

A large, light gray silhouette of a golfer in mid-swing is centered in the background. The golfer is holding a golf club, and the swing is captured in a dynamic pose. The background is a light gray gradient with a dark red header at the top.

The CORE

**How to Prevent Low Back Injury &
Improve Your Golf Game**



Therapeutic Associates
PHYSICAL THERAPY

Presenters

Therapeutic Associates Physical Therapists

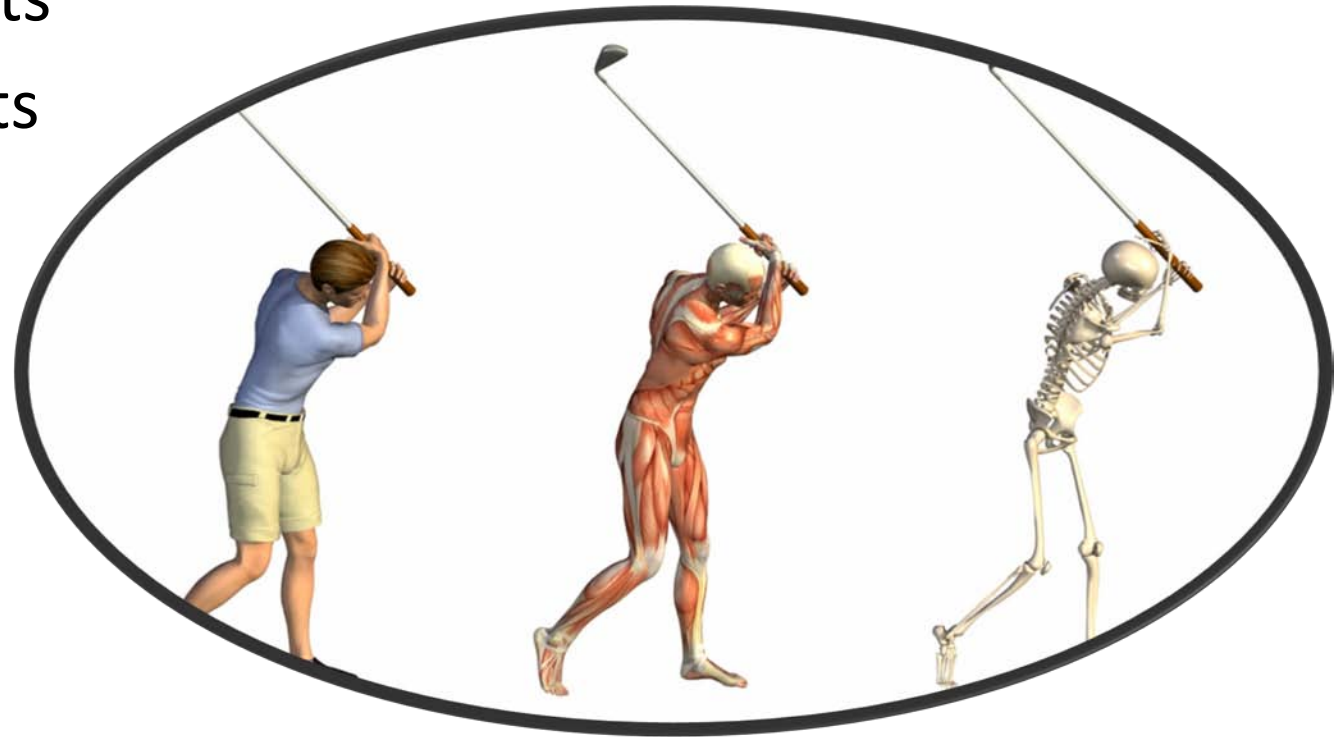
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Certified by the Titleist Professional Institute

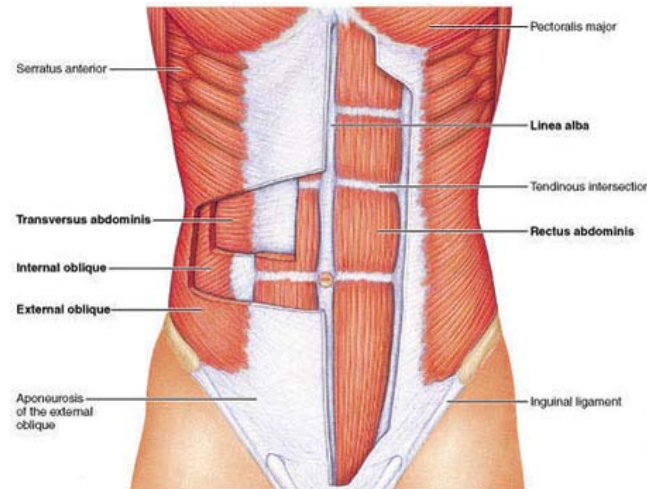
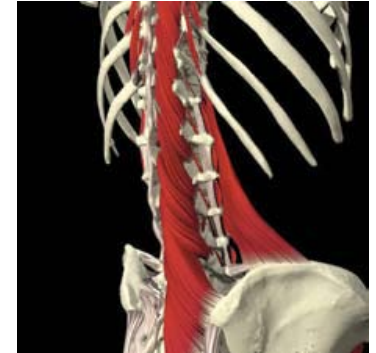
Topics

- Anatomy
- Core Function
- Impairments
- Swing Faults
- Back Pain
- Exercises



Anatomy

- What is the Core?
 - More than Just Muscles
 - Deep and Superficial layers of Muscles
 - Abdominal, lumbar, gluteal and pelvic floor muscles
- Why should I care?
 - Reduce injury
 - Improved Performance



Core Function

- Power vs. Stability
 - Power = ability to move something quickly
 - Global Muscles
 - Stability = body's ability to resist change
 - Local Muscles
- Efficiency
 - Balance of mobility, stability and power
- Consistency



Core Impairments

Common Core Impairments

- **Weakness**
 - Lack of strength in the deep abdominal muscles and gluteal muscles
- **Poor Joint Mobility**
 - Lack of flexibility in the Thoracic spine, Lumbar Spine, and/or Hips
- **Muscle Tightness**
 - Hip flexors, Hamstrings, Lats,
- **Muscle Imbalances**
 - Lumbar Erectors vs Abdominals and Glutes
 - Upper body (arms) vs Legs



You could argue that almost ALL swing faults can be related to Core Impairments.

Swing Faults

Poor Golf Posture

S Posture

Hyper extension or S-curve in low back.

- Tightness- Hip Flexors, lumbar erectors
- Weakness- All essential core muscles
- Muscle Imbalance- Erectors/Abdominals

C Posture

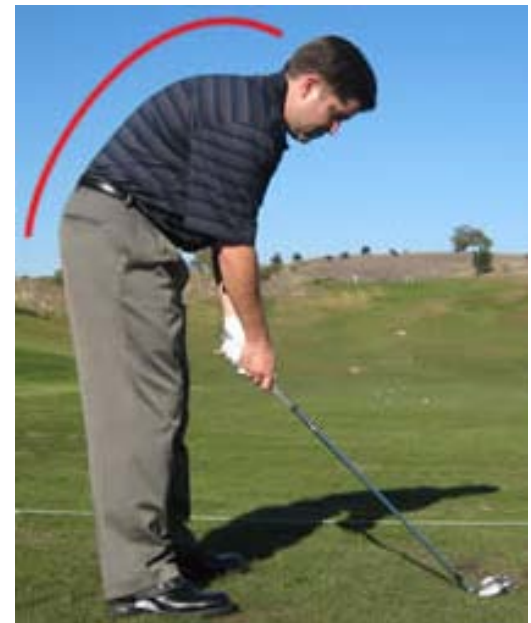
Rounded Spine

- Tightness- Hamstrings, Chest
- Weakness- All essential core muscles
- Muscle Imbalance- Upper/Lower body

Raised Trail Hip

Hips not level with trail hip higher

- Tightness- Trail lumbar mm's,
- Weakness- Abdominals, Glutes
- Muscle Imbalance- Erectors/Abdominals



Swing Faults

Loss of Posture

Loss of Posture

Any time correct golf posture is lost during the swing.

(Standing up, jumping, bending forward)

- Tightness- T. and/or L. spine, upper body,
- Weakness- All essential core muscles
- Muscle Imbalance- Upper vs Lower body, Erectors vs Abdominals



Swing Faults

Reverse Spine Angle

Reverse Spine Angle

When the spine is pointing down the line or tilting toward the target at the top of the back swing

- Tightness- Spine, upper body
- Weakness- All essential core muscles
- Muscle Imbalance- Upper/Lower body



Swing Faults

Sway/Slide Early Extension

Sway

Lateral movement of the body away from the target in the back swing

- Tightness- Trail Hip, T. and/or L. spine, poor ability to separate
- Weakness- glutes,
- Muscle Imbalance- Upper vs Lower body,



Swing Faults

Sway/Slide Early Extension

Slide

Lateral movement toward the target with the down swing.

- Tightness- T. and/or L. spine, Lead Hip
- Weakness- All essential core muscles (poor stability)
- Muscle Imbalance- Upper vs Lower body,



Swing Faults

Sway/Slide Early Extension

Early Extension

When the lower body moves toward the ball (Thrusts) during the down swing.

- Tightness- Spine, upper body
- Weakness- Abdominals/Stabilizers, legs/hips
- Muscle Imbalance- Upper/Lower body



Back Pain

Causes of Back Pain

Strength

Poor strength in the key core muscles leads to over use of other muscles such as lumbar erectors. The over use of the lumbar erectors while swinging increases tension in the muscles and increases compression forces causing pain. Proper strength is essential to stabilize the body during the swing so that excessive forces are not put on the back.

Flexibility/Mobility

Improper flexibility of joints or muscles decreases the ability to have correct posture and makes it difficult to maintain correct posture during the swing. Correct flexibility above and below the back is needed so that excessive force is not put on the low back causing pain.



Back Pain

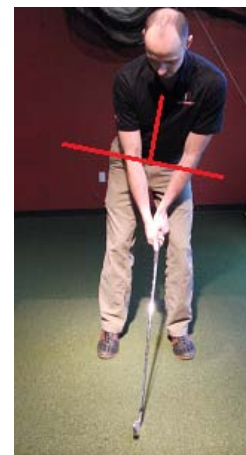
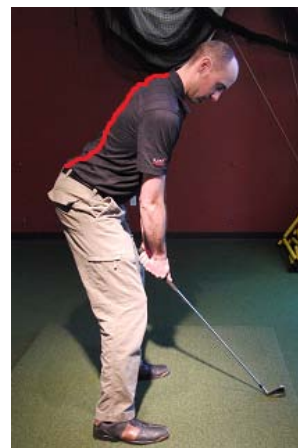
Swings that Cause Back Pain

Bad Posture at Address

C-Posture

S-Posture

Elevated Trail Hip



Reverse Spine Angle

Most common cause of back pain limiting golf.

Poor Kinematic Sequence

Back swing- poor separation, arching,
Down Swing- casting/reaching, excessive/rapid
side bend,
Follow Through- rapid deceleration,

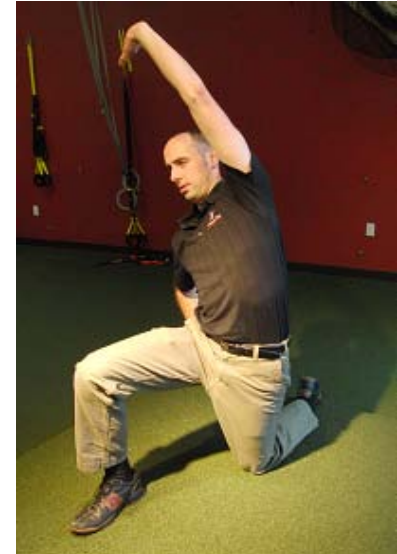


Golf Exercises

Stretches

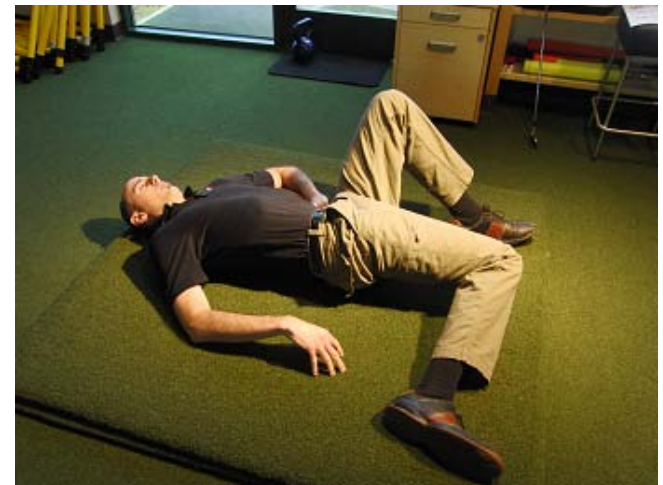
Lunge and Reach

- Kneel on one knee in a lunge position, tuck your hips under until a stretch is felt in the hip flexor. Then reach up and towards the knee that is up so that a stretch is also felt in your low back or lats.



Wind Shield Wipers

- Lay on your back with your knees bent and feet wide apart. Then bring one knee down toward the midline of the body so a stretch is felt in your hip.

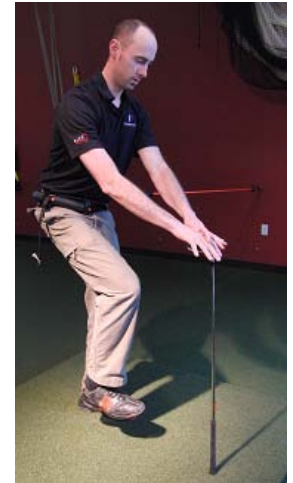


Golf Exercises

Functional Golf Strength

Hip Rotations

- Attach a band to a stationary object and around your hips then turn in circles so that the band is wrapped around your hips. Perform a slow back swing with your pelvis in neutral posture. Repeat with band resistance from both directions.
- (advance to single leg)



X-Reach

- Stand about 12-18 inches from a wall with feet a little wider than shoulder width. Holding a ball, squat down and touch your shin then reach up and over your opposite shoulder trying to touch the wall. Be sure to rotate your hips and maintain neutral pelvis.

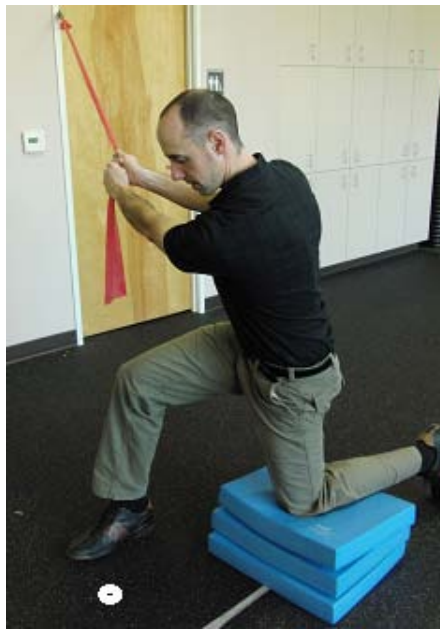


Golf Exercises

Functional Golf Strength

Back Swing

- Attach a band to a stationary object at the top of a door. Kneel on one knee with enough pads or pillows to keep your hips LEVEL (trail knee up).
- Concentrate on maintaining neutral pelvis/spine and efficient movement sequence.
- Optimal thorax/hip separation at the top and hips initiate the down swing.



Golf Exercises

Functional Golf Strength

Follow Through

- Attach a band to a stationary object at waist height or the bottom of a door. Kneel on one knee with enough pads or pillows to keep your hips LEVEL and lead knee up.
- Concentrate on maintaining neutral pelvis/spine and efficient movement sequence.
- Optimal rotation into the lead hip with smooth follow-through.



Thank You!



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