# The DonTigny Dynamic Core Exercise Program for the Immediate Relief of Common Low Back Pain

This is the only program specifically designed for the immediate correction of a commonly overlooked partial dislocation (or subluxation) of the sacroiliac joint and for the prevention of its recurrence.

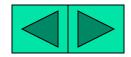
DonTigny © 2009

# Dysfunction of the Sacroiliac joints is A Commonly Overlooked Condition

- You are here because you have probably been to 20-40 physicians, therapists, and chiropractors looking for relief and finding none or only transient help.
- X-rays, cat scans, MRIs, and eventually psychological testing has probably revealed nothing.
- You are not crazy. Everything is probably all right at home and on the job. You get along well with everyone. You are not in it for the money. You would rather go back to work or home to the kids, if not for this persistent pain in the low back. It's just that nobody seems to be able to help.
- If this is you, then this program will probable

# The Physical Therapist

Ideally, you should be instructed in these exercises by a physical therapist who is familiar with this specific method of treatment for low back pain as a bilateral dysfunction in anterior rotation of the sacroiliac joint.



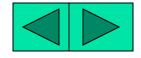


# **Initial Treatment**

- This specific dysfunction is essentially always a pathological release of the position of ligamentous balance with an anterior rotation of the innominates (pelvic bones) on the sacrum.
- Treatment is simply restoring the SIJs to that balanced position
- After correction, to prevent the onset or recurrence of low back pain you must do a strong posterior pelvic tilt whenever you lean forward to perform any task.

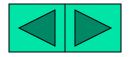


- As with the subluxation/dislocation of any joint, the first priority is to reduce the subluxation.
- If the subluxation tends to recur, the patient can be taught to self-correct.
- If the lesion is unstable, a lumbosacral support or invasive procedures may be necessary.



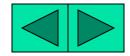
# The Nature of the Correction

- The corrective procedure is not a vertebral manipulation.
- No high or low speed manipulative thrust is necessary or indicated.
- No jerking or popping or twisting is necessary or desirable.
- Correction is achieved by specifically applied traction on the properly positioned joint or by a precise manual rotation of the innominates posteriorly on the sacrum.



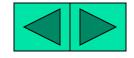
# WARNING

- Although these exercises are very safe, if you are experiencing any numbress or weakness, or loss of bowel or bladder control, see your physician before proceeding.
- If ANY of the exercises cause or increase pain, do not do them.
- Ask your therapist which corrections are best for you and to show you how to do them properly.



# **Correction With an Assistant**

- Initially, it will be a little easier to correct the joint with the help of a therapist or an assistant.
- The patient should then be instructed in the various methods of self correction and prevention.
- Proper technique is essential to success.

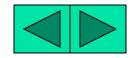


# Manual Correction of the S3 Subluxation

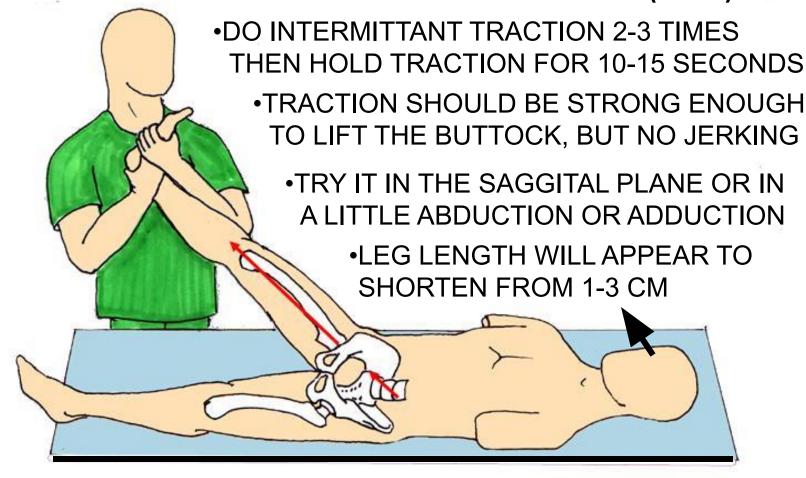
- Any of several similar methods can be used to restore the SIJ to the balanced position.
- Traction at about 45 degrees of passive straight leg raising.
- Direct posterior rotation, either knee to axilla (arm pit) or simply by grasping the innominate bone and rotating it so as to cause the back of the pelvic bone to move down and in on the back of the sacrum.
- Or by using isometric or muscle energy techniques.

# **Correction And Confirmation**

- It does not matter if one leg appears to be longer or shorter on the more painful side or if the legs appear to be of equal length, they will always appear to shorten with correction of the SIJs to the position of ligamentous balance.
- If there is no history of a congenital leg length difference, polio or serious leg fracture the legs will appear to be of equal length after correction and the pelvis will be symmetrical.

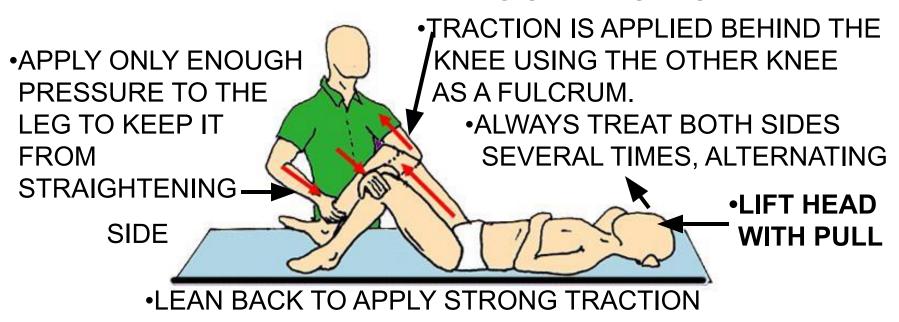


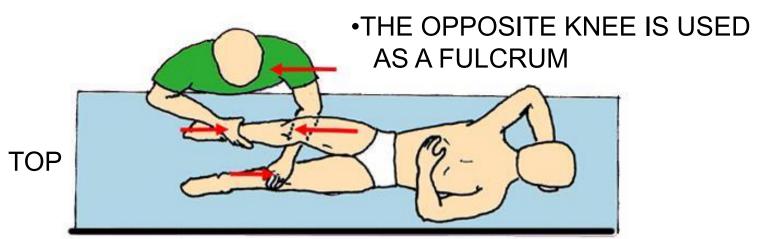
## •TRACTION REDUCTION OF S3 SUBLUXATION (SIJD)



•ALWAYS REPEAT THE PROCEDURE ON THE OTHER LEG, ALTERNATING LEGS AT LEAST 4-5 TIMES ON EACH SIDE. (HAVE PATIENT LIFT HEAD AND TIGHTEN ABS DURING DISTRACTION)
•DONTIGNY ©

#### •THE EZ FIX ALTERNATE CORRECTION



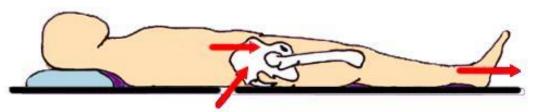


•THIS IS AN EXCEPTIONALLY NICE PROCEDURE, EASY TO APPLY STRONG TRACTION AND VERY WELL TOLERATED.

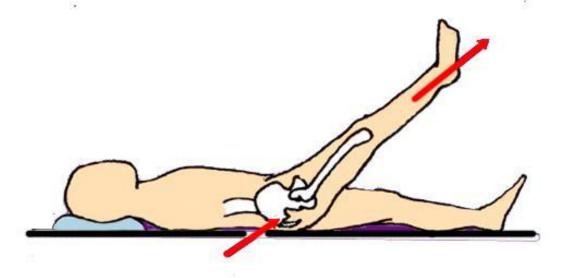


### CAUTION

•YOU **CAN NOT** CORRECT THIS DYSFUNCTION PULLING THE LEG IN LINE WITH THE BODY!

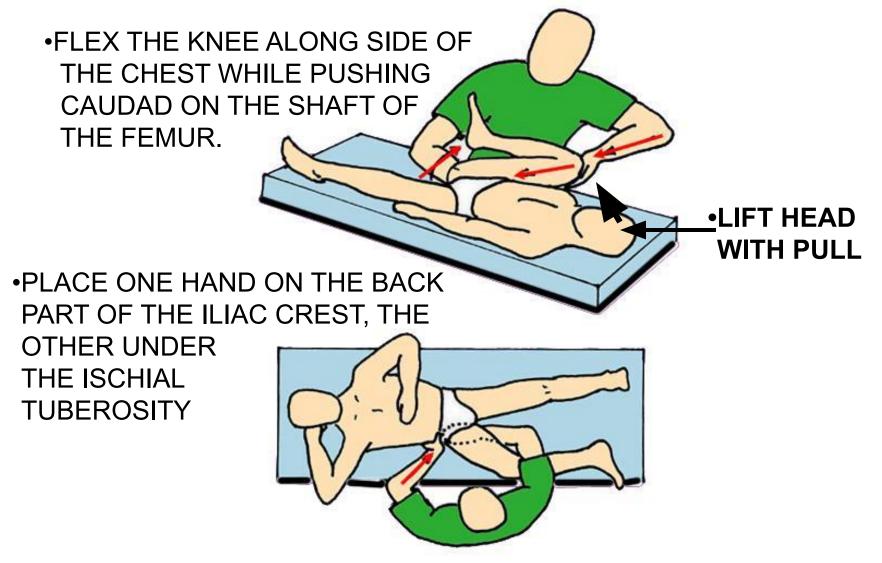


•THIS WILL CHANGE THE PAIN, BUT NOT CORRECT THE BILATERAL SUBLUXATION AS S3.



•TRACTION MUST BE APPLIED WITH THE LEG AT ABOUT 45-50 DEGREES OF ELEVATION WITH THE BODY.

#### MORE ALTERNATE METHODS



•MOBILIZE TO CAUSE THE BACK OF THE INNOMINATE TO MOVE CAUDAD AND MEDIALLY ON THE BACK OF THE SACRUM.

# Patient Self-Management

- The patient must be instructed in self-correction in the event of occasional recurrence.
- Correction may be by a direct stretch or a muscle energy technique.
- The correction may be done using any of several methods. One may be more effective than the others.

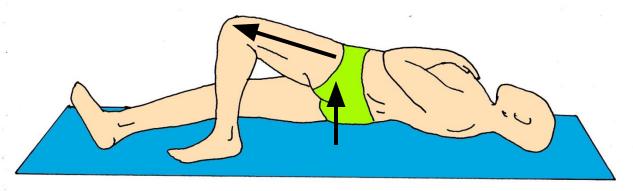


#### **•SELF-CORRECTION**

THIS IS A SIMPLE AND EFFECTIVE METHOD OF SELF-CORRECTION

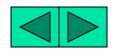






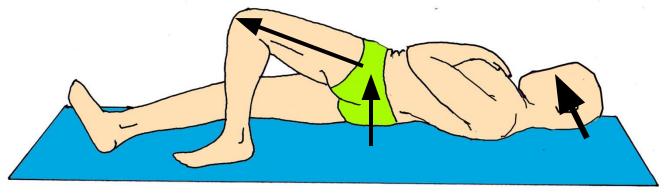
•PUSH THE KNEE FORWARD, LIFTING THE BUTTOCK ON THAT SIDE (CONTINUED ON NEXT SLIDE)

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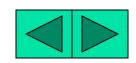


# •SELF-CORRECTION (2)

•CONTINUE TO PUSH WITH YOUR KNEE AND THEN LIFT YOUR HEAD AND SHOULDERS TO TIGHTEN YOUR ABDOMINAL MUSCLES HOLDING BOTH THE LEG PUSH AND ABDOMINAL CRUNCH FOR 8-10 SECONDS.



- •REPEAT ON THE OTHER SIDE. DO EACH SIDE 4-5 TIMES, ALTERNATING SIDES EACH TIME.
- •CORRECTION IS ENHANCED AS THE BACK OF THE PELVIS MOVES DOWN WITH THE LEG PUSH AND THE FRONT OF THE PELVIS MOVES UP WITH THE ABDOMINAL CRUNCH.



# THE STANDING CORRECTION

- The standing correction is similar to the previous supine correction and is done while standing against a wall.
- Simply put one foot high against the wall and push your knee toward the floor while at the same time doing a strong posterior pelvic tilt.
- The knee push pulls the back of the pelvis down while the abdominal muscle pull the front of the pelvis up.

# STANDING CORRECTION

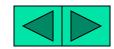
**•SIMILAR TO SUPINE CORRECTION** 

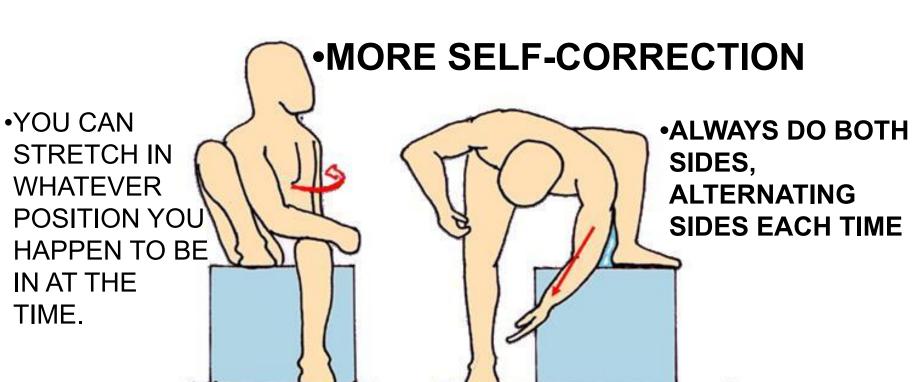
•DO A STRONG POSTERIOR PELVIC TILT.

•PUSH KNEE TOWARD THE FLOOR STRONGLY.

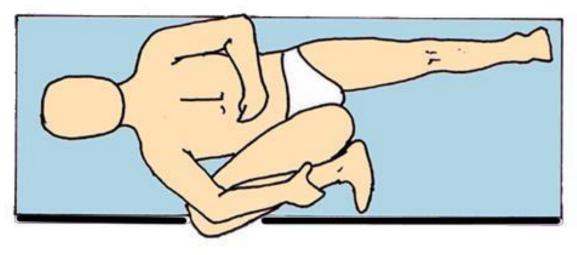
•CORRECT ONE SIDE AND THEN THE OTHER.
DO EACH SIDE 4-6 TIMES.
ALTERNATE SIDES EACH TIME.

REPEAT INTERMITTANTLY THROUGHOUT THE DAY.
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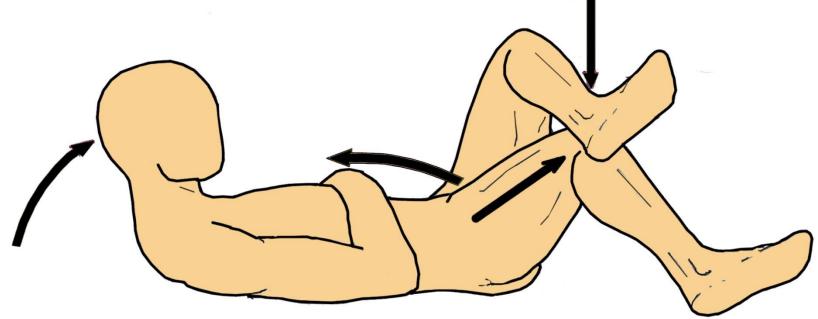
•STRETCH AS HARD AS YOU CAN FOR 8-10 SECONDS





#### FLANK STRETCH CORRECTION

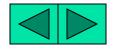
LIE ON YOUR BACK. PLACE YOUR LEFT HEEL OVER THE OUTSIDE OF YOUR RIGHT KNEE AND STRETCH YOUR RIGHT THIGH AND FLANK TO ITHE LEFT.



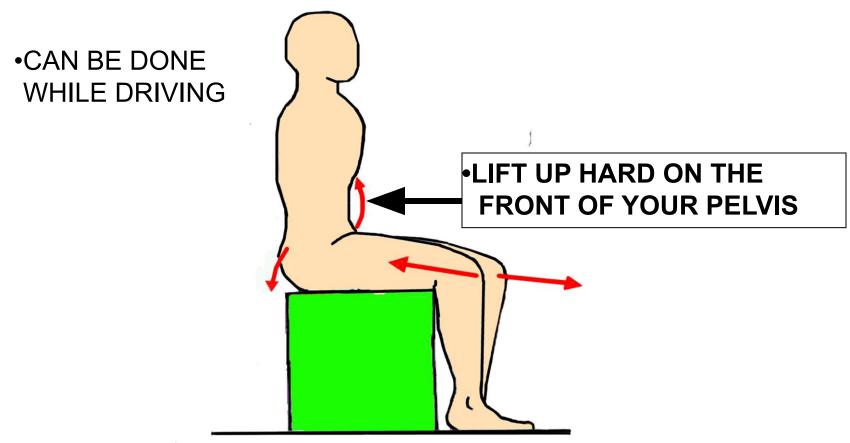
LIFT YOUR HEAD TO TIGHTEN YOUR ABDOMINAL MUSCLES AT THE SAME TIME. STRETCH FOR 30 SECONDS. REPEAT ON THE OTHER SIDE.

# THE SEATED CORRECTION

- This is an excellent correction for when you have pain while seated.
- It can be safely done while driving in a car or a golf cart or even while seated at your desk.
- It can be repeated intermittently throughout the day.



## SEATED CORRECTION



•FOR A CORRECTION ON THE RIGHT, RETRACT THE RIGHT THIGH AND PROJECT THE LEFT. LIFT THE FRONT OF THE PELVIS UP WITH THE ABDOMINAL MUSCLES. HOLD HARD FOR 6-8 SECONDS. REPEAT ON THE LEFT SIDE. REPEAT SEVERAL TIMES ON EACH

SIDE. ALTERNATE SIDES EACH TIME.

**DONTIGNY ©** 

# **Enhanced Seated Correction**

- For a more powerful seated correction.
- When you pull the right thigh back and push the left forward, put both hands on the right knee and push down hard on that knee as you tighten your abdominal muscles to pull up the front of the pelvis.
- Repeat on the left side.
- Do each side several times, alternating sides each time.

## ENHANCED SEATED CORRECTION

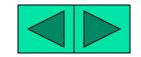
CORRECTION OF THE LEFT SIDE

1. PUSH OUT WITH
THE RIGHT THIGH
KEEPING THE FEET
IN PLACE.

2. PULL YOUR LEFT
THIGH BACK TO
ROTATE THE BACK
OF THE PELVIS
DOWN ON THE LEFT
SIDE.

TIGHTEN YOUR ABS TO BRING UP THE FRONT OF THE PELVIS.

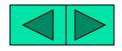
PUSH DOWN HARD WITH BOTH HANDS ON TOP OF THE LEFT KNEE TO REINFORCE THE PULL OF THE ABDOMINAL MUSCLES.



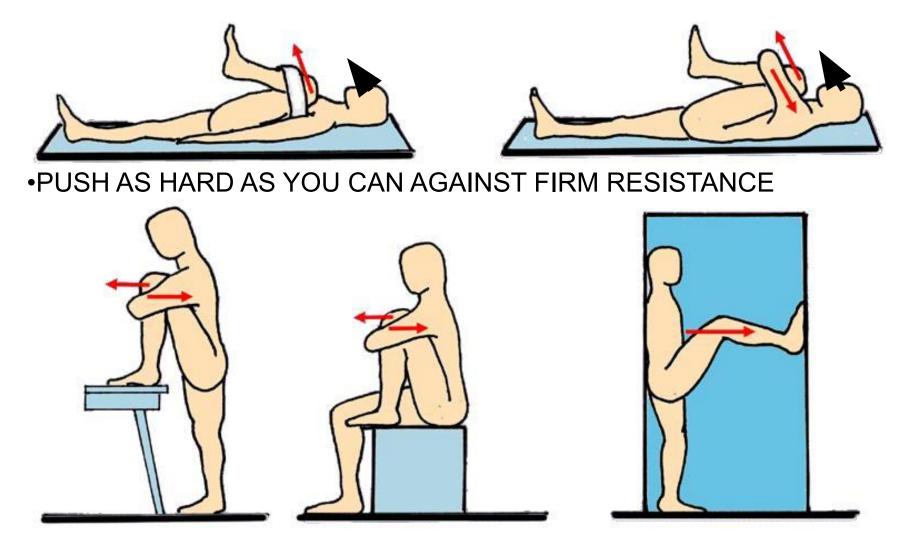


# THE MUSCLE ENERGY CORRECTION

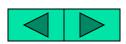
- The muscle energy correction is a strong isometric hip extension correction against maximal resistance.
- This can be done, lying, seated or standing.
- Resistance is supplied with your arms, a belt or standing in a door frame.
- Be sure to do a strong posterior pelvic tilt at the same time.



#### **•CORRECTIONS USING MUSCLE ENERGY**



•HOLD THE CONTRACTION FOR AT LEAST 5-10 SECONDS DONTIGNY©





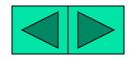
# IMPROVED TECHNIQUE

- Whenever doing a correction be sure to hold a strong posterior pelvic tilt while doing so and hold that pelvic tilt until you safely lower your leg back to the table or floor.
- If you lift or lower your leg without holding the pelvic tilt, the weight of the leg will pull your pelvic bone back into dysfunction.
- Never do single or double straight leg raising exercises or the cobra exercise.



# **Helpful Hints**

- Strange as it seems, sometimes it is helpful to relieve back pain just to walk backwards for several steps.
- Or to walk up several stairs backwards.
- Be certain to use the handrail and watch what you are doing.



#### STRETCHING ON THE ASYMMETRIC PELVIS

•STRETCHES THE:
QUADRATUS LUMBORUM
LATISSIMUS DORSI
ABDOMINAL OBLIQUES
GLUTEUS MAXIMUS
PIRIFORMIS
MULTIFIDUS
AND OTHERS.

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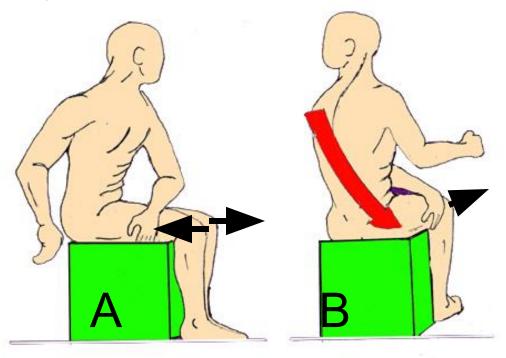
THIS IS THE ONLY
SAFE WAY TO
STRETCH THE
PIRIFORMIS AND
GLUTEUS MAXIMUS

- •WHEN TWISTING, PROJECT ONE KNEE AND RETRACT THE OTHER.
- •TWIST AND STRETCH AND HOLD FOR 20 SECONDS AND REPEAT TOWARD THE OTHER SIDE. REPEAT 3-5 TIMES ON EACH SIDE
- •BE SURE TO DO A CORRECTIVE EXERCISE BEFORE AND AFTER THESE EXERCISES.

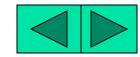
#### •EXERCISING ON THE ASYMMETRIC PELVIS

#### •ISOMETRIC EXERCISE FOR THE:

•LATISSIMUS DORSI
QUADRATUS LUMBORUM
GLUTEUS MAXIMUS
PIRIFORMIS
ABDOMINAL OBLIQUES
MULTIFIDUS
AND OTHERS



- •A. RETRACT RIGHT THIGH, PROJECT THE LEFT, FLEX AND ROTATE THE TRUNK TO THE RIGHT. GRASP RIGHT LEG WITH LEFT HAND
- •B. EXTEND AND ROTATE TRUNK TO LEFT, PROJECT RIGHT KNEE AND RETRACT LEFT PROVIDING RESISTANCE AGAINST TRUNK ROTATION WITH THE LEFT HAND. DO BOTH SIDES.



#### SEATED ISOMETRIC CORE EXERCISE

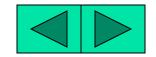
FOR RECTUS ABDOMINIS AND ABDOMINAL OBLIQUES

SEATED WITH KNEES APART PLACE BOTH HANDS ON THE RIGHT KNEE. TIGHTEN THE ABDOMINALS AND THE **BUTTUCKS AND** FLEX THE TRUNK FORWARD TOWARD THE RIGHT, RESISTING THE FLEXION WITH BOTH ARMS

HOLD HARD FOR SIX TO TEN SECONDS.

REPEAT, FLEXING THE TRUNK TOWARD THE LEFT KNEE

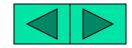
REPEAT ON BOTH SIDES INTERMITTANTLY THROUGHOUT THE DAY.



#### SIT TO STAND EXERCISE

TO RISE FROM A CHAIR OR STOOL WITHOUT PAIN FIRST, MOVE TOWARD THE FRONT OF THE CHAIR. HOLD YOUR ABDOMINAL MUSCLES AND BUTTOCKS TIGHT WHILE RISING. REVERSE TO SIT.

REPEAT 10 TIMES AND WORK UP TO 25 TIMES.



#### HIP FLEXION EXERCISE

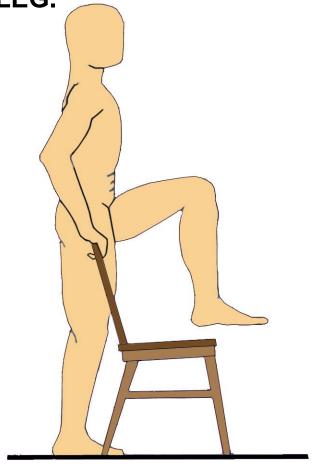
HOLD A STRONG POSTERIOR PELVIC TILT AS YOU LIFT

AND LOWER YOUR LEG.

ALTERNATE LEGS EACH TIME.

REPEAT TEN TIMES WITH EACH LEG.

WORK UP TO FIFTY TIMES.



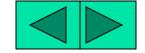
ALWAYS HOLD A STRONG PELVIC TILT WHILE GOING UP OR DOWN STEPS.

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#### HIP ABDUCTION EXERCISE

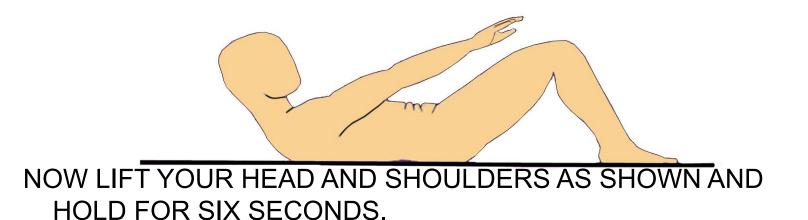
THE HIP ABDUCTORS ARE IMPORTANT STABILIZERS WHEN WALKING.

GRASP SOMETHING FOR BALANCE. **HOLD A STRONG PELVIC** TILT AS YOU LIFT THE LEG OUT TO THE SIDE AND BACK. REPEAT 10 TIMES WITH EACH LEG. **WORK UP TO 50** TIMES.

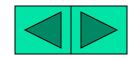


# CRUNCHES CRUNCHES BUILD STRENGTH IN THE ABDOMINAL MUSCLES.

BEGIN LYING ON YOUR BACK WITH HIPS AND KNEES BENT. TIGHTEN YOUR ABS AND FIRST, JUST LIFT YOUR HEAD UP. HOLD YOUR HEAD UP FOR 10 SECONDS AND REPEAT X 10.

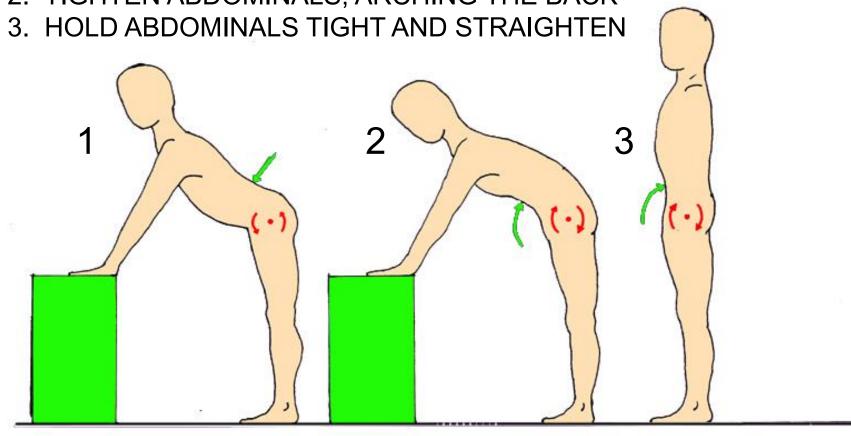


WORK UP TO 25 TIMES.

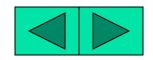


#### **•STANDING PELVIC TILT**

- •FOR STRENGTHENING THE ABDOMINAL MUSCLES
  - 1. STAND WITH HANDS RESTING ON A COUNTER
  - 2. TIGHTEN ABDOMINALS, ARCHING THE BACK



**•PRACTICE AND HOLD THE PELVIC TILT LONG AND OFTEN** 

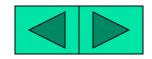




- The posterior pelvic tilt is essential in the prevention of recurrence, HOWEVER, the SIJs must be in a corrected position first.
- If you work too hard on doing the pelvic tilt without correcting the dysfunction, you may reverse the lumbar lordosis and cause a flat back.
- Always correct the subluxation first and then use the posterior pelvic tilt to prevent recurrence.

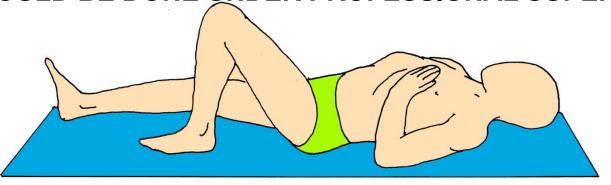
### THE ALL-IN-ONE EXERCISE

- This is a very good method to stretch and strengthen a dorsal kyphosis (round upper back) and help you to stand straight.
- Start easy and stretch slowly.
- Hold stretch for 10-20 seconds.
- Repeat once or twice daily until you can hold a military posture.

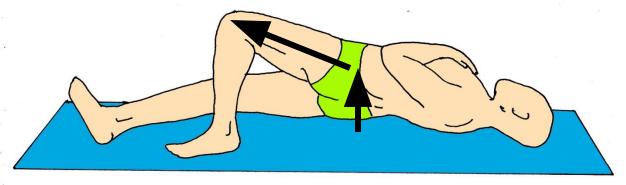


#### •ALL-IN-ONE EXERCISE (FROM FELDENKRAIS)

•TO MOBILIZE THE SIJS AND THE NECK AND UPPER BACK.
THIS SHOULD BE DONE UNDER PROFESSIONAL SUPERVISION.

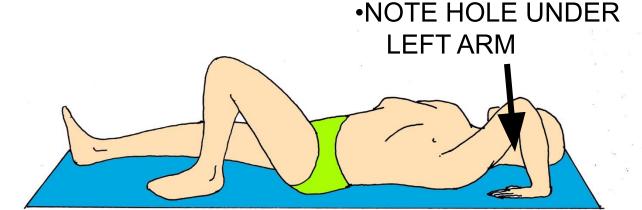


•BEGIN WITH THE HIP AND KNEE BENT AND THE FOOT FLAT



•PUSH YOUR KNEE TOWARD YOUR FOOT, RAISING YOUR BUTTOCK AND ROLLING TOWARD THE OTHER SIDE. ROLL BACK. REPEAT 3-5 TIMES. (CONTINUE ON NEXT SLIDE)
•DONTIGNY ©

### •ALL-IN-ONE EXERCISE (2)(FROM FELDENKRAIS)



•NOW FLEX YOUR SHOULDER AND ELBOW AND PLACE YOUR HAND ALONG SIDE OF YOUR HEAD WITH FINGER POINTING

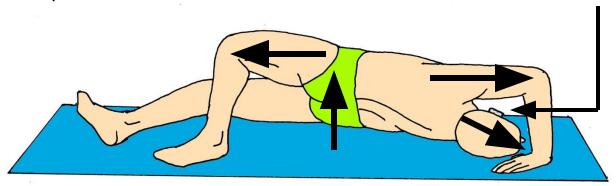


•PUSH YOUR KNEE TOWARD YOUR FOOT AND YOUR ELBOW TOWARD THE TOP OF THE TABLE, RAISING YOUR BUTTOCK AND ARCHING YOUR BACK. ROLL BACK. REPEAT 3-5 TIMES



#### •ALL-IN-ONE EXERCISE (3)(FROM FELDENKRAIS)

•(AGAIN, NOTICE THE HOLE UNDER YOUR ARM)



•PUSH WITH YOUR KNEE AND ELBOW, AND PUT THE BACK OF YOUR HEAD THROUGH THE HOLE AND LOOK AT YOUR HAND.



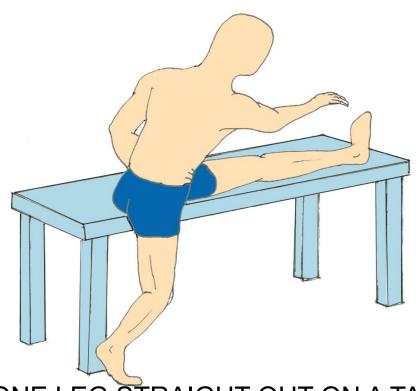
•PUSH WITH YOUR KNEE AND ELBOW AND PUT THE FRONT OF YOUR HEAD THROUGH THE HOLE AND LOOK AT YOUR FOOT. ROLL BACK. REPEAT 3-5 TIMES. DO TO BOTH SIDES. DONTIGNY ©

### **Fascial Tightness**

- Fascial tightness may be present in the buttocks, and limit internal and external rotation of the hip.
- May give a false positive Patrick's test.
- This motion can be regained with gentle stretching. Especially effective are contract/ relax stretching techniques in the lower extremity primitive motion patterns used in proprioceptive neuromuscular facilitation.
- Be sure and do a corrective exercise before and after these exercises

#### STRETCHING FASCIA (1)

(Do a corrective exercise before and after these exercises)
THE HAMSTRINGS (OUTER)

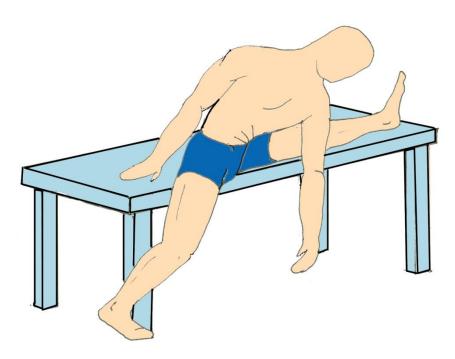


•SIT WITH ONE LEG STRAIGHT OUT ON A TABLE OR BED.
TWIST, BEND AND REACH TO TOUCH THE TABLE ON THE FAR
SIDE OF THE OUTSTRETCHED LEG.

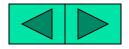
STRETCH EASY FOR 1-2 MINUTES. REPEAT ON THE OTHER LEG. DONTIGNY ©

# •STRETCHING FASCIA (2) THE HAMSTRINGS (INNER)

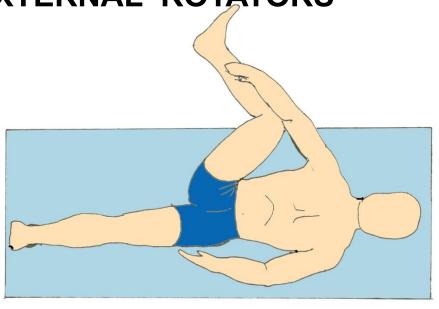
•SIT WITH ONE LEG STRAIGHT OUT ON A TABLE OR BED TWIST, BEND AND REACH DOWN TOWARD THE FLOOR JUST ON INSIDE OF THE OUTSTRETCHED LEG.



•STRETCH EASY FOR 1-2 MINUTES. REPEAT ON THE OTHER LEG.

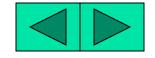


# •STRETCHING FASCIA (3) HIP EXTENSORS, ADDUCTORS AND EXTERNAL ROTATORS

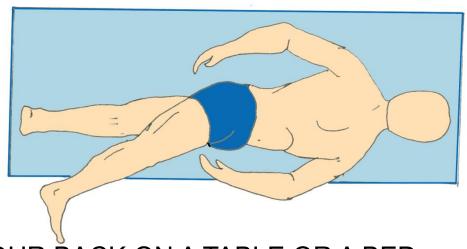


•LIE ON YOUR BACK ON A BED OR TABLE AND BRING YOUR LEG UP AND OUT TO THE SIDE AS INDICATED.

STRETCH EASY FOR ONE-TWO MINUTES. REPEAT ON THE OTHER LEG.



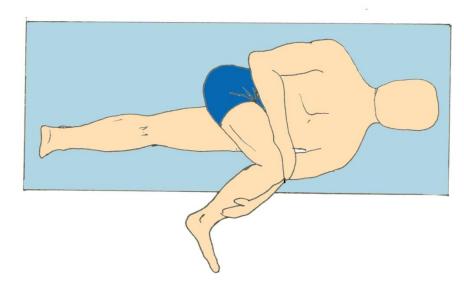
## STRETCHING FASCIA (4) HIP ABDUCTORS, INTERNAL ROTATORS, QUADRATUS



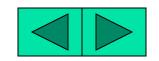
•LIE ON YOUR BACK ON A TABLE OR A BED.
SWING THE RIGHT LEG OVER YOUR LEFT, TWISTING YOUR LOWER TRUNK..

LET STRETCH FOR 1-2 MINUTES, REPEAT WITH THE OTHER LEG.

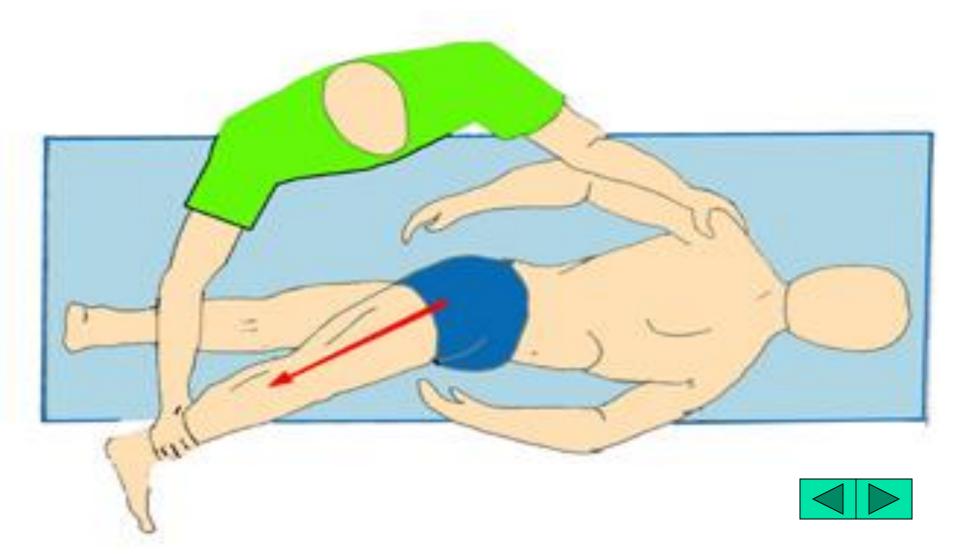
## STRETCHING FASCIA (5) HIP EXTENSORS, ABDUCTORS, INTERNAL ROTATORS



•LIE ON YOUR BACK ON A TABLE OR A BED.
BRING YOUR LEG UP AND ACROSS YOUR BODY AS INDICATED.
STRETCH EASY FOR 1-2 MINUTES. REPEAT ON THE OTHER SIDE.

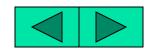


RELEASING THE QUADRATUS LUMBORUM AND HIP ABDUCTORS BY STRETCHING AND USING CONTRACT/RELAX WILL ALLOW YOU TO GET A GREATER CORRECTION AFTERWARD.





- Immediately after stretching the fascia do another set of corrective exercises.
- Many times the tight fascia will prevent you from getting a complete correction.



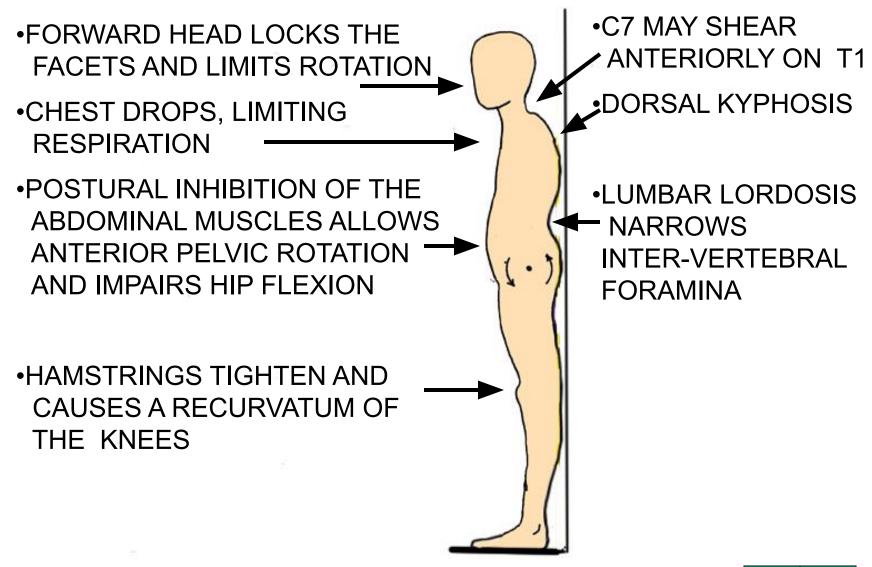
#### PROPER POSTURE

- •HEAD ERECT AND BALANCED
  ON THE SPINE
- **•CHEST IS UP**
- •ABDOMINAL MUSCLES
  SUPPORT THE FRONT
  OF THE PELVIS

- •PRACTICE PROPER
  ALLIGNMENT BY
  STANDING UP
  STRAIGHT AGAINST
  A WALL.
- PELVIS IS ROTATED POSTERIORLY



#### POOR POSTURE





## Use of a Support

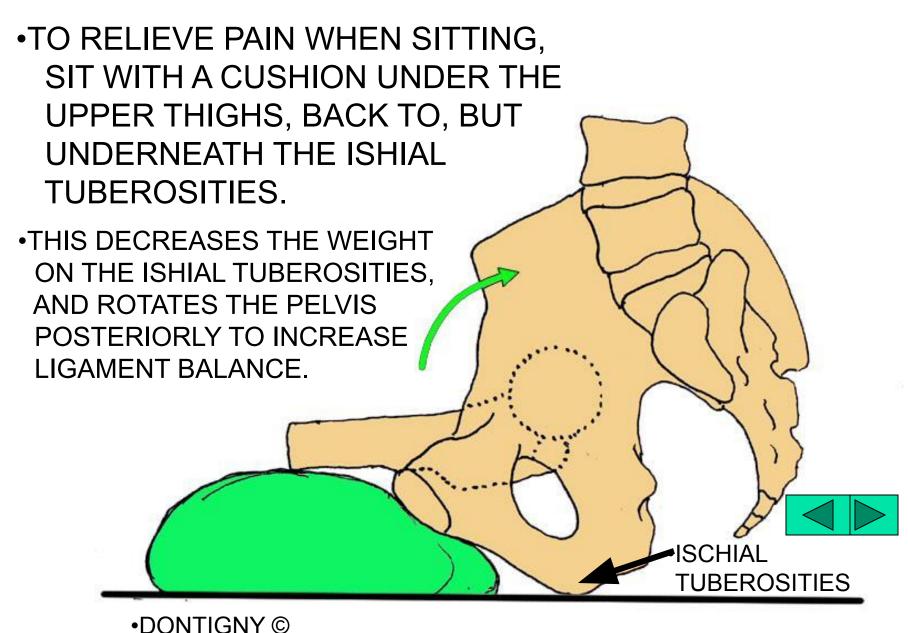
- A sacroiliac belt or a lumbosacral support can be helpful to maintain a balanced position, but must be put on when lying supine after making a correction to self-bracing.
- If the support is put on when the joint is subluxed, it will increase the pain by holding the joint in the subluxed position.
- A wide luggage belt, available at most Marts for about five dollars, can be adjusted or cut off to fit and works very well.



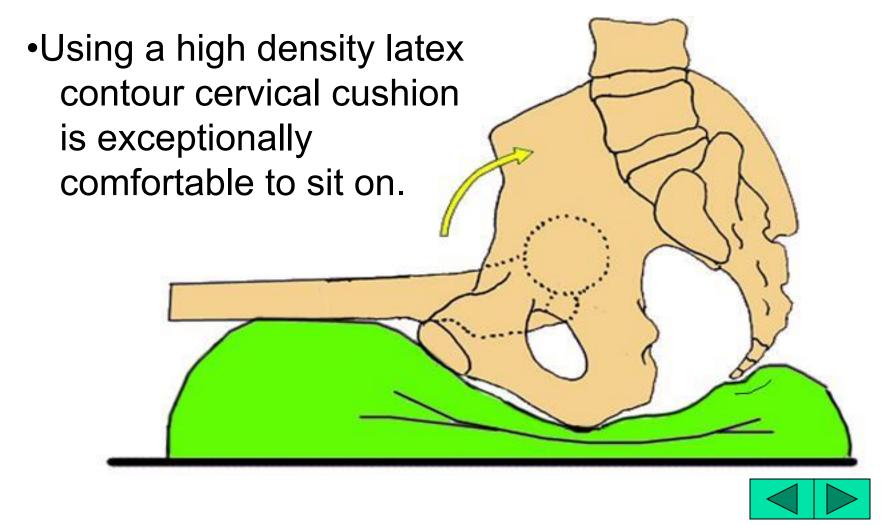
### Use of a Support

- I prefer a lumbosacral support if the patient has a pendulous abdomen or is pregnant because it will stabilize both the lumbosacral vertebra and the sacroiliac joints.
- Supports should be put on with the lower edge just above the trochanters.

#### **•PAIN ON SITTING IS COMMON WITH SIJD**

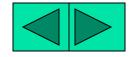


# USING A CONTOUR PILLOW WHEN SITTING



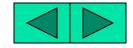
# To Decrease Pain at Night When Sleeping

- When you first go to bed, do your corrective exercises
- To stabilize your pelvis when you are sleeping, sleep in an elastic garment such as spandex bike shorts or a panty girdle.
- Sleep in silk or acetate pajamas
- If you sleep on your side, pull your knees up and put a pillow between them
- Avoid sleeping on your belly if possible.



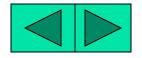
# Special Note With Regard to Exercise Programs

- Not all exercise programs are appropriate for this specific lesion!!!
- If you exercise inappropriately while the SIJs are subluxed, you can irritate the joints and increase inflammation, pain and spasm in the low back, the buttock, down the leg and up the back.
- Special care must be taken so that the SIJs are corrected prior to and following exercise.



### Frequency Of Exercise

- In the acute phase do corrective maneuvers every two-three hours throughout the day for at least three days.
- Then 2-3 times daily for a week
- Then correct whenever necessary. If you feel it go 'out', correct it right away.
- Always do a corrective maneuver before going to bed.



### **Prevention Of SIJD**

- To prevent the onset or recurrence of SIJD, whenever you begin to lean forward to perform any task always tighten your abdominal muscles to hold up the front of your pelvis and pinch your buttocks together to stabilize your low back and SIJs.
- Practice erect, military posture.



### **Sports Applications**

#### Golf

- When leaning forward to address the ball always tighten your abs and hold tension on them throughout the swing.
- If your abs are relaxed you pelvis will hang down in front increasing dysfunction and the curve (lordosis) in your low back.
- The increased lordosis closes the joints in the back of the spine limiting rotation and increases shear and torsion shear to the disks in the front of the spine.

### **UNSTABLE STANCE**

LIMITS TRUNK ROTATION

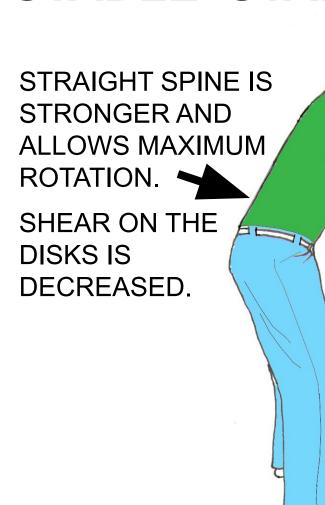
AN INCREASED LUMBAR
CURVE LIMITS ROTATION
IN THE VERTEBRAL
FACETS AND
INCREASES
ROTATIONAL
SHEAR ON THE
FRONT OF THE DISKS.

INACTIVE ABDOMINAL MUSCLES ALLOW ANTERIOR PELVIC ROTATION MADE WORSE BY LEANING FORWARD.

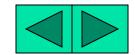
SWING CONTROL IS DECREASED.



#### STABLE STANCE



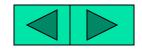
STRONG, ACTIVE ABDOMINAL SUPPORT PREVENTS ANTERIOR PELVIC ROTATION AND PROMOTES A STONGER, MORE CONSISTENT SWING.



## Prevention in Sports

### Weightlifting

- Hold your abs tight as you lean forward to lift and through the lift.
- Keep your spine straight and do not try to hold a lordosis.
- If you do this you should not require a weight belt.



## Prevention in Sports

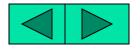
#### Soccer/Football

- A common cause of the onset of back pain when kicking occurs when the kick is blocked.
- The action of the hip flexor muscle pulls the pelvis forward and down on the sacrum.
- When kicking the ball pull the pelvis up with the abs as you kick.
- This will reinforce the kick and prevent the onset of back pain if your kicking leg is blocked.



#### Tennis

When you serve tighten your abs during the serve to add power and consistency.



## Prevention in Sports

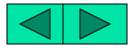
#### Exercising

Do corrections before and after your exercise program.

Do NO single or double straight leg raises unless you are holding a strong posterior pelvic tilt with your abdominal muscles.

Pull should come from the rectus abdominis and the abdominal obliques.

The transversus abdominis effect is minimal.



### THE UNSTABLE PELVIS

- If you keep improving and the necessity to correct is less and less frequent, this is all you have to do.
- If after two months it is still necessary to do corrections more than once daily you may need proliferant injections to stabilize your pelvis. www.getprolo.com
- This is the injection of a chemical irritant into the long and short posterior sacroiliac ligaments to increase connective tissue and strengthen those ligaments.

### THE UNSTABLE PELVIS

- If your pelvis is grossly unstable following an accident surgical stabilization may be necessary.
- The pelvis should always be stabilized in the position of ligamentous balance with congruent joint surfaces.
- It may be possible to maintain mobility and normal function with a ligamentous repair to the long posterior sacroiliac ligaments.

### A Personal Search

- I have spent over 40 years perfecting the biomechanics and treatment of low back pain. I hope this is of benefit to you.
- Research by other individuals is on-going.
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