

## Chapter 10. Musculoskeletal and joint diseases

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### Key

	<p><b>Red drug</b> see <a href="#">GMMMG RAG list</a>  <i>Click on the symbols to access this list</i></p>
	<p><b>Amber drug</b> see <a href="#">GMMMG RAG list</a>  <i>Click on the symbols to access this list</i></p>
	<p><b>Green drug</b> see <a href="#">GMMMG RAG list</a>  <i>Click on the symbols to access this list</i></p>
	<p><b>If a medicine is unlicensed this should be highlighted in the template as follows</b>  <b>Drug name U</b></p>
	<p><b>Not Recommended</b></p>
	<p><b>Over the Counter</b></p>
<p><b>Order of Drug Choice</b></p>	<p>Where there is no preferred 1<sup>st</sup> line agent provided, the drug choice appears in alphabetical order.</p>

<b>BNF chapter</b>	<b>10</b>	<b>Musculoskeletal and joint diseases</b>
<b>Section</b>	<b>10.1</b>	<b>Drugs used in rheumatic diseases and gout</b>
<b>Subsection</b>	<b>10.1.1</b>	<b>Non-steroidal anti-inflammatory drugs</b>
<b>First choice</b>	<b>Ibuprofen tablets</b> 200mg; 400mg; 600mg	<a href="#">MHRA DSU: High-dose ibuprofen: small increase in cardiovascular risk, June 2015</a>
<b>Alternatives</b>	<b>Naproxen tablets</b> 250mg; 500mg	
	<b>Diclofenac tablets</b> 50mg	<a href="#">MHRA DSU: diclofenac: new contraindications and warnings, June 2013.</a> <a href="#">MHRA DSU: NSAIDs: cardiovascular risks October 2012.</a> Further evidence that the cardiovascular risk with diclofenac is higher than other non-selective NSAIDs and similar to the selective COX-2 inhibitors
	<b>Etoricoxib tablets</b> 30mg, 60mg, 90mg, 120mg	<a href="#">MHRA DSU: Etoricoxib (Arcoxia): revised dose recommendation for rheumatoid arthritis and ankylosing spondylitis</a> <a href="#">MHRA DSU: etoricoxib: prescribing to patients with high blood pressure, July 2008.</a>
<b>Grey drugs</b> Items which are listed as Grey are deemed not suitable for routine prescribing but may be suitable for a defined patient population	<b>Piroxicam</b> Capsules, orodispersible tablets  Systemic piroxicam should be initiated only by specialists as a second-line treatment for arthritis. Patients who currently take piroxicam should be reassessed at a routine appointment.	<b>G<sub>n</sub></b> following specialist initiation <a href="#">Criterion 1 (see RAG list)</a>
<b>Do Not Prescribe</b>	<b>Naproxen with esomeprazole</b> Modified-release tablets	<a href="#">Criterion 2 (see RAG list)</a>
<b>General Guidance applicable to all drugs</b>		
<ul style="list-style-type: none"> <li><a href="#">NICE CG177: Osteoarthritis: Care and management in adults.</a></li> </ul>		

<ul style="list-style-type: none"> <li>• <a href="#">NICE NG100: Rheumatoid arthritis in adults: management.</a></li> <li>• <a href="#">CKS (2013) NSAID prescribing issues</a></li> <li>• <a href="#">BNF: NSAID-associated ulcers</a></li> <li>• <a href="#">CKS (2013): Patients on low dose aspirin</a></li> <li>• <a href="#">MHRA DSU: Non-steroidal anti-inflammatory drugs: reminder on renal failure and impairment, May 2009</a></li> <li>• <a href="#">MHRA DSU: Non-steroidal anti-inflammatory drugs: cardiovascular risk, October 2012</a></li> <li>• <a href="#">MHRA DSU: NSAIDs and coxibs: balancing of cardiovascular and gastrointestinal risks, December 2007</a></li> </ul>		
<b>Subsection</b>	<b>10.1.2 Corticosteroids</b>	
<b>Systemic corticosteroids</b>		
The general actions, uses, and cautions of corticosteroids are described <a href="#">in the BNF</a> .		
<b>Local corticosteroid injections</b>		
<b>First choice</b>	<p><b>Methylprednisolone acetate 40mg/ml</b></p> <p>or</p> <p><b>Methylprednisolone acetate 40mg, lidocaine hydrochloride 10mg/ml</b></p>	
<b>Alternatives</b>	<b>Dexamethasone sodium phosphate 3.8mg/ml</b>	<p><a href="#">MHRA DSU: Dexamethasone 4 mg/ml injection (Organon Laboratories Limited): reformulation with changes in name, concentration, storage conditions, and presentation, October 2014.</a></p>
	<b>Hydrocortisone acetate 25mg/ml</b>	
	<p><b>Triamcinolone acetonide 10mg/ml</b></p> <p><b>Triamcinolone acetonide 40mg/ml</b></p>	

Subsection	10.1.3 Drugs that suppress the rheumatic disease process	
<b>DMARDS</b>		
<b>First Choice</b>	<p><b>Methotrexate 2.5mg tablets</b></p>	<p><b>A</b></p> <p><a href="#">NPSA Alert, June 2006.</a> Improving compliance with oral methotrexate guidelines.</p> <p>When prescribing oral methotrexate only ever prescribe 2.5mg tablets and pay particular attention to correct dosing instructions – <b>weekly</b> dosing.</p> <p>Co-prescribe oral folic acid 5mg weekly with methotrexate (to be taken at least 24 hours after the methotrexate [often 2 -3 days after]) and increase dose if necessary dependant on folate levels.</p>
	<p><b>Methotrexate 50mg/ml pre-filled Pen injection (Metoject® brand only amber formulation)</b></p>	<p><b>A</b></p> <p><b>Specialist initiation only</b></p> <p>If moving the parenteral formulation to homecare, clinicians should ensure that responsibility for the different aspects of care is clearly defined (in particular blood monitoring).</p>
	<p><b>Sulfasalazine e/c 500mg tablets</b></p>	<p><b>A</b></p>
	<p><b>Hydroxychloroquine sulphate 200mg tablets</b></p>	<p><b>A</b></p>
<b>Alternatives</b>	<p><b>Leflunomide tablets 10mg; 15mg; 20mg</b></p>	<p><b>A</b></p> <p><b>Specialist initiation only</b></p>
	<p><b>Azathioprine tablets</b> 25mg; 50mg</p>	<p><b>A</b></p>
	<p><b>Ciclosporin capsules</b> 10mg; 25mg; 50mg; 100mg</p>	<p><b>A</b></p> <p><a href="#">BNF Online</a> Patients should be stabilised on a particular brand of oral ciclosporin because switching between formulations without close</p>

		monitoring may lead to clinically important changes in blood-ciclosporin concentration. Prescribing and dispensing of ciclosporin should be by brand name to avoid inadvertent switching.
	<p><b>Mycophenolate U</b></p> <p>Tablets 500mg, Capsules 250mg</p>	<p><b>A</b></p> <p><a href="#">MHRA DSU: Mycophenolate mofetil, mycophenolic acid: new pregnancy-prevention advice for women and men 2015</a></p> <p><a href="#">MHRA DSU: Mycophenolate mofetil: pure red cell aplasia, July 2009</a></p> <p><a href="#">MHRA DSU: Mycophenolate mofetil (CellCept) and mycophenolic acid: risk of hypogammaglobulinaemia and risk of bronchiectasis, January 2015</a></p>

**General guidance applicable to all drugs**

- [NICE NG100: Rheumatoid arthritis in adults: management.](#)

**Biologics (secondary care use only)**

**GMMMG High Cost Drugs Pathway for Rheumatoid Arthritis (December 2017)**

<p><b>First Choices</b> (Follow relevant pathway)</p>	<p><b>Abatacept</b></p> <p>Injection or infusion</p>	<p><b>R</b> Prevents full activation of T-lymphocytes</p>
	<p><b>Adalimumab</b></p> <p>First choice: Amgevita® ▼</p> <p>Alternative: Humira®</p> <p>Solution for injection</p>	<p><b>R</b> TNF inhibitor</p> <p><a href="#">NICE TA195: Adalimumab, etanercept, infliximab, rituximab and abatacept for the treatment of rheumatoid arthritis after the failure of a TNF inhibitor.</a></p> <p><a href="#">NICE TA375: Adalimumab, etanercept, infliximab, certolizumab pegol, golimumab, tocilizumab and abatacept for rheumatoid arthritis not previously treated</a></p>

	<p><a href="#">with DMARDs or after conventional DMARDs only have failed</a></p> <p><a href="#">TA392: Adalimumab for treating moderate to severe hidradenitis suppurativa</a></p>
<p><b>Apremilast</b><sup>▼</sup> (Otezla<sup>®</sup>)</p> <p>Tablets</p>	<p><b>R</b> PDE4 Inhibitor</p> <p><a href="#">TA433: Apremilast for treating active psoriatic arthritis</a></p> <p><a href="#">MHRA: Apremilast (Otezla ▼): risk of suicidal thoughts and behaviour</a></p>
<p><b>Baricitinib</b><sup>▼</sup> (Olumiant<sup>®</sup>)</p> <p>2mg and 4mg tablets</p>	<p><b>R</b></p> <p><a href="#">NICE TA466: Baricitinib for moderate to severe rheumatoid arthritis</a></p>
<p><b>Belimumab</b></p> <p>Infusion</p>	<p><b>R</b> Inhibits activity of B-lymphocyte stimulator</p> <p><a href="#">TA397: Belimumab for treating active autoantibody-positive systemic lupus erythematosus</a></p>
<p><b>Certolizumab</b></p> <p>Solution for injection</p>	<p><b>R</b> TNF inhibitor</p> <p><a href="#">NICE TA415: Certolizumab pegol for treating rheumatoid arthritis after inadequate response to a TNF-alpha inhibitor</a></p> <p><a href="#">NICE TA445: Certolizumab pegol and secukinumab for treating active psoriatic arthritis after inadequate response to DMARDs</a></p>
<p><b>Etanercept</b></p> <p>Solution for injection</p>	<p><b>R</b> TNF inhibitor</p> <p><a href="#">NICE TA35: Guidance on the use of etanercept for the treatment of juvenile idiopathic arthritis.</a></p> <p><a href="#">NICE TA199: Etanercept, infliximab and adalimumab for the treatment of psoriatic arthritis.</a></p>

<p><b>Golimumab</b> Solution for injection</p>	<p><b>R</b> TNF inhibitor</p> <p><a href="#">NICE TA220: Golimumab for the treatment of psoriatic arthritis.</a></p> <p><a href="#">NICE TA225: Golimumab for the treatment of rheumatoid arthritis after the failure of previous disease-modifying anti-rheumatic drugs.</a></p> <p><a href="#">NICE TA497: Golimumab for treating non-radiographic axial spondyloarthritis</a></p>
<p><b>Infliximab</b> Infusion</p>	<p><b>R</b> TNF inhibitor</p>
<p><b>Ixekizumab ▼</b> Solution for injection</p>	<p><b>R</b> Interleukin 17 antagonist</p> <p><a href="#">NICE TA537: Ixekizumab for treating active psoriatic arthritis after inadequate response to DMARDs</a></p>
<p><b>Rituximab</b> Infusion</p>	<p><b>R</b> Anti-lymphocytic - causes lysis of B lymphocytes</p> <p><a href="#">MHRA DSU: Rituximab: progressive multifocal leukoencephalopathy in a patient without prior treatment for rheumatoid arthritis, December 2009.</a></p> <p><a href="#">MHRA DSU: Rituximab: screen for hepatitis B virus before treatment, December 2013</a></p> <p><a href="#">NICE TA308: Rituximab in combination with glucocorticoids for treating anti-neutrophil cytoplasmic antibody-associated vasculitis.</a></p> <p><a href="#">GMMMG Rituximab biosimilar recommendation (August 2017)</a></p>
<p><b>Sarilumab ▼</b> Solution for injection</p>	<p><b>R</b> Interleukin-6 antagonist</p> <p><a href="#">NICE TA485: Sarilumab for moderate to severe rheumatoid arthritis</a></p>

<p><b>Secukinumab</b> Solution for injection</p>	<p><b>R</b> <a href="#">TA407: Secukinumab for active ankylosing spondylitis after treatment with non-steroidal anti-inflammatory drugs or TNF-alpha inhibitors</a></p>
<p><b>Tocilizumab</b> Injection, infusion</p>	<p><b>R</b> Interleukin-6 antagonist <a href="#">NICE TA238: Systemic juvenile idiopathic arthritis – tocilizumab.</a> <a href="#">NICE TA247: Tocilizumab for the treatment of systemic juvenile idiopathic arthritis.</a> <a href="#">NICE TA518: Tocilizumab for treating giant cell arteritis</a></p>
<p><b>Tofacitinib ▼</b> 5mg and 10mg tablets</p>	<p><b>R</b> Janus Kinase Inhibitor <a href="#">NICE TA480: Tofacitinib for moderate to severe rheumatoid arthritis</a> <a href="#">NICE TA543: Tofacitinib for treating active psoriatic arthritis after inadequate response to DMARDs</a></p>
<p><b>Ustekinumab</b> Solution for injection</p>	<p><b>R</b> <a href="#">NICE TA340: Ustekinumab for treating active psoriatic arthritis.</a></p>

**General guidance applicable to all drugs**

- Biologics in Rheumatoid Arthritis can be used, without prior funding approval, according to GMMMG approved pathways [High Cost Drugs Pathway for Rheumatoid Arthritis](#) and [Harmonised Biologics Pathway for Ankylosing Spondylitis and Psoriatic Arthritis](#)
- [MHRA DSU: Tumour necrosis factor alpha inhibitors: risk of tuberculosis—screen all patients before starting treatment and monitor them closely, April 2014](#)
- [MHRA DSU: TNFa inhibitors: risk of TB – screen all patients before starting treatment and monitor them closely\(April 2016\)](#)

**Additional NICE guidance and technology appraisals:**

- [NICE NG100: Rheumatoid arthritis in adults: management.](#)
- [NICE TA383: TNF-alpha inhibitors for ankylosing spondylitis and non-radiographic axial spondyloarthritis](#)

<p><b>Subsection</b></p>	<p><b>10.1.4 Gout and cytotoxic induced hyperuricaemia</b></p>	
<p><b>Acute attack</b></p>		
<p><b>First choice</b> Alternative where NSAIDS contraindicated</p>	<p><b>Colchicine 500microgram tablets</b></p>	<p><a href="#">MHRA DSU: colchicine: extremely toxic in overdose, November 2009.</a></p>



		<a href="#">British Society for Rheumatology Guideline for the Management of Gout</a>
<b>Long-term control of gout</b>		
<b>First choice</b>	<b>Allopurinol tablets</b> 100mg; 300mg	
<b>Alternatives</b>	<b>Febuxostat tablets</b> 80mg; 120mg	<p><b>Gn</b></p> <p>Use only where allopurinol is contraindicated or not tolerated. (As per NICE guidance and/or on specialist advice.)</p> <p><a href="#">NICE TA164: Febuxostat for the management of hyperuricaemia in people with gout.</a></p> <p><a href="#">MHRA DSU: Febuxostat (Adenuric▼): stop treatment if signs or symptoms of serious hypersensitivity occur, June 2012.</a></p>
	<b>Sulfinpyrazone tablets</b> 100mg; 200mg	
<b>Do Not Prescribe</b>	<b>Lesinurad</b> Tablets	<a href="#">Criterion 2 (see RAG list)</a>
<p><b>General guidance applicable to all drugs</b></p> <ul style="list-style-type: none"> <li><a href="#">British Society for Rheumatology Guideline for the Management of Gout</a></li> </ul> <p><b>NICE Technology Appraisals:</b></p> <ul style="list-style-type: none"> <li><a href="#">NICE TA291: Pegloticase for treating severe debilitating chronic tophaceous gout</a></li> <li><a href="#">NICE TA281: Canakinumab for treating gouty arthritis attacks and reducing the frequency of subsequent attacks (terminated appraisal)</a></li> </ul>		
<b>Subsection</b>	<b>10.1.5 Other drugs for rheumatic diseases</b>	
<p><b>Applicable guidance:</b></p> <ul style="list-style-type: none"> <li><a href="#">NICE CG177: Osteoarthritis: Care and management in adults.</a> - section 1.4.5 Do not offer glucosamine or chondroitin products for the management of osteoarthritis.</li> <li>GMMM 'Do Not Prescribe and Grey Lists': <a href="#">Glucosamine</a>.</li> <li><a href="#">GM Policy Statement (2017). Hyaluronic Acid injections for Osteoarthritis. (GM037)</a></li> </ul>		

<p><b>NICE Technology Appraisals:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">NICE TA477: Autologous chondrocyte implantation for treating symptomatic articular cartilage defects of the knee</a></li> <li>• <a href="#">NICE TA508: Autologous chondrocyte implantation using chondrosphere for treating symptomatic articular cartilage defects of the knee</a></li> </ul>		
<p><b>Do Not Prescribe</b></p>	<p><b>Glucosamine</b> With or without chondroitin</p>	<p><a href="#">Criterion 1 (see RAG list)</a></p>
	<p><b>Synovial fluid injections</b> Including hyaluronan and sodium hyaluronate injections</p>	<p><a href="#">Criterion 1 (see RAG list)</a></p>

<b>Section</b>	<b>10.2 Drugs used in neuromuscular disorders</b>	
<b>Subsection</b>	<b>10.2.1 Drugs that enhance neuromuscular transmission</b>	
<b>First choice</b>	<b>Pyridostigmine 60mg tablets</b>	
<b>Alternatives</b>	<b>Neostigmine 15mg tablets</b>	
<b>Subsection</b>	<b>10.2.2 Skeletal muscle relaxants</b>	
<b>First choice</b>	<b>Dantrolene capsules</b> 25mg; 100mg	
<b>Alternatives</b>	<b>Diazepam</b> tablets 2mg; 5mg; 10mg oral solution 2mg/5ml	
	<b>Baclofen</b> 10mg tablets Baclofen oral solution 5mg/5ml	
	<b>Tizanidine tablets</b> 2mg; 4mg	<b>G<sub>n</sub></b> Following specialist initiation
<b>Do Not Prescribe</b>	<b>Cannabis extract (Sativex®)</b> Oromucosal spray	<b>Criterion 3 (see <a href="#">RAG list</a>)</b>

<b>Section</b>	<b>Miscellaneous</b>	
<b>Do Not Prescribe</b>	<b>Therabite®</b> Jaw rehabilitation system	<b>Criterion 1 (see <a href="#">RAG list</a>)</b>

<b>Section</b>	<b>10.3 Drugs for the relief of soft-tissue inflammation</b>	
<b>Subsection</b>	<b>10.3.1 Enzymes</b> (Secondary care use)	
	<b>Collagenase (Xiapex®)</b>	<p><b>R</b></p> <p><a href="#">NICE TA459: Collagenase clostridium histolyticum for treating Dupuytren's contracture</a></p>
<b>Subsection</b>	<b>10.3.2 Rubefacients and other topical antirheumatics</b>	
<b>Rubefacients</b>		
<b>Do Not Prescribe</b>	<p><b>Rubefacients</b></p> <p>Topical rubefacient products may contain nicotinate and salicylate compounds, essential oils, capsaicin, and camphor. Topical NSAID or capsaicin preps are not rubefacients</p>	<b>Criterion 1</b> (see <a href="#">RAG list</a> )
<b>Topical NSAIDS</b>		
<b>Options</b>	<p><b>Ibuprofen 5% Gel</b></p> <p>(Available as 30g, 50g or 100g tubes)</p>	
	<p><b>Ketoprofen 2.5% Gel</b></p> <p>(Available as 30g, 50g or 100g tubes)</p>	<a href="#">MHRA DSU: topical ketoprofen: reminder on photosensitivity reactions, June 2009</a> and <a href="#">MHRA August 2010:</a>
	<p><b>Piroxicam 0.5% Gel</b></p> <p>(Available as 60g or 112g tubes)</p>	
<b>Capsaicin</b>		
<b>Options</b>	<b>Capsaicin 0.025% cream</b>	<p><a href="#">NICE CG177: Osteoarthritis: Care and management in adults.</a></p> <p><a href="#">GMMMG Neuropathic Pain Guideline March 2014</a></p>
	<b>Capsaicin 0.075% cream</b>	
<b>Poultices</b>		
Not recommended for prescribing		