

Table. Pharmacology Treatments for Osteoarthritis.

Medication class or name	Primary effects	Exercise effects	Special consideration
Analgesics (e.g., nonopioid analgesics such as acetaminophen, aspirin; tramadol)	<ul style="list-style-type: none"> Reduce pain Reduce fever (acetaminophen) 	<ul style="list-style-type: none"> None reported 	<ul style="list-style-type: none"> Aspirin may cause GI-related symptoms. Hypersensitivity to aspirin is reported in 1%-2% of the population (rash or hives, respiratory symptoms). Acetaminophen overdose can lead to liver damage. Tramadol is an opioid-like controlled substance with addictive potential; should be used with caution
Nonsteroidal anti-inflammatory drugs (NSAIDs) (e.g., diclofenac, ibuprofen, naproxen, and selective COX-2 inhibitors such as celecoxib)	<ul style="list-style-type: none"> Reduce inflammation by inhibiting the enzyme cyclooxygenase, which in turn reduces prostaglandin synthesis Reduce pain 	<ul style="list-style-type: none"> None reported 	<ul style="list-style-type: none"> NSAIDs are associated with GI irritation, nausea, diarrhoea, and occasionally ulceration. Avoid use in patients with peptic ulcer disease and a history of bariatric surgery. NSAIDs should be used with caution in the elderly, and coincident use of proton pump inhibitors is advised. COX-2 inhibitors have a lower risk of GI complications. NSAIDs and COX-2 inhibitors may be associated with an increased risk of cardiovascular thrombotic events (MI, stroke).
Intra-articular corticosteroid injections	<ul style="list-style-type: none"> Reduce inflammation and consequently improve pain and mobility 	<ul style="list-style-type: none"> Avoid exercise involving the affected joint for 24 hrs after injection 	<ul style="list-style-type: none"> The recommendation is no more than 3 steroid injections per joint per year (i.e., given no less than 12 weeks apart).
Glucosamine	<ul style="list-style-type: none"> Was thought to provide pain relief and stimulate cartilage growth, but actual mechanism of action is unknown Not recommended for knee, hip, or hand OA 	<ul style="list-style-type: none"> None reported 	<ul style="list-style-type: none"> GI side effects are occasionally reported. Glucosamine may interact with warfarin (anticoagulant medication).
Topical capsaicin	<ul style="list-style-type: none"> Derived from chilli peppers; thought to attenuate cutaneous hypersensitivity by defunctionalisation of nociceptor fibres Conditionally recommended for knee OA 	None reported	<ul style="list-style-type: none"> Use is associated with warmth, burning, or stinging sensation at application site. Not recommended for hand OA because of lack of direct evidence and risk of potential eye contamination with use

Table. Pharmacology Treatments for Rheumatoid Arthritis.

Medication class or name	Primary effects	Exercise effects	Special consideration
NSAIDs	<ul style="list-style-type: none"> Reduce inflammation by inhibiting the enzyme cyclooxygenase, which in turn reduces prostaglandin synthesis Reduce pain 	<ul style="list-style-type: none"> None reported 	<ul style="list-style-type: none"> NSAIDs are associated with GI irritation, nausea, diarrhoea, and occasionally ulceration. Avoid use in patients with peptic ulcer disease and a history of bariatric surgery. NSAIDs should be used with caution in the elderly, and coincident use of proton pump inhibitors is advised. COX-2 inhibitors have a lower risk of GI complications. NSAIDs and COX-2 inhibitors may be associated with an increased risk of cardiovascular thrombotic events (MI, stroke).
Disease-modifying antirheumatic drugs (DMARDs) (e.g., methotrexate, azathioprine, leflunomide, sulfasalazine, hydroxychloroquine) and the biologics (e.g., etanercept, infliximab, adalimumab, golimumab, certolizumab pegol, abatacept, rituximab, and tocilizumab)	<ul style="list-style-type: none"> DMARDs are immunosuppressants and thus reduce inflammation; the biologics are specific cytokine or T cell or B cell modulators 	<ul style="list-style-type: none"> None reported 	<ul style="list-style-type: none"> Immunosuppressants reduce the body's response to infection. Each DMARD has recognized side effects and toxicities; careful monitoring is essential.
Systemic corticosteroids	<ul style="list-style-type: none"> Immunosuppression 	<ul style="list-style-type: none"> None reported 	<ul style="list-style-type: none"> In addition to reduced response to infection, chronic corticosteroid use is associated with osteoporosis and, in high doses, muscle loss.
Intra-articular corticosteroid injections	<ul style="list-style-type: none"> Reduce inflammation and consequently improve pain and mobility 	<ul style="list-style-type: none"> Avoid exercise involving the affected joint for 24 hrs after injection 	<ul style="list-style-type: none"> The recommendation is no more than 3 steroid injections per joint per year (i.e., given no less than 12 weeks apart).