

# The Knee

AT A GLANCE



A QUICK REFERENCE GUIDE TO:

Medial Collateral Ligament

Iliotibial Band

Patella Tendinopathy

Septic Joint

And More...

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*PLEASE REMEMBER – THIS GUIDE IS NOT A  
REPLACEMENT FOR CLINICAL REASONING.  
IF YOU ARE UNSURE GET ADVICE*

# Not To Be Missed

Although the site of pain may present in the knee, knee pain may be a symptom of another condition. Consider referral from other sites such as the hip, lumbar spine and peripheral entrapment neuropathies.

The scope of this book does not allow for a comprehensive overview of all conditions which exist around the knee. This book focusses on some of the more common presentations of knee pain. This excludes vascular conditions, such as popliteal artery entrapment and inflammatory conditions such as Gout.

Thank You for choosing this At A Glance reference guide for The Knee

# Effusion AT A Anterior Cruciate Ligament GLANCE



## Presenting Features

Sudden Onset Effusion

Haemarthrosis

Instability / Laxity

Pop or snap sound

Usually non-contact, weightbearing, twisting  
mechanism of injury

## Demographics

Females 1.7x higher risk

High speed changes of direction

## Comorbid/PMH

Possible link with hormonal changes  
and menstrual cycle

## Assessment

Often positive Lachmans, Pivot

Shift, Drawer Test

## Investigation

MRI - Integrity of ACL and  
associated Injuries

X-ray - Second fracture

# Effusion

Osteoarthritis

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## Presenting Features

- Gradual onset effusion
- No mechanism of injury
- <30 mins early morning joint stiffness
- Aggravated by activity

## Demographics

- Usually 40+ years old
- Slight female predominance

## Comorbid/PMH

- Previous knee trauma
- Cardio-respiratory disease
- Obesity
- Metabolic conditions

## Assessment

- Clinical diagnosis
- Radiographic OA  $\neq$  Symptomatic OA

## Investigation

- X-ray:
  - If changes patient's trajectory
  - Rapid deterioration
  - Under age 40

# Bursae AT A GLANCE



## Background

There are 4 bursae over the anterior aspect of the knee; Suprapatellar, Infrapatellar, Pre-Patellar, and the Pes Anserine Bursae

## Presenting Features

Most common - Pre-Patella Bursitis  
Visible and spherical swelling over Patella

## Demographics

More common with repeated kneeling

## Comorbid/PMH

Mechanical compression  
Pes Anserine Bursitis seen in ~20% of those with knee OA

## Assessment

Identify area and nature of swelling  
Consider systemic illness

## Investigation

Imaging not routinely used  
Bloods for inflammation/infection

## Infection

Systemic fever  
Local heat, redness, severe pain

# MCL AT A

Medial Collateral Ligament **GLANCE**



## Background

The adult MCL includes deep and superficial fibres, measures 10-12cm and provides rotational and valgus stability

## Presenting Features

Indirect or direct trauma to the knee

Immediate pain

Popping sensation

Swelling and/or bruising

## Demographics

Contact and team sports

Comorbid/PMH

Nil specific

## Assessment

Observe pain, bruising, swelling and laxity

Grade I (~5mm of laxity)

Grade II (~6-10mm laxity)

Grade III (>10mm laxity) complete tear

## Investigation

MRI - degree of MCL injury

X-ray - increased medial joint space and/or tibial plateau fracture

Calcification of femoral attachment (chronic MCL injury)

# Meniscal Tears AT A GLANCE



## Background

Traumatic tears arise from weightbearing with knee flexion and tibial torsion or high velocity deep knee flexion.

Atraumatic tears are associated with joint surface changes, symptoms usually of insidious onset.

## Presenting Features

Diffuse joint line pain (Medial > Lateral)

Mechanical signs - locking / giving way

	Traumatic	Atraumatic
Demographics	Most common <40	Most common >40
Comorbid/PMH	Nil	Osteoarthritis of the Knee

## Assessment

Several clinical tests exist with varying sensitivity, specificity, and reliability.

History + mechanical signs must correlate with MRI evidence of meniscal lesions.



# Meniscal Tears

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## Assessment (cont.)

Test	Sensitivity	Specificity
Childress	71%	39%
McMurray's	61%	84%
Joint Line Tenderness	83%	83%
Thessaly's	75%	87%

## Investigation

MRI is usually investigation of choice

N.B. High prevalence of findings in asymptomatic population

Arthroscope is most accurate but not usually recommended

## Surgery

Traumatic and non-traumatic lesions show no consistent superior outcomes in those with or without mechanical signs following surgery.

# Patella AT A Instability GLANCE



## Background

Non-traumatic dislocation associated with joint surface changes, symptoms usually of insidious onset.

## Presenting Features

Apprehension  
Catching sensation  
Frank dislocation

## Demographics

Trochlear Dysplasia

Patella Alta

Tibial Tuberosity to Trochlear Groove

Distance  $>16\text{mm}$  (TT-TG)

Patella Tilt  $>20^\circ$

Fourfold risk if  
4 are present  
compared to 3  
or less

## Assessment

Dislocation status

Apprehension testing

Inverted J Sign

## Comorbid/PMH

Hypermobility Disorders

Contralateral instability

## Investigation

X-ray - Fracture and Patella position

MRI - chondral injury, MPF Ligament injury  
and TT-TG distance

# Patella AT A

Tendinopathy

GLANCE



## Background

Pain around the anterior knee and inferior to the patella can be associated with the patella tendon

## Presenting Features

Gradual onset

Mid portion > teno-osseus tendon pain

Insertional pain more likely traction apophysitis/avulsion in adolescents

## Demographics

Jumping, sprinting, kicking

Apophysitis - growth spurt

## Comorbid/PMH

Nil specific

Slow recovery with poor metabolic health

## Assessment

History is key

Pain with mechanical loading

Apophysitis - tenderness over teno-osseus junction

Avulsion Fracture - bone pain high pain severity

## Investigation

Ultrasound or MRI will show tendinopathic changes but doesn't always correlate with symptoms.

# ITB AT A Iliotibial Band GLANCE



## Background

Thought to be a common site of pain in runners (incidence ~10%). Poorly understood with varying diagnostic terminology including impingement, compression, or a friction "syndrome".

## Presenting Features

Exertional pain Lateral Knee  
Tenderness Lateral Femoral Condyle  
Most acute at 30° Flexion

## Demographics

Repeated flexion activity, running/cycling  
Sudden change in volume  
Increased speed or hill work

## Comorbid/PMH

Nil specific

## Assessment

Ober's/Modified Ober's - limited validity  
Noble's Compression Test - unknown validity with confounding variables

## Investigation

No imaging indicated unless alternative pathology suspected

# Septic AT A Joint GLANCE



## Background

Medical emergency. Bacterial infection can occur systemically (from other infection) or directly (from a break in the skin barrier).

## Presenting Features

Pain, swelling, redness, heat  
Difficulty weight bearing  
Sometimes - fever, malaise, rigors

## Demographics

Low socioeconomic background  
>60 years old  
Previous steroid use

## Comorbid/PMH

Rheumatology (4-15x Risk)  
Immunosuppression, Chemo  
Recent invasive procedure  
Recent systemic infection  
Drug/alcohol abuse

## Assessment

Thorough history  
Swelling, temperature  
Observe ability to bear weight

## Referral

Accident and Emergency  
or Urgent Care facility

## Investigation

Joint aspiration  
Blood testing

# Sarcoma AT A GLANCE



## Background

Several types of sarcoma can manifest at the knee, the 3 most common being Osteosarcomas, Chondrosarcomas and Ewing's Sarcoma.

## Presenting Features

Knee pain and swelling

Non-mechanical pain

Insidious onset

Night pain

Painful weightbearing

Low trauma fracture

Palpable bony mass

Systemic ill health (later)

Symptoms may include distal femur / proximal Tibia

## Demographics

Chondrosarcoma - 40-80 Years Old

Ewing's - Caucasian, male>female

Osteosarcoma - 2nd most prevalent adolescent primary

## Comorbid/PMH

Osteosarcoma - Paget's, previous radiation

Chondrosarcoma - Osteo/Enchondromas

## Assessment

Palpate for masses

Joint deformity

## Investigation

MRI is primary method of identification

X-ray has utility but requires 30-50% bone destruction

Consider appropriateness of investigation in your setting

UK Guidelines - x-ray, FBC, ESR, bone profile inc ALP

# Resources

## Rob Tyer

Rob has over 12 years of experience as an MSK clinician, 6 of which he worked as an Advanced Practice Physiotherapist. He has recently started work as a Senior Lecturer for an undergraduate Physiotherapy programme.

Rob has recently co-authored a book on the management of suspected cauda equina syndrome ([www.theCESbook.com](http://www.theCESbook.com)) with Tom Jesson, and he runs courses on the management of lower limb tendinopathies with his colleague Nick Livadas.

## For More Information

Scan this QR code for reference list



## More At A Glance

Rheumatology

Spinal Masqueraders

The Hip

The Hand

Lumbar Radicular Syndromes



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**ONLINE.**

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**Rob Tyer**