

Anxiety

Selected References:

- Adeniyi AA, et al. 2024. Oral Health, Anxiety, Depression, and Stress in Pregnancy: A Rapid Review of Associations and Implications for Perinatal Care. *Int J Environ Res Public Health*. 22(1):32.
- American Psychiatric Association. 2013. Diagnostic and statistical manual of mental disorders, 5th ed. American Psychiatric Association, Washington, DC.
- Anderson PO. 2024. Anxiety Disorders and Breastfeeding. *Breastfeed Med*. 19(3):152-154.
- Arvanitidou O, et al. 2023. The Impact of Stress and Depression on the Outcome of Human Gestation. *Cureus*.15(11):e48700.
- Bhongade M, et al. 2015. Effect of psychological stress on fertility hormones and seminal quality in male partners of infertile couples. *Andrologia*. 47(3):336-342.
- Bodunde EO, et al. 2025. Pregnancy and birth complications and long-term maternal mental health outcomes: A systematic review and meta-analysis. *BJOG*.132(2):131-142.
- Bolea-Alamañac B, et al. 2018. Do mothers who are anxious during pregnancy have inattentive children? *J Affect Disord*. 236:120-126.
- Clinkscales N, et al. 2023. The effectiveness of psychological interventions for anxiety in the perinatal period: A systematic review and meta-analysis. *Psychol Psychother*. 96(2):296-327.
- Dabb C, et al. 2023. Paternal pregnancy-related anxiety: Systematic review of men's concerns and experiences during their partners' pregnancies. *J Affect Disord*. 323:640-658.
- Dean DC, et al. 2018. Association of prenatal maternal depression and anxiety symptoms with infant white matter microstructure. *JAMA Pediatr*. 172(10):973-981.
- Ding X-X, et al. 2014. Maternal anxiety during pregnancy and adverse birth outcomes: A systematic review and meta-analysis of prospective cohort studies. *J Affect Disord*. 159:103-110.
- Dunkel Schetter C, et al. 2022. Anxiety in pregnancy and length of gestation: Findings from the healthy babies before birth study. *Health psychology: official journal of the Division of Health Psychology, American Psychological Association* 41(12):894-903.
- George A, et al. 2013. Anxiety symptoms and coping strategies in the perinatal period. *BMC Pregnancy and Childbirth*. 13:233.
- Gimbel LA, et al. 2022. Pregnancy outcomes and anxiety in nulliparous women. *J Matern Fetal Neonatal Med*. 35(25):8681-8690.
- Göbel A, et al. 2018. The association between maternal-fetal bonding and prenatal anxiety: An explanatory analysis and systematic review. *J Affect Disord*. 239:313-327.
- Goodman J, et al. 2014. Anxiety disorders during pregnancy: A systematic review. *J Clin Psychiatry*. 75(10):e1153-e1154.
- Grigoriadis S, et al. 2018. Maternal Anxiety During Pregnancy and the Association with Adverse Perinatal Outcomes: Systematic Review and Meta-Analysis. *J Clin Psychiatry*. 79(5):17r12011.
- Hadfield K, et al. 2022. Measurement of pregnancy-related anxiety worldwide: a systematic review. *BMC Pregnancy Childbirth*. 22(1):331.
- Koerner A, et al. 2024. Are Providers Adequately Screening for Anxiety Symptoms During Pregnancy? *Nurs Womens Health*. 28(2):109-116.
- Korja R, et al. 2024. Trajectories of maternal depressive and anxiety symptoms and child's socio-emotional outcome during early childhood. *J Affect Disord*. 349:625-634.
- Magnus MC, et al. 2021. Risk of miscarriage in women with psychiatric disorders. *Br J Psychiatry*. 219(3):501-506.
- Malm H, et al. 2015. Pregnancy complications following prenatal exposure to SSRIs or maternal psychiatric

- disorders: Results from population-based National Register data. *Am J Psychiatry*. 172(12):1224-1232.
- Misri S, et al. 2015. Perinatal generalized anxiety disorder: assessment and treatment. *J Womens Health (Larchmt)*. 24(9):762-770.
 - Mughal MK, et al. 2019. Trajectories of maternal distress and risk of child developmental delays: Findings from the All Our Families (AOF) pregnancy cohort. *J Affect Disord*. 248:1-12.
 - Navaratne P, et al. 2016. Impact of a high Edinburgh Postnatal Depression Scale score on obstetric and perinatal outcomes. *Sci Rep*. 6:33544.
 - Ossola P, et al. 2021. Anxiety, depression, and birth outcomes in a cohort of unmedicated women. *J Matern Fetal Neonatal Med*; 34(10):1606-1612.
 - Pan Y, et al. 2022. Association between generalized anxiety symptoms and semen quality in infertile men: A multicentre study in North China. *Andrologia*. 54(8):e14449. Pavlov M, et al. 2014. Obstetric and neonatal outcome in patients with anxiety disorders. *J Matern Fetal Neonatal Med*. 27:(13) 1339-1342.
 - Pezley L, et al. 2022. Efficacy of behavioral interventions to improve maternal mental health and breastfeeding outcomes: a systematic review. *Int Breastfeed J*. 17(1):67.
 - Purkiewicz A, et al. 2025. Breastfeeding: The Multifaceted Impact on Child Development and Maternal Well-Being. *Nutrients*. 17(8):1326.
 - Ramos I, et al. 2022. Pregnancy anxiety, placental corticotropin-releasing hormone and length of gestation. *Biol Psychol*. 172:108376.
 - Ravid E, et al. 2018. Is there an association between maternal anxiety propensity and pregnancy outcomes? *BMC Pregnancy Childbirth*. 18(1):287.
 - Rogers A, et al. 2020. Association Between Maternal Perinatal Depression and Anxiety and Child and Adolescent Development: A Meta-analysis. *JAMA Pediatr*. 174(11):1082-1092.
 - Rooney KL, Domar AD. 2018. The relationship between stress and infertility. *Dialogues Clin Neurosci*. 20(1):41-47.
 - Salehi F, et al. 2016. Comparison of group cognitive behavioral therapy and interactive lectures in reducing anxiety during pregnancy: A quasi experimental trial. *Medicine (Baltimore)*. 95(43):e5224.
 - Schetter CD, et al. 2022. Anxiety in pregnancy and length of gestation: Findings from the healthy babies before birth study. *Health Psychol*. 41(12):894-903. Shi Y, Han
 - Q. 2024. Does maternal anxiety and depression increase the risk of asthma in the offspring? A systematic review and meta-analysis. *Eur Rev Med Pharmacol Sci*. 28(3):1066-1076.
 - Smith CA, et al. 2019. The effect of complementary medicines and therapies on maternal anxiety and depression in pregnancy: A systematic review and meta-analysis. *J Affect Disord*. 245:428-439.
 - Veleminsky M, et al. 2024. Depression and Anxiety. Depression and anxiety in women during physiological pregnancy. *Neuro Endocrinol Lett*. 45(7-8):523-538.
 - Yang Z, et al. 2023. Trajectory of prenatal anxiety and depression and its association with fetal growth development. *Early Hum Dev*. 187:105875.
 - Yonkers KA, et al. 2017. Association of panic disorder, generalized anxiety disorder, and benzodiazepine treatment during pregnancy with adverse birth outcomes. *JAMA Psychiatry*. 74(11):1145-1152.
 - Zhang T, et al. 2023. The impact of maternal depression, anxiety, and stress on early neurodevelopment in boys and girls. *J Affect Disord*. 321:74-82.
 - Zhou J, et al. 2023. Maternal anxiety during pregnancy and children's asthma in preschool age: The Ma'anshan birth cohort study. *J Affect Disord*. 340:312-320.
 - Zhou J, et al. 2023. Maternal pregnancy-related anxiety and children's physical growth: the Ma'anshan birth cohort study. *BMC Pregnancy Childbirth*. 23(1):384.

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Anxiety

Selected References:

- Alhazmi AM, Albulushi A. 2025. Targeted antihypertensive therapy after hypertensive pregnancy: Lactation-safe choices, treatment thresholds, and outcomes (2015-2025). *Curr Probl Cardiol*. 50(12):103191.
- Bateman BT, et al. 2016. Late pregnancy β Blocker exposure and risks of neonatal hypoglycemia and bradycardia. *Pediatrics*. 138(3):e20160731.
- Beau A-B, et al. 2014. Safety of oseltamivir during pregnancy: a comparative study using the EFEMERIS database. *BJOG*. 121(7):895-900.
- Berger AA, et al. 2025. Peripartum antihypertensive use and the risk of neonatal hypoglycemia and postpartum uterine atony: a retrospective cohort study. *Pregnancy Hypertens*. 41:101232.
- Caton AR, et al. 2009. Antihypertensive medication use during pregnancy and the risk of cardiovascular malformations. *Hypertension*. 54(1):63-70.
- Chan WS, et al. 2010. Neurocognitive development of children following in-utero exposure to labetalol for maternal hypertension: a cohort study using a prospectively collected database. *Hypertens Pregnancy*. 29(3):271-83.
- Clark SM, et al. 2015. A review of oral labetalol and nifedipine in mild to moderate hypertension in pregnancy. *Seminars in perinatology*. 39(7):548-555.
- Crooks B, et al. 1998. Adverse neonatal effects of maternal labetalol treatment. *Archives of disease in childhood. Fetal and neonatal edition*. 79(2):F150-F151.
- Davis RL, et al. 2011. Risks of congenital malformations and perinatal events among infants exposed to calcium channel and beta-blockers during pregnancy. *Pharmacoepidemiol Drug Saf*. 20(2):138-45.
- Duan L, et al. 2017. β -Blocker exposure in pregnancy and risk of fetal cardiac anomalies. *JAMA Internal Medicine*. 177(6):885-887.
- Firoz T, et al. 2014. Community Level Interventions for Pre-eclampsia (CLIP) Working Group. Oral antihypertensive therapy for severe hypertension in pregnancy and postpartum: a systematic review. *BJOG*. 121(10):1210-8.
- Freppel R, et al. 2024. Beta-blockers and breastfeeding: a real-life prospective study. *European Journal of Clinical Pharmacology*. 80(12):1937-1943.
- Lam MTC, Dierking E. 2017. Intensive care unit issues in eclampsia and HELLP syndrome. *Int J*

Crit Illn Inj Sci. 7:136-141

- Magee LA, et al. 2022. The 2021 International Society for the Study of Hypertension in Pregnancy classification, diagnosis & management recommendations for international practice. *Pregnancy hypertension*. 27:148-169.
- Magee LA, et al. 2015. Labetalol for hypertension in pregnancy. *Expert Opinion on Drug Safety*. 14(3):453-461.
- Magnus MC, et al. 2021. Risk of miscarriage in women with chronic diseases in Norway: A registry linkage study. *PLoS Med*. 18(5):e1003603.
- Nunez-Pellot C, et al. 2025. Lactation safety of cardiovascular medications. *Am Heart J Plus*. 55:100552.
- O'Meara J, White WB. 1988. Ejaculatory failure and urinary dysfunction secondary to labetalol. *J Urol*. 139:371-2.
- Pasker-de Jong PC, et al. 2010. Antihypertensive treatment during pregnancy and functional development at primary school age in a historical cohort study. *BJOG*. 117(9):1080-6.
- Ramlakhan KP, et al; ROPAC Investigators. 2024. Perinatal outcomes after in-utero exposure to beta-blockers in women with heart disease: Data from the ESC EORP registry of pregnancy and cardiac disease (ROPAC). *Int J Cardiol*. 410:132234.
- Reddy S, Jim B. 2019. Hypertension and pregnancy: Management and future risks. *Advances in Chronic Kidney Disease*. 26(2):137-145.
- Ruys TP, et al. 2014. Cardiac medication during pregnancy, data from the ROPAC. *Int J Cardiol*. 177(1):124-8.
- Tanaka K, et al. 2016. Beta-blockers and fetal growth restriction in pregnant women with cardiovascular disease. *Circ J*. 80(10):2221-6.
- U.S. Food & Drug Administration. (Revised 4/2024). Labetalol hydrochloride drug label. Available at https://www.accessdata.fda.gov/drugsatfda_docs/label/2024/018716s036lbl.pdf. [Accessed 1/2026].
- Van Zutphen AR, et al. 2014. Maternal hypertension, medication use, and hypospadias in the National Birth Defects Prevention Study. *Obstet Gynecol*. 123:309-317.
- Xie RH, et al. 2014. Association between labetalol use for hypertension in pregnancy and adverse infant outcomes. *Eur J Obstet Gynecol Reprod Biol*. 175:124-8.
- Xie RH, et al. 2014. Beta-blockers increase the risk of being born small for gestational age or of being institutionalized during infancy. *BJOG*. 121(9):1090-6.
- Yakoob MY, et al. 2013. The risk of congenital malformations associated with exposure to β -blockers early in pregnancy: a meta-analysis. *Hypertension*. 62(2):375-381.
- Yang X, et al. 2019. Distinct outcomes of labetalol exposed infants: case reports and systematic review. *The Journal of Maternal-Fetal & Neonatal Medicine*. 1-7.

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Anxiety

Selected References:

- Bieńkowski CA, et al. 2022. Analysis of preventable risk factors for *Toxoplasma gondii* infection in pregnant women: case-control study. *J Clin Med*. 11(4):1005.
- Buzby, JC, 2001. Children and Microbial Foodborne Illness. United States Department of Agriculture, Economic Research Service 24(2): 1-6.
- Cavaliere AF, et al. 2023. Case report: vertical transmission of *Plesiomonas shigelloides*. Is it time to strengthen information on safety concerns for raw seafood dietary exposure in pregnancy? *J Matern Fetal Neonatal Med*. 36(1):2220061.
- Cerisola A, et al. 2025. Congenital toxoplasmosis. *Semin Pediatr Neurol*. 54:101203.
- Craig AM, et al. 2019. Listeriosis in Pregnancy: A Review. *Obstet Gynecol Surv*. 74(6):362-368.
- Illinois Department of Public Health. ND. Safe food handling. <https://www.idph.state.il.us/public/hb/hbsafefood.htm/> Accessed 16 June 2026.
- Jeffs E, et al. 2020. The epidemiology of listeriosis in pregnant women and children in New Zealand from 1997 to 2016: an observational study. *BMC Public Health*. 20(1):116.
- Jones JL. 2011. Sushi in pregnancy, parasitic diseases – obstetrician survey. *Zoonoses Public Health*. 58(2):119-125.
- Montoya JG, et al 2024. Toxoplasmosis. *Lancet*. 363(9425):1965-1976.
- New York State Department of Health. 2014. Advice on Eating Game. https://www.health.ny.gov/environmental/outdoors/fish/health_advisories/advice_on_eating_game.htm. Accessed 16 June 2026.
- Oyeyemi OT, et al. 2020. Toxoplasmosis in pregnancy: A neglected bane but a serious threat in Nigeria. *Parasitology*. 147(2):127-134.
- Quinlan JJ. 2013. Foodborne illness incidence rates and food safety risks for populations of low socioeconomic status and minority race/ethnicity: a review of the literature. *Int J Environ Res Public Health*. 10(8): 3634-3652.
- U.S. Centers for Disease Control and Prevention (CDC). 2024. About Listeria infection. <https://www.cdc.gov/listeria/about/index.html>. Accessed 16 June 2026.
- U.S. Centers for Disease Control and Prevention (CDC). 2025. About Bacterial Meningitis. <https://www.cdc.gov/meningitis/about/bacterial-meningitis.html>. Accessed 16 June 2026.
- U.S. Centers for Disease Control and Prevention (CDC). 2024. About Salmonella Infection. <https://www.cdc.gov/salmonella/about/index.html>. Accessed 16 June 2026.
- U.S. Centers for Disease Control and Prevention (CDC). 2025. About Toxoplasmosis. <https://www.cdc.gov/toxoplasmosis/about/index.html>. Accessed 16 June 2026.
- U.S. Centers for Disease Control and Prevention (CDC). 2024. About Vibrio infection. <https://www.cdc.gov/vibrio/about/index.html/> Accessed 16 June 2026.
- United States Department of Agriculture (USDA). 2025. Safe Minimum Internal Temperature Chart. <https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/safe-temperature-chart>. Accessed 16 June 2026.

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Anxiety

Selected References:

- Cazzola M, et al. 2002. Clinical pharmacokinetics of salmeterol. Clin Pharmacokinet, 41(1):19-30.
- Cossette B, et al. 2014. Relative perinatal safety of salmeterol vs formoterol and fluticasone vs budesonide use during pregnancy. Ann Allergy Asthma Immunol, 112(5):459-464.
- GlaxoSmithKline LLC. 2020. Serevent diskus prescribing information.
- Jones KL, et al. 2002. Salmeterol use and pregnancy outcomes: a prospective multi-center study. J Allergy Clin Immunol, 109:S156.
- Lim A, et al. 2011 Systematic review of the safety of regular preventive asthma medications during pregnancy. Ann Pharmacother, 5(7-8):931-945.
- National Asthma Education and Prevention Program Asthma and Pregnancy Working Group. 2025. NAEPP expert panel report: managing asthma during pregnancy—recommendations for pharmacologic treatment—2004 update. J Allergy Clin Immunol, 115(1):34-46.
- Taddio A, Ito S. 2001. Drugs and breast-feeding. In: Koren G, ed. Maternal-fetal toxicology. A clinician's guide. 3rd ed. New York: Marcel Dekker, 177-132.
- Wilton LV, et al. 1998. The outcomes of pregnancy in women exposed to newly marketed drugs in general practice in England. Br J Obstet Gynaecol, 105:882-889.

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Selected References:

- Chanda, S, et al. 2006. Developmental toxicity study of pure trans-capsaicin in rats and rabbits. *Int.J.Toxicol*; 25(3):205-217.
- Cooper RL, Cooper MM. 1993. Red pepper-induced dermatitis in breast-fed infants. *Dermatology*; 193:61-62.
- Cordell GA, Araujo OE. 1993. Capsaicin: identification, nomenclature, and pharmacotherapy. *Ann Pharmacother*; 27(3):330-336.
- Karlsen K, et al. 2021. Problematic use of capsaicin patches as pain relief during labour. *Moller AT. Ugeskr Laeger*; 183(19):V11200815.
- Kirby ML, et al. 1982. Effects of prenatal capsaicin treatment on fetal spontaneous activity, opiate receptor binding and acid phosphatases in the spinal cord. *Exp Neurol*; 76:298-308.
- Muralidhara, Narasimhamurthy K. 1988. Non-mutagenicity of capsaicin in albino mice. *Food Chem Toxicol*; 26:955-958.
- Murphy LM, et al. 2023. A pilot randomized control trial of topical capsaicin as adjunctive therapy for nausea and vomiting of pregnancy. *Am J Obstet Gynecol MFM*; 5(5):100997.
- Nance DM, et al. 1987 Neuroendocrine and behavioral effects of intrathecal capsaicin in adult female rats. *Brain Res Bull*; 18(1):109-114.
- No author. 2007. Final report on the safety assessment of capsicum annuum extract, capsicum annuum fruit extract, capsicum annuum resin, capsicum annuum fruit powder, capsicum frutescens fruit, capsicum frutescens fruit extract, capsicum frutescens resin, and capsaicin. *Int J Toxicol*; 26 Suppl 1:3-106.
- Oh SM, et al. 2025. High-dose 8% capsaicin patch in treatment of chronic neuropathic back pain in a pregnant woman: a case report. *Orthop Rev (Pavia)*; 17:140712.
- Perfumi M, Sparapassi L. 1999. Rat offspring treated prenatally with capsaicin do not show some of the irreversible effects induced by neonatal treatment with neurotoxin. *Pharmacol Toxicol*; 84:66-71.
- Taurig H, et al. 1984. The effects of neonatal capsaicin treatment on growth and subsequent reproductive function in the rat. *Naunyn Schmiedebergs Arch Pharmacol*; 327(3):254-259.
- Yuan LJ, et al. 2016. Capsaicin-containing chili improved postprandial hyperglycemia, hyperinsulinemia, and fasting lipid disorders in women with gestational diabetes mellitus and lowered the incidence of large-for-gestational-age newborns. *Clin Nutr*; 35(2):388-393.

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