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Formulary 2009-2011



**An Essential Medicines Dosing Guide
Based on the WHO Model Formulary**

APPENDIX II

GENERAL INFORMATION ON PRESCRIBING IN PREGNANCY & LACTATION

Extra care is required when prescribing during pregnancy and lactation because of the potentially harmful effects of drugs on the fetus in-utero and the breast-fed infant. While most attention has been focused on teratogenic effects of drugs in the early weeks of pregnancy when fetal tissues are forming, the growth and functional development of fetal organs can be affected by some drugs throughout the pregnancy, while drugs administered in late pregnancy and labour may have persisting adverse effects on the newborn infant. Although relatively few drugs have been shown beyond a doubt to be harmful, no drug is entirely safe and **as with all prescribing, risks and benefits must be balanced.**

On the other hand you will frequently be required to reassure pregnant patients prescribed essential medications and those who have inadvertently taken drugs without realising they were pregnant at the time. This reassurance would be given where appropriate bearing in mind that it is never possible to guarantee a normal outcome in any pregnancy.

The advisability of **breast-feeding** should be discussed in advance antenatally with patients who will have to continue to take necessary drugs after delivery. It is most important that breast-feeding should not be discouraged unless there is a very good reason.

It must be remembered that many drugs that may be taken by pregnant women are available without prescription (**'over-the-counter' drugs**), such as cough mixtures, analgesics and anti-diarrhoeal agents. Others such as **alcohol** and **cigarette smoking** may not be perceived as drugs by the patient. Pregnant and lactating patients should be warned (and indeed the general population) of these potential dangers.

POINTS TO NOTE:

- Prescribing for any woman in the **reproductive age group** should also take into account the possibility that she might be or become pregnant during the treatment.
- During pregnancy the mother and the fetus form a non-separable functional unit. **Maternal well-being** is an absolute prerequisite for the optimal functioning and development of both parts of this unit. Consequently, it is important to treat the mother whenever needed while protecting the unborn to the greatest possible extent.
- It is important to know the '**background risk**' in the context of the prevalence of drug-induced adverse pregnancy outcomes. Major congenital malformations occur in 2-4% of all live births. Up to 15% of all diagnosed pregnancies will result in fetal loss. The cause of these adverse pregnancy outcomes is understood in only a minority of the incidents.
- When a pregnancy is confirmed **existing medications** taken by the patient should be reviewed. Cessation of therapy, a dose reduction, or change of preparation might be available.
- Where drug therapy is essential, use wherever possible **well known preparations whose safety in pregnancy has been reasonably established** and reassure the patient about the use of these essential medications. Breast-feeding in this situation should be discussed in advance antenatally.
- **Avoid all non-essential drug prescribing** during pregnancy and educate the patient about the potential hazards of non-essential drug therapy including non-prescription drugs, excessive alcohol consumption, and cigarette smoking.
- Report **adverse drugs reactions** in pregnancy in and lactation.

The following WHO list includes drugs which may have harmful effects in pregnancy and indicates the trimester of risk. It is based on human data but information on *animal* studies has been included for some newer drugs when its omission might be misleading.

Absence of a drug from the list does not imply safety.

**Table of drugs to be avoided or used with caution in pregnancy:
(WHO Model Formulary 2008)**

Drug	Comment
Acetazolamide	Not used to treat hypertension in pregnancy First trimester: Avoid (toxicity in <i>animal</i> studies)
Acetylsalicylic acid	Third trimester: Impaired platelet function and risk of haemorrhage; delayed onset and increased duration of labour with increased blood loss; avoid analgesic doses if possible in last few weeks (low doses probably not harmful); with high doses, closure of fetal ductus arteriosus <i>in utero</i> and possibly persistent pulmonary hypertension of newborn; kernicterus in jaundiced neonates
Aciclovir	Not known to be harmful; limited absorption from topical preparations
Albendazole	Contraindicated in cestode infections; see section 6.05 First trimester: avoid in nematode infections; see section 6.05
Alcohol	First, second trimesters: Regular daily drinking is teratogenic (fetal alcohol syndrome) and may cause growth retardation; occasional single drinks are probably safe Third trimester: Withdrawal may occur in babies of alcoholic mothers
Allopurinol	Toxicity not reported; use only if no safer alternative and disease carries risk for mother or child
Aminophylline	Third trimester: Neonatal irritability and apnoea have been reported
Amitriptyline	Manufacturer advises avoid unless essential, particularly during first and third trimesters
Amlodipine	No information on use in humans; risk to fetus should be balanced against risk of uncontrolled
Amoxicillin	Not known to be harmful
Amoxicillin + Clavulanic acid	Not known to be harmful
Ampicillin	Not known to be harmful
Amphotericin B	Not known to be harmful but use only if potential benefit outweighs risk
Artemether	First trimester: Avoid
Artemether + Lumefantrine	See Artemether
Artesunate	First trimester: Avoid
Atenolol	May cause intrauterine growth restriction, neonatal hypoglycaemia, and bradycardia; risk greater in severe hypertension; see <i>also</i> pg 18
Atropine	Not known to be harmful
Beclometasone	Benefit of treatment, for example in asthma, outweighs risk
Benzylpenicillin	Not known to be harmful
Bupivacaine	Third trimester: With large doses, neonatal respiratory depression, hypotonia, and bradycardia after paracervical or epidural block; lower doses of bupivacaine for intrathecal use during late pregnancy

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Calcium folinate	Manufacturer advises use only if potential benefit outweighs risk
Carbamazepine	First trimester: Risk of teratogenesis including increased risk of neural tube defects (counselling and screening and adequate folate supplements advised, for example, 5 mg daily); risk of teratogenicity greater if more than one antiepileptic used; see WMF/BNF Third trimester: May possibly cause vitamin K deficiency and risk of neonatal bleeding; if vitamin K not given at birth, neonate should be monitored closely for signs of bleeding
Cefazolin	Not known to be harmful
Ceftazidime	Not known to be harmful
Ceftriaxone	Not known to be harmful
Chloramphenicol	Third trimester: Neonatal 'grey' syndrome
Chloroquine	First, third trimesters: Benefit of prophylaxis and treatment in malaria outweighs risk; important: see <i>also</i> section 6.03
Chlorphenamine	No evidence of teratogenicity
Chlorpromazine	Third trimester: Extrapyramidal effects in neonate occasionally reported
Ciprofloxacin	All trimesters: Avoid—arthropathy in <i>animal</i> studies; safer alternatives available
Clindamycin	Not known to be harmful
Cloxacillin	Not known to be harmful
Codeine	Third trimester: Depresses neonatal respiration; withdrawal effects in neonates of dependent mothers; gastric stasis and risk of inhalation pneumonia in mother during labour
Contraceptives, oral	Epidemiological evidence suggests no harmful effects on fetus
Dexamethasone	Benefit of treatment, for example in asthma, outweighs risk; risk of intrauterine growth retardation on prolonged or repeated systemic treatment; corticosteroid cover required by mother during labour; monitor closely if fluid retention
Diazepam	Avoid regular use (risk of neonatal withdrawal symptoms); use only if clear indication such as seizure control (high doses during late pregnancy or labour may cause neonatal hypothermia, hypotonia and respiratory depression)
Diethylcarbamazine	Avoid: Delay treatment until after delivery
Digoxin	May need dosage adjustment
Doxycycline	First trimester: Effects on skeletal development in <i>animal</i> studies Second, third trimesters: Dental discoloration; maternal hepatotoxicity with large doses
Enalapril	Avoid; may adversely affect fetal and neonatal blood pressure control and renal function; also possible skull defects and oligohydramnios; toxicity in <i>animal</i> studies
Ephedrine	Increased fetal heart rate reported with parenteral ephedrine
Ergocalciferol	High doses teratogenic in <i>animals</i> but therapeutic doses unlikely to be harmful

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Ergotamine	All trimesters: Oxytocic effects on the pregnant uterus
Erythromycin	Not known to be harmful
Estradiol cypionate	Epidemiological evidence suggests no harmful effects on fetus; see Contraceptives, Oral
Ethinylestradiol	Epidemiological evidence suggests no harmful effects on fetus
Fluconazole	Avoid (multiple congenital abnormalities reported with long-term high doses)
Fluoxetine	Manufacturer advises use only if potential benefit outweighs risk; risk of neonatal withdrawal
Furosemide	Not used to treat hypertension in pregnancy
Gentamicin	Second, third trimesters: Auditory or vestibular nerve damage, risk probably very small with gentamicin, but avoid unless essential (if given, serum-gentamicin concentration monitoring essential)
Glibenclamide	Third trimester: Neonatal hypoglycaemia; insulin is normally substituted in all diabetics; if oral drugs are used therapy should be stopped at least 2 days before delivery
Griseofulvin	Avoid (fetotoxicity and teratogenicity in <i>animals</i>); effective contraception required during and for at least 1 month after administration (important: effectiveness of oral contraceptives reduced); also men should avoid fathering a child during and for at least 6 months after administration
Haloperidol	Third trimester: Extrapyrarnidal effects in neonate occasionally reported
Halothane	Third trimester: Depresses neonatal respiration
Heparin	Maternal osteoporosis has been reported after prolonged use; multidose vials may contain benzyl alcohol; some manufacturers advise avoid
Hydralazine	Avoid during first and second trimesters; no reports of serious harm following use in third trimester
Hydrochlorothiazide	Not used to treat hypertension in pregnancy Third trimester: May cause neonatal thrombocytopenia
Hydrocortisone	Benefit of treatment, for example in asthma, outweighs risk; risk of intrauterine growth retardation on prolonged or repeated systemic treatment; corticosteroid cover required by mother during labour; monitor closely if fluid retention
Ibuprofen	Avoid unless potential benefit outweighs risk Third trimester: With regular use closure of fetal ductus arteriosus <i>in utero</i> and possibly persistent pulmonary hypertension of the newborn. Delayed onset and increased duration of labour
Imipenem + cilastatin	Use only if potential benefit outweighs risk (toxicity in <i>animal</i> studies)
Indinavir	Avoid if possible in first trimester; theoretical risk of hyperbilirubinaemia and renal stones in neonate if used at term.
Insulins	All trimesters: Insulin requirements should be assessed frequently by an experienced diabetic clinician

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Iodine	Second, third trimesters: Neonatal goitre and hypothyroidism
Ipratropium bromide	Not known to be harmful
Isoniazid	Not known to be harmful
Ketamine	Third trimester: Depresses neonatal respiration
Lamivudine	Avoid if possible in first trimester; benefit of treatment considered to outweigh risk in second and third trimesters
Levonorgestrel	In oral contraceptives, epidemiological evidence suggests no harmful effects on fetus
Levothyroxine	Monitor maternal serum thyrotrophin concentration; levothyroxine may cross placenta, excessive dosage can be detrimental to fetus
Lidocaine	Third trimester: With large doses, neonatal respiratory depression, hypotonia, and bradycardia after paracervical or epidural block
Magnesium sulfate	Third trimester: not known to be harmful for short-term intravenous administration in eclampsia but excessive doses may cause neonatal respiratory depression
Mebendazole	Toxicity in <i>animal</i> studies. Contraindicated in cestode infections; First trimester: Avoid in nematode infections; see section 6.05
Medroxyprogesterone	Avoid (genital malformations and cardiac defects reported in male and female fetuses); inadvertent use of depot-medroxyprogesterone acetate contraceptive injection in pregnancy unlikely to harm fetus
Mefloquine	Use only if other antimalarials inappropriate, see <i>also</i> Prophylaxis and Treatment of Malaria, section 6.03
Metformin	All trimesters: Avoid; insulin is normally substituted in all diabetics
Metoclopramide	Not known to be harmful
Metronidazole	Avoid high-dose regimens
Morphine	Third trimester: Depresses neonatal respiration; withdrawal effects in neonates of dependent mothers; gastric stasis and risk of inhalation pneumonia in mother during labour
Naloxone	Use only if potential benefit outweighs risk
Neostigmine	Third trimester: Neonatal myasthenia with large doses
Nifedipine	Some dihydropyridines are teratogenic in animals, but risk to fetus should be balanced against risk of uncontrolled maternal hypertension; may inhibit labour (used for premature labour)
Nitrofurantoin	Third trimester: May produce neonatal haemolysis if used at term
Nitrous oxide	Third trimester: Depresses neonatal respiration
Norethisterone	In oral contraceptives, epidemiological evidence suggests no harmful effects on fetus. In higher doses masculinization of female fetuses and other defects reported
Nystatin	No information available, but absorption from gastrointestinal tract negligible
Paracetamol	Not known to be harmful

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Phenobarbital	First, third trimesters: Congenital malformations; risk of teratogenicity greater if more than one antiepileptic used. May possibly cause vitamin K deficiency and risk of neonatal bleeding; if vitamin K not given at birth, neonate should be monitored closely for signs of bleeding;
Phenoxymethylpenicillin	Not known to be harmful
Phenytoin	First and third trimesters: Congenital malformations (screening advised); adequate folate supplements should be given to mother (for example, folic acid 5 mg daily); risk of teratogenicity greater if more than one antiepileptic used; may possibly cause vitamin K deficiency and risk of neonatal bleeding; if vitamin K not given at birth, neonate should be monitored closely for signs of bleeding NOTE. Caution in interpreting plasma phenytoin concentrations — bound phenytoin may be reduced but free (or effective) phenytoin unchanged; see WMF/BNF
Phytomenadione	No specific information available; use only if potential benefit outweighs risk
Polyvidone–iodine	Second, third trimesters: Sufficient iodine may be absorbed to affect the fetal thyroid
Praziquantel	<i>T. solium</i> infections in pregnancy should be treated immediately; see section 6.05. Benefit of treatment in schistosomiasis outweighs risk. If immediate treatment not considered essential for fluke infections, treatment should be delayed until after delivery
Prednisolone	Benefit of treatment, for example in asthma, outweighs risk; risk of intrauterine growth retardation on prolonged or repeated systemic treatment; corticosteroid cover required by mother during labour; monitor closely if fluid retention
Primaquine	Third trimester: Neonatal haemolysis and methaemoglobinaemia. Delay treatment until after delivery
Proguanil	Benefit of prophylaxis and of treatment outweighs risk. Adequate folate supplements should be given to mother
Promethazine	No evidence of teratogenicity
Propranolol	May cause intrauterine growth restriction, neonatal hypoglycaemia, and bradycardia; risk greater in severe hypertension; see <i>pg 18</i>
Propylthiouracil	Second, third trimesters: Neonatal goitre and hypothyroidism
Quinine	First trimester: High doses are teratogenic; but in malaria benefit of treatment outweighs risk
Ranitidine	Not known to be harmful
Retinol	First trimester: Excessive doses may be teratogenic; see <i>also</i> section 8.01 WHO notes
Salbutamol	Appropriate to use for asthma; high doses should be given by inhalation only — parenteral use can affect the myometrium and possibly cause cardiac problems

Silver sulfadiazine	Third trimester: Neonatal haemolysis and methaemoglobinaemia; fear of increased risk of kernicterus in neonates appears to be unfounded
Simvastatin	Avoid — congenital anomalies reported; decreased synthesis of cholesterol possibly affects fetal development
Sodium nitroprusside	Potential for accumulation of cyanide in fetus — avoid prolonged use
Spironolactone	Toxicity in <i>animal</i> studies
Streptokinase	All trimesters: Possibility of premature separation of placenta in first 18 weeks; theoretical possibility of fetal haemorrhage throughout pregnancy; risk of maternal haemorrhage on postpartum use
Sulfadoxine + Pyrimethamine	In malaria, benefit of prophylaxis and treatment outweigh risk. First trimester: Possible teratogenic risk (pyrimethamine a folate antagonist) Third trimester: Neonatal haemolysis and methaemoglobinaemia; fear of increased risk of kernicterus in neonates appears to be unfounded <i>See also</i> section 6.03 WHO notes pg 100
Sulfamethoxazole + Trimethoprim	First trimester: Teratogenic risk (trimethoprim a folate antagonist) Third trimester: Neonatal haemolysis and methaemoglobinaemia; fear of increased risk of kernicterus in neonates appears to be unfounded
Suxamethonium	Mildly prolonged maternal paralysis may occur
Tetracycline	First trimester: Effects on skeletal development in <i>animal</i> studies Second, third trimesters: Dental discoloration; maternal hepatotoxicity with large doses
Thiopental	Third trimester: Depresses neonatal respiration; dose should not exceed 250mg
Trimethoprim	First trimester: Teratogenic risk (folate antagonist)
Vaccine, BCG	First trimester: Theoretical risk of congenital malformations, but need for vaccination may outweigh possible risk to fetus (<i>see also</i> section 12.02 WHO notes pg 175)
Vaccine, Measles	First trimester: Theoretical risk of congenital malformations, but need for vaccination may outweigh possible risk to fetus (<i>see also</i> section 12.02 WHO notes pg 175); avoid MMR
Vaccine, MMR	Avoid; pregnancy should be avoided for 1 month after immunization
Vaccine, Poliomyelitis, live	First trimester: Theoretical risk of congenital malformations, but need for vaccination may outweigh possible risk to fetus (<i>see also</i> section 12.02 WHO notes pg 175)
Vaccine, Rubella	Avoid; pregnancy should be avoided for 1 month after immunization
Vaccine, Yellow fever	First trimester: Theoretical risk of congenital malformations, but need for vaccination may outweigh possible risk to fetus (<i>see also</i> section 12.02 WHO notes pg 175)
Vancomycin	Use only if potential benefit outweighs risk—plasma-vancomycin concentration monitoring essential to reduce risk of fetal toxicity

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Vecuronium	Use only if potential benefit outweighs risk—no information available
Verapamil	May reduce uterine blood flow with fetal hypoxia; may inhibit labour
Warfarin	All trimesters: Congenital malformations; fetal and neonatal haemorrhage; See <i>also</i> WMF/BNF
Zidovudine	Avoid if possible in first trimester; benefit of treatment considered to outweigh risk in second and third trimesters; see WMF/BNF

WHO MODEL FORMULARY 2008 NOTES: Prescribing in Breastfeeding

Administration of some drugs (for example, ergotamine) to nursing mothers may harm the infant, whereas administration of others (for example, digoxin) has little effect. Some drugs inhibit lactation (for example, estrogens).

Toxicity to the infant can occur if the drug enters the milk in pharmacologically significant quantities. The concentration in milk of some drugs (for example, iodides) may exceed that in the maternal plasma so that therapeutic doses in the mother may cause toxicity to the infant. Some drugs inhibit the infant's sucking reflex (for example, phenobarbital). Drugs in breast milk may, at least theoretically, cause hypersensitivity in the infant even when the concentration is too low for a pharmacological effect.

The following table lists drugs:

- which should be used with caution or which are contraindicated in breastfeeding for the reasons given above;
- which, on present evidence, may be given to the mother during breastfeeding, because they appear in milk in amounts which are too small to be harmful to the infant;
- which are not known to be harmful to the infant although they are present in milk in significant amounts.

For many drugs insufficient evidence is available to provide guidance and it is advisable to administer only drugs essential to a mother during breastfeeding. Because of the inadequacy of information on drugs in breast milk the following table should be used only as a guide; **absence from the table does not imply safety.**

WHO POLICY. Infants should be exclusively breastfed for the first 6 months of life; thereafter they should receive appropriate complementary food and continue to be breastfed up to 2 years of age or beyond.

Advice in the table may differ from that given in other sources, including manufacturer's product literature.

For further information on use of drugs during breastfeeding, the WHO document, *Breastfeeding and maternal medication: Recommendations for drugs in the Eleventh WHO Model List of Essential Drugs*. (www.who.int/child-adolescenthealth/New_Publications/NUTRITION/BF_Maternal_Medication.pdf).

Table of drugs present in breast milk (WHO Model Formulary 2008):

Drug	Comment
Acetazolamide	Amount too small to be harmful
Acetylsalicylic acid	Short course safe in usual dosage; monitor infant; regular use of high doses could impair platelet function and produce hypoprothrombinaemia in infant if neonatal vitamin K stores low; possible risk of Reye syndrome
Aciclovir	Significant amount in milk after systemic administration, but considered safe to use
Alcohol	Large amounts may affect infant and reduce milk consumption
Allopurinol	Present in milk — not known to be harmful
Aminophylline	Present in milk—irritability in infant reported
Amitriptyline	Detectable in breast milk; continue breastfeeding; adverse effects possible, monitor infant for drowsiness
Amlodipine	Presence in milk possible; monitor infant
Amoxicillin	Trace amounts in milk; safe in usual dosage; monitor infant
Amoxicillin + Clavulanic acid	Trace amounts in milk
Ampicillin	Trace amounts in milk; safe in usual dosage; monitor infant
Amphotericin B	No information available
Artemether + Lumefantrine	Discontinue breastfeeding during and for 1 week after stopping treatment; present in milk in <i>animal</i> studies
Atenolol	Significant amounts in milk; safe in usual dosage; monitor infant
Atropine	Small amount present in milk; monitor infant
Beclometasone	Systemic effects in infant unlikely with maternal dose of <i>less than equivalent</i> of prednisolone 40 mg daily; monitor infant's adrenal function with higher doses; the amount of inhaled drug in breast milk is probably too small to be harmful
Benzylpenicillin	Trace amounts in milk; safe in usual dosage; monitor infant
Bupivacaine	Amount too small to be harmful
Carbamazepine	Continue breastfeeding; adverse effects possible (severe skin reaction reported in one infant); monitor infant for drowsiness
Cefazolin	Excreted in low concentrations; safe in usual dosage; monitor infant
Ceftazidime	Excreted in low concentrations; safe in usual dosage; monitor infant
Ceftriaxone	Excreted in low concentrations; safe in usual dosage; monitor infant
Chloramphenicol	Continue breastfeeding; use alternative drug if possible; may cause bone-marrow toxicity in infant; concentration in milk usually insufficient to cause 'grey syndrome'
Chloroquine	At doses used for malaria prophylaxis, amount in milk probably too small to be harmful and inadequate for reliable protection against malaria in the breastfed infant; avoid breastfeeding when used for rheumatic disease

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Chlorphenamine	Safe in usual dosage; monitor infant for drowsiness
Chlorpromazine	Continue breastfeeding; adverse effects possible; monitor infant for drowsiness
Ciprofloxacin	Continue breastfeeding; use alternative drug if possible; high concentrations in breast milk
Clindamycin	Amount probably too small to be harmful but bloody diarrhoea reported in 1 infant
Cloxacillin	Trace amounts in milk; safe in usual dosage; monitor infant
Codeine	Amount too small to be harmful
Colchicine	Present in milk but no adverse effects reported; caution because of risk of cytotoxicity
Contraceptives, oral	Combined oral contraceptives may inhibit lactation—use alternative method of contraception until weaning or for 6 months after birth; progestogen-only contraceptives do not affect lactation (preferably start 6 weeks after birth or later)
Dexamethasone	Systemic effects in infant unlikely with maternal dose of <i>less than equivalent</i> of prednisolone 40 mg daily; monitor infant's adrenal function with higher doses
Diazepam	Continue breastfeeding; adverse effects possible; monitor infant for drowsiness
Digoxin	Amount too small to be harmful
Dopamine	No information available
Doxycycline	Continue breastfeeding; use alternative drug if possible (absorption and therefore discoloration of teeth in infant probably usually prevented by chelation with calcium in milk)
Enalapril	Amount probably too small to be harmful
Ephedrine	Irritability and disturbed sleep reported
Ergocalciferol	Caution with high doses; may cause hypercalcaemia in infant
Ergotamine	Use alternative drug; ergotism may occur in infant; repeated doses may inhibit lactation
Erythromycin	Only small amounts in milk – not known to be harmful
Estradiol cypionate	Avoid; adverse effects on lactation; see <i>also</i> Contraceptives, Oral
Ethinylestradiol	May inhibit lactation; use alternative method of contraception; see Contraceptives, Oral
Fluconazole	Present in milk; safe in usual dosage; monitor infant
Fluoxetine	Present in milk; manufacturer advises avoid or use lowest effective dose
Furosemide	Amount too small to be harmful
Gentamicin	Amount probably too small to be harmful; monitor infant for thrush and diarrhoea
Glibenclamide	Theoretical possibility of hypoglycaemia in infant
Griseofulvin	No information available; avoid

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Haloperidol	Amount excreted in milk probably too small to be harmful; continue breastfeeding; adverse effects possible; monitor infant for drowsiness
Halothane	Excreted in milk
Hydralazine	Present in milk but not known to be harmful; monitor infant
Hydrochlorothiazide	Continue breastfeeding; may inhibit lactation
Hydrocortisone	Systemic effects in infant unlikely with maternal dose of <i>less than equivalent</i> of prednisolone 40 mg daily; monitor infant's adrenal function with higher doses
Ibuprofen	Amount too small to be harmful; short courses safe in usual doses
Imipenem + cilastatin	Present in milk; manufacturer advises avoid
Indinavir	Breastfeeding recommended during first 6 months if no safe alternative to breast milk
Insulin	Amount too small to be harmful
Iodine	Stop breastfeeding; danger of neonatal hypothyroidism or goitre; appears to be concentrated in milk
Isoniazid	Monitor infant for possible toxicity; theoretical risk of convulsions and neuropathy; prophylactic pyridoxine advisable in mother and infant
Lamivudine	Present in milk; breastfeeding recommended during first 6 months if no safe alternative to breast milk
Levamisole	Breastfeeding contraindicated
Levonorgestrel	Combined oral contraceptives may inhibit lactation—use alternative method of contraception until weaning or for 6 months after birth; progestogen-only contraceptives do not affect lactation (preferably start 6 weeks after birth or later)
Levothyroxine	Amount too small to affect tests for neonatal hypothyroidism
Lidocaine	Amount too small to be harmful
Lumefantrine	See Artemether + Lumefantrine
Mebendazole	Amount too small to be harmful
Medroxyprogesterone	Present in milk—no adverse effects reported (preferably start injectable contraceptive 6 weeks after birth or later)
Mefloquine	Present in milk but risk to infant minimal
Metformin	Present in milk but safe in usual doses; monitor infant
Methylthioninium chloride	No information available; avoid
Metoclopramide	Present in milk; adverse effects possible; monitor infant for adverse effects
Metronidazole	Significant amount in milk; continue breastfeeding; avoid large doses; use alternative drug if possible
Morphine	Short courses safe in usual doses; monitor infant
Naloxone	No information available
Neostigmine	Amount probably too small to be harmful; monitor infant
Nifedipine	Small amount in milk; continue breastfeeding; monitor infant

Nitrofurantoin	Only small amounts in milk but could be enough to produce haemolysis in G6PD-deficient infants
Norethisterone	Combined oral contraceptives may inhibit lactation – use alternative method of contraception until weaning or for 6 months after birth; progestogen-only contraceptives do not affect lactation (preferably start injectable contraceptive 6 weeks after birth or later)
Nystatin	No information available, but absorption from gastrointestinal tract negligible
Paracetamol	Small amount present in milk: short courses safe in usual dosage; monitor infant
Phenobarbital	Continue breastfeeding; adverse effects possible; monitor infant for drowsiness; <i>see also</i> WMF/BNF
Phenoxymethylpenicillin	Trace amounts in milk; safe in usual dosage; monitor infant
Phenytoin	Small amount present in milk; continue breastfeeding; adverse effects possible; monitor infant for drowsiness; <i>see also</i> WMF/BNF
Polyvidone–iodine	Avoid; iodine absorbed from vaginal preparations is concentrated in milk
Potassium iodide	Stop breastfeeding; danger of neonatal hypothyroidism or goitre; appears to be concentrated in milk
Praziquantel	Avoid breastfeeding during and for 72 hours after treatment; considered safe to continue breastfeeding in treatment of schistosomiasis
Prednisolone	Systemic effects in infant unlikely with maternal dose of <i>less than</i> prednisolone 40 mg daily; monitor infant's adrenal function with higher doses
Primaquine	No information available; risk of haemolysis in G6PD-deficient infants
Procainamide	Present in milk; continue breastfeeding; monitor infant
Proguanil	Amount in milk probably too small to be harmful at doses used for malaria prophylaxis but inadequate for reliable protection against malaria in breastfed infant
Promethazine	Safe in usual dosage; monitor infant for drowsiness
Propranolol	Present in milk; safe in usual dosage; monitor infant
Propylthiouracil	Monitor infant's thyroid status but amounts in milk probably too small to affect infant; high doses might affect neonatal thyroid function
Quinine	Present in milk — continue breastfeeding and monitor infant; risk of haemolysis in G6PD deficient infants
Ranitidine	Significant amount present in milk, but not known to be harmful
Retinol	Theoretical risk of toxicity in infants of mothers taking large doses
Salbutamol	Safe in usual dosage; monitor infant
Senna	Continue breastfeeding; monitor infant for diarrhoea
Silver sulfadiazine	Continue breastfeeding; monitor infant for jaundice—small risk of kernicterus in jaundiced infants particularly with long-acting sulphonamides, and of haemolysis in G6PD-deficient infants

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Simvastatin	No information available — manufacturer advises avoid
Sodium nitroprusside	No information available
Spironolactone	Amount probably too small to be harmful
Sulfadiazine	Monitor infant for jaundice—small risk of kernicterus in jaundiced infants and of haemolysis in G6PD-deficient infants; caution in ill or premature infants
Sulfadoxine + Pyrimethamine	Monitor infant for jaundice—small risk of kernicterus in jaundiced infants and of haemolysis in G6PD-deficient infants (due to sulfadoxine); caution in ill or premature infants
Sulfamethoxazole + Trimethoprim	Monitor infant for jaundice—small risk of kernicterus in jaundiced infants and of haemolysis in G6PD-deficient infants (due to sulfamethoxazole); caution in ill or premature infants
Suxamethonium	No information available
Tetracaine	No information available
Tetracycline	Continue breastfeeding; use alternative drug if possible (absorption and therefore discoloration of teeth in infant probably usually prevented by chelation with calcium in milk)
Thiamine	Severely thiamine-deficient mothers should avoid breastfeeding as toxic methyl-glyoxal excreted in milk
Thiopental	Present in milk—not known to be harmful
Trimethoprim	Present in milk; safe in usual dosage; monitor infant
Vancomycin	Present in milk—significant absorption after oral admin unlikely
Vecuronium	No information available
Verapamil	Amount too small to be harmful
Warfarin	Risk of haemorrhage; increased by vit-K deficiency; warfarin appears safe
Zidovudine	Breastfeeding recommended during first 6 months if no safe alternative to breast milk