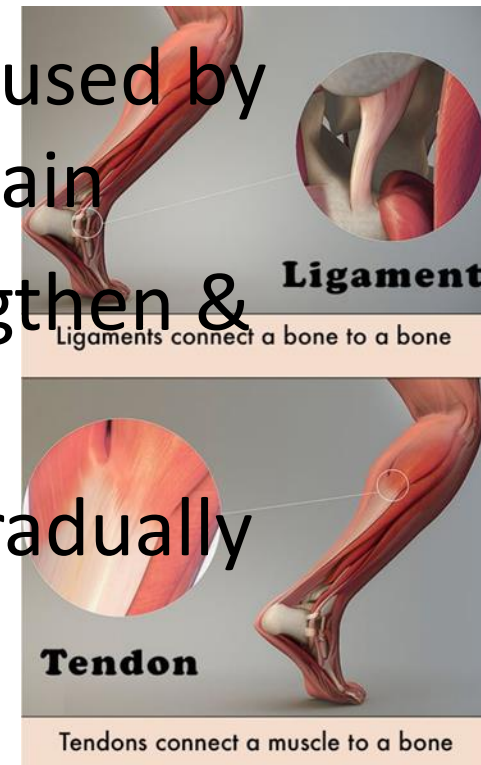


Musculoskeletal Problems

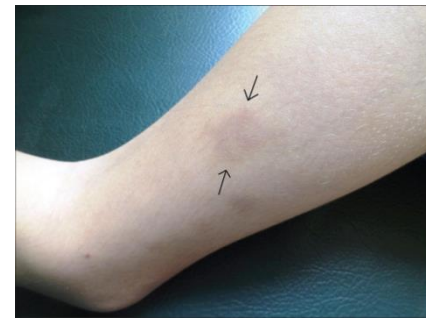
1. Sprains and Strains

- Sprains: a sudden or violent twist or wrench of a joint causing the stretching or twisting of ligaments and sometimes with tearing.
- Strains: injury to a muscle, often caused by overuse, resulting in swelling and pain
- Early mobilization, exercises (strengthen & coordination) are important.
- Return to full activity must occur gradually



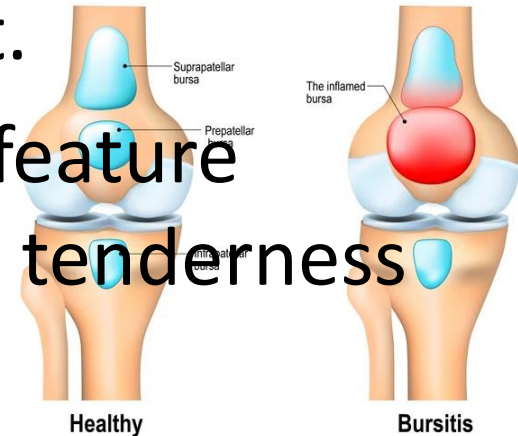
2. Muscle pain; 3. Bruising

- **Muscle pain:** Stiff and painful muscles may occur simply as a result of physical activities such as gardening, or exercise, discomfort can be reduced by OTC medicines
- **Bruising:** a part of body got injured and blood leaks from small blood vessels
- Some product that minimize bruising are available OTC.
- Bruising without apparent injury should alert the pharmacist to the possibility of a more serious condition.
- Spontaneous bruising may be due to underlying blood disorder, e.g. thrombocytopaenia or leukaemia, or may result from an adverse drug reaction or other cause



4. Head Injury; 5. Bursitis

- **Head injury:** Pain occurring as a result of head injury should always be viewed with suspicion (patient monitored), referred for further investigation.
- **Bursitis** (inflammation of a bursa) Bursa **BURSITIS** reduces friction during movement.
- Joint swelling is the predominant feature together with associated pain and tenderness



6. Frozen Shoulder

- **Frozen shoulder:** Stiff and painful shoulder. It is more prevalent in older patients. The shoulder pain sometimes radiates to the arm and is often worse at night
- NSAIDs could be offered, after 5 days, refer for alternative treatment and physiotherapy

7. Painful joints

- **Painful joints** Pain arising in joints (arthralgia) may be due to arthritis, for which there are many causes.
- may be associated with swelling, overlying inflammation, stiffness, limitation of movement and deformity of the joint.
- often difficult to distinguish different causes best to refer

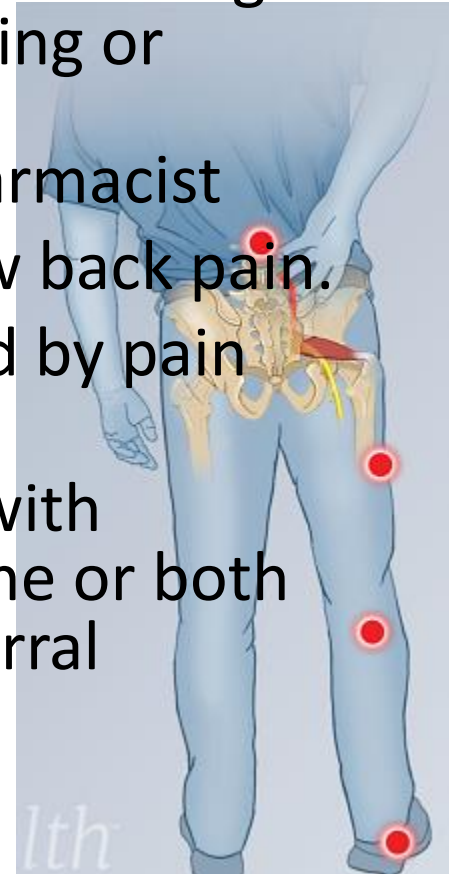


Arthritis

- 1. common cause of arthritis is osteoarthritis (OA), which is due to wear and tear of the joint. This often affects the knees and hips, especially in the older population
- 2. Another form of arthritis is rheumatoid arthritis (RA), which is a more generalized illness caused by the body turning its defenses on itself (autoimmune disease).
- Other forms of arthritis can be caused by gout or infection. A joint infection is rare but serious and occasionally fatal.

8. Back pain

- **Back pain:** cause strain of muscles or soft tissues (e.g. ligaments and tendons) connected to the vertebrae.
- Lower back pain that is not too severe or debilitating and comes on after gardening, awkward lifting or bending may be due to muscular strain and appropriate advice may be given by the pharmacist
- Bed rest is not recommended for simple low back pain.
- emphasis on maintaining activity, supported by pain relief
- Pain that is more severe, causing difficulty with mobility or radiating from the back down one or both legs may indicate **Sciatica** and required referral



8. Back pain

- Back pain that is felt in the middle to upper part of the back is less common, and if it has been present for several days, it is best referred to the doctor
- Kidney pain can be felt in the back, to either side of the middle part of the back just below the ribcage (loin area).
- Pain in the loin area with abnormality of passing urine (discoloration of urine, pain on passing urine or frequency), then a kidney problem is more likely , referral is advised

9. Repetitive strain disorder

- **Repetitive strain disorder:** or chronic upper limb pain syndrome,
- Result of prolonged period of steady hand movement involving repeated grasping, turning, and twisting. Predominant feature is pain in all or one part of one or both arms.
- Person's job usually involves repetitive tasks, such as keyboard operations
- There may be crepitus (a creaking, grating sound) when the wrist is moved.
- Sometimes symptoms disappear on stopping the job, but they may return when the work is restarted

Management Referral

- Suspected fracture
- Possible adverse drug reaction: falls or bruising, postural hypotension, dizziness or confusion as adverse effects from drug therapy
- Head injury
- Medication failure
- Arthritis
- Severe back pain
- Back pain (and/or pins and needles/numbness) radiating to leg
- Back pain in the middle/upper back (especially in the older patient)
- Problems with bladder function
- Patients unable to bear weight on an injured ankle/foot
- Pharmacist to enquire about ones used in self-treatment of the condition and their degree of effectiveness

Treatment timescale

- Musculoskeletal conditions should respond to treatment within a few days.
- Maximum of 5 days' treatment should be recommended, after which patients should see their doctor

Management

- wide range of preparations containing systemic and topical analgesics is available
- Oral analgesic of choice NSAID, such as ibuprofen, provided there were no contraindications.
- Taking regularly is important to obtain full effect and the patient needs to know this.
- Topical formulations include creams, ointments, lotions, sticks and sprays

Paracetamol

- Has analgesic and antipyretic effects, but little or no anti-inflammatory action.
- less irritating to stomach than is aspirin
- Patient should not take more than 2 tablet (500mg) at any one time and not take more than 8 in 24 hours
- Drug of choice in pregnancy and breastfeeding
- Liver toxicity at high doses, damage may not be apparent until a few days later
- overdoses of paracetamol should be taken seriously and the patient should be referred

Aspirin

- Dosage: adults and children over 16 years of age, 300–900 mg every 4–6 hours when required; maximum daily dose 3600 mg
- 1. Should not be given to children under 16 years because of its suspected link with Reye's syndrome
- 2. Indigestion: Gastric irritation (indigestion, heartburn, nausea and vomiting), best taken with or after food. Soluble tablets - less likely to cause gastric irritation, enteric-coated to prevent adverse effects. However, evidence indicates that enteric coating does not reduce the risk of aspirin-induced gastric bleeding. Local use of aspirin, e.g. dissolving a soluble tablet near an aching tooth, is best avoided, because ulceration of the gums may result

Aspirin

- 3. Bleeding - should be avoided for any patient who either currently has or has a history of peptic ulcer. Aspirin affects the platelets and clotting function, so bleeding time is increased, and it has been suggested that it should not be recommended for pain after tooth extraction for this reason. The effects of anticoagulant drugs are potentiated by aspirin, so it should never be recommended for patients taking these drugs
- 4. Pregnancy to be avoided
- 5. Hypersensitivity estimated that 4% of asthmatic patients have this problem, avoided in patient with asthma. Such patients experience skin reactions (rashes and urticaria) or sometimes shortness of breath, bronchospasm and even asthma attacks

NSAIDs

- Ibuprofen - analgesic, anti-inflammatory and antipyretic activity, Max Daily dose -1200mg, suspension 100mg/5ml
- Naproxen OTC dose – 220mg 2-3times/day, max 660mg, elderly 440mg.
- 1. Can be irritating to the stomach, causing indigestion, nausea and diarrhoea, but less than aspirin. GI bleed can also occur. To take with food, and best avoided in patients with peptic ulcer. Elderly patients seem to be particularly prone to these effects
- 2. Hypersensitivity - Cross sensitivity between aspirin and NSAIDs, not to recommend for patient with sensitivity reaction to aspirin. Since asthmatic patients are more likely to have such a reaction, the use of NSAIDs in asthmatic patients should be with caution
- CI – causes sodium and water retention, avoided in patients with CHF or renal impairment and during pregnancy, particularly during the third trimester.
- Breastfeeding mothers may safely take ibuprofen since it is excreted in only tiny amounts in breast milk

Codeine & Dihydrocodeine

- Codeine is a narcotic analgesic; Dihydrocodeine is related to codeine
- Combination products with aspirin, paracetamol or both.
- Constipation is a possible side-effect and is more likely in elderly patients and others prone to constipation.
- Causes drowsiness and respiratory depression at high doses.

Caffeine

- Included in some combination analgesic products to produce wakefulness and increased mental activity.
- Cup of tea or coffee would have the same action.
- Products best avoided near bedtime because of their stimulant effect.
- Caffeine increases the effectiveness of analgesics but the evidence for such claims is not definitive

Counterirritants & Rubefacients

- Cause vasodilatation, bombard the nervous system with sensations other than pain (warmth and irritation) and this is thought to distract attention from the pain felt.
- MOA twofold: one effect relying on absorption of the agent through the skin, while the other on the benefit of the massage
- 1. Methyl salicylate one of the most widely used and effective counterirritants
- 2. Menthol gives a feeling of coolness, followed by a sensation of warmth
- 3. Capsaicin/capsicum produce a feeling of warmth when applied to the skin. Needs to be rubbed well into the affected area. Patients should always wash their hands after use; otherwise they may transfer the substance to the eyes, causing burning and stinging
- Sensitization to counterirritant can occur, blistering or intense irritation of the skin – discontinue product

Topical anti-inflammatory agents

- Topical gels, creams and ointments containing NSAIDs are widely used . Ibuprofen, diclofenac , ketoprofen and piroxicam are available in a range of cream and gel formulations.
- Topical NSAIDs not be used by patients who experience adverse reactions to aspirin, such as asthma, rhinitis or urticaria
- caution should be exercised when considering recommending a topical NSAID to patients with asthma
- Irritant effect - kept well away from the eyes, mouth and mucous membranes and not applied to broken skin.

Heparinoid and hyaluronidase

- Enzymes that may help to disperse oedematous fluid in swollen areas.
- A reduction in swelling and bruising may therefore be achieved.
- Products containing heparinoid or hyaluronidase are used in the treatment of bruises, strains and sprains

Glucosamine and chondroitin

- There is some evidence that glucosamine sulphate (which stimulates cartilage production) and chondroitin (which inhibits cartilage destruction) improve the symptoms of osteoarthritis (OA) in the knee and that glucosamine may have a beneficial structural effect on joints

First aid treatment of Sprain & Strains

- Injured limb should be rested to facilitate recovery
- RICE is a useful aidememoire
 - **R** – Rest; **I** – Ice/cooling; **C** – Compression; **E** – Elevation
- apply compression, cooling and elevation immediately, and for at least 48h
- aim is to prevent swelling. If swelling is not minimized, the resulting pain and pressure will limit movement, lead to muscle wasting, cause pain and delay recovery.
- Icing reduce metabolic needs tissues, reduce blood flow and result in less tissue damage and swelling, but do not prevent hemorrhage. Ice packs 3-4 times/day. should not be applied for more than 15-20 minutes avoid vasoconstriction and reduces vascular clearance of inflammatory mediators from the damaged area

Heat

- application of heat effective in reducing pain
- should never be applied immediately after injury, bc at the acute stage heat will dilate blood vessels and increase blood flow into the affected area – the opposite effect to what is needed. After the acute phase is over (1 or 2 days after the injury), heat can be useful
- To be applied in the form of a warm wet compress, heating pad, or hot water bottle

Prevention of recurrent back pain

- Good posture, lifting correctly, a good mattress and losing excess weight can help