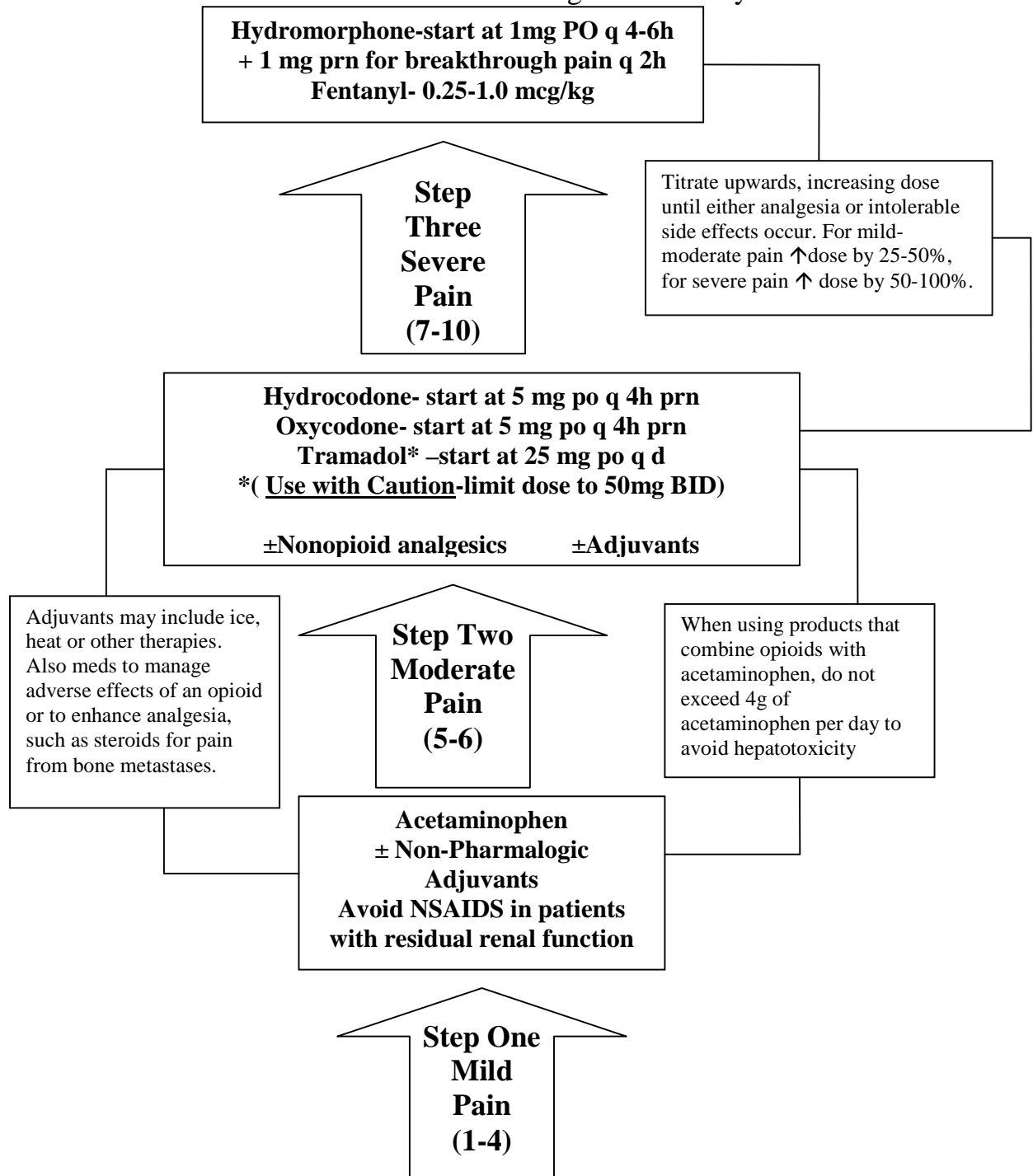


## Supplemental Figure 1 - Nociceptive Pain Algorithm

**Do Not Use:** Morphine, Codeine, Meperidine, Propoxyphene-renal excreted metabolites accumulate in CKD causing neurotoxicity.

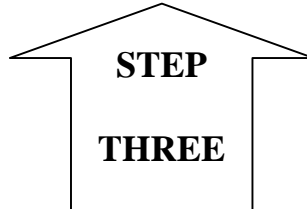


**Nociceptive Pain- aching, dull, throbbing, cramping, pressure**

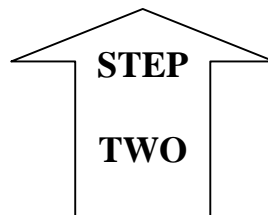
- Once analgesic requirements are stable for a few days, consider converting to long acting medication. Continue to provide short acting opioid for breakthrough pain (approx 1/10<sup>th</sup> the 24 hr dose q2hr prn).
- Remember to increase the breakthrough dose when increasing the long acting dose

## Neuropathic Pain Algorithm

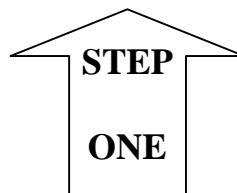
- Desipramine-10 mg PO QHS  
Titrate to adequate pain control or maximum dose of 150mg Po QHS
- If pain control remains inadequate, institute Nociceptive Pain Algorithm



- Pregabalin- Start 25 mg PO Daily with 1 supplement dose of 25mg or 50mg given following dialysis treatment \*\*
- If ineffective after 2-4 weeks, titrate off over one week and start Desipramine



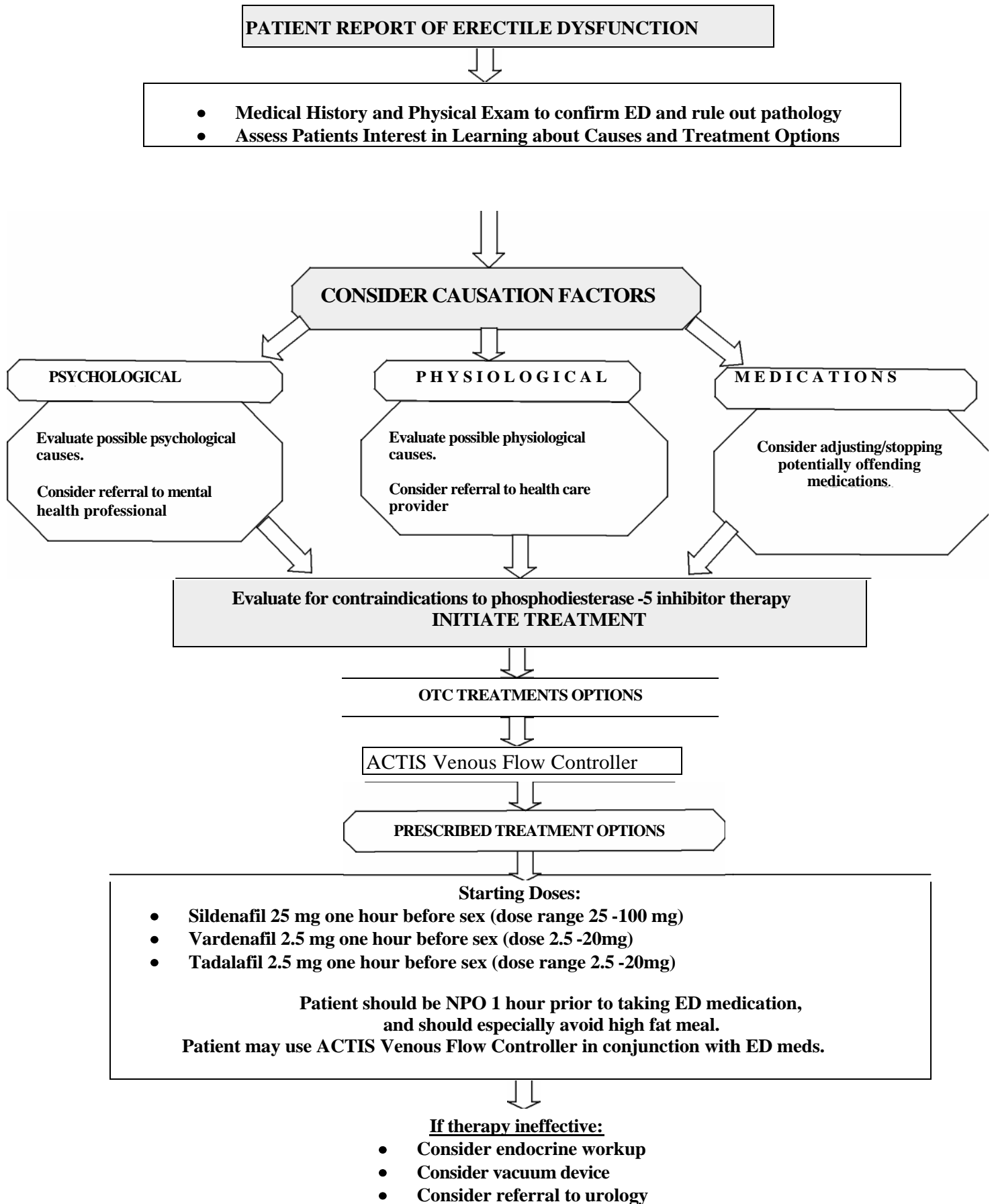
- Gabapentin-Start 100 mg QHS and increase weekly by 100mg per night to a maximum dose of 300 mg QHS
- If ineffective at maximum tolerated dose,discontinue and start Pregabalin



**Neuropathic Pain- tingling, numbness, burning, stabbing**

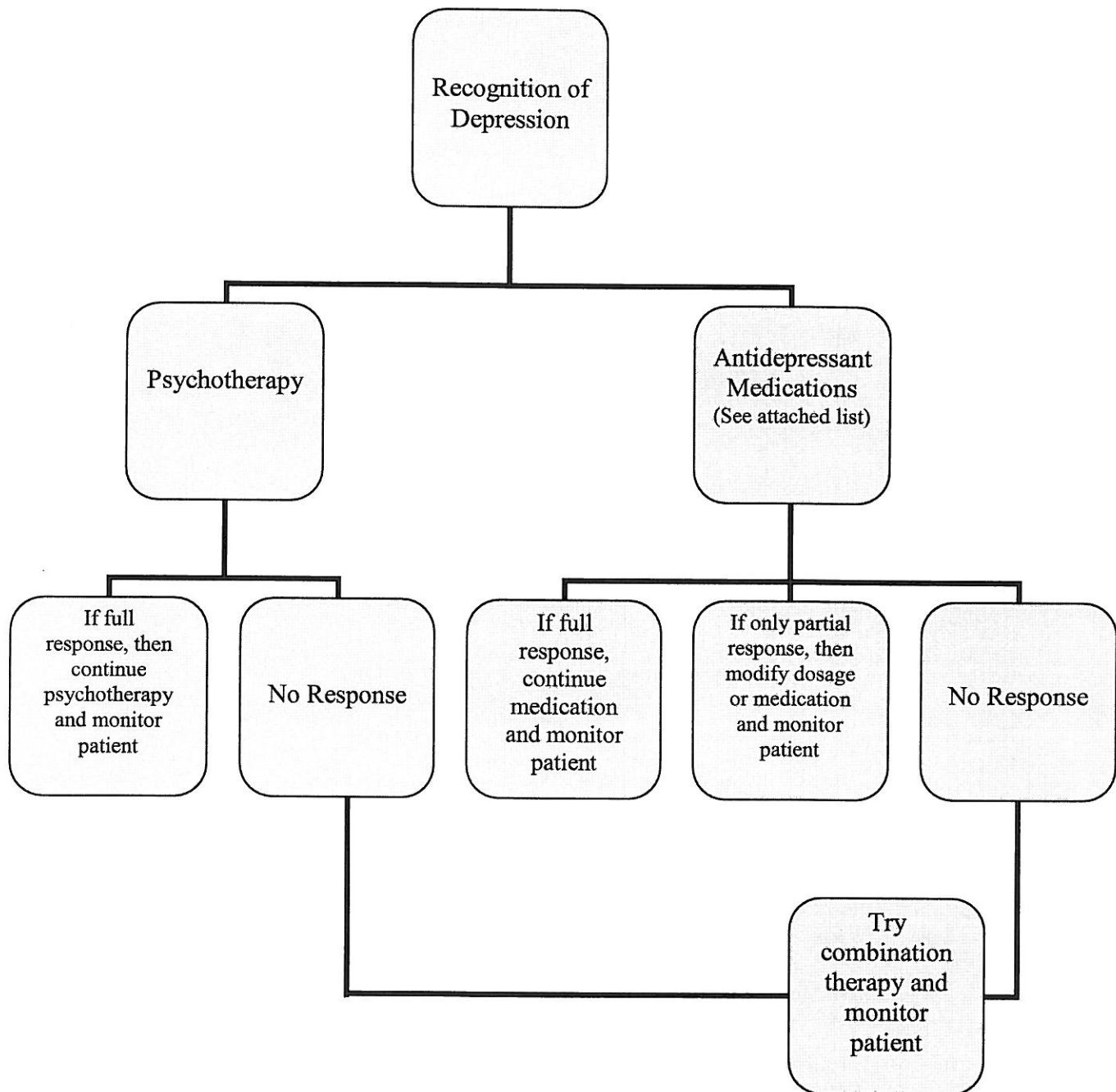
**\*\* To titrate dose for pain control, refer to  
<http://online.factsandcomparisons.com>**

Supplemental figure 2- Algorithm for treatment of ED



Supplemental Figure 3

### Algorithm for Depression



**Note:** Reduce dose of SSRIs, 5-HT<sub>2</sub> Receptor Antagonists, and weak serotonin reuptake inhibitors, dopamine, DNRI and TCA for those with renal failure

*Adapted from VA/DoD Clinical Practice Guideline  
For Management of Major Depressive Disorder*

SEROTONIN SELECTIVE REUPTAKE INHIBITORS (SSRIs)							
GENERIC	BRAND NAME	ADULT STARTING DOSE	MAX	EXCEPTION	SAFETY MARGIN	TOLERABILITY	EFFICACY
Citalopram	Celexa	20 mg	60 mg	Reduce dose for the elderly & those with renal or hepatic failure	No serious systemic toxicity even after substantial overdose. Drug interactions may include tricyclic antidepressants, carbamazepine & warfarin.	Nausea, insomnia, headache, fatigue, dizziness, sexual dysfunction, anorexia, weight loss, paresthesia, GI distress, tremor, restlessness, agitation, anxiety.	Response rate = 2 - 4 wks
Fluoxetine	Prozac	20 mg	80 mg				AM daily dosing. Can be started at an effective dose immediately.
Paroxetine	Paxil	20 mg	50 mg				
Sertraline	Zoloft	50 mg	200 mg				

First Line Antidepressant Medication

Drugs of this class differ substantially in safety, tolerability and simplicity when used in patients on other medications. Can work in TCA nonresponders. Useful in several anxiety disorders. Taper gradually when discontinuing these medications. Fluoxetine has the longer half-life.

SEROTONIN and NOREPINEPHRINE REUPTAKE INHIBITORS (SNRIs)							
GENERIC	BRAND NAME	ADULT STARTING DOSE	MAX	EXCEPTION	SAFETY MARGIN	TOLERABILITY	EFFICACY
Venlafaxine IR	Effexor IR	75 mg	175 mg	Reduce dose for the elderly & those with renal or hepatic failure	No serious systemic toxicity even after substantial overdose. Drug interactions may include tricyclic antidepressants, carbamazepine & warfarin.	Comparable to SSRIs at low dose. Nausea, dry mouth, headache, insomnia, constipation, dizziness, sexual dysfunction, anorexia, weight loss, paresthesia, GI distress, tremor, restlessness, agitation, anxiety.	Response rate = 2 - 4 wks (4 - 7 days at ~300 mg/day)
Venlafaxine XR	Effexor XR	75 mg	175 mg				BID or TID dosing with IR. Daily dosing with XR. Can be started at an effective dose (75 mg) immediately.

Dual action drug that predominantly acts like a Serotonin Selective Reuptake inhibitor at low doses and adds the effect of an Norepinephrine Selective Reuptake inhibitor at high doses. Possible efficacy in cases not responsive to TCA or SSRI. Taper dose prior to discontinuation.

SEROTONIN (5-HT <sub>2A</sub> ) RECEPTOR ANTAGONIST and WEAK SEROTONIN REUPTAKE INHIBITORS							
GENERIC	BRAND NAME	ADULT STARTING DOSE	MAX	EXCEPTION	SAFETY MARGIN	TOLERABILITY	EFFICACY
Nefazodone	Serzone	125 mg	600 mg	Reduce dose for the elderly & those with renal or hepatic failure	No serious systemic toxicity even after substantial overdose. Can interact with agents that decrease cytochrome P450 3A4 activity, resulting in increased plasma levels of nefazodone and its active metabolite, desmefazodone.	Nausea, dry mouth, headache, insomnia, constipation, dizziness, sexual dysfunction, anorexia, weight loss, paresthesia, GI distress, tremor, restlessness, agitation, anxiety.	Response rate = 2 - 4 wks
Trazodone	Desyrel	150 mg	600 mg				BID dosing. Requires dose titration.

Corrects sleep disturbance and reduces anxiety within one week.

DOPAMINE and NOREPINEPHRINE REUPTAKE INHIBITORS (DNRI)							
GENERIC	BRAND NAME	ADULT STARTING DOSE	MAX	EXCEPTION	SAFETY MARGIN	TOLERABILITY	EFFICACY
Bupropion - IR	Wellbutrin - IR	200 mg	450 mg	Reduce dose for the elderly & those with renal or hepatic failure	No serious systemic toxicity even after substantial overdose. Can interact with agents that decrease cytochrome P450 3A4 activity, resulting in increased plasma levels of bupropion and its active metabolite, hydroxybupropion.	Nausea, dry mouth, headache, insomnia, constipation, dizziness, sexual dysfunction, anorexia, weight loss, paresthesia, GI distress, tremor, restlessness, agitation, anxiety.	Response rate = 2 - 4 wks
Bupropion - SR	Wellbutrin - SR	150 mg	450 mg				BID / TID dosing. Requires dose titration.

Least likely antidepressant to result in a pt becoming manic. Do not use if there is a history of seizure disorder, head trauma, bulimia or anorexia. Can work at 200 mg.

TRICYCLIC ANTIDEPRESSANTS (TCAs) - Mainly Serotonin Reuptake Inhibitors							
GENERIC	BRAND NAME	ADULT STARTING DOSE	MAX	EXCEPTION	SAFETY MARGIN	TOLERABILITY	EFFICACY
Amiripryline *	Elavil, Endep *	50 - 100 mg	300 mg	Reduce dose for the elderly & those with renal or hepatic failure	Serious toxicity can result from OD. Slow system clearance. Can cause multiple drug/drug interactions.	Sedation, increased anticholinergic effects, orthostatic hypotension, cardiac conduction disturbances, arrhythmias & wt gain, dizziness, sexual dysfunction.	Response rate = 2 - 4 wks
Imipramine *	Tofranil *	75 mg	300 mg				Can be given QD. Monitor serum level after one week of treatment.
Doxepin *	Sinequan *	75 mg	300 mg				

These antidepressants are not recommended for use in the elderly. Highest response rates. TATCAs useful in chronic pain, migraine headaches & insomnia.

\* Tertiary Amine Tricyclic Antidepressants (TATCAs)

TRICYCLIC ANTIDEPRESSANTS (TCAs) - Mainly Norepinephrine Reuptake Inhibitors							
GENERIC	BRAND NAME	ADULT STARTING DOSE	MAX	EXCEPTION	SAFETY MARGIN	TOLERABILITY	EFFICACY
Desipramine *	Norpramin *	75 - 200 mg	300 mg	Reduce dose for the elderly & those with renal or hepatic failure	Serious toxicity can result from OD. Reserve Maprotiline as a second-line agent due to risk of seizures at therapeutic & nontherapeutic doses.	Generally Good	Response rate = 2 - 4 wks
Nortriptyline	Aventyl/Amelior	50 mg	150 mg				Therapeutic Levels: Desipramine 125-300 ng/mL, Nortriptyline 50-150 ng/mL.

Consider Desipramine or Nortriptyline first in the elderly if TCAs are necessary.

\* Secondary Amine Tricyclic Antidepressants (SATCAs)