

Acute ACL

Is it an ACL injury

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Clinical Specialist Triage physio and Senior Orthopaedic physio



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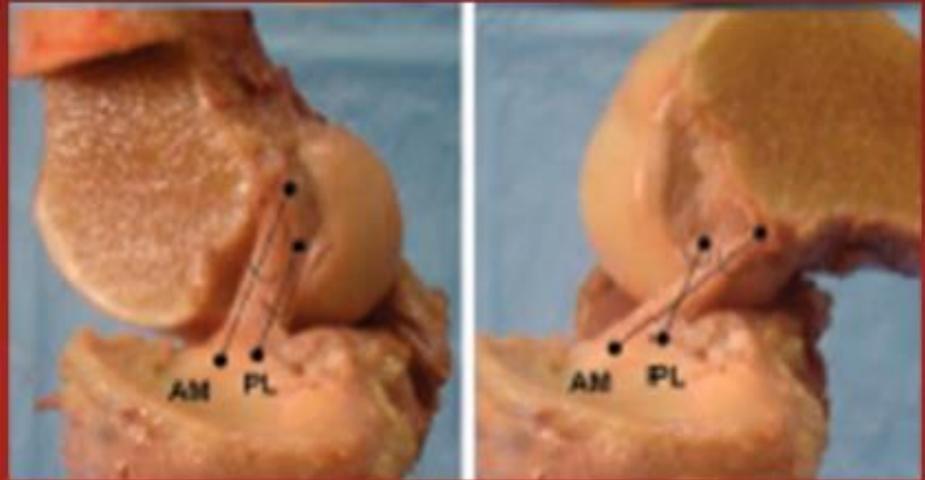
Anatomy and function

- ▶ Function of ACL is to resist anterior translation of tibia on femur.
- ▶ The ACL is often said to be comprised of two bundles: an anteromedial bundle that is tight in flexion and a posterolateral bundle that is tight in extension.

Anterior Cruciate Ligament

Two bands

- Anteromedial band taut in flexion
- Posterolateral band taut in extension





History

- ▶ Mechanism of injury
- ▶ Contact vs non contact
- ▶ Using patient report a sudden stop or change of direction – quick deceleration hyperextension or rotational injury





Risk Factors

4 categories environmental, biomechanical hormonal and anatomical

- ▶ Previous history of ACL injury
- ▶ Females
- ▶ General Hyperlaxity
- ▶ Abnormal biomechanics
- ▶ Footwear

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Observation

- Swelling
- Antalgic gait
- Weight bearing
- ? Check PCL beforehand observe for a posterior sag sign first so that you don't get a false positive on anterior drawer test



Special questions

- ▶ Giving way
 - ▶ Buckling
 - ▶ Immediate swelling
 - ▶ Able to weight bear after injury
 - ▶ Did they hear a pop
-
- ▶ What sport/occupation do they play



Lachman

- ▶ Good indicator for ACL damage in the posterolateral band
- ▶ Only test one plane instability
- ▶ Patient is supine, examiner holds knee between full extension and 30 degrees flexion. Femur is stabilised outside hand while other hand stresses tibia. For max results tibia should be laterally rotated. False results if femur not stabilised properly or meniscus tear is blocking translation or tibia medially rotated

Pivot Shift

- ▶ Test ACL and posterior capsule integrity
- ▶ False negative easily
- ▶ due to patient inability to relax and
- ▶ if there is meniscal involvement.
- ▶ If MCL is deficient
- ▶ Hemarthrosis is present
- ▶ Lateral compartment OA

High specificity 0.97 – 0.99

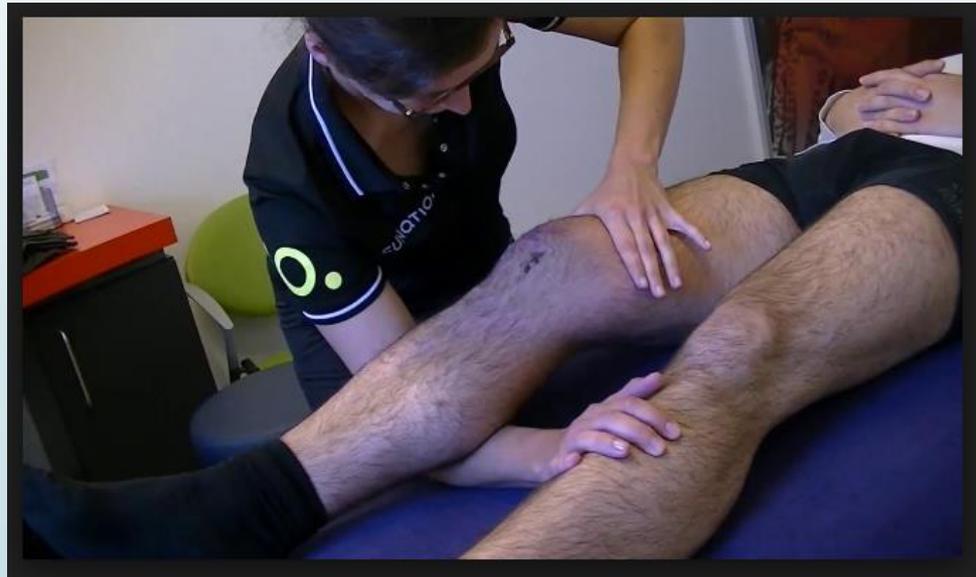
But test is subjective and high interobserver variability low sensitivity 0.18- 0.48

Anterior drawer

- Test for one plane anterior and one plane posterior instabilities.
- Difficulty is ascertaining starting position i.e. PCL lag sign
- Knee flexed to 90 degrees hip flexed to 45 degrees, patients foot is stabilised by examiner and examiner hands placed around tibia ensure hamstrings are relaxed, tibia drawn forward. Normal movement is about 6mm
- Positive test anteromedial bundle of ACL, posterolateral capsule, posteromedial capsule, MCL deep fibres, ITB

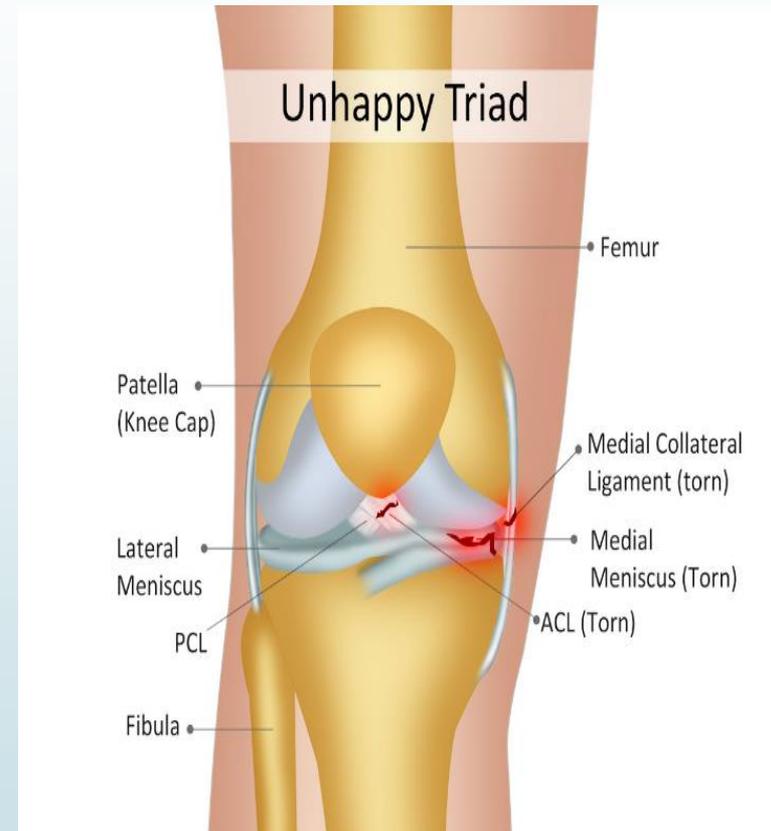
Levers Lelli's test

- ▶ Sensitivity 86%
- ▶ Specificity 91%



O'Donoghue Triad

- ACL tear
- MCL tear
- And Medial meniscus tear lateral compartment





Immediate treatment

- PRICE
- Bracing
- Rest and crutches
- Ice
- Compression
- Elevation

- MRI and refer to surgeon
- Prehab

GAA activate or 15 plus



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PHASE 1 – RUNNING, CUTTING AND LANDING MECHANICS

OUT



Drill 1 JOG 2 reps (focusing on upper body technique)

- Exaggerate arms (hands hip to lip).
- Keep chest open and head up.



Drill 2 1/2 PACE RUN 2 reps (focusing on lower body technique)

- Stay tall through the hips.
- High knee drive.
- Run off the balls of the feet.



Drill 3 JUMP, CATCH AND LAND 2 reps

- When landing, keep feet hip width apart.
- Land by flexing hips and knees.
- Keep knees over toes.



Drill 4 PARTNER SHUFFLE 2 reps

- Adopt semi-squat position.
- Keep body facing forward.

IN



Drill 1 A SKIP 2 reps

- Co-ordinate arms and legs.
- Pick up knees and toes.



Drill 2 ICE HOCKEY STOP 2 reps

- Stop in a lateral lunge at each cone.
- Keep head and back straight.
- Sit down and back on lead leg.



Drill 3 PICK UPS 2 reps

- For Gaelic Football: alternate pick-up leg.
- For Hurling: alternate between a jab lift and a roll lift.



Drill 4 LUNGE STOPS 2 reps

- Decelerate from jog by dropping into lunge.
- Keep knee in line with foot and hip.

FIFA 11 plus

FIFA 11+

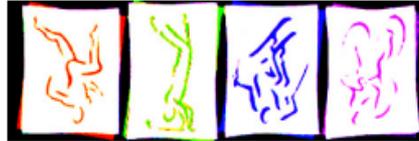
PART 1 RUNNING EXERCISES - 8 MINUTES

 <p>1 RUNNING STRAIGHT AHEAD</p> <p>The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>2 RUNNING HIP OUT</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>3 RUNNING HIP IN</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>
 <p>4 RUNNING CIRCLING PARTNER</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>5 RUNNING SHOULDER CONTACT</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>6 RUNNING QUICK FORWARDS & BACKWARDS</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>

PART 2 STRENGTH · PLYOMETRICS · BALANCE · 10 MINUTES

<p>LEVEL 1</p>  <p>1 THE BENCH STATIC</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	<p>LEVEL 2</p>  <p>2 THE BENCH ALTERNATE LEGS</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	<p>LEVEL 3</p>  <p>3 THE BENCH ONE LEG LIFT AND HOLD</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>
 <p>4 SIDEWAYS BENCH STATIC</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>5 SIDEWAYS BENCH RAISE & LOWER HIP</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>6 SIDEWAYS BENCH WITH LEG LIFT</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>
 <p>7 HAMSTRINGS BEGINNER</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>8 HAMSTRINGS INTERMEDIATE</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>9 HAMSTRINGS ADVANCED</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>
 <p>10 SINGLE LEG STANCE HOLD THE BALL</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>11 SINGLE LEG STANCE THROWING BALL WITH PARTNER</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>12 SINGLE LEG STANCE TEST YOUR PARTNER</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>
 <p>13 SQUATS WITH TOE RAISE</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>14 SQUATS WALKING LUNGES</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>	 <p>15 SQUATS ONE-LEG SQUATS</p> <p>Each group is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in. The coach is made up of 10 equal sized groups of 10. Each group is given a 10m x 10m area to run in.</p>

PEP program



The Santa Monica Sports Medicine Research Foundation *The PEP Program: Prevent injury and Enhance Performance*

This prevention program consists of a warm-up, stretching, strengthening, plyometrics, and sport specific agilities to address potential deficits in the strength and coordination of the stabilizing muscles around the knee joint. It is important to use proper technique during all of the exercises. The coaches and trainers need to emphasize correct posture, straight up and down jumps without excessive side-to-side movement, and reinforce soft landings. This program should be completed 3 times a week. If you are using this program with athletes that are twelve or under, please perform the plyometrics over a visual line on the field or a flat 2" cone and land each jump with two feet. Do not perform single leg plyometrics with young individuals until they demonstrate substantial control. (see addendum) The field should be set up 10 minutes prior to the warm-up. This will allow for a smooth transition between the activities. A sample field set-up has been included in your packet.

This program should take approximately 15 - 20 minutes to complete. However, when you first begin the program, it may take slightly longer due to the fact that you must first become well acquainted with the program and the transitions. Along side each exercise you will notice a box with the approximate amount of time that should be spent on each activity. This will serve as a guideline to you in order to conduct your warm-up in a time efficient manner.



Hip journal

- ▶ Personalised hip Therapy: development of a non-operative protocol to treat femoroacetabular impingement syndrome in the FASHlon randomised controlled trial. Peter Wall et al Br J sports Med 2016,50:1217 – 1223