

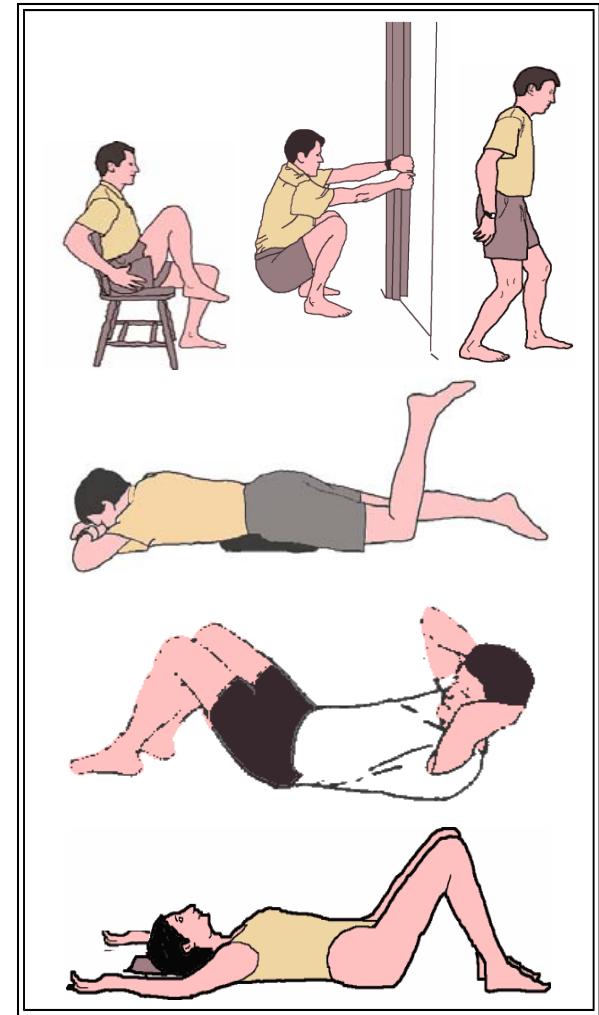
# The Back Maintenance Manual (1): Pilates Exercises for Low Back Pain

(Sample 3 of 6 free Samples)

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## Introduction:-

You can't diagnose & "fix" a lesion that is associated with your Low Back Pain. It's up to your doctor to do that. You can however find out the habitual movement pattern that is causing your pain. Avoidance of this movement pattern is a very powerful back pain management tool. Add to that the power of therapeutic Pilates exercises, and you have a good chance of managing - maybe even curing - your back problem.

## Determining if your Pain is caused by Lumbar Flexion:-

Six Assessments for Pain upon Lumbar Flexion are described. Work through them! Take notes as you go! -

**(1) Quadruped Position-** In the quadruped position, flex your back. If your pain increases, you probably have "pain upon lumbar flexion".

**(2) Seated:-** While seated, flex your back (see diagram). If your pain increases, you probably have "pain upon lumbar flexion".

**(3) Forward Bending:-** When bending forward, if you have pain as the back bends, you very probably have "pain upon lumbar flexion". If you start your forward bend by using the "Position of Mechanical advantage", and avoid excessive lumbar flexion, you will find that your pain is reduced.

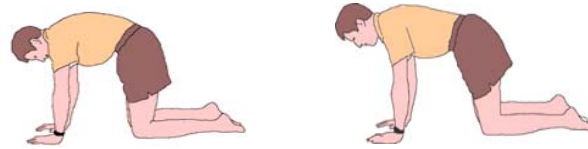
**(4) Your Body Type:-** If you have a tall slender masculine build and are between 15 and 50 years old, you likely have "pain upon lumbar flexion",.

**(5) Your Life Style:-** If you spend a lot of your day seated with your lumbar spine in flexion, or you are in an occupation that requires a lot of forward bending, you likely have "pain upon lumbar flexion".

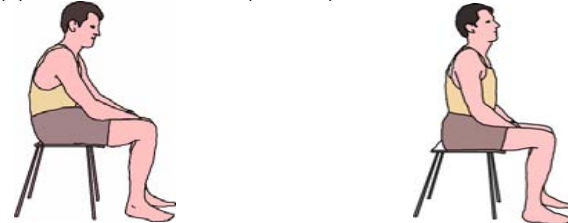
**(6)** Your pain may worsen with sitting and improve with standing.

## Diagrams: Testing if Back Pain is Caused by Flexion (LHS), or Extension (RHS)

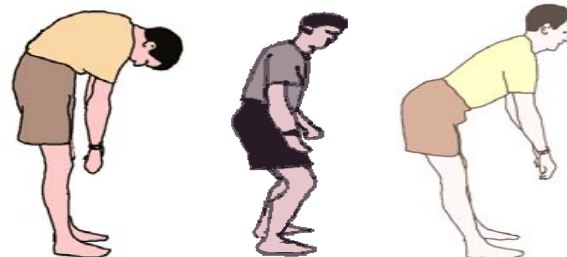
(1) Lumbar Flexion (Quadruped) Lumbar Extension



(2) Lumbar Flexion (Seated) Lumbar Extension



(3) Flexion upon bending forward Position of Mechanical Advantage Extension upon return from forward bending



## Determining if your pain is caused by Lumbar Extension:-

Six Assessments for Pain upon Lumbar Extension are described. Again: Work through them! Take notes as you go! -

**(1) Quadruped Position-** In the quadruped position, extend your back. If your pain increases, you probably have "pain upon lumbar extension".

**(2) Seated:-** While seated, extend your back (see diagram- RHS). If your pain increases, you probably have "pain upon lumbar extension".

**(3) Return from Forward Bending:-** When returning from forward bending, if you have pain as your back straightens, you very probably have "pain upon lumbar extension". If you start your return from forward bending by using the "Position of Mechanical advantage", and avoid excessive lumbar extension, you will find that your pain is reduced.

**(4) Your Body Type:-** If you have "pain upon lumbar extension", you are likely to be a short, thick set or overweight male or female. You may have a large pelvis & buttocks. Often, you will have a large abdomen. Often (but by no means always) you will be 55 years or over.

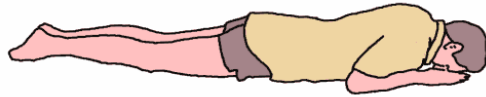
**(5) Your Life Style:-** You may spend a lot of your day seated on the front of your seat with your lumbar spine in extension, or you may be in an occupation that requires a lot of lumbar extension (e.g. horse riding, reaching above your head).

**(6)** Your pain may worsen with standing and improve with sitting.

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## Assessment:-

1. Is your back pain worsened by lying "prone" (see diagram below)?



2. Is your back pain worsened by lying "supine" (see diagram below)? -



3. Is your pain reduced when your legs are brought up so that you are lying "semi-supine" (see diagram below)? -

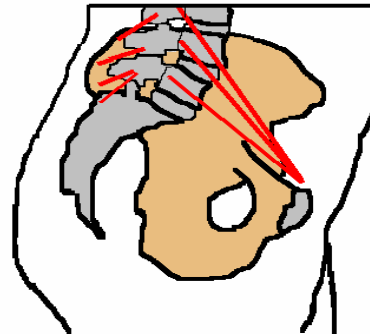
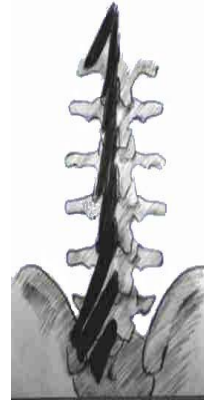


If you are answering yes to these questions, your likely cause of pain is a "tight weak" (i.e. "tight" at rest & when stretched, & "weak" in terms of its ability to pull against a load) Psoas muscle, that is pulling the lumbar vertebrae forward & compressing them together. Please study the following diagrams and discussion for information about the "tight weak" Psoas muscle...

**Diagram 1:** The Psoas muscle runs from the lumbar spine to the thigh bone. It becomes short & tight in response to low back pain.



**Diagram 2:** (Spine & pelvis from rear): The lower segments of the Multifidus muscle run from the lumbar spine down to the pelvis & sacrum. It becomes weak in response to low back pain.



**Diagram 3:** Side view of pelvis and lower lumbar spine: The red lines represent the directions of pull of the Multifidus muscle (Left hand side), and the Psoas muscle (right hand side).

## Discussion: The "Tight Weak" Psoas Muscle :-

When you fully straighten your hip joint, your over-tight psoas muscle pulls your lower lumbar vertebrae forward (that's called "anterior glide"), and together (that's called "compression"). The result is that lumbar discs and facet joint are put under strain and the sciatic nerve roots are pinched. The solution is three fold:-

1. Teach the psoas muscle to relax instead of attempting to brace the lower spine.
2. Reactivate the weakened multifidus, so that it can counter the forward force of the psoas.
3. Re-activate the other muscles that tension the ligamentous support of the lower spine & sacrum (Latissimus dorsi & Lower trapezius from above, Gluteus maximus & medius from below, Transverse and oblique abdominals from the side).

Traditional Pilates exercises are good for rebuilding the Multifidus and abdominal muscles. The Back Maintenance Manual takes this further with "Evolved Pilates" exercises that help to relax the tight psoas & rebuild the weak Gluteus maximus & other muscles.

## Further Reading:-

- See Reference 12

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## Required items

1. A wall with some vertical lines on it.
2. A friend with a camera, ideally on a tripod.
3. A swim suit or other clothing that shows the shape of your body.

## Your Standing Posture Type:- Procedure

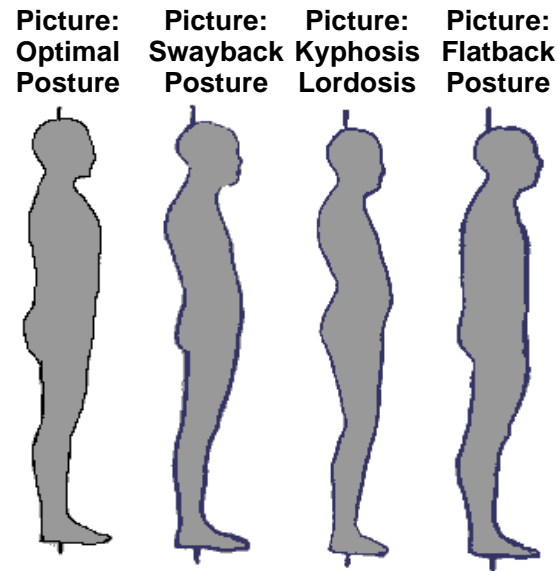
1. Stand bare-footed and side on to the wall.
2. Relax in the posture that feels natural to you.
3. Have your friend take a picture.
4. Date the picture for future reference. You can then take photos at some time in the future, so as to observe progress.

## Comment on Prevalence:

Frequency of the posture types as observed by myself at supermarket checkout queues:-

- Swayback: Approximately 30% of men and 20% of women.
- Kyphosis-Lordosis: Approximately 20% of women and 15% of men.
- Flatback: Approximately 10% of men and women.
- Only 5% of persons may have the optimal posture depicted to the left, with a further 15% coming reasonably close(3).

**(Attention: does not replace the advice of a medical specialist - Refer "Back Pain Red Flags", page 55).**



## Comment on the Musculoskeletal Abnormalities:

The "Poor Posture" pictures above have these two features in common:

1. Thoracic kyphosis (hunchback) with head "forward and down". (The head is straining forward - as though to read the computer screen - observed in 80 to 90% of people).
2. The Gluteus maximus is weak, and the hamstring muscles are overstrong and shortened. (The hamstrings are taking on the work load of the lazy Gluteus maximus).

## The Universal Cause for "Poor Posture"....

In fact these postural deficits (weak Gluteus maximus and kyphosis with head forward and down) are so common in modern western man that there must be a universal cause. The pictures to the right are of the Kalahari Bushman. The standing picture depicts very strong gluteals and a minimal thoracic kyphosis with head forward. The squatting picture shows no sign of kyphosis with head forward. Could these "good" postural traits be due to barefoot walking and squatting? The author argues the case elsewhere(1).



## Further Reading:-

- See Reference 5

## Next Section: Pilates Controlology....

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