Brand Names

Anjeso, Mobic, Qmiiz, Vivlodex, Xifyrm, Zybic

Indication Specific Dosing

For the treatment of osteoarthritis

Oral dosage (tablets, orally disintegrating tablets, and suspension)

Adults

7.5 mg PO once daily. If needed, the dosage may be increased to a maximum of 15 mg PO once daily. Use the lowest effective dose of meloxicam for the shortest duration consistent with individual treatment goals.

Oral dosage (capsules)

Adults

5 mg PO once daily. If needed, the dosage may be increased to a maximum of 10 mg PO once daily.

For the relief of the signs and symptoms of rheumatoid arthritis

Oral dosage (tablets, orally disintegrating tablets, and suspension)

Adults

7.5 mg PO once daily. If needed, the dosage may be increased to a maximum of 15 mg PO once daily. Use the lowest effective dose of meloxicam for the shortest duration consistent with individual patient treatment goals.

For the relief of the signs and symptoms of pauciarticular or polyarticular course juvenile rheumatoid arthritis (JRA)/juvenile idiopathic arthritis (JIA)

Oral dosage (suspension)

Children and Adolescents 2 to 17 years

0.125 mg/kg/dose (Max: 7.5 mg/dose) PO once daily. Use for the shortest duration consistent with patient treatment goals.

Oral dosage (tablets and orally disintegrating tablets)

Children and Adolescents weighing 60 kg or more

7.5 mg PO once daily. Use for the shortest duration consistent with patient treatment goals.

For the treatment of moderate pain or severe pain alone or in combination with other non-NSAID analgesics

Intravenous dosage (Anjeso, Qamzova, or Xifyrm)

Adults

30 mg IV once daily.

Contraindications And Precaution

Drug Interactions

The coadministration of certain medications may lead to harm and require avoidance or therapy modification; review all drug interactions prior to concomitant use of other medications.

cardiovascular disease, coronary artery bypass graft surgery (CABG), serious cardiovascular events

Meloxicam is contraindicated in the setting of coronary artery bypass graft surgery (CABG). An increased incidence of myocardial infarction and stroke was found in clinical trials of a COX-2 selective NSAID for the treatment of pain in the first 10 to 14 days after CABG surgery. NSAIDs may increase the risk of serious cardiovascular events, which can be fatal. Guidelines recommend against NSAID use in individuals presenting with and hospitalized for ST-elevation myocardial infarction (STEMI) due to increased risk of mortality and cardiovascular (CV) complications associated with their use. Avoid NSAID use in individuals with a recent myocardial infarction unless the benefits are expected to outweigh the risk of recurrent CV thrombotic events. If an NSAID is used in individuals with a recent myocardial infarction, monitor for signs of cardiac ischemia. Observational data from a national registry demonstrated that individuals treated with NSAIDs in the

post-MI period were at increased risk of reinfarction, CV-related death, and all-cause mortality beginning the first week of treatment. An increased relative risk of death in NSAID users continued during the follow-up period of 4 years. Data demonstrate that individuals treated with NSAIDs were more likely to die in the first year after a myocardial infarction compared to those not treated with NSAIDs. The relative increase in serious CV thrombotic events over baseline conferred by NSAID use appears to be similar in those with and without known CV disease or risk factors for CV disease; however, individuals with known cardiovascular disease or risk factors had a higher absolute incidence of excess serious CV thrombotic events, due to their increased baseline rate. Some observational studies found that this increased risk of serious CV thrombotic events began as early as the first weeks of treatment with an NSAID; the increase in CV thrombotic risk has been observed most consistently at higher doses. Current evidence is insufficient to determine if the risk of an event is higher or lower for any particular NSAID compared to other NSAIDs. There is no consistent evidence that concomitant use of aspirin mitigates the increased risk for CV thrombotic events. To minimize the potential risk for an adverse CV event in NSAID-treated individuals, use the lowest effective dose for the shortest duration possible; remain alert for the development of such events, throughout the entire treatment course, even in the absence of previous CV symptoms. NSAIDs may worsen pre-existing hypertension, which may contribute to the increased incidence of CV events. Monitor blood pressure during NSAID treatment initiation and throughout therapy. Avoid NSAID use in individuals with severe heart failure, unless the benefits of treatment are expected to outweigh the risks. Monitor for signs of worsening heart failure if an NSAID is used in individuals with severe heart failure. Monitor renal function in individuals with heart failure during use of an NSAID. Data demonstrate an increased risk for myocardial infarction, hospitalization for heart failure, and death with NSAID use in individuals with heart failure.

Hypersensitivity

This medication is contraindicated in patients with a history of hypersensitivity to it or any of its components.

bleeding disorder, ethanol ingestion, GI bleeding, peptic ulcer disease, serious gastrointestinal events, tobacco smoking

Individuals with a prior history of GI bleeding and/or peptic ulcer disease who use NSAIDs had a more than 10-fold increased risk of developing a GI bleed compared to individuals without these risk factors. Individuals with advanced hepatic disease or bleeding disorder are also at increased risk for GI bleeding. Other risk factors for GI bleeding in individuals receiving NSAIDs include longer duration of NSAID therapy, concomitant use of oral corticosteroids, aspirin, anticoagulants, or selective serotonin

reuptake inhibitors (SSRIs), tobacco smoking, ethanol ingestion, older age, and poor general health status. Serious gastrointestinal events, including bleeding, inflammation, perforation, and ulceration, can occur at any time and without warning symptoms in individuals receiving NSAIDs. To minimize the risk of an adverse GI event in NSAID-treated individuals, use the lowest effective NSAID dose for the shortest possible duration. Avoid concurrent administration of other NSAIDs; in the setting of concomitant use of low-dose aspirin for cardiac prophylaxis, monitor more closely for evidence of GI bleeding. Avoid NSAID use in individuals at higher risk for GI adverse events unless benefits are expected to outweigh the increased bleeding risk, and consider alternate therapies other than NSAIDs for those individuals and individuals with active GI bleeding. Monitor individuals for signs and symptoms of GI bleeding and ulceration during NSAID therapy.

aspirin exacerbated respiratory disease, asthma

Meloxicam is contraindicated in individuals with aspirin exacerbated respiratory disease, which may include chronic rhinosinusitis complicated by nasal polyps, severe and potentially fatal acute bronchospasm, and/or intolerance to aspirin and other NSAIDs. When an NSAID is used in individuals with pre-existing asthma without known aspirin sensitivity, monitor for changes in the signs and symptoms of asthma.

hypovolemia, renal disease

Oral meloxicam is not recommended for use in individuals with severe renal impairment. A lower oral meloxicam maximum daily dosage applies for individuals receiving dialysis. Intravenous meloxicam is contraindicated in individuals with moderate to severe renal insufficiency who are at risk for renal failure due to volume depletion. In general, intravenous meloxicam is not recommended in individuals with moderate or severe renal insufficiency. Avoid NSAID use in individuals with advanced renal disease, unless the benefits are expected to outweigh the risks of worsening renal function. If an NSAID is used in individuals with advanced renal disease, monitor for signs and symptoms of worsening renal function. Correct volume status in individuals with dehydration or hypovolemia prior to starting an NSAID. Monitor renal function in individuals with renal impairment, dehydration, or hypovolemia during use of an NSAID. NSAID use in individuals with renal impairment, dehydration, or hypovolemia in whom renal prostaglandins have a compensatory role in the maintenance of renal perfusion may precipitate renal decompensation. The renal effects of NSAIDs may hasten the progression of renal dysfunction in individuals with pre-existing renal disease.

hepatic disease

Use meloxicam with caution in individuals with hepatic failure. Monitor renal function in individuals with hepatic impairment during use of an NSAID. NSAID use in individuals with hepatic failure in whom renal prostaglandins have a compensatory role in the maintenance of renal perfusion may precipitate renal decompensation. Advanced hepatic disease is also a risk factor for GI bleeding in individuals who use NSAIDs.

CYP2C9 poor metabolizer

Consider a dosage reduction of meloxicam in an individual who is a known or suspected CYP2C9 poor metabolizer based on genotype or previous history or experience with other CYP2C9 substrates. Meloxicam plasma concentrations may be elevated in these individuals.

phenylketonuria

Meloxicam oral disintegrating tablets are contraindicated in individuals with phenylketonuria. The oral disintegrating tablets contain phenylalanine.

geriatric

Geriatric adults, compared to younger individuals, are at greater risk for NSAID-associated serious cardiovascular, gastrointestinal, and/or renal adverse reactions. If the anticipated benefit for the older adult outweighs these potential risks, start dosing at the low end of the dosing range, and monitor for adverse effects. According to the Beers Criteria, NSAIDs are considered potentially inappropriate medications (PIMs) in geriatric adults. There is an increased risk of GI bleeding and peptic ulcer disease in high-risk groups including those older than 75 years, or those taking systemic corticosteroids, anticoagulants, or antiplatelet medications. The risk of GI ulcers, gross bleeding, or perforation is cumulative with continued use. Avoid the chronic use of NSAIDs in high-risk individuals, including those with a history of gastric or duodenal ulcers, unless other alternatives are not effective, and the individual can take a gastroprotective agent. The use of a gastroprotective agent, like a proton pump inhibitor or misoprostol, reduces but does not eliminate GI risks. NSAIDs may also increase blood pressure and induce kidney injury. Avoid use of NSAIDs in geriatric adults with the following conditions due to the potential for symptom exacerbation or adverse effects: symptomatic heart failure (fluid retention, symptom exacerbation) or chronic kidney disease Stage 4 or higher (CrCl less than 30 mL/minute) (acute kidney injury, further decline of renal function). Use with caution in individuals with asymptomatic heart failure.

pregnancy

Avoid the use of NSAIDs, such as meloxicam, during pregnancy starting at 30 weeks gestation due to the risk of premature closure of the fetal ductus arteriosus. When use is necessary between 20 and 30 weeks gestation, limit use to the lowest effective dose and shortest duration possible. Consider ultrasound monitoring of amniotic fluid if treatment exceeds 48 hours. Discontinue the NSAID if oligohydramnios develops, and follow up according to clinical practice. Use of NSAIDs around 20 weeks gestation and later may also cause fetal renal dysfunction, leading to oligohydramnios, and in some cases, neonatal renal impairment. These adverse outcomes are seen, on average, after days to weeks of treatment, although oligohydramnios has been infrequently reported as soon as 48 hours after NSAID initiation. Oligohydramnios is often, but not always, reversible with treatment discontinuation. Complications of prolonged oligohydramnios may include limb contractures and delayed lung maturation. In some cases, invasive neonatal procedures such as exchange transfusion or dialysis have been required. Observational data regarding other potential embryo-fetal risks of NSAID use during the first or second trimesters are inconclusive. Animal studies indicate that prostaglandins play an important role in endometrial blood flow, embryo implantation, and fetal kidney development. Inhibiting prostaglandin synthesis has been associated with increased pre- and post-implantation loss and impaired kidney development in animals at NSAID doses relevant to clinical use. The effects of meloxicam on labor and obstetric delivery are unknown. In animal studies, NSAIDs inhibit prostaglandin synthesis, delay parturition, and increase the incidence of still birth.

people who can cause pregnancy in others, people who may become pregnant, reproductive risk

Counsel people who may become pregnant and people who can cause pregnancy in others about the reproductive risk associated with meloxicam. NSAIDs may delay or prevent prostaglandin-mediated rupture of ovarian follicles, which has been associated with reversible infertility. Small studies with NSAIDs demonstrated a reversible delay in ovulation. Consider withdrawal of NSAIDs in people who may become pregnant who have difficulties conceiving or who are undergoing infertility evaluation. Also, meloxicam may impair fertility in people who can cause pregnancy in others. Oral administration of meloxicam to male rats for 35 days resulted in decreased sperm count and motility and histopathological evidence of testicular degeneration at 0.3-times the maximum recommended human dose based on body surface area comparison. It is not known if these effects on fertility are reversible. The clinical relevance of these findings is unknown.

breast-feeding

Use meloxicam with caution during breast-feeding. There are no data on the presence of meloxicam in human milk, its effects on the breast-fed child, or its effects on milk production. Meloxicam was present in the milk of lactating rats at concentrations higher than those in plasma. Due to its long half-life and good bioavailability, alternative agents, such as acetaminophen or ibuprofen, are preferred during lactation.

Pregnancy And Lactation

Avoid the use of NSAIDs, such as meloxicam, during pregnancy starting at 30 weeks gestation due to the risk of premature closure of the fetal ductus arteriosus. When use is necessary between 20 and 30 weeks gestation, limit use to the lowest effective dose and shortest duration possible. Consider ultrasound monitoring of amniotic fluid if treatment exceeds 48 hours. Discontinue the NSAID if oligohydramnios develops, and follow up according to clinical practice. Use of NSAIDs around 20 weeks gestation and later may also cause fetal renal dysfunction, leading to oligohydramnios, and in some cases, neonatal renal impairment. These adverse outcomes are seen, on average, after days to weeks of treatment, although oligohydramnios has been infrequently reported as soon as 48 hours after NSAID initiation. Oligohydramnios is often, but not always, reversible with treatment discontinuation. Complications of prolonged oligohydramnios may include limb contractures and delayed lung maturation. In some cases, invasive neonatal procedures such as exchange transfusion or dialysis have been required. Observational data regarding other potential embryo-fetal risks of NSAID use during the first or second trimesters are inconclusive. Animal studies indicate that prostaglandins play an important role in endometrial blood flow, embryo implantation, and fetal kidney development. Inhibiting prostaglandin synthesis has been associated with increased pre- and post-implantation loss and impaired kidney development in animals at NSAID doses relevant to clinical use. The effects of meloxicam on labor and obstetric delivery are unknown. In animal studies, NSAIDs inhibit prostaglandin synthesis, delay parturition, and increase the incidence of still birth.

Interactions

Acebutolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Acetaminophen; Aspirin, ASA; Caffeine: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that

the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Acetaminophen; Aspirin: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Acetaminophen; Aspirin; diphenhydrAMINE: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Acetaminophen; Ibuprofen: (Major) Avoid concomitant use of ibuprofen with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Acoramidis: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with acoramidis is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and acoramidis is a CYP2C9 inhibitor.
Acyclovir: (Moderate) Monitor patients for signs of worsening renal function during coadministration of acyclovir and nonsteroidal antiinflammatory drugs. Coadministration may increase the risk for drug-induced nephrotoxicity.
Adagrasib: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with adagrasib is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and adagrasib is a moderate CYP2C9 inhibitor.
Adefovir: (Moderate) Chronic coadministration of adefovir with nephrotoxic drugs, such as nonsteroidal antiinflammatory drugs may increase the risk of developing nephrotoxicity even in patients who have normal renal function. The use of adefovir with NSAIDs may be done cautiously. As stated in the current adefovir prescribing information, 'Ibuprofen (800 mg PO three times daily), when given concomitantly with

adefovir dipivoxil, increased the adefovir Cmax by 33% and AUC by 23%, as well as urinary recovery. The increase appears to be due to higher oral bioavailability, not a reduction in renal clearance of adefovir.' In an in vitro investigation, the antiviral effect of adefovir was unaltered and the renal proximal tubule accumulation of adefovir was inhibited by the presence of a NSAID. Adefovir is efficiently transported by the human renal organic anion transporter 1, and the presence of this transporter appears to mediate the accumulation of the drug in renal proximal tubules. The in vitro study suggests that the use of a NSAID with adefovir may potentially reduce the nephrotoxic potential of adefovir. Of course, NSAIDs are associated with nephrotoxicity of their own; therefore, further data on the interaction between NSAIDs and adefovir in humans are needed.
Albuterol; Budesonide: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Aldesleukin, IL-2: (Major) Aldesleukin, IL-2 may cause nephrotoxicity. Concurrent administration of drugs possessing nephrotoxic effects, such as nonsteroidal antiinflammatory agents (NSAIDs), with Aldesleukin, IL-2 may increase the risk of kidney dysfunction. In addition, reduced kidney function secondary to Aldesleukin, IL-2 treatment may delay elimination of concomitant medications and increase the risk of adverse events from those drugs.
Alendronate: (Minor) Monitor for gastrointestinal adverse events during concurrent use of alendronate and nonsteroidal antiinflammatory drugs. Both medications have been associated with gastrointestinal irritation although data suggest concomitant use introduces little additional risk for adverse effects for most patients.
Alendronate; Cholecalciferol: (Minor) Monitor for gastrointestinal adverse events during concurrent use of alendronate and nonsteroidal antiinflammatory drugs. Both medications have been associated with gastrointestinal irritation although data suggest concomitant use introduces little additional risk for adverse effects for most patients.
Aliskiren: (Moderate) NSAIDs may attenuate the antihypertensive effects of aliskiren by inhibiting the synthesis of vasodilatory prostaglandins. In patients who are elderly, volume-depleted (including those on diuretic therapy), or with compromised renal function who are being treated with NSAIDs, the coadministration of aliskiren may result in a further deterioration of renal function, including acute renal failure. These effects are usually reversible. Therefore, blood pressure and renal function should be monitored closely when an NSAID is administered to a patient taking aliskiren.
Aliskiren; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant

diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics. (Moderate) NSAIDs may attenuate the antihypertensive effects of aliskiren by inhibiting the synthesis of vasodilatory prostaglandins. In patients who are elderly, volume-depleted (including those on diuretic therapy), or with compromised renal function who are being treated with NSAIDs, the coadministration of aliskiren may result in a further deterioration of renal function, including acute renal failure. These effects are usually reversible. Therefore, blood pressure and renal function should be monitored closely when an NSAID is administered to a patient taking aliskiren.
Alpha-blockers: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Alteplase: (Moderate) NSAIDs can cause GI bleeding, inhibit platelet aggregation, prolong bleeding time; these pharmacodynamic effects may be increased when administered to patients receiving thrombolytic agents. Patients receiving these drugs concurrently should be monitored closely for bleeding.
Amikacin: (Moderate) It is possible that additive nephrotoxicity may occur in patients who receive nonsteroidal antiinflammatory drugs (NSAIDs) concurrently with other nephrotoxic agents, such as amikacin.
aMILoride: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may reduce the natriuretic effect of diuretics in some patients. NSAIDS have been associated with an inhibition of prostaglandin synthesis, which may result in reduced renal blood flow leading to renal insufficiency and increases in blood pressure that are often accompanied by peripheral edema and weight gain. Patients taking diuretics and NSAIDS concurrently are at higher risk of developing renal insufficiency. If an NSAID and a diuretic are used concurrently, carefully monitor the patient for signs and symptoms of decreased renal function and diuretic efficacy.
aMILoride; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure as well as

for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics. (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may reduce the natriuretic effect of diuretics in some patients. NSAIDS have been associated with an inhibition of prostaglandin synthesis, which may result in reduced renal blood flow leading to renal insufficiency and increases in blood pressure that are often accompanied by peripheral edema and weight gain. Patients taking diuretics and NSAIDS concurrently are at higher risk of developing renal insufficiency. If an NSAID and a diuretic are used concurrently, carefully monitor the patient for signs and symptoms of decreased renal function and diuretic efficacy.
Aminolevulinic Acid: (Moderate) Agents that inhibit prostaglandin synthesis such as nonsteroidal antiinflammatory drugs (NSAIDs), could decrease the efficacy of photosensitizing agents used in photodynamic therapy. Avoidance of NSAIDs before and during photodynamic therapy may be advisable.
Aminosalicylate sodium, Aminosalicylic acid: (Major) Avoid concomitant use of meloxicam with aminosalicylic acid due to an increased risk of gastrointestinal toxicity and renal impairment, with little or no increase in efficacy.
Amiodarone: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with amiodarone is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and amiodarone is a moderate CYP2C9 inhibitor.
amLODIPine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
amLODIPine; Atorvastatin: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs)

and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. amLODIPine; Benazepril: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. amLODIPine; Celecoxib: (Major) Avoid concomitant use of celecoxib with any other NSAID due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers. (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation

in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
amLODIPine; Olmesartan: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
amLODIPine; Valsartan: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to

maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
amLODIPine; Valsartan; hydroCHLOROthiazide, HCTZ: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Amphotericin B lipid complex (ABLC): (Moderate) Concurrent use of amphotericin B and other nephrotoxic medications, including nonsteroidal antiinflammatory drugs (NSAIDs),

may enhance the potential for drug-induced renal toxicity. Monitor renal function carefully during concurrent therapy. Amphotericin B dosage reduction may be necessary if renal impairment occurs.
Amphotericin B liposomal (LAmB): (Moderate) Concurrent use of amphotericin B and other nephrotoxic medications, including nonsteroidal antiinflammatory drugs (NSAIDs), may enhance the potential for drug-induced renal toxicity. Monitor renal function carefully during concurrent therapy. Amphotericin B dosage reduction may be necessary if renal impairment occurs.
Amphotericin B: (Moderate) Concurrent use of amphotericin B and other nephrotoxic medications, including nonsteroidal antiinflammatory drugs (NSAIDs), may enhance the potential for drug-induced renal toxicity. Monitor renal function carefully during concurrent therapy. Amphotericin B dosage reduction may be necessary if renal impairment occurs.
Anagrelide: (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Angiotensin II receptor antagonists: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Angiotensin-converting enzyme inhibitors: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Antithrombin III: (Moderate) An additive risk of bleeding may be seen in patients receiving anticoagulants in combination with other agents known to increase the risk of bleeding such as nonsteroidal anti-inflammatory drugs (NSAIDs). Monitor clinical and laboratory response closely during concurrent use.
Apixaban: (Major) An additive risk of bleeding may be seen in patients receiving anticoagulants in combination with other agents known to increase the risk of bleeding such as nonsteroidal antiinflammatory drugs (NSAIDs). Monitor clinical and laboratory response closely during concurrent use.
Aprepitant, Fosaprepitant: (Moderate) Use caution if meloxicam and aprepitant, fosaprepitant are used concurrently, and monitor for an increase in meloxicam-related

adverse effects for several days after administration of a multi-day aprepitant regimen. Meloxicam is a CYP3A4 substrate. Aprepitant, when administered as a 3-day oral regimen (125 mg/80 mg/80 mg), is a moderate CYP3A4 inhibitor and inducer and may increase plasma concentrations of meloxicam. For example, a 5-day oral aprepitant regimen increased the AUC of another CYP3A4 substrate, midazolam (single dose), by 2.3-fold on day 1 and by 3.3-fold on day 5. After a 3-day oral aprepitant regimen, the AUC of midazolam (given on days 1, 4, 8, and 15) increased by 25% on day 4, and then decreased by 19% and 4% on days 8 and 15, respectively. As a single 125 mg or 40 mg oral dose, the inhibitory effect of aprepitant on CYP3A4 is weak, with the AUC of midazolam increased by 1.5-fold and 1.2-fold, respectively. After administration, fosaprepitant is rapidly converted to aprepitant and shares many of the same drug interactions. However, as a single 150 mg intravenous dose, fosaprepitant only weakly inhibits CYP3A4 for a duration of 2 days; there is no evidence of CYP3A4 induction. Fosaprepitant 150 mg IV as a single dose increased the AUC of midazolam (given on days 1 and 4) by approximately 1.8-fold on day 1; there was no effect on day 4. Less than a 2-fold increase in the midazolam AUC is not considered clinically important. Aprepitant is also a CYP2C9 inducer and meloxicam is a CYP2C9 substrate. Administration of a CYP2C9 substrate, tolbutamide, on days 1, 4, 8, and 15 with a 3-day regimen of oral aprepitant (125 mg/80 mg/80 mg) decreased the tolbutamide AUC by 23% on day 4, 28% on day 8, and 15% on day 15. The AUC of tolbutamide was decreased by 8% on day 2, 16% on day 4, 15% on day 8, and 10% on day 15 when given prior to oral administration of aprepitant 40 mg on day 1, and on days 2, 4, 8, and 15. The effects of aprepitant on tolbutamide were not considered significant.

Argatroban: (Moderate) An additive risk of bleeding may be seen in patients receiving anticoagulants in combination with other agents known to increase the risk of bleeding such as nonsteroidal anti-inflammatory drugs (NSAIDs). Monitor clinical and laboratory response closely during concurrent use.

Asciminib: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with asciminib is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and asciminib is a CYP2C9 inhibitor.

Aspirin, ASA: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.

Aspirin, ASA; Butalbital; Caffeine: (Major) Concomitant use of low dose aspirin or

analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Aspirin, ASA; Caffeine: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Aspirin, ASA; Caffeine; Orphenadrine: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Aspirin, ASA; Carisoprodol; Codeine: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Aspirin, ASA; Citric Acid; Sodium Bicarbonate: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Aspirin, ASA; Dipyridamole: (Major) Concomitant use of low dose aspirin or analgesic

doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection. (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Aspirin, ASA; Omeprazole: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Aspirin, ASA; oxyCODONE: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Atazanavir: (Moderate) The plasma concentrations of meloxicam may be elevated when administered concurrently with atazanavir. Clinical monitoring for adverse effects is recommended during coadministration. Atazanavir is a CYP3A4 inhibitor, while meloxicam is a CYP3A4 substrate.
Atazanavir; Cobicistat: (Moderate) The plasma concentrations of meloxicam may be elevated when administered concurrently with atazanavir. Clinical monitoring for adverse effects is recommended during coadministration. Atazanavir is a CYP3A4 inhibitor, while meloxicam is a CYP3A4 substrate.
Atenolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Atenolol; Chlorthalidone: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may

precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics. (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Auranofin: (Moderate) Due to the inhibition of renal prostaglandins by NSAIDs, concurrent use with other nephrotoxic agents, such as gold compounds, may lead to additive nephrotoxicity. Monitor renal function carefully during concurrent therapy.
azaTHIOprine: (Moderate) NSAIDs should be used with caution in patients receiving immunosuppressives as they may mask fever, pain, swelling and other signs and symptoms of an infection.
Azelastine; Fluticasone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Azilsartan: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Azilsartan; Chlorthalidone: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Bacitracin: (Major) Avoid concurrent use of bacitracin with nonsteroidal antiinflammatory drugs. Coadministration may increase the risk for drug-induced nephrotoxicity.
Beclomethasone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use

increases the risk of GI bleeding.
Benazepril: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Benazepril; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Benzgalantamine: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.
Benzoic Acid; Hyoscyamine; Methenamine; Methylene Blue; Phenyl Salicylate: (Major) Avoid concomitant use of meloxicam with phenyl salicylate due to an increased risk of gastrointestinal toxicity and renal impairment, with little or no increase in efficacy.
Berotralstat: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with berotralstat is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and berotralstat is a weak CYP2C9 inhibitor.
Beta-blockers: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.

Betamethasone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Betaxolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Bictegravir; Emtricitabine; Tenofovir Alafenamide: (Moderate) Concomitant use of nonsteroidal anti-inflammatory drugs (NSAIDs) and tenofovir alafenamide may result in additive nephrotoxicity. Monitor for renal toxicity if concomitant use is required. (Moderate) Monitor for nonsteroidal antiinflammatory drug (NSAID) or emtricitabine-related adverse events during concomitant use. Concomitant use may increase NSAID or emtricitabine concentrations. Coadministration of drugs that reduce renal function or compete for active tubular secretion, such as NSAIDs and emtricitabine, may increase the risk of adverse reactions.
Bismuth Subsalicylate: (Major) Avoid concomitant use of meloxicam with bismuth subsalicylate due to an increased risk of gastrointestinal toxicity and renal impairment, with little or no increase in efficacy.
Bismuth Subsalicylate; metroNIDAZOLE; Tetracycline: (Major) Avoid concomitant use of meloxicam with bismuth subsalicylate due to an increased risk of gastrointestinal toxicity and renal impairment, with little or no increase in efficacy.
Bisoprolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Bisoprolol; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics. (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Bivalirudin: (Moderate) An additive risk of bleeding may be seen in patients receiving anticoagulants in combination with other agents known to increase the risk of bleeding such as nonsteroidal anti-inflammatory drugs (NSAIDs). Monitor clinical and laboratory response closely during concurrent use.
Brimonidine; Timolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.

Budesonide: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Budesonide; Formoterol: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Budesonide; Glycopyrrolate; Formoterol: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Bumetanide: (Moderate) If a nonsteroidal anti-inflammatory drug (NSAID) and a diuretic are used concurrently, carefully monitor the patient for signs and symptoms of decreased renal function and diuretic efficacy. Patients taking diuretics and NSAIDs concurrently are at higher risk of developing renal insufficiency. NSAIDs may reduce the natriuretic effect of diuretics in some patients. NSAIDs have been associated with an inhibition of prostaglandin synthesis, which may result in reduced renal blood flow leading to renal insufficiency and increases in blood pressure that are often accompanied by peripheral edema and weight gain.
Busulfan: (Major) Due to the thrombocytopenic effects of busulfan, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, ASA, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Butalbital; Aspirin; Caffeine; Codeine: (Major) Concomitant use of low dose aspirin or analgesic doses of aspirin and meloxicam is generally not recommended due to the increased risk of bleeding and renal impairment. Controlled clinical studies showed that the concomitant use of NSAIDs and analgesic doses of aspirin does not produce any greater therapeutic effect than the use of NSAIDs alone. In a clinical study, the concomitant use of an NSAID and aspirin was associated with a significantly increased incidence of GI adverse reactions as compared to use of the NSAID alone. Meloxicam is not a substitute for low dose aspirin for cardiovascular protection.
Calcium Phosphate, Supersaturated: (Moderate) Concomitant use of medicines with potential to alter renal perfusion or function such as nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk of acute phosphate nephropathy in patients taking sodium phosphate monobasic monohydrate; sodium phosphate dibasic anhydrous.
Calcium-channel blockers: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive

agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Candesartan: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Candesartan; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Capecitabine: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with capecitabine is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and capecitabine is a weak CYP2C9 inhibitor.
Capreomycin: (Major) Because capreomycin is primarily eliminated by the kidney, coadministration with other potentially nephrotoxic drugs, including nonsteroidal antiinflammatory drugs (NSAIDs), may increase serum concentrations of either drug. Theoretically, the chronic coadministration of these drugs may increase the risk of developing nephrotoxicity, even in patients who have normal renal function. Monitor patients for changes in renal function if these drugs are coadministered.
Captopril: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-

inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Captopril; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Carmustine, BCNU: (Major) Due to the thrombocytopenic effects of carmustine, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, ASA, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding. These additive effects may not occur for at least 6 weeks after the administration of carmustine due to the delayed myelosuppressive effects of carmustine.
Carteolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Carvedilol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Cefotaxime: (Minor) Cefotaxime's product label states that cephalosporins may potentiate the adverse renal effects of nephrotoxic agents, such as aminoglycosides, nonsteroidal antiinflammatory drugs (NSAIDs), and loop diuretics. Carefully monitor renal function, especially during prolonged therapy or use of high aminoglycoside doses. The majority of reported cases involve the combination of aminoglycosides and cephalothin or cephaloridine, which are associated with dose-related nephrotoxicity as singular agents. Limited but conflicting data with other cephalosporins have been noted.
Celecoxib: (Major) Avoid concomitant use of celecoxib with any other NSAID due to the

risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Celecoxib; Tramadol: (Major) Avoid concomitant use of celecoxib with any other NSAID due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Ceritinib: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with ceritinib is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and ceritinib is a weak CYP2C9 inhibitor.
Chlorambucil: (Major) Due to the thrombocytopenic effects of chlorambucil, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, ASA, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Chlorothiazide: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Chlorpheniramine; Ibuprofen; Pseudoephedrine: (Major) Avoid concomitant use of ibuprofen with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Chlorthalidone: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Cholestyramine: (Minor) Pretreatment for four days with cholestyramine before IV meloxicam significantly increased the clearance of meloxicam by 50%. This interaction may occur via reduction of enterohepatic recycling of meloxicam in the gastrointestinal tract; the impact on oral dosing of meloxicam or overall clinical relevance is not established.
Choline Salicylate; Magnesium Salicylate: (Major) Avoid concomitant use of meloxicam

with choline salicylate due to an increased risk of gastrointestinal toxicity and renal impairment, with little or no increase in efficacy. (Major) Avoid concomitant use of meloxicam with magnesium salicylate due to an increased risk of gastrointestinal toxicity and renal impairment, with little or no increase in efficacy.
Cholinesterase inhibitors: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.
Ciclesonide: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Cidofovir: (Contraindicated) The concomitant administration of cidofovir and nonsteroidal antiinflammatory drugs (NSAIDs) is contraindicated due to the potential for increased nephrotoxicity. NSAIDs should be discontinued 7 days prior to beginning cidofovir.
Cilostazol: (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Ciprofloxacin: (Moderate) Use quinolones and nonsteroidal anti-inflammatory drugs (NSAIDs) concomitantly with caution due to potential increased risk of CNS stimulation and convulsive seizures. NSAIDs in combination with very high doses of quinolones have been shown to provoke convulsions in preclinical studies and postmarketing.
Citalopram: (Moderate) Monitor for signs and symptoms of bleeding during concomitant selective serotonin reuptake inhibitor (SSRI) and nonsteroidal antiinflammatory drug (NSAID) use due to increased risk for bleeding. Serotonin release by platelets plays an important role in hemostasis. Epidemiological studies have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding.
Citric Acid; Potassium Citrate; Sodium Citrate: (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Cladribine: (Major) Due to the thrombocytopenic effects of cladribine, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional

risk factor for bleeding.
Clevidipine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Clofarabine: (Major) Due to the thrombocytopenic effects of clofarabine, an additive risk of bleeding may be seen in patients receiving concomitant NSAIDs. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Clopidogrel: (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Colistimethate, Colistin, Polymyxin E: (Major) The administration of colistimethate sodium may increase the risk of developing nephrotoxicity, even in patients who have normal renal function. Nonsteroidal antiinflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when used concurrently. Monitor patients for changes in renal function if these drugs are coadministered. Since colistimethate sodium is eliminated by the kidney, coadministration with other potentially nephrotoxic drugs, including nonsteroidal antiinflammatory drugs (NSAIDs), may theoretically increase serum concentrations of either drug.
Colistin: (Major) The administration of colistimethate sodium may increase the risk of developing nephrotoxicity, even in patients who have normal renal function. Nonsteroidal antiinflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when used concurrently. Monitor patients for changes in renal function if these drugs are coadministered. Since colistimethate sodium is eliminated by the kidney, coadministration with other potentially nephrotoxic drugs, including nonsteroidal antiinflammatory drugs (NSAIDs), may theoretically increase serum concentrations of either drug.
Corticosteroids: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use

increases the risk of GI bleeding.
Cortisone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
cycloSPORINE: (Moderate) Monitor serum creatinine, potassium concentrations, and cyclosporine concentrations closely when systemic cyclosporine is given with meloxicam. Renal dysfunction associated with cyclosporine may be potentiated by concurrent usage of NSAIDs, particularly in a dehydrated patient. The effects of NSAIDs on the production of renal prostaglandins may also cause changes in the elimination of cyclosporine. Monitor patients closely for signs and symptoms of cyclosporine toxicity and infection, as NSAIDs may mask fever, pain, or swelling.
Cytarabine, ARA-C: (Major) The main toxic effect of cytarabine, ARA-C is bone marrow suppression with leukopenia, thrombocytopenia and anemia. Due to the thrombocytopenic effects of cytarabine, an additive risk of bleeding may be seen in patients receiving concomitant NSAIDs. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding. Dipyridamole can block membrane transport of cytarabine in tumor cells, therefore decreasing its antineoplastic activity.
Dabigatran: (Major) Educate patients about the signs of increased bleeding and the need to report these signs to a healthcare provider immediately if coadministration of dabigatran and a nonsteroidal antiinflammatory drug (NSAID) is necessary. Dabigatran can cause significant and, sometimes, fatal bleeding. This risk may be increased by concurrent use of chronic NSAID therapy.
Dabrafenib: (Moderate) The concomitant use of dabrafenib, a CYP29 inducer, and meloxicam, a CYP2C9 substrate, may result in decreased levels of meloxicam; avoid concomitant use if possible. If another agent cannot be substituted and coadministration of these agents is unavoidable, monitor patients closely for loss of meloxicam efficacy. In addition, an increased risk of bleeding may occur when NSAIDs are used with agents that cause clinically significant thrombocytopenia. Patients should be monitored closely for bleeding.
Dacarbazine, DTIC: (Major) Leukopenia and thrombocytopenia are common toxicities of dacarbazine, DTIC. Due to the thrombocytopenic effects of dacarbazine, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, ASA, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Dalteparin: (Moderate) An additive risk of bleeding may be seen in patients receiving anticoagulants in combination with other agents known to increase the risk of bleeding such as nonsteroidal antiinflammatory drugs (NSAIDs). Monitor clinical and laboratory response closely during concurrent use.

Darunavir: (Moderate) The plasma concentrations of meloxicam may be elevated when administered concurrently with darunavir. Clinical monitoring for adverse effects is recommended during coadministration. Darunavir is a CYP3A4 inhibitor, while meloxicam is a CYP3A4 substrate.
Darunavir; Cobicistat: (Moderate) The plasma concentrations of meloxicam may be elevated when administered concurrently with darunavir. Clinical monitoring for adverse effects is recommended during coadministration. Darunavir is a CYP3A4 inhibitor, while meloxicam is a CYP3A4 substrate.
Darunavir; Cobicistat; Emtricitabine; Tenofovir alafenamide: (Moderate) Concomitant use of nonsteroidal anti-inflammatory drugs (NSAIDs) and tenofovir alafenamide may result in additive nephrotoxicity. Monitor for renal toxicity if concomitant use is required. (Moderate) Monitor for nonsteroidal antiinflammatory drug (NSAID) or emtricitabine-related adverse events during concomitant use. Concomitant use may increase NSAID or emtricitabine concentrations. Coadministration of drugs that reduce renal function or compete for active tubular secretion, such as NSAIDs and emtricitabine, may increase the risk of adverse reactions. (Moderate) The plasma concentrations of meloxicam may be elevated when administered concurrently with darunavir. Clinical monitoring for adverse effects is recommended during coadministration. Darunavir is a CYP3A4 inhibitor, while meloxicam is a CYP3A4 substrate.
Dasatinib: (Major) Due to the thrombocytopenic and possible platelet inhibiting effects of dasatinib, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors (including aspirin), strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding. Caution should be exercised if patients are required to take medications that inhibit platelet function or anticoagulants concomitantly with dasatinib.
Deferasirox: (Moderate) Because gastric ulceration and GI bleeding have been reported in patients taking deferasirox, use caution when coadministering with other drugs known to increase the risk of peptic ulcers or gastric hemorrhage including NSAIDs. In addition, coadministration of deferasirox with other potentially nephrotoxic drugs, including NSAIDs, may increase the acute renal failure. Monitor serum creatinine and/or creatinine clearance in patients who are receiving deferasirox and nephrotoxic drugs concomitantly.
Deflazacort: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Delafloxacin: (Moderate) Use quinolones and nonsteroidal anti-inflammatory drugs (NSAIDs) concomitantly with caution due to potential increased risk of CNS stimulation and convulsive seizures. NSAIDs in combination with very high doses of quinolones have

been shown to provoke convulsions in preclinical studies and postmarketing.
Desmopressin: (Major) Additive hyponatremic effects may be seen in patients treated with desmopressin and drugs associated with hyponatremia including NSAIDs. Use combination with caution, and monitor patients for signs and symptoms of hyponatremia. A woman who took both desmopressin and ibuprofen was found in a comatose state. As her serum sodium concentration was 121 mmol/L, and her plasma osmolality was low in the presence of a high-normal urine osmolality and normal sodium excretion, she was treated with fluid restriction. Her serum sodium concentration was 124 mmol/L within a day and was 135 mmol/L by the second day. The woman had previously received desmopressin without the development of clinical symptoms of hyponatremia.
Desvenlafaxine: (Moderate) Platelet aggregation may be impaired by desvenlafaxine due to platelet serotonin depletion, possibly increasing the risk of a bleeding complication (e.g., gastrointestinal bleeding, ecchymoses, epistaxis, hematomas, petechiae, hemorrhage) in patients receiving nonsteroidal antiinflammatory drugs (NSAIDs). Patients should be monitored for signs and symptoms of bleeding while taking desvenlafaxine with NSAIDs.
dexAMETHasone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Diclofenac: (Major) Avoid concomitant use of diclofenac with any other NSAID due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Diclofenac; miSOPROStol: (Major) Avoid concomitant use of diclofenac with any other NSAID due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Diflunisal: (Major) Avoid concomitant use of diflunisal with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
dilTIAZem: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage.

Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
diphenhydrAMINE; Ibuprofen: (Major) Avoid concomitant use of ibuprofen with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
diphenhydrAMINE; Naproxen: (Major) Avoid concomitant use of meloxicam with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Dipyridamole: (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Disulfiram: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with disulfiram is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and disulfiram is a weak CYP2C9 inhibitor.
DOCEtaxel: (Major) Due to the thrombocytopenic effects of docetaxel, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors (including aspirin), strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Donepezil: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.
Donepezil; Memantine: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.
Doravirine; lamiVUDine; Tenofovir disoproxil fumarate: (Moderate) Avoid administering tenofovir, PMPA concurrently with or recently after a nephrotoxic agent, such as high-dose or multiple nonsteroidal antiinflammatory drugs (NSAIDs). Cases of acute renal

failure, some requiring hospitalization and renal replacement therapy, have been reported after high-dose or multiple NSAIDs were initiated in patients who appeared stable on tenofovir. Consider alternatives to NSAIDs in patients at risk for renal dysfunction. If these drugs must be coadministered, carefully monitor the estimated creatinine creatinine, serum phosphorus, urine glucose, and urine protein prior to, and periodically during, treatment.
Dorzolamide; Timolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Doxazosin: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Dronedarone: (Moderate) Dronedarone is metabolized by and is an inhibitor of CYP3A. Meloxicam is a substrate for CYP3A4. The concomitant administration of dronedarone and CYP3A substrates may result in increased exposure of the substrate and should, therefore, be undertaken with caution.
Drospirenone: (Minor) Drospirenone has antimineralocorticoid effects; the progestin may increase serum potassium. Other drugs that may have additive effects on serum potassium with drospirenone include chronic treatment with NSAIDs, and monitoring of serum potassium in the 1st month of concurrent therapy is recommended.
Drospirenone; Estetrol: (Minor) Drospirenone has antimineralocorticoid effects; the progestin may increase serum potassium. Other drugs that may have additive effects on serum potassium with drospirenone include chronic treatment with NSAIDs, and monitoring of serum potassium in the 1st month of concurrent therapy is recommended.
Drospirenone; Estradiol: (Minor) Drospirenone has antimineralocorticoid effects; the progestin may increase serum potassium. Other drugs that may have additive effects on serum potassium with drospirenone include chronic treatment with NSAIDs, and monitoring of serum potassium in the 1st month of concurrent therapy is

recommended.
Drospirenone; Ethinyl Estradiol: (Minor) Drospirenone has antimineralocorticoid effects; the progestin may increase serum potassium. Other drugs that may have additive effects on serum potassium with drospirenone include chronic treatment with NSAIDs, and monitoring of serum potassium in the 1st month of concurrent therapy is recommended.
Drospirenone; Ethinyl Estradiol; Levomefolate: (Minor) Drospirenone has antimineralocorticoid effects; the progestin may increase serum potassium. Other drugs that may have additive effects on serum potassium with drospirenone include chronic treatment with NSAIDs, and monitoring of serum potassium in the 1st month of concurrent therapy is recommended.
DULoxetine: (Moderate) Monitor for signs and symptoms of bleeding during concomitant duloxetine and nonsteroidal antiinflammatory drug (NSAID) use due to increased risk for bleeding. Serotonin release by platelets plays an important role in hemostasis. Epidemiological studies have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding.
Edoxaban: (Major) An additive risk of bleeding may be seen in patients receiving anticoagulants in combination with other agents known to increase the risk of bleeding such as nonsteroidal antiinflammatory drugs (NSAIDs). Monitor clinical and laboratory response closely during concurrent use.
Efavirenz: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with efavirenz is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and efavirenz is a moderate CYP2C9 inhibitor.
Efavirenz; Emtricitabine; Tenofovir Disoproxil Fumarate: (Moderate) Avoid administering tenofovir, PMPA concurrently with or recently after a nephrotoxic agent, such as high-dose or multiple nonsteroidal antiinflammatory drugs (NSAIDs). Cases of acute renal failure, some requiring hospitalization and renal replacement therapy, have been reported after high-dose or multiple NSAIDs were initiated in patients who appeared stable on tenofovir. Consider alternatives to NSAIDs in patients at risk for renal dysfunction. If these drugs must be coadministered, carefully monitor the estimated creatinine creatinine, serum phosphorus, urine glucose, and urine protein prior to, and periodically during, treatment. (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with efavirenz is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and efavirenz is a moderate CYP2C9 inhibitor. (Moderate) Monitor for nonsteroidal antiinflammatory drug (NSAID) or emtricitabine-related adverse events during concomitant use. Concomitant use may increase NSAID or emtricitabine concentrations. Coadministration of drugs that reduce renal function or compete for active tubular

secretion, such as NSAIDs and emtricitabine, may increase the risk of adverse reactions.
Efavirenz; lamiVUDine; Tenofovir Disoproxil Fumarate: (Moderate) Avoid administering tenofovir, PMPA concurrently with or recently after a nephrotoxic agent, such as high-dose or multiple nonsteroidal antiinflammatory drugs (NSAIDs). Cases of acute renal failure, some requiring hospitalization and renal replacement therapy, have been reported after high-dose or multiple NSAIDs were initiated in patients who appeared stable on tenofovir. Consider alternatives to NSAIDs in patients at risk for renal dysfunction. If these drugs must be coadministered, carefully monitor the estimated creatinine creatinine, serum phosphorus, urine glucose, and urine protein prior to, and periodically during, treatment. (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with efavirenz is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and efavirenz is a moderate CYP2C9 inhibitor.
Elbasvir; Grazoprevir: (Moderate) Administering meloxicam with elbasvir; grazoprevir may result in elevated meloxicam plasma concentrations. Meloxicam is a substrate of CYP3A; grazoprevir is a weak CYP3A inhibitor. If these drugs are used together, closely monitor for signs of adverse events.
Elexacaftor; tezacaftor; ivacaftor: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with ivacaftor is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and ivacaftor is a weak CYP2C9 inhibitor.
Eltrombopag: (Moderate) Eltrombopag is a UDP-glucuronyltransferase inhibitor. NSAIDs are a substrate of UDP-glucuronyltransferases. The significance or effect of this interaction is not known; however, elevated concentrations of the NSAID are possible. Monitor patients for adverse reactions if eltrombopag is administered with an NSAID.
Elvitegravir; Cobicistat; Emtricitabine; Tenofovir Alafenamide: (Moderate) Caution is warranted when elvitegravir is administered with meloxicam as there is a potential for decreased meloxicam concentrations. Meloxicam is primarily metabolized by CYP2C9, while elvitegravir is a CYP2C9 inducer. (Moderate) Concomitant use of nonsteroidal anti-inflammatory drugs (NSAIDs) and tenofovir alafenamide may result in additive nephrotoxicity. Monitor for renal toxicity if concomitant use is required. (Moderate) Monitor for nonsteroidal antiinflammatory drug (NSAID) or emtricitabine-related adverse events during concomitant use. Concomitant use may increase NSAID or emtricitabine concentrations. Coadministration of drugs that reduce renal function or compete for active tubular secretion, such as NSAIDs and emtricitabine, may increase the risk of adverse reactions.
Elvitegravir; Cobicistat; Emtricitabine; Tenofovir Disoproxil Fumarate: (Moderate) Avoid administering tenofovir, PMPA concurrently with or recently after a nephrotoxic agent, such as high-dose or multiple nonsteroidal antiinflammatory drugs (NSAIDs). Cases of acute renal failure, some requiring hospitalization and renal replacement therapy, have

been reported after high-dose or multiple NSAIDs were initiated in patients who appeared stable on tenofovir. Consider alternatives to NSAIDs in patients at risk for renal dysfunction. If these drugs must be coadministered, carefully monitor the estimated creatinine creatinine, serum phosphorus, urine glucose, and urine protein prior to, and periodically during, treatment. (Moderate) Caution is warranted when elvitegravir is administered with meloxicam as there is a potential for decreased meloxicam concentrations. Meloxicam is primarily metabolized by CYP2C9, while elvitegravir is a CYP2C9 inducer. (Moderate) Monitor for nonsteroidal antiinflammatory drug (NSAID) or emtricitabine-related adverse events during concomitant use. Concomitant use may increase NSAID or emtricitabine concentrations. Coadministration of drugs that reduce renal function or compete for active tubular secretion, such as NSAIDs and emtricitabine, may increase the risk of adverse reactions.
Emtricitabine: (Moderate) Monitor for nonsteroidal antiinflammatory drug (NSAID) or emtricitabine-related adverse events during concomitant use. Concomitant use may increase NSAID or emtricitabine concentrations. Coadministration of drugs that reduce renal function or compete for active tubular secretion, such as NSAIDs and emtricitabine, may increase the risk of adverse reactions.
Emtricitabine; Rilpivirine; Tenofovir alafenamide: (Moderate) Concomitant use of nonsteroidal anti-inflammatory drugs (NSAIDs) and tenofovir alafenamide may result in additive nephrotoxicity. Monitor for renal toxicity if concomitant use is required. (Moderate) Monitor for nonsteroidal antiinflammatory drug (NSAID) or emtricitabine-related adverse events during concomitant use. Concomitant use may increase NSAID or emtricitabine concentrations. Coadministration of drugs that reduce renal function or compete for active tubular secretion, such as NSAIDs and emtricitabine, may increase the risk of adverse reactions.
Emtricitabine; Rilpivirine; Tenofovir Disoproxil Fumarate: (Moderate) Avoid administering tenofovir, PMPA concurrently with or recently after a nephrotoxic agent, such as high-dose or multiple nonsteroidal antiinflammatory drugs (NSAIDs). Cases of acute renal failure, some requiring hospitalization and renal replacement therapy, have been reported after high-dose or multiple NSAIDs were initiated in patients who appeared stable on tenofovir. Consider alternatives to NSAIDs in patients at risk for renal dysfunction. If these drugs must be coadministered, carefully monitor the estimated creatinine creatinine, serum phosphorus, urine glucose, and urine protein prior to, and periodically during, treatment. (Moderate) Monitor for nonsteroidal antiinflammatory drug (NSAID) or emtricitabine-related adverse events during concomitant use. Concomitant use may increase NSAID or emtricitabine concentrations. Coadministration of drugs that reduce renal function or compete for active tubular secretion, such as NSAIDs and emtricitabine, may increase the risk of adverse reactions.
Emtricitabine; Tenofovir alafenamide: (Moderate) Concomitant use of nonsteroidal anti-inflammatory drugs (NSAIDs) and tenofovir alafenamide may result in additive

nephrotoxicity. Monitor for renal toxicity if concomitant use is required. (Moderate) Monitor for nonsteroidal antiinflammatory drug (NSAID) or emtricitabine-related adverse events during concomitant use. Concomitant use may increase NSAID or emtricitabine concentrations. Coadministration of drugs that reduce renal function or compete for active tubular secretion, such as NSAIDs and emtricitabine, may increase the risk of adverse reactions.
Emtricitabine; Tenofovir Disoproxil Fumarate: (Moderate) Avoid administering tenofovir, PMPA concurrently with or recently after a nephrotoxic agent, such as high-dose or multiple nonsteroidal antiinflammatory drugs (NSAIDs). Cases of acute renal failure, some requiring hospitalization and renal replacement therapy, have been reported after high-dose or multiple NSAIDs were initiated in patients who appeared stable on tenofovir. Consider alternatives to NSAIDs in patients at risk for renal dysfunction. If these drugs must be coadministered, carefully monitor the estimated creatinine creatinine, serum phosphorus, urine glucose, and urine protein prior to, and periodically during, treatment. (Moderate) Monitor for nonsteroidal antiinflammatory drug (NSAID) or emtricitabine-related adverse events during concomitant use. Concomitant use may increase NSAID or emtricitabine concentrations. Coadministration of drugs that reduce renal function or compete for active tubular secretion, such as NSAIDs and emtricitabine, may increase the risk of adverse reactions.
Enalapril, Enalaprilat: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Enalapril; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.

Enoxaparin: (Major) Whenever possible, discontinue agents which may enhance the risk of hemorrhage, including nonsteroidal antiinflammatory drugs, before initiation of enoxaparin therapy. If coadministration is essential, conduct close clinical and laboratory monitoring.
Entecavir: (Moderate) The manufacturer of entecavir recommends monitoring for adverse effects when coadministered with NSAIDs. Entecavir is primarily eliminated by the kidneys; NSAIDs can affect renal function. Concurrent administration may increase the serum concentrations of entecavir and adverse events.
Eplerenone: (Major) Monitor serum potassium and serum creatinine concentrations within 3 to 7 days of initiating coadministration of eplerenone and nonsteroidal antiinflammatory drugs (NSAIDs), and monitor blood pressure. The concomitant use of other potassium-sparing antihypertensives with NSAIDs has been shown to reduce the antihypertensive effect in some patients and result in severe hyperkalemia in patients with impaired renal function. Patients who develop hyperkalemia may continue eplerenone with proper dose adjustment; eplerenone dose reduction decreases potassium concentrations.
Epoprostenol: (Moderate) NSAIDs may decrease the effect of antihypertensive agents through various mechanisms, including renal and peripheral vasoactive pathways.
Eptifibatide: (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Erlotinib: (Moderate) Monitor for symptoms of gastrointestinal (GI) perforation (e.g., severe abdominal pain, fever, nausea, and vomiting) if coadministration of erlotinib with nonsteroidal antiinflammatory drugs (NSAIDs) is necessary. Permanently discontinue erlotinib in patients who develop GI perforation. The pooled incidence of GI perforation clinical trials of erlotinib ranged from 0.1% to 0.4%, including fatal cases. Patients receiving concomitant NSAIDs may be at increased risk of perforation.
Escitalopram: (Moderate) Monitor for signs and symptoms of bleeding during concomitant selective serotonin reuptake inhibitor (SSRI) and nonsteroidal antiinflammatory drug (NSAID) use due to increased risk for bleeding. Serotonin release by platelets plays an important role in hemostasis. Epidemiological studies have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding.
Esmolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Ethacrynic Acid: (Moderate) If a nonsteroidal anti-inflammatory drug (NSAID) and a diuretic are used concurrently, carefully monitor the patient for signs and symptoms of decreased renal function and diuretic efficacy. Patients taking diuretics and NSAIDs concurrently are at higher risk of developing renal insufficiency. NSAIDs may reduce the

natriuretic effect of diuretics in some patients. NSAIDs have been associated with an inhibition of prostaglandin synthesis, which may result in reduced renal blood flow leading to renal insufficiency and increases in blood pressure that are often accompanied by peripheral edema and weight gain.
Ethanol: (Major) Advise patients to avoid alcohol and alcohol-containing products while taking NSAIDs. Concomitant ingestion of alcohol with NSAIDs increases the risk of developing gastric irritation and GI mucosal bleeding. Alcohol is a mucosal irritant and NSAIDs decrease platelet aggregation. Routine ingestion of alcohol and NSAIDs can cause significant GI bleeding, which may or may not be overt. Even occasional concomitant use of NSAIDs and alcohol should be avoided. Chronic alcohol ingestion is often associated with hypoprothrombinemia and this condition increases the risk of bleeding.
Ethiodized Oil: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when given to patients receiving a contrast agents. When possible, withhold NSAID therapy during administration of a contrast agent.
Etodolac: (Major) Avoid concomitant use of etodolac with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Etravirine: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with etravirine is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and etravirine is a weak CYP2C9 inhibitor.
Felodipine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Fenofibric Acid: (Minor) At therapeutic concentrations, fenofibric acid is a mild-to-moderate inhibitor of CYP2C9. Concomitant use of fenofibric acid with CYP2C9 substrates, such as meloxicam, has not been formally studied. Fenofibric acid may theoretically increase plasma concentrations of CYP2C9 substrates and could lead to

toxicity for drugs that have a narrow therapeutic range. Monitor the therapeutic effect of meloxicam during coadministration with fenofibric acid.
Fenoprofen: (Major) Avoid concomitant use of fenoprofen with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Floxuridine: (Major) Due to the thrombocytopenic effects of floxuridine, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Fluconazole: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with fluconazole is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and fluconazole is a moderate CYP2C9 inhibitor.
Fludrocortisone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Flunisolide: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Fluorouracil, 5-FU: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with fluorouracil is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and fluorouracil is a weak CYP2C9 inhibitor.
FLUoxetine: (Moderate) Monitor for signs and symptoms of bleeding during concomitant selective serotonin reuptake inhibitor (SSRI) and nonsteroidal antiinflammatory drug (NSAID) use due to increased risk for bleeding. Serotonin release by platelets plays an important role in hemostasis. Epidemiological studies have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding.
Flurbiprofen: (Major) Avoid concomitant use of flurbiprofen with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Fluticasone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Fluticasone; Salmeterol: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Fluticasone; Umeclidinium; Vilanterol: (Moderate) Monitor for gastrointestinal toxicity

during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Fluticasone; Vilanterol: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Fluvastatin: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with fluvastatin is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and fluvastatin is a weak CYP2C9 inhibitor.
fluvoxaMINE: (Moderate) Monitor for signs and symptoms of bleeding during concomitant selective serotonin reuptake inhibitor (SSRI) and nonsteroidal antiinflammatory drug (NSAID) use due to increased risk for bleeding. Serotonin release by platelets plays an important role in hemostasis. Epidemiological studies have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding.
Fondaparinux: (Moderate) An additive risk of bleeding may be seen in patients receiving anticoagulants in combination with other agents known to increase the risk of bleeding such as nonsteroidal antiinflammatory drugs (NSAIDs). Monitor clinical and laboratory response closely during concurrent use.
Formoterol; Mometasone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Foscarnet: (Minor) The risk of renal toxicity may be increased if foscarnet is used in conjuction with other nephrotoxic agents, such as nonsteroidal antiinflammatory drugs (NSAIDs). Monitor renal function carefully during concurrent therapy.
Fosinopril: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Fosinopril; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects,

during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Furosemide: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant furosemide and meloxicam use. Nonsteroidal antiinflammatory drugs (NSAIDs) may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of loop diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Galantamine: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.
Ganciclovir: (Minor) Concurrent use of nephrotoxic agents, such as NSAIDs, with ganciclovir should be done cautiously to avoid additive nephrotoxicity. Monitor renal function carefully if concomitant therapy is required.
Garlic, Allium sativum: (Minor) Garlic, Allium sativum may produce clinically-significant antiplatelet effects; until more data are available, garlic should be used cautiously in patients receiving drugs with a known potential risk for bleeding such as nonsteroidal antiinflammatory drugs (NSAIDs).
Gemfibrozil: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with gemfibrozil is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and gemfibrozil is a weak CYP2C9 inhibitor.
Gemifloxacin: (Moderate) Use quinolones and nonsteroidal anti-inflammatory drugs (NSAIDs) concomitantly with caution due to potential increased risk of CNS stimulation and convulsive seizures. NSAIDs in combination with very high doses of quinolones have been shown to provoke convulsions in preclinical studies and postmarketing.
Gentamicin: (Moderate) It is possible that additive nephrotoxicity may occur in patients who receive nonsteroidal anti-inflammatory drugs (NSAIDs) concurrently with other nephrotoxic agents, such as gentamicin.

Gepotidacin: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.
Ginger, Zingiber officinale: (Minor) Patients receiving regular therapy with nonsteroidal antiinflammatory drugs (NSAIDs) should use ginger with caution, due to a theoretical risk of bleeding resulting from additive pharmacology related to the COX enzymes. However, clinical documentation of interactions is lacking. Several pungent constituents of ginger (Zingiber officinale) are reported to inhibit arachidonic acid (AA) induced platelet activation in human whole blood. The constituent (8)-paradol is the most potent inhibitor of COX-1 and exhibits the greatest anti-platelet activity versus other gingerol analogues. The mechanism of ginger-associated platelet inhibition may be related to decreased COX-1/Thomboxane synthase enzymatic activity.
Ginkgo, Ginkgo biloba: (Moderate) Monitor for signs or symptoms of bleeding with coadministration of ginkgo biloba and NSAIDs as an increased bleeding risk may occur. Although data are mixed, ginkgo biloba is reported to inhibit platelet aggregation and several case reports describe bleeding complications with ginkgo biloba, with or without concomitant drug therapy.
Glimepiride: (Moderate) NSAIDs may enhance hypoglycemia in diabetic patients via inhibition of prostaglandin synthesis, which indirectly increases insulin secretion. If NSAIDs are administered or discontinued in patients receiving oral antidiabetic agents, patients should be monitored for hypoglycemia or loss of blood glucose control. No clinically significant interaction between sulindac at daily doses of 400 mg and oral hypoglycemic agents has been observed. Sulindac, its sulfide metabolite, and sulfonylureas are highly bound to protein. Sulindac could displace the sulfonylureas, altering hypoglycemic activity. Careful patient monitoring is recommended to ensure that no change in their diabetes medicine dosage is required. A sulfonylurea dose adjustment may be needed, especially if sulindac doses greater than 400 mg daily are used or if the drug combination is used in patients with renal impairment or other metabolic defects that might increase sulindac blood concentrations.
glipiZIDE: (Moderate) NSAIDs may enhance hypoglycemia in diabetic patients via inhibition of prostaglandin synthesis, which indirectly increases insulin secretion. If NSAIDs are administered or discontinued in patients receiving oral antidiabetic agents, patients should be monitored for hypoglycemia or loss of blood glucose control. No clinically significant interaction between sulindac at daily doses of 400 mg and oral hypoglycemic agents has been observed. Sulindac, its sulfide metabolite, and

sulfonylureas are highly bound to protein. Sulindac could displace the sulfonylureas, altering hypoglycemic activity. Careful patient monitoring is recommended to ensure that no change in their diabetes medicine dosage is required. A sulfonylurea dose adjustment may be needed, especially if sulindac doses greater than 400 mg daily are used or if the drug combination is used in patients with renal impairment or other metabolic defects that might increase sulindac blood concentrations.
glipiZIDE; metFORMIN: (Moderate) NSAIDs may enhance hypoglycemia in diabetic patients via inhibition of prostaglandin synthesis, which indirectly increases insulin secretion. If NSAIDs are administered or discontinued in patients receiving oral antidiabetic agents, patients should be monitored for hypoglycemia or loss of blood glucose control. No clinically significant interaction between sulindac at daily doses of 400 mg and oral hypoglycemic agents has been observed. Sulindac, its sulfide metabolite, and sulfonylureas are highly bound to protein. Sulindac could displace the sulfonylureas, altering hypoglycemic activity. Careful patient monitoring is recommended to ensure that no change in their diabetes medicine dosage is required. A sulfonylurea dose adjustment may be needed, especially if sulindac doses greater than 400 mg daily are used or if the drug combination is used in patients with renal impairment or other metabolic defects that might increase sulindac blood concentrations.
glyBURIDE: (Moderate) NSAIDs may enhance hypoglycemia in diabetic patients via inhibition of prostaglandin synthesis, which indirectly increases insulin secretion. If NSAIDs are administered or discontinued in patients receiving oral antidiabetic agents, patients should be monitored for hypoglycemia or loss of blood glucose control. No clinically significant interaction between sulindac at daily doses of 400 mg and oral hypoglycemic agents has been observed. Sulindac, its sulfide metabolite, and sulfonylureas are highly bound to protein. Sulindac could displace the sulfonylureas, altering hypoglycemic activity. Careful patient monitoring is recommended to ensure that no change in their diabetes medicine dosage is required. A sulfonylurea dose adjustment may be needed, especially if sulindac doses greater than 400 mg daily are used or if the drug combination is used in patients with renal impairment or other metabolic defects that might increase sulindac blood concentrations.
glyBURIDE; metFORMIN: (Moderate) NSAIDs may enhance hypoglycemia in diabetic patients via inhibition of prostaglandin synthesis, which indirectly increases insulin secretion. If NSAIDs are administered or discontinued in patients receiving oral antidiabetic agents, patients should be monitored for hypoglycemia or loss of blood glucose control. No clinically significant interaction between sulindac at daily doses of 400 mg and oral hypoglycemic agents has been observed. Sulindac, its sulfide metabolite, and sulfonylureas are highly bound to protein. Sulindac could displace the sulfonylureas, altering hypoglycemic activity. Careful patient monitoring is recommended to ensure that no change in their diabetes medicine dosage is required. A

sulfonylurea dose adjustment may be needed, especially if sulindac doses greater than 400 mg daily are used or if the drug combination is used in patients with renal impairment or other metabolic defects that might increase sulindac blood concentrations.
Gold: (Moderate) Due to the inhibition of renal prostaglandins by NSAIDs, concurrent use with other nephrotoxic agents, such as gold compounds, may lead to additive nephrotoxicity. Monitor renal function carefully during concurrent therapy.
Grapefruit juice: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with grapefruit juice is necessary. Concurrent use may increase meloxicam exposure. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and grapefruit juice is a moderate CYP2C9 inhibitor.
guanFACINE: (Moderate) NSAIDs may decrease the effect of antihypertensive agents through various mechanisms, including renal and peripheral vasoactive pathways.
Heparin: (Moderate) An additive risk of bleeding may be seen in patients receiving anticoagulants in combination with other agents known to increase the risk of bleeding such as nonsteroidal antiinflammatory drugs (NSAIDs). Monitor clinical and laboratory response closely during concurrent use.
Hyaluronidase, Recombinant; Immune Globulin: (Moderate) Immune Globulin (IG) products have been reported to be associated with renal dysfunction, acute renal failure, osmotic nephrosis, and death. Patients predisposed to acute renal failure include patients receiving known nephrotoxic drugs like nonsteroidal anti-inflammatory drugs (NSAIDs) and salicylates. Coadminister IG products at the minimum concentration available and the minimum rate of infusion practicable. Also, closely monitor renal function.
hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
hydroCHLOROthiazide, HCTZ; Moexipril: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects,

during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
HYDROcodone; Ibuprofen: (Major) Avoid concomitant use of ibuprofen with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Hydrocortisone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Hyoscyamine; Methenamine; Methylene Blue; Phenyl Salicylate; Sodium Biphosphate: (Major) Avoid concomitant use of meloxicam with phenyl salicylate due to an increased risk of gastrointestinal toxicity and renal impairment, with little or no increase in efficacy.
Ibandronate: (Moderate) Monitor renal function and for gastrointestinal adverse events during concurrent use of intravenous or oral ibandronate, respectively, and nonsteroidal antiinflammatory drugs. Acute renal failure has been observed with intravenous ibandronate and concomitant use of other nephrotoxic agents may increase this risk. Additionally, the oral formulations of both medications have been associated with gastrointestinal irritation although data suggest concomitant use introduces little additional risk for adverse effects for most patients.
Ibritumomab Tiuxetan: (Major) During and after therapy, avoid the concomitant use of Yttrium (Y)-90 ibrutumomab tiuxetan with drugs that interfere with platelet function such as nonsteroidal antiinflammatory drugs (NSAIDs); the risk of bleeding may be increased. If coadministration with NSAIDs is necessary, monitor platelet counts more frequently for evidence of thrombocytopenia. (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Ibuprofen lysine: (Major) Because ibuprofen lysine exerts similar pharmacologic characteristics to other systemic NSAIDs, including COX-2 inhibitors, additive pharmacodynamic effects, including a potential increase for additive adverse GI effects, may be seen if ibuprofen lysine is used with other NSAIDs. In general, concurrent use of ibuprofen lysine and another NSAID should be avoided.
Ibuprofen: (Major) Avoid concomitant use of ibuprofen with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Ibuprofen; Famotidine: (Major) Avoid concomitant use of ibuprofen with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities

including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Ibuprofen; Pseudoephedrine: (Major) Avoid concomitant use of ibuprofen with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Idelalisib: (Major) Avoid concomitant use of idelalisib, a strong CYP3A inhibitor, with meloxicam, a CYP3A substrate, as meloxicam toxicities may be significantly increased. The AUC of a sensitive CYP3A substrate was increased 5.4-fold when coadministered with idelalisib.
Iloprost: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Immune Globulin IV, IVIG, IGIV: (Moderate) Immune Globulin (IG) products have been reported to be associated with renal dysfunction, acute renal failure, osmotic nephrosis, and death. Patients predisposed to acute renal failure include patients receiving known nephrotoxic drugs like nonsteroidal anti-inflammatory drugs (NSAIDs) and salicylates. Coadminister IG products at the minimum concentration available and the minimum rate of infusion practicable. Also, closely monitor renal function.
Indapamide: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may reduce the natriuretic effect of diuretics in some patients. NSAIDS have been associated with an inhibition of prostaglandin synthesis, which may result in reduced renal blood flow leading to renal insufficiency and increases in blood pressure that are often accompanied by peripheral edema and weight gain. Patients taking diuretics and NSAIDS concurrently are at higher risk of developing renal insufficiency. If an NSAID and a diuretic are used concurrently, carefully monitor the patient for signs and symptoms of decreased renal function and diuretic efficacy.
Indomethacin: (Major) Avoid concomitant use of indomethacin with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Inotersen: (Moderate) Use caution with concomitant use of inotersen and nonsteroidal

antiinflammatory drugs (NSAIDs) due to the risk of glomerulonephritis and nephrotoxicity as well as the potential risk of bleeding from thrombocytopenia. Consider discontinuation of NSAIDs in a patient taking inotersen with a platelet count of less than 50,000 per microliter.
Iodine; Potassium Iodide, KI: (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Iodixanol: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when given to patients receiving a contrast agents. When possible, withhold NSAID therapy during administration of a contrast agent.
Iohexol: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when given to patients receiving a contrast agents. When possible, withhold NSAID therapy during administration of a contrast agent.
Iomeprol: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when given to patients receiving a contrast agents. When possible, withhold NSAID therapy during administration of a contrast agent.
Ionic Contrast Media: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when given to patients receiving a contrast agents. When possible, withhold NSAID therapy during administration of a contrast agent.
Iopamidol: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when given to patients receiving a contrast agents. When possible, withhold NSAID therapy during administration of a contrast agent.
Iopromide: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when given to patients receiving a contrast agents. When possible, withhold NSAID therapy during administration of a contrast agent.
Ioversol: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when given to patients receiving a contrast agents. When possible, withhold NSAID therapy during administration of a contrast agent.
Irbesartan: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Irbesartan; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these

effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Isavuconazonium: (Moderate) Concomitant use of isavuconazonium with meloxicam may result in increased serum concentrations of meloxicam. Meloxicam is a substrate of the hepatic isoenzyme CYP3A4; isavuconazole, the active moiety of isavuconazonium, is a moderate inhibitor of this enzyme. Caution and close monitoring are advised if these drugs are used together.
Isosulfan Blue: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when given to patients receiving a contrast agents. When possible, withhold NSAID therapy during administration of a contrast agent.
Isradipine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Itraconazole: (Major) Concomitant use of itraconazole and meloxicam may result in decreased plasma concentrations of meloxicam. Caution should be used when meloxicam is used concurrently with itraconazole and its effects should be monitored; dosage adjustment of meloxicam may be required.
Ivacaftor: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with ivacaftor is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and ivacaftor is a weak CYP2C9 inhibitor.
Ketoprofen: (Major) Avoid concomitant use of ketoprofen with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including

but not limited to GI bleeding, GI perforation, or peptic ulcers.
Ketorolac: (Contraindicated) Concomitant use of ketorolac with another NSAID is contraindicated. Increased adverse gastrointestinal effects are possible if ketorolac is used with other systemic nonsteroidal antiinflammatory drugs (NSAIDs), including COX-2 inhibitors.
Labetalol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
lamiVUDine; Tenofovir Disoproxil Fumarate: (Moderate) Avoid administering tenofovir, PMPA concurrently with or recently after a nephrotoxic agent, such as high-dose or multiple nonsteroidal antiinflammatory drugs (NSAIDs). Cases of acute renal failure, some requiring hospitalization and renal replacement therapy, have been reported after high-dose or multiple NSAIDs were initiated in patients who appeared stable on tenofovir. Consider alternatives to NSAIDs in patients at risk for renal dysfunction. If these drugs must be coadministered, carefully monitor the estimated creatinine creatinine, serum phosphorus, urine glucose, and urine protein prior to, and periodically during, treatment.
Landiolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Leflunomide: (Moderate) In vitro studies indicate that the M1 metabolite of leflunomide inhibits cytochrome P450 2C9, the enzyme responsible for the metabolism of many NSAIDs. Leflunomide altered protein binding and thus, increased the free fraction of ibuprofen by 13% to 50%. The clinical significance of the interactions with NSAIDs is unknown. There was extensive concomitant use of NSAIDs in phase III clinical studies of leflunomide in the treatment of rheumatoid arthritis, and no clinical differential effects were observed. However, because some NSAIDs have been reported to cause hepatotoxic effects, some caution may be warranted in their use with leflunomide.
Levamlodipine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term

NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Levobunolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
levoFLOXacin: (Moderate) Use quinolones and nonsteroidal anti-inflammatory drugs (NSAIDs) concomitantly with caution due to potential increased risk of CNS stimulation and convulsive seizures. NSAIDs in combination with very high doses of quinolones have been shown to provoke convulsions in preclinical studies and postmarketing.
Levomilnacipran: (Moderate) Platelet aggregation may be impaired by SNRIs such as levomilnacipran due to platelet serotonin depletion, possibly increasing the risk of a bleeding complication (e.g., gastrointestinal bleeding, ecchymoses, epistaxis, hematomas, petechiae, hemorrhage) in patients receiving nonsteroidal antiinflammatory drugs (NSAIDs). Monitor for signs and symptoms of bleeding in patients taking levomilnacipran and NSAIDs.
Lisinopril: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Lisinopril; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Lithium: (Moderate) Monitor serum lithium concentrations during concomitant nonsteroidal anti-inflammatory (NSAID) use; reduce the lithium dose based on serum lithium concentrations and clinical response. NSAIDs decrease renal blood flow, resulting in decreased renal clearance and increased serum lithium concentrations.

Lomustine, CCNU: (Major) Due to the bone marrow suppressive and thrombocytopenic effects of lomustine, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, ASA, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Lopinavir; Ritonavir: (Moderate) Concurrent administration of meloxicam with ritonavir may result in elevated meloxicam plasma concentrations. Meloxicam is metabolized by the hepatic isoenzyme CYP3A4; ritonavir is an inhibitor of this enzyme. Caution and close monitoring are advised if these drugs are administered together.
Losartan: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Losartan; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Lumacaftor; Ivacaftor: (Minor) Concomitant use of meloxicam and lumacaftor; ivacaftor may alter meloxicam exposure; caution and close monitoring are advised if these drugs are used together. Meloxicam is primarily metabolized by CYP2C9 and is also a substrate of CYP3A4. Lumacaftor is a strong CYP3A inducer; in vitro data also suggest that lumacaftor; ivacaftor may induce and/or inhibit CYP2C9. Although induction of meloxicam through the secondary CYP3A pathway may lead to minor decreases in drug efficacy, the net effect of lumacaftor; ivacaftor on CYP2C9-mediated metabolism is not clear. Monitor the patient for decreased meloxicam efficacy or increased or prolonged therapeutic effects and adverse events.
Lumacaftor; Ivacaftor: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with ivacaftor is necessary. Concurrent use may

increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and ivacaftor is a weak CYP2C9 inhibitor. (Minor) Concomitant use of meloxicam and lumacaftor; ivacaftor may alter meloxicam exposure; caution and close monitoring are advised if these drugs are used together. Meloxicam is primarily metabolized by CYP2C9 and is also a substrate of CYP3A4. Lumacaftor is a strong CYP3A inducer; in vitro data also suggest that lumacaftor; ivacaftor may induce and/or inhibit CYP2C9. Although induction of meloxicam through the secondary CYP3A pathway may lead to minor decreases in drug efficacy, the net effect of lumacaftor; ivacaftor on CYP2C9-mediated metabolism is not clear. Monitor the patient for decreased meloxicam efficacy or increased or prolonged therapeutic effects and adverse events.
Macimorelin: (Major) Avoid use of macimorelin with drugs that directly affect pituitary growth hormone secretion, such as nonsteroidal antiinflammatory drugs (NSAIDs). Healthcare providers are advised to discontinue NSAID therapy and observe a sufficient washout period before administering macimorelin. Use of these medications together may impact the accuracy of the macimorelin growth hormone test.
Magnesium Salicylate: (Major) Avoid concomitant use of meloxicam with magnesium salicylate due to an increased risk of gastrointestinal toxicity and renal impairment, with little or no increase in efficacy.
Magnesium Sulfate; Potassium Sulfate; Sodium Sulfate: (Moderate) Use caution when prescribing sulfate salt bowel preparation in patients taking concomitant medications that may affect renal function such as nonsteroidal anti-inflammatory drugs (NSAIDs).
Mannitol: (Major) Avoid use of mannitol and nonsteroidal anti-inflammatory drugs (NSAIDs), if possible. If use together is necessary, carefully monitor the patient for signs and symptoms of decreased renal function and diuretic efficacy. Concomitant administration of nephrotoxic drugs, such as NSAIDs, increases the risk of renal failure after administration of mannitol. NSAIDs may reduce the natriuretic effect of diuretics in some patients. NSAIDS have been associated with an inhibition of prostaglandin synthesis, which may result in reduced renal blood flow leading to renal insufficiency and increases in blood pressure that are often accompanied by peripheral edema and weight gain.
Mecamylamine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to

maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Meclofenamate Sodium: (Major) Avoid concomitant use of meclofenamate sodium with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Mefenamic Acid: (Major) Avoid concomitant use of mefenamic acid with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Mesalamine, 5-ASA: (Minor) The concurrent use of mesalamine with known nephrotoxic agents such as nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk of nephrotoxicity.
Methenamine; Sodium Salicylate: (Major) Avoid concomitant use of meloxicam with sodium salicylate due to an increased risk of gastrointestinal toxicity and renal impairment, with little or no increase in efficacy.
Methotrexate: (Major) Do not administer nonsteroidal anti-inflammatory drugs (NSAIDs) before or concomitantly with high doses of methotrexate, such as used in the treatment of osteosarcoma. Concomitant administration of some NSAIDs with high dose methotrexate therapy has been reported to elevate and prolong serum methotrexate concentrations, resulting in deaths from severe hematologic and gastrointestinal toxicity. Use caution when NSAIDs are administered concomitantly with lower doses of methotrexate as they have been reported to reduce the tubular secretion of methotrexate in an animal model and may enhance its toxicity. Despite potential interactions, patients with rheumatoid arthritis (RA) are often receiving concurrent treatment with NSAIDs without apparent problems. However, these doses are lower than those used in psoriasis or malignancy; higher methotrexate doses may lead to unexpected toxicity in combination with NSAIDs. NSAIDs may be continued in patients with RA receiving treatment with methotrexate, although the possibility of increased toxicity has not been fully explored.
Methoxsalen: (Minor) Preclinical data suggest agents that inhibit prostaglandin synthesis such as meloxicam could decrease the efficacy of photosensitizing agents used in photodynamic therapy.
Methyldopa: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin

formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
methylPREDNISolone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
metOLazone: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Metoprolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Metoprolol; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics. (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
miFEPRIStone: (Moderate) Mifepristone significantly increased exposure of drugs metabolized by CYP2C8/2C9 in interaction studies. Therefore, when mifepristone is used chronically, as in the treatment of Cushing's syndrome, use caution with coadministered CYP2C8/2C9 substrates, including the NSAIDs. Use the lowest doses of the substrate and patients should be monitored closely for adverse reactions.
Milnacipran: (Moderate) Platelet aggregation may be impaired by milnacipran due to platelet serotonin depletion, possibly increasing the risk of a bleeding complication (e.g., gastrointestinal bleeding, ecchymoses, epistaxis, hematomas, petechiae, hemorrhage) in patients receiving nonsteroidal antiinflammatory drugs (NSAIDs). Monitor for signs and

symptoms of bleeding in patients taking milnacipran and NSAIDs.
Mitotane: (Minor) Use caution if mitotane and meloxicam are used concomitantly, and monitor for decreased efficacy of meloxicam and a possible change in dosage requirements. Mitotane is a strong CYP3A4 inducer and meloxicam is a minor CYP3A4 substrate; coadministration may result in decreased plasma concentrations of meloxicam.
mitoXANTRONE: (Major) Due to the thrombocytopenic effects of mitoxantrone, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Modafinil: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with modafinil is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and modafinil is a weak CYP2C9 inhibitor.
Moexipril: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Mometasone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Moxifloxacin: (Moderate) Use quinolones and nonsteroidal anti-inflammatory drugs (NSAIDs) concomitantly with caution due to potential increased risk of CNS stimulation and convulsive seizures. NSAIDs in combination with very high doses of quinolones have been shown to provoke convulsions in preclinical studies and postmarketing.
Nabumetone: (Major) Avoid concomitant use of meloxicam with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Nadolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Naproxen: (Major) Avoid concomitant use of meloxicam with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Naproxen; Esomeprazole: (Major) Avoid concomitant use of meloxicam with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities

including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Naproxen; Pseudoephedrine: (Major) Avoid concomitant use of meloxicam with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Nebivolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Nelarabine: (Major) Due to the thrombocytopenic effects of nelarabine, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Neomycin: (Minor) It is possible that additive nephrotoxicity may occur in patients who receive NSAIDs concurrently with other nephrotoxic agents, such as aminoglycosides.
Neostigmine: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.
Neostigmine; Glycopyrrolate: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.
NiCARdipine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to

maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. NIFEdipine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. niMODipine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. Nirmatrelvir; Ritonavir: (Moderate) Concurrent administration of meloxicam with ritonavir may result in elevated meloxicam plasma concentrations. Meloxicam is metabolized by the hepatic isoenzyme CYP3A4; ritonavir is an inhibitor of this enzyme. Caution and close monitoring are advised if these drugs are administered together. Nisoldipine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs,

to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Non-Ionic Contrast Media: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when given to patients receiving a contrast agents. When possible, withhold NSAID therapy during administration of a contrast agent.
Ofloxacin: (Moderate) Use quinolones and nonsteroidal anti-inflammatory drugs (NSAIDs) concomitantly with caution due to potential increased risk of CNS stimulation and convulsive seizures. NSAIDs in combination with very high doses of quinolones have been shown to provoke convulsions in preclinical studies and postmarketing.
OLANZapine; FLUoxetine: (Moderate) Monitor for signs and symptoms of bleeding during concomitant selective serotonin reuptake inhibitor (SSRI) and nonsteroidal antiinflammatory drug (NSAID) use due to increased risk for bleeding. Serotonin release by platelets plays an important role in hemostasis. Epidemiological studies have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding.
Olmesartan: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Olmesartan; amLODIPine; hydroCHLOROthiazide, HCTZ: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal

prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.

Olmesartan; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.

Olopatadine; Mometasone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.

Omacetaxine: (Major) Avoid the concomitant use of omacetaxine and nonsteroidal antiinflammatory drugs (NSAIDs) when the platelet count is less than 50,000 cells/microliter due to an increased risk of bleeding.

Oritavancin: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with oritavancin is necessary. Concurrent use may increase

meloxicam exposure. Meloxicam is a CYP2C9 substrate and oritavancin is a weak CYP2C9 inhibitor.
Oxaprozin: (Major) Avoid concomitant use of meloxicam with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
PACLitaxel: (Major) Due to the thrombocytopenic effects of paclitaxel, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Pamidronate: (Moderate) Monitor renal function during concomitant pamidronate and nonsteroidal antiinflammatory drug use due to risk for additive nephrotoxicity.
PARoxetine: (Moderate) Monitor for signs and symptoms of bleeding during concomitant selective serotonin reuptake inhibitor (SSRI) and nonsteroidal antiinflammatory drug (NSAID) use due to increased risk for bleeding. Serotonin release by platelets plays an important role in hemostasis. Epidemiological studies have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding.
PAZOPanib: (Moderate) Pazopanib is a weak inhibitor of CYP3A4. Coadministration of pazopanib and meloxicam, a CYP3A4 substrate, may cause an increase in systemic concentrations of meloxicam. Use caution when administering these drugs concomitantly.
Pentamidine: (Major) Avoid concurrent or sequential use of pentamidine with meloxicam. Coadministration may increase the risk for drug-induced nephrotoxicity. Closely monitor renal function if coadministration is unavoidable.
Pentosan: (Moderate) An additive risk of bleeding may be seen in patients receiving anticoagulants in combination with other agents known to increase the risk of bleeding such as nonsteroidal antiinflammatory drugs (NSAIDs). Monitor clinical and laboratory response closely during concurrent use.
Pentostatin: (Major) Due to the thrombocytopenic effects of pentostatin, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Perindopril: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are

usually reversible.
Perindopril; amLODIPine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Phenoxybenzamine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Phentolamine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect

is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Photosensitizing agents (topical): (Moderate) Agents that inhibit prostaglandin synthesis such as nonsteroidal antiinflammatory drugs (NSAIDs), could decrease the efficacy of photosensitizing agents used in photodynamic therapy. Avoidance of NSAIDs before and during photodynamic therapy may be advisable.
PHYSostigmine: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.
Pindolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Pioglitazone; Glimepiride: (Moderate) NSAIDs may enhance hypoglycemia in diabetic patients via inhibition of prostaglandin synthesis, which indirectly increases insulin secretion. If NSAIDs are administered or discontinued in patients receiving oral antidiabetic agents, patients should be monitored for hypoglycemia or loss of blood glucose control. No clinically significant interaction between sulindac at daily doses of 400 mg and oral hypoglycemic agents has been observed. Sulindac, its sulfide metabolite, and sulfonylureas are highly bound to protein. Sulindac could displace the sulfonylureas, altering hypoglycemic activity. Careful patient monitoring is recommended to ensure that no change in their diabetes medicine dosage is required. A sulfonylurea dose adjustment may be needed, especially if sulindac doses greater than 400 mg daily are used or if the drug combination is used in patients with renal impairment or other metabolic defects that might increase sulindac blood concentrations.
Piroxicam: (Major) Avoid concomitant use of meloxicam with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.

Platelet Inhibitors: (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Pneumococcal Vaccine, Polyvalent: (Moderate) Concomitant administration of antipyretics, such as nonsteroidal antiinflammatory drugs (NSAIDS), may decrease an individual's immunological response to the pneumococcal vaccine. A post-marketing study conducted in Poland using a non-US vaccination schedule (2, 3, 4, and 12 months of age) evaluated the impact of prophylactic oral acetaminophen on antibody responses to Prevnar 13. Data show that acetaminophen, given at the time of vaccination and then dosed at 6 to 8 hour intervals for 3 doses on a scheduled basis, reduced the antibody response to some serotypes after the third dose of Prevnar 13 when compared to the antibody responses of infants who only received antipyretics 'as needed' for treatment. However, reduced antibody responses were not observed after the fourth dose of Prevnar 13 with prophylactic acetaminophen.
Polyethylene Glycol; Electrolytes: (Moderate) Use caution when prescribing sulfate salt bowel preparation in patients taking concomitant medications that may affect renal function such as nonsteroidal anti-inflammatory drugs (NSAIDs).
Polyethylene Glycol; Electrolytes; Ascorbic Acid: (Moderate) Use caution when prescribing sulfate salt bowel preparation in patients taking concomitant medications that may affect renal function such as nonsteroidal anti-inflammatory drugs (NSAIDs).
Polymyxin B: (Major) The chronic coadministration of systemic polymyxins may increase the risk of developing nephrotoxicity, even in patients who have normal renal function. Nonsteroidal antiinflammatory drugs (NSAIDs) may increase the risk for nephrotoxicity when used concurrently. Monitor patients for changes in renal function if these drugs are coadministered. Since Polymyxin B is eliminated by the kidney, coadministration with other potentially nephrotoxic drugs, including nonsteroidal antiinflammatory drugs (NSAIDs), may theoretically increase serum concentrations of either drug.
Potassium Acetate: (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Potassium Bicarbonate: (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Potassium Chloride: (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Potassium Citrate: (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Potassium Citrate; Citric Acid: (Moderate) Monitor serum potassium concentrations

closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Potassium Gluconate: (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Potassium Iodide, KI: (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Potassium: (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
PRALAtrexate: (Major) Renal elimination accounts for approximately 34% of the overall clearance of pralatrexate. Concomitant administration of drugs that undergo substantial renal clearance, such as nonsteroidal antiinflammatory drugs (NSAIDs), may result in delayed clearance of pralatrexate.
Prasugrel: (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Prazosin: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
prednisoLONE: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
predniSONE: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Probenecid: (Major) Probenecid can decrease the renal clearance of nonsteroidal antiinflammatory agents (NSAIDs). Reduction of the NSAID dose may be necessary when

it is used together with probenecid.
Probenecid; Colchicine: (Major) Probenecid can decrease the renal clearance of nonsteroidal antiinflammatory agents (NSAIDs). Reduction of the NSAID dose may be necessary when it is used together with probenecid.
Procarbazine: (Major) Due to the thrombocytopenic effects of procarbazine, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Propranolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
pyRIDostigmine: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.
Quinapril: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Quinapril; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular

effects of diuretics.
Quinolones: (Moderate) Use quinolones and nonsteroidal anti-inflammatory drugs (NSAIDs) concomitantly with caution due to potential increased risk of CNS stimulation and convulsive seizures. NSAIDs in combination with very high doses of quinolones have been shown to provoke convulsions in preclinical studies and postmarketing.
Ramipril: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Regorafenib: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with regorafenib is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and regorafenib is a weak CYP2C9 inhibitor.
Reteplase, r-PA: (Moderate) NSAIDs can cause GI bleeding, inhibit platelet aggregation, prolong bleeding time; these pharmacodynamic effects may be increased when administered to patients receiving thrombolytic agents. Patients receiving these drugs concurrently should be monitored closely for bleeding.
Risedronate: (Minor) Monitor for gastrointestinal adverse events during concurrent use of risedronate and nonsteroidal antiinflammatory drugs. Both medications have been associated with gastrointestinal irritation although data suggest concomitant use introduces little additional risk for adverse effects for most patients.
Ritonavir: (Moderate) Concurrent administration of meloxicam with ritonavir may result in elevated meloxicam plasma concentrations. Meloxicam is metabolized by the hepatic isoenzyme CYP3A4; ritonavir is an inhibitor of this enzyme. Caution and close monitoring are advised if these drugs are administered together.
Rivaroxaban: (Major) An additive risk of bleeding may be seen in patients receiving anticoagulants in combination with other agents known to increase the risk of bleeding such as nonsteroidal antiinflammatory drugs (NSAIDs). Monitor clinical and laboratory response closely during concurrent use.
Rivastigmine: (Moderate) NSAIDs may cause additive pharmacodynamic GI effects with cholinesterase inhibitors, leading to gastrointestinal intolerance. Patients receiving concurrent NSAIDs should be monitored closely for symptoms of active or occult gastrointestinal bleeding. While NSAIDs appear to suppress microglial activity, which in turn may slow inflammatory neurodegenerative processes important for the progression of Alzheimer's disease (AD), there are no clinical data at this time to suggest that NSAIDs alone or as combined therapy with AD agents result in synergistic effects in AD.

Rucaparib: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with rucaparib is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and rucaparib is a weak CYP2C9 inhibitor.
Sacubitril; Valsartan: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Salsalate: (Major) Avoid concomitant use of meloxicam with salsalate due to an increased risk of gastrointestinal toxicity and renal impairment, with little or no increase in efficacy.
Selective serotonin reuptake inhibitors: (Moderate) Monitor for signs and symptoms of bleeding during concomitant selective serotonin reuptake inhibitor (SSRI) and nonsteroidal antiinflammatory drug (NSAID) use due to increased risk for bleeding. Serotonin release by platelets plays an important role in hemostasis. Epidemiological studies have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding.
Sertraline: (Moderate) Monitor for signs and symptoms of bleeding during concomitant selective serotonin reuptake inhibitor (SSRI) and nonsteroidal antiinflammatory drug (NSAID) use due to increased risk for bleeding. Serotonin release by platelets plays an important role in hemostasis. Epidemiological studies have demonstrated an association between use of psychotropic drugs that interfere with serotonin reuptake and the occurrence of upper gastrointestinal bleeding.
Sodium Phosphate Monobasic Monohydrate; Sodium Phosphate Dibasic Anhydrous: (Moderate) Concomitant use of medicines with potential to alter renal perfusion or function such as nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk of acute phosphate nephropathy in patients taking sodium phosphate monobasic monohydrate; sodium phosphate dibasic anhydrous.
Sodium picosulfate; Magnesium oxide; Anhydrous citric acid: (Moderate) Use caution when prescribing sodium picosulfate; magnesium oxide; anhydrous citric acid in patients taking concomitant medications that may affect renal function such as nonsteroidal anti-inflammatory drugs (NSAIDs).
Sodium Polystyrene Sulfonate: (Major) Meloxicam oral suspension contains sorbitol and use of sorbitol with sodium polystyrene sulfonate has been implicated in cases of upper gastrointestinal injury and colonic necrosis, both potentenially fatal complications. Concomitant use of the oral solution of meloxicam and sodium polystyrene sulfonate is not recommended. Patients with renal insufficiency may be at increased risk while on

such therapy. This risk of interaction does not apply to other forms of meloxicam.
Sodium Sulfate; Magnesium Sulfate; Potassium Chloride: (Moderate) Monitor serum potassium concentrations closely if potassium supplements and nonsteroidal anti-inflammatory drugs (NSAIDs) are used together. Concomitant use may increase the risk of hyperkalemia.
Sotalol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Sparsentan: (Moderate) Monitor for worsening renal function during concomitant use of sparsentan and nonsteroidal antiinflammatory drugs (NSAIDs), including selective cyclooxygenase (COX-2) inhibitors. Concomitant use increases the risk for nephrotoxicity, especially in patients with additional risk factors such as hypovolemia and chronic renal impairment.
Spironolactone: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant spironolactone and nonsteroidal antiinflammatory drug (NSAID) use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Spironolactone; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant spironolactone and nonsteroidal antiinflammatory drug (NSAID) use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Streptomycin: (Moderate) It is possible that additive nephrotoxicity may occur in patients who receive nonsteroidal anti-inflammatory drugs (NSAIDs) concurrently with other nephrotoxic agents, such as streptomycin.
Sulfamethoxazole; Trimethoprim, SMX-TMP, Cotrimoxazole: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with sulfamethoxazole is necessary. Concurrent use may increase meloxicam exposure.

Meloxicam is a CYP2C9 substrate and sulfamethoxazole is a moderate CYP2C9 inhibitor.
Sulfonylureas: (Moderate) NSAIDs may enhance hypoglycemia in diabetic patients via inhibition of prostaglandin synthesis, which indirectly increases insulin secretion. If NSAIDs are administered or discontinued in patients receiving oral antidiabetic agents, patients should be monitored for hypoglycemia or loss of blood glucose control. No clinically significant interaction between sulindac at daily doses of 400 mg and oral hypoglycemic agents has been observed. Sulindac, its sulfide metabolite, and sulfonylureas are highly bound to protein. Sulindac could displace the sulfonylureas, altering hypoglycemic activity. Careful patient monitoring is recommended to ensure that no change in their diabetes medicine dosage is required. A sulfonylurea dose adjustment may be needed, especially if sulindac doses greater than 400 mg daily are used or if the drug combination is used in patients with renal impairment or other metabolic defects that might increase sulindac blood concentrations.
Sulindac: (Major) Avoid concomitant use of meloxicam with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Sulopenem Etzadroxil; Probenecid: (Major) Probenecid can decrease the renal clearance of nonsteroidal antiinflammatory agents (NSAIDs). Reduction of the NSAID dose may be necessary when it is used together with probenecid.
SUMAtriptan; Naproxen: (Major) Avoid concomitant use of meloxicam with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Tacrolimus: (Moderate) Monitor patients for signs of worsening renal function during coadministration of tacrolimus and nonsteroidal antiinflammatory drugs. Coadministration may increase the risk for drug-induced nephrotoxicity.
Telavancin: (Minor) Concurrent or sequential use of telavancin with drugs that inhibit renal prostaglandins such as nonsteroidal antiinflammatory drugs (NSAIDS) may lead to additive nephrotoxicity. Closely monitor renal function and adjust telavancin doses based on calculated creatinine clearance.
Telmisartan: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Telmisartan; amLODIPine: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood

pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
(Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Telmisartan; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Temozolomide: (Major) Myelosuppression, primarily neutropenia and thrombocytopenia, is the dose-limiting toxicity of temozolomide. Due to the thrombocytopenic effects of temozolomide, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants, NSAIDs, platelet inhibitors, including aspirin, ASA, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Tenecteplase: (Moderate) NSAIDs can cause GI bleeding, inhibit platelet aggregation, prolong bleeding time; these pharmacodynamic effects may be increased when administered to patients receiving thrombolytic agents. Patients receiving these drugs concurrently should be monitored closely for bleeding.

Tenofovir Alafenamide: (Moderate) Concomitant use of nonsteroidal anti-inflammatory drugs (NSAIDs) and tenofovir alafenamide may result in additive nephrotoxicity. Monitor for renal toxicity if concomitant use is required.
Tenofovir Disoproxil Fumarate: (Moderate) Avoid administering tenofovir, PMPA concurrently with or recently after a nephrotoxic agent, such as high-dose or multiple nonsteroidal antiinflammatory drugs (NSAIDs). Cases of acute renal failure, some requiring hospitalization and renal replacement therapy, have been reported after high-dose or multiple NSAIDs were initiated in patients who appeared stable on tenofovir. Consider alternatives to NSAIDs in patients at risk for renal dysfunction. If these drugs must be coadministered, carefully monitor the estimated creatinine creatinine, serum phosphorus, urine glucose, and urine protein prior to, and periodically during, treatment.
Terazosin: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Tezacaftor; Ivacaftor: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with ivacaftor is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and ivacaftor is a weak CYP2C9 inhibitor.
Thiazide diuretics: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Thioguanine, 6-TG: (Major) Due to the thrombocytopenic effects of thioguanine, an additive risk of bleeding may be seen in patients receiving concomitant anticoagulants,

NSAIDs, platelet inhibitors, including aspirin, strontium-89 chloride, and thrombolytic agents. In addition, large doses of salicylates (>= 3-4 g/day) can cause hypoprothrombinemia, an additional risk factor for bleeding.
Thrombolytic Agents: (Moderate) NSAIDs can cause GI bleeding, inhibit platelet aggregation, prolong bleeding time; these pharmacodynamic effects may be increased when administered to patients receiving thrombolytic agents. Patients receiving these drugs concurrently should be monitored closely for bleeding.
Ticagrelor: (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Timolol: (Moderate) Monitor blood pressure during concomitant beta-blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of beta-blockers may be diminished by NSAIDs.
Tirofiban: (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Tobacco: (Major) Advise patients to avoid smoking tobacco while taking nonsteroidal anti-inflammatory drugs (NSAIDs). Concomitant use of NSAIDs with tobacco smoking may enhance the risk of gastrointestinal side effects, including peptic ulcer and GI bleeding. Patients using tobacco and NSAIDs concurrently should be monitored closely for GI adverse reactions.
Tobramycin: (Moderate) It is possible that additive nephrotoxicity may occur in patients who receive nonsteroidal anti-inflammatory drugs (NSAIDs) concurrently with other nephrotoxic agents, such as tobramycin.
Tolmetin: (Major) Avoid concomitant use of meloxicam with any other NSAID, including COX-2 inhibitors, due to the risk of additive serious NSAID toxicities including but not limited to GI bleeding, GI perforation, or peptic ulcers.
Toremifene: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with toremifene is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and toremifene is a weak CYP2C9 inhibitor.
Torsemide: (Moderate) If a nonsteroidal anti-inflammatory drug (NSAID) and a diuretic are used concurrently, carefully monitor the patient for signs and symptoms of decreased renal function and diuretic efficacy. Patients taking diuretics and NSAIDs concurrently are at higher risk of developing renal insufficiency. NSAIDs may reduce the natriuretic effect of diuretics in some patients. NSAIDs have been associated with an inhibition of prostaglandin synthesis, which may result in reduced renal blood flow leading to renal insufficiency and increases in blood pressure that are often accompanied by peripheral edema and weight gain.
Trandolapril: (Moderate) Monitor blood pressure and renal function periodically during

concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Trandolapril; Verapamil: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease. (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin-converting enzyme (ACE) inhibitor and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of ACE inhibitors may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of ACE inhibitors and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
traZODone: (Moderate) Platelet aggregation may be impaired by trazodone due to platelet serotonin depletion, possibly increasing the risk of a bleeding complication (e.g., gastrointestinal bleeding, ecchymoses, epistaxis, hematomas, petechiae, hemorrhage) in patients receiving nonsteroidal antiinflammatory drugs (NSAIDs). Patients should be instructed to monitor for signs and symptoms of bleeding while taking trazodone concurrently with medications that impair platelet function and to promptly report any bleeding events to the practitioner.
Treprostinil: (Moderate) NSAIDs may decrease the effect of antihypertensive agents through various mechanisms, including renal and peripheral vasoactive pathways.
Triamcinolone: (Moderate) Monitor for gastrointestinal toxicity during concurrent corticosteroid and nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of GI bleeding.
Triamterene: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may reduce the natriuretic effect of diuretics in some patients. NSAIDS have been associated with an

inhibition of prostaglandin synthesis, which may result in reduced renal blood flow leading to renal insufficiency and increases in blood pressure that are often accompanied by peripheral edema and weight gain. Patients taking diuretics and NSAIDS concurrently are at higher risk of developing renal insufficiency. If an NSAID and a diuretic are used concurrently, carefully monitor the patient for signs and symptoms of decreased renal function and diuretic efficacy.
Triamterene; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics. (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may reduce the natriuretic effect of diuretics in some patients. NSAIDS have been associated with an inhibition of prostaglandin synthesis, which may result in reduced renal blood flow leading to renal insufficiency and increases in blood pressure that are often accompanied by peripheral edema and weight gain. Patients taking diuretics and NSAIDS concurrently are at higher risk of developing renal insufficiency. If an NSAID and a diuretic are used concurrently, carefully monitor the patient for signs and symptoms of decreased renal function and diuretic efficacy.
Urea: (Moderate) Nonsteroidal anti-inflammatory drugs (NSAIDs) may reduce the natriuretic effect of diuretics in some patients. NSAIDS have been associated with an inhibition of prostaglandin synthesis, which may result in reduced renal blood flow leading to renal insufficiency and increases in blood pressure that are often accompanied by peripheral edema and weight gain. Patients taking diuretics and NSAIDS concurrently are at higher risk of developing renal insufficiency. If an NSAID and a diuretic are used concurrently, carefully monitor the patient for signs and symptoms of decreased renal function and diuretic efficacy.
valACYclovir: (Moderate) Monitor patients for signs of worsening renal function during coadministration of valacyclovir and nonsteroidal antiinflammatory drugs. Coadministration may increase the risk for drug-induced nephrotoxicity.
valGANciclovir: (Minor) Concurrent use of nephrotoxic agents, such as NSAIDs, with valganciclovir should be done cautiously to avoid additive nephrotoxicity.
Valproic Acid, Divalproex Sodium: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with valproic acid is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and valproic acid is a moderate CYP2C9 inhibitor.
Valsartan: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID)

use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible.
Valsartan; hydroCHLOROthiazide, HCTZ: (Moderate) Monitor blood pressure and renal function periodically during concomitant angiotensin II blocker and nonsteroidal anti-inflammatory drug (NSAID) use. The antihypertensive effect of angiotensin II blockers may be diminished by NSAIDs. In persons who are elderly, volume-depleted, or with compromised renal function, coadministration of angiotensin II blockers and NSAIDs may result in deterioration of renal function, including possible acute renal failure; these effects are usually reversible. (Moderate) Monitor blood pressure as well as for signs of worsening renal function and loss of diuretic efficacy, including antihypertensive effects, during concomitant nonsteroidal antiinflammatory drug (NSAID) and thiazide diuretic use. NSAIDs may cause a dose-dependent reduction in renal blood flow, which may precipitate overt renal decompensation, and concomitant diuretic use increases the risk of this reaction. NSAIDs have been shown to reduce the natriuretic effect of thiazide diuretics and are associated with fluid retention which may blunt the cardiovascular effects of diuretics.
Vancomycin: (Minor) It is possible that additive nephrotoxicity may occur in patients who receive NSAIDs concurrently with other nephrotoxic agents, including vancomycin.
Vanzacaftor; Tezacaftor; Deutivacaftor: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with vanzacaftor; tezacaftor; deutivacaftor is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and vanzacaftor; tezacaftor; deutivacaftor is a weak CYP2C9 inhibitor.
Vanzacaftor; Tezacaftor; Deutivacaftor: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with vanzacaftor; tezacaftor; deutivacaftor is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and vanzacaftor; tezacaftor; deutivacaftor is a weak CYP2C9 inhibitor.
Venlafaxine: (Moderate) Platelet aggregation may be impaired by venlafaxine due to platelet serotonin depletion, possibly increasing the risk of a bleeding complication (e.g., gastrointestinal bleeding, ecchymoses, epistaxis, hematomas, petechiae, hemorrhage) in patients receiving nonsteroidal antiinflammatory drugs (NSAIDs). Monitor patients for signs and symptoms of bleeding when coadministering venlafaxine with NSAIDs.
Verapamil: (Moderate) If nonsteroidal anti-inflammatory drugs (NSAIDs) and an antihypertensive drug are concurrently used, carefully monitor the patient for signs and symptoms of renal insufficiency and blood pressure control. Doses of antihypertensive medications may require adjustment in patients receiving concurrent NSAIDs. NSAIDs, to varying degrees, have been associated with an elevation in blood pressure. This effect

is most significant in patients receiving concurrent antihypertensive agents and long-term NSAID therapy. NSAIDs cause a dose-dependent reduction in prostaglandin formation, which may result in a reduction in renal blood flow leading to renal insufficiency and an increase in blood pressure that are often accompanied by peripheral edema and weight gain. Patients who rely upon renal prostaglandins to maintain renal perfusion may have acute renal blood flow reduction with NSAID usage. Elderly patients may be at increased risk of adverse effects from combined long-term NSAID therapy and antihypertensive agents, especially diuretics, due to age-related decreases in renal function and an increased risk of stroke and coronary artery disease.
Verteporfin: (Moderate) Use caution if coadministration of verteporfin with nonsteroidal anti-inflammatory drugs is necessary due to the risk of decreased verteporfin efficacy. Oxaprozin may additionally worsen photosensitivity. Verteporfin is a light-activated drug. Once activated, local damage to neovascular endothelium results in a release of procoagulant and vasoactive factors resulting in platelet aggregation, fibrin clot formation, and vasoconstriction. Concomitant use of drugs that decrease platelet aggregation like nonsteroidal anti-inflammatory drugs could decrease the efficacy of verteporfin therapy.
Vigabatrin: (Minor) Vigabatrin is not significantly metabolized; however, it is an inducer of CYP2C9. In theory, decreased exposure of drugs that are extensively metabolized by CYP2C9, such as meloxicam, may occur during concurrent use of vigabatrin.
Vilazodone: (Moderate) Platelet aggregation may be impaired by vilazodone due to platelet serotonin depletion, possibly increasing the risk of a bleeding complication (e.g., gastrointestinal bleeding, ecchymoses, epistaxis, hematomas, petechiae, hemorrhage) in patients receiving nonsteroidal antiinflammatory drugs (NSAIDs). Patients should be instructed to monitor for signs and symptoms of bleeding while taking vilazodone concurrently with NSAIDs and to promptly report any bleeding events to the practitioner.
Voclosporin: (Moderate) Concomitant use of voclosporin and nonsteroidal anti-inflammatory drugs (NSAIDs) may result in additive nephrotoxicity. Monitor for renal toxicity if concomitant use is required.
Vorapaxar: (Moderate) Monitor for signs and symptoms of bleeding during concomitant platelet inhibitor and chronic nonsteroidal antiinflammatory drug (NSAID) use. Concomitant use increases the risk of bleeding.
Voriconazole: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with voriconazole is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and voriconazole is a moderate CYP2C9 inhibitor.
Vortioxetine: (Moderate) Platelet aggregation may be impaired by vortioxetine due to platelet serotonin depletion, possibly increasing the risk of a bleeding complication (e.g., gastrointestinal bleeding, ecchymoses, epistaxis, hematomas, petechiae, hemorrhage) in

patients receiving nonsteroidal antiinflammatory drugs (NSAIDs). Bleeding events related to drugs that inhibit serotonin reuptake have ranged from ecchymosis to life-threatening hemorrhages. Patients should be instructed to monitor for signs and symptoms of bleeding while taking vortioxetine concurrently with medications which impair platelet function and to promptly report any bleeding events to the practitioner.
Warfarin: (Moderate) Monitor patients for signs or symptoms of bleeding during concurrent use of warfarin and nonsteroidal antiinflammatory drugs (NSAIDs). To minimize the potential for GI bleeding, use the lowest effective NSAID dose for the shortest possible duration. If signs or symptoms of bleeding occur, promptly evaluate and treat. Systemic hematological effects may also occur with the use of topical NSAIDs. NSAIDs inhibit platelet aggregation and may prolong bleeding time in some patients.
Zafirlukast: (Moderate) Consider a meloxicam dose reduction and monitor for adverse reactions if coadministration with zafirlukast is necessary. Concurrent use may increase meloxicam exposure. Meloxicam is a CYP2C9 substrate and zafirlukast is a weak CYP2C9 inhibitor.
Zoledronic Acid: (Moderate) Monitor renal function during concomitant zoledronic acid and nonsteroidal antiinflammatory drug use due to risk for additive nephrotoxicity.

Adverse Reaction

abdominal pain, anorexia, colitis, constipation, diarrhea, dyspepsia, epistaxis, eructation, esophageal ulceration, esophagitis, flatulence, gastritis, gastroesophageal reflux, GI bleeding, GI perforation, hematemesis, melena, nausea, oral ulceration, pancreatitis, peptic ulcer, stomatitis, vomiting, xerostomia

NSAIDs can cause serious gastrointestinal (GI) adverse events including GI bleeding, inflammation, ulceration, and GI perforation of the esophagus, stomach, or small or large intestine, which can be fatal. These serious adverse events can occur at any time, with or without warning symptoms, in individuals treated with NSAIDs. Only 1 in 5 individuals who develop a serious upper GI adverse event on NSAID therapy is symptomatic. Upper GI ulcers, gross bleeding, or perforation caused by NSAIDs occurred in approximately 1% of individuals treated for 3 to 6 months, and in about 2% to 4% of individuals treated for 1 year; however, short-term NSAID therapy is not without risk. Remain alert for signs and symptoms of GI bleeding during NSAID therapy. Consider monitoring complete blood count (CBC) periodically in individuals on long-term NSAID treatment. If a serious GI adverse event is suspected, promptly initiate evaluation and treatment, and discontinue the NSAID until a serious GI adverse event is ruled out. To minimize the potential risk for an adverse GI event in NSAID-treated individuals, use the lowest effective dose for the shortest duration possible. Controlled clinical trials have

demonstrated that the incidence of gastrointestinal (GI) adverse effects for meloxicam is generally lower than that observed for comparator NSAIDs, including diclofenac, piroxicam, and naproxen. Esophagitis (less than 2%) has been reported in individuals receiving NSAIDs, including meloxicam. Esophageal ulceration, bleeding, perforation, and inflammation have also been reported. Higher doses (22.5 mg or more) of meloxicam have been associated with increased risk of serious GI events. GI adverse events were the most frequently reported adverse events in all treatment groups across meloxicam trials. In clinical trials, GI adverse events were reported with meloxicam tablets or suspension in 11.8% to 26.6% of subjects at 7.5 mg/day vs. 18% to 24.2% of subjects at 15 mg/day. In an osteoarthritis trial, the incidence of GI adverse events with oral meloxicam was lower compared to extended-release diclofenac 100 mg/day (28.1%) and slightly more than placebo (17.2%). The most common GI adverse reactions reported with oral meloxicam in adult clinical trials include abdominal pain (1.9% to 4.7%), diarrhea (1.9% to 7.8%), flatulence (0.4% to 3.2%), nausea (2.4% to 7.2%), and vomiting (0.6% to 2.6%). Dyspepsia and dyspeptic symptoms, including aggravated dyspepsia, eructation, and gastrointestinal irritation, occurred in 3.8% to 9.5% of subjects. The incidence of constipation in meloxicam osteoarthritis trials ranged from 0.8% to 2.6%. Abdominal pain, vomiting, and diarrhea were more commonly reported in pediatric subjects than in adults. During osteoarthritis clinical trials with low-dose meloxicam capsules, diarrhea (3%), nausea (2%), and abdominal discomfort (2%) occurred in subjects receiving meloxicam 5 or 10 mg/day. During open-label trials in subjects receiving meloxicam 10 mg/day, diarrhea occurred in 4% of subjects, constipation in 3%, dyspepsia in 3%, and nausea in 2%. Constipation was reported in 7.6% of subjects who received IV meloxicam during clinical trials, compared to 6.1% of subjects who received placebo. Less common GI adverse events (less than 2%) reported with oral meloxicam regardless of causality include colitis, xerostomia (dry mouth), peptic ulcer disease (duodenal or gastric ulcer), eructation, esophagitis, gastritis, gastroesophageal reflux, GI bleeding (hemorrhagic duodenal or gastric ulcer), hematemesis, melena, pancreatitis, GI perforation (perforated duodenal or gastric ulcer, intestinal perforation), and stomatitis, including oral ulceration. Abdominal discomfort, abdominal distension, abdominal pain, diarrhea, epigastric discomfort, epistaxis, flatulence, frequent bowel movements, gastritis, gastroesophageal reflux, gastrointestinal pain, oropharyngeal pain, rectal hemorrhage, and xerostomia were reported in less than 2% of subjects who received IV meloxicam in clinical trials. Ischemic colitis has been reported with meloxicam. Anorexia may also occur with NSAID therapy.

elevated hepatic enzymes, hepatic failure, hepatic necrosis, hepatitis, hyperbilirubinemia, jaundice

Elevated hepatic enzymes [alanine aminotransferase (ALT) or aspartate aminotransferase (AST)] of 3 or more times the upper limit of normal (ULN) have been

reported in approximately 1% of NSAID-treated subjects in clinical trials. In addition, rare, sometimes fatal, cases of severe hepatic injury, including fulminant hepatitis, hepatic necrosis, and hepatic failure have been reported. Elevations of ALT or AST less than 3 times ULN may occur in up to 15% of individuals treated with NSAIDs. Elevations of AST, ALT, gamma-glutamyl transferase (GGT), or bilirubin (hyperbilirubinemia) have been reported with oral meloxicam in 2% or less of subjects in clinical trials. GGT elevations have been reported with IV meloxicam in 2.8% of subjects, compared to 1.5% of subjects who received placebo. An abnormal liver function test has been reported with IV meloxicam in less than 2% of subjects. Hepatitis has been reported with oral meloxicam in less than 2% of subjects, while jaundice or hepatic failure have been reported in postmarketing. If clinical signs and symptoms consistent with liver disease develop, or if systemic manifestations occur (e.g., eosinophilia, rash, etc.), discontinue the NSAID immediately, and perform a clinical evaluation of the individual. Consider monitoring a chemistry profile periodically in individuals on long-term NSAID treatment.

agranulocytosis, anemia, leukopenia, neutropenia, purpura, thrombocytopenia, thrombocytosis

Anemia has occurred in NSAID-treated individuals. This may be related to occult or gross blood loss, fluid retention, or an incompletely described effect on erythropoiesis. NSAIDs may increase the risk of bleeding events. If an individual treated with an NSAID has any signs or symptoms of anemia, monitor hemoglobin or hematocrit. Consider monitoring complete blood count (CBC) periodically in individuals on long-term NSAID treatment. Anemia has been reported in 4.1% or less of subjects receiving oral meloxicam and 2.4% of subjects receiving IV meloxicam during clinical trials. Anemia may be due to retention of fluids, GI blood loss, or an incompletely described effect on erythropoiesis. Increased bleeding time, neutropenia, and thrombocytosis have been reported with IV meloxicam in less than 2% of subjects in clinical trials. Other infrequent (less than 2%) hematological reactions (without regard to causality) reported with oral meloxicam include leukopenia, purpura, and thrombocytopenia. Agranulocytosis has been reported with meloxicam in postmarketing.

edema, fluid retention, hypokalemia, hypomagnesemia, hyponatremia, peripheral edema, weight gain

Fluid retention and edema have been reported in patients taking NSAIDs. Inhibition of prostaglandin synthesis by NSAIDs potentiates water reabsorption. In premarketing trials, edema (using combined terms of edema, edema-dependent, peripheral edema, and leg edema) has been reported in 0.6% to 4.5% of patients receiving oral meloxicam. During osteoarthritis open-label clinical trials with low-dose meloxicam capsules, peripheral edema was reported in 2% of adults taking 10 mg/day. Hyponatremia due to

water intoxication has been reported with NSAID use. Face edema and weight gain have occurred in less than 2% of patients receiving oral meloxicam, which may be related to the renal fluid retaining effects of NSAIDs. Edema, hypokalemia, and hypomagnesemia were reported in less than 2% of patients who received IV meloxicam during clinical trials (n = 748).

anaphylactic shock, anaphylactoid reactions, angioedema, bronchospasm, cough, dyspnea, fever, hypoxia, urticaria

Allergic or respiratory reactions, including angioedema, asthma, bronchospasm, dyspnea, fever, and urticaria, have been reported infrequently (less than 2%) in patients receiving oral meloxicam. Fever has been reported more in pediatric trials than in adult trials. Cough has been reported in 0.2% to 2.4% of patients in oral meloxicam clinical trials. Dyspnea and hypoxia were reported in less than 2% of patients who received IV meloxicam during clinical trials (n = 748). Anaphylactoid reactions, including anaphylactic shock, have been reported during postmarketing surveillance. Patients with hypersensitivity to salicylates are generally at higher risk for allergic reactions to NSAIDs. Advise patients who develop urticaria, bronchospasm, or other signs and symptoms of an anaphylactoid reaction to seek emergency care immediately.

dizziness, drowsiness, headache, migraine, paresthesias, seizures, syncope, tremor, vertigo

Dizziness (1.1% to 3.8%) was reported during clinical trials of oral meloxicam. Adverse events reported in less than 2% of patients include convulsions (seizures), paresthesias, tremor, vertigo, syncope, and somnolence or drowsiness. Headache (1% to 8.3%) has also been reported and was reported more frequently in pediatric patients than in adults. During osteoarthritis open-label clinical trials with low-dose meloxicam capsules, headache was reported in 4% of adults taking 10 mg/day. Attention disturbance, migraine, presyncope, somnolence, and syncope were reported in less than 2% of patients who received IV meloxicam during clinical trials (n = 748).

alopecia, bullous rash, contact dermatitis, diaphoresis, ecchymosis, erythema, erythema multiforme, exfoliative dermatitis, fixed drug eruption, hot flashes, maculopapular rash, photosensitivity, pruritus, rash, Stevens-Johnson syndrome, toxic epidermal necrolysis

NSAIDs can cause serious and potentially fatal skin reactions, including exfoliative dermatitis, Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis (TEN), and fixed drug eruption (FDE), which may present as a more severe variant known as generalized bullous fixed drug eruption (GBFDE). These serious events may occur without warning. Inform individuals about the signs and symptoms of serious skin reactions and instruct

them to discontinue use of the NSAID at the first appearance of skin rash or any other sign of hypersensitivity. Rash, including erythema and maculopapular rash, was reported with oral meloxicam in 0.3% to 3% of adults and less than 2% of pediatric subjects during clinical trials. Pruritus was reported in 0% to 2.4% of adults. Dermatologic adverse reactions reported with oral meloxicam in less than 2% of subjects include alopecia, bullous rash, diaphoresis, hot flashes, photosensitivity, pruritus, and urticaria. Erythema multiforme, exfoliative dermatitis, FDE, SJS, and TEN have been reported with oral meloxicam during postmarketing experience. Contact dermatitis, ecchymosis, and rash were reported with IV meloxicam in less than 2% of subjects during clinical trials.

angina, arrhythmia exacerbation, heart failure, hypertension, hypotension, myocardial infarction, palpitations, sinus tachycardia, stroke, thromboembolism, vasculitis

To minimize the potential risk for an adverse cardiovascular event in NSAID-treated patients, use the lowest effective dose for the shortest duration possible. NSAIDs, such as meloxicam, may cause an increased risk of serious cardiovascular thromboembolism, myocardial infarction, and stroke, which can be fatal. Estimates of increased relative risk range from 10% to 50% or more, based on the drug and dose studied. The risk may increase with increased exposure, as measured in dose or duration. Significant cardiovascular risk has been observed within days to weeks of NSAID initiation. The relative increase in cardiovascular thrombotic events over baseline appears to be similar in patients with or without cardiovascular disease or risk factors for cardiovascular disease; however, patients with known cardiovascular disease or risk factors may be at greater risk because of higher baseline risk of events. NSAIDs may also lead to onset of new hypertension or worsening of preexisting hypertension, which may contribute to the increased incidence of cardiovascular adverse events. Of 16,200 patients who received oral meloxicam during clinical trials, less than 2% experienced angina pectoris, myocardial infarction, hypertension, hypotension, heart failure, arrhythmia exacerbation, palpitations, sinus tachycardia, or vasculitis. During osteoarthritis open-label clinical trials with low-dose meloxicam capsules, hypertension occurred in 4% of patients taking 10 mg/day. Blood pressure decreases occurred in 2% to 3% of patients in trials of meloxicam oral disintegrating tablets. Monitor blood pressure during the initiation of NSAID therapy and throughout the course of therapy. Sinus tachycardia was reported in less than 2% of patients who received IV meloxicam during clinical trials (n = 748). Inform patients of the signs and symptoms of cardiovascular adverse events, and advise them to seek medical help immediately if such signs or symptoms occur.

azotemia, hematuria, increased urinary frequency, interstitial nephritis, renal failure (unspecified), renal papillary necrosis, urinary retention

Long-term use of NSAIDs has resulted in renal papillary necrosis and other renal injury. Micturition frequency (increased urinary frequency) has been reported with oral meloxicam in 0.1% to 2.4% of subjects in clinical trials. Other renal adverse effects reported with oral meloxicam in less than 2% of subjects include albuminuria, azotemia, increased serum creatinine, hematuria, and renal failure (unspecified). Pollakiuria and urinary retention have been reported with IV meloxicam in less than 2% of subjects. Interstitial nephritis and acute urinary retention have been reported with meloxicam in postmarketing. Monitor fluid status, serum creatinine, and blood urea nitrogen concentrations. Consider monitoring a chemistry profile periodically in individuals on long-term NSAID treatment.

anxiety, appetite stimulation, confusion, depression, hallucinations, insomnia

Insomnia has been reported in 0% to 3.6% of patients during oral meloxicam clinical trials. Other psychiatric adverse events reported in less than 2% of patients include abnormal dreaming, anxiety, increased appetite (appetite stimulation), confusion, depression, and nervousness. Alterations in mood (such as mood elevation) have been noted in postmarketing reports. Confusion, hallucinations, and insomnia were reported in less than 2% of patients who received IV meloxicam during clinical trials (n = 748).

arthralgia, back pain

Joint-related adverse events, including joint crepitation, joint effusion, and joint swelling, were reported in 1.5% to 2.3% of patients in oral meloxicam clinical trials. Other musculoskeletal adverse events reported in trials include undefined pain (0.9% to 5.2%), arthralgia (0% to 5.3%), and back pain (0.4% to 3%). During osteoarthritis open-label clinical trials with low-dose meloxicam capsules, arthralgia and back pain occurred in 6% and 4% of patients, respectively. Extremity pain (2%) and osteoarthritis (5%) were also reported. Back pain and muscle spasms were reported in less than 2% of patients who received IV meloxicam during clinical trials (n = 748).

dehydration

Dehydration has been reported in less than 2% of patients during oral meloxicam clinical trials.

conjunctivitis, dysgeusia, tinnitus

Adverse events related to the special senses and reported in less than 2% of patients

during oral meloxicam clinical trials include abnormal vision, conjunctivitis, taste perversion (dysgeusia), and tinnitus.

aseptic meningitis

Aseptic meningitis has been reported rarely with NSAID therapy (such as meloxicam). Ibuprofen has been the most common NSAID implicated in this adverse reaction; however, cases have been reported with sulindac, naproxen, tolmetin, diclofenac, ketoprofen, rofecoxib, and piroxicam. Aseptic meningitis from 1 NSAID does not preclude use of another NSAID; most patients can be treated with another drug without incident. However, a patient with Sjogren's syndrome experienced aseptic meningitis after receipt of naproxen, ibuprofen, and rofecoxib at different times; aseptic meningitis developed about a week after each drug exposure, and the symptoms abated roughly 2 days after each drug cessation. The occurrence of aseptic meningitis is not related to NSAID chemical class or prostaglandin inhibition. A Type III or IV immunological hypersensitivity reaction is the proposed mechanism of action. Drug-induced aseptic meningitis usually occurs shortly after drug initiation but can occur after years of drug usage. Although NSAID-induced aseptic meningitis is primarily reported in patients with systemic lupus erythematosus (SLE), healthy patients and patients with other disease states such as ankylosing spondylitis, connective tissue disease, osteoarthritis, and rheumatoid arthritis have developed NSAID-induced aseptic meningitis. Symptoms of aseptic meningitis include confusion, drowsiness, general feeling of illness, severe headache, nausea, nuchal rigidity, and photophobia. As aseptic meningitis is a diagnosis of exclusion, discontinue the suspected drug and do not restart unless a rechallenge is desired.

infertility

NSAIDs, such as meloxicam, may delay or prevent prostaglandin-mediated rupture of ovarian follicles, which has been associated with reversible infertility and poses a reproductive risk. Small studies of women treated with NSAIDs demonstrated a reversible delay in ovulation. Consider withdrawal of NSAIDs in women who have difficulties conceiving or who are undergoing infertility evaluation. Also, meloxicam may impair fertility in males of reproductive potential. Oral administration of meloxicam to male rats for 35 days resulted in decreased sperm count and motility and histopathological evidence of testicular degeneration at 0.3-times the maximum recommended human dose based on body surface area comparison. It is not known if these effects on fertility are reversible. The clinical relevance of these findings is unknown.

cystitis, infection, influenza, laryngitis, pharyngitis, sinusitis

Infections reported during oral meloxicam therapy include influenza-like symptoms (3.3% to 5.8%), pharyngitis (0.6% to 3.2%), urinary tract infection (0.3% to 6.9%), and upper respiratory tract infection (0% to 8.3%), which may also include laryngitis, pharyngitis, or sinusitis. During osteoarthritis open-label clinical trials with low-dose meloxicam capsules, upper respiratory tract infection (4%), nasopharyngitis (4%), bronchitis (3%), and sinusitis (3%) were reported among adults taking 10 mg/day. Cellulitis, gastroenteritis, urinary tract infection (cystitis), and vulval abscess were reported in less than 2% of patients who received IV meloxicam during clinical trials (n = 748).

asthenia, chest pain (unspecified), fatigue, hyperthermia, malaise, weight loss

General adverse events reported in less than 2% of patients who received oral meloxicam include fatigue, malaise, and weight loss. Household accident (0% to 4.5%) and fall (0% to 2.6%) were also reported. Asthenia, fatigue, hyperthermia, non-cardiac chest pain (unspecified), fever, vaginal discharge, and weight loss were reported in less than 2% of patients who received IV meloxicam during clinical trials (n = 748).

hematoma, injection site reaction, wound dehiscence

Injection site reaction (including pain, pruritus, phlebitis, and thrombosis) was reported in less than 2% of subjects who received IV meloxicam during clinical trials (n = 748). Procedural complications, including incision site hemorrhage, incision site rash, wound dehiscence, and wound hematoma were also reported in less than 2% of subjects who received IV meloxicam.

Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS)

Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS), a multi-organ hypersensitivity reaction, has occurred with NSAIDs. Some of these events have been life-threatening or fatal. DRESS typically presents as fever, rash, and/or lymphadenopathy in conjunction with other organ system involvement including hepatitis, nephritis, hematologic abnormalities, myocarditis, or myositis sometimes resembling an acute viral infection. Eosinophilia is often present. Early manifestations such as fever and lymphadenopathy may be present without evidence of a rash. Discontinue the NSAID in patients presenting with such signs and symptoms in whom an alternative etiology cannot be identified.

diagnostic test interference

The pharmacological activity of NSAIDs in reducing inflammation, and possibly fever, may result in diagnostic test interference by diminishing the utility of these diagnostic signs in detecting infection.

Description

Meloxicam is an oral and parenteral nonsteroidal anti-inflammatory drug (NSAID) indicated for osteoarthritis, rheumatoid arthritis, or juvenile rheumatoid arthritis and for moderate or severe pain alone or in combination with other non-NSAID analgesics, respectively. Because of delayed onset of action, IV meloxicam alone is not recommended for use when rapid onset of analgesia is required. Meloxicam, like all NSAIDs, may exacerbate hypertension and congestive heart failure and may cause an increased risk of serious cardiovascular thromboembolism, acute myocardial infarction, and stroke, which can be fatal. Also, serious gastrointestinal (GI) tract adverse effects, such as GI bleeding or inflammation and stomach or other GI perforation and ulceration, can occur without warning or symptoms in patients receiving NSAIDs. The lowest effective meloxicam dose for the shortest possible duration consistent with individual treatment goals is recommended to minimize the potential risk for an adverse cardiovascular or GI event.

Mechanism Of Action

Meloxicam inhibits prostaglandin synthesis, primarily by inhibiting cyclooxygenase (COX-1 and COX-2), resulting in analgesic, anti-inflammatory, antipyretic pharmacologic effects. Prostaglandins are mediators of inflammation, sensitize afferent nerves, and potentiate the action of bradykinin in inducing pain. Meloxicam may decrease prostaglandins in peripheral tissues.

Pharmacokinetics

Meloxicam is administered orally or intravenously. The mean Vd of meloxicam is approximately 10 L. Meloxicam is approximately 99.4% bound to human plasma proteins, primarily albumin. The fraction of protein binding is independent of drug concentration over the clinically relevant concentration range. Meloxicam is extensively hepatically metabolized to 4 inactive metabolites. The 5'-carboxy meloxicam (60% of dose) metabolite is formed by oxidation of the intermediate metabolite, 5'-hydroxymethyl meloxicam (9% of dose). In vitro studies indicate that CYP2C9 is important in this metabolic pathway, with a minor contribution by CYP3A4. Peroxidase activity is probably responsible for the other 2 metabolites, which account for 16% and

4% of an administered dose, respectively. Meloxicam excretion is predominantly in the form of metabolites and occurs to an equal extent in urine and feces. Only traces of unchanged drug are excreted in the urine (0.2%) and feces (1.6%). After multiple meloxicam 7.5 mg doses, about 6% and 13% of the dose were found in urine in the form of the 5'-hydroxymethyl and 5'-carboxy metabolites, respectively. There is significant biliary and/or enteral secretion of the drug. Meloxicam plasma clearance ranges from 7 to 9 mL/minute. The mean elimination half-life ranges from 15 to 24 hours. The elimination half-life is constant across dose concentrations indicating linear metabolism within the therapeutic dose range.

Affected cytochrome P450 isoenzymes and drug transporters: CYP2C9, CYP3A4
Meloxicam is a CYP2C9 and CYP3A4 substrate.

Route-Specific Pharmacokinetics

- **Oral Route**

Following oral administration of a 7.5 mg oral dose under fasted conditions, the mean Cmax is approximately 1.05 mcg/mL. Mean Tmax is achieved approximately 5 to 6 hours after administration. A second meloxicam concentration peak occurs around 12 to 14 hours post-dose, which suggests gastrointestinal recirculation. The absolute bioavailability is approximately 89%. Drug administration after a high-fat breakfast (75 g of fat) does not affect the extent of absorption of meloxicam tablets but led to a 22% increase in peak plasma concentrations. Meloxicam capsules administered under fed conditions result in 22% lower mean Cmax and a 3 hour delay in median Tmax (5 hours vs. 2 hours for fasted conditions). Significant changes in AUC were not observed. The Cmax and AUC for meloxicam suspension and oral disintegrating tablets were not affected after a high-fat meal; however, Tmax was increased to approximately 7 hours and 4 to 12 hours, respectively. Meloxicam can be administered without regard to the timing of meals or concomitant administration fo antacids. Meloxicam concentrations in synovial fluid, after a single oral dose, range from 40% to 50% of those in plasma. The mean elimination half-life of oral meloxicam is 15 to 22 hours. Equal doses of tablets and oral suspension are bioequivalent; however, capsules have not demonstrated equivalent systemic exposure to other formulations of oral meloxicam. The orally disintegrating tablet has been shown to meet bioequivalence criteria for AUC and Cmax compared to meloxicam tablets.

- **Intravenous Route**

The median time to meaningful pain relief is 2 to 3 hours after IV meloxicam administration. IV meloxicam exhibits linear pharmacokinetics over the doses ranging from 15 to 180 mg. After meloxicam IV administration, the apparent Vd during the terminal elimination phase of meloxicam is 9.63 L. Plasma concentrations of meloxicam 30 mg IV exceed that of meloxicam 15 mg PO for the first 24 hours. After a single dose of

meloxicam 30 mg IV to healthy volunteers, Cmax was 5,642.9 +/- 1,009 ng/mL to 8,755 +/- 1,951 mcg/mL; Tmax was 0.045 to 0.12 +/- 0.043 to 0.095 hours; AUC was 102,301.5 +/-31,999.9 ng x hour/mL to 121,437.6 +/-64,505.6 ng x hour/mL; and half-life was approximately 21 +/- 5.6 hours to 23.6 +/- 10.1 hours. Following multiple dosing, IV meloxicam is predicted to have slightly higher than 2-fold accumulation without a change in the terminal elimination half-life. After repeated doses with IV meloxicam (Anjeso), Cmax was 10,632.5 +/- 4,729.8 ng/mL; AUC was 297,771.6 +/- 241,604.01 ng x hour/mL; and half-life was 26.4 +/- 10.1 hours.

- **Hepatic Impairment**

In subjects with mild (Child-Pugh class A) and moderate (Child-Pugh class B) hepatic impairment, there are no marked differences in plasma concentrations compared to healthy volunteers. Protein binding of meloxicam is not affected by hepatic insufficiency. Individuals with severe hepatic impairment (Child-Pugh class C) have not been adequately studied.

- **Renal Impairment**

In individuals with renal insufficiency, total drug plasma concentrations decreased according to the degree of renal impairment, while the free AUC values are similar. Meloxicam total clearance is likely greater in renally impaired individuals due to an increase in the unbound fraction of meloxicam. Individuals with severe renal insufficiency have not been adequately studied. The unbound peak plasma concentrations are higher in individuals with end-stage renal failure receiving chronic hemodialysis (1% unbound fraction) in comparison to healthy volunteers (0.3% unbound fraction). Hemodialysis does not significantly remove meloxicam from the circulation. Pharmacokinetics of IV meloxicam in geriatric subjects with mild renal impairment are similar to healthy young subjects. Cmax and AUC increases of 5% and 7%, respectively, were observed in elderly subjects with mild renal impairment (eGFR 60 to 90) relative to healthy volunteers with the use of IV meloxicam. Intravenous meloxicam has not been studied in individuals with moderate and severe renal insufficiency.

- **Pediatrics**

Younger subjects (2 to 6 years) had approximately 30% lower meloxicam exposure compared to older subjects (7 to 16 years) after single dose (0.25 mg/kg) administration and after achieving steady-state (0.375 mg/kg/day). Older subjects had exposures similar (single-dose) or slightly reduced (steady-state) to those of adults when using AUC values normalized to a dose of 0.25 mg/kg. The meloxicam mean (SD) elimination half-life was 15.2 (10.1) and 13 (3) hours for 2 to 6 year and 7 to 16 year pediatric subjects, respectively. Body weight appears to be the single predictive covariate for differences in meloxicam apparent oral plasma clearance. The pharmacokinetics of meloxicam capsules have not been investigated in pediatric subjects. Based on population

pharmacokinetics analysis, age does not have a clinically meaningful effect on the pharmacokinetics of intravenous meloxicam.

- **Geriatric**

Geriatric males (65 years and older) have similar meloxicam pharmacokinetics compared to younger subjects. Geriatric females (65 years and older) have a 47% higher AUC and 32% higher Cmax compared to younger females (55 years and less) after correction for body weight. Based on population pharmacokinetics analysis, age does not have a clinically meaningful effect on the pharmacokinetics of intravenous meloxicam. Age effects on the pharmacokinetics of meloxicam capsules have not been investigated.

- **Gender Differences**

A smaller unbound fraction is reported for geriatric female subjects in comparison to geriatric male subjects. Young females exhibit slightly lower plasma concentrations relative to young males. At steady-state, the mean elimination half-life is 17.9 hours for the female group compared to 21.4 hours for the male group; the peak concentrations are similar. Gender did not have a clinically meaningful effect on the pharmacokinetics of intravenous meloxicam. Gender effects on the pharmacokinetics of meloxicam capsules have not been investigated.

- **Ethnic Differences**

Race did not have a clinically meaningful effect on the pharmacokinetics of intravenous meloxicam.

Administration

For storage information, see the specific product information within the How Supplied section.

Oral Administration

Oral Solid Formulations

Tablets and capsules
May administer without regard to meals.
Oral disintegrating tablets (ODT)
With dry hands, peel back the foil of the blister and remove the tablet. Do not push the tablet through foil backing as this could damage the tablet.
Place tablet into the mouth or on the tongue. The tablet will disintegrate quickly with saliva and can easily be swallowed with or without liquid.

Oral Liquid Formulations

May administer without regard to meals.
Shake the suspension gently before each use.

Injectable Administration

Visually inspect parenteral products for particulate matter and discoloration prior to administration whenever solution and container permit. Anjeso solutions are opaque and pale-yellow. Qamzova solutions are clear and greeenish-yellow. Xifyrm solutions are clear, pale-yellow to yellow.

Intravenous Administration

Administer by IV bolus over 15 seconds.
When initiating intravenous meloxicam, monitor analgesic response.
Discard unused portion.
Because of delayed onset of analgesia, intravenous meloxicam alone is not recommended for use when rapid onset of analgesia is required. The median time to meaningful pain relief is 2 to 3 hours after intravenous meloxciam administration. A non-NSAID analgesic with a rapid onset of effect may be needed.

Maximum Dosage Limits

- **Adults**
  15 mg/day PO for tablets, including oral disintegrating tablets, and suspension; 10 mg/day PO for capsules; 30 mg/day IV.
- **Geriatric**
  15 mg/day PO for tablets, including oral disintegrating tablets, and suspension; 10 mg/day PO for capsules; 30 mg/day IV.
- **Adolescents**
  0.125 mg/kg/day (Max: 7.5 mg/day) PO for tablets, including oral disintegrating tablets, and suspension; safety and efficacy have not been established for capsules or IV injection.
- **Children**
  2 to 12 years: 0.125 mg/kg/day (Max: 7.5 mg/day) PO for tablets, including oral disintegrating tablets, and suspension; safety and efficacy have not been established for capsules or IV injection.
  1 year: Safety and efficacy have not been established.
- **Infants**

Safety and efficacy have not been established.

- **Neonates**
  Safety and efficacy have not been established.

Dosage Forms

- Anjeso 30mg/mL Solution for Injection
- Meloxicam 10mg Oral capsule
- Meloxicam 15mg Oral tablet
- Meloxicam 5mg Oral capsule
- Meloxicam 7.5mg Oral tablet
- Meloxicam 7.5mg/5mL Oral suspension
- Meloxicam Bulk powder
- Mobic 15mg Tablet
- Mobic 15mg Tablet
- Mobic 7.5mg Tablet
- Qmiiz ODT 15mg Orally Disintegrating Tablet
- Qmiiz ODT 7.5mg Orally Disintegrating Tablet
- SYMBRAVO 20mg-10mg Tablet
- Vivlodex 10mg Capsule
- Vivlodex 5mg Capsule
- Xifyrm 30mg/mL Solution for Injection
- Zybic 7.5mg/5mL Suspension

Dosage Adjustment Guidelines

Hepatic Impairment

Intravenous meloxicam has not been studied in people with hepatic impairment. For oral meloxicam, no dose adjustment is needed in patients with mild to moderate hepatic impairment. Since meloxicam is significantly metabolized in the liver and hepatotoxicity may occur, monitor for adverse events in people with severe hepatic impairment.

Renal Impairment

No dosage adjustment is needed for people with mild renal impairment. Intravenous meloxicam has not been studied and is not recommended in people with moderate or severe renal impairment. For oral meloxicam, no dosage adjustment is needed for people with moderate renal impairment. Oral meloxicam has not been studied and is not recommended in people with severe renal impairment.

Intermittent hemodialysis

Meloxicam is not dialyzable; therefore, supplemental doses are not needed after hemodialysis. For hemodialysis individuals, the maximum oral daily dosage of meloxicam is 7.5 mg/day for tablets, including orally disintegrating tablets, and suspension, and 5 mg/day for capsules.