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Pain Management
Opioid Safety

A Quick Reference Guide (2014)

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Opioids: A Practical Guide for Clinicians			
Example Risk Assessment Tool: Opioid Risk Tool (ORT)[1]			
		Item Score if Female	Item Score if Male
1. Family history of substance abuse	Alcohol	1	3
	Illegal drugs	2	3
	Prescription drugs	4	4
2. Personal history of substance abuse	Alcohol	3	3
	Illegal drugs	4	4
	Prescription drugs	5	5
3. Age (mark box if 16–45)		1	1
4. History of preadolescent sexual abuse		3	0
5. Psychological disease	Attention deficit disorder obsessive compulsive disorder Bipolar Schizophrenia	2	2
	Depression	1	1
Total			
Risk Category: 0–3 Low Risk of aberrant behaviors; **4–7 Moderate Risk** of aberrant behaviors; **≥8 High Risk** of aberrant behaviors			

Assess risk of aberrant behaviors before initiating opioid medications; the ORT or other rating tools can assist with this process but can overestimate risk thus should not be used as only reason to decline opioid prescription.

Opioids Risk Classification[10-11]	
Risk	**Condition/Situation**
Low **(no moderate to high risk characteristics)** **(ORT = 0–3; SOAPP-R ≤17)**	• **Diagnosis with concordant physical exam, medical imaging, laboratory findings** • **High levels of pain acceptance and active coping strategies** • **Well motivated patient willing to participate in multimodal treatment plan** • **Attempting to function at normal levels and making progress towards treatment goals** • **Urine drug testing (UDT) and prescription drug monitoring program (PDMP) are appropriate** • **No aberrant drug related behaviors (lost prescriptions, multiple requests for early refills, unauthorized dose escalation, apparent intoxication, frequent accidents etc.)**
Moderate **(high risk characteristics absent)** **(ORT = 4–7)**	• **Diagnosis with concordant physical exam, medical imaging, laboratory findings and pain in >3 regions of body** • **Moderate co-morbid psychological and medical problems well-controlled by active treatment** • **Risk factors for medication misuse/abuse (e.g. history of substance use)** • **Any positive UDT or PDMP with no repeat behavior** • **Moderate levels of pain acceptance and coping strategies**
High **(ORT ≥8; SOAPP-R >17)**	• **Widespread pain without objective signs and symptoms** • **Unstable or untreated substance abuse or psychiatric disorder or high suicide or homicide risk** • **History of or current troublesome aberrant drug related behaviors** • **Unwilling to participate in multimodal therapy and not functioning close to a normal lifestyle** • **Pattern of repeat positive PDMP or UDT (or failure to submit)**

Regardless of the use of screening tools, patients may be classified into three different categories of risk stratification; **ORT** = Opioid Risk Tool;
SOAPP-R = Screener and Opioid Assessment for Patients with Pain-Revised

Recommended Frequency of UDT and PDMP[2]	
Opioid Risk Classification	**Recommended UDT/PDMP Frequency**
Low Risk	Periodic (at least 1/year)
Moderate Risk	Regular (at least 2/year)
High Risk or Opioid Doses >120 Morphine Equivalents/Day	Frequent (3–4/year)
Aberrant Behavior (e.g. Lost Prescriptions, Frequent Accidents)	At time of visit (address aberrant behaviors in person)

UDT Results[2]

The following should be viewed as a "red flag", requiring confirmation testing and intervention (see interpreting UDT page 7)

- **Negative for opioid(s) prescribed**
- **Positive for prescription medications not prescribed (benzodiazepines, opioids, stimulants etc.)**
- **Positive for illicit drugs (methamphetamine, cocaine or its metabolites, marijuana, etc.)**
- **Positive for alcohol**

If confirmatory drug test substantiates the "red flag" (e.g. positive for amphetamines) AND is:

- **Positive for prescribed opioids: consider a controlled taper and referral to an addiction treatment program if necessary**
- **Negative for prescribed opioids: stop prescribing opioids and refer to addiction treatment program if necessary**

PDMP = Prescription Drug Monitoring Program; UDT = Urine Drug Testing

Urine Drug Testing Methods[3-5]		
Type of Test	**Logistics**	**Pearls**
Initial Screening Test: Immunoassay	• Inexpensive • Fast • Widely available	• High sensitivity, low specificity (higher potential for false positives) • Opiate screen not sensitive for semisynthetic (e.g. oxycodone) or synthetic opioids (e.g. fentanyl)
Confirmatory Test: Gas Chromatography-Mass Spectrometry (gcms)[+] or Liquid Chromatography-Mass Spectrometry (lcms)	• Expensive • Time consuming	• High sensitivity, high specificity • Expensive • Detects medication even if concentration is low

[+] GCMS is considered the criterion standard for confirmatory testing; Immunoassay tests have high predictive values for marijuana and cocaine, but lower predictive values for opiates and amphetamines

Urine Drug Testing Specimen Validity[3-4]	Normal Characteristics of a Urine Sample[3-5]
• Urine samples that are adulterated, substituted, or diluted may avoid detection of drug use[4] • Urine collected in the early morning is most concentrated and most reliable • Excessive water intake and diuretic use can lead to diluted urine samples (Creatinine <20 mg/dL)[3-4] • THC assays are sensitive to adulterants (e.g. Visine eyedrops)	Temperature within 4 minutes of voiding: 90–100°F pH: 4.5–8.0 Creatinine: >20 mg/dL Specific gravity: >1.003 Nitrates: <500 mcg/dL Volume: ≥30 mL

Urine Drug Testing (UDT) Federal Work Place Cut Off Values[3-9]

			Initial Drug Test Level (immunoassay) (ng/mL)	Confirmatory Drug Test Level (GC–MS) (ng/mL)	Confirmatory Test Analyte[3,7]	Detection Period After Last Dose (Days)*
Extended UDT	Regular UDT	Marijuana Metabolites	50	15	THCA	2–8 single use 20–30 chronic use+
		Cocaine Metabolites	300	150	BEG	1–3
		Opioid Metabolites	2000§	2000§	Codeine, Morphine, 6-MAM	2–3 days opiates 3–5 minutes heroin 12–24 hours 6-MAM
		Oxycodone	N/A	N/A		2–4
		Amphetamines	1000	500	Amphetamine, Methamphetamine MDMA, MDA, MDEA	1–3
		Methamphetamine	Incomplete data	500		3–4
		Benzodiazepines	300	200		3 short-acting 30 long-acting
		Barbiturates	300	200		1 short-acting 21 long-acting
		Methadone	300	200	EDDP	3–6
		Alcohol	N/A	N/A	EtG, EtS	12 hours

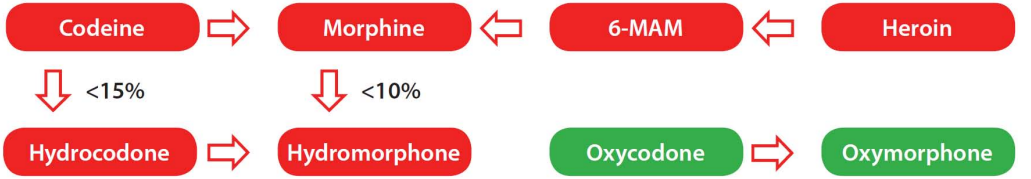
THCA = delta-9-Tetrahydrocannabinol-9-Carboxylic acid; **BEG** = Benzyolyecgonine; **6-MAM** = 6-Monoacetylmorpine; **MDMA** = 3,4-Methylenedioxy-N-Methyl Amphetamine; **MDA** = 3,4-Methylenedioxyamphetamine; MDEA = 3,4-Methylenedioxy-N-Ethylamphetamine **EDDP** = 2-Ethylidene-1,5-Dimethyl-3,3-Diphenylpyrrolidine; **EtG** = Ethyl Glucuronide; **EtS** = Ethyl Sulfate; * Detection time for most drugs in urine is 1–3 days; + Long-term use of lipid-soluble drugs (THC, diazepam, ketamine) can be detected for a longer period of time; § Testing levels for opiates were raised from 300 ng/mL to 2000 ng/mL to reduce detection from foods containing poppy seeds.

Agent	Summary of Agents Potentially Contributing to False Positives[3-8]				
Marijuana Metabolites	• dronabinol • efavirenz	• NSAIDs* • proton pump inhibitors	• hemp foods: tea, oil+		
Cocaine Metabolites	• coca leaf teas	• topical anesthetics containing cocaine			
Opioid Metabolites	• dextromethorphan • fluoroquinolones	• levofloxacin • ofloxacin	• poppy seeds • poppy oil	• rifampin • quinine	
Amphetamines/ Methamphetamine (High Rate of False Positives)	• amantadine • benzphetamine • brompheniramine • bupropion • chlorpromazine • desipramine	• dextroamphetamine • doxepin • ephedrine • fluoxetine • isometheptene • isoxsuprine	• labetalol • l-methamphetamine (OTC nasal inhaler) • methylphenidate • MDMA • phentermine	• phenylephrine • phenyl-propanolamine • promethazine • pseudoephedrine	• ranitidine • selegiline • thioridazine • trazodone • trimethobenzamide • trimipramine
Benzodiazepines	• oxaprozin	• sertraline			
Barbiturates	• ibuprofen	• naproxen			
Methadone	• chlorpromazine • clomipramine • diphenhydramine	• doxylamine • ibuprofen • quetiapine	• thioridazine • verapamil		
Alcohol	• mouthwash	• short-chain alcohols	• OTC cough products (isopropyl alcohol)		

* NSAIDs resulting in false-positive for marijuana mainly consist of ibuprofen and naproxen and modern tests **do not** result in false positives; + THC concentrations in hemp products are low enough to prevent positive immunoassay results.

Interpreting Urine Drug Testing[2,3-5]		
Drug or Class	**Expected Results**	**Considerations**
Alcohol	Alcohol	• Testing for ETOH metabolites, ethyl glucuronide or ethyl sulfate, can identify alcohol up to 80 hours after consumption
Amphetamines	**Immunoassay**–amphetamines, methamphetamines or MDMA **Confirmatory**–amphetamines, methamphetamines or MDMA	• Immunoassay tests are highly cross-reactive; therefore confirmatory testing is required and can identify which amphetamine is present
Benzodiazepines	**Immunoassay**–unconjugated oxazepam or its metabolites **Confirmatory**–alprazolam, diazepam, clonazepam, lorazepam, etc.	• Immunoassays for benzodiazepines have a 28% overall false negative rate • Confirmatory testing is needed when use is expected or suspected (alprazolam, clonazepam and lorazepam often not detected by immunoassay)
Barbiturates	**Immunoassay**–barbiturates	• N/A
Cocaine Metabolites	**Immunoassay**–cocaine or benzoylecgonine (BEG)	• Cocaine's primary metabolite, BEG, has low cross-reactivity with other substances and is highly predictive of cocaine use • A positive result should be interpreted as recent exposure to cocaine

continued

Interpreting Urine Drug Testing[2,3-5]		
Drug or Class	**Expected Results**	**Considerations**
Opioids or "opiates"- Natural (from opium)		
Codeine (Tylenol # 2,3,4)	**Opiates Immunoassay**–positive **Confirmatory**–codeine, possibly morphine and hydrocodone	• Immunoassays for "opiates" are responsive to morphine and codeine but do not distinguish which • Codeine is metabolized to morphine and small quantities of hydrocodone
Morphine (Avinza, Embeda, MS Contin, Kadian)	**Opiates Immunoassay**–positive **Confirmatory**–morphine, possibly hydromorphone	• Immunoassays for "opiates" are responsive to morphine and codeine but do not distinguish which • Morphine (<10%) may be metabolized to hydromorphone
Heroin	**Opiates Immunoassay**–positive **Confirmatory**–heroin (6–MAM), morphine, possibly codeine	• 6-MAM is pathognomonic for heroin use, detection 12–24 hrs • Heroin is metabolized to morphine
Opioid Metabolic Pathways		

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Interpreting Urine Drug Testing[2,3-5]		
Drug or Class	**Expected Results**	**Considerations**
Opioids-Semisynthetic (derived from opium)		
Hydrocodone (Lorcet, Lortab, Norco, Vicodin)	**Opiates Immunoassay**–positive **Confirmatory**–hydrocodone, possibly hydromorphone	• "Opiates" immunoassay may detect semisynthetic opioids º hydrocodone > hydromorphone > oxycodone • Negative result does not exclude use and confirmatory testing (GC/MS) is required • Hydrocodone is metabolized in small amounts to hydromorphone, both may be found in urine • Oxycodone is metabolized to oxymorphone, both may be found in urine • Hydromorphone and oxymorphone use does not result in positive screens for hydrocodone and oxycodone, respectively
Hydromorphone (Dilaudid, Exalgo)	**Opiates Immunoassay**–may be positive **Confirmatory**–hydromorphone	
Oxycodone (Roxicet, OxyContin)	**Opiates Immunoassay**–may be positive **Oxycodone Immunoassay**–positive **Confirmatory**–oxycodone possibly oxymorphone	
Oxymorphone (Opana)	**Oxycodone Immunoassay**–positive **Confirmatory**–oxymorphone	
Opioids-Synthetic (man-made)		
Fentanyl	**GC/MS**–fentanyl and norfentanyl	• Current "opiates" immunoassays do not detect synthetic opioids • Confirmatory testing (GC/MS) is needed
Meperidine (Demerol)	**GC/MS**–normeperidine, possibly meperidine	
Methadone (Methadose)	**Methadone Immunoassy**–positive **GC/MS**–methadone, EDDP	

Confirmatory testing: Chromatography (gas chromatography-mass spectrometry (GC/MS) or liquid chromatography-mass spectrometry (LC/MS)) Note: Each facility may have its own order sets and lab policies and procedures. Contact your lab for additional details.

Recommended Opioid Starting Dose[2,10]					
	Opioid-Naïve		Opioid-Exposed		
Opioid	mg	Doses/day	mg	Doses/day	Half-life (hrs)
Hydrocodone	5–10	2–3	5–10	3–4	3.3–4.4
Morphine IR	7.5–15	2–3	7.5–15	2–3	2–4
Morphine SR	NR		15–30	2	11–13
Oxycodone IR	5–10	2–3	5–10	3–4	3–6
Oxycodone SR	NR		10	2	12
Fentanyl patch	NR		12.5–25 mcg	1 per 72 hrs	20–27
Hydromorphone IR	2	2–3	2–4	2–3	2–3
Codeine	15	2–3	30	2–4	3
Oxymorphone IR	5	2–3	5–10	2–3	7–9
Oxymorphone SR	NR		10	2	9–11
Tramadol	50	2–3	50	3–4	6–8*
Tramadol ER	NR		200	1	10–12

Adapted from Manchikanti et al, 2012. **NR** = Not Recommended; Adjust the daily dose by 25–100% at a time, if necessary; Do not increase more than every five half-lives or weekly for fentanyl; Titrate only one drug; * active metabolite t ½ is 7–9hrs

Methadone Dosing Guide

Methadone Initiation[11]	
Dosing Strategy	Gradual titration, as a rule start low and go slow
Initial Dose	2.5 mg every 8–12 hours
Increments	2.5 mg increase 7 days
In the case of methadone, upward dosage titration should not occur more frequently than every 7 days and perhaps longer (e.g. every 1 to 2 months), and only if there is no problem with daytime sedation, taking into consideration that there is wide interpatient variability in half-life and responsiveness.	

Adverse Effects and Precautions with Methadone[11]

- Drowsiness: avoid use with other CNS depressants, sedatives and alcohol; advise caution when operating motor vehicles
- Respiratory depression: use extreme caution in patients with asthma, COPD, severe obesity, sleep apnea, and cor pulmonale
- QTc prolongation: monitor and make appropriate adjustments for patients with increased risk of dysrhythmia, conduction abnormalities or medications affecting cardiac conduction
    - o Monitor the QT interval more frequently if the QTc is greater than 450 ms and less than 500 ms
    - o Discontinue if QTc >500 ms
- Use additional caution in the elderly (>65) and patients with liver and renal disease

Switching Opioids (Does Not Apply to Methadone or Fentanyl)[11,17]	
When converting from a weak opioid analgesic to a stronger opioid, use the recommended initial doses of new opioid	
Discuss non-pharmacologic options (stretching, gentle activity, meditation, relaxation, application of heat/cold, and hobbies) during process of opioid rotation	
For opioid rotations involving high dose or step wise rotation, consider discussing with advanced pain care provider	
Steps for converting 1. Determine total 24 hour dose of current opioid 2. Calculate the equivalent dose of new opioid	3. Reduce dose calculated in step 2, providing 50–67% of new analgesic to account for incomplete cross tolerance 4. Consider rescue opioid therapy during the conversion process

Single-Step Rotation[11]	Step-Wise Rotation[17]
Commonly used tapering strategy	May be preferable when rotating from high doses of opioids
Stop the current opioid-Start new opioid dose: Timing for the first dose of the new opioid is based on the original's anticipated decline in plasma level and the new opioid's onset of action	Reduce the original opioid in several steps with overlapping increase of the new opioid in similar increments Example: Reduce the original opioid by 10–30% per week while increasing the new opioid by 10–30% per week; process is usually completed in 3–4 weeks

Equianalgesic and Conversion Doses for Patients Previously Receiving Other Opioids[11]		
Opioid Agent	**Estimated Oral Equianalgesic Dose (MG)**	**Initial Conversion Dose (Not Equianalgesic)**
Morphine	30	50–67% of estimated oral equianalgesic
Oxycodone	15–20	50–67% of estimated oral equianalgesic
Oxymorphone	10	50–67% of estimated oral equianalgesic
Tapentadol	No data (50 to 100)	50–100 mg every 4 to 6 hours
Tramadol	No data (100 to 150)	25 mg every morning
Codeine	180–200	30 mg every 4 to 6 hours
Hydrocodone	30	50–67% of estimated oral equianalgesic
Hydromorphone	7.5	50–67% of estimated oral equianalgesic

Equianalgesic and Conversion Doses Patients Previously Receiving Other Opioids; Fentanyl and Methadone[11]

Opioid Agent	Estimated Oral Equianalgesic Dose (MG)	Initial Conversion Dose (Not Equianalgesic)	
Methadone	20 acute 2 to 4 chronic	**Methadone-to-Morphine is Dependent on Morphine–Equivalent Dose of Previous Opioid**	
		Oral Morphine (24 hrs)	Methadone
		<200 mg/day	2.5–5 mg every 8 hrs
		200–500 mg/day	7% of oral morphine-equivalent dose given in divided doses every 8 hrs
		>500 mg/day	Consult with pain specialist
Fentanyl	(transdermal)	**For Converting Only to Fentanyl from Another Opioid**	
		Oral morphine (24 hr)	Fentanyl transdermal
		30–59 mg	12 mcg/hr
		60–134 mg	25 mcg/hr
		135–224 mg	50 mcg/hr
		225–314 mg	75 mcg/hr
		315–404 mg	100 mcg/hr

Common Adverse Effects for Opioid Analgesics and Suggested Management[11]	
Pruritus	• Rule out allergic reaction • Consider treatment with antihistamine • Itching may resolve spontaneously despite continuation of therapy
Sedation	• Rule out other causes • Reduce or temporarily hold dose with or without addition of co–analgesic to prevent respiratory depression • Add or increase non–sedating adjuvant for additional pain relief • Consider opioid rotation
Constipation	• Assess for constipation at every visit • Initiate bowel stimulant and a stool softner and increase liquids, dietary fiber (bulk forming laxatives NOT recommended), and exercise • If initial regimen is inadequate, mild hyperosmotics, saline and emollient laxatives may be added • If possible, reduce or discontinue other drugs that may cause or contribute to constipation

Less Common Adverse Effects[11]		
Adverse Effect	**Signs and Symptoms**	**Protocol for Management**
Respiratory Depression	Drowsiness; Slow shallow, breathing; Difficulty staying awake; Difficulty awakening; Loud or unusual snoring	• Hold opioid completely • Avoid other CNS depressants (esp. benzodiazepines) • Alert family members/care takers of the signs and symptoms
Opioid-induced Endocrinopathy	Loss of libido; Impotence; Fatigue; Mood alterations; Loss of muscle mass; Abnormal menses; Infertility	• Ask patients about symptoms at each visit • Determine cause of symptoms (consult endocrinologist) • Testosterone patch may improve symptoms
Hallucinations/Dysphoria	Confusion; Bad dreams; Hallucinations; Restlessness; Agitation	• Evaluate for underlying cause • Eliminate non-essential CNS acting medications (e.g. steroids) • If symptoms persist consider consultation with mental health professional or switch medications

continued

Less Common Adverse Effects[11]		
Adverse Effect	**Signs and Symptoms**	**Protocol for Management**
Sleep Disordered Breathing	Loud snoring; Irregular pauses in breathing; Excessive daytime sleepiness; Morning headaches; Depression; Impaired concentration	• Strongly consider stopping opioid and obtain sleep study • Instruct patient to avoid alcohol and medications that cause drowsiness • Obstructive sleep apnea: instruct to sleep on side; see dentist about mouthpiece to assist breathing
Osteoporosis	Bone fracture	• Monitor bone density in patients at risk
Immune Dysfunction	Severe fatigue; Muscle and joint pain that worsens following exertion; Decreased immunoglobulins	• Obtains labs and consult with immunologist

Opioid Dose Reduction or Discontinuation [2,11,16]

- Gradual dosage reduction (appropriate for most patients): Reduce dose by 10–25% every 1–4 weeks, larger initial dose reductions (25–50%) can be used
- Rapid dosage reduction (medically dangerous situations): Decrease dose every 1–7 days (see suggested rapid tapers)
- Stop immediately (clear signs of unsafe or illegal behavior): Educate the patient about potential withdrawal and provide appropriate referrals

Methadone Rapid Taper	Morphine SR/CR Rapid Taper	Oxycodone CR Rapid Taper
• Decrease dose by 20–50% per day until you reach 30 mg/day Then decrease by 5 mg/day every three to five days to 10 mg/day • Then decrease by 2.5 mg/day every one to five days	• Decrease dose by 20–50% per day until you reach 45 mg/day • Then decrease by 15 mg/day every one to five days	• Decrease dose by 20–50% per day until you reach 30 mg/day • Then decrease by 10 mg/day every one to five days

Opioid tapers should be individualized to the specific patient situation and care should be taken to engage and provide support to the patient throughout the process

Consider Use of Adjuvant Medications During Taper [13-15]

Withdrawal Symptoms (Not as Effective for Anxiety, Restlessness, Insomnia, and Muscular Aching)	Clonidine 0.1–0.6 mg oral every 6 hours; hold dose if blood pressure <90/60 mmHg (0.1–0.2 mg QID is commonly used in the outpatient setting); taper prior to stopping
Anxiety, Dysphoria, Lacrimation, Rhinorrhea	Hydroxyzine 25–50 mg three times a day as needed
Myalgias	NSAIDs or acetaminophen (see page 20 for dosing information)
Sleep Disturbance	Trazodone (50–100 mg) or gabapentin (300–1800 mg) as needed
Nausea	Antiemetics (e.g. prochlorperazine 5–10 mg every 4 hrs as needed)
Diarrhea	Bismuth subsalicylate (524 mg every 0.5–1 hr, max: 4192 mg/day); loperamide (4 mg then 2 mg after each loose stool, max 16 mg/day)

Benzodiazepine Reduction and/or Discontinuation [18-19]

Benzodiazepine Dosage Equivalents						
	Chlordiazepoxide	Diazepam	Clonazepam	Lorazepam	Alprazolam	Temazepam
Approximate Dosage Equivalents	10 mg	5 mg	0.25–0.5 mg	1 mg	0.5 mg	10–20 mg
Elimination Half-life	>100 hr	>100 hr	20–50 hr	10–20 hr	12–15 hr	10–20 hr

Benzodiazepine example dosage reduction and/or discontinuation*:

- **Switching to a longer acting benzodiazepine may be considered if clinically appropriate**
- **Reduce dose by 50% the first 2–4 weeks then maintain on that dose for 1–2 months then reduce dose by 25% every two weeks**

Milestone Suggestions	Example: Lorazepam 4 mg bid
Week 2: Decrease dose by 25%	Convert to 40 mg diazepam daily **Week 1:** 35 mg/day **Week 2:** 30 mg/day (25%) **Week 3:** 25 mg/day
Week 4: Decrease dose by 25%	**Week 4:** 20 mg/day (50%)
Weeks 5–8: Hold dose 1–2 months	**Weeks 5–8:** Continue at 20 mg/day for 1 month
Week 9–15: Decrease dose by 25% every two weeks	**Weeks 9–10:** 15 mg/day **Weeks 11–12:** 10 mg/day **Weeks 13–14:** 5 mg/day **Week 15:** Discontinue

*These are suggestions only; high dose alprazolam may not have complete cross tolerance, a gradual switch to diazepam before taper may be appropriate; other treatment modalities (e.g. antidepressants) for anxiety should be considered if clinically appropriate; consider consultation with mental health provider.

Non-Opioid Agents for Acute and Chronic Pain[13]			
Generic Name	Usual Adult Dosing	Maximum Dose	Comments
Acetaminophen	650–1000 mg po q4–6 h prn	3 gm/day in healthy patients 2 gm/day in hepatic impairment	No platelet (<2 gm/day) or anti-inflammatory effect. Adjust dose in alcoholic or hepatic disease
Ibuprofen	200–400 mg po q4–6 h prn	1200 mg/day (unless otherwise directed by physician)	*
Indomethacin	25–50 mg po q8–12 h prn	200 mg/day	*
Ketorolac	20 mg po followed by 10 mg po q4–6 h prn	Maximum 40 mg/day Max duration: 5 days	Adjust dose for patients > 65 yo or <50 kg
Meloxicam	7.5 mg po q24 h	15 mg/day	*
Naproxen	250–500 mg po q6–12 h prn	1250 mg/day (initial) then 1000 mg/day	*
Diclofenac, delayed release enteric coated	50–75 mg po q8–12 h prn	150 mg/day	*
Etodolac	200–400 mg po q6–8 h prn	1200 mg/day	*
Salsalate	500–1000 mg po q8–12 h prn	3000 mg/day	
Sulindac	150–200 mg po q12 h prn	400 mg/day	Safest NSAID in patients with renal impairment or on lithium

* Use NSAIDs with caution in renal/ hepatic failure, GI disease or patients receiving concurrent anticoagulants or lithium. Consider using PPI's (omeprazole 20mg daily-twice daily) for patients at high risk for developing upper GI bleeding associated with NSAID use.

continued

Non-Opioid Agents for Neuropathic Pain Syndromes[13]			
Generic Name	**Usual Adult Dosing**	**Maximum Dose**	**Comments**
Gabapentin	300 mg po daily and titrate prn (q8–12 h)	3600 mg/day	Adjust dose based on renal function
Carbamazepine	100-200 mg po q6–12 h	1200 mg/day	Avoid in patients with active liver disease. Used primarily for trigeminal neuralgia
Pregabalin	50–150 mg po q8–12 h	300 mg/day	Adjust dose based on renal function
Amitriptyline	25–150 mg po at bedtime	150 mg/day	Caution in elderly
Nortriptyline	10–75 mg po at bedtime	150 mg/day	Caution in elderly
Desipramine	25–200 mg po at bedtime	300 mg/day	Caution in elderly
Venlafaxine Ir Venlafaxine Xr	75–112.5 mg po BID 75–225 mg po daily	225 mg/day	Adjust dose based on renal function. Higher doses associated with ↑ BP
Duloxetine	30–60 mg po once daily	60 mg/day	Avoid if any hepatic insufficiency
Lidocaine Patch	1–3 patches applied ≤12 h in any 24 h period	3 patches for ≤12 h in any 24 h period	Irritated or broken skin ↑ risk of systemic absorption and toxicity
Lidocaine Ointment/Cream	Apply thin film to affected area 2–4/day	17–20 g/day	
Capsaicin Starting Dose is 0.025% Cream	Apply thin film to affected area 3–4/day		

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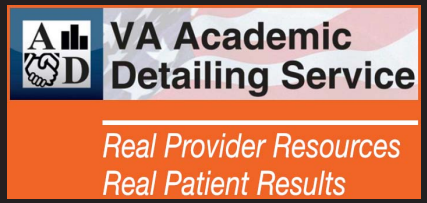

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This reference guide was created to be used as a tool for VA providers and is available to use from the Academic Detailing SharePoint. These are general recommendations only; specific clinical decisions should be made by the treating provider based on an individual patient's clinical condition.

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