Hip problems in children

The table below provides a brief summary of the potential causes of hip problems in children

Development dysplasia of the hip	Often picked up on newborn examination
Transient synovitis (irritable hip)	Typical age group = 2-10 years Acute hip pain associated with viral infection
Perthes disease	Perthes disease is a degenerative condition affecting the hip joints of children, typically between the ages of 4-8 years. It is due to avascular necrosis of the femoral head Perthes disease is 5 times more common in boys. Around 10% of cases are bilateral Features • hip pain: develops progressively over a few weeks • limp • stiffness and reduced range of hip movement • x-ray: early changes include widening of joint space, later changes include decreased femoral head size/flattening
Slipped upper femoral epiphysis	Typical age group = 10-15 years More common in obese children and boys Displacement of the femoral head epiphysis postero-inferiorly Bilateral slip in 20% of cases May present acutely following trauma or more commonly with chronic, persistent symptoms Features • knee or distal thigh pain is common • loss of internal rotation of the leg in flexion
Juvenile idiopathic arthritis (JIA)	Preferred to the older term juvenile chronic arthritis, describes arthritis occurring in someone who is less than 16 years old that lasts for more than three months. Pauciarticular JIA refers to cases where 4 or less joints are affected. It accounts for around 60% of cases of JIA Features of pauciarticular JIA • joint pain and swelling: usually medium sized joints e.g. knees, ankles, elbows • limp • ANA may be positive in JIA - associated with anterior uveitis

Lower back pain: investigation and management

Much of the following is based on the 2009 NICE low back pain guidelines. They apply to patients with non-specific lower back pain (i.e. not due to malignancy, infection, trauma etc) that has lasted for more than 6 weeks and less than 12 months.

Investigation

- lumbar spine x-ray should not be offered
- MRI should only be offered to patients with non-specific back pain where spinal fusion is being considered and to patients where malignancy, infection, fracture, cauda equina or ankylosing spondylitis is suspected

Advice to people with low back pain

- try to encourage self-management
- stay physically active and exercise

Analgesia

- paracetamol is first-line
- proton pump inhibitors should be co-prescribed for patients over the age of 45 years who are given NSAIDs
- tricyclic antidepressants should be considered if other medications are insufficient
- strong opioids should be considered for short-term use

NICE suggest that one of the following three treatments should be offered:

- exercise programme
- manual therapy
- acupuncture

Patients who have received at least one of the above treatments and who have high disability and/or psychological distress should be considered for a combined physical and psychological treatment programme, comprising around 100 hours over a maximum of 8 weeks.

Exercise programme

- up to 8 sessions over up to 12 weeks
- supervised group exercise

Manual therapy

- up to 9 sessions over up to 12 weeks
- includes spinal manipulation, spinal mobilisation and massage
- spinal manipulation can be performed by chiropractors and osteopaths, and doctors/physiotherapists who have undergone specialist training

Acupuncture

- up to 10 sessions over up to 12 weeks

Talipes equinovarus

Talipes equinovarus, or club foot, describes an inverted (inward turning) and plantar flexed foot. It is usually diagnosed on the newborn exam.

Talipes equinovarus is twice as common in males than females and has an incidence of 1 per 1,000 births. Around 50% of cases are bilateral.

Most commonly idiopathic. Associations include:

- spina bifida
- cerebral palsy
- Edward's syndrome (trisomy 18)
- oligohydramnios
- arthrogryposis

The diagnosis is clinical (the deformity is not passively correctable) and imaging is not normally needed.

Management*

- in recent years there has been a move away from surgical intervention to more conservative methods such as the Ponseti method
- the Ponseti method consists of manipulation and progressive casting which starts soon after birth. The deformity is usually corrected after 6-10 weeks. An Achilles tenotomy is required in around 85% of cases but this can usually be done under local anaesthetic
- night-time braces should be applied until the child is aged 4 years. The relapse rate is 15%

Morton's neuroma

Morton's neuroma is a benign neuroma affecting the intermetatarsal plantar nerve, most commonly in the third inter-metatarsophalangeal space. The female to male ratio is around 4:1.

Features

- forefoot pain, most commonly in the third inter-metatarsophalangeal space
- worse on walking. May be described as a shooting or burning pain. Patients may feel they have a pebble in their shoe

- Mulder's click: one hand tries to hold the neuroma between the finger and thumb. The other hand squeezes the metatarsals together. A click may be heard as the neuroma moves between the metatarsal heads
- there may be loss of sensation distally in the toes

Diagnosis is usually clinical although ultrasound may be helpful in confirming the diagnosis

Management

- avoid high-heels
- metatarsal pad
- CKS recommends referral if symptoms persist for > 3 months despite footwear modifications and the use of metatarsal pads
- orthotists may give the patient a metatarsal dome orthotic
- other secondary care options include corticosteroid injection and neurectomy of the involved interdigital nerve and neuroma

Lower back pain: prolapsed disc

A prolapsed lumbar disc usually produces clear dermatomal leg pain associated with neurological deficits.

Features

- leg pain usually worse than back
- pain often worse when sitting

The table below demonstrates the expected features according to the level of compression:

L3 nerve root compression	Sensory loss over anterior thigh Weak quadriceps Reduced knee reflex Positive femoral stretch test
L4 nerve root compression	Sensory loss anterior aspect of knee Weak quadriceps Reduced knee reflex Positive femoral stretch test
L5 nerve root compression	Sensory loss dorsum of foot Weakness in foot and big toe dorsiflexion Reflexes intact Positive sciatic nerve stretch test
S1 nerve root compression	Sensory loss posterolateral aspect of leg and lateral aspect of foot Weakness in plantar flexion of foot Reduced ankle reflex Positive sciatic nerve stretch test

Management

- similar to that of other musculoskeletal lower back pain: analgesia, physiotherapy, exercises
- if symptoms persist then referral for consideration of MRI is appropriate

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Osteoarthritis: joint replacement

Joint replacement (arthroplasty) remains the most effective treatment for osteoarthritis patients who experience significant pain.

Selection criteria

- around 25% of patients are now younger than 60-years-old

- whilst obesity is often thought to be a barrier to joint replacement there is only a slight increase in short-term complications. There is no difference in long-term joint replacement survival

Surgical techniques

- for hips the most common type of operation is a cemented hip replacement. A metal femoral component is cemented into the femoral shaft. This is accompanied by a cemented acetabular polyethylene cup
- uncemented hip replacements are becoming increasingly popular, particularly in younger more active patients. They are more expensive than conventional cemented hip replacements
- hip resurfacing is also sometimes used where a metal cap is attached over the femoral head. This is often used in younger patients and has the advantage that the femoral neck is preserved which may be useful if conventional arthroplasty is needed later in life

Post-operative recovery

- patients receive both physiotherapy and a course of home-exercises
- walking sticks or crutches are usually used for up to 6 weeks after hip or knee replacement surgery

Patients who have had a hip replacement operation should receive basic advice to minimise the risk of dislocation:

- avoiding flexing the hip > 90 degrees
- avoid low chairs
- do not cross your legs
- sleep on your back for the first 6 weeks

Complications

- wound and joint infection
- thromboembolism: NICE recommend patients receive low-molecular weight heparin for 4 weeks following a hip replacement
- dislocation

Knee problems: children and young adults

The table below summarises the key features of common knee problems:

Chondromalacia patellae	Softening of the cartilage of the patella Common in teenage girls Characteristically anterior knee pain on walking up and down stairs and rising from prolonged sitting Usually responds to physiotherapy
Osgood-Schlatter disease	Seen in sporty teenagers Pain, tenderness and swelling over the tibial tubercle

(tibial apophysitis)	
Osteochondritis dissecans	Pain after exercise Intermittent swelling and locking
Patellar subluxation	Medial knee pain due to lateral subluxation of the patella Knee may give way
Patellar tendonitis	More common in athletic teenage boys Chronic anterior knee pain that worsens after running Pain is reproduced by resisted knee extension

Referred pain may come from hip problems such as slipped upper femoral epiphysis

Venous thromboembolism: prophylaxis in patients admitted to hospital

Venous thromboembolism (VTE) still accounts for a significant proportion of avoidable hospital deaths. In an effort to tackle this problem NICE produced guidelines in 2010.

Before admission

- advise women to consider stopping oestrogen-containing oral contraception or HRT 4 weeks before surgery.
- assess the risks and benefits of stopping antiplatelet therapy 1 week before surgery.

The following patients are deemed at risk of VTE

Medical patients

- if mobility significantly reduced for >= 3 days **or**
- if expected to have ongoing reduced mobility relative to normal state plus any VTE risk factor (see below)

Surgical patients and patients with trauma

- if total anaesthetic + surgical time > 90 minutes **or**
- if surgery involves pelvis or lower limb and total anaesthetic + surgical time > 60 minutes **or**
- if acute surgical admission with inflammatory or intra-abdominal condition **or**
- if expected to have significant reduction in mobility **or**
- if any VTE risk factor present (see below)

VTE risk factors

- active cancer or cancer treatment
- age > 60 years
- critical care admission

- dehydration
- known thrombophilias
- obesity (BMI > 30 kg/m^2)
- one or more significant medical comorbidities (for example: heart disease; metabolic, endocrine or respiratory pathologies; acute infectious diseases; inflammatory conditions)
- personal history or first-degree relative with a history of VTE
- use of HRT
- use of oestrogen-containing contraceptive therapy
- varicose veins with phlebitis

In-patient VTE prophylaxis

As a general rule pharmacological VTE prophylaxis is used for medical patients unless there is a contraindication.

For surgical patients mechanical VTE prophylaxis is offered for patients at risk. Pharmacological VTE prophylaxis is also given for if the risk of major bleeding is low.

Pharmacological VTE prophylaxis options:

- fondaparinux sodium
- low molecular weight heparin (LMWH)
- unfractionated heparin (UFH) (for patients with renal failure)

Mechanical VTE prophylaxis options:

- anti-embolism stockings (thigh or knee length)
- foot impulse devices
- intermittent pneumatic compression devices (thigh or knee length)

Post-procedure VTE prophylaxis

For certain procedures pharmacological VTE prophylaxis is recommended for all patients, using one of the following:

- dabigatran, started 14 hours after surgery
- fondaparinux, started 6 hours after surgery
- LMWH, started 6-12 hours after surgery
- rivaroxaban, started 6-10 hours after surgery.

Procedure	**Length of prophylaxis**
Elective hip	28-35 days
Elective knee	10-14 days

Hip fracture 28-35 days

Elbow pain

The table below details some of the characteristic features of conditions causing elbow pain:

Lateral epicondylitis (tennis elbow)	Features • pain and tenderness localised to the lateral epicondyle • pain worse on resisted wrist extension with the elbow extended or supination of the forearm with the elbow extended • episodes typically last between 6 months and 2 years. Patients tend to have acute pain for 6-12 weeks
Medial epicondylitis (golfer's elbow)	Features • pain and tenderness localised to the medial epicondyle • pain is aggravated by wrist flexion and pronation • symptoms may be accompanied by numbness / tingling in the 4th and 5th finger due to ulnar nerve involvement
Radial tunnel syndrome	Most commonly due to compression of the posterior interosseous branch of the radial nerve. It is thought to be a result of overuse. Features • symptoms are similar to lateral epicondylitis making it difficult to diagnose • however, the pain tends to be around 4-5 cm distal to the lateral epicondyle • symptoms may be worsened by extending the elbow and pronating the forearm
Cubital tunnel syndrome	Due to the compression of the ulnar nerve. Features • initially intermittent tingling in the 4th and 5th finger • may be worse when the elbow is resting on a firm surface or flexed for extended periods • later numbness in the 4th and 5th finger with associated weakness
Olecranon bursitis	Swelling over the posterior aspect of the elbow. There may be associated pain, warmth and erythema. It typically affects middle-aged male patients.

Reflexes

The common reflexes are listed below:

Reflex	Root
Ankle	S1-S2
Knee	L3-L4
Biceps	C5-C6
Triceps	C7-C8

Intersection syndrome

Intersection syndrome is a tenosynovitis caused by inflammation where the abductor pollicislongus and extensor pollicisbrevis muscles cross over (or intersect) the tendons of the extensor carpi radialislongus and the extensor carpi radialisbrevis.

Features

- intersection syndrome is commonly misdiagnosed as de Quervain's tenosynovitis
- pain in the distal dorsoradial forearm, around 5-10 cm proximal of the wrist joint
- swelling and erythema may be seen

Intersection syndrome is commonly seen in skiers, tennis players, weight lifters and canoeists.

Management

- NSAIDs
- steroid injection
- physiotherapy
- surgical treatment is rarely required

- **Hip pain in adults**
-

The table below provides a brief summary of the potential causes of hip pain in adults

Osteoarthritis	Pain exacerbated by exercise and relieved by rest Reduction in internal rotation is often the first sign Age, obesity and previous joint problems are risk factors
Inflammatory arthritis	Pain in the morning Systemic features Raised inflammatory markers
Referred lumbar spine pain	Femoral nerve compression may cause referred pain in the hip Femoral nerve stretch test may be positive - lie the patient prone. Extend the hip joint with a straight leg then bend the knee. This stretches the femoral nerve and will cause pain if it is trapped
Trochanteric bursitis	Due to repeated movement of the fibroelasticiliotibial band Pain and tenderness over the lateral side of thigh

Meralgiaparaesthetica	Caused by compression of lateral cutaneous nerve of thigh Typically burning sensation over antero-lateral aspect of thigh
Avascular necrosis	Symptoms may be of gradual or sudden onset May follow high dose steroid therapy or previous hip fracture of dislocation
Pubic symphysis dysfunction	Common in pregnancy Ligament laxity increases in response to hormonal changes of pregnancy Pain over the pubic symphysis with radiation to the groins and the medial aspects of the thighs. A waddling gait may be seen
Transient idiopathic osteoporosis	An uncommon condition sometimes seen in the third trimester of pregnancy Groin pain associated with a limited range of movement in the hip Patients may be unable to weight bear ESR may be elevated