# PHC Chapter 14: Musculoskeletal conditions

## 14.1 ARTHRALGIA

M25.50-59

### DESCRIPTION

Joint pain without swelling, warmth, redness or systemic manifestations such as fever.
It is usually self-limiting. May be an early manifestation of degenerative joint conditions (osteoarthrosis) or local and systemic diseases. May follow injury to the joint, e.g. work, play and position during sleep.
Suspect rheumatic fever in children, especially if arthralgia affects several joints in succession.

### GENERAL MEASURES

» Advise patient to:
  - apply heat locally to the affected joint, taking precautions not to burn themselves
  - exercise once their pain is relieved
  - reduce weight, if overweight, to decrease stress on the joint
» Exclude systemic causes.
» Reassure patient.

### MEDICINE TREATMENT

Treat for 1 week (maximum 2 weeks) provided no new signs develop.

**Pain:**

Children

- Paracetamol, oral, 10–15 mg/kg/dose 6 hourly when required. See dosing table: Chapter 23.

Adults

- Paracetamol, oral, 500 mg to 1 g, 4 to 6 hourly as required (to a maximum of 4 g in 24 hours).
  - Maximum dose: 15 mg/kg/dose.
- Methyl salicylate ointment, topical, may provide some relief.

### REFERRAL

» Pain for 1 week in children, and pain for > 2 weeks in adults.
» Recurrent pain.
» Severe pain.
» Fever.
» Involvement of several joints in succession
» Evidence of systemic illness e.g. e.g. sore throat in children, presence of jaundice, anaemia.

## 14.2 ARTHRITIS, RHEUMATOID

M06.90-99

### DESCRIPTION

A chronic inflammatory systemic condition. May affect many organs, but the musculoskeletal system is predominantly affected with several joints becoming painful and swollen. There is usually symmetrical involvement of small joints from early on. The small joints of the fingers and hands with the exception of the distal interphalangeal joints, are usually involved, although any joint can be involved.

» Four 'S factors' are useful to screen for early joint disease:
  - Stiffness: Early morning stiffness lasting > 30 minutes.
  - Swelling: Persistent swelling of 1 or more joints, particularly hand joints.
  - Squeeze test hands: Tenderness on squeezing across all 4 metarcarpo-phalangeal joints.
  - Squeeze test feet: Tenderness on squeezing across all 4 metartarso-phalangeal joints.

Late disease may have destruction and deformity of affected joints especially of the fingers e.g. ulnar deviation, buttonhole and swan neck deformities. *LoE:III*[1]

### GENERAL MEASURES

» Advise patient to:
  - reduce weight
  - stop smoking
» Manage co-morbidities.
» Educate on joint-care (refer for occupational therapy, if available).

### MEDICINE TREATMENT

All newly diagnosed patients must be referred for specialist management with Disease Modifying Anti-rheumatic Drugs (DMARDs).

**For control of acute symptoms whilst awaiting referral (Doctor initiated):**

- NSAIDs, e.g.:
- Ibuprofen, oral, 400 mg 8 hourly with or after a meal.
  - Continue for no longer than 3–6 months.

**For control of acute symptoms during disease flares and in severe extra-articular manifestations e.g. scleritis (Doctor prescribed):**

- NSAIDs, e.g.:
- Ibuprofen, oral, 400 mg 8 hourly with or after a meal for 2 weeks. *LoE:III*[2]

NSAIDsare used for symptomatic relief in patients with active inflammation and pain. They have no long-term disease modifying effects.
NSAIDs are relatively contra-indicated in patients with significantly impaired renal function, i.e. eGFR < 60 mL/minute.

**CAUTION: NSAIDS**

Concomitant use of more than one oral NSAID has no additional clinical benefit and only increases toxicity.

Chronic use of all NSAIDsis associated with increased risks of gastrointestinal bleeding, renal failure, and cardiovascular events (stroke and myocardial infarction).
NSAIDs should be used judiciously at the lowest effective dose for the shortest duration. Explore and manage exacerbating factors for pain. See chapter 20: Pain.
Do not use NSAID in pregnancy and breastfeeding.

*LoE:III*[3]

If NSAIDS are contraindicated for acute flares e.g. warfarin therapy, renal dysfunction (Doctor prescribed): *LoE:III*[4]

- Corticosteroids (intermediate-acting) e.g.:
- Prednisone, oral, 7.5 mg daily for a maximum of 2 weeks. *LoE:III*[5]

In high-risk patients: > 65 years of age; history of peptic ulcer disease; on concomitant warfarin, aspirin, or corticosteroids: *LoE:II*[6]

**ADD**

- Proton pump inhibitor, e.g.
- Lansoprazole, oral, 30 mg daily whilst on an NSAID.

For confirmed rheumatoid arthritis, NSAIDs and corticosteroids will be continued by a specialist as bridging therapy until DMARDs have taken effect.

### REFERRAL

**Urgent (to a specialist)**

» Severe extra-articular articular manifestations.

**Non-urgent**

» Refer all patients early for confirmation of diagnosis and management.
» Known rheumatoid arthritis patients with acute disease flares.

## 14.3 ARTHRITIS, SEPTIC

M00.90-99

### DESCRIPTION

An acute infective condition involving one or more joints.

The joint is hot, swollen, and very painful, and movement is restricted.

Signs of systemic infection, including fever, are usually present. The infection is usually blood borne, but may follow trauma to the joint. The course may be acute or protracted. A wide spectrum of organisms is involved, including staphylococci and *N. gonorrhoea*.

**Note:** Haemophiliacs may present with an acute arthritis similar to septic arthritis. This is due to bleeding into a joint and not due to infection.

### MEDICINE TREATMENT

» Infants ≤ 2 months of age, who fulfil the IMCI criteria for "POSSIBLE SERIOUS BACTERIAL INFECTION" should receive a first dose of ceftriaxone and other IMCI urgent care while arranging transfer.

- Ceftriaxone, IM, 80 mg/kg/dose immediately as a single dose. See dosing table: Chapter 23.
  - Do not inject more than 1 g at one injection site.

**CAUTION: USE OF CEFTRIAXONE IN NEONATES AND CHILDREN**

» If SUSPECTING SERIOUS BACTERIAL INFECTION in neonate, give ceftriaxone, even if jaundiced.

» Avoid giving calcium-containing IV fluids (e.g. Ringer Lactate) together with ceftriaxone:
- If ≤ 28 days old, avoid calcium-containing IV fluids for 48 hours after ceftriaxone administered.
- If > 28 days old, ceftriaxone and calcium-containing IV fluids may be given sequentially provided the giving set is flushed thoroughly with sodium chloride 0.9% before and after.
- Preferably administer IV fluids without calcium contents.

» Always include the dose and route of administration of ceftriaxone in the referral letter.

Children with suspected septic arthritis should be assessed for evidence of septicaemia and septicaemic shock, which should be treated accordingly while awaiting transfer.

### REFERRAL

**Urgent**

All patients for confirmation of diagnosis and surgical drainage.

## 14.4 GOUT

## 14.4.1 GOUT, ACUTE

M10.00-09/M10.90-99

### DESCRIPTION

A metabolic disease in which uric acid crystals are deposited in joints and other tissues. Characterised by recurrent attacks of an acute arthritis that often affects one joint which is very painful, tender, swollen, red and hot to the touch. The inflammation may extend beyond the joint.

In many patients the 1st metatarso-phalangeal joint is initially involved. The instep, ankle, heel, and knee are also commonly involved. Bursae (such as the olecranon) may be involved.

Gout commonly occurs in men > 40 years of age and in postmenopausal women.

### INVESTIGATIONS

Increased serum uric acid level.

However, the serum uric acid level may be normal during acute attacks, and therefore best estimated after the acute symptoms have subsided.

### GENERAL MEASURES

» Immobilise the affected joint during the acute painful attack.

» Increase (high) fluid intake.

» Avoid alcohol.
» Avoid aspirin.

### MEDICINE TREATMENT

Initiate treatment as early as possible in an acute attack.

- NSAIDs, e.g.:
- Ibuprofen, oral, 400 mg,8 hourly with or after a meal for the duration of the attack.

**CAUTION: NSAIDS**

Concomitant use of more than one oral NSAID has no additional clinical benefit and only increases toxicity.
Chronic use of all NSAIDs is associated with increased risks of gastrointestinal bleeding, renal failure, and cardiovascular events (stroke and myocardial infarction).
NSAIDs should be used judiciously at the lowest effective dose for the shortest duration. Explore and manage exacerbating factors for pain. See chapter 20: Pain.
Do not use NSAID in pregnancy and breastfeeding.

*LoE:III*[7]

**If NSAIDS are contraindicated, e.g. peptic ulceration, warfarin therapy and renal dysfunction, or heart failure:**

- Corticosteroids (intermediate-acting) e.g.: *LoE:III*[8]
- Prednisone, oral, 40 mg daily for 5 days (Doctor prescribed). *LoE:II*[9]

### REFERRAL

» No response to treatment.
» For confirmation of diagnosis, if in doubt.
» Patients with chronic kidney disease.
» Patients with suspected secondary gout (e.g. haematological malignancies).

**Note:**

» Gout may be secondary to other medical conditions, e.g. haematological malignancies.
» Gout may co-exist with hypertension, diabetes mellitus (as a risk factor for degenerative vascular disease) and chronic kidney disease. The pharmacological treatment of these conditions could precipitate gout.

## 14.4.2 GOUT, CHRONIC

M10.00-09/M10.90-99

### DESCRIPTION

Gout with one or more of the following:

» uric acid deposits in and around the joints and cartilages of the extremities (tophi)
» tophi are most commonly found as hard nodules around the fingers and toes, at
» the tips of the elbows (olecranon bursae) or at the pinnae of the ears
» serum uric acid >0.5 mmol/L
» bone and cartilage destruction of the fingers and toes with joint swelling and deformity
» prolongation of attacks, often with reduction in pain severity
» incomplete resolution between attacks

### GENERAL MEASURES

» If possible, avoid known precipitants and medicines that may increase uric acid, e.g. low dose aspirin, ethambutol, pyrazinamide and diuretics, especially hydrochlorothiazide. *LoE:III*
» Encourage weight loss, if overweight.
» Avoid alcohol.

### MEDICINE TREATMENT

Uric acid lowering therapy is required in all of the following:

» ≥ 2 acute attacks per year
» chronic tophaceous gout
» urate renal stones
» urate nephropathy

When the acute attack has settled completely, i.e. usually after 3 weeks:

- Allopurinol, oral, 100 mg daily (Doctor initiated).
  - Increase monthly by 100 mg according to serum urate levels.
  - Titrate dose to reduce serum urate to <0.35 mmol/L.
  - Allopurinol dosage is dependent on severity of disease and serum urate concentration. Doses in excess of 300 mg should be administered in divided doses. *LoE:III[10]*
  - Average dose: 300 mg per day.
  - The elderly and patients with renal impairment require lower doses, start with 50 mg daily, or refer.

### REFERRAL

» Suspected secondary gout.
» No response to treatment.
» Non-resolving tophaceous gout.
» Renal impairment.

## 14.5 OSTEOARTHROSIS (OSTEOARTHRITIS)

M13.00-19/M13.80-99/M15.0/M15.3/M15.8-9/M16.0-9/M18.0-5/M18.9/M19.00-09/M19.80-99

### DESCRIPTION

A degenerative disorder typically affecting weight-bearing joints.
Signs and symptoms include:

» pain usually with movement
» limited range of movement often with crepitus
» post-rest stiffness
» joint may be swollen

### GENERAL MEASURES

Non-pharmacological/general measures are as important as pharmacological management.
Educate patient and family on:

» weight reduction
» exercise
» rest during acute painful episodes.

Recommend use of a walking stick or crutch to alleviate stress on weight bearing joint.
Physiotherapy and/or occupational therapy.

## MEDICINE TREATMENT

**Pain:**

- Paracetamol, oral, 500 mg to 1 g, 4 to 6 hourly as required (to a maximum of 4 g in 24 hours).
  - Maximum dose: 15 mg/kg/dose.
- Methyl salicylate ointment, topical, may provide some relief.

If patient responds to paracetamol reduce the dose to:

- Paracetamol, oral, 500 mg, 6–8 hourly when required.

If no response and inflammation is present:

**ADD**

- NSAID, e.g.:
- Ibuprofen, oral, 400 mg 8 hourly with or after a meal, as needed for 7 days.

As many of these patients, particularly the elderly, have concomitant medical conditions such as cardiovascular, gastrointestinal disease or renal function impairment, NSAIDs must be used with caution.

Patients on aspirin for cardiovascular risk reduction should take aspirin 30 minutes before the 1st dose of ibuprofen in the morning, as taking aspirin and ibuprofen at the same time may reduce aspirin's efficacy. *LoE:III*[11]

In high-risk patients: > 65 years of age; history of peptic ulcer disease; or on concomitant warfarin, aspirin, or corticosteroids:

**ADD**

- Proton pump inhibitor, e.g.:
- Lansoprazole, oral, 30 mg daily. *LoE:II*[12]

**CAUTION: NSAIDS**

Concomitant use of more than one oral NSAID has no additional clinical benefit and only increases toxicity.

Chronic use of all NSAIDs is associated with increased risks of gastrointestinal bleeding, renal failure, and cardiovascular events (stroke and myocardial infarction).

NSAIDs should be used judiciously at the lowest effective dose for the shortest duration. Explore and manage exacerbating factors for pain. See chapter 20: Pain.

Do not use NSAID in pregnancy and breastfeeding.

*LoE:III*[13]

## REFERRAL

» All cases with:
  - uncertain diagnosis
  - intractable pain
  - recurrent episodes of pain with inflammation
  - suspected infection

» Consideration of joint replacement.

**References:**


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**SOUTH AFRICAN PRIMARY HEALTHCARE LEVEL ESSENTIAL MEDICINES LIST**
**CHAPTER14: MUSCULOSKELETAL CONDITIONS**
**NEMLC RECOMMENDATIONS FOR MEDICINE MANAGEMENT (2020)**

**Medicine amendment recommendations, with supporting evidence and rationale are listed below.**
**Kindly review the medicine amendments in the context of the complete chapter for musculoskeletal conditions.**
*Note: This primary healthcare chapter has been updated to align to previous NEMLC recommendations as well as the recent NEMLC-approved Adult Hospital Level STGs and EML, 2019 edition.*

| SECTION | MEDICINE/ MANAGEMENT | ADDED/DELETED/AMENDED |
|---|---|---|
| **14.2 Arthritis, rheumatoid (RA)** | NSAIDs | Caution amended |
| | Oral corticosteroids (intermediate-acting) | Added as therapeutic class |
| | Prednisone, oral | Retained as example of class (listed in the STG) |
| | Prednisolone, oral | Added as a therapeutic alternative (listed in the interchange database) |
| | PPI, oral | Evidence updated for PPI prophylaxis in patients on concomitant NSAID with corticosteroids |
| **13.4 Gout** | | |
| - *Acute gout* | NSAIDs | Caution amended |
| | Oral corticosteroids (intermediate-acting) | Added as therapeutic class |
| | Prednisone, oral | Retained as example of class (listed in the STG) |
| | Prednisolone, oral | Added as a therapeutic alternative (listed in the interchange database) |
| - *Chronic gout* | Allopurinol, oral | Directions for use amended |
| **13.3 Osteo-arthritis** | NSAIDs, oral | Caution amended |
| | PPI, oral | Evidence updated for PPI prophylaxis in patients on concomitant NSAID with corticosteroids |

## 14.2 ARTHRITIS, RHEUMATOID (RA)

NSAIDs, oral: *caution amended*

The following was editorially amended for correctness and clarity purposes, aligned with the Adult Hospital Level STGs and EML, 2019:

~~Concomitant use of more than one oral NSAID has no additional clinical benefit and only increases toxicity.~~
~~Chronic use of all NSAIDs is associated with increased risks of gastrointestinal bleeding, renal failure, and cardiovascular events (stroke and myocardial infarction).~~

To:

Concomitant use of more than one oral NSAID has no additional clinical benefit and only increases toxicity.
Chronic use of all NSAIDs is associated with increased risks of gastrointestinal bleeding, renal failure, and cardiovascular events (stroke and myocardial infarction). NSAIDs should be used judiciously at the lowest effective dose for the shortest duration. Explore and manage exacerbating factors for pain. See chapter 20: Pain. Do not use NSAID in pregnancy and breastfeeding.

Aligned with SAMF, 2016.
**Level of Evidence: III Guidelines**[1]

Corticosteroids (intermediate acting): *added as therapeutic class*
Prednisone, oral: *retained as example of class (listed in the STG)*
Prednisolone, oral: *added as a therapeutic alternative (listed in the interchange database)*
Aligned with SAMF 2016 and Adult Hospital Level STGs and EML, 2019.
**Level of Evidence: III Guidelines**

[1] SAMF, 2016

PPI, oral: *evidence updated for PPI prophylaxis in patients on concomitant NSAID with corticosteroids*
Meta-analysis by Narum et al (2014)[2] showed an associated risk of corticosteroid monotherapy and gastrointestinal events in hospitalised patients only (OR 1.42, 95% CI 1.22 to 1.66); whilst for patients in ambulatory care, the increased risk was not statistically significant. However, subgroup analysis of documented concomitant NSAID use showed an increased risk (OR 1.30, 95% CI 0.81 to 2.07). Of note, is that the definition of gastrointestinal events varied between trials and RCTs were heterogeneous.

Systematic review[3] (that included the meta-analysis above) suggests that gastrointestinal risk of corticosteroid monotherapy is marginal and that PPI co-therapy should not routinely be indicated in patients taking corticosteroids unless they have a history of peptic ulcer disease or are taking NSAIDs.
**Level of Evidence: II Systematic review and meta-analysis of RCTs of low to moderate quality**

## 14.3 GOUT

### i) Acute gout

Corticosteroids (intermediate acting): *added as therapeutic class*
Prednisone, oral: *retained as example of class (listed in the STG)*
Prednisolone, oral: *added as a therapeutic alternative (listed in the interchange database)*
Aligned with SAMF 2016 and Adult Hospital Level STGs and EML, 2019.
**Level of Evidence: III Guidelines**

### ii) Chronic gout

Allopurinol, oral: *directions for use amended*

The directions for use of allopurinol amended from:

- ~~Allopurinol, oral, 100 mg daily (Doctor initiated).~~
  - ~~Increase monthly by 100 mg according to urate blood levels.~~
  - ~~Titrate dose to reduce serum urate to < 0.35 mmol/L.~~
  - ~~Average dose: 300 mg perday.~~
  - ~~Maximum dose: 400 mg daily.~~
  - ~~The elderly and patients with renal impairment require lower doses.~~

To

- Allopurinol, oral, 100 mg daily (Doctor initiated).
  - Increase monthly by 100 mg according to serum urate levels.
  - Titrate dose to reduce serum urate to <0.35 mmol/L.
  - Allopurinol dosage is dependent on severity of disease and serum urate concentration. Doses in excess of 300 mg should be administered in divided doses.
  - Average dose: 300 mg per day.
  - The elderly and patients with renal impairment require lower doses, start with 50 mg daily, or refer.

**Level of Evidence: III Guidelines[4] [5]**

### Referral

Referral criteria updated in STG text as follows:

» Suspected secondary gout.
» No response to treatment.
» Non-resolving tophaceous gout.
» Renal impairment

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[4] SAMF 2016
[5] Adult Hospital Level STGs and EML, 2019

## 14.5 OSTEOARTHRITIS

NSAIDs, oral: *caution added*
PPI, oral: *evidence updated for PPI prophylaxis in patients on concomitant NSAID with corticosteroids* (see above)
See section 14.2: Arthritis, rheumatoid (RA), above.