



## Proton Pump Inhibitors

This sheet talks about exposure to proton pump inhibitors in a pregnancy and while breastfeeding. This information should not take the place of medical care and advice from your healthcare provider.

### ***What are proton pump inhibitors?***

Proton pump inhibitors (PPIs) are a group of medicines that treat the symptoms of acid reflux, stomach and intestinal ulcers. Acid reflux occurs when acid from the stomach backs up into the esophagus and causes symptoms commonly known as “heart burn.” Proton pump inhibitors work by decreasing acid production in the stomach, which reduces discomfort. Examples of proton pump inhibitors include: omeprazole (Prilosec®), lansoprazole (Prevacid®), pantoprazole (Protonix®), esomeprazole (Nexium®) and rabeprazole (Aciphex®).

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

Always talk with your healthcare provider before making any changes in your medication. The benefits of treatment for heartburn symptoms or ulcers needs to be considered along with any possible risks from medicines. Your healthcare providers can help you to decide what the best decision for you is.

### ***Can taking PPIs increase the chance for miscarriage or other complications?***

Miscarriage may occur in any pregnancy. Available information does not suggest a higher chance for miscarriage, low birth weight, or premature delivery with the use of PPIs during pregnancy.

### ***Can taking PPIs during pregnancy cause birth defects?***

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. The studies suggest it is unlikely that proton pump inhibitors would increase the chance for birth defects over the background risk. Omeprazole is the best studied of the proton pump inhibitors. Multiple studies including over 6,610 women exposed to omeprazole, 1,630 exposed to lansoprazole, 560 exposed to pantoprazole, 700 exposed to esomeprazole, and 44 exposed to rabeprazole have shown no increase in the chance of birth defects.

### ***Can I breastfeed while taking a PPI?***

Yes. There is limited data on the safety of PPI use while breastfeeding. PPIs do enter the breastmilk but at low levels and are broken down by stomach acid. These medications are sometimes given directly to infants with reflux making them less likely to be a concern for a breastfeeding infant. Be sure to discuss any medications you are using with your healthcare provider as well as the baby’s pediatrician.

### ***What if the father of my baby takes a PPI?***

There is no evidence to suggest that a father’s use of PPIs birth defects in a partner’s pregnancy. In general, a father’s exposures are unlikely to increase the risks to a pregnancy. For more information, please see the MotherToBaby fact sheet on Paternal Exposures and Pregnancy at <https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/>.

### **References:**

- Diav-Citrin O, et al. 2005. The safety of proton pump inhibitors in pregnancy: A multicenter prospective controlled trial. *Aliment Pharmacol Ther*; 21:269-75.
- Kallen BA. 2001. Use of omeprazole during pregnancy—no hazard demonstrated in 955 infants exposed during

- pregnancy. *Eur J Obstet Gynecol Reprod Biol.* 96(1):63-68.
- Mahadevan U, Kane S. 2006. American Gastroenterological Association Institute technical review on the use of gastrointestinal medications in pregnancy. *Gastroenterology.* 131(1):283-331
  - Majithia R, Johnson DA. 2012. Are proton pump inhibitors safe during pregnancy and lactation? Evidence to date. *Drugs.* 72(2):171-179.
  - Marshall JK, et al. 1998. Omeprazole for refractory gastroesophageal reflux disease during pregnancy and lactation. *Can J Gastroenterol.* 12(3):225-7.
  - Matok I, et al. 2012. The safety of fetal exposure to proton-pump inhibitors during pregnancy. *Dig Dis Sci.* 57(3):699-705.
  - Pasternak B, Hviid A. 2010. Use of proton pump inhibitors in early pregnancy and the risk of birth defects. *N Engl J Med.* 363(22): 2114-2123.
  - Plante L, et al. 2004. Excretion of pantoprazole in human breast. *J Reprod Med.* 2004;49:825-7.
  - Ruigomez A, et al. 1999. Use of cimetidine, omeprazole, and ranitidine in pregnant women and pregnancy outcomes. *Am J Epidemiol.* 150(5):476-481.

**October, 2018**