

## Drugs during Pregnancy

Taking drugs or medications during pregnancy can be harmful. Possible effects include prenatal death (miscarriage), developmental delay, intellectual disability and birth defects. Some medications may be necessary but should only be taken under medical supervision. Alcohol, tobacco, caffeine and illicit drugs including cannabis and cocaine are all classified as drugs. Limit caffeine drinks and don't smoke or drink alcohol during pregnancy.

Most women take some kind of drug, substance or medication during pregnancy, often without realizing the potential for harm. Drugs or medication taken by the mother may cross the placenta and reach the developing foetus. The possible effects may include prenatal death (stillbirth), developmental delay, intellectual disability and birth defects.

You should always give your doctor or midwife a full list of all drugs or medication you take, or have recently taken, including:

- Prescription medicines
- Over-the-counter medicines
- Nutrition supplements (like vitamins)
- Complementary therapies (such as herbal medicine).

You should also tell your doctor or midwife if you smoke, drink alcohol or take illegal drugs, even if you only take them occasionally or socially.

### **Harmful effects of drugs or substances on the fetus and pregnancy:**

Generally a drug, substance or medication can cause harm by:

- Interfering with normal foetal development
- Damaging the placenta and putting the baby's life at risk
- Increasing the risk of miscarriage
- Bringing on premature labour.

### **The potential for harm:**

The potential for harm to the pregnancy and unborn baby depends on a range of factors including:

- The type of drug, substance or medication taken
- How the drug, substance or medication is taken
- The size of the dose
- How often it's taken
- Whether the drug, substance or medication is used alone or in combination with other drugs
- The individual response of the baby to the drug, substance or medication
- The gestational age of the baby
- Other factors, such as maternal health and diet.

### **Harmful drugs and substances:**

Some drugs, substances or medications that may be harmful during pregnancy, depending on amount and frequency of use, include:

- **Medicines** – including some prescription drugs, over-the-counter medicines and complementary medicines such as herbal remedies or nutrition supplements
- **Illicit use of prescription drugs** – such as benzodiazepines or morphine
- **Tobacco**
- **Alcohol**
- **Caffeine** – for example tea, coffee and cola drinks
- **Illegal drugs** – such as cannabis, heroin, cocaine or amphetamines
- **Substances used as drugs** – such as inhalants (glues or aerosols).

Drugs such as heroin and amphetamines are often mixed or ‘cut’ with unknown substances. These unknown substances can also be harmful to the pregnancy or foetus.

The Food and Drug Administration (FDA) created the following rating system in 1979 to categorize the potential risk to the fetus for a given drug.

**Category A:** Controlled human studies have demonstrated no fetal risk

**Category B:** Animal studies indicate no fetal risk, but no human studies

**OR** adverse effects in animals, but not in well- controlled human studies

**Category C:** No adequate human or animal studies,

**OR** adverse fetal effects in animal studies, but no available human data.

**Category D:** Evidence of fetal risk, but benefits outweighs risks.

**Category X:** Evidence of fetal risk. Risks outweigh any benefits.

Unfortunately this system oversimplifies the issues relevant to prescribing a medication to a pregnant patient. For example, the FDA system does not adequately address the risk of not treating a disease versus the risks of the medication, and there is a tendency to assume that a category B drug is safer for human use than a category C drug when there may be no human studies available to support the assumption. In addition the system is not easy to apply to combination prescription drugs with many active ingredients and the potential for drug interactions. Despite its shortcomings the FDA rating system (and others like it) will most likely continue to be used as a rapid "first screen" on the the potential risk to the fetus for a given drug. See proposed changes to **FDA Pregnancy and Lactation Labeling**

Table below is a list of some medications that appear to have demonstrated no significant fetal risk in human studies.

**Table: Some Medications Considered Safe for Use during Pregnancy**

Condition	Medication
Asthma	<ul style="list-style-type: none"> <li>• Budesonide inhaled or nasal spray (Pulmicort®, Rhinocort ®)</li> </ul>
Bladder infection (UTI)	<ul style="list-style-type: none"> <li>• Nitrofurantoin (Macrobid®)</li> <li>- Avoid in patients with possible G6PD deficiency</li> </ul>
Cough	<ul style="list-style-type: none"> <li>• Dextromethrophan_(Robitussin DM sugar free ®)</li> </ul>

Constipation	<ul style="list-style-type: none"> <li>• Metamucil® , Citrucel®,</li> <li>• Docusate (Colace®, Ducolax ®)</li> <li>• Milk of magnesia.</li> <li>• Polyethylene glycol (Miralax®)</li> </ul>
Diabetes	<ul style="list-style-type: none"> <li>• Insulin</li> <li>• Glyburide (Micronase®)</li> <li>• Metformin (Glucophage®)</li> </ul>
Diarrhea	<ul style="list-style-type: none"> <li>• Loperamide (Imodium A-D ®)</li> </ul>
Gas	<ul style="list-style-type: none"> <li>• Simethicone (Gas-X ®, Mylicon ®, Phazyme ®)</li> </ul>
Gastroesophageal reflux disease (GERD),	<ul style="list-style-type: none"> <li>• Ranitidine (Zantac®)</li> <li>• Cimetidine (Tagamet®)</li> </ul>
Hay fever, sneezing, runny nose, itchy watery eyes	<ul style="list-style-type: none"> <li>• Chlorpheniramine_(Chlor-Trimeton ®,Efidac ®, Teldrin ®)</li> <li>• Diphenhydramine_(Benadryl ®) Clemastine (Tavist Allergy ®)</li> </ul>
Headache or fever:	<ul style="list-style-type: none"> <li>• Acetaminophen_(APAP,Paracetamol,Panadol, Tylenol®)</li> </ul>
Heartburn	<ul style="list-style-type: none"> <li>• TUMS®</li> </ul>
Hemorrhoids	<ul style="list-style-type: none"> <li>• Tucks®</li> <li>• Preparation H®</li> <li>• Anusol®</li> </ul>
High blood pressure	<ul style="list-style-type: none"> <li>• Methyldopa (Aldomet®)</li> </ul>
Hyperprolactinemia	<ul style="list-style-type: none"> <li>• Bromocriptine (Parlodel®)</li> <li>• Carbergoline (Dostinex®)</li> </ul>
Hypothyroidism	<ul style="list-style-type: none"> <li>• Thyroid hormone</li> <li>• Levothyroxine (Synthroid ®, Levoxyl ®)</li> </ul>
Infection	<ul style="list-style-type: none"> <li>• Acyclovir (Zovirax ®)</li> <li>• Azthitromycin (Zithromax ®)</li> <li>• Cephalosporins examples: Cephalexin (Keflex®), Cefazolin (Ancef ®), cefaclor (Ceclor®)</li> <li>• Clindamycin (Cleocin®)</li> <li>• Erythromycin</li> <li>• Penicillins</li> </ul>

	<p>example Amoxicillin (Amoxil®), Amoxicillin Clavulanate (Augmentin®), methicillin, carbenicillin</p> <ul style="list-style-type: none"> <li>• Metronidazole (Flagyl®)</li> </ul>
Insomnia	<ul style="list-style-type: none"> <li>• Doxylamine (Unisom Sleep Tabs®)</li> </ul>
Motion sickness	<ul style="list-style-type: none"> <li>• Dimenhydrinate (Dramamine®)</li> </ul>
Nasal congestion	<ul style="list-style-type: none"> <li>• Pseudo ephedrine (Sudafed®) -Avoid in first trimester.</li> </ul>
Nasal congestion, sneezing, runny nose, itchy watery eyes	<ul style="list-style-type: none"> <li>• Actifed Cold and Allergy® Ingredients: Triprolidine, Pseudoephedrine -Avoid in first trimester.</li> </ul>
Nasal congestion, sneezing, runny nose, itchy watery eyes, fever, and headache	<ul style="list-style-type: none"> <li>• Actifed Cold and Sinus® Ingredients: Acetaminophen, Chlorpheniramine, Pseudoephedrine- Avoid in first trimester.</li> </ul>
Nausea	<ul style="list-style-type: none"> <li>• Ginger</li> <li>• Pyridoxine 25 mg PO TID <b>WITH</b> Unisom Sleep Tabs (Doxylamine Succinate 25 mg) 1/2 tablet TID</li> <li>• Metoclopramide (Reglan®)</li> </ul>
Pre Eclampsia	<ul style="list-style-type: none"> <li>• Magnesium sulfate</li> </ul>
Vaginal yeast infection	<ul style="list-style-type: none"> <li>• Clotrimazole cream (Gyne-Lotrimin®)</li> </ul>

## REFERENCES:

1. Schatz M, Zeiger RS, Harden K, Hoffman CC, Chilingar L, Petitti D. The safety of asthma and allergy medications during pregnancy. *J Allergy Clin Immunol.* 1997 100:301-6. 1997. PubMed
2. Briggs GG, Freeman RK, Yaffe FJ. *Drugs in Pregnancy and Lactation: Reference Guide to Fetal and Neonatal Risk.* 7th ed. Baltimore: Williams & Wilkins; 2005.
3. Martinez-Frias ML, Rodriguez-Pinilla E. Epidemiologic analysis of prenatal exposure to cough medicines containing dextromethorphan: no evidence of human teratogenicity. *Teratology,* 63:38-41. 2001 PubMed
4. Einarson A, Lyszkiewicz D, Koren G. The safety of dextromethorphan in pregnancy : results of a controlled study. *Chest.* 119:466-9. 2001 PubMed
5. Shaw GM, Todoroff K, Velie EM, Lammer EJ: Maternal illness, including fever, and medication use as risk factors for neural tube defects. *Teratology* 57:1-7, 1998. PubMed
6. Aselton P, Jick H, Milunsky A, Hunter JR, Stergachis A. First-trimester drug use and congenital disorders. *Obstet Gynecol.* 65:451-5. 1985. PubMed

7. Limitations of Pregnancy Risk Categories .  
Ob.Gyn. News 01 March 2001

8. Reproductive Toxicology Center. Bethesda, Md. Available at <http://reprotox.org>. Accessed 11/1/ 07.

9. Czeizel AE, Augmentin treatment during pregnancy and the prevalence of congenital abnormalities: a population-based case-control teratologic study. *Eur J Obstet Gynecol Reprod Biol.* 2001 Aug;97(2):188-92. PMID: 11451547

10. Czeizel AE, Nitrofurantoin and congenital abnormalities. *Eur J Obstet Gynecol Reprod Biol.* 2001 Mar;95(1):119-26. PMID: 11267733

11. Czeizel AE, Use of cephalosporins during pregnancy and in the presence of congenital abnormalities: a population-based, case-control study. *Am J Obstet Gynecol.* 2001 May;184(6):1289-96. PMID: 11349204

12. Czeizel AE, et al. A population-based case-control teratologic study of oral erythromycin treatment during pregnancy. *Reprod Toxicol.* 1999 Nov-Dec;13(6):531-6. PMID: 10613401

13. Nørgård B, Population-based case control study of the safety of sulfasalazine use during pregnancy. *Aliment Pharmacol Ther.* 2001 Apr;15(4):483-6. PMID: 11284776

14. Czeizel AE and Vargha P., A case-control study of congenital abnormality and dimenhydrinate usage during pregnancy. *Arch Gynecol Obstet.* 2005 Feb;271(2):113-8. Epub 2004 Oct 23. PMID: 15517327

15. Rockenbauer M, et al. Recall bias in a case-control surveillance system on the use of medicine during pregnancy. *Epidemiology.* 2001 Jul;12(4):461-6. PMID: 11416783

16. Czeizel AE, et al. No teratogenic effect after clotrimazole therapy during pregnancy. *Epidemiology.* 1999 Jul;10(4):437-40. PMID: 10401880