

Table 17.1 Medications Used to Treat Osteoarthritis

Medication	Indications	Dosing	Side effects affecting rehab	Other side effects or considerations	Drug interactions
Acetaminophen (Tylenol)	Reduces fever, relieves pain	650 mg every 4-6 h. Maximum dose of 3000 mg/day.	Cog: 0 S: 0 A: 0 Motor: 0 D: 0 Com: 0 F: 0	Hepatotoxicity with daily doses >3000 mg. Chronic overuse or overdose can cause hepatic necrosis and associated abdominal pain, jaundice, coagulopathy, encephalopathy, nausea, vomiting, renal failure, and death.	Avoid use in patients with hepatic disease. Do not take with combination products containing acetaminophen (Percocet, Lortab, Norco, Ultracet).
NSAID nonselective inhibitors of cyclo-oxygenase 1 and 2					
Diclofenac (Voltaren) Enteric coated (Cataflam EC) Sustained release (Voltaren XR) Combined with misoprostol to protect gastrointestinal tract (Arthrotec; 50/200 mg, 75/200 mg)	Reduces fever and inflammation, relieves pain	Adults and children ≥12 yr: 25-75 mg in 1-2 divided doses. XR: 100 mg/day. Children <12 yr: 2-3 mg/kg by mouth/day in 2-4 divided doses.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when used with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Diffunisal (Dolobid)	Reduces fever and inflammation, relieves pain	500 mg twice/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when combined with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Etodolac (Lodine, Lodine XL)	Reduces fever and inflammation, relieves pain	200-500 mg 2-3 times/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when combined with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.

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Medication	Indications	Dosing	Side effects affecting rehab	Other side effects or considerations	Drug interactions
Fenoprofen (Nalfon)	Reduces fever and inflammation, relieves pain	200-600 mg 4 times/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when combined with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Flurbiprofen (Ansaid)	Reduces fever and inflammation, relieves pain	50-100 mg in 1-2 divided doses.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when combined with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Ibuprofen (Motrin, Advil)	Reduces fever and inflammation, relieves pain	Adults: 200-800 mg up to 4 times/day. Children: 30-50 mg/kg by mouth/day in 4 divided doses; maximum dose of 2.4 g/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when combined with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Indomethacin (Indocin, Indocin SR)	Reduces fever and inflammation, relieves pain	Adults: 25-50 mg 1-2 times/day. SR: 75 mg once/day. Children: 1-2 mg/kg by mouth/day in 2-4 divided doses; maximum dose of 4 mg/kg/day or	Cog: ++ S: 0 A: 0 Motor: 0 D: ++ Com: + F: ++	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when combined with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.

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Medication	Indications	Dosing	Side effects affecting rehab	Other side effects or considerations	Drug interactions
		150-200 mg/day.			
Ketoprofen (Orudis)	Reduces fever and inflammation, relieves pain	12.5-75mg 2-3 times/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when used with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Ketorolac (Toradol)	Reduces fever and inflammation, relieves pain	Oral: 10 mg every 6 h for maximum of 5 days. Intravenous or intramuscular: 15-30 mg every 6 h for maximum of 5 days.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when used with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Meclofenamate (Meclomen)	Reduces fever and inflammation, relieves pain	50-100 mg 4 times/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when combined with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Mefenamic acid (Ponstel)	Reduces fever and inflammation, relieves pain	250 mg 2-3 times/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of	Increased risk of bleeding when used with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.

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Medication	Indications	Dosing	Side effects affecting rehab	Other side effects or considerations	Drug interactions
				platelet aggregation with NSAIDs lasts 1-3 days.	
Meloxicam (Mobic)	Reduces fever and inflammation, relieves pain	Adults: 7.5 mg 1-2 times/day. Children ≥ 2 yr: 0.125 mg/kg by mouth/day; maximum dose of 7.5 mg/day.	Cog: + S: 0 A: 0 Motor: 0 D: + Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when used with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Nabumetone (Relafen)	Reduces fever and inflammation, relieves pain	500-750 mg 2-3 times/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when used with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Naproxen (Aleve, Naprosyn) Naproxen sodium (Anaprox) Naprelan sustained release	Reduces fever and inflammation, relieves pain	Adults: 375-500 mg every 8 h. Children: 7-20 mg/kg by mouth/day in 2-3 divided doses; maximum dose of 1 g/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when used with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Oxaprozin (Daypro)	Reduces fever and inflammation, relieves pain	600 mg once/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of	Increased risk of bleeding when combined with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.

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Medication	Indications	Dosing	Side effects affecting rehab	Other side effects or considerations	Drug interactions
				platelet aggregation with NSAIDs lasts 1-3 days.	
Piroxicam (Feldene)	Reduces fever and inflammation, relieves pain	10-20 mg once/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when used with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Sulindac (Clinoril)	Reduces fever and inflammation, relieves pain	150-200 mg 2-3 times/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when used with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.
Tolmetin (Tolectin)	Reduces fever and inflammation, relieves pain	Adults: 200-600 mg 2-3 times/day. Children <2 yr: Not established. Children ≥2 yr: Start at 20 mg/kg by mouth/day in 3-4 divided doses and increase to 15-30 mg/kg/day; maximum dose of 30 mg/kg/day.	Cog: + S: 0 A: 0 Motor: 0 D: ++ Com: + F: +	Gastrointestinal upset, dyspepsia, xerostomia, oral ulceration, glossitis, gastrointestinal mucosal hemorrhage, abrupt acute renal insufficiency, fluid retention, worsening of congestive heart failure, memory loss, confusion, dizziness, headache. Reversible inhibition of platelet aggregation with NSAIDs lasts 1-3 days.	Increased risk of bleeding when used with oral anticoagulant warfarin (Coumadin). Do not combine with aspirin. Antagonizes effects of antihypertensives.

Cog = cognition; S = sedation; A = agitation or mania; Motor = discoordination; D = dysphagia; Com = communication; F = falls; NSAID = nonsteroidal anti-inflammatory drug.

The likelihood rating scale for encountering the side effects is as follows: 0 = Almost no probability of encountering side effects. + = Little likelihood of encountering side effects. +/++ = Low probability of encountering side effects; however, probability increases with increased dosage. ++ = Medium likelihood of encountering side effects. +++ = High likelihood of

encountering side effects, particularly with high doses. ++++ = Highest likelihood of encountering side effects; best to avoid in at-risk patients.