



STATE OF LOUISIANA
DEPARTMENT OF HEALTH AND HOSPITALS



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Dear Health Professional:

The Department of Health and Hospitals, Bureau of Health Services Financing, and the University of Louisiana at Monroe, College of Pharmacy, continue to develop Disease Management programs to address the educational component of the Louisiana Medicaid Pharmacy Benefits Management system.

Enclosed are the education brochures for selected Medicaid recipient and their health care practitioners. We appreciate your taking time to review these and incorporating this information into your practice as you deem appropriate.

Thank you for your continued participation in the Medicaid program. Should you need additional information concerning the Disease Management program, please contact M.J. Terrebonne at (225)342-9768.

Sincerely,

Ben A. Bearden
Director

BAB/MJT/wp

Enclosures

Asthma and Pregnancy

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Asthma, P5

Asthma is one of the most common diseases during pregnancy that has potential for serious medical complications. Uncontrolled asthma during pregnancy increases the risk of both maternal and fetal complications.(1) Asthma is estimated to occur in about 1 to 4% of pregnancies, typically as a preexisting comorbidity, although a few cases may initially present during pregnancy.(2,3) Health issues relating to asthma and pregnancy may be categorized as follows:

- The effect of pregnancy on asthma severity,
- The effect of asthma on pregnancy and maternal and fetal outcomes, and
- General asthma management during pregnancy.

Introduction

In a review of 366 asthmatic women, 35% of the patients reported worsened asthma during pregnancy, while 33% experienced no change, and 28% had improvement in their asthma. In the latter group, symptoms diminished during the last four weeks of pregnancy. Among those patients whose asthma worsened, the most severe effects were noted between weeks 29 and 36 of gestation.(4) An administrative database study showed that pregnancies in asthmatic women are associated with an increased risk of preterm birth, low birth weight, pre-eclampsia, and greater incidence of congenital malformations.(5) An outcomes review of pregnant asthmatic patients found that asthmatic women were at increased risk for antepartum and postpartum hemorrhage, independent of asthma medications.(6) It was further noted that asthmatic women taking steroids were at increased risk of pregnancy-induced hypertension.(6) A retrospective investigation evaluated pneumonia as a complication of pregnancy.(7) Results revealed that women with asthma had more than a five-fold increase in the risk of developing pneumonia during pregnancy. Other studies, however, in which exact documentation of the severity of asthma (via peak flow measurement) were done, suggest that asthma generally improves during pregnancy.(8) Additional findings(9,10) have shown that even patients with severe asthma effectively

managed with inhaled and oral corticosteroids are not subject to increased maternal or fetal mortality. It is generally believed that the severity of asthma during one pregnancy strongly indicates the severity experienced in subsequent pregnancies.(11) Changes during pregnancy, which may alter the course of asthma, appear to be related primarily to alteration of hormonal levels.(12) In those patients who experience improved symptoms during pregnancy, there generally appears to be a shift in the hormonal balance toward free cortisol. Conversely, the exacerbation of asthma in pregnancy appears to be related to an increase in serum progesterone, aldosterone and deoxycorticosterone.(12) The relationship between asthma status and hormonal balance are summarized in Table 1.

Table 1. Physiologic factors that may affect asthma during pregnancy (12) .

Factors that may improve asthma:	Factors that may worsen asthma:
<ol style="list-style-type: none"> 1. Pulmonary effect of increased serum free cortisol. 2. Progesterone mediated bronchodilator. 3. Estrogen or progesterone-mediated bronchoconstriction. 4. Decreased plasma histamine-mediated bronchodilation. 5. Glucocorticoid-mediated increased beta-adrenergic responsiveness. 6. Prostaglandin E-mediated bronchodilation.. 7. Prostaglandin I2-mediated stabilization. 8. Atrial natriuretic factor-induced bronchodilation. 9. Increased half-life or decreased protein binding of endogenous or exogenous bronchodilators. 	<ol style="list-style-type: none"> 1. Pulmonary refractoriness to cortisol effects because of competitive binding to glucocorticoid receptors by progesterone, aldosterone, or deoxycorticosterone. 2. Prostaglandin F2-mediated bronchoconstriction. 3. Decreased functional reserve capacity of the lung. 4. Increased placental major basic protein reaching the lung. 5. Increased viral or bacterial respiratory infection-triggered asthma. 6. Increased gastroesophageal reflux-induced asthma. 7. Increased stress.

Therapeutic Management

The basic therapeutic management of asthma, which applies to all patients, is applicable to pregnant asthmatic patients as well. Appropriate asthma management includes asthma education, diligent monitoring of the woman's pulmonary status as well as fetal status, avoidance of asthma triggers, immunotherapy as indicated, and indicated pharmacotherapy.(1) Published practice guides include avoidance of asthma triggers, use of bronchodilators as quick relief drugs for patients with intermittent problems, and the addition of anti-inflammatory drugs, e.g. inhaled corticosteroids, in those patients with persistent asthma.(1) A recent prospective randomized study assessed the effectiveness of mite allergen avoidance efforts during pregnancy and the first year of life.(13) It was

determined that use of multiple mite avoidance measures achieved and maintained a low mite allergen environment during pregnancy and during the first postpartum year for infants at risk for atopy.

Table 2. Recommendations for patients to assist in avoidance of asthma triggers during pregnancy. (2,14)

Asthma Triggers	Avoidance
Allergens	<ol style="list-style-type: none"> 1. Define relevant allergens, and avoid as much as possible. Examples include pollen, mold, animal dander, house dust mites and cockroaches. 2. Reduce contact with allergy causing pets as much as possible. 3. Use non-allergenic pillows/comforters and seal pillows, mattresses and box springs in special dust mite-proof casings. 4. Wash bedding at least weekly in 130 degree F water or dry clean comforters periodically to kill dust mites. 5. Keep home humidity under 50% to control dust mite and mold growth. 6. Use filtering vacuums or “filter vacuum bags” to control dust while cleaning. 7. Close windows, use air-conditioning and avoid unnecessary outdoor activity when pollen and pollution are worse.
Exercise	<ol style="list-style-type: none"> 1. Exercise regularly but warm up slowly before vigorous exercise.
Respiratory Infections	<ol style="list-style-type: none"> 1. If possible avoid persons with a “cold” or influenza. This can be better achieved by staying away from crowded indoor environments during winter when the risk of infection is high. Influenza and pneumococcal vaccinations should be considered.
Emotional Stress	<ol style="list-style-type: none"> 1. Try to avoid stressful circumstances and learn to cope with and manage stress.
Lung Irritants	<ol style="list-style-type: none"> 1. Learn about likely chemical irritants in your environment and avoid them when possible. For example stay indoors and reduce activity when air pollution is worse. 2. Smoking harms both the asthmatic patient and her child.
Weather	<ol style="list-style-type: none"> 1. Avoid abrupt inhalation of cold air when going from a warm to a cold location. The use of a covering over the mouth and nose may help.
Drugs	<ol style="list-style-type: none"> 1. Generally avoid drugs that may make your asthma worse or that you may not have discussed with your physician. An example would be aspirin or certain other nonsteroidal anti-inflammatory drugs such as ibuprofen.

The National Asthma Education and Prevention Program Working Group on Asthma and Pregnancy determined that under-treatment, principally attributable to unfounded fears of fetal effects of medication, is the major problem in the management of asthma during pregnancy in the United States.(1) Information on the effect of marketed drug use during pregnancy is limited, primarily because premarketing studies are precluded in pregnant women unless the drug is intended for specific use during pregnancy.(15) A retrospective cohort study documented a significant increase in hyperbilirubinemia in infants of asthmatic women taking corticosteroids (Category C) during pregnancy (See Table 6 for the FDA Pregnancy Risk Factor Categories).(16) A recent Swedish study, evaluating the teratogenic potential of inhaled budesonide (Category C) in early pregnancy, concluded that it is unlikely that significant fetal risk exists with this therapy.(17) Yet use of oral corticosteroids in the first trimester has been correlated with increased risk of oral clefts, and prednisone therapy throughout pregnancy has been associated with lower birth weight among babies of non-asthmatic women.(18,19) Several studies have suggested a strong association between oral corticosteroids and the risk of pre-eclampsia.(12) Nevertheless, there is little data to suggest increased fetal risk from most drugs used during pregnancy to treat asthma and rhinitis, with the exception of brompheniramine, epinephrine, and alpha-adrenergic compounds (other than pseudoephedrine), all Category C. Additional drug classes which pose some possible fetal risk include decongestants (other than ephedrine, Category C), antibiotics such as tetracyclines (Category D), sulfonamides (Category B) and ciprofloxacin (Category C), live virus vaccines, such as measles, mumps, polio, rubella (Category C), immunotherapy (dose related), and iodides (Category D).(20)

Table 3. General guidelines relative to drug therapy during pregnancy. (2, 21)

1.	Optimize non-drug treatment, such as environmental controls and avoidance of asthma triggers before using medication. (22)
2.	Employ the minimum dose necessary to control symptoms and avoid fetal hypoxia. Dosages should be decreased if the patient's asthma improves during pregnancy.
3.	Steps to control asthma and any necessary medication changes should be optimized prior to conception if possible.
4.	The preferred drug delivery method, because of decreased chance of systemic effect, is aerosolized therapy. It should be noted that inhaled triamcinolone is teratogenic and should be avoided during pregnancy.
5.	Inhaled beta2-agonists (Category C) are generally considered safe during pregnancy. Since systemic beta agonists may inhibit or prolong labor, they should be avoided near labor.
6.	Parenteral epinephrine poses a risk of congenital malformations; therefore, it should be avoided during pregnancy.
7.	Theophylline (Category C) readily crosses the placenta and may cause jitteriness in the newborn. Theophylline dosing may need to be altered as pregnancy progresses, as a result of pregnancy induced changes in the drug's kinetics. Alteration of late-gestation fetal breathing movements by maternally administered theophylline was studied by Ishikawa et al.(23) A significant increase in fetal breathing movements was observed in the study group of women receiving theophylline, a consideration to keep in mind relative to fetal monitoring.
8.	Cromolyn (Category B) appears to be safe in pregnancy.

Table 4. More recent guidelines for asthma during pregnancy published in the American Journal of Clinical Immunology suggest the following additional stepwise pharmacologic approach. (24)

1. Inhaled beta agonist, terbutaline (Category B) preferred, two inhalations every four hours, as needed up to eight inhalations per day. Regular daily use suggest the need for additional medications.
2. Regular inhaled cromolyn, two inhalations four times a day is recommended as the initial therapy for patients requiring regular medication.
3. Regular inhaled beclomethasone (Category B) is recommended if the cromolyn is ineffective. There are data to suggest enhanced incidence of oropharyngeal candidiasis associated with inhaled beclomethasone.(25,26) Oral rinsing and gargling with water after each inhalation may decrease the risk of colonization.(27)
4. Regular oral theophylline if beclomethasone is not effective. It should be noted that theophylline reduces the pressure of the lower esophageal sphincter, and thus may aggravate preexisting gastroesophageal reflux.
5. Oral prednisone is reserved for those who have failed all other therapies. Prednisone or methylprednisolone are the preferred oral steroids since they cross the placenta relatively poorly.(21)
6. Status asthmaticus has been associated with intrauterine growth retardation, stillbirths, maternal deaths, and other comorbidities such as cerebral palsy.(28) Therefore patients who experience acute exacerbation should be treated aggressively to avoid fetal hypoxia and maternal injury.
7. Published allergy specialty practice recommendations for treatment for acute asthma exacerbations include the following.(24)
 - a. Nebulized beta2-agonist (terbutaline preferred) as an initial step.
 - b. Intravenous methylprednisolone if there is a poor response to initial beta-agonist therapy.
 - c. Then consider intravenous aminophylline and inhaled anticholinergic medications as the subsequent step.
 - d. Subcutaneous terbutaline if no response to steps one to three.
 - e. Supplemental oxygen is also recommended to maintain an oxygen saturation greater than 95%.

Routine skin testing to identify allergens should be deferred in pregnant asthmatic patients due to the potential risk for severe systemic reactions to the allergens. Immunotherapy may be safely continued during pregnancy, however, initiation of immunotherapy is not recommended in the pregnant patient because of the risk of a severe systemic reaction in highest during initiation of therapy.

(2)

Table 5. A summary of the recent ACAAI-ACOG Recommendations for the use of newer asthma and allergy medications during pregnancy recommends the following.(29)

Medication	Pregnancy Category	Consider Use in Pregnant Women
Salmeterol	C	With moderate to severe asthma who have shown a very good response prior to pregnancy and who are inadequately controlled by medium-dose inhaled corticosteroids
Ipratropium (Nebulized)	B	Presenting with acute asthma who do not improve substantially with the first inhaled beta agonist treatment
Nedocromil Budesonide	B	Who have shown a good response prior to pregnancy Who are starting inhaled corticosteroids during pregnancy; Who require high doses of inhaled corticosteroids for adequate control
Fluticasone	C	Who have shown a good response prior to pregnancy
Zileuton	C	No indication at this time
Zafirlukast	B	With recalcitrant asthma who have shown a uniquely favorable response prior to pregnancy
Montelukast	B	With recalcitrant asthma who have shown a uniquely favorable response prior to pregnancy
Cetirizine	B	Who do not tolerate chlortrimeton or triplennamine and who need an antihistamine in spite of optimal topical therapy (ideally after 1 st trimester)
Loratadine	B	Same as for cetirizine
Azelastine	C	Not a drug of choice, based on animal studies
Fexofenadine	C	Not a drug of choice, based on animal studies
Intranasal Steroids		Who have shown a good response prior to pregnancy and who continue to require such therapy

As long as good asthma control is maintained during pregnancy, patients usually will not need modification of their drug therapy during labor and delivery. Worsening of symptoms during labor can be treated with inhaled terbutaline followed by intravenous methylprednisolone if the terbutaline is not effective. For patients who take oral corticosteroids prior to labor, a short course of systemic corticosteroids should be given prior to labor and delivery in anticipation of associated stress.(2) For labor induction, oxytocin is the preferred medication, and intracervical prostaglandin E2 gel can be used for cervical ripening prior to labor induction. The concurrent use of epidural analgesia should be considered for regional anesthesia during labor and delivery. Ketamine may be the agent of choice for general anesthesia, possibly with preanesthetic use of a beta2-agonist. For postpartum

hemorrhage, currently oxytocin is considered the drug of choice.

Ergonovine and methylergonovine have been associated with bronchospasm.(30)

Asthma medications considered safe for use during pregnancy are also generally considered safe in lactating women. It should be noted though that theophylline is readily secreted in breast milk and may result in irritability and insomnia in the newborn.(2) Although the excretion of drugs into breast milk has not been completely evaluated, there appears to be no substantial evidence of harm to the nursing child, and breast-feeding should not be discouraged.(30)

Thorough understanding and consistent application of professional guidelines, provision of patient education, and patient adherence to therapy can help assure that the pregnant asthmatic patient remains free of disease exacerbation and that fetal outcome is optimal.

Table 6. Food and Drug Administration Pregnancy Risk Factor Categories (31)

Category A: Controlled studies in women fail to demonstrate a risk to the fetus in the first trimester (and there is no evidence of a risk in the later trimesters), and the possibility of fetal harm appears remote.
Category B: Either animal-reproduction studies have not demonstrated a fetal risk but there are no controlled studies in pregnant or animal-reproduction studies have shown an adverse effect (other than a decrease in fertility) that was not confirmed in controlled studies in women in the first trimester (and there is no evidence of a risk in later trimesters).
Category C: Either studies in animals revealed adverse effects on the fetus (teratogenic or embryocidal or other) and there are no controlled studies in women or studies in women and animals are not available. Drugs should be given only if the potential benefit justifies the potential risk to the fetus.
Category D: There is positive evidence of human fetal risk, but the benefits from use in pregnant women may be acceptable despite the risk (e.g., if the drug is needed in a life-threatening situation or for a serious disease for which safe drugs cannot be used or are ineffective).
Category X: Studies in animals or human beings have demonstrated fetal abnormalities or there is evidence of fetal risk based on human experience or both, and the risk of the use of the drug in pregnant women clearly outweighs any possible benefit. The drug is contraindicated in women who are or may become pregnant.

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References

1. Luskin AT. An overview of the recommendations of by the Working Group on Asthma and Pregnancy. National Asthma Education and Prevention Program. *J Allergy Clin Immunol*. 1999;103(2 Pt 2):S350-3.
2. Brown E, Evans M, Ferdman R. Treatment Updates-A Clinical Series for Physicians. JAMA Asthma Treatment Center, Nov 1997. <http://www.ama-assoc.org/special/asthma/treatmnt/updates/pregnant.htm> Accessed May 27, 2000.
3. Esplin MS, Clark SL. Outpatient management of asthma during pregnancy. *Clinical Obstetrics and Gynecology*. 1998;41(3):555-563.
4. Schatz M, Harden K, Forsythe A et al. The course of asthma during pregnancy postpartum and with successive pregnancies: a prospective analysis. *J Allergy Clin Immunol*. 1988;81:509-517.
5. Demissie K, Breckenridge MB, Rhodes GG. Infant and maternal outcomes in the pregnancies of asthmatic women. *Am J Respir Crit Care Med*. 1998;158:1091-1095.
6. Alexander S, Dodds L, Armason BA. Perinatal outcomes in women with asthma during pregnancy. *Obstet Gynecol*. 1998;92(3):435-440.
7. Munn MB, Groome LJ, Atterbury JL, et al. Pneumonia as a complication of pregnancy. *Journal of Maternal-Fetal Medicine*. 1999;8:151-154.
8. Tucker DE. Asthma and pregnancy. *Women's Health*. Sept. 1998. <http://www.womens-health.co.uk/asthma.htm> Accessed May 2000.
9. Terr AI. Asthma and reproductive medicine. *Obstet Gynecol Surv*. 1998 Nov;3(11):699-707.
10. Minerbi-Codish I, Fraser D, Avnum L, et al. Influence of asthma in pregnancy on labor and the newborn. *Respiration*. 1998;65(2):130-135.
11. Mabie W, Barton J, Wasserstrum N, et al. Clinical observations on asthma in pregnancy. *J Matern Fetal Med*. 1992;45-50.
12. Schatz M. Asthma and pregnancy. *Lancet*. 1999 Apr 10;353(9160):1202-1204.
13. Custovic A, Simpson BM, Simpson A, et al. Manchester asthma study:low allergan environment can be achieved and maintained during pregnancy and in early life. *J Allergy Clin Immunol*. 2000 Feb;105(2 Pt 1):252-258.
14. When Allergies and Asthma Complicate Pregnancy. American College of Allergy. 1998 July.
15. Rosa F. Databases in the assessment of the effects of drugs during pregnancy. *J AllergyClinical Immunol*. 1999 Feb;103 (2 Pt 2):S360-361.
16. Alexander S, Dodds L, Armson BA. Perinatal outcomes in women with asthma during pregnancy. *Obstet Gynecol* 1998 Sept;92(3):35-440.
17. Kallen B, Hakan R, Aberg A. Congenital malformations after the use of inhaled budesonide in early pregnancy. *Obstet Gynecol*. 2000 March;93(3):392-395.
18. Rodriguez-Pinilla E, Martinez-Prias ML. Corticosteroids during pregnancy and oral clefts:a case-control study. *Teratology*. 1998;58:2-5.
19. Reinischch JM, Simon NG, Karow WG, et al. Perinatal exposure to prednisone in humans and animals as regards intrauterine growth. *Science*. 1978;202:436-438.
20. National Asthma Education Program: Expert Panel Report. *Guidelines for Diagnosis and Management of Asthma*. Washington, D.C.: Government Printing Office(Pub. No. 91-3042) 1997.
21. Mawhinnery H, Spector SL. Optimum management of asthma in pregnancy. *Drugs*. 1986;32:178-187.
22. Dombrowski MP. Pharmacologic therapy of asthma during pregnancy. *Obstetrics and Gynecology Clinics of North America*. 1997;24(3):559-574.
23. Ishikawa M, Yooneyama Y, Power GG, et al. maternal theophylline and breathing movements in late-gestation human fetuses. *Obstet Gynecol*. 1996 Dec;88(6):973-978.
24. Adams S. Practice parameters for the diagnosis and treatment of asthma. *J Allergy Clin Immunol*. 1995;96:821-824.
25. Nieminen MM, Vidgren P, Kokkarinen J, et al. A new beclomethasone multidose powder inhaler in the treatment of bronchial asthma. *Respiration*. 1998;65(4):275-81.
26. Saltzan GA, Pyszczynski DR. Oropharyngeal candidiasis in patients treated with beclomethasone dipropionate delivered by metered-dose inhaler alone and with Aerochamber. *J Allergy Clin Immunol*. 1988 Feb;81(2):424-428.
27. YamandaY, Hosokawa M, Yamaguchi N, et al. Effects of mouth wash on the removing beclomethasone dipropionate delivered by pressurized aerosol metered dose inhaler in the mouth. *Yakugaku Zasshi*. 1999 June;119(6):436-443.
28. Fitzsimmons R, Greenberger PA, Patterson R. Outcomes of pregnancy in women requiring corticosteriods for severe asthma. *J Allergy Clin Immunol*. 1986;78:349-355.
29. Dombrowski MP, Huff R, Lipkowitz M, et al. The use of newer asthma and allergy medications during pregnancy. *Ann Allergy Asthma Immunol*. 2000 May;84(5):475-80.
30. Saltmarsh N. (Ed). *Practice Parameters for the Diagnosis and Treatment of Asthma. Asthma Disease State Management Resource*. Atlanta, GA: American Health Consultants, 1998.
31. Briggs GG, Freeman RK, Sumner JY. *Drugs in Pregnancy and Lactation*. 5th ed. Baltimore, MD: William & Wilkins, 1998.

Complete Wellness: A Guide to Managing Your Health

** The following is an abbreviated version of the education material sent to selected Medicaid recipients.*

Asthma and Pregnancy

By: William H. Ross, BS Pharm.

Drug Information Service

University of Louisiana at Monroe, College of Pharmacy

If you have asthma and are pregnant or planning to become pregnant, this information is for you!

What effect can asthma have on a pregnancy?

Poorly controlled asthma can cause problems for both the expectant mother and the baby. The good news is that asthma can be controlled and, then the danger to both the mother and child is low. During pregnancy,

- 1/3 have no change in their asthma,
- Asthma gets better for about 1/3,
- Asthma gets worse for about 1/3.

Shortness of breath is common during pregnancy. It is important to know the difference between the normal shortness of breath due to pregnancy and shortness of breath caused by asthma. Uncontrolled asthma may also cause an expectant mother to suffer from high blood pressure or preeclampsia, a high blood pressure condition that can cause problems to the mother. The worse time for asthma is the last 3 months of pregnancy. About one out of ten women with asthma have problems during labor and delivery. If you have been pregnant before, your asthma will probably be the same in the next pregnancy.

How can I control my asthma while I am pregnant?

Asthma and allergies are often related. Many patients with asthma are allergic to pollens, molds, pet hair, house dust, mites and cockroaches. Also, things that do not necessarily cause an allergy may still make asthma worse. These include tobacco smoke, chemical fumes, paint, smog, ozone, strong odors and certain drugs. Both allergic and non-allergic substances may cause asthma symptoms or make it worse. Both of these types of substances are called triggers. You can help control your asthma during

pregnancy by trying to reduce the triggers you are exposed to.

- Remove allergy-causing pets from your house.
- Seal pillows, mattresses and box springs in special covers. Ask your doctor about these covers.
- Wash sheets weekly in hot water.
- If you can't wash blankets, try to dry clean them to kill dust mites.
- If possible, use air conditioning to keep down the humidity and to control dust mites and dust.
- Use filtering vacuums or "filter vacuum bags" and vacuum often.
- Close windows and stay indoors when pollen and pollution are bad.
- Try to avoid crowds during cold and flu season.

What about smoking during pregnancy?

Infants are three times more likely to die of Sudden Infant Death Syndrome (SIDS) if their mothers smoked during pregnancy or when the baby is small. Tobacco smoke is a strong asthma trigger and can cause asthma-like changes in your baby's lungs. A pregnant woman who smokes is much more likely to have severe asthma symptoms at some time during pregnancy and these also can hurt the baby.

What about alcohol during pregnancy?

Drinking alcohol while pregnant can severely harm the baby. Alcohol can also make breathing more difficult for the mother which then reduces the oxygen supply to the baby.

What about my asthma medicines during pregnancy?

No medicine can be proved to be completely safe for all asthma patients during pregnancy. It is important to know, however, that your baby is at greater risk from uncontrolled asthma than from the medicines you take to control your asthma. Asthma medicines that the mother breathes in (inhalers) are usually safer for the baby than those that are swallowed because most of the breathed medicine does not get into the mother's or baby's bloodstream. Discuss all of your medicines, including non-prescription drugs and "natural remedies", with your doctor and your pharmacist as soon as you know that you are pregnant.

What about allergy shots?

Sometimes if an asthma patient continues to have bad symptoms despite getting rid of asthma triggers, a doctor will give the patient allergy shots (immunotherapy). If you are already getting allergy shots when you become pregnant, you should keep using these medicines:

- If they are helping your asthma,
- If you do not have any bad effects from the allergy shots.

Since it may take many months for allergy shots to work well, it is not usually recommended that allergy shots be started during a pregnancy.

Remember-your baby is depending on you!!

If asthma is closely watched and controlled during pregnancy then problems with the mother's health can be avoided and she can expect a healthy normal baby. If you become pregnant, it is very important to tell your doctor and pharmacist right away. This way you can work together as a team to make sure that you and your baby stay healthy.



What other effects can asthma have on my baby?

A baby depends on its mother for the oxygen it needs to live and grow. Uncontrolled asthma causes less oxygen in the mother's blood, so the baby has less oxygen too. This low oxygen can affect the baby's growth and even its survival. Other problems for the baby can include greater chance of premature birth, low birth weight, and stillbirth.

How can I know if asthma is affecting my baby?

There are several tests your doctor can do to check your asthma and how it's affecting the health of the baby. Ultrasound can be done in months 1-3 to check your due date. In months 4-6, ultrasounds can be used to make sure your baby is growing like it should. Special electronic heart rate monitoring and ultrasound may be done in months 7-9 to check your baby's well being. If you have bad asthma symptoms toward the end of your pregnancy, an ultrasound check may be done more often. You can talk with your doctor about keeping track of your baby's activity and kick counts as another check on its health. Your doctor may also want to measure your lung function to be sure your baby is getting enough oxygen, especially if you have bad or repeated asthma symptoms.

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Complete Wellness:

A Guide to Disease Management