Methylphenidate

Selected References:

- Al Hasan S, et al. 2026. Prescription Stimulant Continuation in Pregnancy and Birth Outcomes. J Atten Disord 30(3):315-328.
- Aliakbari F, et al. 2022. Relationship between long-term use of Ritalin and semen parameters in patients referred to psychiatric centres. First International Journal of Andrology, 54(11):1-6.
- Baker AS, et al. 2018. Management of attention deficit hyperactivity disorder during pregnancy. Obstet Gynecol Clin North Am, 45(3):495-509.
- Bateman B, et. al. 2015. Attention deficit hyperactivity medications during pregnancy and the risk of congenital cardiac malformations: A cohort study, abstracts, 368. Pharmacoepidemiol Drug Saf, 24:1–587.
- Bello G, et al. 2022. Successful lactation after resuming methylphenidate in a woman with narcolepsy. J Clin Sleep Med 18:1891–1894.
- Besag F, 2014. ADHD treatment and pregnancy. Drug Saf, 37:397-408.
- Bolea-Alamanac B et. al. 2014. Methylphenidate use in pregnancy and lactation: a systematic review of evidence. Br J of Clin Pharm, 77(1):96-101.
- Briggs G, et. al. 2017. Drugs in pregnancy and lactation: a reference guide to fetal and neonatal risk. Tenth edition. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins Health.
- Bro SP, et. al. 2015. Adverse pregnancy outcomes after exposure to methylphenidate or atomoxetine during pregnancy. Clinical Epi, 7:139-147.
- Camacho X, et al. 2023. The association between psychostimulant use in pregnancy and adverse maternal and neonatal outcomes: results from a distributed analysis in two similar jurisdictions. Int J Epidemiol 52(1):190-202.
- Cohen JM, et al. 2017. Placental complications associated with psychostimulant use in pregnancy. Obstet Gynecol. 130(6):1192-1201.
- Collin-Levesque L, et al. 2018. Infant exposure to methylphenidate and duloxetine during lactation: A case report. Breastfeed Med 13:221–225.
- Debooy, VD. 1993. Intravenous pentazocine and methylphenidate abuse during pregnancy. Am J dis Child 147(10):1062-1065.
- Diav-Citrin, O et. al. 2016. Methylphenidate in Pregnancy: A multicenter, prospective, comparative, observational study. J Clin Psychiatry, 77(9):1176-1181.
- Dideriksen D, et. al. 2013. First trimester in utero exposure to methylphenidate. Basic and Clin Pharm and Tox, 112:73-76.
- Golub M, et al. 2005. NTP CERHR Expert Panel Report on the reproductive and developmental toxicity of amphetamine and methamphetamine. Birth Defects Res B Dev Reprod Toxicol, 74(6):471-584.
- Hackett LP, et al. 2005. Infant dose and safety of breastfeeding for dexamphetamine and methylphenidate in mothers with attention deficit hyperactivity disorder. Ther Drug Monit 27:220–221.
- Hackett LP, et al. 2006. Methylphenidate and breast-feeding. Ann Pharmacother 40:1890–1891.
- Haervig KB, et. al. 2014. Use of ADHD medication during pregnancy from 1999-2010: a Danish register-based study. Pharmacoepidemiol and Drug Saf, 23:526-533.
- Humphreys C, et. al. 2007. Exposure to attention deficit hyperactivity disorder medications during pregnancy. Can Fam Physician, 53:1153-1155.
- Huybrechts KF, et al. 2018. Association between methylphenidate and amphetamine use in pregnancy and risk of congenital malformations: a cohort study from the International Pregnancy Safety Study Consortium. JAMA Psychiatry, 75(2):167-175.
- Ilett KF, et. al. 2006. Transfer of dexamphetamine into breast milk during treatment for attention deficit

hyperactivity disorder. Br J of Clin Pharm, 63(3):371-375.

- Kallen B, et. al. 2013. The use of central nervous system active drugs during pregnancy. Pharmaceuticals, 6:1221-1286.
- Kim J, et al. 2025. Managing attention-deficit/hyperactivity disorder in a breastfeeding mother: A case report. Pharmacotherapy 45:529–534.
- Louik C, et. al. 2015. Increasing use of ADHD medications in pregnancy. Pharmacoepidemiol Drug Saf, 24(2):218-220.
- Madsen KB, et al. 2023. In utero exposure to ADHD medication and long-term offspring outcomes. Mol Psychiatry, 28(4):1739-1746.
- Madsen KB, et al. 2025. In utero exposure to methylphenidate, amphetamines and atomoxetine and offspring neurodevelopmental disorders – a population-based cohort study and meta-analysis. Mol Psychiatry 30(9): 3885-3894.
- Malo J et. al. 2015. ADHD drugs, pregnancy and lactation—increasing inquiries and need for more safety data. Birth Def Res Pt A, 103:458-464.
- Ornoy A, et al. 2020. The effects of drugs used for the treatment of attention deficit hyperactivity disorder (ADHD) on pregnancy outcome and breast feeding: a critical review. Curr Neuropharmacol, Online ahead of print.
- Pottegard A, et. al. 2014. First-trimester exposure to methylphenidate: a population-based cohort study. J Clin Psychiatry, 75(1):e88-93.
- Spigset O, et. al. 2007. Excretion of methylphenidate in breast milk. Am J Psychiatry, 164:348.
- Suarez, EA, et al. 2024. Prescription stimulant use during pregnancy and risk of neurodevelopmental disorders in children. JAMA Psychiatry, e235073.
- Szpunar MJ, et al. 2023. Risk of major malformations in infants after first-trimester exposure to stimulants. J Clin Psychopharmacol, 43:326–332.
- Upadhyaya HP, et al. 2003. Neuroendocrine and behavioral responses to dopaminergic agonists in adolescents with alcohol abuse. Psychopharmacology (Berl) 166:95–101.
- Wajnberg R, et. al. 2011. Pregnancy outcome after in-utero exposure to methylphenidate: a prospective comparative cohort study. Repro Tox, 31:255-268.

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Methylphenidate

Selected References:

- Diav-Citrin et al. 2003. Pregnancy outcome after gestational exposure to loratadine or antihistamines: a prospective controlled cohort study. J Allergy Clin Immunol 111(6):1239-1243.
- Gilboa SM, et al. 2009. National Birth Defects Prevention Study: Use of antihistamine medications during early pregnancy and isolated major malformations. Birth Defects Res A Clin Mol Teratol 85(2):137-150.
- Gilboa SM, et al. 2014. Antihistamines and birth defects: a systematic review of the literature. Expert Opin Drug Saf 13(12): 1667-1698.
- Gonzalez-Estrada A et al. 2016. Allergy medications during pregnancy. American J Med Sci 352(3):326-331.
- Hilbert J, et al. 1988. Excretion of loratadine in human breast milk. J Clin Pharamacol 28:234-239.
- Kallen, B. 2005. Methodologic issues in the epidemiologic study of the teratogenicity of drugs. Congenit Anom (Kyoto) 45: 44-51.
- Kallen B, Otterblad Olausson P. 2001. Monitoring of maternal drug use and infant congenital malformations. Does loratadine cause hypospadias? Int J Risk Saf Med 14(3-4):115-119.
- Kallen B, Otterblad Olausson P. 2006. No increased risk of infant hypospadias after maternal use of loratadine in early pregnancy. Int M Med Sci 3(3):106-107.
- Keles N. 2004. Treatment of allergic rhinitis during pregnancy. Am J Rhinol 18(1):23-28.
- Li Q, et al. 2013. Assessment of antihistamine use in early pregnancy and birth defects. J Allergy Clin Immunol Pract. 1(6):666-74.e1.
- Med Lett Drugs Ther. 2019. OTC drugs for seasonal allergies; 61(1570):57-60.
- Merlob P, Stahl B. 2002. Prospective follow-up of adverse reactions in breast-fed infants exposed to loratadine treatment (1999-2001). BENTIS Newsletter Number 10: 43-51.
- Moretti M, et al. 2003. Fetal safety of loratadine use in the first trimester of pregnancy: A multicenter study. J Allergy Clin Immunol. 111(3) 479-483.
- Pedersen L, et al. 2006b. Maternal use of loratadine during pregnancy and risk of hypospadias in offspring. Int J Med Sci 3(1) 21-25.
- Schwarz EB et al. 2008. Risk of hypospadias in offspring of women using loratadine during pregnancy: a systematic review and meta-analysis. Drug Saf 31(9):775-788.
- Werler M, et al. 2004. Evaluation of an association between loratadine and hypospadias – United States, 1997-2001. MMWR 53(10):219-221.

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Methylphenidate

Selected References:

- Bjørk M. et al. 2002. Association of Prenatal Exposure to Antiseizure Medication With Risk of Autism and Intellectual Disability. JAMA Neurol. 79(7):672–681. doi:10.1001/jamaneurol.2022.1269
- Blotiere PO. et al. 2020. Risk of early neurodevelopmental outcomes associated with prenatal exposure to the antiepileptic drugs most commonly used during pregnancy: a French nationwide population-based cohort study. BMJ Open 10(6).
- Brannon, GE. et al. 2000. Anorgasmia in a patient with bipolar disorder type 1 treated with gabapentin. J Clin Psychopharmacol. 20(3):379-81.
- Carrasco M, et al. 2015. Neonatal gabapentin withdrawal syndrome. Pediatr Neurol. 53:445-447
- Desrochers, B. et al. 2024. Risks of congenital malformations and neonatal intensive care unit admissions with gabapentin use in pregnancy: A cohort study and scoping review with meta-analysis. *Paediatr Perinat Epidemiol*. 38,6: 486-494. doi:10.1111/ppe.13086
- FDA Drug Label. Gabapentin. Food and Drug Administration. Updated date: 2025-05-23.
- Fujii H. et al. 2013. Pregnancy outcomes following gabapentin use: results of a prospective comparative cohort study. Neurology.80(17):1565-1570. doi:10.1212/WNL.0b013e31828f18c1
- Grant AC. 2002. Gabapentin-induced anorgasmia in women. Am J Psychiatry. 159(7):1247.
- Hernandez-Diaz S. et al., 2025. Use of Antiseizure Medications Early in Pregnancy and the Risk of Major Malformations in the Newborn. Neurology. 12;105(3): e213786. doi: 10.1212/WNL.0000000000213786.
- Huybrechts, KF. et al. (2017). Risk of neonatal drug withdrawal after intrauterine co-exposure to opioids and psychotropic medications: cohort study. Bmj. 2017;358:j3326. doi:10.1136/bmj.j3326.
- Johannessen SI, Helde G, Brodtkorb E. Levetiracetam concentrations in serum and in breast milk at birth and during lactation. Epilepsia. 2005;46:775–7.
- Kaufman KR, Struck PJ. 2011. Gabapentin-induced sexual dysfunction. Epilepsy Behav. 21(3):324-6.
- Kristensen JH. et al. 2006. Gabapentin and breastfeeding: A case report. J Hum Lact. 22:426–8.
- Linnebank M, et al. 2011. Antiepileptic drugs interact with folate and vitamin B12 serum levels. Ann Neurol; 69(2):352-9.
- Loudin, S, et al. 2017. An Atypical Withdrawal Syndrome in Neonates Prenatally Exposed to Gabapentin and Opioids. Clinical and Laboratory Observations. 181:286-288.
- Ohman I. et al. 2005. Pharmacokinetics of gabapentin during delivery, in the neonatal period, and lactation: Does a fetal accumulation occur during pregnancy? Epilepsia. 46:1621–4.
- Ohman I. et al. 2009. Gabapentin kinetics during delivery, in the neonatal period, and during lactation. Epilepsia. 50 (Suppl. 10):108. Abstract.
- Pack AM. et al. 2024. Teratogenesis, perinatal, and neurodevelopmental outcomes after in utero exposure to

antiseizure medication: practice guideline from the AAN, AES, and SMFM. Neurology. 102(11):e209279.
- Patorno E, et al. 2020. Gabapentin in pregnancy and the risk of adverse neonatal and maternal outcomes: A population-based cohort study nested in the US Medicaid Analytic eXtract dataset. PLoS Med. 17(9):e1003322.

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Methylphenidate

Selected References:

- Ailes EC, et al, & The National Birth Defects Prevention Study. 2016. Association between antibiotic use among pregnant women with urinary tract infections in the first trimester and birth defects, National Birth Defects Prevention Study 1997 to 2011. Birth Defects Res A Clin Mol Teratol; 106(11):940–949.
- Ansaldi Y, et al. 2023. Urinary tract infections in pregnancy. Clin Microbiol Infect; 29(10):1249–1253.
- Ben David S, et al. 1995. The safety of nitrofurantoin during the first trimester of pregnancy: meta-analysis. Fundam Clin Pharmacol; 9(5):503–507.
- Boissiere-O'Neill T, et al. 2025. Exposure to Systemic Antimicrobials During Pregnancy and Risk of Miscarriage: A Population-Based Registry Study. BJOG: doi: 10.1111/1471-0528.18155. Online ahead of print.
- Bookstaver PB, et al. 2015. A Review of Antibiotic Use In Pregnancy. Pharmacotherapy, 35(11):1052-1062.
- Bruel H, et al. 2000. Anémie hémolytique chez un nouveau-né après prise maternelle de nitrofurantoïne en fin de grossesse [Hemolytic anemia in a newborn after maternal treatment with nitrofurantoin at the end of pregnancy]. Arc Pediatr; 7(7):745–747.
- Chang E, et al. 2005. Urinary Tract Infections are Associated with an Increased Risk of Preeclampsia. American Journal of Obstetrics and Gynecology, 193(6):S71.
- Christensen B. 2000. Which antibiotics are appropriate for treating bacteriuria in pregnancy? J Antimicrob Chemother; 46 Suppl A:29–34.
- Crider KS, et al. 2009. Antibacterial medication use during pregnancy and risk of birth defects: National Birth

Defects Prevention Study. Arch Pediatr Adolesc Med; 163(11):978–985.

- Czeizel AE, et al. 2001. Nitrofurantoin and congenital abnormalities. Eur J Obstet Gynecol Rep Biol; 95(1):119–126.
- Damkier P, et al. 2019. In utero exposure to antibiotics and risk of congenital malformations: a population-based study. Am J Obstet Gynecol; 221(6):648.e1–648.e15.
- de Jonge L, et al. 2013. Identifying associations between maternal medication use and birth defects using a case-population approach: an exploratory study on signal detection. Drug Saf; 36(11):1069–1078.
- Gardner JS, et al. 1998. Maternal exposure to prescription and non-prescription pharmaceuticals or drugs of abuse and risk of craniosynostosis. Int J Epidemiol; 27(1):64–67.
- Gerk PM, et al. 2001. Active transport of nitrofurantoin into human milk. Pharmacotherapy; 21(6):669-675.
- Goldberg O, et al. 2013. Exposure to nitrofurantoin during the first trimester of pregnancy and the risk for major malformations. J Clin Pharmacol. 53(9):991–995.
- Goldberg O, et al. 2015. Exposure to nitrofurantoin during early pregnancy and congenital malformations: a systematic review and meta-analysis. J Obstet Gynaecol Can; 37(2):150–156.
- Hailey FJ, et al. 1983. Foetal safety of nitrofurantoin macrocrystals therapy during pregnancy: a retrospective analysis. J Int Med Res; 11(6):364–369.
- Hjorth S, et al. 2022. Prenatal exposure to nitrofurantoin and risk of childhood leukaemia: a registry-based cohort study in four Nordic countries. Int J Epidemiol; 51(3):778-788.
- Källén BAJ, Olausson P0. 2003. Maternal drug use in early pregnancy and infant cardiovascular defect. Rep Toxicol; 17(3):255–261.
- Källén B, Robert-Gnansia E. 2005. Maternal drug use, fertility problems, and infant craniostenosis. Cleft Palate Craniofac J; 42(6):589–593.
- Kass EH. 1960. Bacteriuria and pyelonephritis of pregnancy. Arch Intern Med; 105:194-198.
- Laspro M, et al. 2025. Association of commonly prescribed antepartum medications and incidence of orofacial clefting. Cleft Palate Craniofac J; 62(7):1164-1174.
- Lenke RR, et al. 1983. Pyelonephritis in pregnancy: a prospective randomized trial to prevent recurrent disease evaluating suppressive therapy with nitrofurantoin and close surveillance. Am J Obstet Gynecol; 146(8):953–957.
- Lind JN. 2012. Maternal Medication Use and Risk of Hypospadias – An Exposure Spectrum Approach. Georgia State University, Thesis.
- Lumbiganon P, et al. & World Health Organization Asymptomatic Bacteriuria Trial Group. 2009. One-day compared with 7-day nitrofurantoin for asymptomatic bacteriuria in pregnancy: a randomized controlled trial. Obst Gynecol; 113(2 Pt 1):339–345.
- Macrobid® Medication label. https://dailymed.nlm.nih.gov/dailymed/fda/fdaDrugXsl.cfm?setid=8f270a9f-12a1-44d4-bc7e-873613555801&type=display.
- McGrady GA, et al. 1985. Maternal urinary tract infection and adverse fetal outcomes. Am J Epidemiol; 121(3):377-381.
- Miller JE, et al. 2013. Maternal Use of Antibiotics and the Risk of Childhood Febrile Seizures: A Danish Population-Based Cohort. PloS One; 8(4):e61148.
- Nelson WO & Bunge RG. 1957. The effect of therapeutic dosages of nitrofurantoin (furadantin) upon spermatogenesis in man. J Urol; 77(2):275–281.
- Osmundson SS, et al. 2025. First-Trimester Antibiotic Use for Urinary Tract Infection and Risk of Congenital Malformations. JAMA Netw Open; 8(7):e2519544.
- Patel J, et al. & National Birth Defects Prevention Study. 2023. Fever and antibiotic use in maternal urinary tract infections during pregnancy and risk of congenital heart defects: Findings from the National Birth Defects Prevention Study. Birth Defects Res; 116(1):e2281
- Patel J, et al. 2024. Fever and antibiotic use in maternal urinary tract infections during pregnancy and risk of congenital heart defects: Findings from the National Birth Defects Prevention Study. Birth Defects Res;

116(1):e2281.
- Philpot J, et al. 1995. Congenital symmetrical weakness of the upper limbs resembling brachial plexus palsy: a possible sequel of drug toxicity in first trimester of pregnancy? Neuromuscul Disord; 5(1):67–69.
- Puhó EH, et al. 2007. Drug treatment during pregnancy and isolated orofacial clefts in Hungary. Cleft Palate Craniofac J; 44(2):194–202.
- The American College of Obstetrics and Gynecology (ACOG). 2023. Urinary Tract Infections in Pregnant Individuals. Obstet Gynecol; 142(2):435-445.
- Zao J, et al. 2014. Using nitrofurantoin while breastfeeding a newborn. Can Fam Physician; 60(6):539–540.

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Methylphenidate

Selected References:

- Alzahrani MA, et al. 2023 Effect of St. John’s wort (Hypericum perforatum L.) on Male Sexual and Reproductive Health: A Narrative Review. Biomedicines. 11(10):2800.
- Barrett B, et al. 1999. Assessing the risks and benefits of herbal medicine: An overview of scientific evidence. Altern Ther Health Med 5(4):40-49.
- Clauson KA, et al. 2008. Clinically relevant safety issues associated with St. John’s wort product labels. BMC Complement Altern Med; 8:42.
- Fetrow CW and Avila JR. 1999. Professional’s Handbook of Complementary and Alternative Medicines. Springhouse, PA: Springhouse Corporation.
- Grush LE, et al. 1998. St. John’s wort During Pregnancy. JAMA 280(18):1566.
- Kaygusuz M, et al. 2021. TCM use in pregnant women and nursing mothers: A study from Turkey. Complement Ther Clin Pract. 42:101300.
- Klier CM, et al. 2006. St. John’s wort (Hypericum perforatum) and breastfeeding: plasma and breast milk

concentrations of hyperforin for 5 mothers and 2 infants. J Clin Psychiatry. 67(2):305-309.

- Kolding L, et al. 2015. Hypericum perforatum use during pregnancy & pregnancy outcome. Reprod Toxicol; 58:234-7.
- LeeA, et al. 2003. The safety of St. John's wort (Hypericum perforatum) during Breast-feeding. J Clin Psychiatry 64(8):966-968.
- McCloskey LR, et al. 2021. Contraception for Women with Psychiatric Disorders. Am J Psychiatry; 178(3):247-255.
- Moretti ME, et al. 2009 Evaluating the safety of St. John's wort in human pregnancy. Reprod Toxicol. 28(1):96-99.
- Nordeng H and Havnen GC. 2004. Use of herbal drugs in pregnancy: a survey among 400 Norwegian women. Pharmacoepidemiol Drug Safety 13:371-380.
- Ondrizek RR, et al. 1999. Inhibition of human sperm motility by specific herbs used in alternative medicine. J Assist Reprod Genet 16(2):87-91.
- Schafer W, et al. 2021. Characterization of pregnancies exposed to St. John's wort and their outcomes: A claims data analysis. Reprod Toxicol 102:90-97.
- Spiess D, et al. 2022. Advanced in Vitro Safety Assessment of Herbal Medicines for the Treatment of Non-Psychotic Mental Disorders in Pregnancy. Front Pharmacol. 13:882997.
- United Stated Food and Drug Administration (FDA). 2021. Dietary Supplements. Available at: https://www.fda.gov/consumers/consumer-updates/dietary-supplements.
- United Stated Food and Drug Administration (FDA). 2024. Dietary Supplements. Available at: https://www.fda.gov/food/dietary-supplements.

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