

# GOLFER'S GUIDE TO LOW BACK PAIN

EMPOWER U PT & PERFORMANCE



# PURPOSE

To keep golfers on the course by improving their resilience with Golf Fitness and to help golfers return to the course quickly after injury.

**FEEL BETTER. MOVE BETTER. SCORE BETTER**

If you have any questions after reading this guide and want to learn more, please reach out by [clicking here](#). Enjoy!

-Dr. Trevor

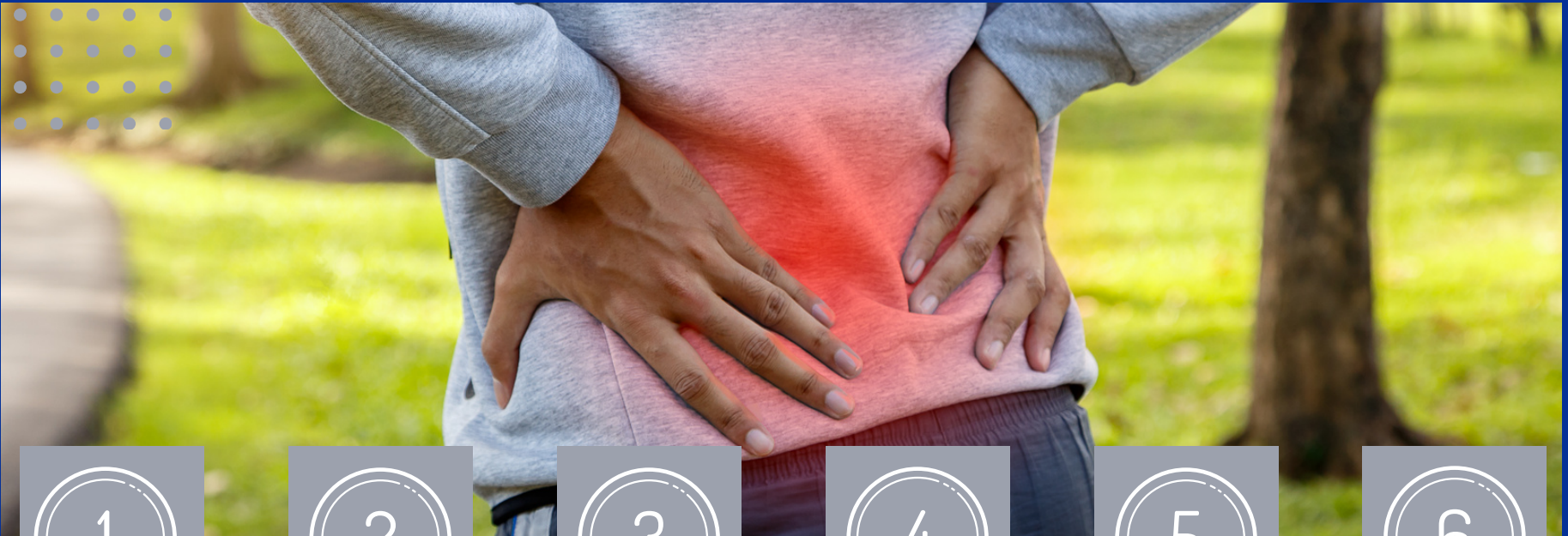
# INJURY PREVALENCE IN GOLF



## #1 Golf Injury - Low back pain

- 25% of all injuries
- “Based on data collected at TPI from over 31,000 golfers, 28.1% of all players deal with lower back pain after every round.”
- Most commonly on trail side of the low back

# WHY DOES YOUR BACK HURT?



1

**Golf  
Swing  
Demands**

2

**Cumulative  
Load  
Theory**

3

**Acute to  
Chronic  
Workload  
Ratio**

4

**Muscle  
Demands**

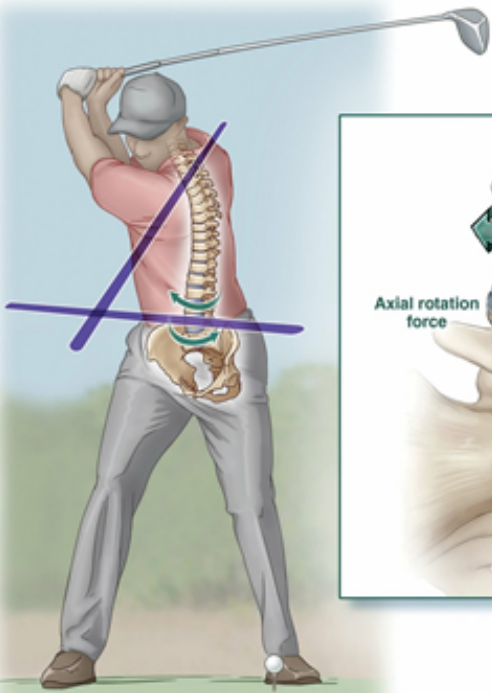
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**Multifactorial  
Nature of  
Pain**

6

**Swing  
Characteristics**





Top of the Back Swing: "X-Factor"



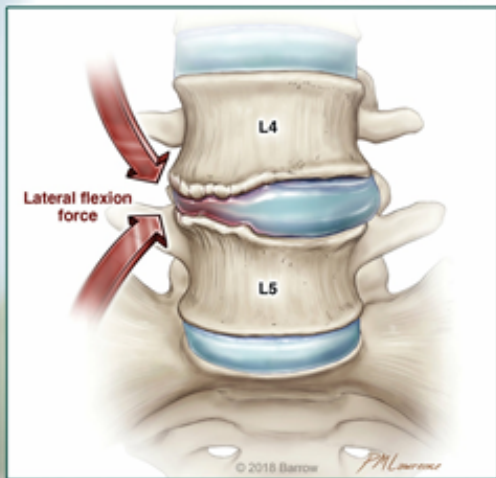
# GOLF SWING DEMANDS

1 full golf swing places 8x your bodyweight of compressive loads through your lumbar spine.

Running only places 3x your body weight worth of compressive loads on the back.



Down Swing: "Crunch"



# CUMULATIVE LOAD THEORY

The total stress placed on a system over time and suggests a load threshold exists which, when crossed, leads to tissue breakdown and injury.

- 60 full swings per round for amateur golfer
- 40 full swings per round for professional

*Now imagine the number of swings per week, per month, per year, and per lifetime that golfer takes...the cumulative load and force placed on the back now becomes even larger.*

# ACUTE TO CHRONIC WORKLOAD RATIO

Ratio comparing short term (7 day) load to long term (28 day) load placed on the body.

*Whenever there is a drastic change in your short-term activity level, such as number of golf swings, then your injury risk increases.*

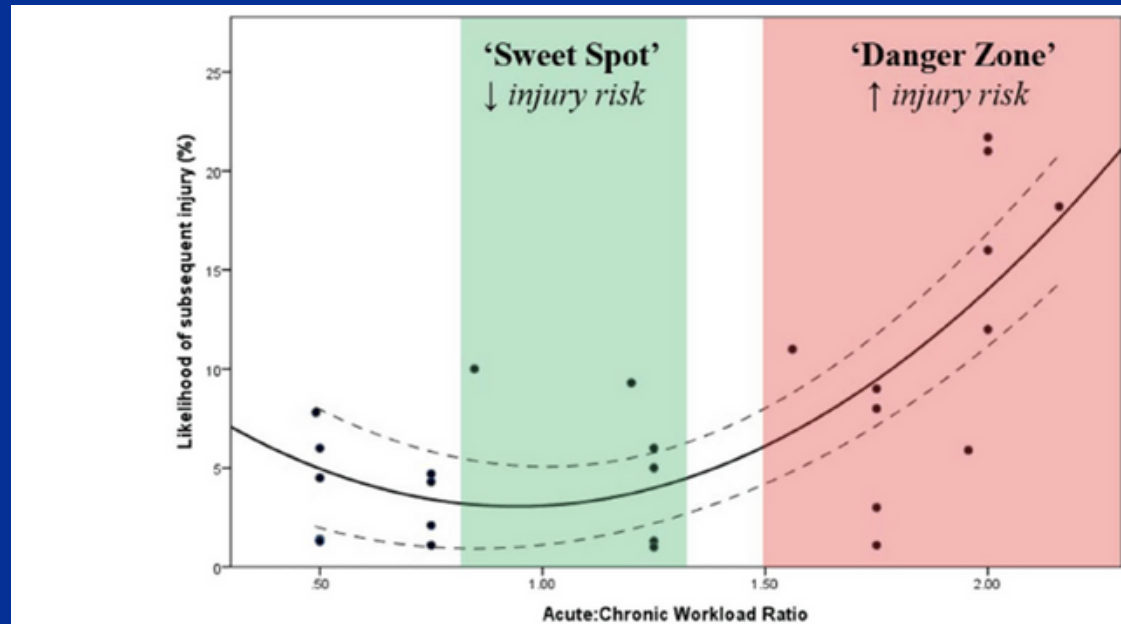


Figure 6 Guide to interpreting and applying acute:chronic workload ratio data. The green-shaded area ('sweet spot') represents acute:chronic workload ratios where injury risk is low. The red-shaded area ('danger zone') represents acute:chronic workload ratios where injury risk is high. To minimise injury risk, practitioners should aim to maintain the acute:chronic workload ratio within a range of approximately 0.8–1.3. Redrawn from Blanch and Gabbett.<sup>46</sup>

**Sweet Spot** - Stay in the 80-120% range of activity you are used to over 7 days and you'll lower your injury risk.

# MUSCLE DEMANDS

## Asymmetrical Muscle Strength

- Increased rotational trunk strength in the direction of the target
  - *Larger imbalance with people in low back pain*

## Fatigue

- Erector spinae are fatigued by the end of a full round of golf
  - More fatigue = less stability provided to lumbar spine
  - *Reduced core and back musculature endurance found with people in back pain*



Erector Spinae



# MULTIFACTORIAL NATURE OF PAIN

"Pain is a complex experience that is produced by the brain when it perceives that danger to body tissue exists and that action is required."

## Factors that impact Pain

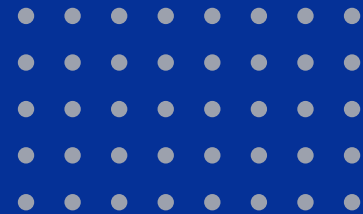
- Sensations from Tissue
- Immune Function
- Stress
- History of trauma (emotional or physical)
- Fear Avoidance
- Job Dissatisfaction
- Disturbed Sleep Patterns
- Previous Pain Experiences
- Failed Treatments





# SWING CHARACTERISTICS

Certain characteristics have been found by Titleist Performance Institute to be linked to increased back pain and injury rate.



# SWING CHARACTERISTICS



## Reverse Spine Angle

Any excessive upper body backward bend (trunk leading towards the target) or excessive left lateral upper body bend, for a right handed golfer, during the golf swing.

### One of the Prime causes of Low Back Pain during golf

- Increased tension on the low back during the backswing.
- Excessive compressive loads placed on the right side of the spine at impact.



## S-Posture

Golf set up Posture characterized by excessive arch in the lower back

This excessive curvature places high stress on the low back and causes the core muscles to be placed in a position where they cannot be as effective.



## Excess Sidebend

Excessive Trailside side bending during the downswing

For the Right handed golfer, leaning to the Right on downswing through impact causing increased compression on the right side of the back.

"Side bending through impact is one of the main contributing factors to trail side spinal injury."

# SWING CHARACTERISTICS



## Excess Flexion

Excessive Bending Forward or Flexion during the swing

Setting up and swinging through the golf swing with increased forward bend at the hips or in a greater “slouched” position can be a position that, once combined with rotation movement of the golf swing, will place more stress on the low back.



## Sway

Excessive lower body lateral movement away from the target during the backswing.

This characteristic shifts more weight on the outside of your trail foot and has been linked to S-posture and Reverse Spine angle due to rotating around a tilted platform.



## Slide

Excessive lower body lateral movement towards the target during the downswing.

This characteristic is linked to loss of power, but also linked to limited ability to have efficient rotation of the trunk and hips towards the target causing increased load placed on low back.



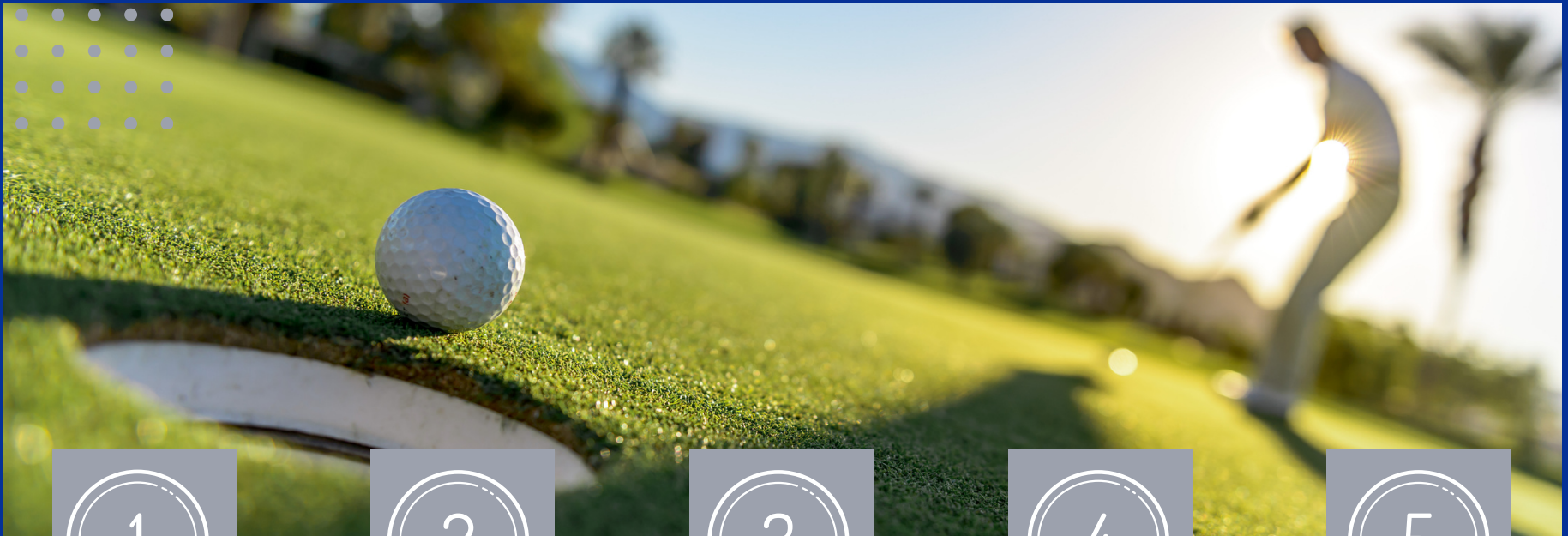
# PHYSICAL PREDICTOR OF LOW BACK PAIN IN GOLFERS



Side Plank difference  $>12.5$  seconds between sides has been linked to low back pain in golfers.

*Try it at home and see if there is any difference between sides!*

# HOW TO PREVENT & ADDRESS LOW BACK PAIN IN GOLFERS



**Swing  
Modifications**



**TPI  
Physical  
Screen**



**Golf  
Fitness**



**Prioritize  
Sleep**



**Individualized  
Physical  
Therapy  
Assessment**

# SWING MODIFICATIONS TO REDUCE LOW BACK PAIN

- **Ensure proper set up position**
  - Ensure ball is not too far back in stance
  - Ensure pelvis is in neutral position
- **Reduction of side bend angle on downswing by 10%**
- **Reduce S-posture & Reverse Spine Angle**
  - Reduce elevation of R sided pelvis in backswing
  - Improve hip and thoracic spine rotation
- **Reduce Early Extension**
  - Proper Club Fitting
  - Proper distance from ball



FITNESS HANDICAP: 25

**Screen Type**  
TPI PHYSICAL SCREEN

**TPI Certified Instructor**  
TREVOR HIRSCH

**Date**  
7/27/2018

# TPI PHYSICAL SCREEN

## Pelvic Rotation

Result: **F**

The Pelvic Rotation Test checks your ability to rotate the lower body independent of the upper body. This is an important skill needed for properly sequencing the downswing and to allow for a good separation between the upper and lower body. This movement requires good mobility of the spine, hips and pelvis, along with simultaneous stability of the thorax.

You have difficulty rotating your lower body independent of your upper body. This can prevent you from initiating the downswing with a proper sequence and limit the coil between your upper and lower body.

## Lower Quarter Rotation

Result: **F**

The Lower Quarter Rotation Test measures rotational mobility of both the left and right lower extremities (this includes the hips, knees and ankles) in the backswing to determine if there may be an increased chance of excess lateral motion (Sway) or Loss of Posture.

When turning in the same direction as your backswing, you have limited rotation on your right (trail) lower extremity and normal rotation on your left (lead) lower extremity. Any reduction in rotation on the right lower extremity can lead to an inability to rotate properly without losing posture during the backswing.

- Titleist Performance Institute's research based 16-point assessment performed on 1000's of amateurs and PGA tour players to correlate with particular swing characteristics and injuries
- Provides Fitness Handicap Score
- Design Individualized Exercise program based on results



# GOLF FITNESS

**Golf Proof body by improving resilience to repetitive golf swings and to reduce injury risk.**

Fitness interventions driven at improving:

- Mobility of hips and thoracic spine
- Improve Strength and Endurance in back, glutes, and core musculature



## The Human Body's Normal Pattern Of Segments And Joints

Foot	Stable
Ankle	Mobile
Knee	Stable
Hip	Mobile
Pelvis/Sacrum/Lumbar Spine	Stable
Thoracic Spine	Mobile
Scapulo-Thoracic	Stable
Gleno-humeral / Shoulder	Mobile
Elbow	Stable
Wrist	Mobile



STABILITY

MOBILITY

Adapted from TPI

**Customized Golf Fitness program should focus on Facilitating Body's naturally alternating stable and mobile joints.**

# PRIORITIZE SLEEP

- Sleep 7-9 hours/night for proper recovery.
- Chronic Sleep Deprivation linked to:
  - Diabetes, Heart Disease, High Blood pressure, & mood disorders
- Lack of sleep is a risk factor for obesity.
- "Sleeping five hours or less per night increased mortality risk from all causes by roughly 15 percent" (Harvard). "At least 50% of individuals with insomnia...suffer from chronic pain."

Adapted from Signature MD

## 10 TIPS FOR *Better Sleep*

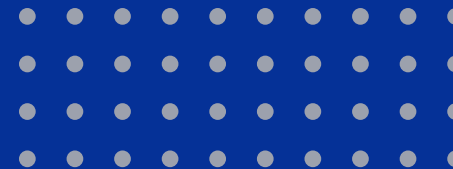
1.  **MAINTAIN A CONSISTENT DAILY SCHEDULE**
2.  **REDUCE YOUR DAILY CAFFEINE INTAKE**
3.  **TURN OFF THE COMPUTER OR TELEVISION**
4.  **DONT GO TO BED ON A FULL STOMACH**
5.  **DONT GO TO BED ON AN EMPTY STOMACH**
6.  **ENGAGE IN REGULAR EXERCISE**
7.  **LIMIT BEVERAGE CONSUMPTION BEFORE BED**
8.  **KEEP YOUR BEDROOM DARK & QUIET**
9.  **INVEST IN A COMFORTABLE MATTRESS, PILLOW & BEDDING**
10.  **GO TO SLEEP AND WAKE UP USING YOUR INTERNAL ALARM CLOCK**



# INDIVIDUALIZED PHYSICAL THERAPY ASSESSMENT

Essential to diagnosing and treating underlying root cause of symptoms.

Your Doctor of Physical Therapy will utilize techniques and find movements for you to perform to help reduce symptoms while treating the root cause.



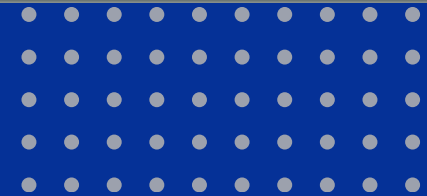
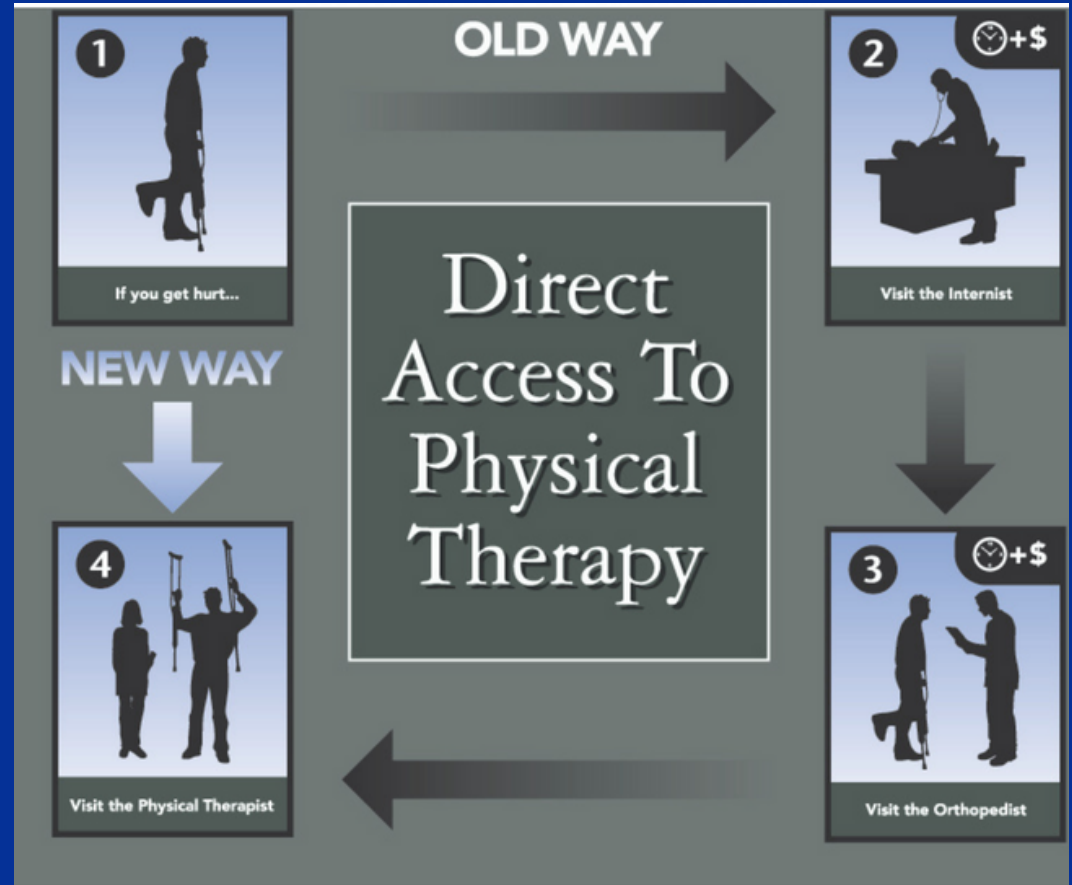


# WHAT IS GOLF SPECIFIC PHYSICAL THERAPY?

- Comprehensive physical assessment
- Video analysis of golf swing
- Individualized treatment

# DIRECT ACCESS TO PRIMARY CARE PHYSICAL THERAPY

## AVAILABLE IN ALL 50 STATES





**Interested in how to apply all this information to you?  
Interested in adding Years & Yards to your swing?**

**[Click Here](#) to contact us for a FREE discovery  
session.**



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