Exercise Rx Part II & Self-Stretch

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Objectives

By the end of this lecture/lab the osteopathic medical student will:

- Identify, Describe, Demonstrate, Differentiate & Define:
  - mechanics and principles for the exercise prescription
  - stretching exercises for balance, strengthening, upper and lower cross syndrome, and somatic dysfunction.
  - appropriate stretches for given muscle somatic dysfunction

The Exercise Rx

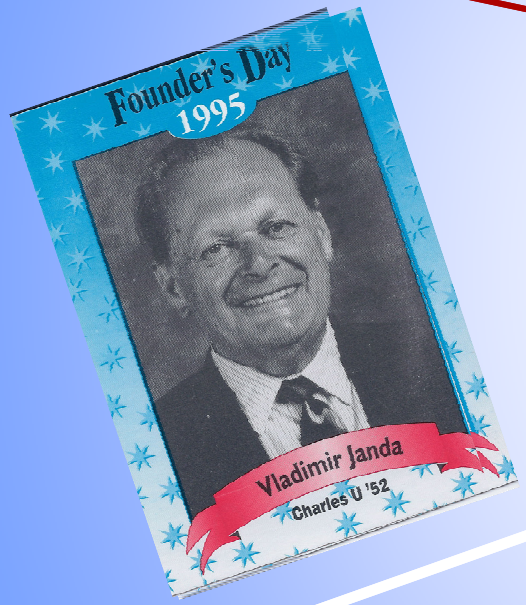
Basic Concepts

Shortening

Facilitation

Hypertonicity

Postural Muscles



Pseudoparesis

Movement Muscles

Inhibited

Hypotonicity

Stretched

Pseudoparesis: Patient Perception

- Ask the patient to flex one leg at the hip about 12 inches & put it down
- Then repeat on the other side
- They may repeat this from side to side looking to compare for any difference
  - One side may feel heavier or it's just easier on one side…
- They are to communicate this difference to the examiner

Vleeming, A, V. Mooney, R. Stoeckart, Movement, Stability & Lumbopelvic Pain: Integration of research and therapy, 2e, 2007

Lumbar Sidebending Test of QL

Positive

Negative

Adductors ROM & MET

Short Adductors

Long Adductors

Quadriceps Test w/MET

negative

positive

Hip Extension Test

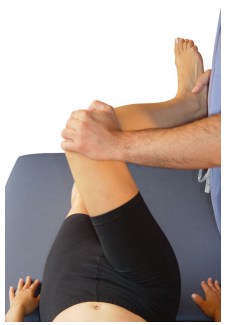
- **Patient Position:** Supine with her buttocks very near the end of the table; The patient actually starts in the seated position at the end of the table with her feet supported by a stool & just lays down.
- **Test:** The patient is then instructed to grasp the thigh behind one knee and bring it to her chest. The stool is removed & the other leg is allowed to dangle. The dangling leg should extend downward toward the ground (figure A). A tight iliopsoas or rectus femoris will result in loss of extension (figure B). The tight rectus can be removed from the equation by help from the physician who straightens the knee (figure C). Check both sides.

A

B

C

Piriformis ROM Test



The Exercise Rx

Stretching & Strengthening
Introductory Concepts

How much & how often?

- N = 138, college students

≥80 degrees Normal Flexibility	<80 degrees Limited Flexibility

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Original research

Comparison of active stretching technique in males with normal and limited hamstring flexibility

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ABSTRACT

Objective: (1) to analyse the accumulative effects of a 12-week active stretching program on hip flexion passive range of motion (HF-PROM), and (2) to compare whether participants with different PROM baseline scores (normal and limited hamstring flexibility) respond in the same way to stretching.
Design: Repeated measures design.
Setting: Controlled laboratory environment.
Participants: 138 males were categorized according to hamstring flexibility in the unilateral passive straight-leg raise test (PSLR) and assigned to one of two groups: normal hamstring flexibility (≥80°) or limited hamstring flexibility (<80°). In each group, participants were randomly distributed into one of two treatment subgroups: (a) control or (b) active stretching. The active stretching subgroups performed 12 weeks of flexibility training, the control subgroups did not stretch.
Main Outcome Measures: HF-PROM was determined through the PSLR test.
Results: Both stretching subgroups significantly improved ($p < 0.01$) their HF-PROM from baseline. The control subgroups did not.
Conclusions: 12 weeks of an active stretching program performed 3 days per week with a daily stretch dose of 180 s improved HF-PROM in both populations (normal and limited hamstring flexibility). The stretching program was equally effective in terms of absolute improvement values for males with normal and limited hamstring flexibility.

1. Introduction

The length of the hamstring muscles is considered to play an important role in both the effectiveness and the efficiency of basic human movements, such as walking and running (Gajdosik, 1991). Clinical observations have suggested that limited hamstring flexibility is very common in general populations (Hellsing, 1988) as well as athletic populations (Witvrouw, Danneels, Asselmann, Dhave, & Cambier, 2003) and is associated with various musculoskeletal alterations, including specific disorders of the lumbar spine, such as low-back pain (Biering-Sorensen, 1984) and changes in lumbo-pelvic rhythm (Esola, McClure, Fitzgerald, & Siegler, 1996). Likewise, in sports therapy, short hamstrings have been related to muscle strains (Croisier, Forthomme, Namurois, Vanderthommen, & Crielaard, 2002), development of patellar tendinopathy (Witvrouw, Bellemans, Lysens, Danneels, & Cambier, 2001) and patellofemoral pain (Witvrouw, Lysens, Bellemans, Cambier, & Vanderstraeten, 2000), muscle damage following eccentric exercise (McHugh, Connolly, Eston, Kremenic, Nicholas, & Gleim, 1999), and a reduction in athletic performance (Kovacs, 2006).

Stretching programs have generally been shown to increase muscle flexibility, most likely as a result of enhanced stretch tolerance rather than mechanical/physiological changes in the muscle that is being stretched (Chan, Hong, & Robinson, 2001; LaRoche & Connolly, 2006; Law, Harvey, Nicholas, Tonkin, De Sousa, & Finniss, 2009). Several studies have proposed various stretching programs to improve hamstring muscle flexibility (Bandy & Irion, 1994; Cipriani, Abel, & Pirrwitz, 2003; Davis, Ashby, McCale, McQuain, & Wine, 2005). In general, these studies have reported that joint range of motion (ROM) is improved in the long term after approximately 3–6 weeks of regular passive stretching.

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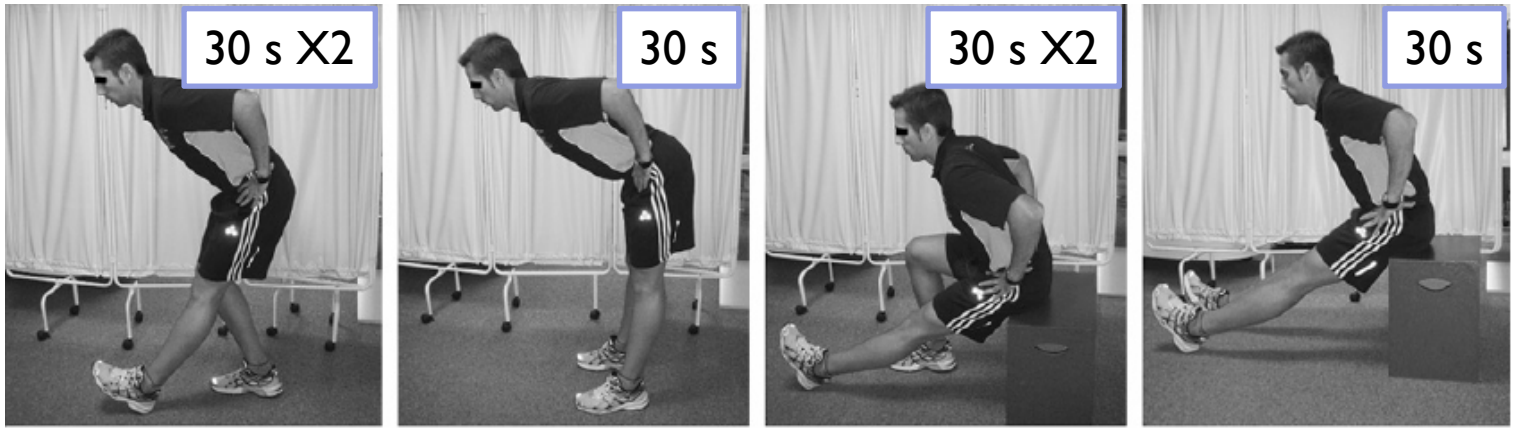
How much & how often?

- 12 weeks of stretching, 3 days/week, sessions on non-consecutive days
- Total session time was 180 s
- Hamstring length tested with SLR at 0, 4, 8 & 12 weeks; *no stretching on test days*



Unilateral A | Bilateral A | Unilateral B | Bilateral B

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How much & how often?

Conclusions

- The stretching program was equally effective in terms of absolute improvement values for males with normal and limited hamstring flexibility.
- Greatest improvement during initial 8 weeks, but still improving at 12 weeks

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How long do I hold a stretch for?

- N = 34
- Either 10 s for 9 repetitions or 30 s for 3 repetitions,
  - Total stretch time of 90 s.
  - Each group stretched 6 days a week for 6 weeks

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Original research

Hamstring flexibility increases the same with 3 or 9 repetitions of stretching held for a total time of 90 s

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Knee range of motion
Stretch tolerance

ABSTRACT

Objective: To determine if stretching for a constant total time with differing repetition durations and number of repetitions over a 6-week period produced different changes in hamstring flexibility measured by knee extension range of motion (ROM).
Design: Randomized Control Trial.
Setting: University laboratory.
Subjects: 34 volunteers, 18–25 years old with tight hamstrings as determined by a greater than 30° loss of knee extension with hip flexed to 90° participated in the study.
Main outcome measures: Change in knee extension ROM was assessed in participants who were randomly assigned to a control, or to a stretching group of either 10 s for 9 repetitions or 30 s for 3 repetitions, for a total stretch time of 90 s. Each group stretched 6 days a week for 6 weeks.
Results: Pre to post stretch comparison indicated both stretching groups were successful in increasing joint ROM (11.6 ± 5.25° – 13.4 ± 5.36°) over the control ($F = 19.77$, $p < 0.003$). However, there was no significant difference between the stretching groups ($p = 0.9$).
Conclusion: Stretching for 6 weeks for total of 90 s showed increased joint ROM regardless of the number of repetitions or the duration of each individual stretch.

1. Introduction

Flexibility and joint range of motion (ROM) are important factors in sport performance and in rehabilitation, especially in individuals with musculoskeletal pain (Decoster, Scanlon, Horn, & Cleland, 2004; Law, Harvey, Nicholas, Tonkin, De Sousa, & Finniss, 2009). Flexibility enhances the ability to perform normal functional activities (Law et al., 2009), allowing for improved fitness, strength (force generation capacity), endurance and psychological well-being. Stretch is thought to increase muscle extensibility (Harvey, Herbert, & Crosbie, 2002) and tolerance to stretching (Ben & Harvey, 2010; Folpp, Deall, Harvey, & Gwinn, 2006; Law et al., 2009), resulting in improved joint ROM, movement, and function (Law et al., 2009). Conversely, even a slight loss of extensibility can limit sporting and athletic achievements (Folpp et al., 2006). Knee ROM is of particular interest due to its influence on functional gait (Hamer, Irrgang, Paul, Dearwater, & Fu, 1992), efficient movement (Bandy, Irion, & Briggler, 1998) and sport performance (Folpp et al., 2006). If knee ROM is restricted due to neurogenic (voluntary and reflex control) and myogenic (involving the passive and active properties of the muscle) constraints, it can be influenced by stretching techniques (Harvey et al., 2002; Hutton, 1992; Law et al., 2009).

Many clinicians use various combinations of stretch parameters when instructing patients in hamstring stretches to increase knee extension ROM, often based on research findings (Bandy & Irion, 1994; Bandy, Irion, & Briggler, 1997; Cipriani, Abel, & Pirrwitz, 2003; Feland, Myrer, Schulthies, Fellingham, & Measom, 2001; Roberts & Wilson, 1999; Sherry & Best, 2004; de Weijer, Gorniak, & Shamus, 2003; Willy, Kyle, Moore, & Chleboun, 2001). Two parameters, the number of repetitions and the duration of each repetition, have been manipulated to determine effective ways to improve ROM (Bandy & Irion, 1994; Bandy et al., 1997; Feland et al., 2001; Roberts & Wilson, 1999). The number of repetitions often utilized during stretching ranges from 1 to 10 (Bandy & Irion, 1994; Bandy et al., 1997; Cipriani et al., 2003; Decoster et al., 2004; Feland

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How long do I hold a stretch for?

Results

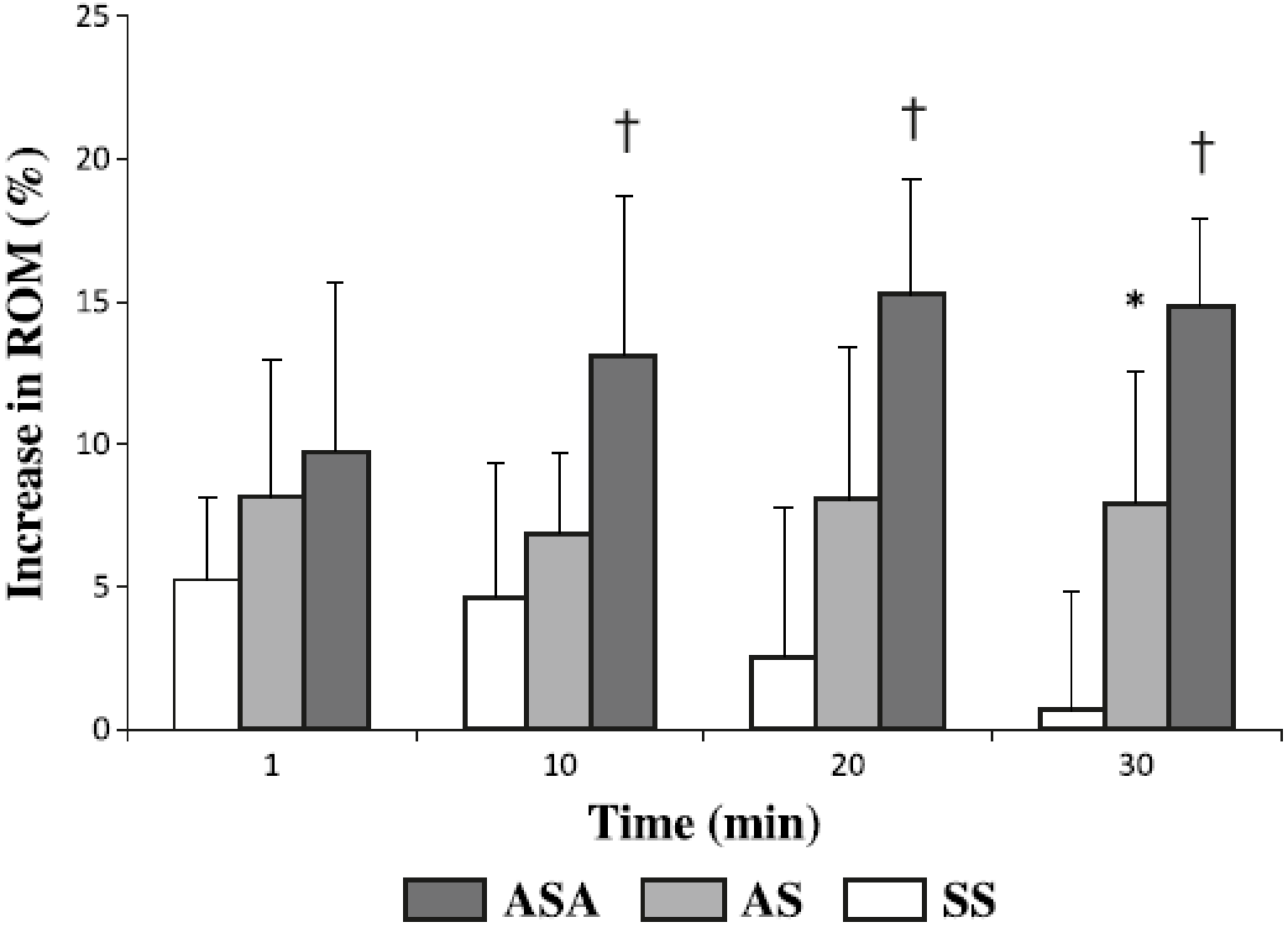
- Pre to post stretch comparison indicated both stretching groups were successful in increasing joint ROM over the control However, there was no significant difference between the stretching groups.

Conclusion

- Stretching for 6 weeks for total of 90 s showed increased joint ROM regardless of the number of repetitions or the duration of each individual stretch.

Wayne Johnson, A.; Mitchell, Ulrike H.; Meek, Katie; Brent Feland, J., "Hamstring flexibility increases the same with 3 or 9 repetitions of stretching held for a total time of 90 s." Physical Therapy in Sport 2014, Vol. 15 Issue 2, p101

Aerobic exercise prior to stretching



Murphy, JR, MC DiSanto, T Alkanani, DG Behm. " Aerobic activity before and following short-duration static stretching improves range of motion and performance vs. a traditional warm-up." Appl. Physiol. Nutr. Metab. 35: 679-690 (2010)

Exercise Rx: Stretching

- Perform exercises 2-3 on each side 2-3 times/day
- Stretch each side for 15 seconds or 4 deep breaths, unless otherwise prescribed
- Once the feeling of stretch is no longer appreciated, you can cut down on frequency.
  - You must re-assess every week

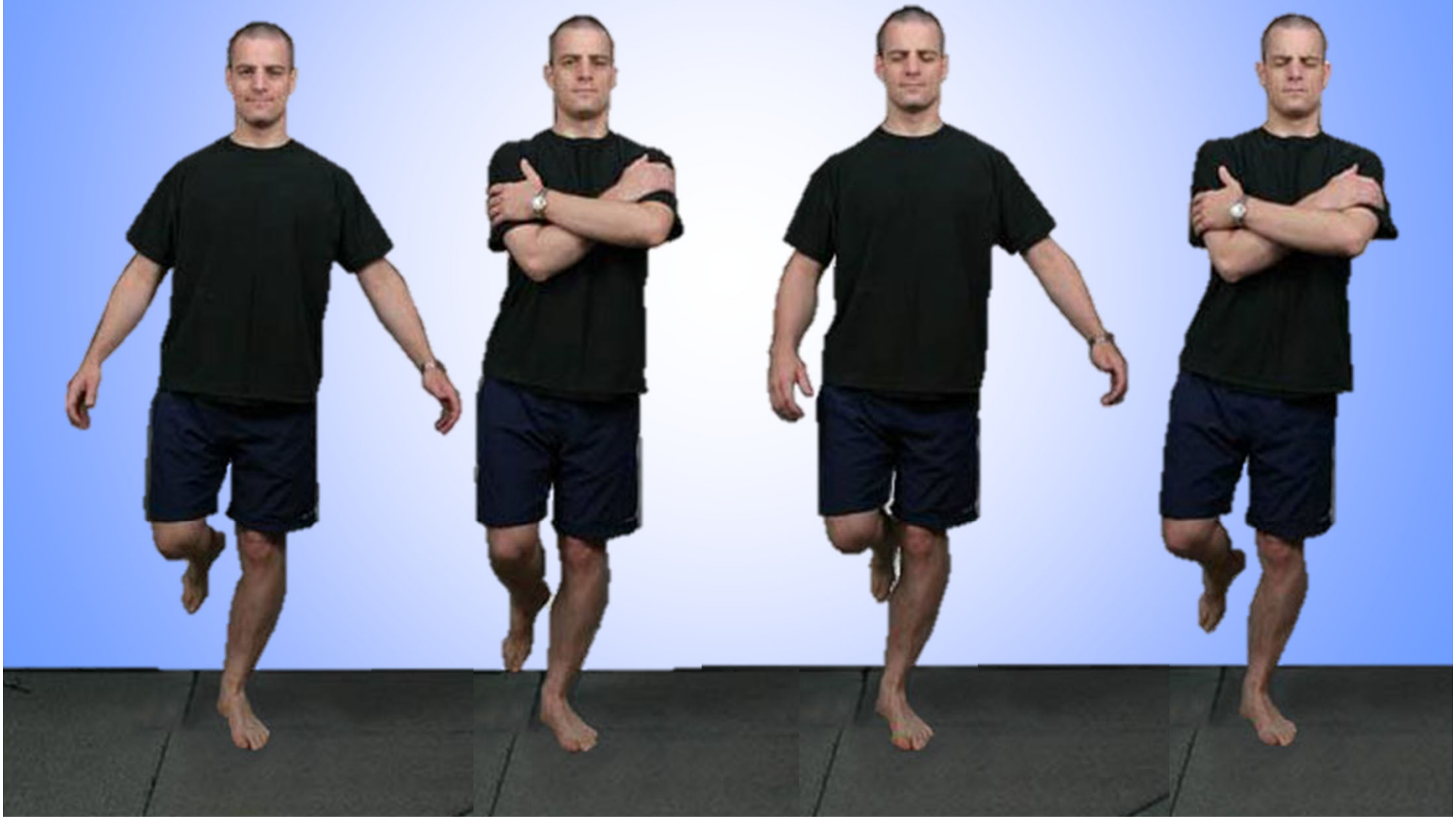
Exercise Rx: Retraining

- After stretching, please perform retraining exercises
- Perform retraining exercise 2-3 times per day

The Exercise Rx

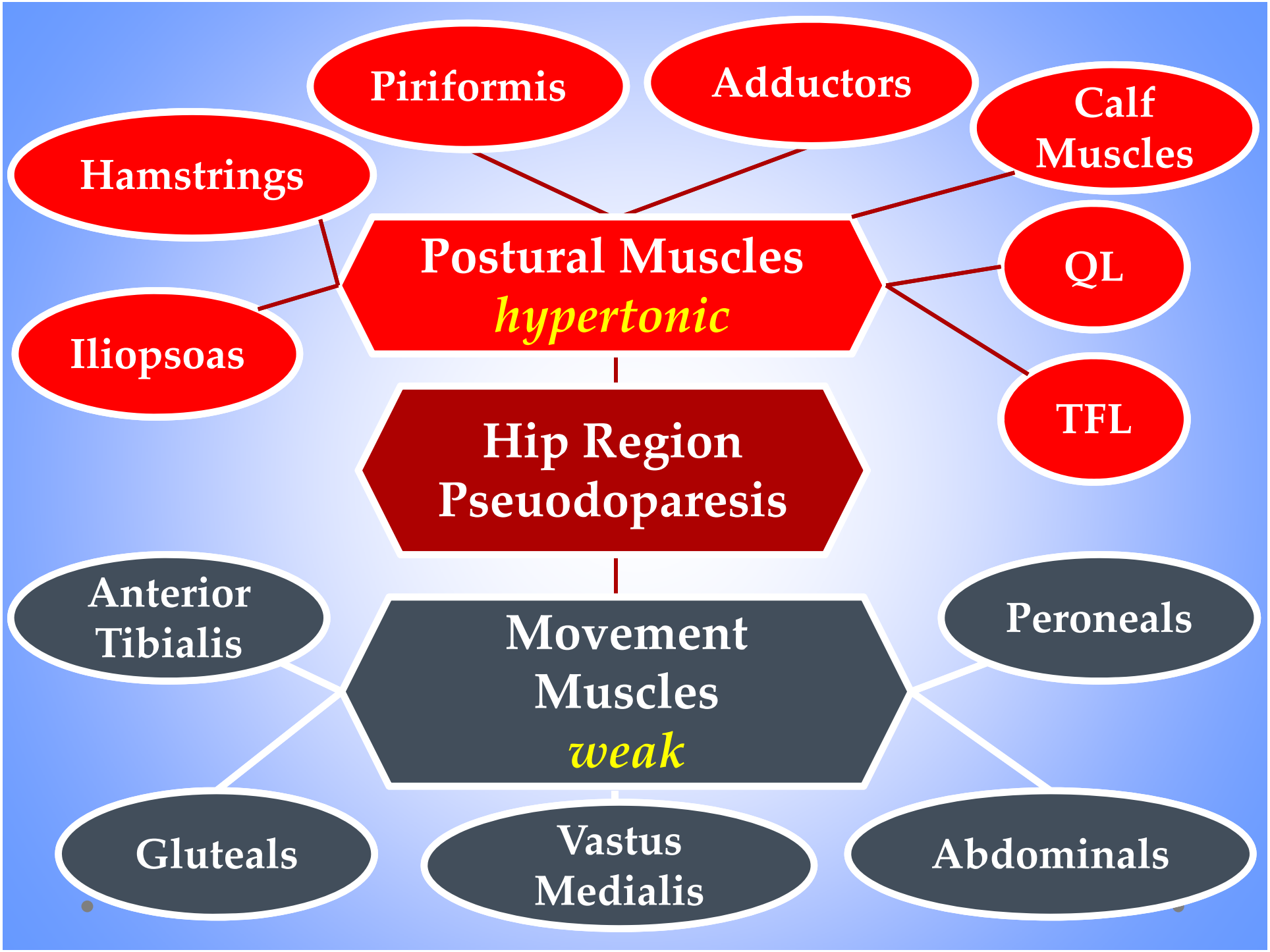
Balance Training

Sensory Motor Balance Training



The Exercise Rx

Lower Crossed Syndrome
and
The Exercise Prescription


Piriformis
Adductors
Calf Muscles
Hamstrings
Postural Muscles
hypertonic
QL
Iliopsoas
TFL
Hip Region
Pseuodoparesis
Anterior Tibialis
Peroneals
Movement Muscles
weak
Gluteals
Vastus Medialis
Abdominals

Stretching Postural Muscles

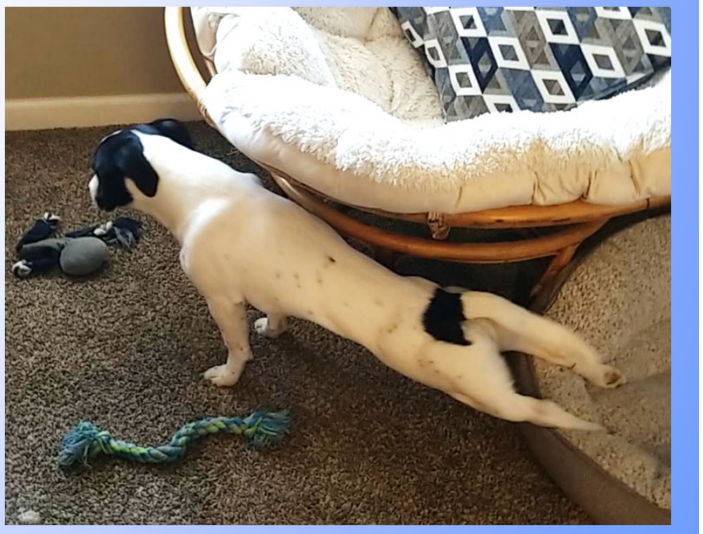
- Rectus Femoris/Quadriceps Femoris
- Iliopsoas
- Lower Extremity Adductors
- Tensor Fasciae Lata
- Quadratus Lumborum
- Hamstrings
- Piriformis

Iliopsoas Stretch 1

- Kneel
- Contract your buttock muscles for 3 deep breaths or 12 seconds
- Repeat 3-5 times with each leg

Upward dog (iliopsoas stretch)

- Lay down on your stomach with your hands at shoulder level on either side of your chest, figure A.
- Push up, but try to keep your tummy below your belly button on the floor resulting in the "cobra" posture, figure B.
- Take 5 deep breaths & slowly lower yourself downward again.
- Rest for a breath or 2 & then repeat it again 2-4 more times.



Danto, Normalization of Muscle Function, Samjill Publishing Co. LLC, 2005

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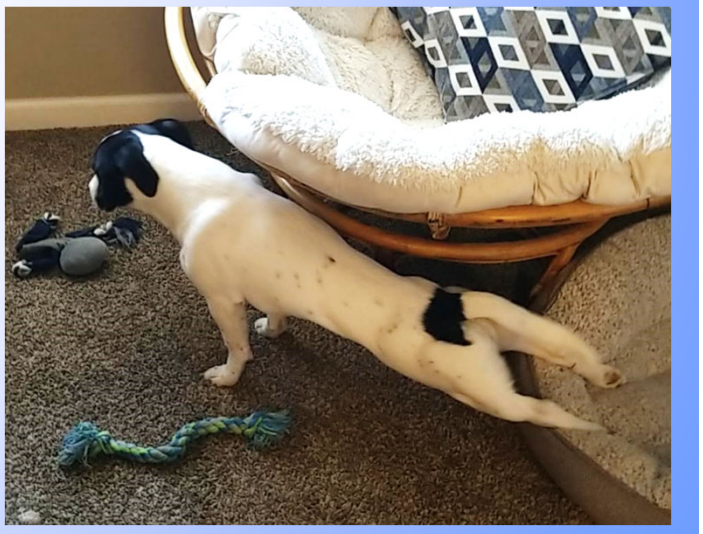

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Iliopsoas and Rectus Stretches

1. Start by sitting on the end of a table or bed
2. Lay down, taking both legs with you
3. Allow one leg to be extended off the edge as far as gravity will take it
4. Lift the extended leg 1" towards the ceiling against gravity for 5 seconds
5. Then allow it to drop again.
6. Repeat steps 4 & 5 1-3 times on each side

Rectus Femoris Stretch

- Flexion of contralateral hip
  - Tilts pelvis posteriorly
  - Rectus femoris attaches to ilium
  - Vasti attach to femur
  - Isolates rectus femoris from the vasti

Caution: Do not prescribe for patients with Knee problems!

Quadriceps/Rectus Femoris

- Position as shown with care taken to:
  - Keep hip of quads being stretched straight
  - Opposite knee is ideally slightly flexed
  - Buttocks muscles are contracted during stretch

Danto, Normalization of Muscle Function, Samjill Publishing Co. LLC, 2005

Lower Extremity Adductors

- Back straight & buttocks as close to the wall as possible
- Place your hands on the floor behind your hips & press your hands into the floor.
- Next arch your back & feel your pelvis rotate.
- Hold this position for 20 seconds.
- Repeat this exercise 3 times and then 3 times a day

Danto, Normalization of Muscle Function, Samjill Publishing Co. LLC, 2005

Tensor Fascia Lata

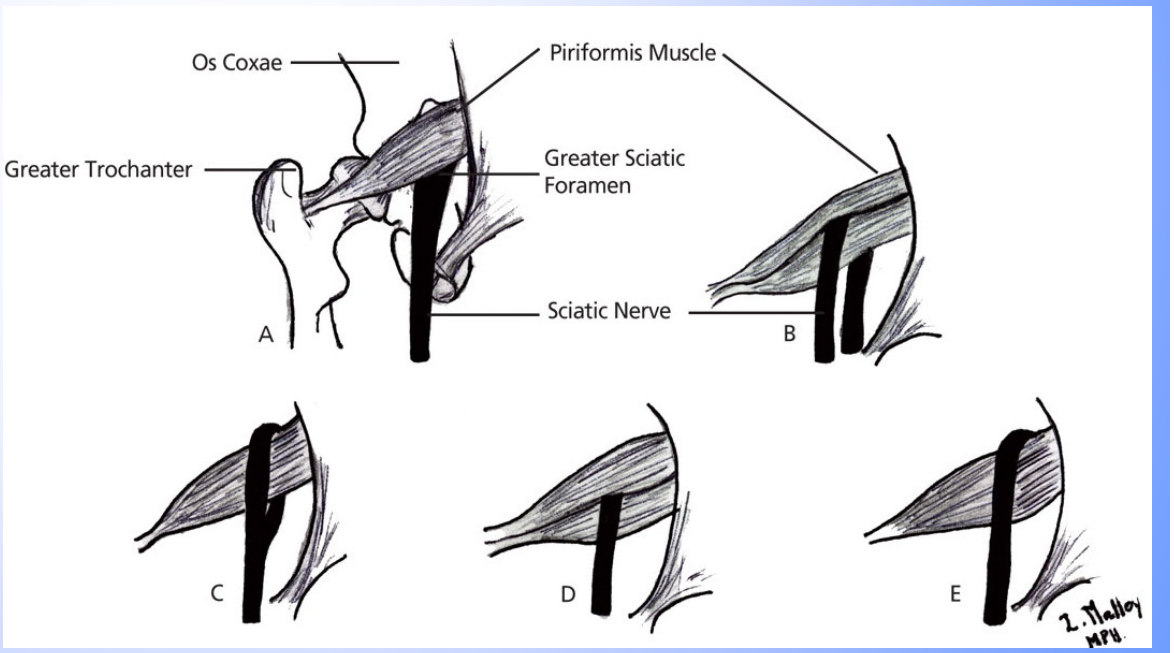
- Maintain posterior pelvic tilt
- Externally rotate leg to be stretched
- Translate pelvis towards leg to be stretched

Tensor Fascia Lata 2

- Stand with your legs crossed at the knees, as shown
- Then shift your weight mostly onto the foot of the side you are trying to stretch, allowing your hip to shift toward that side.
- Reach the arm on that side over towards the other side.

Piriformis Syndrome

- Pain localized to the ipsilateral gluteal region
- Occasional radiation into the ipsilateral posterior thigh (sciatic nerve)
- May cause paresthesias in posterior thigh, calf, or foot.*
- Worse during prolonged sitting



Foundations for Osteopathic Medicine, 4th ed., p.1119

*Osteopathic Approach to Diagnosis and Treatment, DiGiovanna, Schiowitz, and Dowling, 3rd ed., p.356

Piriformis Self MET

1. Lay on your back with one leg crossed over the other, as shown above.
2. Grab your hip pointer & hold your hip against the table.
3. Place your other hand on the outside of your thigh. Inhale deeply & gently press your thigh into your hand.
4. Then, exhale, relax your leg and allow your thigh hand to pull your leg further towards the other side.
5. Repeat steps 3 & 4 another 3-5 times

Danto, Normalization of Muscle Function, Samjill Publishing Co. LLC, 2005

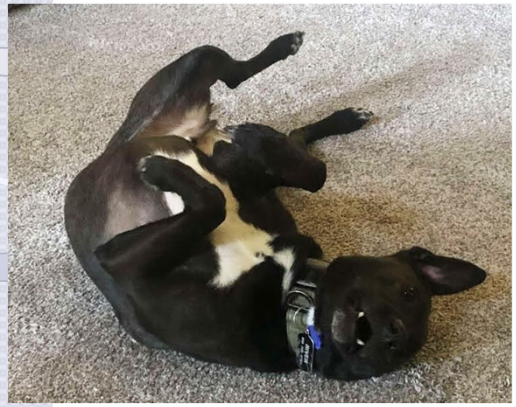
Other Piriformis Stretches

- Flex and externally rotate
- Extend other leg behind
- Hold 12 seconds

1. Flex and externally rotate
2. Pull knee and ankle toward you
3. Push through your leg into your hands for 5 seconds
4. Upon relaxing, rest 2 seconds and pull your leg closer to your chest
5. Repeat steps 4 & 5 for 3-5 times

Gluteus Medius/Minimus

Quadratus Lumborum



A

B

- Stand with your legs a little more than shoulder width apart and reach your arm down your thigh toward your knee, looking at the ceiling (figure A).
- Then, exhale and look down (figure B).
  - Upon looking down your hand should be able to creep down your leg more.
- Repeat 3-5 times and then switch sides. The whole exercise should be repeated 2-3 times a day.

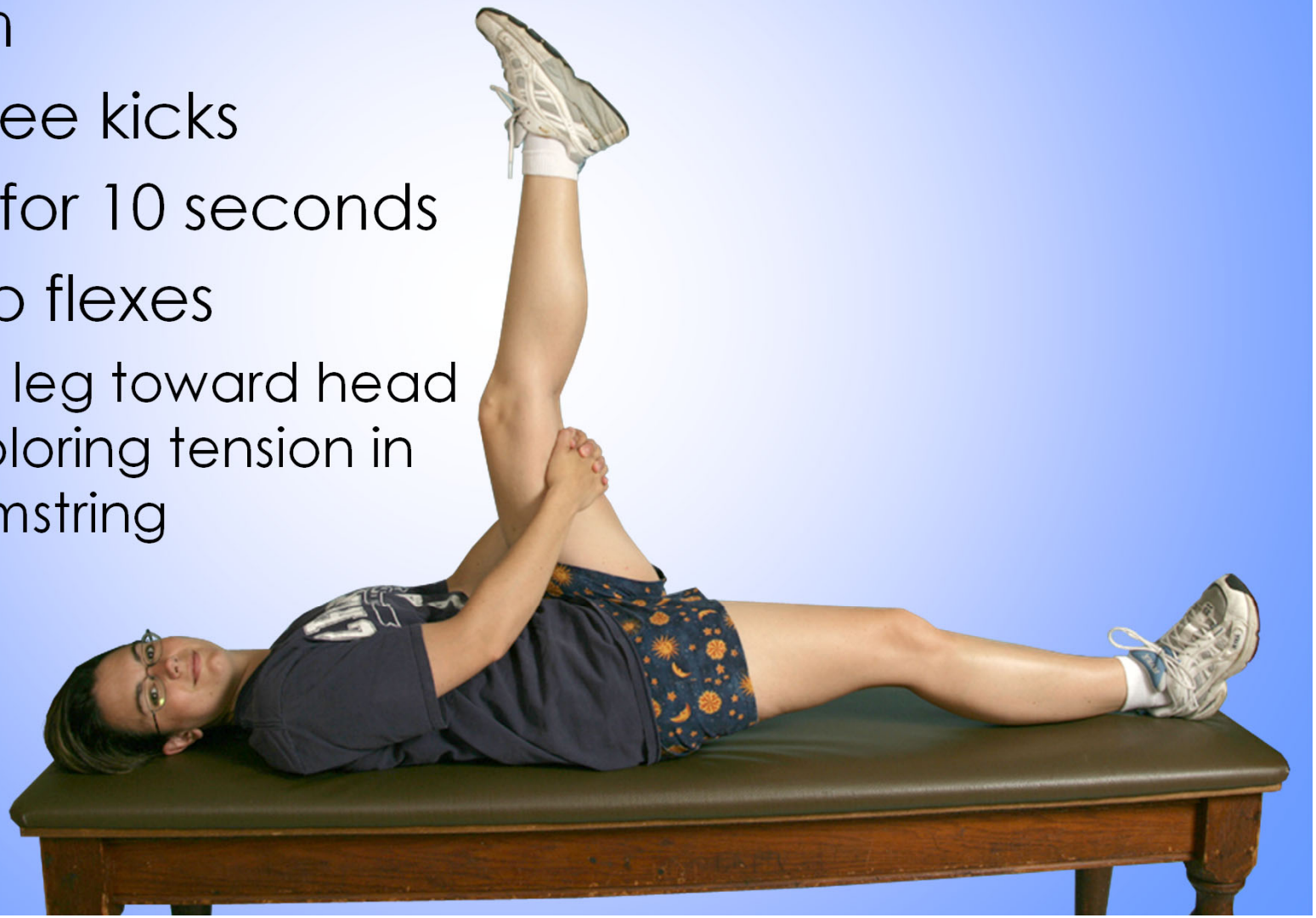
Danto, Normalization of Muscle Function, Samjill Publishing Co. LLC, 2005

Quadratus Lumborum

1. Lay near the side of a bed with your leg that's on the bed flexed and the other leg hanging off the back of the bed
2. Stretch your top arm over your head, as shown
3. Lift the leg hanging off the side of the bed 1" towards the ceiling against gravity for 5 seconds
4. Then allow it to drop again.
5. Repeat steps 3 & 4 1-3 times on each side

Hamstring

- 10 toe points up and down
- 10 knee kicks
- Hold for 10 seconds
- 10 Hip flexes
  - Pull leg toward head exploring tension in hamstring



Hamstring Stretch 2

- Allow lumbar spine to maintain lumbar lordosis
- Keep c-spine straight
- Press your “sit bones” or buttock toward the ceiling
- Hold stretch 30 seconds, repeat 2-3 times

Hamstring Stretch 3

- Place your foot on another chair while sitting
- Lean forward and dorsiflex your foot
- Hold for 3-5 deep breaths
- Repeat 2-3 times

Gastrocnemius Towel Self-MET Stretch

Follow this sequence:

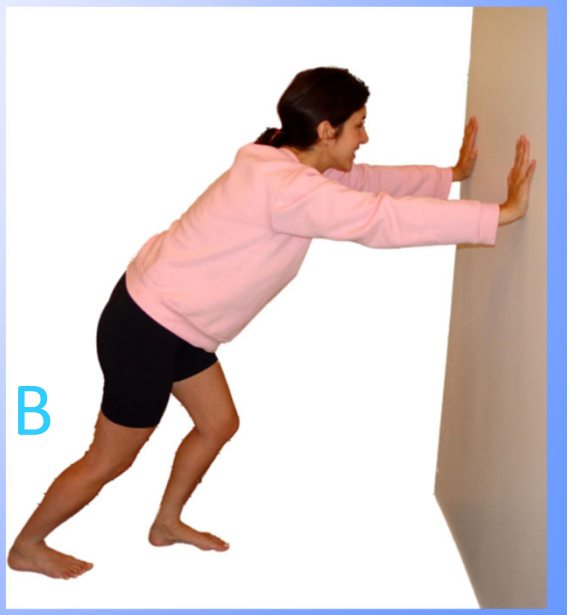
- Sit comfortably with your back against the wall & a towel or belt around your forefoot.
- Pull the towel back maximally.
- Press your toes into the towel for 5 seconds.
- Upon stopping the press, the towel should come back more towards you, along with your toes/foot.
- Repeat steps 2-4 for 3-5 times & then the whole procedure 3 times a day.

Soleus Self-Stretch

1. Sit with your heel on the chair & cup your forefoot in your hands
2. Pull your toes & forefoot towards your nose.
3. Press your toes & forefoot into your hands for 3 deep breaths or 15 seconds.
4. Upon relaxing pull your forefoot closer to you, allowing the ankle to flex more.
5. Repeat this exercise on both sides for 3-5 times & then 3 times a day.

Holding Up the Wall-stretch

- Lean against a wall with one foot forward & the other back, making sure to keep the heels on the floor.
- The forward leg should be bent at the knee & the back leg should have the knee straight to stretch the gastrocnemius (figure A).
  - The back leg can be bent as long as the heel doesn't leave the floor to stretch the soleus (figure B).
- This position is held for 15-30 seconds & then repeat on the other side.
- This exercise is repeated on both sides for 3-5 times & then 3 times a day.



Soleus Kneeling Stretch

- Shoeless, the patient kneels upon her knees with her toes tucked underneath, figure A.
- Placing her hands in the prayer position corrects upper postural imbalances, figure B.
- The patient should place just enough weight upon her toes as she sits back so that she is at “the feather’s edge of discomfort” & hold this position for 15 seconds.
- The next part of this exercise brings her forward onto her elbows, taking the weight off of her heels, figure C. Hold this position for 3 deep breaths. Then return to the start position.
- This exercise is repeated 3-5 times & then 3 times a day.

Stair Stretch & Strengthen

1. The patient stands on a stair allowing gravity to lower her heels lower than her toes.
2. She then presses with her toes so that her whole body rises maximally.
3. Then, she allows gravity to lower herself back to the start position.
4. She repeats this 15 times and 3 sets.
   - *Once she is strong enough, then she can do one leg at a time.*
   - *Strengthening exercises should not be done unless the patient is pain free.*

The Exercise Rx

Lower Crossed Syndrome

and

Re-Training

Pedal Retraining Exercise

Follow this sequence:

1. The patient is sitting comfortably with her feet flat on the floor
2. She press her toes into the ground for 5 seconds & then return to the starting position for 5 seconds.
3. She then lifts her toes off the ground rocking her feet onto her heels for 5 seconds & then return to the starting position for 5 seconds.
4. She should repeat steps 2-3 for 6-15 repetitions.

Perform this balancing exercise every 1/2 hour when sitting for extended periods.

Pelvic Tilt

- Arch lower back
- Tilt pelvis to the 12:00 position

- Flatten lower back
- Tilt pelvis to the 6:00 position
- Curl tailbone in

10 times in each direction, please.

Pelvic Clock

- *Unlike picture we use an imaginary clock…*
- Intended to allow patient to explore motion & self-treatment
- Method #1: explore each number on clock
- Method #2: smooth pain-free motion around the clock
- Self Tx: Hold 6 hours away from any painful position for 60-90 seconds

Core Stability Evaluation

- As you exhale, start by curling your pelvis up to the 12:00 position
- Contract your buttock muscles to lift your vertebrae 1 at a time
- As you inhale, lower your back 1 vertebrae at time and then continue arch your back to the 6:00 position
- Repeat 5-7 times

Hip Extensor Retraining

Dorsiflex your foot

Straighten your leg

Lift your leg, holding pelvis
On the table!

- ***3 sets of 10 with each leg***

Re-training Ab/Ad-duction

- Start on “all-fours”
- Lean back and towards the right for 15 seconds, then
- Lean back and towards the left for 15 seconds,
- Repeat in each direction for 2-3 sets
- Perform 2-3 times/day

Re-training Ab/Ad-duction 2

Start on laying on your side and feeling your upper buttock

Keeping your feet together, separate your knees about 6 inches while exhaling. Feel your buttock muscle contract during the separation. Repeat this 10-15 times on each side 2-3 times and 2-3 times/day.

Re-training Ab/Ad-duction 3

Start on laying on your side and feeling your upper buttock

Twist your top leg so that your toe points toward your other leg. Then lift the top leg about 10 inches while exhaling. Feel your buttock muscle contract during the separation. Repeat this 10-15 times on each side 2-3 times and 2-3 times/day.

Abdominal Sit-Backs

Hold sit-back 5-7 seconds and repeat 5-7 times

Level 1
Arms Extended

Level 2
Arms Folded

Level 3
Arms Behind Head

Obliques

Seated Posture & Retraining

1. Fully extend, fully slouch…Find the middle.
2. The middle is probably where you need to retrain your body to be comfortable.
3. Practice sitting in the middle each time you sit, and when your muscle fatigue you can let go of the posture.
4. It may take a year to become good at maintaining this posture.

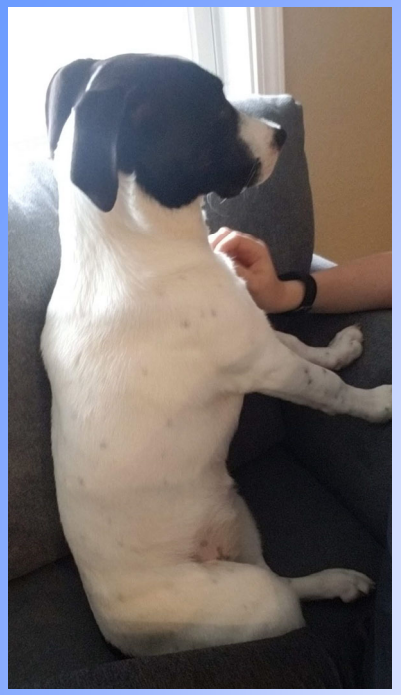
Transitioning to Stand

You are sitting comfortably in a chair with a good lumbar support.

Then, slide forward in your chair, but advance one butt cheek further than the other & place a foot beneath the front edge of the chair. Maintain your lumbar curve while the knees & hips are straightened.

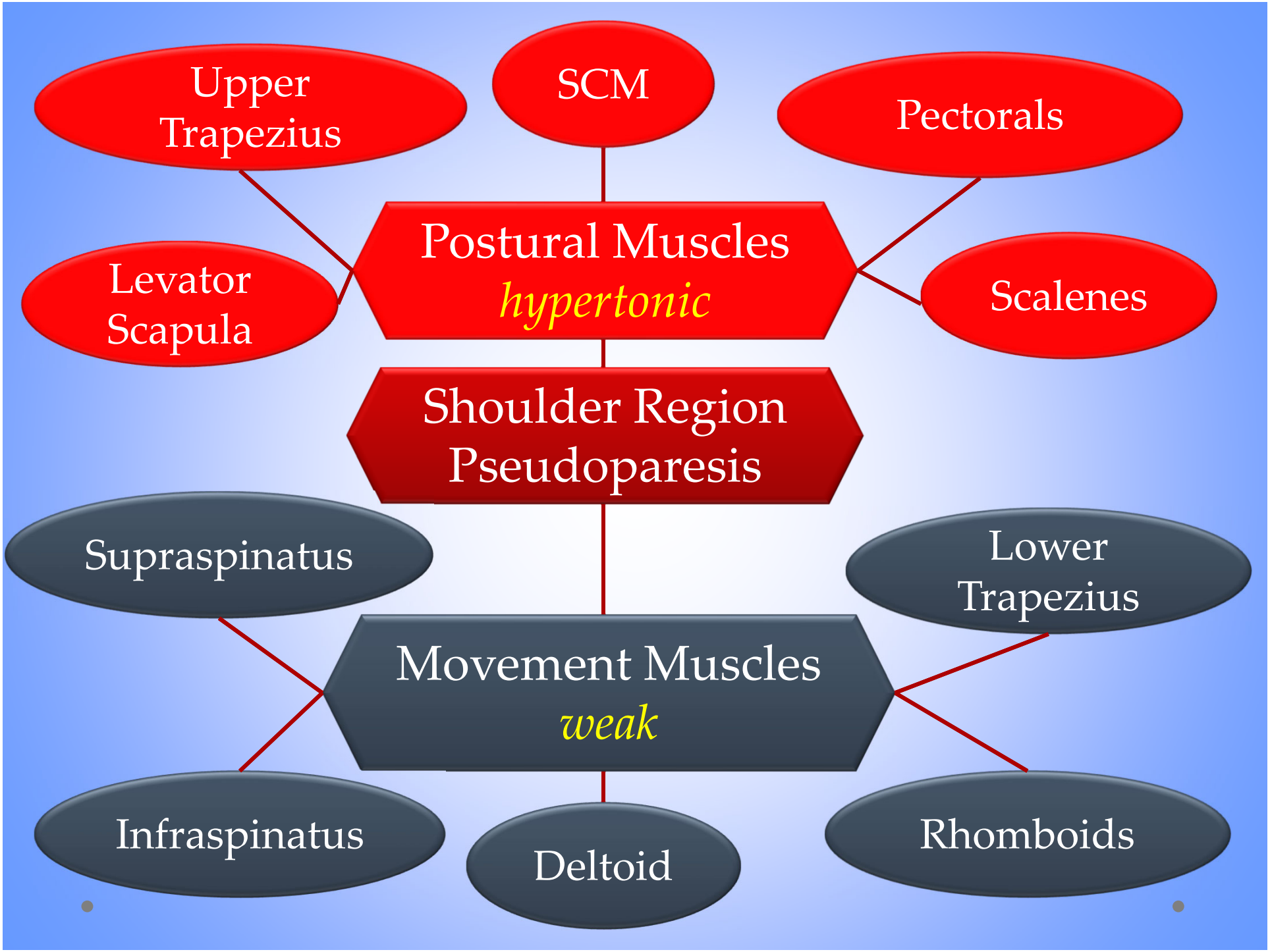
The standing position.

The sequence is reversed to sit down



The Exercise Rx

Upper Crossed Syndrome & the Exercise Rx


Upper Trapezius
SCM
Pectorals
Levator Scapula
Postural Muscles
hypertonic
Scalenes
Shoulder Region Pseudoparesis
Supraspinatus
Lower Trapezius
Movement Muscles
weak
Infraspinatus
Deltoid
Rhomboids

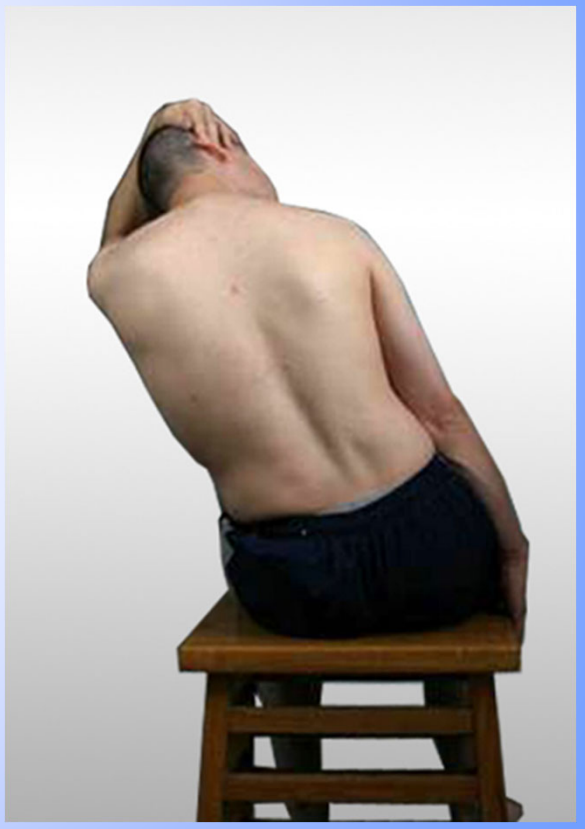
Levator Scapula

- Patient seated self stretch
- Patient anchors ipsilateral hand under thigh or chair to stabilize scapula
- Face rotated away about 30 degrees.
- Patient's reaches overhead, flexes forward, and sidebends away to take up slack.

SCM & Trapezius:

Synergistic Can Be Tested & Treated Together

- Patient seated self stretch
- Patient anchors ipsilateral hand under thigh or chair to stabilize scapula
- Patient flexes, sidebends away, rotates head and neck toward side being treated
- Adding chin tuck emphasizes SCM
- Patient's reaches overhead to stabilize head in this position, then leans away until stretch is felt.



Pectoralis Minor & Major

Stretch for 30 seconds on each side 2-3 times and 2-3 times/day

Pectoralis Minor & Major

Stretch for 60 seconds 2-3 times/day
Remember to take deep breaths and go only to the feather's edge of discomfort.

Latissimus Dorsi

forward flexion and external rotation of humerus to lengthen/stretch

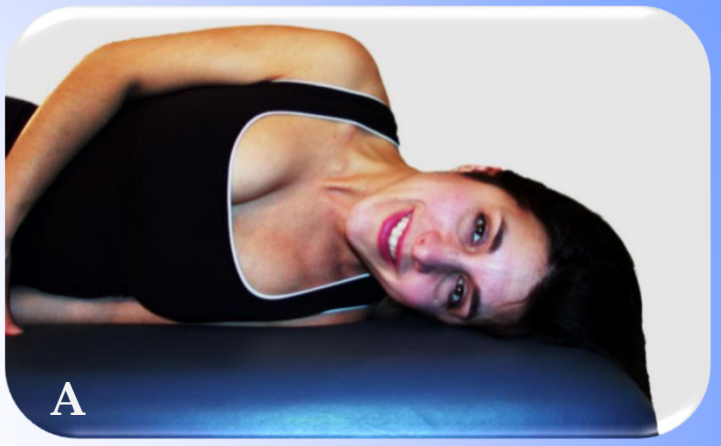
Allow your stomach to sag & lumbar spine to arch. Lean back in prayer position.
Stretch for 30 seconds on each side 2-3 times and 2-3 times/day

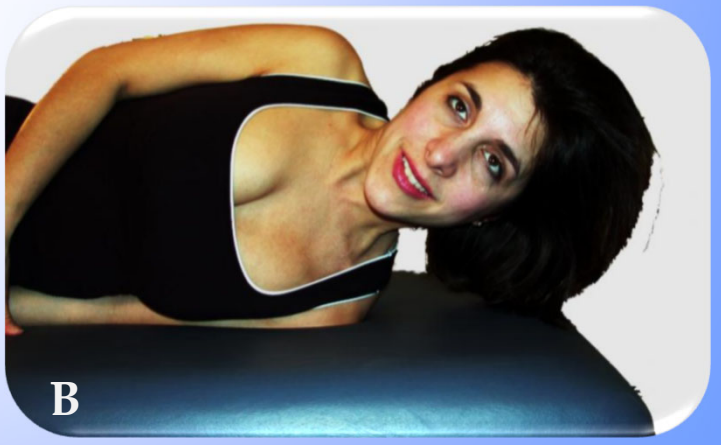
Self-Stretch (scalenes)

- Place the hand of the affected side under your buttocks palm up. Use your other hand to reach over your head and grab just above the ear of the affected side.
- Place your neck into a sidebending stretch toward the unaffected side.
- Take a deep breath feel the tension mount in your head placed hand, upon exhalation follow the relaxation of your neck into further sidebending.
- Repeat this 3-6 times and make sure the other side is stretched to equality.
- Do this exercise 3 times a day.

Gravity Self-stretch (scalenes)

- While lying on your unaffected side, lift your head and look away from the table/bed while taking a deep inhalation (figure A).
- Hold your breath for a count of five and, while exhaling, allow your head to sink back towards the table/bed (figure B).
- Repeat this exercise 3 times.
- Makes sure the other side is equally loose.
- Perform this exercise 3 times a day.





Self-stretch (scalenes)

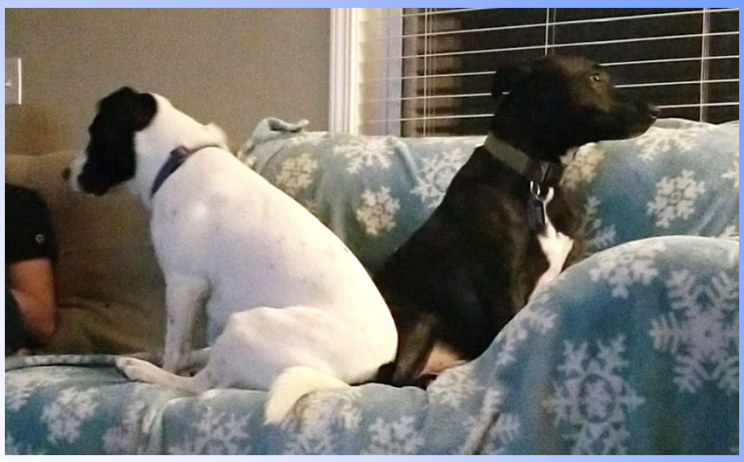
Different muscles can be stretched depending upon the amount of head rotation that you perform.

- **No rotation**: the *middle scalenes* will be stretched
- **Rotation towards** the affected side: the *anterior scalenes* will be stretched
- **Rotation away** from the affected side: the *posterior scalenes* will be stretched

The anterior, middle and posterior scalenes should all be stretched to equality.

Scalene Self-Tx

- Anchor 1st & 2nd Ribs
- Sidebend Away Slightly
- Rotate Toward Slightly
- Posteriorly Translate



The Exercise Rx

Upper Crossed Syndrome - Retraining

Self-awareness
(levator scapula)

- One of the hallmarks of musculoskeletal pain is a loss of control.
- This exercise is designed to help patients regain control.
- Most people under stress tense their shoulders.
- To re-assert control a patient can raise their shoulders even higher, as in figure A, and then drop them, figure B.

fig. A

fig. B

Seated Neck Stretches

- Figure A: Starting position in a comfortable posture in a high-back chair with hands in lap.
- Figure B: Tuck your chin as far back as possible and inhale deeply.
- Figure C: While holding your breath, rotate your head to look at the sky. Then exhale and return to the starting position (figure A).

Seated Neck Stretches

- Start with tucking your chin
- Then, rotate your head 10 times in one direct maintaining the chin tucked position.
- Repeat for the other direction
- Then, bring your ear as close to one of your shoulders as possible 10 times. Make sure not to lose your tucked chin position.
- Repeat towards the other shoulder 10 times

CERVICAL FLEXION TEST (SUPINE)

Incorrect **Correct**

Positive Test Means Possible Facilitation of:

- SCM
- Scalenes
- Cervical erector spinae

CERVICAL FLEXION RETRAINING

Each morning upon awakening and each evening before sleep, practice:

1. Start completely flat
2. Tuck your chin and slowly curl it towards your chest as far as you can while inhaling;
3. Then, uncurl from the tucked position while exhaling;
4. Repeat 10 times.

You may need to support your head with your hand when you first try this exercise.

Scapular Retraining: Push elbows posteriorly and squeeze scapulae together (can also add chin tuck)

Pectoralis Retraining

No pillow & your arms by your sides with your palms up

Slide your arms along the floor, as if you were making a snow angel

If you feel your arm lift off the floor, stop rotating and stretch your arm out further away from yourself.

If you can get your arm back to the floor, then re-start the circular motion again. If you cannot get your arm back to the floor, then that is as far as your shoulder goes. Do not go past the feather's edge of discomfort.

- Do this exercise 5-7 times & then repeat it 2-3 times a day.
- Your goal is to stretch your arms above straight up above your head.

Arm Wheels: Shoulder Stretch

Start by lying down on your side with a pillow between your neck & shoulder

Reach your free arm straight out in front of you & rotate it at your shoulder in a circular fashion, like a wheel, while keeping your hand as close as possible to the surface upon which you are lying.

At the top of your stretch, when your arm is closest to your head, rotate your hand around to face the ceiling

When you get to the point indicated above, rotate back to the start position by going in the opposite direction..

If, at any point, you feel your arm lift off the surface, stop rotating and stretch your arm out further away from yourself. You will find that when you do this your hand gets closer to the floor again. Re-start the circular motion again. Do this exercise 2-3 times with each side & then repeat it 2-3 times a day.

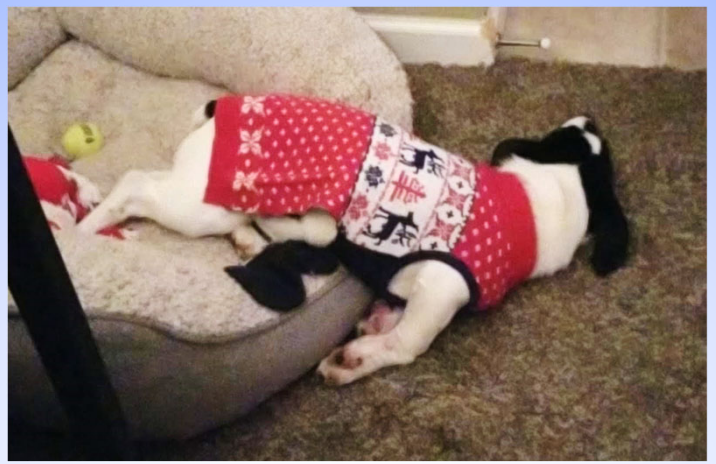
Standing Posture

Stand with your feet about 4 inches apart, arms at your sides and with your thumbs pointing forwards

- Tighten your butt muscles
- Rotate your arms and shoulders out and back while inhaling (*make sure to feel your shoulder blades squeeze together in your back*); your thumbs rotate outwards
- Maintain this position while pulling your shoulder down and exhaling
- Hold this position while breathing normally and correcting the head posture *(suspended by a Unicorn horn at a 60 degree angle from the ceiling)*

Posture & Doorway Exercise

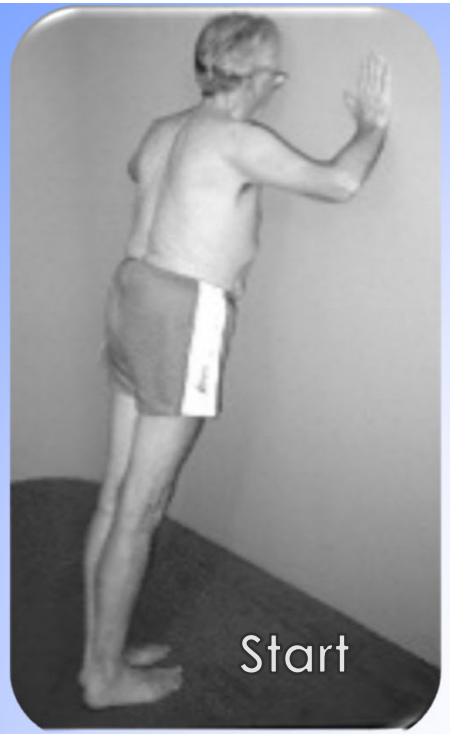
- Each time you walk through a doorway pretend you are making your grand entrance!
- Head suspended from a string pulling on your invisible unicorn horn.
- Shoulders and chest opened up!
- Make a grand entrance!
-

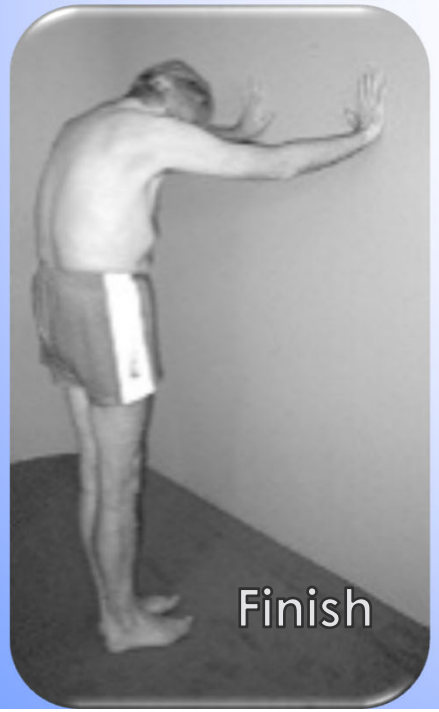


The Exercise Rx

Self-treatment of Somatic Dysfunction

Exercise Prescription: Thoracics Wall "Push-ups"





1. Start: arms length from the wall with your hands on the wall a little more than a shoulders width apart
2. Put your nose up to the wall, feel you shoulder blades come together
3. Slowly push away from the wall and curl your head into flexion, one vertebra at a time
4. When your arms are fully straightened your chin should be on your chest and you should feel your shoulder blades spread apart
5. Now uncoil from the bottom up as you bend your elbows and go back to the "start" position.

Based upon Greenman's Exercise Prescription Course, 2012

Exercise Rx: Lumbar Flexed SD Self-Articulatory

- Feet slightly less than shoulder width apart
- Shift hips towards 'feather's edge' of discomfort 5 times
  - Pain-free ROM should increase each time
- Stick out belly and arch back backwards in extension
- Increase hip shift and back extension through 5-7 more reps
- Repeat 3-5 times a day prn

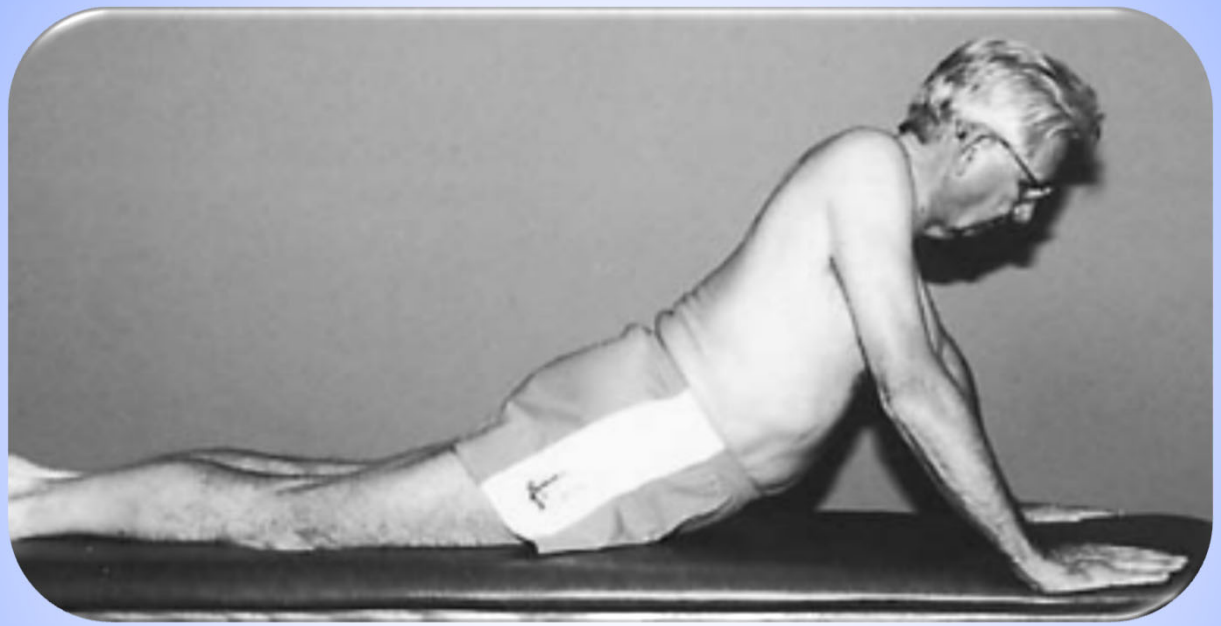
Greenman's Principles of Manual Medicine, 4th Edition 2011, 502

Exercise Rx: Lumbar Flexed SD Self-Articulatory

- Feet slightly less than shoulder width apart and toes wider than heels
- Extend your back from your neck down and shift your hips forward
- Repeat 5-7 more times and increase your hip shift each time to the 'feather's edge' of discomfort
  - Pain-free ROM should increase each time
- Hip shift in the direction of discomfort can be added to the back extension through 5-7 more reps
- Repeat 3-5 times a day prn

Greenman's Principles of Manual Medicine, 4th Edition 2011, 503

Exercise Rx: Prone Lumbar Flexed SD Self-Articulatory



- Keep elbows straight and allow your stomach to sag
- The stretch should be felt in the front of the chest and abdomen
  - May be felt in the low back too
- Breath deep, with exhalations you may feel more sagging in your low back (aka extension)
- When there's no change in amount of sag, relax
- Repeat 3-7 times twice a day

Greenman's Principles of Manual Medicine, 4th Edition 2011, 503

Exercise Rx: Lumbar Extended SD "Diagonal Hip Sink"

- On "all fours" to start
- Shift hips, not your feet, to the right side (pictured)
  - *Never exceed the 'feather's edge' of discomfort*
- Hold in that position for 3 deep breaths
  - With each deep breath you will sink a little farther
- Then, go back to the neutral start position and do the other side
- Repeat 3-5 times a day prn

Greenman's Principles of Manual Medicine, 4th Edition 2011, 505

Exercise Rx: Lumbar Extended SD Self-Articulatory

- Place one foot on a stool or chair
- Place both hands on that knee and slide your hands down, drawing your chest towards your knee
  - *Start with a chin nod and follow with your neck, upper back and lower back.*
- Hold the forward bent position for 3 deep breaths
- Then, go back to the neutral start position
- Repeat on each side 5 to 7 times, 3-5 times a day, as needed

Greenman's Principles of Manual Medicine, 4th Edition 2011, 505

A 26-yo male presents to your office with complaints of left hip pain due to training for a triathlon. PE reveals left lower extremity abduction reduced to 30 degrees. Home exercise Rx would address this by including which of the following stretches?

Do's & Don't's (scalenes)

Avoid

- Carrying, pulling or tugging awkward packages
- Lifting the head when rolling over in bed
- Using glasses that have thick lower rims
- Turning your head to hear someone with your better ear

Do's

- Use an appropriate elbow rest
- Use reading lights
- Elevate the head of the bed 3-3 ½ inches using books or blocks under the bedposts
- Use a pillow that is not foam rubber or does not have a springy action
- Keep you neck & shoulders warm at night

Patient Instructions: Do's & Dont's *(levator scapula)*

- **Do not** carry heavy bags on the affected side or light bags for prolonged periods
- **Avoid** activities that involve turning the head in one direction for long periods
  - ✓ **Do not** use a computer with the monitor angled to one side
  - ✓ **Avoid** watching a sporting event or movie from the corner or front row
- **Do not** use a cane that is too long
- **Do not** use a phone cocked to the ear (try a headset)
- **Avoid** sleeping in uncomfortable positions, as in a plane or car (try a neck rest)
- **Avoid** exposure to a cool drafts on the back of the neck (don't be shy to move or put on a turtle neck)
- **Re-educate** latissimus dorsi and pectoralis muscles to neurologically turn off and stretch the levator scapula

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HAPPY OCTOBER!