



A+G REFORESTATION

# Injury Management Quick Guide

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# Injury Management Quick Guide

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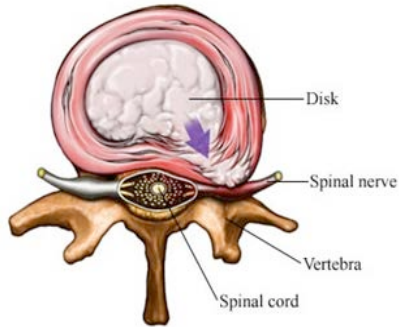
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*\* for more information refer to video file for each injury*

# Low Back Pain

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Most commonly caused by a disc bulge associated with repetitive bending.

Disc jelly moves backwards causing stiffness pain and possibly sciatica.

The disc is most vulnerable with bending and twisting. It becomes worse with static loading.

Feels most vulnerable first thing in the morning.

Refer to Video.

## **Possible Causes**

- Repetitive bending from back instead of hips and knees
- Lifting tree boxes poorly
- Bending and twisting at same time
- When putting on full planting bags
- Slouching when driving to block
- Not using abdominals when lifting or bending



# Low Back Pain

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## Screening and Diagnosis

Localised low back pain sometimes with pain radiating into one or both buttocks or legs.

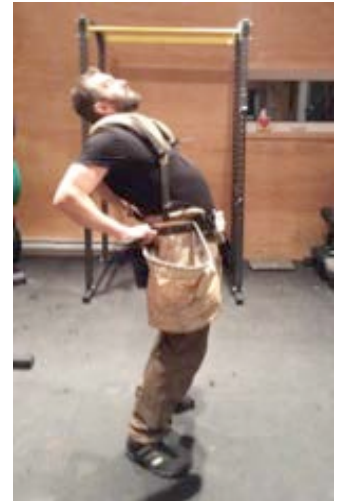
Tingling or numbness radiating through the leg indicates nerve impingement.

Typically worsens with more bending or lifting, usually stiffness extending.

TAKE NOTE OF RED FLAGS: bilateral nerve symptoms, loss of motor function, severe pain, saddle numbness, bowel/bladder dysfunction: **Refer to physician**

## Treatment and Prevention

1. Extend before work, extend at each bag up and extend at the end of the day. Repeat 10 reps
2. Contract abdominals 30% when lifting bags, bending to plant or handling boxes.
3. Sit up straight with backwards curve in low back when driving to and from block.
4. Prepare for your planting season by improving abdominal and gluteal strength.



## What if Extension Makes it Worse?

If extension exercises cause the worker more back/leg pain this may be due to a less common type of disc strain called an 'ipsilateral'. This is when the hole containing the nerve root is narrowed. The worker may be seen to be leaning towards the painful side to reduce pain. This often occurs due to repetitive reaching, twisting and bending toward bag to get trees.

If an ipsilateral occurs:

1. Cease extension exercises
2. Trial either gapping exercise
3. Repeat 10 times at bag ups, in morning, after shifts and after prolonged sitting
4. Monitor change



# Patello Femoral Knee Pain

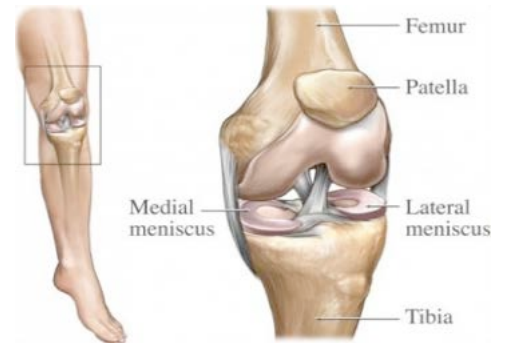
Knee pain associated with mis-alignment of knee cap.

Often feels worse when going down hills.

May get clicking or grinding sound.

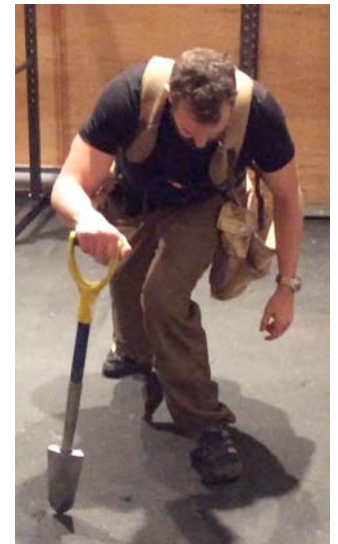
Knee can swell.

Refer to Video.



## **Possible Causes**

- Tight Quadriceps
- Tight iliotibialband (ITB)
- Increased knee angle when climbing up or down hills, when bending to plant or stepping up into crummy
- Flat feet



## **Screening and Diagnosis**

Pain underneath the knee cap.

Grind Test: Hyperextend the knee, apply pressure directly down on knee cap and squeeze the thigh muscles.

Swelling around knee cap or severe pain may indicate cartilage injury.



# Patello Femoral Knee Pain

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## Treatment and Prevention

1. Stretch/Roll ITB and Quadricep
2. Ice, anti-inflammatories
3. Watch knee position when coming down hills
4. Keep knees out, made easier by strengthening quads, gluts and balance in pre-season
5. Tape techniques (refer to page 11)

### Quad Stretch

- Hold 20 seconds
- Repeat twice



### Roll ITB

- Using Foam Roller, roll from hip to knee
- Repeat 10 times



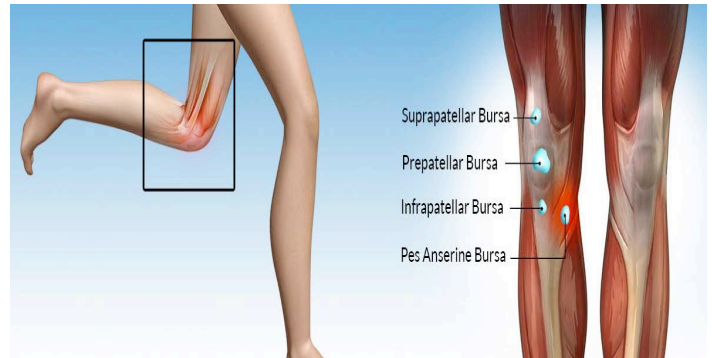
# MCL Strain & Pes Anserine Tendonitis

Inside knee pain associated with poor knee alignment.

Often worse with uneven terrain and when going downhill.

Worker develops tenderness and sometimes swelling over area.

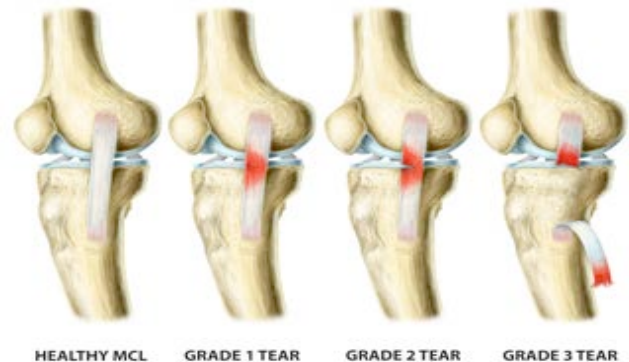
Refer to Video.



## Possible Causes

- Tight quads, ITB, adductors and hamstring
- Inward twist of the knee
- Increased knee angle when walking, planting trees, jumping off obstacles and climbing into crummy
- Flat feet

Severity of MCL Injuries



## Screening and Diagnosis

**MCL Strain:** pain when the knee is pushed inwards in standing (valgus test). Looseness, severe pain and inability to weight bear should be referred.

**Pes Anserine Tendonitis:** Tenderness just underneath the bone prominence of the knee.

# MCL Strain & Pes Anserine Tendonitis

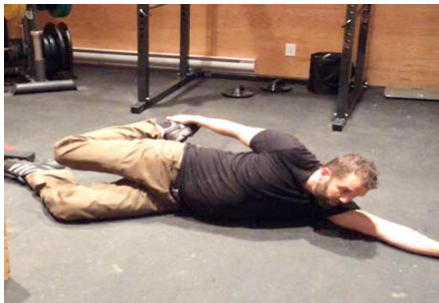
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## Treatment and Prevention

1. Ice, anti-inflammatories
2. Stretch/Roll Quadricep, ITB, adductors and hamstring (see next page 11)
3. Tendon massage
4. Tape (refer to page 11)
5. Watch knee position, squeeze gluteal muscles to keep knees out.
6. Centre of knee cap should line up with 2nd toes

### Quad Stretch

- Hold 20 seconds
- Repeat twice



### Roll ITB

- Using Foam Roller, roll from hip to knee
- Repeat 10 times



### Hamstring Stretch

- Hands behind knee.
- Straighten leg until comfortable stretch felt in back of thigh
- Repeat twice



### Hamstring Roll Stretch

- Using Foam Roller, roll back of thigh from buttock to knee.
- Keep abs tight.
- Repeat 10 times





# Meniscus Strain or Tear

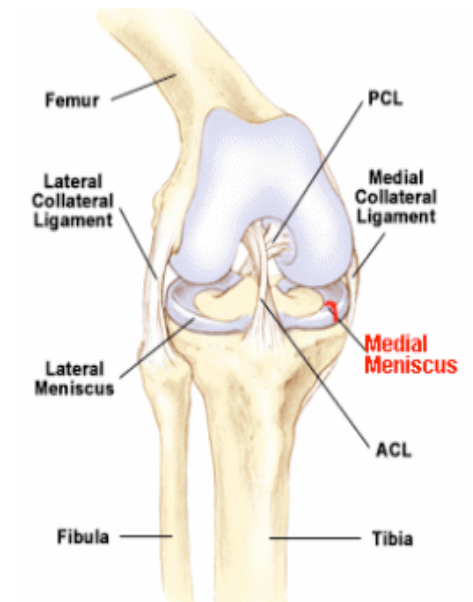
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Can occur acutely or due to repetitive trauma.

May be sharp or achey of varying intensity, pain feels deep. Worker may experience clicking.

Depending on location of injury it may heal very poorly. Initial management is crucial.

Refer to Video.



## **Possible Causes**

- Slip or fall causing twisting of the knee
- Increased knee angle and rotation with loading leg
- Impact or jarring on the knee
- Muscle weakness causing unstable joint movement

## **Screening and Diagnosis**

Described as deep pain worse at specific knee position.

Pain with passive bending and straightening of the leg.

Pain with deep squat or hyperextension.

Inability to weight-bear and immediate swelling may indicate more severe meniscal and possible ligament injury.

## **Treatment and Prevention**

1. Avoid jarring and impact on uneven surfaces much as possible
2. Maintain correct knee alignment while planting, strengthen quads and gluts to maintain knee stability
3. Use brace or taping if knee is unstable (refer to page 11)
4. Minor meniscal injuries can heal while working if knee position is maintained and inflammation reduced.

# Patella Tendonitis

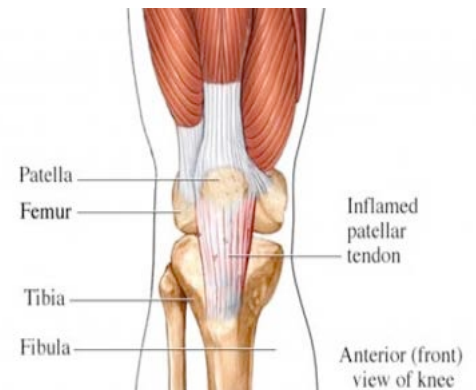
Pain immediately below the knee cap due to strain and inflammation of the tendon attaching the knee cap to the shin.

Gradual onset with increase in walking or change of terrain.

May experience swelling and puffiness.

Usually worse before and after work once cooled down.

Refer to Video.



## Possible Causes

- Excess bending and loading – walking downhill and landing from jumping
- Worsened with tight quads, calves and ankles
- Weak gluts and poor knee control will increase susceptibility



## Screening and Diagnosis

Specific tenderness in the soft area directly below the knee cap

Worse pain with walking down hill, squatting down

Pain is worse before starting work, improves as you warm up, worsens once resting and cooled off

# Patella Tendonitis

## Treatment and Prevention

1. Ice, anti-inflammatories
2. Tape (refer to page 11)
3. Over counter brace/cuff (see top right)
4. Stretch quads, calfs
5. Decline squats
6. Maintain correct knee alignment while planting (see bottom right)



## Quad & Calf Stretch

- Hold 15-30 seconds
- Repeat twice



## Decline Squats

- 3 sets of 10-15 squats
- Repeat twice a day



# Knee Taping

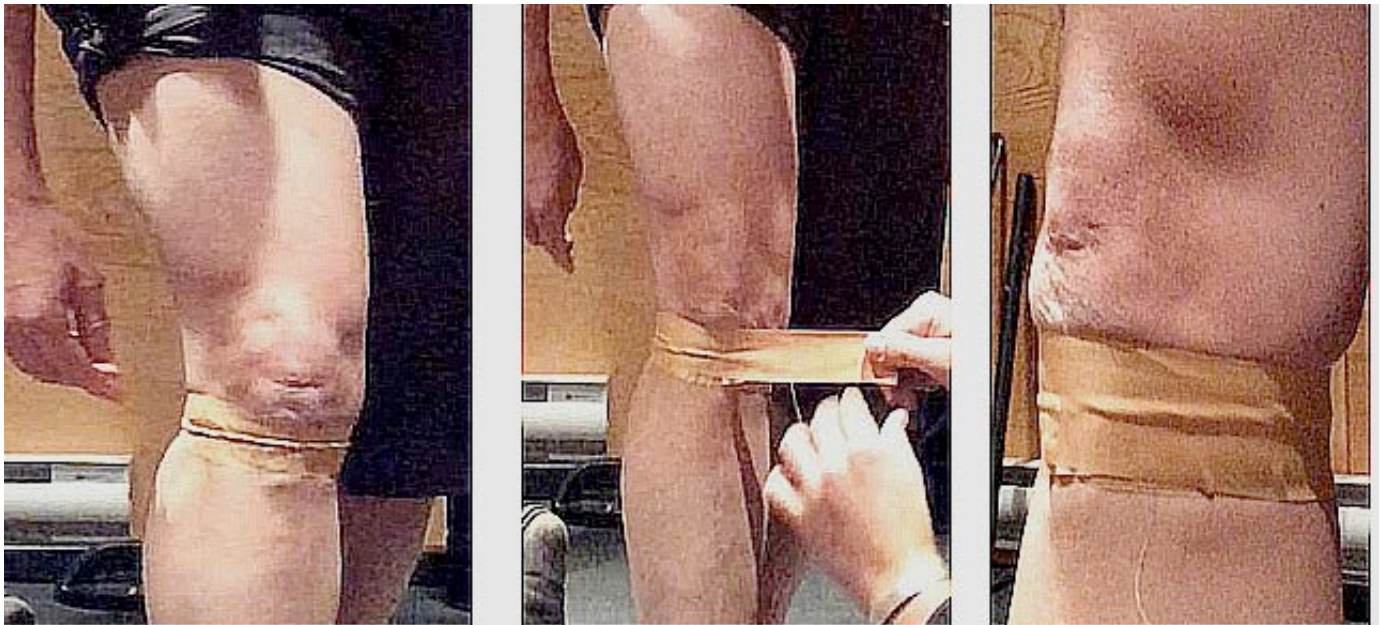
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Medial De-Load and Support Tape for:

1. Patello-femoral pain
2. Pes Anserine tendonitis
3. MCL strain
4. Medial meniscus



Patella Tendonitis unloading technique:



# Cervical Spine / Neck Pain

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Pain or pressure at base of neck.

Headaches or pain base of skull.

Pain or numbness running down arm from neck to shoulder, elbow or hand.

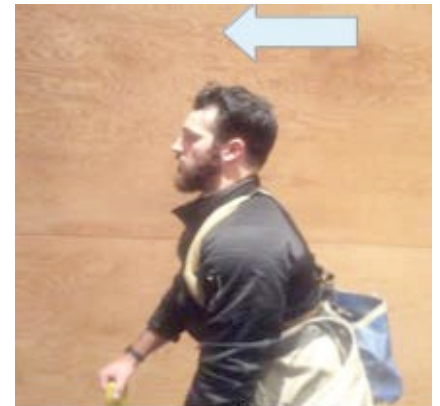
Weakness in hands and fingers.

Refer to Video.



## **Possible Causes**

- Repetitive head flexion
- Sustained or repetitive head and neck protrusion
- Short shoulder straps
- Weak scapular stabilisers



## **Treatment and Prevention**

1. Ensure shoulder straps are not too tight.
2. Adapt technique to avoid leading with chin. Keep chin tucked slightly. (see pictures below)
3. Do stretches throughout the shift



# Thoracic Spine & Upper Back

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Pain through upper back on inside of shoulder blade.

Pain with tree placing and reaching.

Can be painful to take a deep breath. Lying flat on back can hurt.

Associated with thoracic joints and rib joints.

Refer to Video.

## **Possible Causes**

- Repetitive bending with rotation to place tree
- Over reaching and twisting to place tree
- Not getting close enough to hole if hand closing



## **Screening and Diagnosis**

Pain next to shoulder blade, with rotation of upper back towards side of pain. May have loss of range.

Pain on Extension (leaning backwards) with possible loss of range.

Pain or discomfort with a deep breath

## **Treatment and Prevention**

1. Do thoracic rotation and thoracic extension exercises.
2. Use tape for positional feedback (see right)
3. Avoid over reaching
4. Keep shoulders level when reaching to place tree



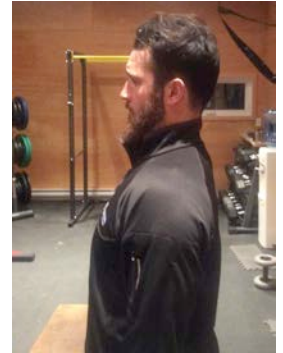
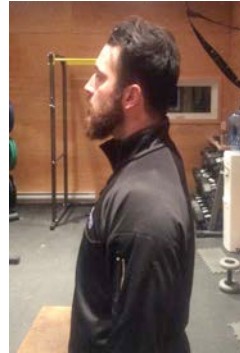
# Thoracic Spine & Upper Back

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## Stretches for Thoracic Spine & Upper Back Pain

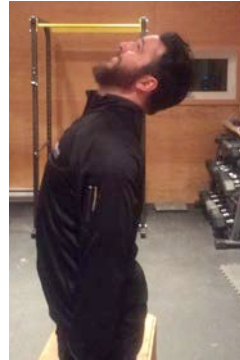
### Chin Tucks

- Do throughout day.
- Hold 2 seconds.
- Repeat 5 times.



### Head and Neck Extension

- Hold 2 seconds.
- Repeat 5 times.



### Thoracic Extension

- Using Foam Roller.
- Repeat 10 times, twice a day.



### Thoracic Rotation

- Rotate towards side of pain.
- Repeat 10 times.
- Do throughout the day.



# Shoulder Impingement

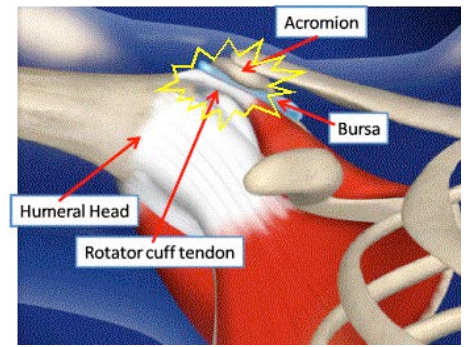
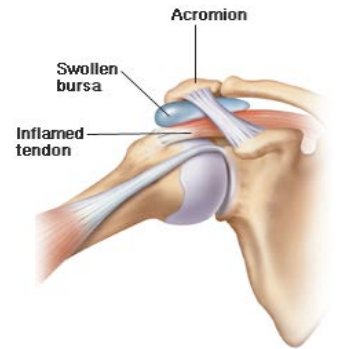
Tendons of Rotator Cuff and Bursa become irritated and inflamed as they come under the point of the shoulder.

Results in pain, weakness and loss of shoulder movements.

Painful to lie on affected shoulder and lift arm.

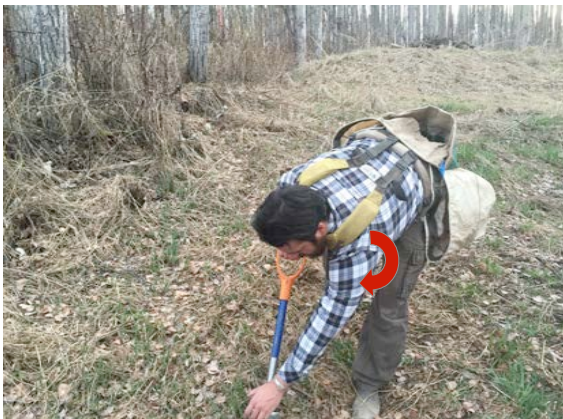
Can get grinding and popping sounds.

Refer to Video.



## Possible Causes

- Poor shoulder blade position when planting. i.e rounded or shrugged shoulder (see picture on left, red arrow).
- Over reaching to place tree.
- Weak rotator cuff.
- Hitting hard ground forcing shoulder upwards (see picture on right, red arrow).





# Shoulder Impingement

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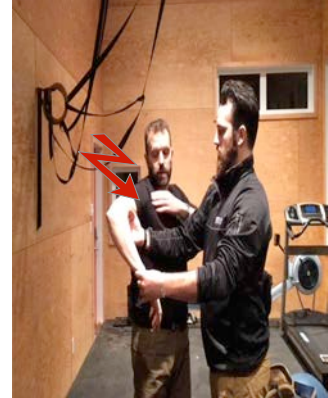
## Screening and Diagnosis

Pain on top of shoulder with lifting the arm.

Hitching shoulder blade to get more movement.

No significant weakness.

Positive Neer's or Hawkins-Kennedy Impingement tests.



## Treatment and Prevention

1. Ice, anti-inflammatories.
2. Keep shoulder back and down when planting.
3. Tape to reinforce posture and position (see right).
4. Stretch posterior capsule and mobilize thoracic spine.



## Posterior Capsule Stretch

- Apply overpressure with other hand
- Hold 5 seconds
- Repeat 10 times



## Thoracic Spine Mobilization

- Using a foam roller
- Hold 5 seconds
- Repeat 10 times



# Rotator Cuff Strains & Tears

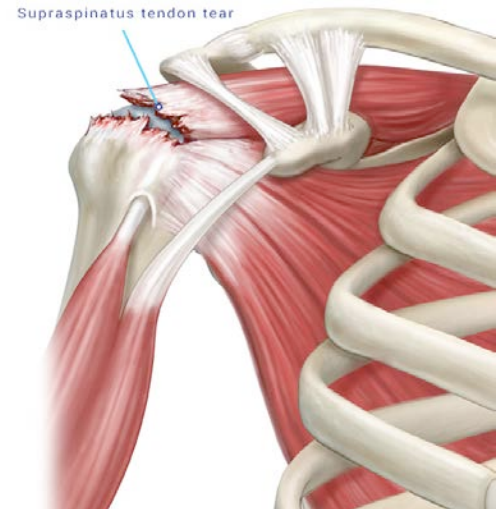
Rotator cuff muscles position the shoulder correctly and assist with movement.

Tears cause sudden weakness when lifting the arm, particularly to the side, pain may not occur immediately.

May occur gradually or acutely.

Early identification is key to prevent further injury, significant tears require surgery.

Refer to Video.



## Possible Causes

- Handling excessive or repetitive force with poor shoulder blade position (rounded or shrugged shoulder).
- Performing overhand lifts, lifts away from body or excessive lifts.
- Sudden jerking or impact through the arm with force.

## Screening and Diagnosis

Early identification of a tear is important.

Look for inability to lift arm to shoulder height or positive 'empty can test' (significant weakness is more important than pain)

If you suspect a torn muscle refer to practitioner immediately.

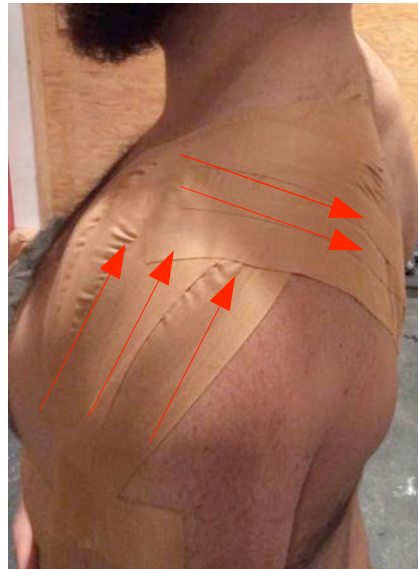


# Rotator Cuff Strains & Tears

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## Treatment and Prevention

1. Ice, anti-inflammatories and tape will help minor strains.
2. Keep shoulders back and down when planting or lifting (see below left).
3. Tape to reinforce shoulder blade position and de-load the tendon (see below right).
4. Refer to practitioner if doesn't respond



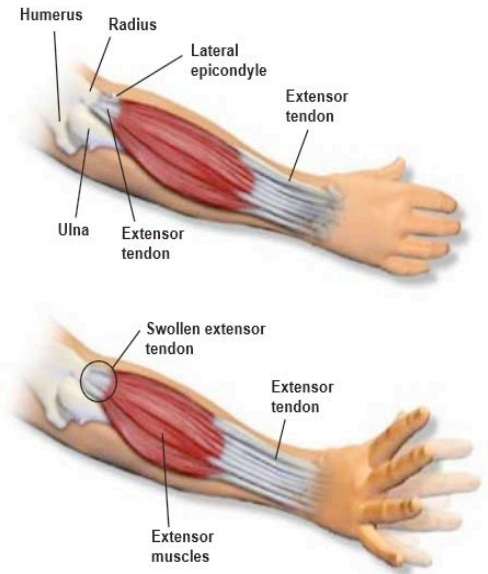
# Tennis Elbow

An acute or chronic inflammation and tenderness of the tendon attaching to the outside of the elbow, connecting the forearm muscles.

Tendon becomes damaged by trauma or repetitive use. This causes micro tears and scar tissue.

Commonly associated with physical work requiring repetitive gripping or lifting.

Refer to Video.



## Possible Causes

- Excessive wrist extension when using shovel or bags
- Gripping shovel too tightly
- Poorly fitting gloves requiring excessive grip
- Forceful over flexion of wrist
- Striking hard ground repetitively



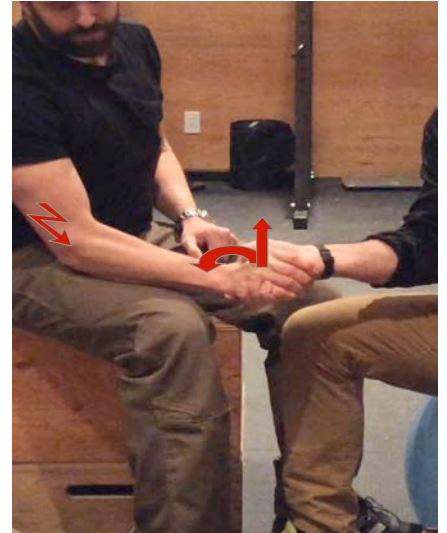
# Tennis Elbow

## Screening and Diagnosis

Tenderness over the outside of the elbow.

Pain with gripping, turning, lifting the wrist or opening the fingers.

Severe pain or significant loss of strength may indicate more serious tears.



## Treatment and Prevention

1. Self massage (see below left)
2. Avoid repetitive wrist extension when planting
3. Wear snug fitting gloves
4. Extensor stretching and strengthening (see next page)
5. Ice, anti-inflammatories
6. Tape to unload (see below middle and right)



# Tennis Elbow

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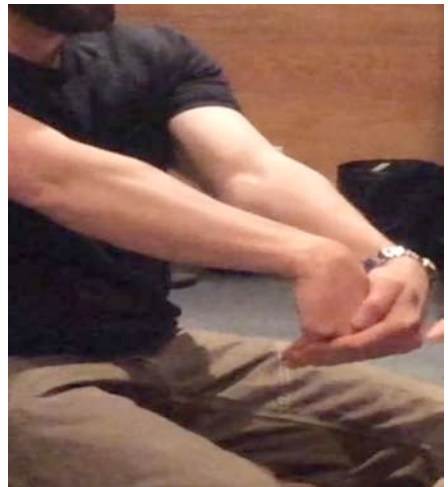
## Eccentric Extensor Strengthening

- Resist wrist extension
- Repeat 3 sets of 15



## Extensor Stretch

- Hold 5 seconds
- Repeat twice



# Medial Epicondylitis

Similar to tennis elbow, pain is on the inside of the elbow.

Acute or chronic inflammation of the tendon attaching to the inside of the elbow, attaching the forearm flexors.

Tendon becomes damaged by trauma or repetitive use.

This causes micro tears and scar tissue.



## Possible Causes

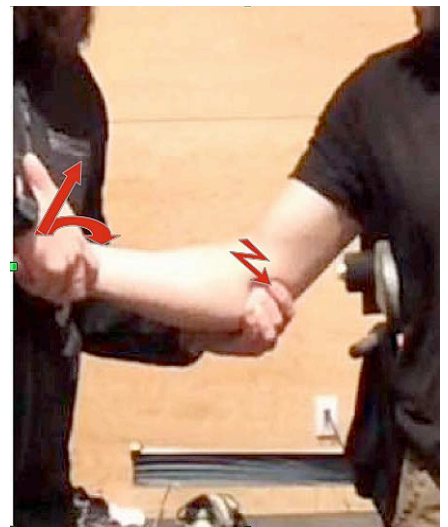
- Excessive forceful wrist flexion and inward rotation
- Gripping shovel too tightly
- Poorly fitting gloves requiring excessive grip
- Repetitive excessive wrist extension when planting
- Tight wrist flexors

## Screening and Diagnosis

Tenderness over the inside of the elbow.

Pain with gripping, flexing the wrist or curling the fingers.

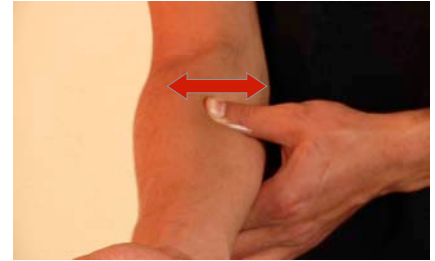
Severe pain or significant loss of strength may indicate more serious tears.



# Medial Epicondylitis

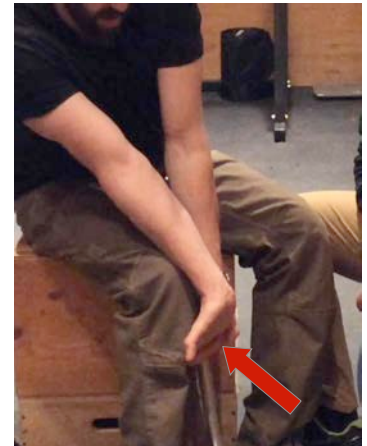
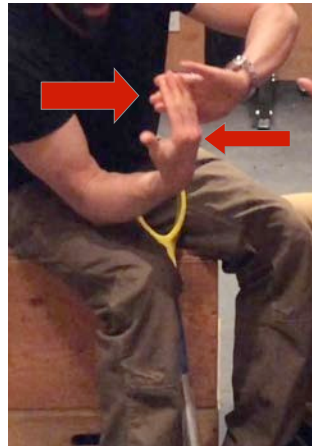
## Treatment and Prevention

1. Self massage (see right)
2. Wear snug fitting gloves
3. Ice, anti-inflammatories
4. Avoid repetitive wrist flexion, extension and rotation when planting
5. Flexor stretching and strengthening (see below)
6. Tape to unload (see right)



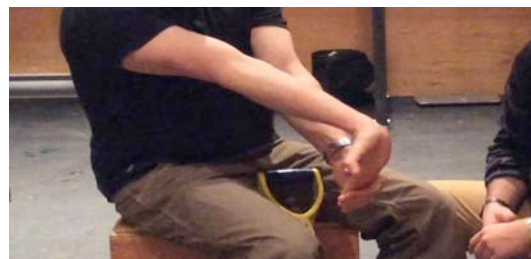
## Eccentric Flexor Strengthening

- Resist wrist flexion
- Repeat 3 sets of 15



## Flexor Stretch

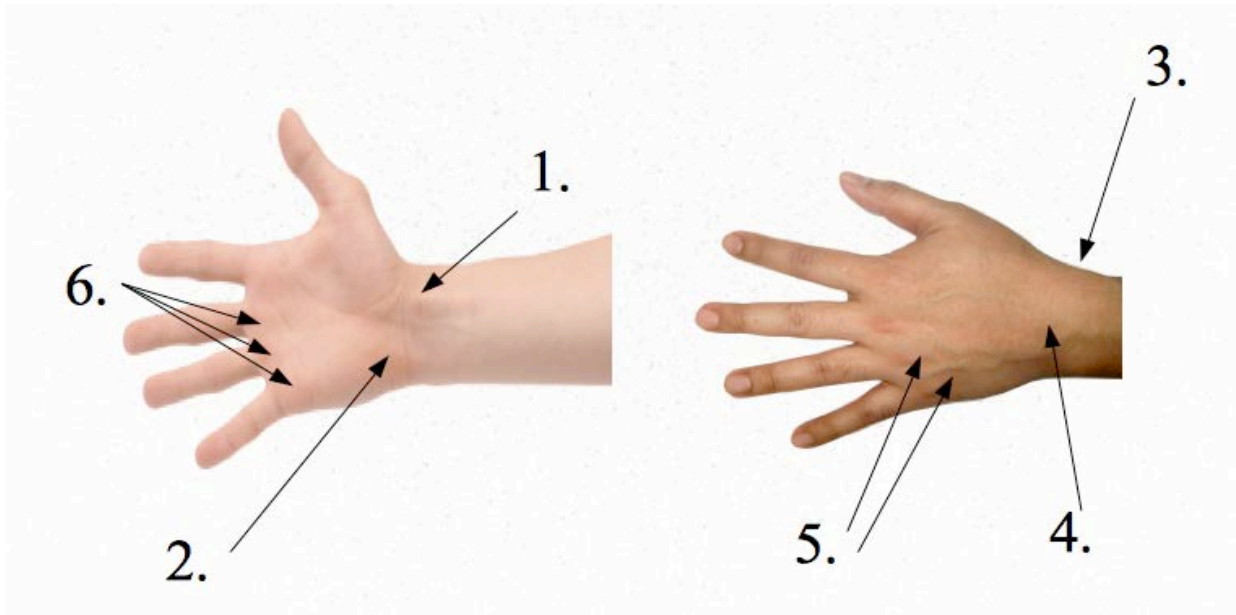
- Hold 5 seconds
- Repeat twice





# Hand and Wrist Injuries Pain Map

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1. Carpal Tunnel Syndrome
2. Ulnar Nerve Irritation (Claw Hand)
3. De Quervins Tendonitis (Thumb Tendonitis)
4. Carpal Impingement
5. 4<sup>th</sup> & 5<sup>th</sup> Finger Extensor Tendonitis
6. Trigger Fingers

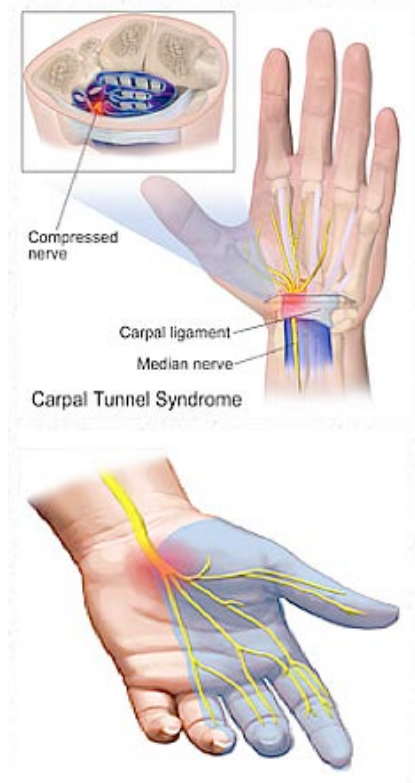
# Carpal Tunnel Syndrome

Caused by nerve compression at the wrist.

Swelling in wrist can compress the nerve.

Causes pain numbness or burning into thumb and fingers. May also get loss of grip strength.

Refer to Video.



## Possible Causes

- Excessive wrist movement when using shovel
- Holding shovel too tight
- Striking rocks or hard ground
- Wearing loose or wet gloves requiring more grip to hold shovel
- Sleeping with wrists bent or flexed
- Vibration from riding quad
- Head forward or protruded when planting

## Treatment and Prevention

1. Reduce inflammation using ice, anti-inflammatories (oral or topical)
2. Unload Nerve:
  - Brace at night to keep wrist straight (top right)
  - Keep chin tucked when planting (bottom right)
3. Median Nerve glide (next page)
4. Wear Snug fitting gloves
5. Physiotherapy if symptoms are severe



# Carpal Tunnel Syndrome

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## Median Nerve Glide

- Hold for 5 seconds
- Repeat 10 times
- To increase load, place palm on wall or crummy and turn heard towards arm.
- Can turn head away for more tension.
- Repeat 3 sets of 15 (without increasing pain).



## Wrist Stretch

- Get a partner to assist
- Hold palm with one hand and open like a book
- Hold 5 seconds
- Repeat 5 times



# Ulnar Nerve Irritation

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Also called Claw Hand. Caused by swelling or irritation of the ulnar nerve at wrist.

Causes hand to cramp and form claw shape.

Can have numbness into ring and little finger.

Refer to Video.



## Possible Causes

- Impact from shovel on ulnar nerve at wrist.
- Hitting rocks or hard ground.
- Over stretch of nerve with excessive wrist extension using shovel.



## Treatment and Prevention

1. Limit wrist extension when using shovel
2. Test ground when striking shovel
3. Can adapt or cushion shovel handle
4. Ice, anti-inflammatories
5. Ulnar nerve glide



### Ulnar Nerve Glide

- Hold for 5 seconds
- Repeat 10 times
- Keep Shoulder down
- Little and ringer fingers should be straight



# De Quervins

Also called Thumb Tendonitis.

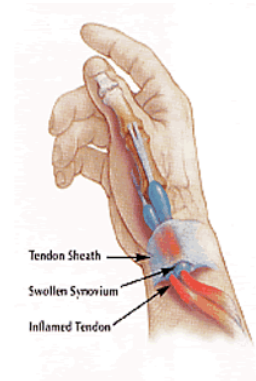
Inflammation of tendons at the base of the thumb.

Causes pain with thumb and wrist movements.

Tendon may squeak or creak.

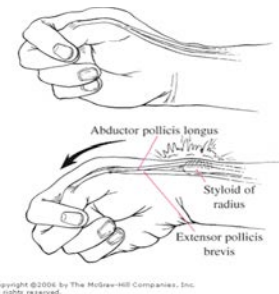
Pain with this movement (see sketch middle right).

Refer to Video.



## Possible Causes

- Repetitive deviation of wrist to open hole (picture below top)
- Repetitive deviation of wrist to tear tape (picture below bottom)
- Tight glove compressing wrist
- Banging or direct trauma to wrist



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## Treatment and Prevention

1. Stop aggravating movement.
2. Ice, anti-inflammatories.
3. Tendon sheath mobilization and massage (next page)
4. Unload tendon with tape

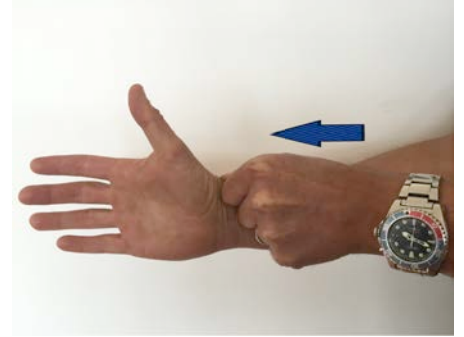


# De Quervins

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## Tendon Sheath Mobilization

- Grasp tendon at wrist with thumb extended, push towards thumb
- Flex thumb, pull tendon towards elbow.
- Creates a shear force
- Will be painful for first 6 reps
- Repeat 15 reps



# Carpal Impingement

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Pain on back of wrist when trying to extend wrist, e.g. Pushing up from ground.

Loss of range of extension.

May have clunking feeling or noise in wrist.

Caused by overstretch of ligaments in back of wrist allowing carpals to drift and then jam with extension movements.

Refer to Video.

## Possible Causes

- Repetitive wrist flexion, e.g overstretching using shovel
- Sustained wrist flexion. e.g sleeping with wrists bent
- Sudden extension force. e.g hitting rock with shovel forcing wrist back



## Treatment and Prevention

1. Watch technique to not over flex wrist
2. Ice, anti-inflammatories
3. Mobilize carpals into extension (see next page)
4. Use tape to limit movement and avoid position



# Carpal Impingement

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## Carpal Extension Mobilization

- Mobilize carpals into extension
- Place thumb on painful spot.
- Pull wrist apart.
- Extend wrist by straightening elbow and pushing down with thumb.
- Repeat 10 times each bag up.





# 4<sup>th</sup> & 5<sup>th</sup> Finger Tendonitis

Causes Pain and swelling on back of hand on fourth and fifth fingers.

Can get squeaky or creaky noise or sensation.

Caused by swollen tendon and sheath.

Refer to Video.



## Possible Cause

- Planting Technique. When opening hole with shovel, if the wrist is extended and the force used is pulling the wrist backwards then the tendons will rub creating the inflammation. Inflammation causes sticking of tendons which in turn causes pain loss of mobility and crepitis.

## Treatment and Prevention

1. Change technique - keep wrist straight
2. Ice, anti-inflammatories
3. Tendon sheath mobilisation. (see next page)
4. Eccentric loading of extensor tendons (see next page)



### Tendon Sheath Mobilisation

- Hold Tendon where painful.
- Fully straighten finger while pushing sheath towards finger.
- Bend finger and pull sheath in opposite direction.



### Eccentric Loading

- Resist finger extension while tendon is lengthening.
- Start with straight fingers, end with fully bent. Resist thru movement
- Repeat 3 sets of 15 twice daily



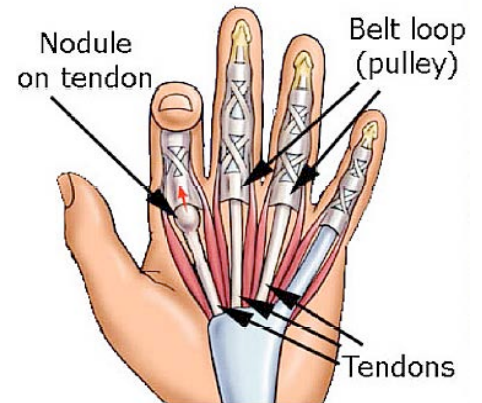
# Trigger Fingers

Tendons get a swelling which gets stuck on the pulleys in the palm of the hand.

Can see a bump on tendon.

Can cause finger to get stuck or make a snapping noise when moving.

Refer to Video.



## Possible Causes

- Repetitive rubbing or pressure from shovel handle on palm of hand.
- Bunching of glove causing pressure area.

## Treatment and Prevention

1. Ice, anti-inflammatories
2. Wear gloves that fit
3. Watch pressure areas on palm of hands
4. Do eccentric loading of tendon stretch

### Eccentric Loading

- Start with fingers and wrist bent.
- Resist as you straighten fingers and extend wrist.
- Repeat 3 sets of 15 twice daily

