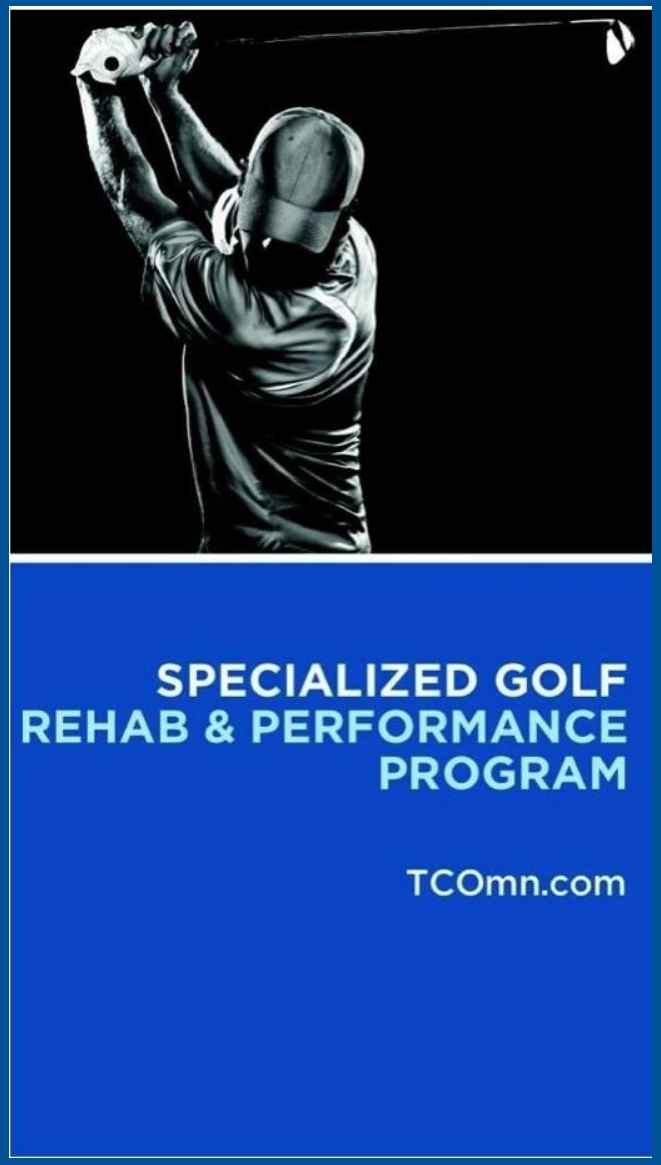

Tee'd Up for Golf Therapy

Brandon Schomberg
PT, DPT, OCS, SCS, CSCS, CGFI-MP3

With Colleague
Matt Stewart, DPT

TWIN CITIES ORTHOPEDICS

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BACKGROUND

- THERAPY / MILITARY / GOLF (hack)
- TITLEIST PERFORMANCE INSTITUTE CERTIFIED (TPI) - MEDICAL LEVEL THREE
- USGTF-GOLF TEACHING FEDERATION TRAINED
- TCO GOLF MEDICINE PROGRAM
- PUBLISHED AUTHOR- STRENGTH & CONDITIONING FOR GOLF INJURIES: ORTHOPEDIC SECTION APTA (2015)

USGTF UNITED STATES GOLF TEACHERS FEDERATION — Leader in the Field of Golf Instruction —

CERTIFIED

PHYSICAL THERAPY
UNIVERSITY OF MINNESOTA

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Things you're not going to learn...

- How to make it on the PGA tour.
- How to be the next Tiger Woods.
- How to hit "hole-in-ones."
- The best golf swing to eliminate the two way miss.
- How to ask your clinic manager for a golf simulator.

Do you know why there are 18 holes on a golf course?
Because that's how long it took the Scotts who invented the game to finish their bottle of whiskey!

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Learning Objectives

Understand “Golf Therapy” Objectives

- Golf Terminology
- Golf Injuries
- Golf Swing

Rehab your Golfer

- Pearls
- Warming Up
- Return to Play
- Golf’ish Exercises

Review of TCO Golf Medicine Services

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Golf is fun...

Golf Injuries:
Prevention & Management

Independent Study Course 25.2.2

Strength & Conditioning for Golf Injuries

Brandon E. Schomberg, DPT, OCS, SCS, CSCS, CGFI-MP3
Twin Cities Orthopedics, Minnesota

COURSE DESCRIPTION

This 3-monograph series will educate the registrant on the kinesiology of the golf swing, injury prevention strategies, and comprehensive rehabilitation program design. The authors have exceptional backgrounds and experiences in treating the golf athlete. Each monograph is designed for the registrant to be able to immediately apply the content to patient care. In addition to the written work, one author has created a library of video clips showing numerous exercises that can be used at various stages of rehabilitation.

COURSE OBJECTIVES

1. Cite the incidence and prevalence of common injuries of the golfer.
2. Identify the postures, mechanics, and pathomechanics associated with the golf swing.
3. Identify common golf injuries according to etiology and body region.
4. Develop intervention strategies to minimize golf injuries. Identify key elements during each phase of the golf swing motion, including grip, address, backswing, downswing, impact, and follow through.
5. Identify the kinematic requirements of the critical body segments during each phase of the golf swing.
6. Identify at least 3 examples of different swing styles based on differing body types.
7. Identify and differentiate between efficient and faulty swing characteristics.
8. Describe how the stretch-shorten cycle and ground reaction forces contribute to maximum club head speed at impact.
9. Describe which phases of the golf swing motion increase the torsion, compression, and shear in the lumbar spine.
10. Identify stress potentials in the upper and lower extremities during the golf swing.
11. Apply knowledge of the golf swing to assist in designing rehabilitation programs and improving performance.
12. Apply evidence-based strength and conditioning concepts to assist golf athletes of all skill levels with injury prevention and improved golf performance.
13. Appreciate the role of the neuromuscular system in generating an optimal golf swing.
14. Explain general timelines, precautions, and contraindications for safely returning to golf.
15. Apply clinical screening tools for functional analysis of the golfer and assist in developing injury prevention programs and proper golf warm-up routines.

AUTHORS

- **Kinesiology and Biomechanics of the Golf Swing**
  Ada Wells, MPT, PMA®-CPT, TPI-Level 3 Medical
- **Strength & Conditioning for Golf Injuries**
  Brandon Schomberg, DPT, OCS, SCS, CSCS, CGFI-MP3
- **Common Golf Injuries**
  Steven Pavlet, PT, DPT, MS, OCS, ATC

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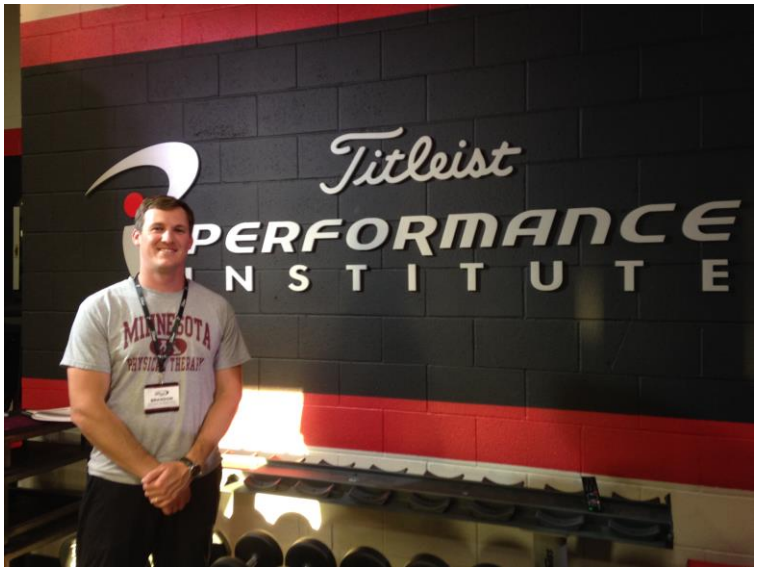
CONTINUING PHYSICAL THERAPY EDUCATION
ORTHOPAEDIC SECTION
APTA American Physical Therapy Association

No Financial Disclosures

Just here to share information to collectively improve our patients, golfers, and promote the skills of our Golf Specialty Interest Group (SIG) within TCO.

Goals:

- **Increase your Competence with Golfers**
- **Improve Patient Outcomes & Performance**



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TPI Level One Instructor (Baseline)

Multiple Tracks:

Medical, Golf Pro, Fitness, Junior, Power

L1

TPI CERTIFIED LEVEL 1

It all starts here.

Level 1 teaches the foundational concepts behind the Body-Swing Connection™. In this online Certification class, students learn to quickly evaluate a player's physical readiness using TPI's physical assessment screen and how the results of that assessment are correlated to the player's swing characteristics. This is the class that changed the trajectory of the golf fitness industry.

Use this line…

- TPI's Philosophy of the Swing: **"We don't believe there is one way to swing a golf club; we believe there are an infinite number of ways to swing a club. But we do believe there is one efficient way for everyone to swing and it is based on what they can physically do."**

Movement Matters:

The golf swing is a reflection of how you move.

Past athletic participation will influence how the golfer moves.

Two Minutes of Fame…..When it All Started

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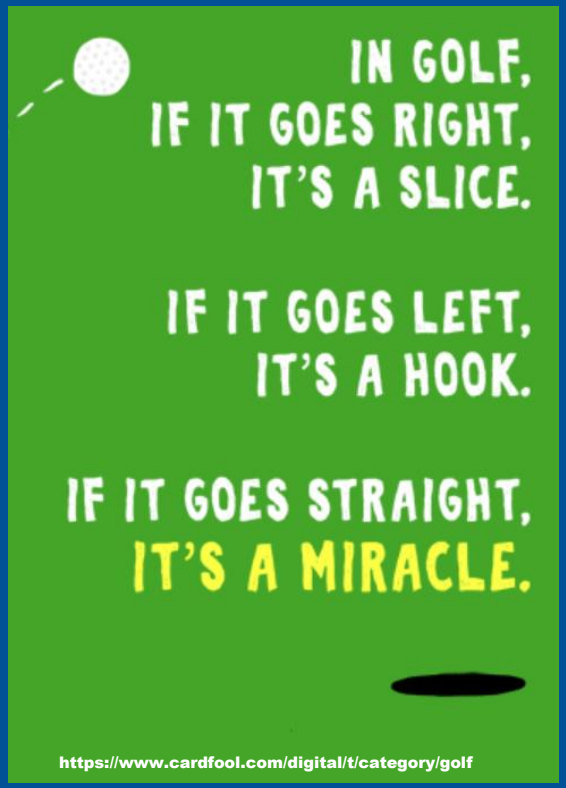
Speak the Golf'ish language

- Learn the basic terminology



https://www.cardfool.com/digital/t/category/golf

https://society6.com/product/talk-birdie-to-me-funny-golf-golfer-golfing_print

Speak Golf: 4 PHASES

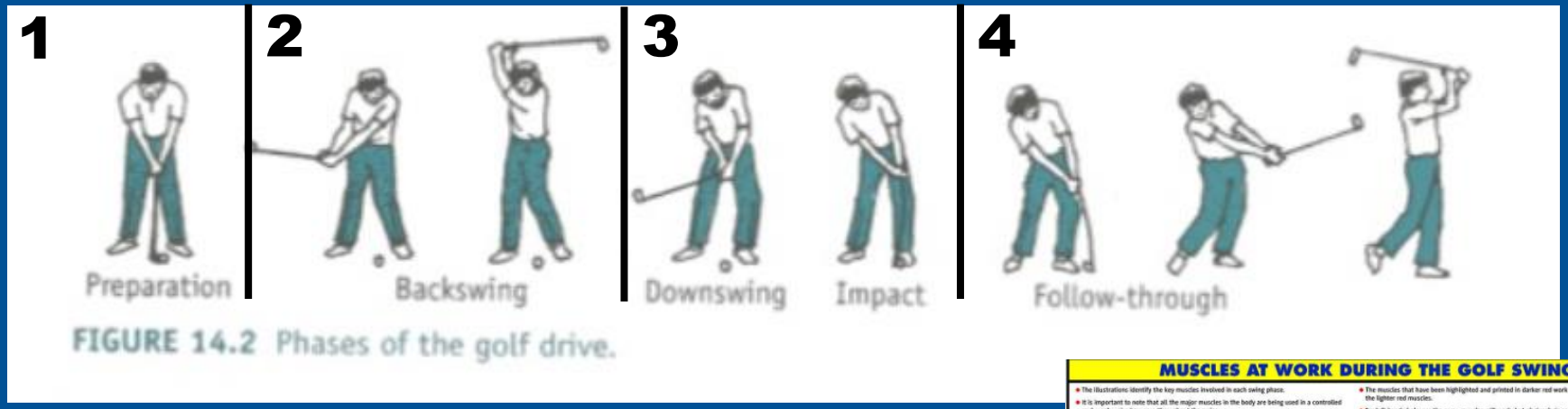


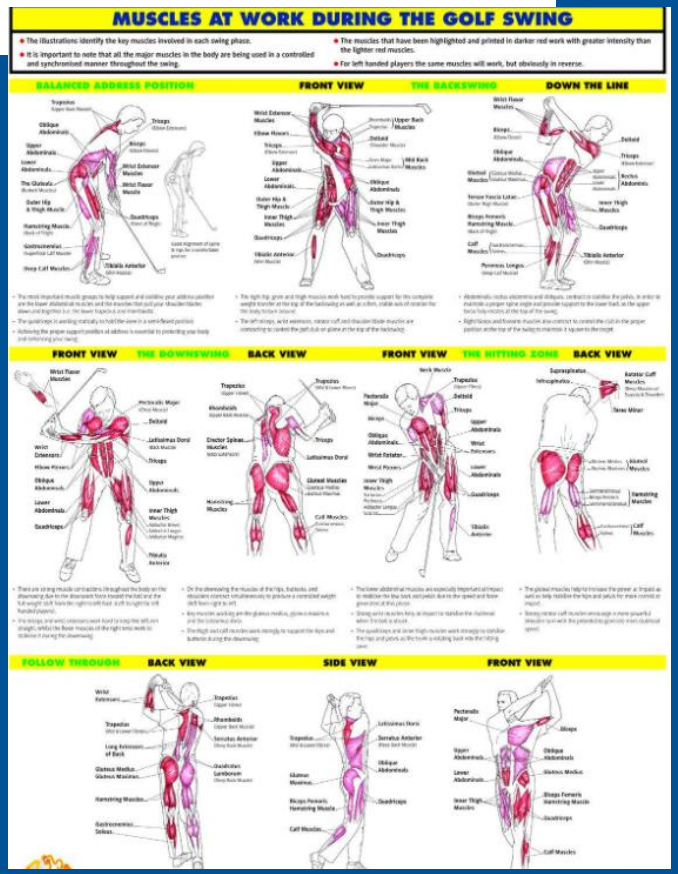
FIGURE 14.2 Phases of the golf drive.

1. **Address** (Set-up, Preparation, Takeaway)

2. **Backswing** (Transition)

3. **Downswing** (Impact)

4. **Follow Through**



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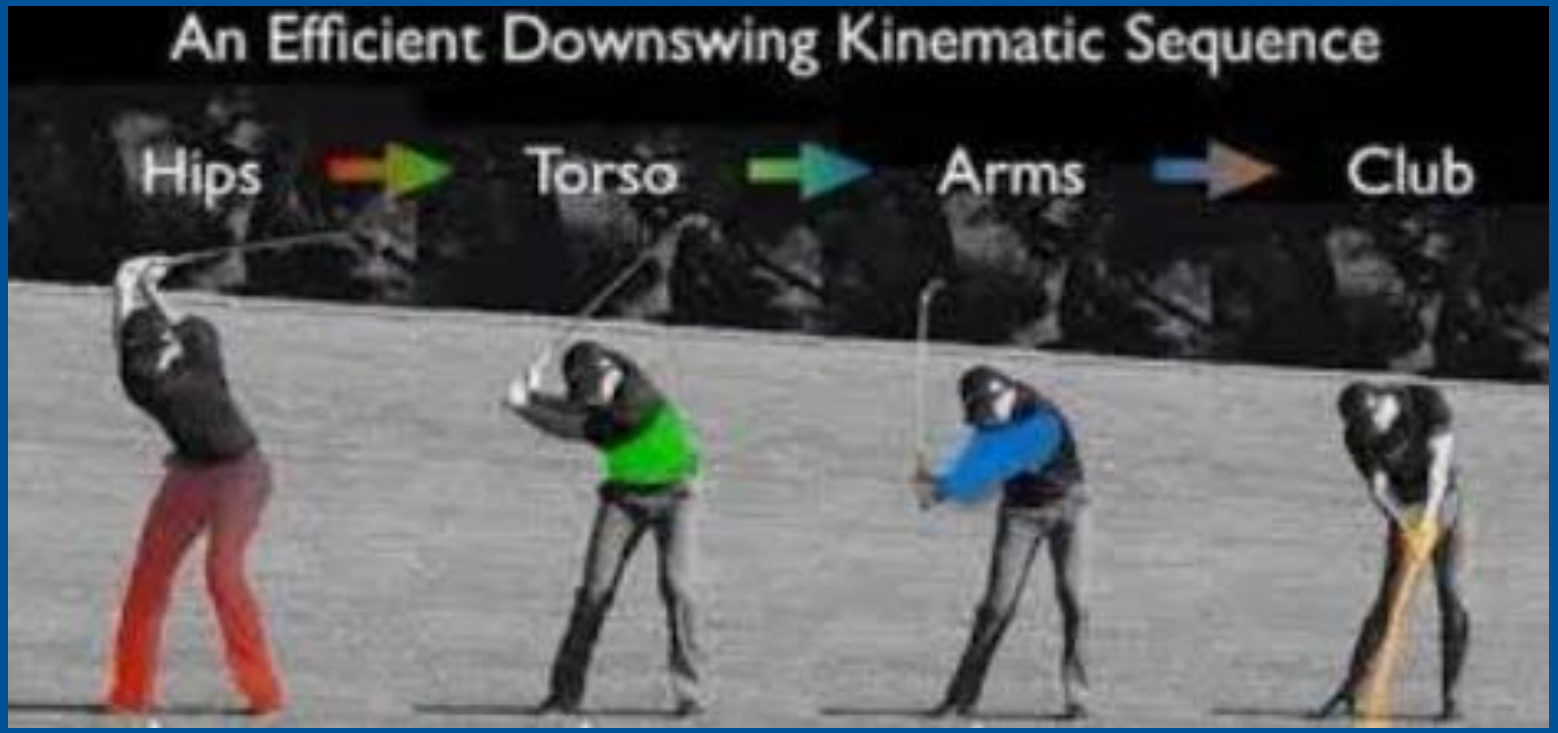
How Does a Golfer Move…

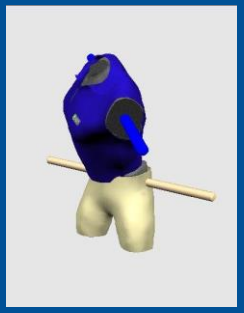
Kinematic Sequence: Efficiency of the golf swing with how the golfer generates speed and transfer the speed of energy throughout their bodies. <u>Each player is unique.</u>

Transfer of Energy: Speed of Lower Body→ Torso → Arms → Club

Key Points:

Each segment builds on the previous, increasing speed/energy up the chain.
Each segment of the chain slows down as the next segment accelerates (i.e. whip).



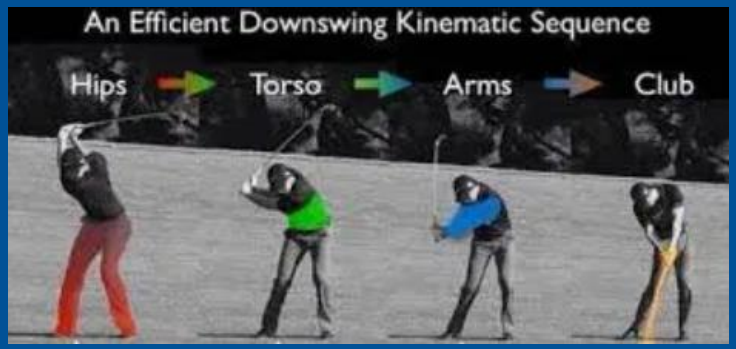


Kinematic Sequence

Maximum pelvic rotation velocity[9]

Professionals:
477 +/- 53 deg/sec

Amateurs:
395 +/- 53 deg/sec



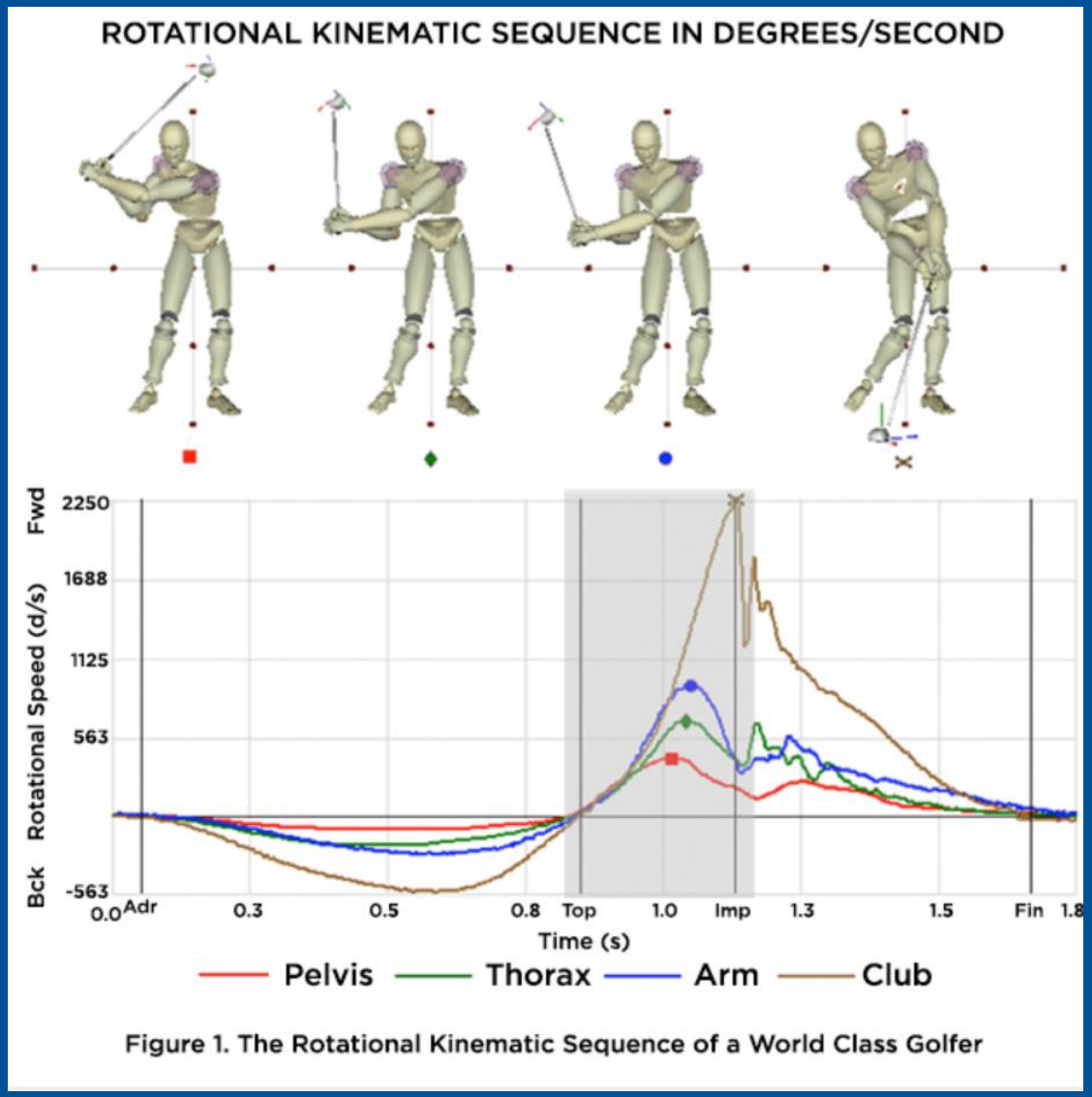


Figure 1. The Rotational Kinematic Sequence of a World Class Golfer

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Golf Rehab: Improve Your Outcomes

Speak golf early. “The 5 E’s” Learning recheck from JW’s presentation

Engage, Empathize, Educate, Enlist, End

Incorporate golf rehab early on. First visit is ideal for therapeutic alliance.

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Questions to Consider for Golfers

What is your timeline or expectation?

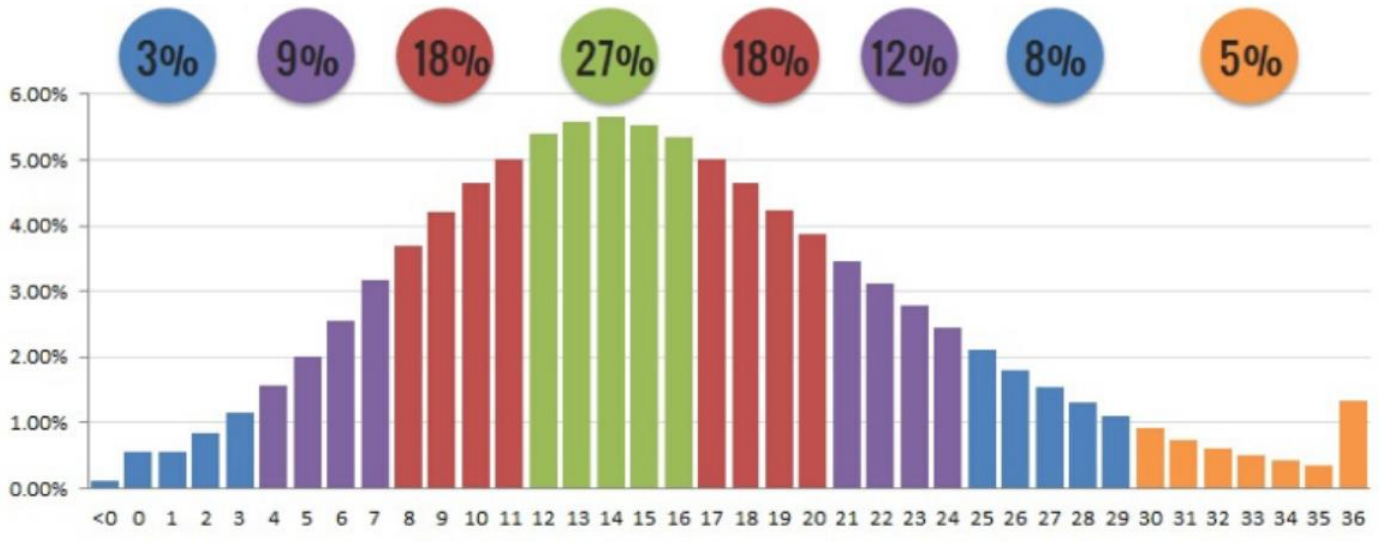
Are you a member anywhere? How often do you play?

Do you work with a golf pro or personal trainer?

Do you like to walk or ride?

What's your handicap index? (lower number is better)

Toss a plug in for TCO Golf Medicine.



https://blog.nextgengolf.org/golf-help/what-is-a-golf-handicap

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Know Your Golfer- Topics to Consider

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Main Takeaways

- Understand your *golfer's goals*
- Create a *team* approach – work with the team
- Be *creative, use best evidence,* and have golf'ish fun

(Avoid Boredom)

https://www.golfpunkhq.com/news/article/golfs-positive-impact-on-society-

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Popularity

About 55 million people in 206 countries worldwide play golf, making it one of the most popular sports in the world.[10]

Up to ⅔ of golfers may experience some type of injury at some point in their playing career, annual injury rates with professionals population between 31.0% and 90.0%![15]

Low back injuries are the most common (up to 35% for amateurs). Other common injury sites include the elbow, shoulder, wrist, and knee- 46.2% during swing itself[15]

~Injury Rates: (Varies)

Spine (18.3–36.4%)

Elbow (8.0–33.0%)

Wrist and Hand (10.0–32%)

Shoulder (4.0–18.6%)

Foot and Ankle (10-13%)

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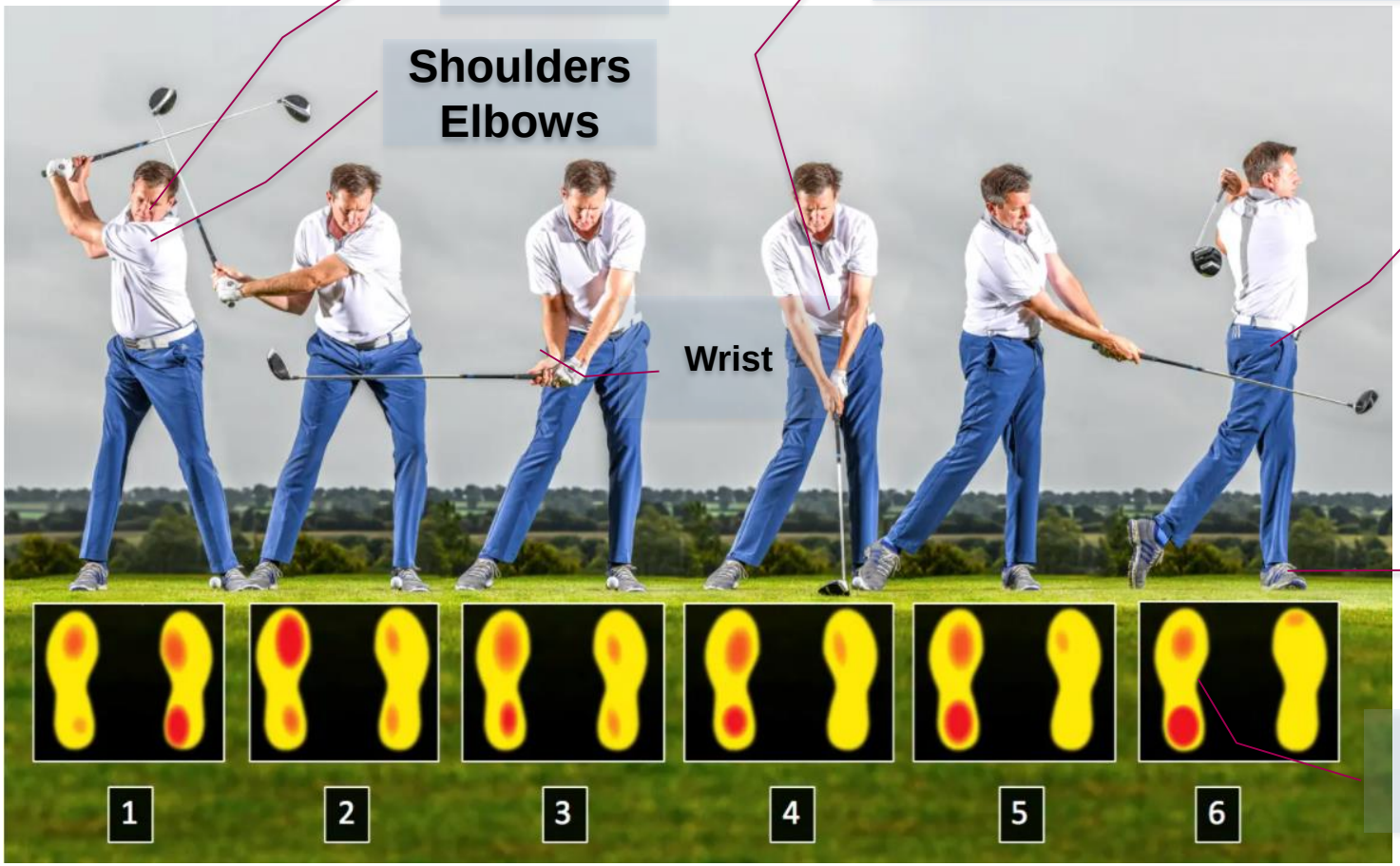
Transition



https://www.todaysggolfer.co.uk/tips-and-tuition/swing-drills/video-tips/2019/pressure-tactics-improve-your-transition/

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Transition: Weight Transfer

Golf Injuries

- Majority of golf injuries are from overuse, and poor swing mechanics.[1,2]

- Warm-ups are NOT popular among recreational golfers
  - 35-71% of golfers seldomly to never warm up.[4]

Other Traumatic: struck by golf ball/shaft/clubhead, golf cart crash, getting in/out bunkers, falls, holes, etc.

https://www.golfdigest.com/story/country-music-star-crashes-golf-cart-after-day-drinking-round-goes-awry

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Transition from Mobility to Stability

- Golfers struggle with the same things our patients struggle with.
  - Ideally, we are mobile throughout the thoracic spine, mobile throughout the hips, with a very stable core
  - Most golfers (and patients) are the opposite

- The complexity of the golf swing can highlight these **IMBALANCES**

- Stabilizing newly gained motion is paramount

Injured Golfers

On average, 80% of ALL golfers will sustain at least one injury[6].

Think of the Four Principles

- Phase I: *Healing*- low intensity stabilizing exercises
  - Work on ROM & stability with other limbs
- Phase II: Intermediate rehab-medium intensity
- Phase III: Higher intensity strengthening
- Phase IV: Strength progression & power = transition into sport requirements
- GETTING ***GOLF READY*** DURING EACH PHASE

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TITLEIST PERFORMANCE INSTITUTE

Common Injuries with Golfers

Low Back Pain: Most Common- **80% will be right sided[6]**.

Other most common limitations: sprains and strains, tendinopathies, arthritis, disc injuries, etc.

Usually poor mechanics or overuse but likely a combination of the two.

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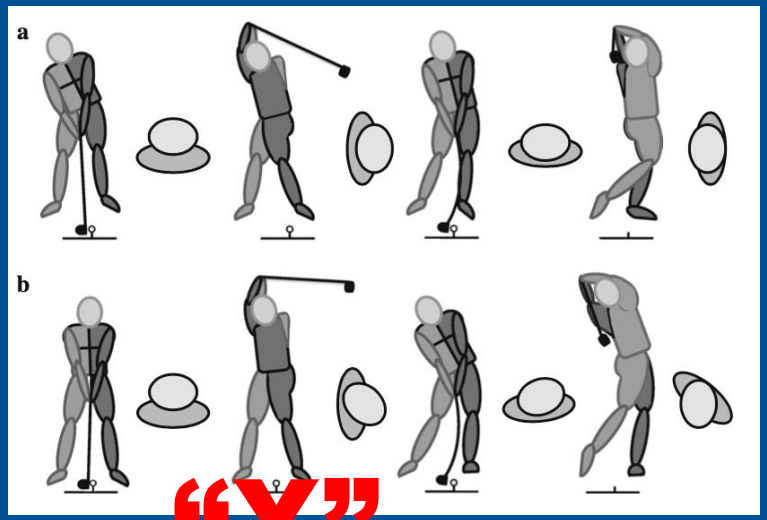
Low Back Injuries

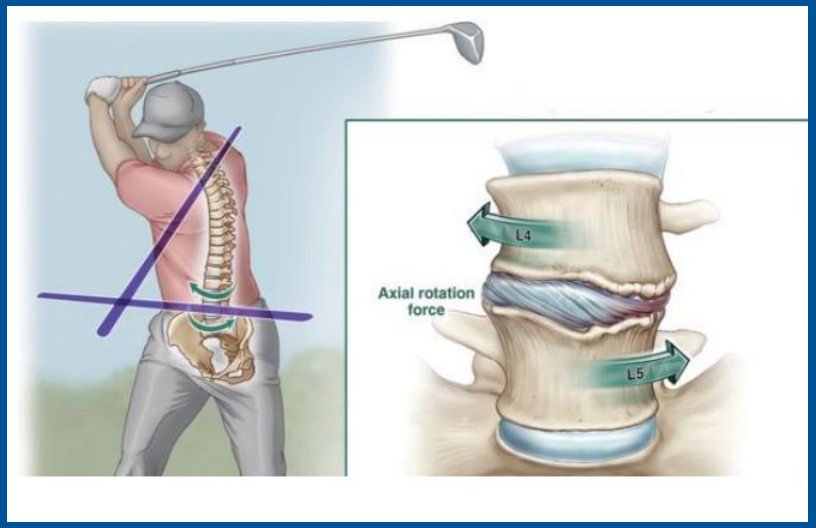
- Combination of compression, shear, rotational and lateral bending loads throughout lumbar spine.
  - Compression loads represent ~**8x-10x body weight**.[1,3]
- Golfers are predisposed to a multitude of LBP conditions including strains, HNPs, stress fx, and spondylolisthesis, etc.[1]
- Compared to the “classic” golf swing, the modernized golf swing adds more stress to the muscles and joints[1,2]
  - Large shoulder turn with restricted hip turn creating large hip shoulder separation angle **(X-FACTOR).**[1]

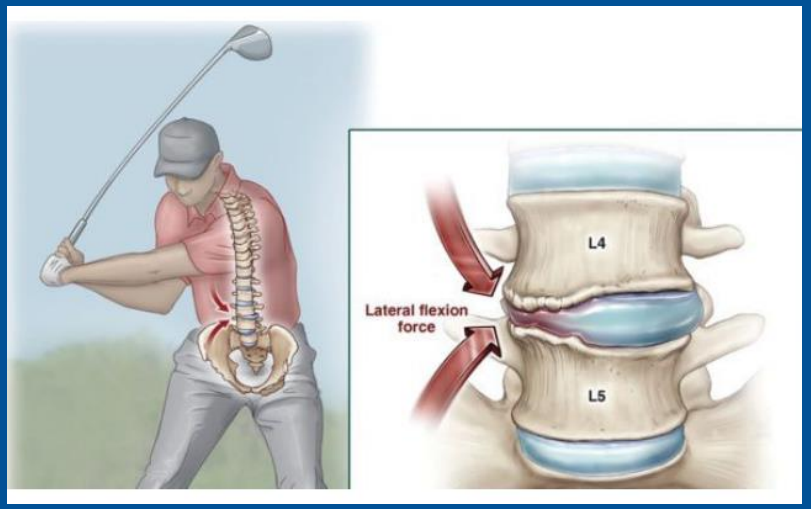


“X”

Low Back Injuries (continued)

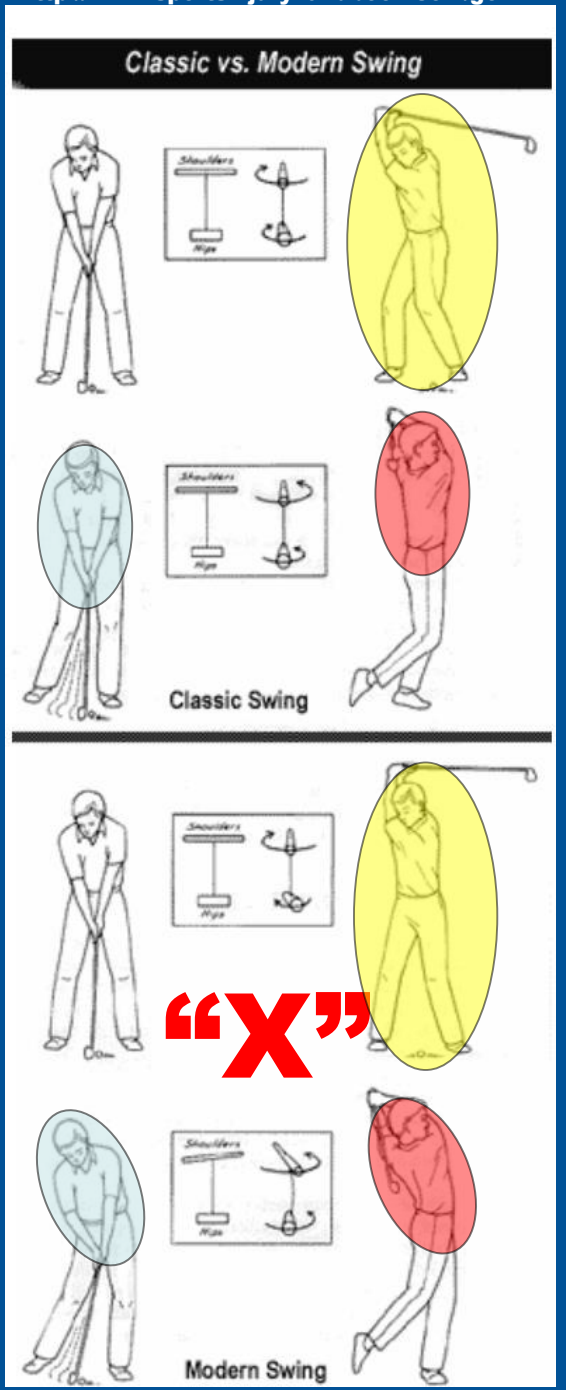
https://www.golfcare.co.uk/blog/2019/02/golf-back-injury/





https://vastasports.com/golf-injuries/

http://www.sportsinjuryhandbook.com/golf



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LBP Predictors

- Largest predictors[5]
  - Age
  - Previous symptoms of LBP
  - Decreased internal rotation of lead hip.
  - Bridge endurance test and/or side plank side to side differences.

Study	Variable	Finding in Low Back Pain Group
Evans and Oldreive[15]	Transversus abdominis endurance	Decreased
Kalra et al[30]	Trunk strength in all planes	Decreased
Lindsay and Horton[35]	Trunk axial rotation endurance toward lead side	Decreased
Tsai et al[52]	Peak isokinetic trunk extension	Decreased
Tsai et al[52]	Peak isometric lead hip adduction	Decreased

How to Manage LBP Injuries?

- Rest, ice (or heat), NSAIDs
- Preventative Stabilization Exercises
  - Increased spinal stability → increased elastic tension that can be developed → increased power.[7]
- Find strength and mobility limitations throughout the kinetic chain.

TPI SCREEN IS KEY

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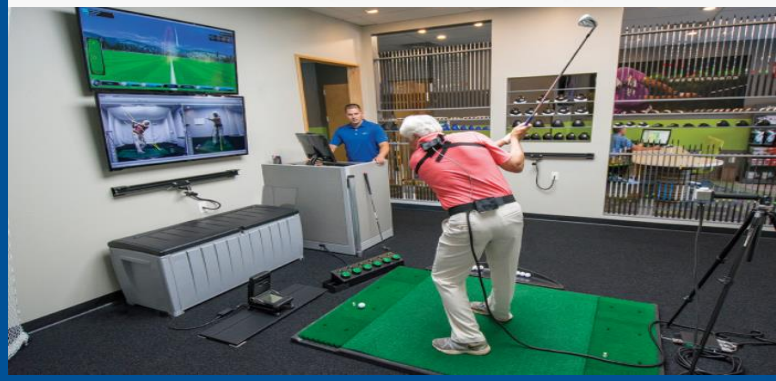
Reduce the Risk of LBP

GOLFTEC
Swing Better. Play Better.™



- Work with a PGA professional in order to ensure proper technique and club size

- Use a push cart, ride in a cart

  Note: if you do have to carry a bag, utilize two straps rather than one in order to distribute loads evenly on the spine

- **HUGE:** Participate in a training program in the **off season**

- Be strategic and deliberate about calculating playing volume and avoid ramping up volume too quickly. Intentional practice

- ***Never*** *try to play through LBP. #1 predictor of LBP is a history of LBP*

The best way to prevent lower back injuries in golf is to attack the problem head on with three main offensives:

- **Normalize Movement Patterns**
- **Optimize Swing Mechanics**
- **Incorporate Recovery Techniques**

First of all, let me start by making a bold statement. The lower back is rarely the original ***cause*** of the pain! It may be the current ***source*** of the pain, but it's rarely the cause of the pain. More often than not, abnormal motions or forces coming from adjacent or distant areas of the body force the lower back to do excessive work until it completely breaks down itself. In other words, the lumbar spine is usually the area that is being unnecessarily overworked to the point of injury. It is basically the over-used and over-abused worker who just goes and goes until he or she breaks. **-Dr. Greg Rose**

Drive for Show, PUTT FOR DOUGH!

- If the average golfer has 93 shots for a round

  55 Swings + 38 Putts

60% Swings

40% Putting

Putt, putt, putt….**recovery days**

https://blog.njm.com/drive-for-show-putt-for-dough

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Glute Strengthening

ROM Required During the Golf Swing[8]

- Cervical spine
  - ~ 70-90º of rotation bilaterally
- Thoracic spine
  - > 45º of rotation bilaterally
- Pelvis
  - > 45º of rotation bilaterally
- Upper Extremity
  - ~45º radial deviation
- Lower Extremity
  - ~9-35º of IR, 15-48º of ER

https://www.mytpi.com/articles/fitness/5_exercises_for_increasing_thoracic_spine_mobility_in_your_golf_swing

Top Impairments with GOLFERS

Stiffness:

- Thoracic Spine
- Hips
- Cervical Spine
- Ankles

Motor Control:

- Core and Pelvic Control
- Disassociation
- Balance

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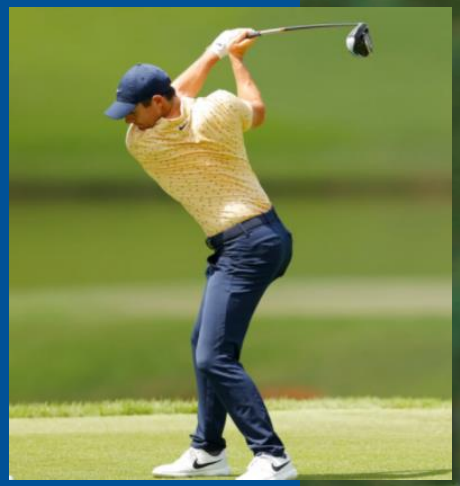
We think all golfers look like this….



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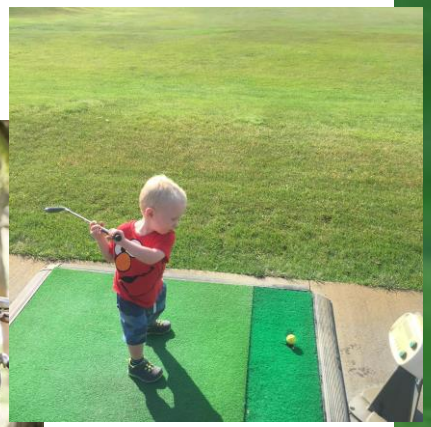
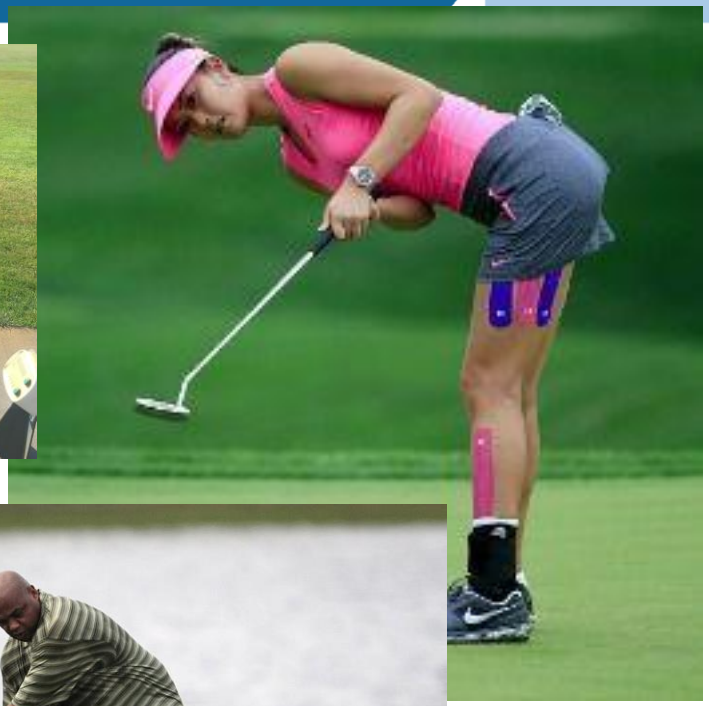
Reality





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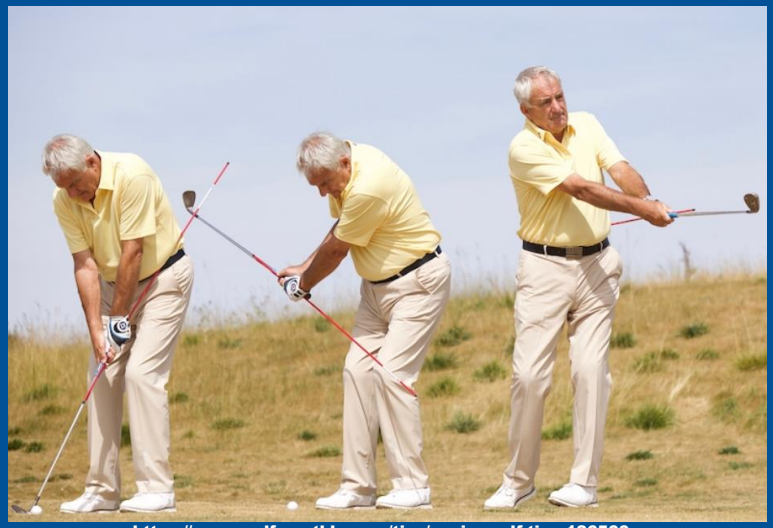
Age Influences our Movement

Younger = more nimble

Senior = stiffness



https://www.golfmonthly.com/tips/senior-golf-tips-186560

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Genetics + Development + Athlete + Training = Results

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Swing Characteristics

THE TWELVE MOST COMMON SWING CHARACTERISTICS & PHYSICAL CAUSES

1. S-POSTURE- Increase arch in lower back. Can lead to injury of lower back d/t stress. LCS
2. C-POSURE- Roundness of back. Can lead to injury of T-spine and lower back. UCS
3. LOSS OF POSTURE-Loss of posture during golf swing. Generalized stiffness and asymmetry.
4. FLAT SHOULDER PLANE-Angle of shoulders at top of backswing. Need lat and shoulder mobility.
5. EARLY EXTENSION- Hips and spine go into early extension or straighten up early in downswing.
6. OVER-THE-TOP- Overuse of upper body during downswing. Reduced spinal and hip mobility.
7. SWAY- Excessive lower body lateral movement away from target during backswing. R hip IR
8. SLIDE- Excessive lower body lateral movement toward the target. Lead hip IR needed.
9. REVERSE SPINE ANGLE-excessive upper body backward bend or excessive left lateral upper body
10. HANGING BACK- golfer does not shift weight correctly back onto lead side on downswing.
11. CASTING / EARLY RELEASE- Premature release of the wrist angles. D/t weak grip strength.
12. CHICKEN WINGING- Loss of extension or breakdown of the lead elbow through impact area.

Posture

1. S-POSTURE- Increase arch in lower back. Can lead to injury of lower back d/t stress. LCS
2. C-POSURE- Roundness of back. Can lead to injury of T-spine and lower back. UCS

Core Stabilization Exercises

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Sway

7. SWAY- Excessive lower body lateral movement away from target during backswing. R hip IR

Spinal Mobility Exercises

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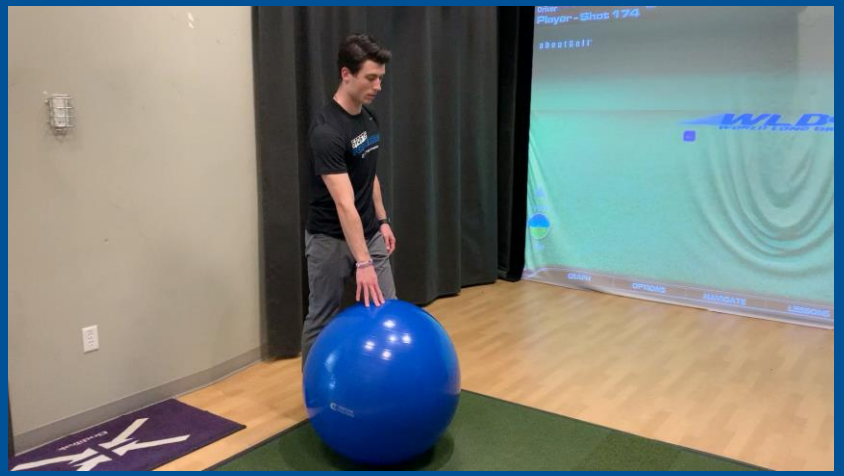
Slide

8. SLIDE- Excessive lower body lateral movement toward the target. Lead hip IR needed.

Hip & Pelvis Mobility Exercises



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Hanging Back

10. HANGING BACK- golfer does not shift weight correctly back onto lead side on downswing.

Swing Specific Mobility

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Be Creative

Not everything has to be GOLF'ish

Think of Basic Strength Principles

- **ACSM Guidelines:** Important to educate
- **FITT Principle**: Frequency, Intensity, Time, & Type
- **SAID Principle:** Train for your sport
- **Progression Principle**: Excel here
- **Overload Principle:** Don't neglect

GOAL is to avoid *REVERSIBILITY*

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Pearls for Golfers

- Proper Warm Up
  - ↳ Golfer's TEN Dynamic Warm Up
- Hydration
- Master your grip
- Nutrition
- Don't forget your CVS!
  - Walking Goals

Table 5. Walking Progression Goals

Distance (miles)	Goal (time to complete) in Minutes
0.5	10
1.0	16
1.5	28
2.0	35
2.5	40
3.0	50
3.5	60
4.0	70

Warming Up[4]

- Most people don't warm up (up to 71%)
- Older golfers less likely to warm-up
- Golfers 3x more likely to warm up if they have proper knowledge of a warm-up.
- Dynamic > static

Take-home message: TEACH A WARM-UP

THE GOLFER'S TEN: QUICK BODY WARM-UP

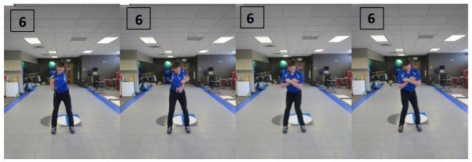
Exercise	Sets/Reps	Explanation
1. Rotator cuff push-pulls → into circles	10x each position	Clasp hands together in front of body and provide a comfortable pulling out motion. Hold for several seconds, then perform small to large circles. Repeat this motion while pushing hands together comfortably.
2. Functional side bending stretch	5x each side	While standing tall, reach overhead side-to-side with small reaches first and build up to more motion
3. Alternate saws	5x each position	Assume either golf or upright position with palms up. Extend one arm by straightening elbow ("reaching") with one hand and squeeze shoulder blade back with opposite arm.
4. Lunge with rotation	5x, 5 sec hold	Step into a lunge position. Rotate with arms out (imagine holding onto a large stability ball) and up towards forward leg.
5. Standing hip cross-over stretch	5x each leg, 5 sec hold.	Stand upright and while balancing on one leg, bring the non-weight bearing leg to opposite shoulder as far as able.
6. Club rotational stretch upper → lower body	10x each position	Hold golf club horizontally in front of shoulders. Keep lower body stationary and rotate upper trunk side-to-side. Next, keep upper body stationary and rotate pelvis and hips to each direction.
7. Hamstring release with golf club	5x for 5 sec hold each side	Assume golf address position. Push down vertically with both arms onto upside down club. Lean forward slightly with knees bent and then extend knees to feel stretch in hamstrings.
8. Stork turns	5x each leg	Stand upright and balance on one leg (use golf club to assist with balance) with opposite foot resting behind knee of weight-bearing leg in a figure four position. In a controlled motion, rotate the leg outwards.
9. Golf ball pick-ups	3x each leg	As the name implies, perform a controlled reach with spine in neutral position as far as comfortable and back up. Use golf club to help with balance (on same side as moving leg).
10. Golf club tempo swings	20x	This can be performed in a controlled manner with a weighted club, several clubs, or with a towel tied onto the end for wind resistance. Other substitutes include the Orange Whip or SwingFan.

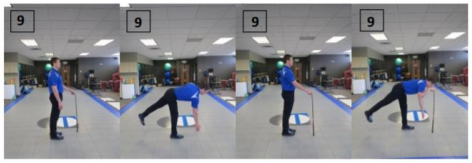
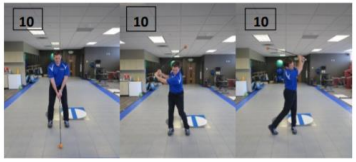
TWIN CITIES ORTHOPEDICS

THE GOLFER'S TEN: QUICK BODY WARM-UP




THE GOLFER'S TEN: QUICK BODY WARM-UP



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Golf Resources

Golf Warm Up:

- The Golfer's TEN (https://www.youtube.com/watch?v=1elQ6Vkn1gA)
- MedBridge Code: JHERQVBT
- Dynamic Warm Up: Refer to your local TPI Therapist

TWIN CITIES ORTHOPEDICS

Return to Golf (RTG) [6]

- Some specific protocols in place for MDs
- Guidelines:
  - No pain, swelling
  - ROM WFL
  - LSI > 85% for strength and balance
- Proper warm-ups

Tips:

- Chipping and putting early on
- Start at 25% wedges and short irons at driving range- progress weekly
- 9 holes

RTG Following Common Procedures

- Spinal Surgery RTG[6]
  - Lumbar microdiscectomy and lumbar laminectomy
  - Gradual return to swinging irons at 4-8 weeks
  - Can take 3-5 months to return to previous levels
- Lumbar Fusions
  - Gentle swinging 5-9 months post-op
  - 9 holes at 6-7 months
- Ankle/Foot[6]: Pain free SLS 5” minimum general rule
- TKA[6]: Start early as 6 weeks swing progression.
- THA[6]: 4-6 weeks earliest, or up to a year.

  Avg 19.5 weeks.

Remember….Therapeutic Alliance

The less restrictions that surgeons and physical therapists impose on a golfer, the better the patient will feel about the recovery process[6].

= ↑ Value = Happiness = Fun

Be safe, work with the ‘team’ of the surgeon, golf pro, trainer, etc.

What Does Your Golfer Need?

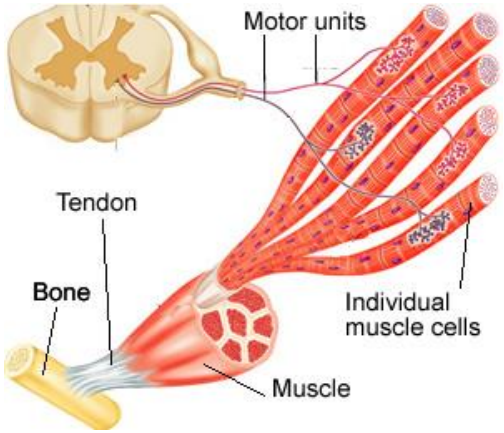
Motor Control

Mobility and flexibility

Stability and Balance

Strength and Power

Pliability



Durable Skill ← Phil Mickelson

Endurance

Sound familiar?

TWIN CITIES ORTHOPEDICS

Golf Specific Functional Strengthening Program Benefits[8,9]

- Study conducted with 8-week golf training program that improved flexibility, strength, and balance resulting in increased club velocity, ball velocity (5%), carry distance (7.7%), total distance (6.8%).
  - Training resulted improvements on swing mechanics without intention.

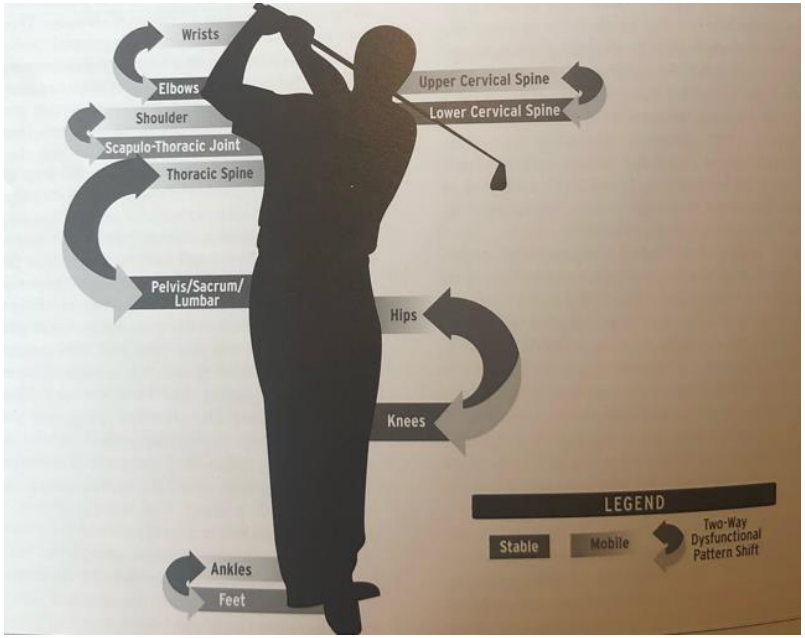
- Changes in swing mechanics possibly due to motor learning and golf specific physical characteristics.
  - Resisted movements resembling golf swing
  - Improvements in motor sequencing
  - Improved mechanical efficiency

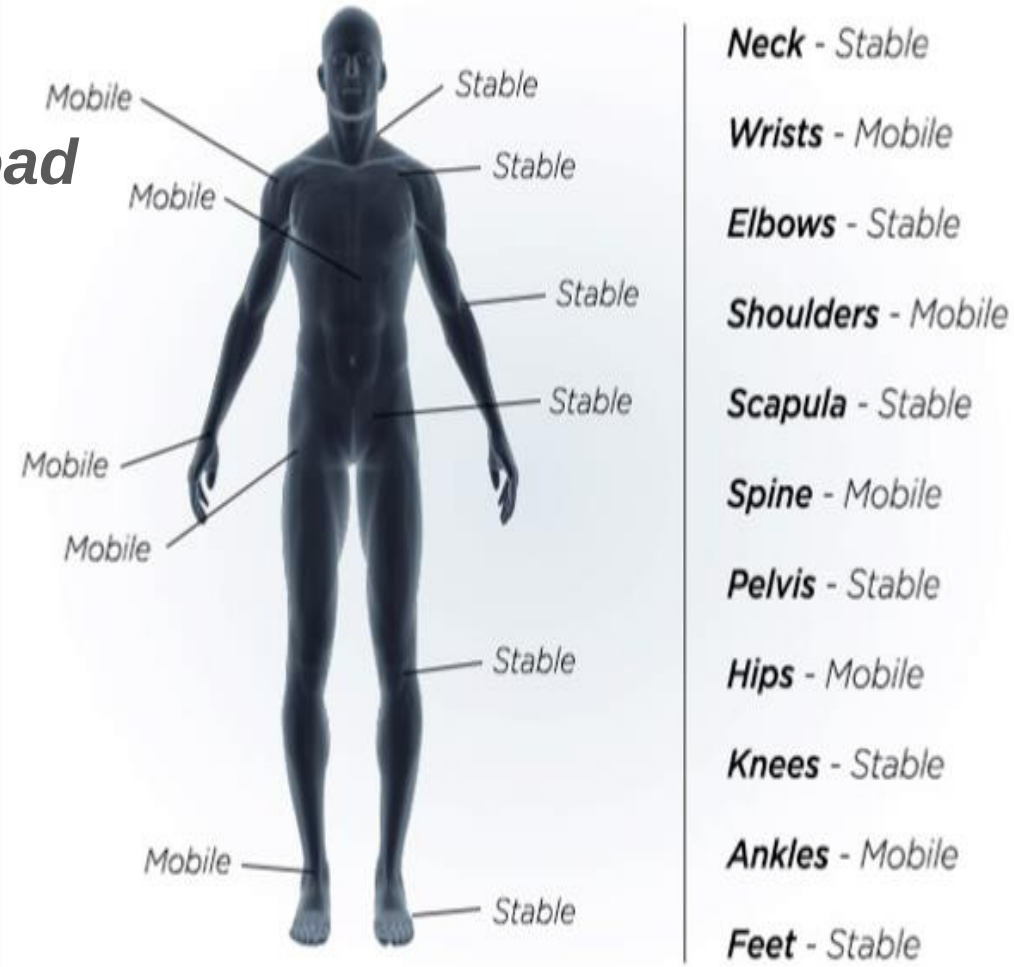
- Significant increase in club and ball velocity- Carry and driving distance improved

Body Matrix

TPI Medial Focus = SFMA

Reset → Re-enforce → Reload





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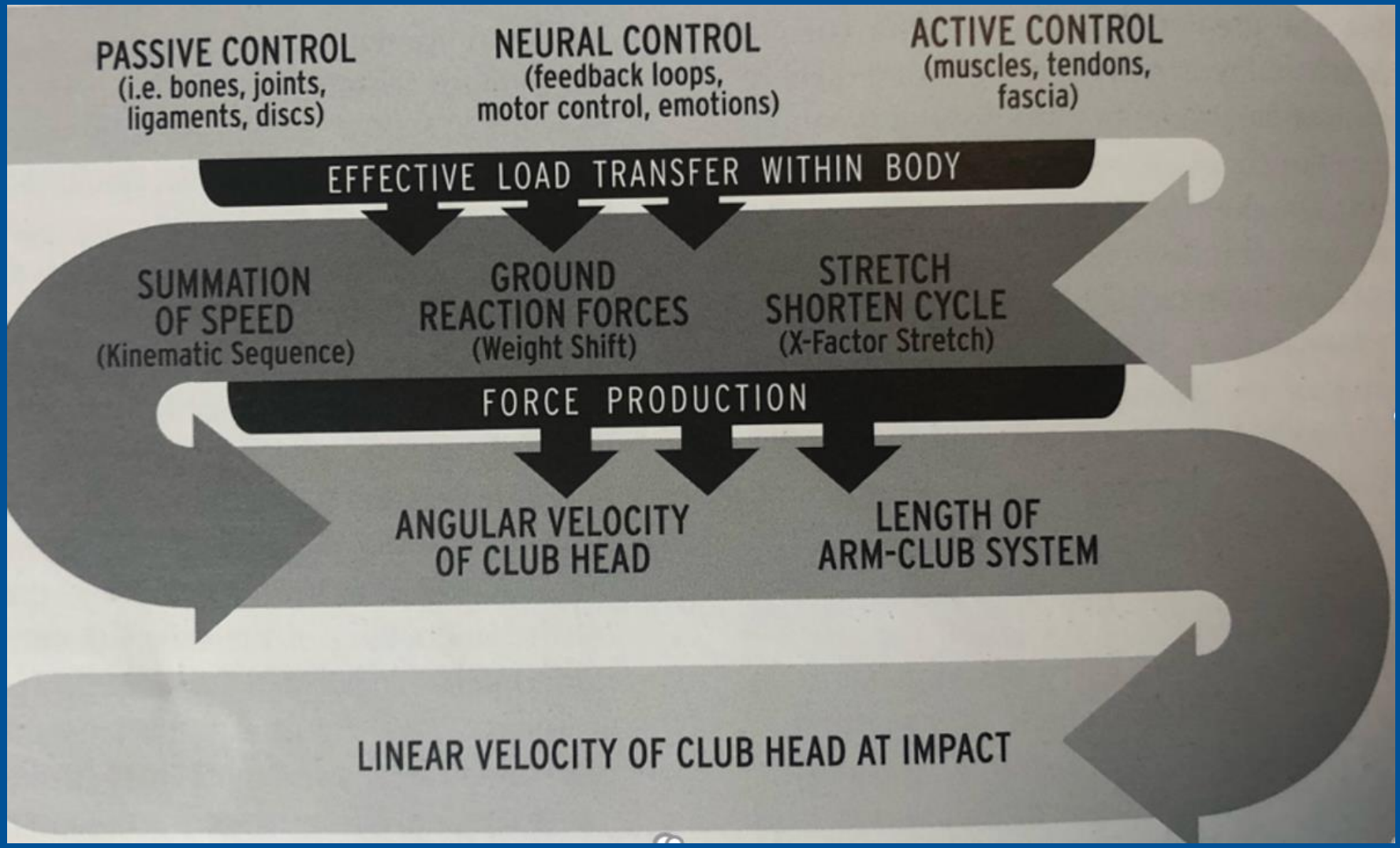
Body + Swing Factors affecting CHS



-Ada Wells, MPT- Kinesiology and Biomechanics of the Golf Swing- ISC 25.2.1: Golf Injuries

Golf Screen

TPI- Level One Screen

CERTIFIED

* *Equals PGA Tour Norms*

Pelvic Tilt			Pelvic Rotation			Torso Rotation			Overhead Deep Squat
Starting Pelvic Tilt (Subjective)			**Without Holding Shoulders**	L	R	**Without Holding Hips**	L	R	**Standing Squat**
* Neutral Tilt			* Good			* Good			* Bar Overhead Deep Squat
S-Posture			Limited			Limited			Arms Down Full Deep Squat
C-Posture									Arms Down Limited Deep Squat
Amount of Motion			**Holding Shoulders**			**Holding Hips**			**Half Kneeling Ankle Test**
* Normal Motion			Improves			Improves			* Good Dorsiflexion Bilaterally
Hard Time Arching Back									Right Ankle Dorsiflexion Limited
Hard Time Flattening Back			Doesn't Improve			Doesn't Improve			Left Ankle Dorsiflexion Limited
Both Limited									Both Limited
Quality of Movement			**Coordination**						**Do They Weight Shift?**
* Smooth Movement			* Good Rotary Movement						* No weight shift
Shake and Bake Movement									Weight Shift **Right**
Did Not Test			More Lateral Movement						Weight Shift **Left**

Toe Touch			90 / 90			Single Leg Balance			LAT Length Test		
Bilateral Toe Touch			**Standing**	L	R	**Thigh Parallel**	L	R	**Low Back Flat Against Wall**	L	R
* CAN	Touches Toes	CAN'T	* Greater than Spine Angle			0-5 Seconds			Below the Nose		
			Equal to Spine Angle			6-10 Seconds			Covers the Nose		
			Less than Spine Angle			11-15 Seconds			Between Nose and Wall		
Unilateral Toe Touch			**Golf Posture**			* 16-20 Seconds			* Touches Wall		
YES	Both Limited	NO	* Equal to Standing			21-25 Seconds					
L	One Side Limited	R	Less than Standing			26 Seconds or Greater					
			Greater than Standing								

Lower Quarter Rotation				Seated Trunk Rotation			Bridge w/ Leg Extension			Cervical Rotation		
L	**Backswing**		R	L	**Club Behind Back**	R	L	**Lying Supine**	R	L	**Mouth Closed**	R
*	60 degrees or more			*	Greater than 45 degrees		*	Glute Normal		*	Touches Both Sides	
	Less than 60 degrees				Equal to 45 degrees			Glute Weak			Limited	
	Downswing				Less than 45 degrees			Cramping				
*	60 degrees or more											
	Less than 60 degrees											

Forearm Rotation				Wrist Hinge			Wrist Flexion (Bowing)			Wrist Extension (Cupping)		
L	**Elbows Bent By Sides**		R	L	**Elbows Bent By Sides**	R	L	**Elbows Straight**	R	L	**Elbows Straight**	R
*	>80 Bilateral			*	Normal			Greater than 60 degrees			Greater than 60 degrees	
	Palm Up Limited				Limited Hinge Up		*	Equal to 60 degrees		*	Equal to 60 degrees	
	Palm Down Limited				Limited Hinge Down			Limited			Limited	

OPTIONAL

Reach Roll Lift Test		
L	**Prayer Position**	R
*	Good Range	
	Between Ground and Ear	
	Can't Lift	

NOTES:

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Pelvic Tilt

Pelvic Rotation

Torso Rotation

Overhead Deep Squat

Toe Touch

90/90

Single Leg Balance

Lat Length Test

Lower Quarter Rotation

Seated Trunk Rotation

Bridge with Leg Extension

Cervical Rotation

Forearm Rotation

Wrist Hinge

Wrist Flexion / Extension

Optional
Reach Roll & Lift

Assessment of the Golfer

Deep Squat

Movement

Ankle

Knee

Hips

Shoulder

Weight shift

Lower Quarter Rotation

Movement

Looking for > 60 deg

Hip IR / ER

Single Leg Balance

Movement

Can they do it?

Aim for 10 seconds

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Address any impairments…

Assessment of the Golfer (continued)

Single Leg Bridge

<u>Movement</u>

Pelvis control

Glute vs HS activation

(normal, weak, cramping)

Seated
Trunk Rotation

<u>Movement</u>

T-spine

Want > 45 deg

<u>Address any impairments…</u>

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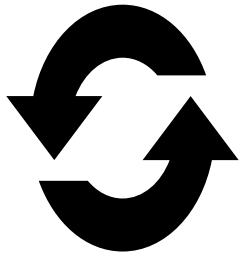
Top Impairments- **Recap**

Stiffness:

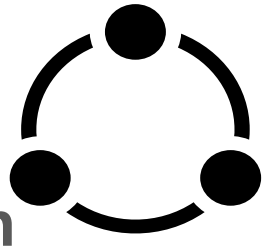
Thoracic Spine

Hips  **Cervical Spine**

Ankles

Motor Control:

Core and Pelvic Control

Disassociation  **Balance**

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Swing Specific Mobility (continued)

Rotational Strengthening

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Functional Balance

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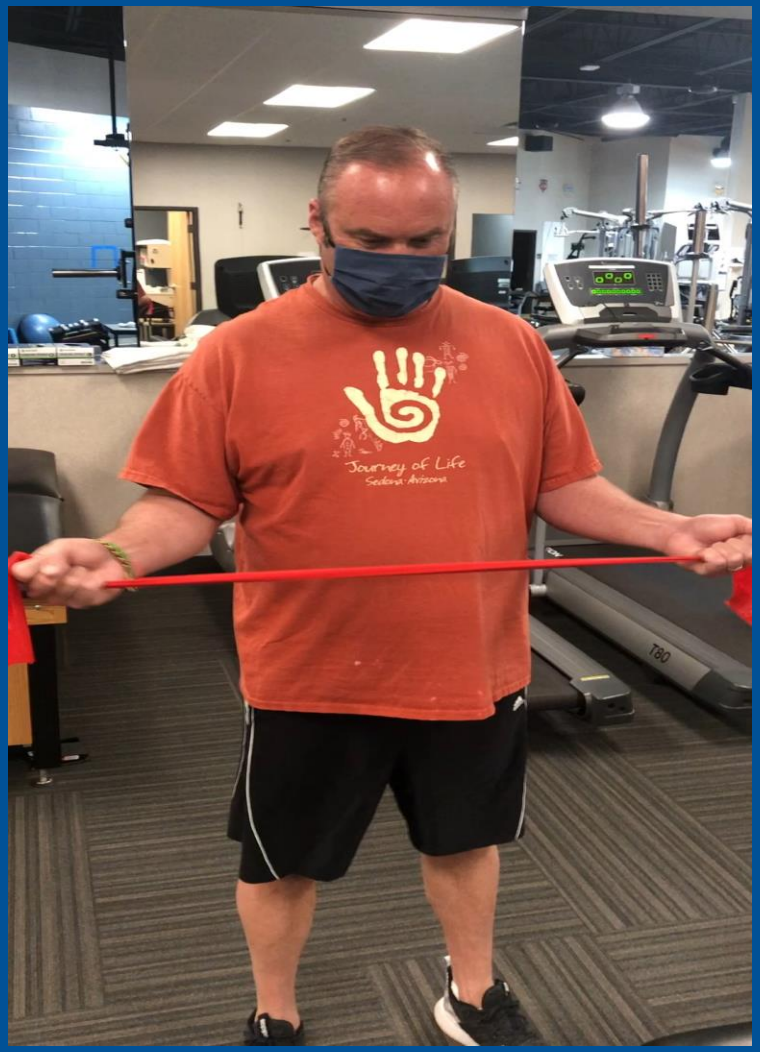
TA and Gluteal Co-Activation

- More Advanced: Use of golf club facilitates TA contraction with single leg deadlift
  - Golfers love using clubs for exercise

Incorporate GOLF Early and Frequently



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Thoracic Mobility and Stability

1. Tennis Ball Thoracic Spine Mobility
2. Open Books
3. Quadruped Posterior Rocking with Pattern Assistance
4. Reach Roll and Lift
5. Quadruped Reach Back
6. Lumbar Lock ½ Prayer
7. Chops/Lifts ½ Kneel
8. Chops/Lifts Split Stance

Foam Roll for Thoracic Mobility and Posture

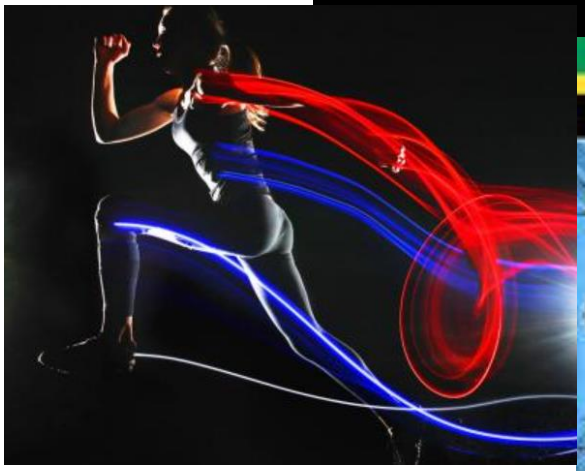
Thanks to Krystan Coyle, PT, DPT, MBA, OCS - TrainingHAUS

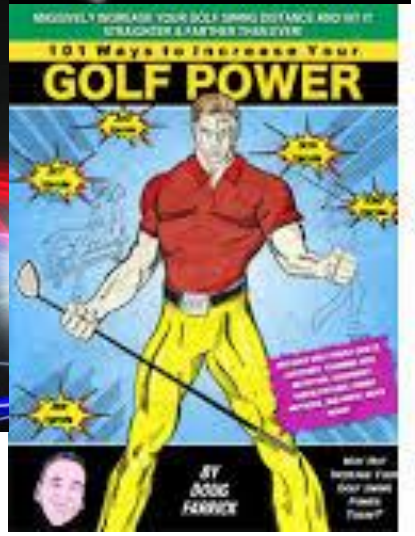
Examples of Possible Swing Faults

1. Loss of Posture – Flat Shoulder Plane
2. Early Extension

HOT Topic….What is Power in GOLF

Is it this?





GOLF POWER =

- ↑Club Head Speed (CHS)
- ↑Club Head Acceleration
- ↑Ball Speed
- ↑Driving Distance

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Golf Performance Facts

PGA Tour average ball speed is 170 mph, and WLDC is 227 mph. The difference in ball speed is…..**TRAINING.**

▸ TOUR Average **170.06**

BALL SPEED

RANK THIS WEEK	RANK LAST WEEK	PLAYER NAME	ROUNDS	AVG.	TOTAL BALL SPEED	TOTAL ATTEMPTS	FASTEST SPEED
1	1	Bryson DeChambeau	45	190.64	16,776.10	88	199.55

DRIVING DISTANCE ⓘ

RANK	LEADER	AVG.
1	Bryson DeChambeau	322.0
2	Rory McIlroy	318.8
3	Cameron Champ	318.0
4	Wyndham Clark	315.6
5	Will Gordon	314.4
TOUR AVERAGE		295.3

	Avg Swing Speed	Avg Ball Speed	Avg Driving Distance
WLDC	145 mph	227 mph	350+ yards
PGA Pro	114	170	295
Amateur	93	133	214

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https://www.pgatour.com/stats/stat.02401.html

https://blog.trackmangolf.com/performance-of-the-average-male-amateur/

Power is…

Velocity

Force

Strength

Speed

Rory's Slow Motion Drive

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Performance Considerations

Type I: slow, **low power**, low resistance to fatigue **(Oxidative)**
(putting, chipping, walking)

↑↓

Type IIa: fast, **medium power**, medium resistance to fatigue **(Glycolytic)**
(Shorter shots)

↑↓

Type IIx (IIb): faster, **high power**, easily fatigued **(Alactic)**
(Sprints, Swinging Golf Club-Driver)

Regain Power

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Maximal Strength Training (MST)

Impact of MST on work efficiency and muscle fiber type in the elderly[11].

- Took older age (~72 yo) intervention and younger age (~24 yo) control.
- 8 weeks of training (4x4, 85-90% 1RM) in older group.
- Changes after 8 weeks: Significant 41%↑ in size of fast twitch fibers, 32%↑ of % of Type II fibers, strength ↑68%, and RFD ↑ 48%.

Results: High intensity maximal strength training (MST) excellent strategy for improving physical function and preventing falls.

(↑ Golf Performance)

Clinical Pearl: Use RPE scale to help select starting weight.

- 1 = easy 10= maximum effort and unable to complete another repetition.
- Aim for between 7-9 on the RPE scale.
- Do not compromise correct technique.

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Golf in the Literature

- Untrained persons: Maximal strength gains seen with 12-RM
  Trained persons: Maximal strength gains seen with 8-RM[13].

- Skilled golfers in 18 week study reported that after 6 weeks training, explosive strength improved, however, driving performance did not increase until after 12 weeks. *Should be a 3 month commitment for more highly skilled versus recreational golfers[12].*

- Ball speed after S&C increased 4%-7%. In turn, this can improve total ball distance off tee by nearly 30-50 feet[14].

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PACKAGES

TITLEIST PERFORMANCE INSTITUTE

TCO's Golf Medicine Program is integrated with the Titleist Performance Institute (TPI) and inspires golfers of all levels to be their best. Our golf specialists can help you achieve your specific goals. TCO Golf Medicine packages are available to all ages and fitness levels.

#1 Golf Rehab Package

TCO's TPI Certified Physical Therapists will assess functional limitations and progress athletes through the rehabilitation process

This package is ideal for individuals who are returning from injury or surgery

#2 Golf Functional Packages

Training program led by the TCO Physical Therapy Team who are TPI Certified and/or Certified Strength and Conditioning Specialists

Customized home exercise program tailored to your "functional" body movement through MyTPI.com

Helps keep your body and golf game functionally strong and mobile, aids in preventing injury and targets specific goals.

#3 Golf Fit Packages

One-on-one training led by a personal trainer and/or Certified Strength and Conditioning Specialist

Get in "golf" shape, tailored to your individual fitness goals

#4 Golf Performance Package

The ultimate team training investment combines services from clinical, fitness, nutrition, and golf professionals

TCO Physical Therapy Team

- 2 clinical-golf-functional and TPI assessments (pre- and post-testing)
- 12 weeks of corrective exercises to create a functional approach to your training

TCO Certified Personal Trainers/Strength & Conditioning Coaches

- 4 "golf" fitness training sessions
- Improve balance, endurance, strength, and power

TCO Nutrition Solutions

- Nutrition consultation with a registered dietitian – Get started on the right track for your nutrition and wellness goals

TCO Partner Golf Pro Services

- (6) 30-minute sessions with a PGA Certified Golf Pro
- Customized golf lessons to improve your swing and play your best golf

To schedule, or for more information, contact your provider or email **SpecialtyPrograms@TCOmn.com**

Goals: Tee'd Up

Achieved our "Golf Therapy" Objectives

Increased your Competence (Evidence)

Improved Patient Outcomes & Performance

Review of TCO Golf Medicine Services

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Information also used from:

http://www.worldlongdrive.com/news/, http://www.mytpi.com/, https://www.pgatour.com, www.tcomn.com

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- Hometown: Chesterfield, MO (suburb of St. Louis)
- Undergrad: UW-Madison (B.S. Kinesiology 2017)
- PT school: UW-Madison (DPT 2021)
- PT focus: General ortho/sport, spine, hip, golf
- Interests: All things sports (especially St. Louis and Wisconsin sports), playing golf, poker, travel, snowboarding, outdoors.
- Fun fact: I'm a triplet with two sisters.

Thank You

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