



# Psychopharmacology Reference Cards



**MICHIGAN MEDICINE**  
UNIVERSITY OF MICHIGAN

**DEPARTMENT OF PSYCHIATRY**

Updated June 2022

# Antidepressants: General Safety and References

## General Safety Data for Pregnancy

Generally speaking, the literature shows that antidepressant use during pregnancy (as compared to untreated depression/anxiety during pregnancy), does not increase the risk of 1) congenital abnormalities, 2) preterm birth, or 3) babies being small for gestational age. Furthermore, there is no data to support that children exposed to antidepressants have increased rates of neurodevelopmental problems long term (including autism). There is some data that infants born to mothers taking antidepressants have higher rates of poor neonatal adaptation syndrome (babies being fussy/jittery soon after delivery); however, symptoms of this, if they occur at all, are generally mild and short-lived. Persistent pulmonary hypertension in newborns is sometimes listed as a potential side effect of in utero antidepressant exposure; however, the condition is very rare.

## General Safety Data for Breastfeeding

There is no evidence of short or long term risks to breastfed babies whose mothers are taking SSRIs or SNRIs.

## Pregnancy Resources

REPROTOX® is an information system developed by the Reproductive Toxicology Center for its members.

REPROTOX® contains summaries on the effects of medications, chemicals, infections, and physical agents on pregnancy, reproduction, and development. The REPROTOX® system was developed as an adjunct information source for clinicians, scientists, and government agencies. Visit [reprotox.org](http://reprotox.org) for more information.

## Lactation Resources

Hale's Medications & Mothers' Milk 2021: A Manual of Lactational Pharmacology – An Essential Reference Manual on the Transmission of Medicine into Breast Milk. 19th Edition by Dr. Thomas W. Hale PhD

Springer Publishing Company. Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Library of Medicine (US); 2006-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK501922/>

## References

“Pharmacologic Treatment of Perinatal Depression.” Mary C. Kimmel, MD, Elizabeth Cox, MD, Crystal Schiller, PhD, Edith Gettes, MD, Samantha Meltzer-Brody, MD, MPH. *Obstet Gynecol Clin N Am* 45, pages 419–440, published 2018. <https://doi.org/10.1016/j.ogc.2018.04.007>

# Antidepressants

| Generic (Trade)  | S: start dose(mg),<br>T: target dose(mg/day)  | Titration Schedule                                   | N: notes; S: side effects; R: risks   | P: pregnancy data;<br>L: lactation data   |
|--|---|--|---|---|
| <b>Fluoxetine (Prozac)</b>                             | S: 10-20, T: 20-60  | 10mg q 2-4 weeks                                     | N: long half-life—self tapering, S: can be activating   | P: safe, L: safe; likely greater amount in breast milk than other SSRIs (10%) although this does not correlate with harmful effects   |
| <b>Sertraline (Zoloft)</b>                             | S: 25-50, T: 100-200  | 25-50mg q 2-4 weeks                                  | S: can be activating or sedating, or cause emotional numbing; more GI effects than others   | P: safe, L: safe; negligible amounts transmitted into breast milk (<1%) although this does not correlate with better outcomes   |
| <b>Escitalopram (Lexapro)</b>                          | S: 2.5-5, T: 10-20  | 5-10mg q 2-4 weeks                                   | N: quite well tolerated   | P: safe, L: safe  |
| <b>Citalopram (Celexa)</b>                             | S: 10, T: 20-60   | 10mg q 2-4 weeks                                     | S: due to warnings about inc. Qtc, may consider getting EKG at doses above 40mg   | P: safe, L: safe  |
| <b>Mirtazapine (Remeron)</b>                           | S: 7.5, T: 15-45  | 7.5mg q 2-4 weeks                                    | N: causes sedation and increased appetite—helpful for anxious/depressed patients with insomnia who are not eating well<br><br>S: weight gain  | P: safe, L: safe  |
| <b>Duloxetine (Cymbalta)</b>                           | S: 30, T: 60-120  | 30mg q 2-4 weeks                                     | N: helpful for chronic/neuropathic pain and headaches S: can cause constipation   | P/L: safety/lactation data comparable to SSRI's   |
| <b>Venlafaxine (Effexor XR)</b>                        | S: 75, T: 150-300   | 75mg q 2-4 weeks                                     | N: avoid non XR formulation for ease of dosing S: may cause hypertension; can cause significant withdrawal symptoms when tapered-taper slowly   | P/L: safety/lactation data comparable to SSRI's   |
| <b>Bupropion (Wellbutrin IR, Wellbutrin XL, Zyban)</b> | IR: S: 37.5-75<br><br>T: 75 BID (this dose equivalent to 150mg of XL and may switch to this for ease of dosing)<br><br>XL: S: 150, T: 150-450 | IR: 37.5-75 q2-4 weeks<br><br>XL: 150mg q 2-4 weeks  | N: activating properties help with low energy/motivation/lack of focus. Can be used alone or to augment SSRI/SNRI. Not to exceed 450 mg (seizure risk). Helpful for smoking cessation in pregnancy. May help ADHD and other addictive disorders.<br><br>S: lowers seizure threshold—CONTRAINDICATED IN PATIENTS WITH SEIZURES. Can increase anxiety/irritability, so may opt to start slowly with IR formulation then if well tolerated, switch to XL. Be sure to have patients take in morning (XL) or morning and early afternoon (IR) to prevent sleep disruption. | P/L: safety/lactation data comparable to SSRI's   |
| <b>Paroxetine (Paxil, Paxil CR)</b>                    | Paxil: S: 10, T: 20-40<br><br>CR: S: 25   | Paxil: 10mg q 2-4 weeks<br><br>CR: 12.5 mg q 2 weeks | S: can be sedating, cause withdrawal effects due to short half life (CR form less likely to cause withdrawal).  | P: older data demonstrated potential 1.5-2.0 fold increase in risk of cardiovascular malformations, leading to a 2005 warning. Recent data show no consistent information to support teratogenic risks. L: safe |

# Mood Stabilizers: General Safety and References

## General Safety Data for Pregnancy

Because medications in this class have more risk associated with them and less data than other medications, decisions about using them in pregnancy should be made as a team by the mother and the physician. Benefits and risks should be weighed and ultimately, if a patient has historically only done well on medications with higher risk of teratogenicity (i.e., Lithium), it may be reasonable to continue that medication.

## General Safety Data for Breastfeeding

This class of medications, with the exception of lamotrigine, carries significant risk when used in breastfeeding. Therefore, mothers should avoid breastfeeding while on them (again, with the exception of lamotrigine), or do so only with close physician monitoring (lithium).

## Pregnancy Resources

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## Lactation Resources

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Springer Publishing Company. Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Library of Medicine (US); 2006-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK501922/>

## References

Larsen ER & Saric K. Pregnancy and bipolar disorder: the risk of recurrence when discontinuing treatment with mood stabilizers: a systematic review. *Acta Neuropsychiatr.* 29(5): pages 259-266, published 2017.

Poels, E. M. P., Bijma, H. H., Galbally, M., & Bergink, V. (2018). Lithium during pregnancy and after delivery: a review. *International Journal of Bipolar Disorders*, 6(1). <https://doi.org/10.1186/s40345-018-0135-7>

# Mood Stabilizers

| Generic (Trade)   | S: start dose(mg),<br>T: target dose(mg/day)   | Titration Schedule   | N: notes; S: side effects; R: risks   | P: pregnancy data; L: lactation data   |
|---|--|--|---|--|
| <b>Lithium</b><br>(Eskalith, Lithobid)  | S: 150-300<br><br>T: 900-1200, blood level 0.6-1.2 mEq/L (generally, although some assert that a higher target of 0.8 mEq/L should be aimed for in pregnancy due to increased stressors/risk of postpartum psychosis—see references) | 150-300mg q 3-7 days   | N: narrow therapeutic window<br><br>S: thyroid malfunction, toxicity with NSAID's, GI upset, tremor, excessive urination/thirst | P: small increase cardiac malformations (1.15 % vs 1.9%). Need to carefully monitor levels during pregnancy and delivery due to shifts in blood volume<br><br>L: high rate of excretion into breastmilk; breastfeeding not recommended or if mom wants to BF, mom/ pediatrician need to monitor carefully baby for tox effects (sedation, feeding problems, lethargy, seizures) and measure blood levels |
| <b>Valproic acid</b><br>(Depakote, Depakene)<br><br>DO NOT PRESCRIBE TO WOMEN OF CHILDBEARING AGE | S: 250-500, T: 500-1000, blood level 50-120 mg/L   | 250-500mg q 3-4 days   | S: weight gain, hair loss<br><br>R: hepatitis, pancreatitis   | P: risk of neural tube defects 10% esp in 1st trimester (as well as facial and cardiac abnormalities), IUGR, intellectual disability, neonatal toxicity. NOT RECOMMENDED<br><br>L: theoretical risk of infant hepatotoxicity / thrombocytopenia  |
| <b>Carbamazepine</b><br>(Tegretol)<br><br>DO NOT PRESCRIBE IN PREGNANCY/ BREASTFEEDING MOTHERS    | S: 100mg, T: 300-1200  | 100mg q 5-7 days   | S: glaucoma<br><br>R: Stevens-Johnson syndrome, agranulocytosis   | P: risk of defects 6% (neural tube, craniofacial), risk fetal vitamin K deficiency/bleeding, IUGR, neonatal toxicity. NOT RECOMMENDED<br><br>L: high levels in breastmilk—needed to monitor baby's bloodwork   |
| <b>Lamotrigine</b><br>(Lamictal)  | S: 25, T: 200-400  | 25mg/day x 2wks, then 50mg/day x 2 weeks, then 100mg/day; may increase in 100mg increments q2 weeks after this | N: regarded as first choice for mood stabilization, esp. for bipolar depression in pregnancy<br><br>R: Stevens-Johnson syndrome | P: no increased risk of malformation, some risk for neonatal toxicity (rare),<br><br>L: generally safe; infant levels are 30% of mom's dose; theoretical risk of SJS but no cases reported. Baby should be monitored for apnea, rash, drowsiness or poor sucking in which case toxicity should be considered (rare)  |
| <b>Topiramate</b><br>(Topamax)  | S: 25-50, T: 50-400  | 25-50mg q 3-7 days   | S: sedating<br><br>R: increased ammonia, metabolic acidosis, glaucoma, kidney stones  | P: some reports of increased risk of cleft palate, low birth weight. Avoid.<br><br>L: small case series showed no adverse effects; avoid if possible   |
| <b>Oxcarbamazepine</b><br>(Trileptal)   | S: 300, T: 300-2100  | 300mg q 3-7 days   | R: Stevens-Johnson syndrome   | P/L: data are limited but suggest similar risk to that of carbamazepine, so recommend avoiding in pregnancy and breastfeeding  |

# Antipsychotics/Neuroleptics: General Safety

## General Safety Data for Pregnancy

Antipsychotics have been shown to confer no increased risk of congenital malformations to babies exposed to them in utero, with the exception of risperidone, which seemed to confer some increased risk of overall and cardiac malformations. Less data is available on the effect of these medications on potential pregnancy complications.

## General Safety Data for Breastfeeding

Data are generally reassuring. Due to inverse relationship between dopamine and prolactin, some of these medications may cause increased breast milk production/galactorrhea.

Please also see references before including Reprotox, Hale's book, and LactMed.

## References

(RR 1.26) (Huybrechts KF, Hernández-Díaz S, Paterno E, et al. Antipsychotic Use in Pregnancy and the Risk for Congenital Malformations. JAMA Psychiatry. 2016;73(9):938–946).

# Antipsychotics/Neuroleptics

| Generic (Trade)                | S: start dose(mg),<br>T: target dose(mg/day) | Titration Schedule   | N: notes; S: side effects; R: risks   | P: pregnancy data; L: lactation data  |
|--------------------------------|--|----------------------|---|---|
| <b>Risperidone (Risperdal)</b> | S: 0.5-1, T: 1-6                             | 0.5-1mg q 3-5 days   | S: ↑prolactin, ↑metabolic risk  | P: may have slightly higher risk for cardiac malformations (see general safety data)<br><br>L: second line—limited data and higher excretion compared to other antipsychotics |
| <b>Aripiprazole (Abilify)</b>  | S: 1, T: 2-15                                | 1-5mg q 3-5 days     | S: akathisia, weight gain   | P: safe<br><br>L: limited data but reassuring so far; may have variable effects on breast milk production   |
| <b>Ziprasidone (Geodon)</b>    | S: 20 QD, T: 20 BID - 60 BID                 | 20mg BID q 3-5 days  | N: relatively weight neutral. Must take with 500 calorie meal for absorption<br><br>S: ↑Qt <sub>c</sub>   | P: no controlled human data so far<br><br>L: very limited data  |
| <b>Quetiapine (Seroquel)</b>   | S: 12.5-25, T: 12.5-300                      | 12.5-50mg q 3-5 days | N: may use in small doses as PRN for anxiety (ie 12.5mg TID PRN), moderate doses for sleep aid (25-50mg), higher doses for mood stabilization (100-300mg),<br><br>S: sedation, weight gain, dry mouth | P: safe<br><br>L: safe; very good data  |
| <b>Olanzapine (Zyprexa)</b>    | S: 2.5, T: 2.5-10                            | 2.5-5mg q 3-5 days   | S: ↑metabolic risk, sedation  | P: safe<br><br>L: safe  |
| <b>Paliperidone (Invega)</b>   | S: 1, T: 3-9                                 | 1-2mg q 3-5 days     | N: active metabolite of risperidone<br><br>S: ↑prolactin  | P: limited data but reassuring so far<br><br>L: limited data  |
| <b>Lurasidone (Latuda)</b>     | S: 20, T: 40-120                             | 20mg q 3-5 days      | N: must be taken with at least 350cal meal. Relatively weight neutral<br><br>S: some sedation   | P: somewhat limited data, but reassuring so far<br><br>L: appears to have very low excretion into breastmilk but data are limited   |
| <b>Brexpiprazole (Rexulti)</b> |  |                      |   | NEWER AGENT WITH LIMITED DATA IN PREGNANCY AND LACTATION—AVOID IF POSSIBLE  |
| <b>Cariprazine (Vraylar)</b>   |  |                      |   | NEWER AGENT WITH LIMITED DATA IN PREGNANCY AND LACTATION—AVOID IF POSSIBLE  |

# Anxiolytics and Sleep Aids

| Generic (Trade)                             | S: start dose(mg),<br>T: target dose(mg/<br>day)          | Frequency  | N: notes; S: side effects; R: risks   | P: pregnancy data; L: lactation data  |
|---|---|--|---|---|
| <b>Alprazolam (Xanax)</b><br><br>DO NOT USE | S: 0.25-0.5, M: 1 TID                                     |  | <b>N:</b> prefer not to use this short acting medication due to increased risk of rebound anxiety and tolerance/addiction   | <b>P:</b> avoid combining with antidepressants in first TM to prevent risk malformation (see references). Use low dose in late pregnancy or BF. (Risk with high doses near time of delivery—floppy baby syndrome and infant sedation.)<br><br><b>L:</b> okay in small doses, in high doses risk infant sedation |
| <b>Lorazepam (Ativan)</b>                   | S: 0.25-0.5, M: 1 TID                                     | May take up to 3x/day; prefer standing dosing over PRN | <b>N:</b> highly effective short term medication, especially upon initiation of SSRI for anxiety and for rumination. Not recommended for patients with a history of substance abuse due to addictive potential.   | same as above   |
| <b>Clonazepam (Klonopin)</b>                | S: 0.25-0.5, M: 1 TID                                     | May take up to 3x/day; prefer standing dosing over PRN | <b>N:</b> longer acting than Ativan—may provide better coverage for consistently highly anxious patients. Highly effective short term medication, especially upon initiation of SSRI and for anxiety and for rumination. Not recommended for patients with a history of substance abuse due to addictive potential.<br><br><b>S:</b> may be more sedating than alprazolam and lorazepam | same as above   |
| <b>Zolpidem (Ambien, Ambien CR)</b>         | <b>Ambien:</b> S: 5, M: 10<br><b>CR:</b> S: 6.25, M: 12.5 | Bedtime  | <b>N:</b> good option for patient with history of substance abuse; <b>S:</b> sedation   | <b>P:</b> limited data, but so far no evidence for increased risk of malformation<br><br><b>L:</b> limited data; consider alternatives  |
| <b>Gabapentin (Neurontin)</b>               | S: 100, M: 900 TID  | May take up to 3x/day, PRN                             | <b>N:</b> good option for patient with history of substance abuse; <b>S:</b> sedation   | <b>P:</b> limited data<br><br><b>L:</b> limited data but reassuring so far  |
| <b>Trazodone (Desyrel)</b>                  | S: 25, M: 150-200   | At bedtime PRN   | <b>S:</b> few with exception of potential grogginess; no addictive potential  | <b>P:</b> safe (similar profile to SSRI's)<br><br><b>L:</b> safe (similar profile to SSRI's)  |

# Anxiolytics and Sleep Aids

| Generic (Trade)                   | S: start dose(mg);<br>M: max dose(mg) | Frequency                             | N: notes; S: side effects; R: risks  | P: pregnancy data; L: lactation data  |
|-----------------------------------|---------------------------------------|---------------------------------------|--|---|
| <b>Diphenhydramine (Benadryl)</b> | S: 25, M: 50                          | At bedtime PRN                        | S: sedation/grogginess; no addictive potential   | P: safe<br>L: can interfere with lactation, generally safe in occasional small doses    |
| <b>Doxylamine (Unisom)</b>        | S: 25, M: 25                          | At bedtime PRN                        | S: sedation/grogginess; no addictive potential   | P: safe<br>L: can interfere with lactation, generally safe in occasional small doses    |
| <b>Hydroxyzine (Atarax)</b>       | S: 10-25 M: 50                        | At bedtime PRN or TID PRN for anxiety | N: similar properties to diphenhydramine. No addictive potential so good option for anxious patient with history of substance abuse;<br>S: sedation, dry mouth | P: limited data,<br>L: may cause infant drowsiness, may decrease breast milk production |
| <b>Melatonin</b>                  | S: 1-3, M: 5                          | At bedtime (or a little before), PRN  | S: potential grogginess  | P: limited data but reassuring so far<br>L: limited data but reassuring so far          |
| <b>Quetiapine (Seroquel)</b>      | S: 12.5, M: 50 TID                    | May take up to 3x/day, PRN            | N: no addictive potential, good option for patient with history of substance abuse;<br>S: sedation, weight gain  | P: safe<br>L: safe; very good data  |

## General information

Anti-anxiety medication taken on an as needed basis can play an important role in perinatal psychiatry due to the severity and acuity of anxiety that can be experienced during the perinatal period. Because most all anxiolytic medications can have a side effect of sedation, counsel patients to take first doses when someone else is present, if possible. Patients should not sleep in bed with their baby when taking these medications. Let patients know that you plan to eventually taper off of this medication. Preferentially prescribe long-acting anxiolytics as standing dose (over as needed delivery).

Sleeping medications can be quite useful in the perinatal period given the frequent complaint of insomnia. Many women are understandably worried about taking these medications for fear of not waking up when the baby wakes in the night. For this reason we reassure patients that we are starting at the lowest doses and suggest that they try these medications when someone else is present who could wake up with the baby if needed. Patients should not sleep in bed with their baby when taking these medications.

Many of these medications are quite safe in breastfeeding, although any baby whose mother is taking an anxiolytic or sedating medications should be monitored for drowsiness. Additionally, counsel patients that medications with antihistamine properties (diphenhydramine, doxylamine, hydroxyzine) may decrease breast milk production. Also see Reprotox, Hale's book, LactMed.

## References

Grigoriadis, S., Graves, L., Peer, M., Mamisashvili, L., Dennis, C. L., Vigod, S. N., Steiner, M., Brown, C., Cheung, A., Dawson, H., Rector, N., Guenette, M., & Richter, M. (2019). Benzodiazepine Use During Pregnancy Alone or in Combination With an Antidepressant and Congenital Malformations. *The Journal of Clinical Psychiatry*, 80(4). <https://doi.org/10.4088/jcp.18r12412>

# Stimulants for Management of ADHD

## General Safety Data for Pregnancy and Breastfeeding

Data regarding use of stimulants for the treatment of ADHD in pregnancy include:

- no significant concerns for teratogenicity
- questionable risk of miscarriage
- increased risk of prematurity
- some increased risk of adverse placental outcomes (preeclampsia, abruption)
- some increased risk of gestational hypertension
- some increased risk of NICU admission and CNS disorders (seizure, NOS), etc
- data are lacking on long term neurodevelopmental effects

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- no significant concerns for teratogenicity
- questionable risk of miscarriage
- increased risk of prematurity
- some increased risk of adverse placental outcomes (preeclampsia, abruption)
- some increased risk of gestational hypertension
- some increased risk of NICU admission and CNS disorders (seizure, NOS), etc
- data are lacking on long term neurodevelopmental effects

General considerations

- Aim for discontinuation in pregnancy if patient able to function without it. If not, aim for lowest dose needed
- Consider decreasing by small increments weekly when trying to taper down/off
- Long acting formulations have less potential to be abused
- Higher doses may increase risk for psychosis, especially with the amphetamine class
- Let patients know that long acting formulations should not be crushed, cut or chewed

The decision about whether to prescribe stimulants during the perinatal period should be made jointly with the patient after sharing information about the risks and benefits. For a good review article and demonstration of shared decision making, please reference this article:

- Baker, A. S., & Freeman, M. P. (2018). Management of Attention Deficit Hyperactivity Disorder During Pregnancy. *Obstetrics and Gynecology Clinics of North America*, 45(3), 495–509. <https://doi.org/10.1016/j.ogc.2018.04.010>

You may also reference the section in the [MC3 Perinatal Provider Toolkit](#) entitled “[Management of ADHD in the Perinatal Period.](#)”

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The information on these cards is intended to offer general guidelines on psychotropic medications used to treat behavioral health conditions. It is not a substitute for specific professional medical advice.

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