

Physical Therapy and Golf Related Injuries

By: Nathan Guy, SPT



What We Will Cover Today

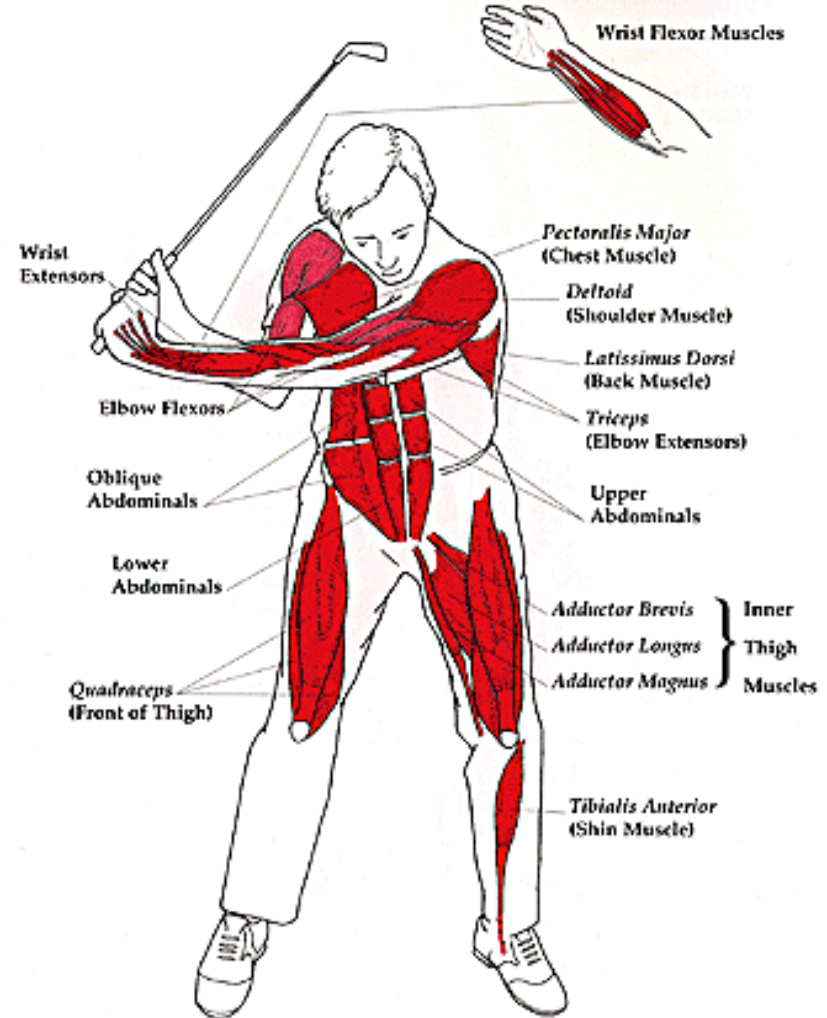
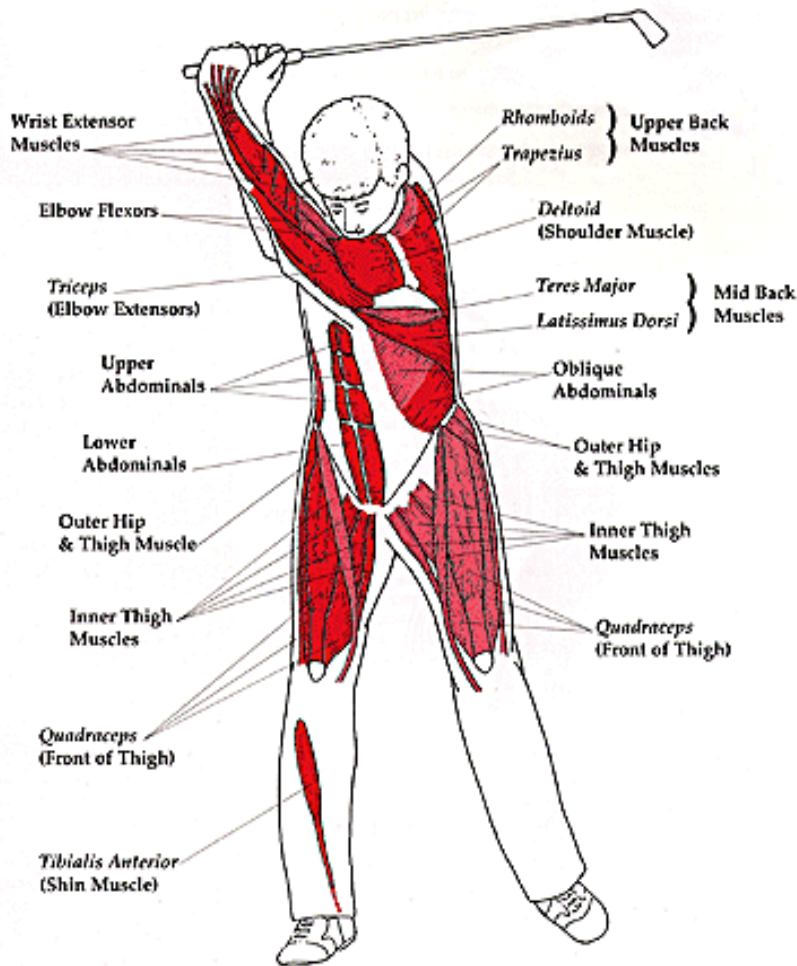
- ◆ Discuss the major muscle contributors and strains during a golf swing.
- ◆ Importance of strength and flexibility for a golf swing.
- ◆ Common injuries that occur from playing golf.
- ◆ How a Physical Therapist plays a role in all of these factors.

Golf Requirements

- ◆ Golf is a complex sport that requires many characteristics from the player including but not limited to; strength, flexibility, endurance, balance, and precise movements.
- ◆ Physical therapists are known as the movement experts which makes us very qualified to not only treat golfers with injuries, but help prevent them.



Muscles Used During the Golf Swing

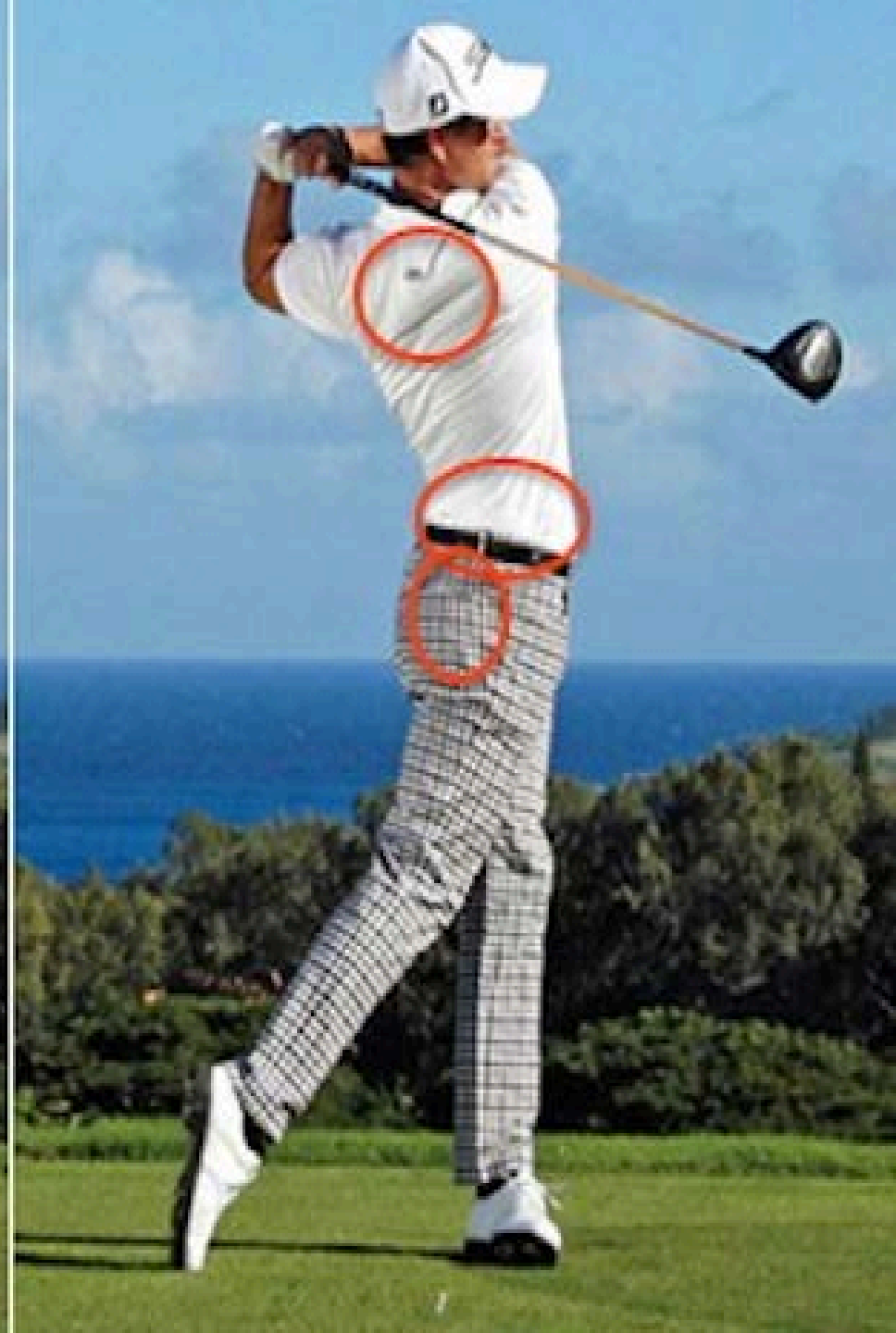


Muscles Used During the Golf Swing

- ◆ **Key Lower Body Muscles: Gluteus Maximus**
- ◆ **Major contributor during the backswing and downswing for balanced posture.**
- ◆ **Key Upper Body Muscles: Pectoralis Major, Latissimus Dorsi, Core, and Forearm Musculature.**
 - ◆ **Your chest muscles and Latissimus assist with bringing the arms across your body and raising them up in the air.**
 - ◆ **Your core holds the whole thing together and transmits forces from your lower to upper body.**
 - ◆ **The forearms transmit all of the forces created by the body into the club.**

Strains on the Body

- ◆ If you have muscle weakness or lack of mobility, your body will find ways to compensate for these issues so you can still swing.
- ◆ This is bad because you are now asking muscles to perform actions they are not intended to do.
- ◆ For example: if you have a weaker core and shoulder rotators, during your rotation the core is not activated to stabilize and help create the power needed for the golf swing, so the body compensates with the arms and more specifically the forearms.
- ◆ There is an important balance needed for all of the muscles to activate in order to have a synchronized swing that does not hurt.



Importance of Strength and Flexibility

- ◆ Strength does not mean that you have to hit the ball 300 yards.
- ◆ Strength and flexibility are needed for a more efficient and reliable golf swing.
- ◆ Your strength along with flexibility provides the foundation for proper stability, balance and coordination.
- ◆ A major contributor is ENDURANCE.
- ◆ Without endurance it does not matter how strong or flexible you are.

Common Injuries

- ◆ Medial Epicondylitis (Golfer's Elbow)
- ◆ Shoulder Pain
- ◆ Low Back Pain

Medial Epicondylitis

- ◆ Pain around the inside of the elbow where many of the wrist and finger flexor tendons attach.
- ◆ It is more commonly an overuse injury of the wrist and finger flexors associated with golfing.
- ◆ This is usually a result of a compensation from somewhere else in the body causing rapid elbow movements for power.
- ◆ When these muscles are called upon repeatedly and it is something that the person is not conditioned for, this results in excessive pulling on the tendons that attach to the medial elbow.
- ◆ Symptoms: pain around the medial elbow and tenderness in the forearm. The pain may spread into the forearm and gets worse with gripping activities. There could also be swelling or inflammation present.

Medial Epicondylitis

**Golfer's Elbow
(Medial Epicondylitis)**



- **Pronator Teres**
- **Flexor Carpi Radialis**
- **Flexor Digitorum Superficialis**
- **Flexor Carpi Ulnaris**

Exercises to Prevent Medial Epicondylitis

- ◆ Hand, wrist and forearm strengthening.
- ◆ Maintain elbow, shoulder and core strength.
- ◆ Endurance always play a big role in any repetitive sport, so don't forget to stay active by walking/running.

Hand, Wrist, and Forearm Strengthening

- ◆ Hand Strengthening:
 - ◆ Putty or Stress Ball squeezes.
- ◆ Wrist Strengthening:
 - ◆ Wrist flexion, extension, radial and ulnar deviation with a golf club.
- ◆ Forearm Strengthening:
 - ◆ Pronation and Supination with a golf club.

Physical Therapy for Medial Epicondylitis

- ◆ Medial epicondylitis can be a difficult injury to rehab without the proper handling depending on how bad the injury is.
- ◆ A physical therapist will first perform a full evaluation and figure out the cause of the injury, followed by educating the patient on certain movements to initially avoid.
- ◆ It is important for a patient to listen to the therapist and avoid these motions so the proper healing cycle can occur.
- ◆ The therapist will use specific therapeutic exercises to begin loading the injured tissues and manual therapy to relieve pressure, decrease pain, and improve joint movement.

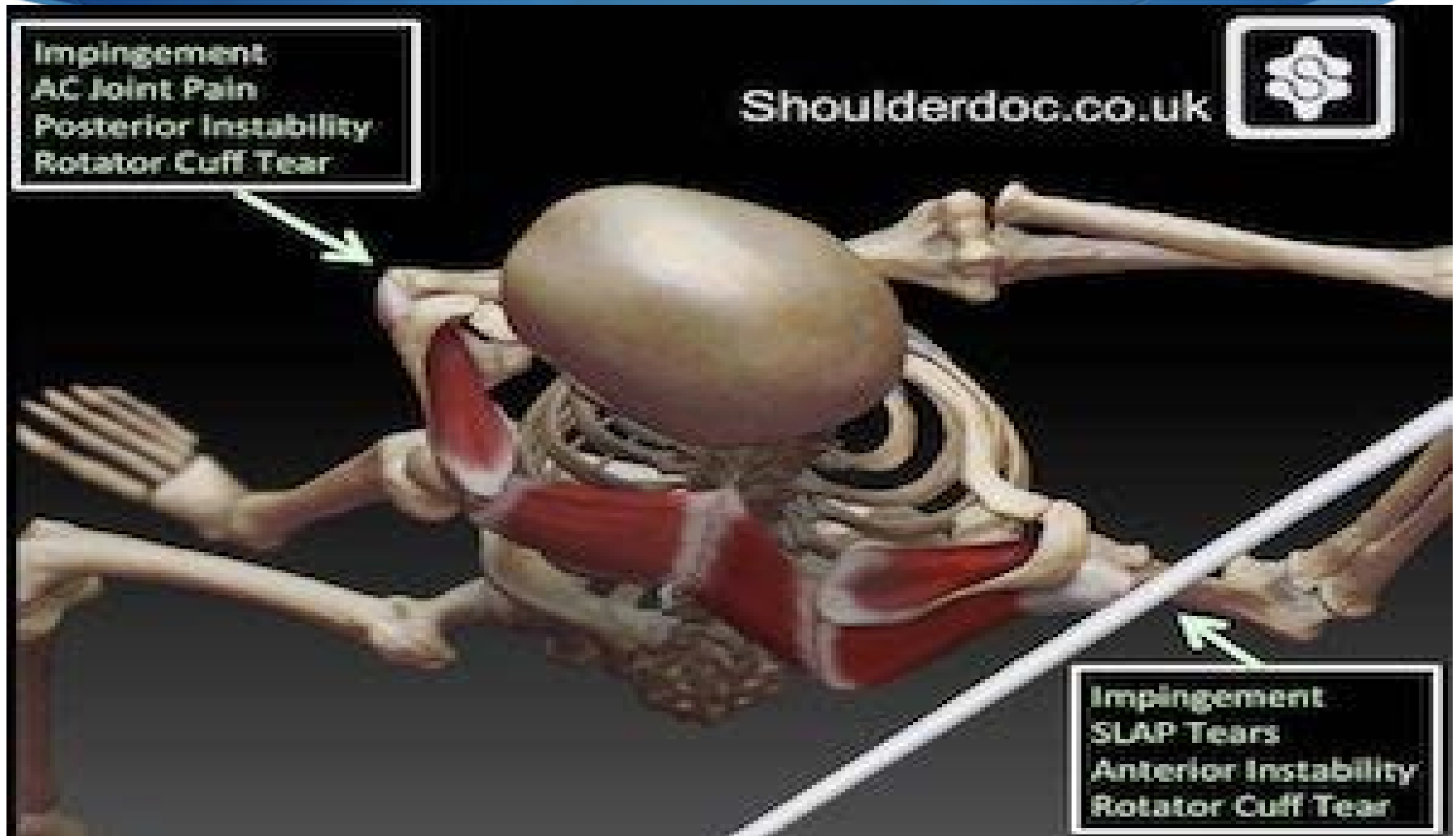
Shoulder Pain

- ◆ This is a very broad topic for pain and especially in golf.
- ◆ Shoulder pain specifically from golf typically occurs from an injury to the rotator cuff.
- ◆ The rotator cuff is a very important group of muscles that help to provide movement and stability to the shoulder.
- ◆ During the golf swing the leading shoulder is forced to stretch in an adducted position and the opposite shoulder is brought into an abducted and externally rotated position.
- ◆ This can lead to different injuries depending on the handedness of the golfer and shoulder.

Shoulder Pain

- ◆ The stresses that are put on the shoulders during a golf swing require not only strength but flexibility from the rotator cuff musculature and shoulder joint itself.
- ◆ Golf is not thought to be an overhead sport such as volleyball or a baseball pitcher but research shows that 30% of the golf swing is spent vertically elevated above 90 degrees.
- ◆ This combination of extreme shoulder movements and repetitions makes it very easy to get a rotator cuff injury such as a tendonitis, an impingement, or an injury to the shoulder joint capsule itself.

Shoulder Injuries



Shoulder Pain Prevention Exercises/Warm up

- ◆ Shoulder external rotation and internal rotation.
 - ◆ External rotation with a press.
- ◆ Shoulder warm-up and stretch.
 - ◆ Club behind back shoulder stretch.
 - ◆ Latissimus Dorsi stretch.

Physical Therapy for Shoulder Pain

- ◆ If your shoulder pain becomes worse or does not get better, it is time to see a physical therapist.
- ◆ Shoulder pain could be from a multitude of problems and if the problem is bad or just not getting better, it is important to see a physical therapist to find out the exact cause and begin therapy to resolve the issue.

Low Back Pain

- ◆ Low back pain is a very common problem that nearly 60-70% of Americans have dealt with.
- ◆ For golf, lower back pain is by far the most common ailment suffered regardless of age.
- ◆ Low back pain is rarely the **original** cause of the pain, but may seem like the only problem the golfer is having.
- ◆ Most often, the pain occurs from a result of abnormal motions or forces coming from other areas of the body which forces the lower back to do excessive work until it cannot handle the stresses any longer.

Low Back Pain

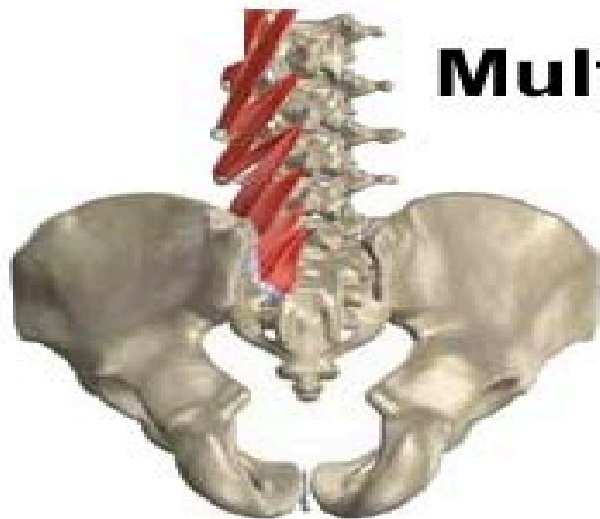
- ◆ Most likely a right handed player will have pain on the right side and vice versa for left handed players. Why?
- ◆ During a proper swing that incorporates the entire body, the player must rotate through their upper back and hips all while maintaining a proper low back posture.
- ◆ The lack of movement/mobility from the hips or upper back and/or a lack of core and abdominal strength causes the lower back to compensate and move more than it should.
- ◆ To be precise, the low back is built for stability while the player's upper back and hips are meant to provide the movement through the swing.

The Most Common Low Back Injury

- ◆ Muscle strain or ligamentous sprain. AKA: “pulled muscle”
- ◆ This is due to the repetitive nature of the golf swing and the golfer lacking control and endurance.
- ◆ The deep muscles of the back most importantly the Multifidus is often strained. It is a very important muscle for back stability and attaches inter-segmentally along the spine.
- ◆ The ligaments around the spine are also important for mobility but when the stabilizing muscles are injured they are not contracting correctly and more stress is applied to the ligaments for stability and this often leads to a sprain.

The Lumbar Multifidus

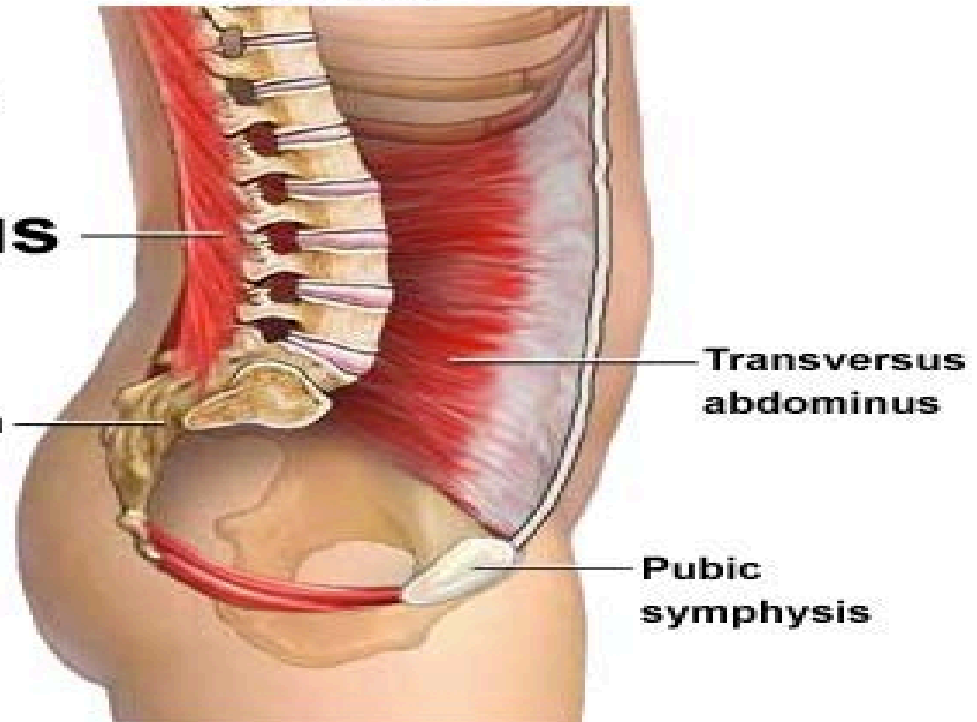
Insertion: Spinous processes of vertebrae



Multifidus

Sacrum

Side view



Transversus abdominus

Pubic symphysis

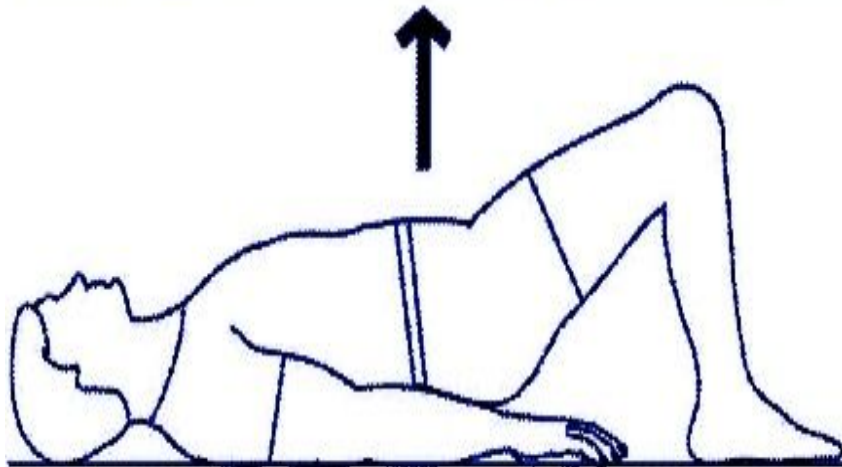
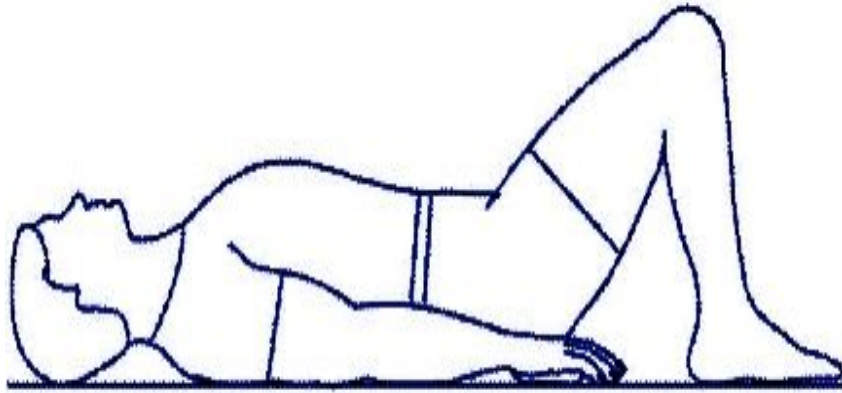
Origin: Transverse processes of vertebrae

Actions: Extension & lateral rotation of spine

Exercises For Low Back Pain Prevention

- ◆ Endurance is a BIG piece of low back pain prevention.
- ◆ Walking at least 30 minutes every day.
- ◆ Bridge Exercise
- ◆ Bird Dog
- ◆ Sit-ups

Bridge/ Bird Dog



Sit-Up



Physical Therapy for Low Back Pain

- ◆ A physical therapist will perform a complete evaluation and find the exact cause of your back pain.
- ◆ Back pain could come from multiple problems and can be very in depth.
- ◆ A physical therapist will look at your posture, normal movements, strength, flexibility, and find out about any other functional limitations that could be contributing to your pain and create a plan of care that is specific to you and address your dysfunctions.
- ◆ Physical therapists also know many manual therapy techniques that are great for treating low back pain.
- ◆ A typical treatment could include a combination of therapeutic exercises, manual therapy, patient education, activity modification/education, modalities, heat/ice, among other treatments.

Quick Warm Up

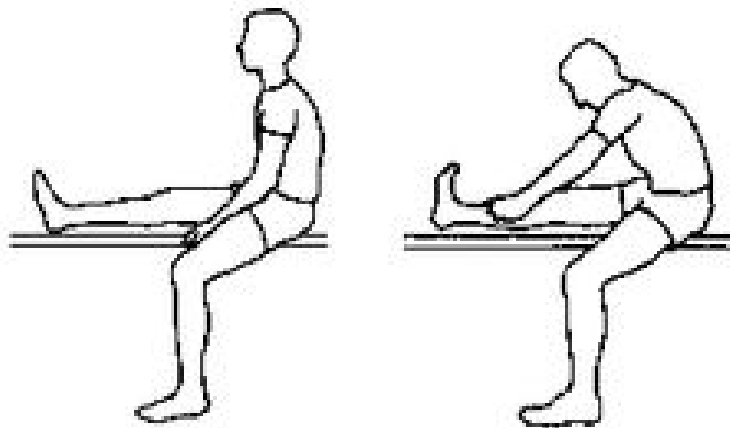
Goodmornings

Quadriiceps stretch



Shoulder Internal and External Rotation

Back Rotations with golf club



References

- ◆ 1. http://www.mytpi.com/articles/health/the_golfer's_guide_to_lower_back_pain_part_1. Accessed September 28, 2016.
- ◆ 2. <http://www.athletico.com/2015/05/28/lower-back-pain-in-golfers/>. Accessed October 2, 2016.
- ◆ 3. <http://www.jagpt.com/2013/04/golf-injury-prevention/>. Accessed September 28, 2016.
- ◆ 4. Cole MH, Grimshaw PN. The Biomechanics of the Modern Golf Swing: Implications for Lower Back Injuries. *Sports Med*. 2016 Mar;46(3):339-51. doi: 10.1007/s40279-015-0429-1. PubMed PMID: 26604102.
- ◆ 5. Preventing golf injuries. How to stay in the game. *Mayo Clin Health Lett*. 2013 May;31(5):6. PubMed PMID: 24701648.
- ◆ 6. <https://S-Media-Cache-Ak0.Pinimg.Com/Originals/98/8D/A7/988Da7b3526824b763ecef041a964789.Jpg>. 2016. Print.
- ◆ 7. Staehler, Richard A. and Peter F. Ulrich. "Treating Low Back Pain And Back Injury From Golf". *Spine-health*. N.p., 2016. Web. 25 September. 2016.