

Low Back Injuries in Golf

See also Lower back pain

Background

1. According to National Golf Foundation there were 28.7 million golfers in U.S. in 2006, ages 5 and above
2. More than 80% of injuries are thought to be chronic and overuse in nature
3. As many as 1/3 of professional golfers have experienced low back pain for greater than two wks w/in past yr
4. Forceful trunk rotation and lumbar extension are thought to cause much of this overuse-type injury
5. Swing of a golf club involves rotational movement around a fixed lumbar spine
 - Which leads to high torque forces and tremendous energy delivered through facet joints
6. Useful websites
 - www.sportsmed.org
 - www.pga.com

Pathophysiology

1. Injuries caused by
 - Overuse
 - Poor mechanics
 - Poor physical fitness, muscle and ligament strains
 - Trauma
2. Professionals: 33% involve lumbar spine
3. Amateur: 25% of injuries involve lumbar spine
4. Risk factors
 - Poor swing mechanics
 - Poor flexibility
 - Incr workload w/o adaptation
 - Inadequate warm-up
 - Muscle imbalances
 - Vertebral malalignment, such as scoliosis, kyphosis, etc.
 - Improper club length
 - Underlying medical conditions
 - Osteoporosis
 - Osteoarthritis
 - Obesity
 - Neuropathy
 - Rheumatoid arthritis
 - "Over swinging": swinging harder/ faster than ability allows
 - Carelessness or improper golf etiquette, such as
 - Club throwing
 - Alcohol consumption
 - Golf cart accidents
 - Carrying golf bag
5. Morbidity/ mortality
 - Average time lost per lumbar spine injury 69 days
 - For all golfers; amateur or professional

Diagnostics

1. History

- Recent incr frequency of play
 - Number of rounds in a week or month
- Warm-up, cool down, stretching
- Swing speed
- Handicap/ level of experience
- Hx of trauma
- Hx of low back sprain/ strains
- Describe quality of pain
- Duration of discomfort
- Relieving and exacerbating factors
- Self tx
- Any audible noises or clicks felt during swing
- Red flags
 - Numbness
 - Tingling
 - Radicular symptoms
 - Incontinence

2. Physical exam

- Inspect for
 - Asymmetry
 - Discoloration
 - Skin changes
 - Swelling
- ROM: active then passive
 - Standing: side bend, forward flexion, backward extension
 - Sitting: rotation, isolate lumbar region
- Palpation
 - Skin, myofascial, muscle, ligament, tendon, bone
 - Bony landmarks, muscle attachments
 - Intervertebral motion testing
 - Somatic dysfunctions
 - Tissue texture changes
 - Restrictions in motion
 - Tenderness
 - Asymmetry
- Muscle testing
 - Lower extremity
 - Spinal extensors
 - Hamstrings
 - Abdominals
- Neurologic
 - Sensation
 - Reflexes
 - Proprioception: Rhomberg, heel-shin
- Special tests
 - Straight leg raise

- Slump test
 - Pt in sitting position
 - Hunches down in slumped position while legs are passively extended one at a time
 - Elongating spinal canal and nerves
 - Attempting to elicit neurologic-type radiating pain
3. Diagnostic testing
- Lab eval: usually not necessary
 - Diagnostic imaging, required if
 - Red flags in hx
 - Failed conservative therapy
 - MRI modality of choice
 - Plain films if osteoarthritis or spondylosis suspected

Differential Diagnosis

1. Muscle strain: most common
2. Spondylosis
3. Spondylolisthesis
4. Facet dysfunction
5. Osteoarthritis
6. Disc herniation
7. Sacroiliac joint dz
8. Sacral torsion
9. Vertebral compression fx
10. Lower rib fracture
 - Acute / traumatic
 - Chronic / stress
11. Nephrolithiasis
12. Urinary tract infection

Therapeutics

1. Acute
 - Relative rest
 - Ice
 - Anti-inflammatory drugs
 - NSAIDs are more effective than placebo for pain relief in patients with acute LBP
 - If red flags: needs immediate eval and work-up
2. Further mgmt (24 hrs to several wks)
 - Physical therapy; focus on flexibility and correcting muscle weakness/ imbalance, core stabilization
 - Ice/ heat
 - U/S
 - Electric stimulation
 - Traction
 - Consider osteopathic/ chiropractic manipulation
 - Other interventions for less common etiologies as appropriate
3. Long-term Care
 - Swing analysis/ golf lessons, correct improper mechanics

- Improve overall fitness: aerobic conditioning/ cross-training
- 5-10 min pre-round stretch/ warm-up routine
- May include: physiatrist, physical therapist, PGA golf professional
- Refer: failure to improve w/in 4-6 wks or development of red flags

Follow-Up

1. Return to office
 - For sprains/ strains return after 4-6 wks of physical therapy
 - More severe injuries
 - Follow up 2-4 wks for improvement
 - Abstinence from activity
 - Compliance w/physical therapy
2. Refer to specialist
 - No response to conservative mgmt
3. Refer to ED
 - Saddle paresthesias
 - Bowel or bladder incontinence
 - Focal neurologic/ muscular deficits
 - LOC
 - Signs of fx/ deformity
 - Needs immediate eval
 - MRI or CT for neurologic deficits
 - Neurosurgical or orthopedic referral

Prognosis

1. With rehabilitation & correction of swing mechanics
 - Should return to previous level of activity
2. High risk of relapse incl
 - Age >65
 - Hx of osteoporosis
 - Chronic medical conditions
 - Poor functional status
 - Poor overall fitness level
 - Non-compliance

Prevention

1. Improve technical skills w/lessons
2. Improve physical fitness
3. Instituting pre-practice/ round warm-up routine
 - Stretch major muscle groups
 - Incr ROM in golf swing
 - Light aerobic activity
4. Realistic expectation for skill level
5. Gradual incr in frequency of play
6. Proper golf etiquette or anger mgmt
7. Ensure proper equipment length/wt

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Evidence-Based Inquiry

1. What is the most effective treatment for acute low back pain?

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