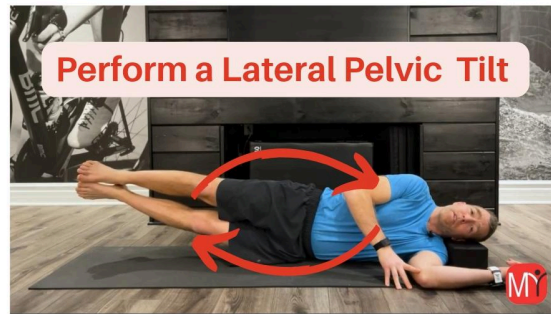


Scan or click the QR code for a full video demonstration of this exercise:

Lateral Pelvic Curl - Bilateral Leg Lift

This is the patient video that is included with the **My Rehab Connection Exercise App/software**.

Side Lying Lateral Pelvic Tilt with Bilateral Leg Lift (Lateral Pelvic Curl)



Exercise Programming

So now that we've gone over the exercises themselves, let's talk about some key things to consider when we're actually prescribing these exercises to our patients or clients.

One of the really big things to consider here is that when progressing to strength and endurance exercises we need to increase the effort and intensity, but we also need to consider volume. Think about performing squats or curls at the gym. To build strength we need to work hard with every set, and I would expect to perform several sets to fatigue in the same training session. So with our lumbar strength and endurance exercises we would typically prescribe 3-5 sets of each exercise.

But as intensity and volume increase we also need to program rest and recovery. So just like performing squats or biceps curls, we're only going to perform these exercises 2-3 times per week, which allows a minimum of 1 rest day in between.

Volume - How Many Reps/Sets

In terms of determining the workload there are a few options. First, we could certainly prescribe these exercises using specific numbers of sets and reps as our targets. For example, we could prescribe 3-5 sets of 8-10 repetitions.

But if you're going to prescribe these strength exercises based on sets and reps, remember, the ultimate requirement to build strength is to fatigue the muscle. So if we're going to follow this convention it's usually better to prescribe these as sets to fatigue. In other words, instead of saying do 3 sets of 8-10 reps, we say do 3 sets to fatigue. We would also have patients keep track of their numbers as a way to monitor progress. As a general rule, if the patient or client is able to do sets of 12-15+ reps we would typically progress the exercise to a more challenging option. Likewise, if they can't do at least 6-8 we could regress the exercise.

REMOM - Rehab Every Minute On The Minute

Now, the other option is to base our exercise prescription on time. This is our REMOM protocol. What we would do here is to have the patient set a 60 second timer. They can do this on their phone or watch, or they can download an app that allows them to set a timer at repeating 60 second intervals. Then they would perform the exercise for 60 seconds, but they would not necessarily worry about the specific number of reps, as it's the clock that's keeping track of the volume and workload.

I like this because it allows the patient or client to keep focused on the form and execution of the exercise itself. This is a big deal, because when training the lumbar spine it is critical that the exercise stimulus is directed to the intended muscles and joints.

This also makes it easy to program multiple exercises into a circuit. So here we could prescribe multiple lumbar spine exercises, or even include hip or neck exercises into the circuit, with the patient or client going from exercise to exercise with each successive minute.

For example, we could create a REMOM circuit with 2-3 lumbar exercises, and maybe even add 1-2 hip exercises. We could even add a rest minute if needed. So in our example here we have 5 exercises - with each exercise taking 60s. And we could have the patient repeat this for 3 rounds or circuits. So this would take a total of 15 minutes.

Prescribing exercises this way often has a significant psychological advantage and can really help with compliance for a lot of patients. This can be an issue, because we all have trouble getting some patients to actually do the exercises we prescribe for them. But I have found that for the vast majority of patients, it is much easier (or at least it comes across as an easier and more reasonable request) for them to spend 12-15 minutes 2-3x times per week doing their exercises. It makes it seem like a less daunting task compared to performing 3 sets of 10 reps of 5 different exercises.