

# ACL Updates

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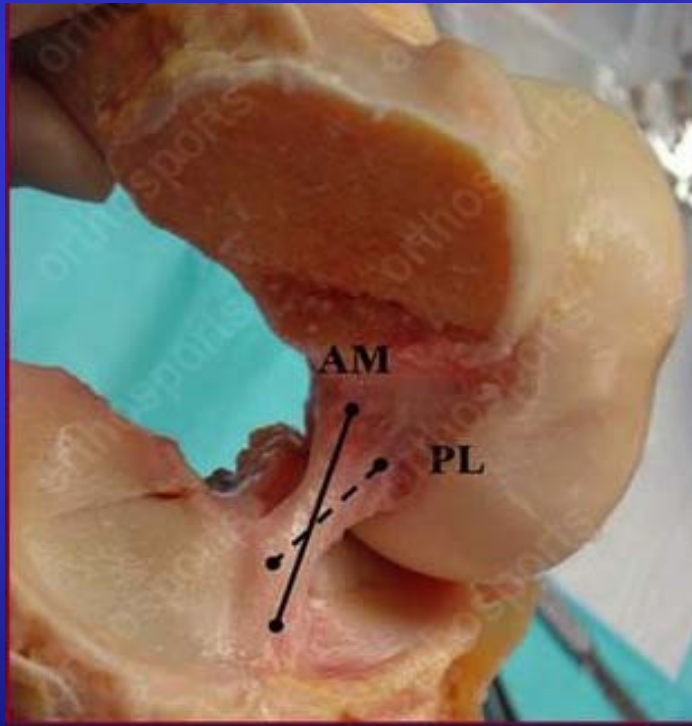


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# What's New in ACL Reconstruction?



- History
- Examination
- Investigations
- Graft Placement
- Graft Choice
- Rehabilitation



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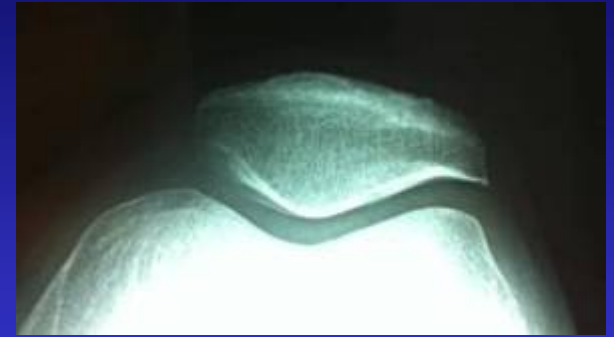
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# Routine Imaging

- Weight Bearing AP
- Lateral
- Notch View
- Skyline Patella



# MRI



Sagittal



Coronal

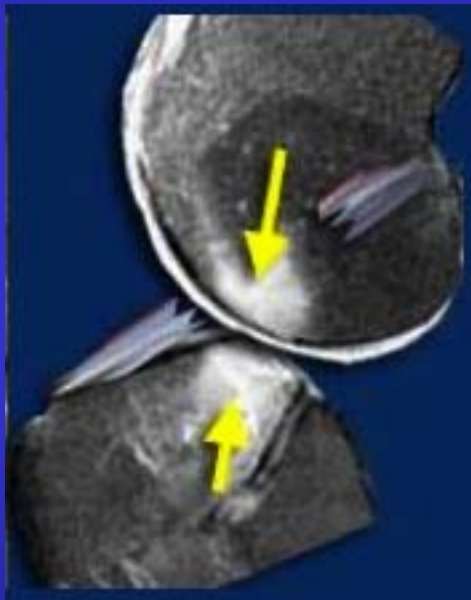


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# Bone bruising from dislocation

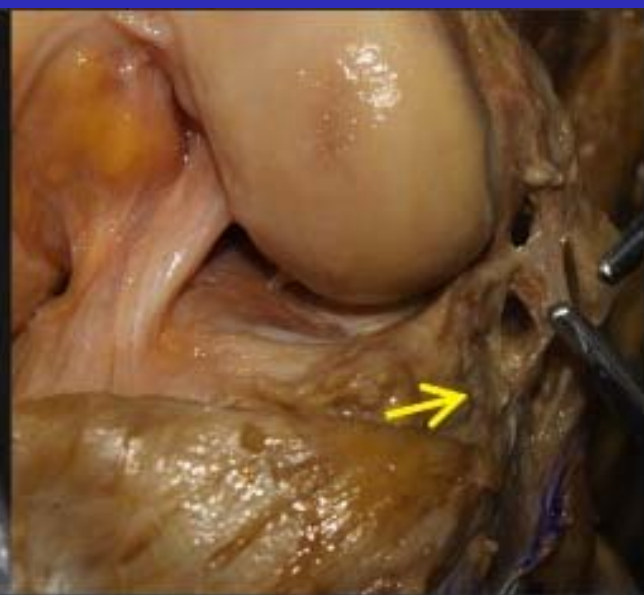


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# Segond Fracture



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# Graft Placement – Lots New

- Over the top NO
- 1 or 11 O'clock NO
- Trans tibial drilling NO
- Vertical grafts NO

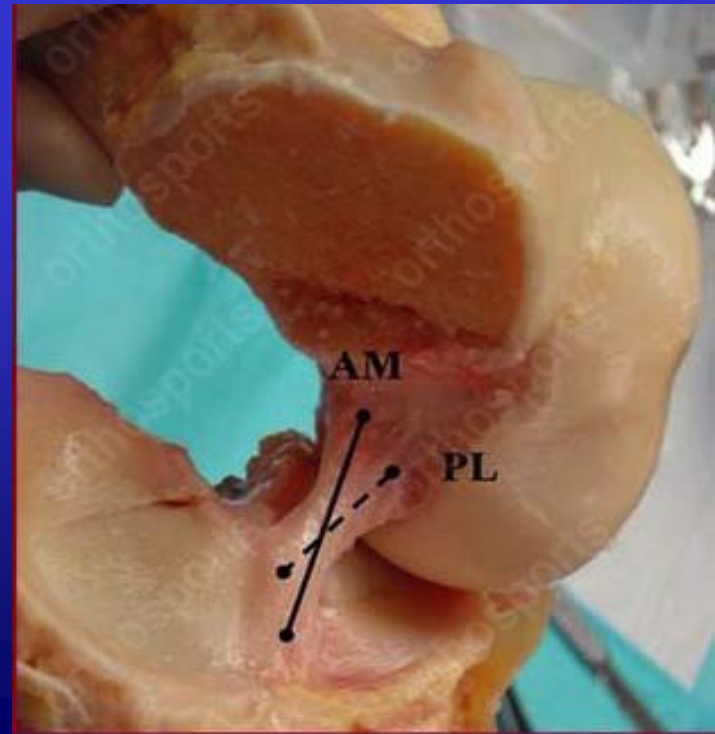
Tight in extension with negative Lachmann  
and good KT scores / IKDC scores BUT not  
ideal rotational stability





# Graft Anatomy

- Vertical graft does not recreate PL bundle
  - PL bundle resists tibial IR near full-knee extension
- “Anatomic” reconstructions better reproduce the PL bundle



# Graft Placement – why do we need something new?

- 2-8% of pts not happy
- Negative Lachmann but ongoing functional instability
- Pivot shift remains positive despite an excellent operation



Using the anatomical footprint makes  
sense but...

It has lead to higher re-rupture rates in  
professional soccer players



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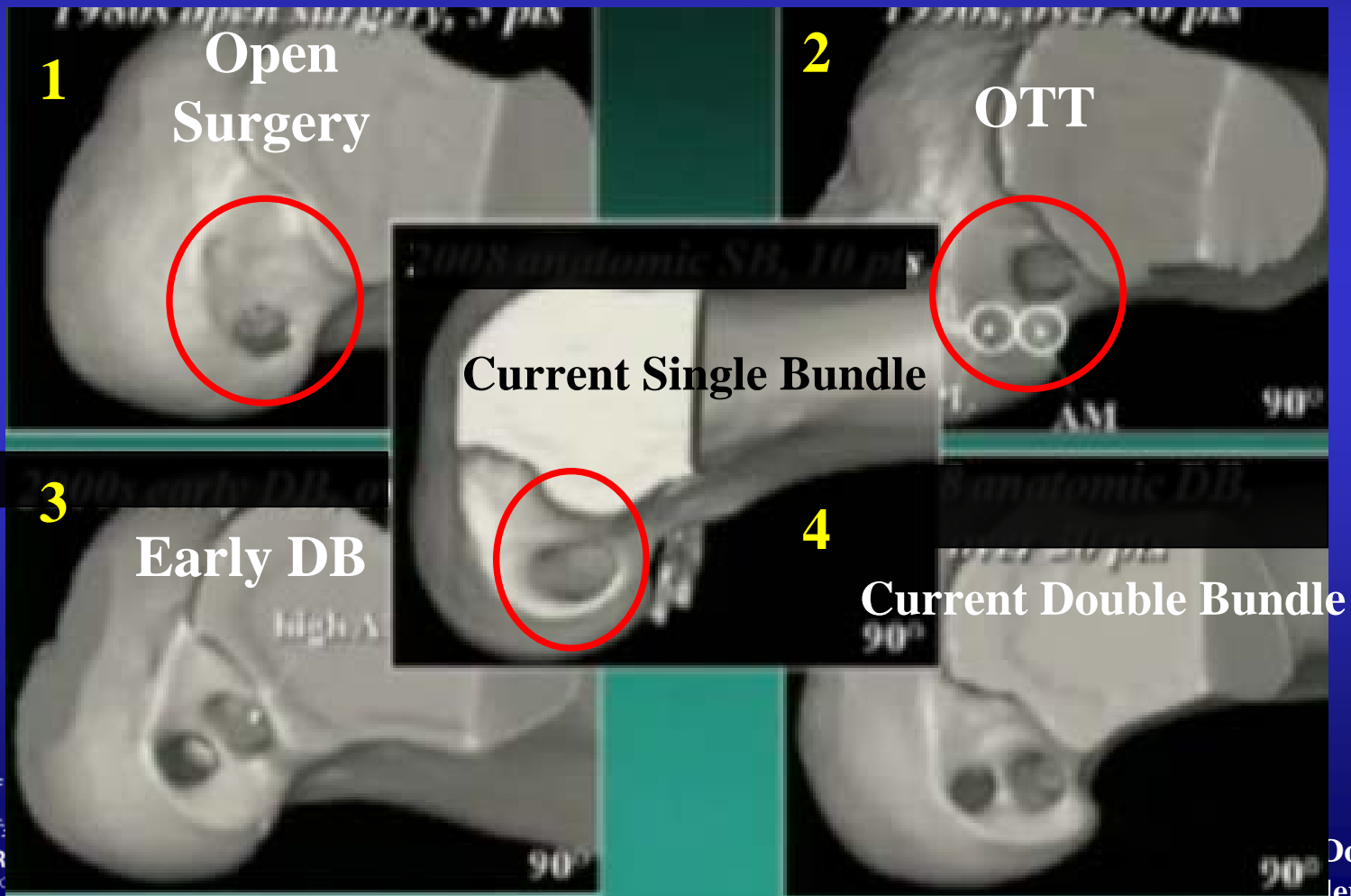
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# Pivot shift after surgery

- Poorer patient-reported outcomes after ACL reconstruction
- Can happen without failure of the ACL
- In some patients an intra-articular reconstruction is not sufficient to completely restore rotational knee stability



# Evolution of tunnel position



# What does the Second fracture signify?



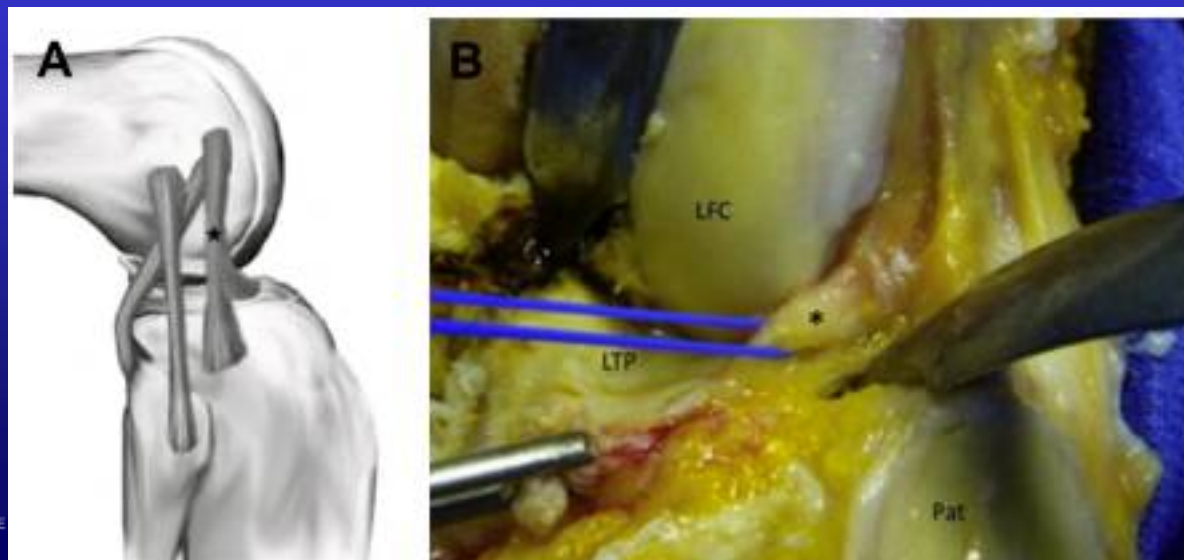
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# Anterolateral Ligament

- Originates from the LFC, just anterior to the popliteus tendon
- Inserts on the anterolateral tibial plateau
- Tibial insertion posterior to the posterior border of Gerdy's tubercle



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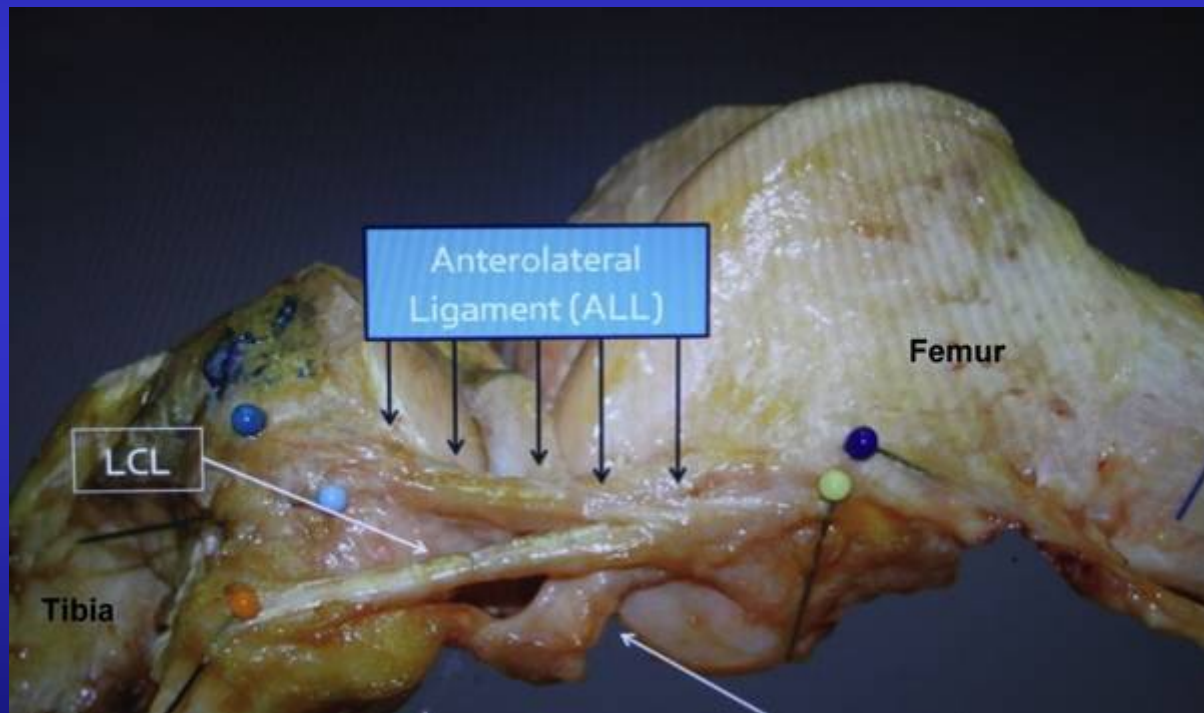
# Anterolateral Ligament

- The anterolateral ligamentous structures of the knee are under significant load when the lateral tibia is translated anteriorly and could act as a secondary restraint, supplementing the primary role of the ACL in preventing tibial rotation and anterior translation.





# Anterolateral Ligament Injury



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# Lateral extra-articular tenodesis

- Goal : to diminish tibial internal rotation and anterior translation of the lateral tibia.



# Lateral Reconstruction

- The longer lever arm = more efficient control of tibial rotation
- Rotational laxity controlled even if intra-articular graft fails
- Decreases stress on intra-articular reconstruction by more than 40%



# Anterolateral Ligament Reconstruction

- Not usually done as a primary procedure
- Indicated in revisions where the operation was done well the first time

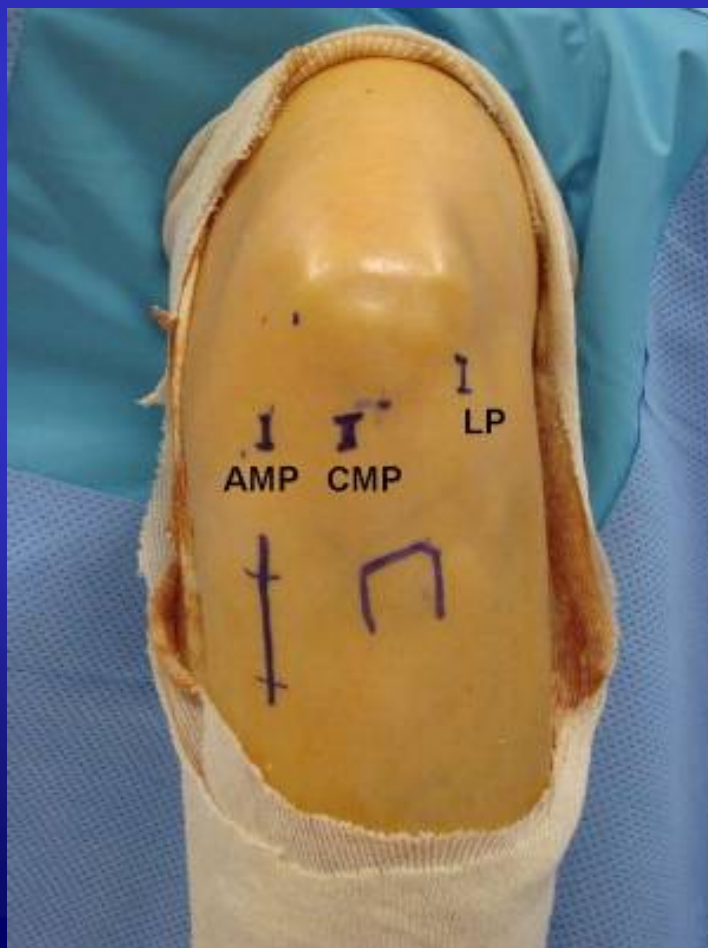


# Contraindication

- The presence of a PL corner injury
  - The tenodesis may tether the tibia in a PL subluxed position.



# Surgical Technique



# Graft Sources

- LARS going out of favour
  - Was trendy and advertised in the media
  - Results not as good as promised
  - High number of revisions
  - Still not sure if it will destroy the knee
- Based on historical failures (Kennedy LAD etc) I have never done one



# Graft Sources

- BTB being used more often
- Quads Tendon with bone a good option
- Allograft
  - Very high failure rate <25 years old





# Rehabilitation

- FIFA 11
- PEP
  
- Reducing re injury rates from 10% to 1%



# The Programme

- Part 1: Running exercises at a slow speed combined with active stretching and controlled partner contacts
- Part 2: Six set of exercises, focusing on core and legs strength, balance, and plyometrics/ agility, each with three levels of increasing difficulty
- Part 3: Running exercises at moderate/high speed combined with planting/cutting movements.





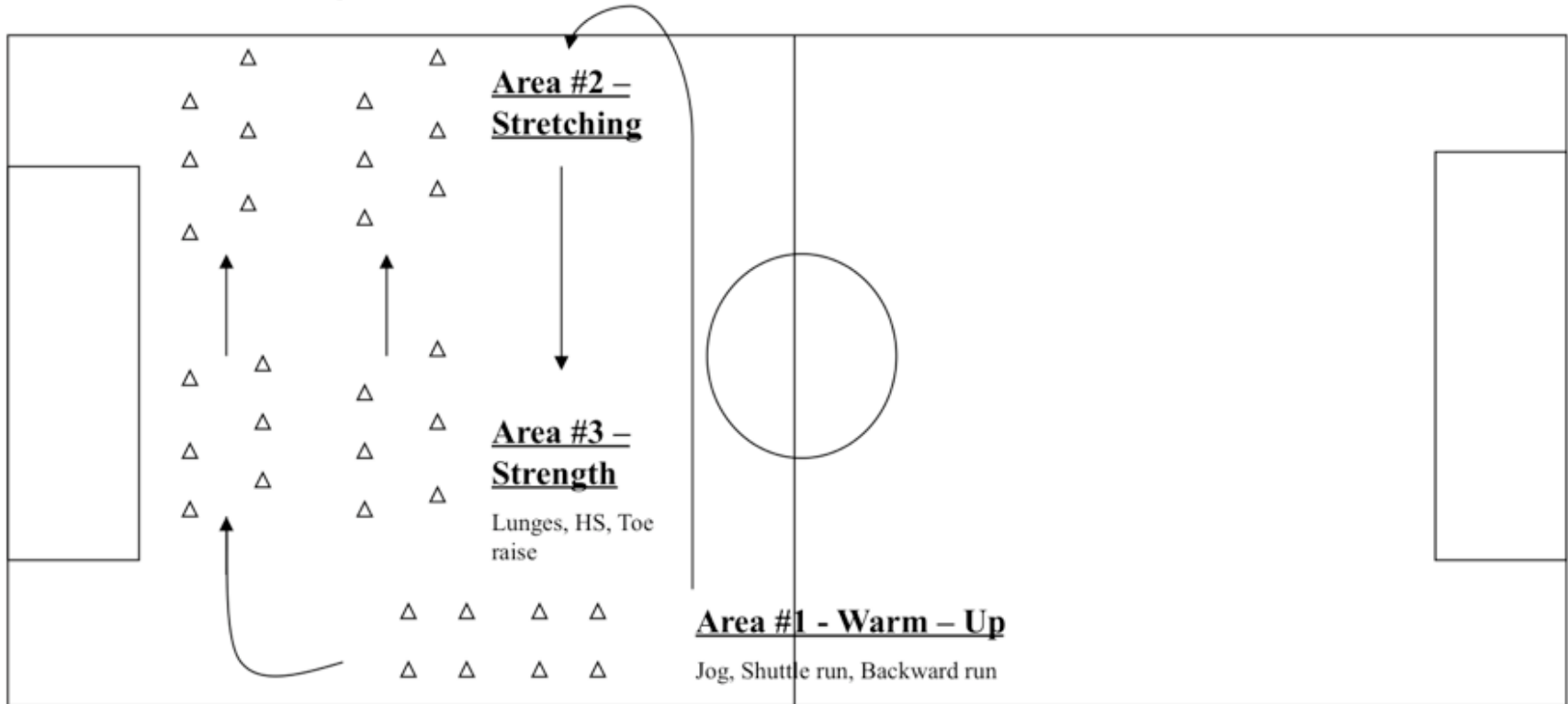
# PEP Program: Prevent injury and Enhance Performance



## Field Set-Up

### Area #5 Agilities

Shuttle Run /Diagonal Run



### Area #4 –

### Plyometrics

Side-to-side/Forward and Backward Hops

Note: Set-up one half of the field with cones 10 minutes prior to practice.

This will allow for a smooth transition between exercises.

11+			
<b>PART 1: RUNNING EXERCISES - 8 MINUTES</b>			
1. 10 METRES STRAIGHT AHEAD	2. 10 METRES HIP HIT	3. 10 METRES HIP IN	4. 10 METRES HIP OUT
5. 10 METRES DRIVING PARTNER	6. 10 METRES SHOULDER CONTACT	7. 10 METRES HEAD & SHOULDER CONTACT	8. 10 METRES HEAD & SHOULDER CONTACT
<b>PART 2: STRENGTH - PLYOMETRICS - BALANCE - 10 MINUTES</b>			
1. THE WALL - STATIC	2. THE WALL - ADVANCED	3. THE WALL - ONE LEG LIFT AND HOLD	4. THE WALL - ONE LEG LIFT AND HOLD
5. THE WALL - STATIC	6. THE WALL - ONE LEG LIFT AND HOLD	7. THE WALL - ONE LEG LIFT AND HOLD	8. THE WALL - ONE LEG LIFT AND HOLD
9. THE WALL - ONE LEG LIFT AND HOLD	10. THE WALL - ONE LEG LIFT AND HOLD	11. THE WALL - ONE LEG LIFT AND HOLD	12. THE WALL - ONE LEG LIFT AND HOLD
13. THE WALL - ONE LEG LIFT AND HOLD	14. THE WALL - ONE LEG LIFT AND HOLD	15. THE WALL - ONE LEG LIFT AND HOLD	16. THE WALL - ONE LEG LIFT AND HOLD
17. THE WALL - ONE LEG LIFT AND HOLD	18. THE WALL - ONE LEG LIFT AND HOLD	19. THE WALL - ONE LEG LIFT AND HOLD	20. THE WALL - ONE LEG LIFT AND HOLD
21. THE WALL - ONE LEG LIFT AND HOLD	22. THE WALL - ONE LEG LIFT AND HOLD	23. THE WALL - ONE LEG LIFT AND HOLD	24. THE WALL - ONE LEG LIFT AND HOLD
<b>PART 3: RUNNING EXERCISES - 3 MINUTES</b>			
1. 10 METRES AROUND THE PITCH	2. 10 METRES AROUND THE PITCH	3. 10 METRES AROUND THE PITCH	4. 10 METRES AROUND THE PITCH
5. 10 METRES AROUND THE PITCH	6. 10 METRES AROUND THE PITCH	7. 10 METRES AROUND THE PITCH	8. 10 METRES AROUND THE PITCH
9. 10 METRES AROUND THE PITCH	10. 10 METRES AROUND THE PITCH	11. 10 METRES AROUND THE PITCH	12. 10 METRES AROUND THE PITCH



The "11+" has three parts with a total of 15 exercises, which should be performed in the specified sequence at the start of each training session.

**Part 1:** running exercises at a slow speed combined with active stretching and controlled partner contacts;

**Part 2:** six sets of exercises focusing on core and leg strength, balance and plyometrics/agility, each with three levels of increasing difficulty; and

**Part 3:** running exercises at moderate/high speed combined with planting/cutting movements.

A key point in the programme is to use the proper technique during all of the exercises. Pay full attention to correct posture and good body control, including straight leg alignment, knee-over-toe position and soft landings.



## 4 RUNNING CIRCLING PARTNER

Jog forwards to the first cone. Shuffle sideways at a 90-degree angle towards your partner, shuffle an entire circle around one other (without changing the direction you are looking in) and back to the first cone. Jog to the next cone and repeat the exercise. When you have finished the course, jog back.

Do the exercise twice.

**Important when performing the exercise:**

- 1 Bend your hips and knees slightly and carry your body weight on the balls of your feet.
- Do **not** let your knees buckle inwards.



## 4 RUNNING CIRCLING PARTNER



This exercise strengthens your hamstrings and gluteal muscles and improves your movement control.

**Assume the starting position,** standing with both feet hip-width apart on the ground and your hands on your hips.

**During this exercise,** lunge forwards slowly at an even pace. As you lunge, bend your hips and knees slowly until your leading knee is flexed to 90 degrees. The bent knee should not extend beyond the toes. Keep your upper body straight and your pelvis horizontal. Do 10 lunges on each leg.

**Repetitions:** 2 sets (10 lunges on each side)

**Important when performing the exercise:**

- 1 Bend your leading knee to 90 degrees.
- 2 Keep your upper body upright.
- 3 Keep your pelvis horizontal.
- ▼ Your bent knee should **not** extend beyond your toes.
- ▼ Do **not** let your leading knee buckle inwards.
- ▼ Do **not** bend your upper body forwards.
- ▼ Do **not** twist or tilt your pelvis to the side.



# Summary

- Common injury
- Current operation works very well
- New operations need to be monitored very closely
- Rehab improving



# Thank you



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