



## Inhaled Corticosteroids (ICSs)

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk. This sheet talks about whether exposure to inhaled corticosteroids may increase the risk for birth defects over that background risk. This information should not take the place of medical care and advice from your health care provider.

### ***What are inhaled corticosteroids?***

Inhaled corticosteroids (ICSs) are medicines used daily to prevent and control the symptoms of asthma. ICSs are taken using an inhaler, pump, or nebulizer. ICSs have fewer side effects than corticosteroid pills since most of the inhaled medicine goes directly to the lungs instead of traveling throughout the body.

ICSs help control the swelling of the airways in the lungs and reduce mucus production so that asthma attacks are less likely. ICSs are not effective in stopping immediate symptoms when you are having an asthma attack. Some examples of ICSs are beclomethasone dipropionate (Qvar®), budesonide (Pulmicort®), fluticasone propionate (Flovent®), mometasone furoate (Asmanex®), or triamcinolone acetonide (Azmacort®).

This fact sheet will focus on corticosteroids that are inhaled (breathed into lungs), and not corticosteroids taken in other ways. For more information about corticosteroids taken in a pill form, see the MotherToBaby fact sheet Prednisone/Prednisolone at <https://mothertobaby.org/fact-sheets/prednisoneprednisolone-pregnancy/pdf/> or the MotherToBaby fact sheet on Topical Corticosteroids at <https://mothertobaby.org/fact-sheets/topical-corticosteroids-pregnancy/pdf/>.

### ***I just found out I am pregnant. Should I stop taking my ICS?***

No. Always talk to your health care provider before making any changes in your medication. Untreated asthma can cause problems for a pregnancy (see the MotherToBaby fact sheet Asthma and Pregnancy at <https://mothertobaby.org/fact-sheets/asthma-and-pregnancy/pdf/>). ICSs are considered preferred asthma treatments during pregnancy because they usually control asthma well. Also, they are absorbed into the body in lower amounts compared to pill forms of medication. That means that only very small amounts are likely to reach the developing baby.

It is important to control your asthma symptoms with medicine that is proven to work for you. If you are taking an ICS that is working for you, it is not recommended that you switch medications during pregnancy without talking to your health care provider.

### ***Can taking ICSs during my pregnancy cause a birth defect?***

ICSs are unlikely to cause a birth defect. When corticosteroid pills are taken during the first trimester of pregnancy, some studies suggested a small chance (less than 1%) for cleft lip with or without cleft palate (split in the lip and /or roof of the mouth). However, studies on ICSs have found no overall increased chance for birth defects. High doses of ICSs (doses that could be closer to the doses found in corticosteroid pills) have not been well studied during pregnancy.

### ***Can taking ICSs during pregnancy cause other pregnancy complications?***

Even though corticosteroid pills have been associated with lower birth weight, this has not been seen with ICSs. However, untreated asthma can also cause low birth weight and other pregnancy complications. It is important to work with your health care team to make sure your asthma is well-controlled during pregnancy.

### ***Can I take ICSs while breastfeeding?***

Most ICSs have not been studied during breastfeeding. However, the amount of medicine that would be in the breast milk following inhalation is likely too small to cause problems for a breastfeeding infant. Be sure to talk to your health care provider about any medications you take while breastfeeding.

### ***What if the father of the baby takes an ICS?***

There is no evidence that ICSs taken by men would affect their sperm. In general, exposures that fathers have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures and Pregnancy at <https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/>.

***MotherToBaby is currently conducting a study looking at asthma and the medications used to treat asthma in pregnancy. If you are interested in taking part in this study, please call 1-877-311-8972 or sign up at <https://mothertobaby.org/join-study/>.***

### **Selected References:**

- Bakhireva LN, et al. 2005. Asthma medication use in pregnancy and fetal growth. *Allergy Clin Immunol* 116(3):503-509.
- Bay Bjørn AM, et al. 2014. Use of corticosteroids in early pregnancy is not associated with risk of oral clefts and other congenital malformations in offspring. *Am J Ther*; 21(2):73-80.
- Blais L, et al. 2007. Use of inhaled corticosteroids during the first trimester of pregnancy and the risk of congenital malformations among women with asthma. *Thorax* 62:320-328.
- Blais L, et al. 2009. High doses of inhaled corticosteroids during the first trimester of pregnancy and congenital malformations. *J Allergy Clin Immunol* 124(6):1229-1234.
- Charlton RA, et al. 2015. Safety of fluticasone propionate prescribed for asthma during pregnancy: A UK population-based cohort study. *J Allergy Clin Immunol Pract*; 3(5):772-9.e3.
- Cossette B, et al. 2013. Impact of maternal use of asthma-controller therapy on perinatal outcomes. *Thorax*; 68(8):724-30.
- Ellsworth A. 1994. Pharmacotherapy of asthma while breastfeeding. *J Hum Lact*; 10:39-41.
- Fält A, et al. 2007. Exposure of infants to budesonide through breast milk of asthmatic mothers. *J Allergy Clin Immunol* 120(4):798-802.
- Greenberger PA, Patterson R. 1983. Beclomethasone dipropionate for severe asthma during pregnancy. *Ann Internal Med* 98:478-480.
- Källén B, et al. 1999. Congenital malformations after the use of inhaled budesonide in early pregnancy. *Obstet Gynecol* 93(3):392-395.
- Lim AS, et al. 2011. Management of asthma in pregnant women by general practitioners: A cross sectional survey *BMC Family Practice* 12:121
- Namazy J, et al. 2004. Use of inhaled steroids by pregnant asthmatic women does not reduce intrauterine growth. *J Allergy Clin Immunol* 113(3):427-432.
- Norjavaara E and Gerhardsson de Verdier MG. 2003. Normal pregnancy outcomes in a population-based study including 2968 pregnant women exposed to budesonide. *J Allergy Clin Immunol* 111(4):736-742.
- Rocklin RE, 2011. Asthma, asthma medications and their effects on maternal/fetal outcomes during pregnancy. *Reproductive Toxicology* 32 (2011) 189–197
- Schatz M, et al. 2004. The relationship of asthma medication use to perinatal outcomes. *J Allergy Clin Immunol* 113(6):1040-1045.
- Steinberg JA. 2015. Perception versus reality: the saga of inhaled asthma controller medication and fetal risk. *J Allergy Clin Immunol*; 135(1):131-2.

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