



MotherToBaby

Medications & More During Pregnancy & Breastfeeding  
Ask The Experts

Fact Sheet

by the **Organization of Teratology Information Specialists (OTIS)**

For more information about us or to find a service in your area,  
call **(866) 626-6847**. Visit us online at **www.MotherToBaby.org**.

Find us! Facebook.com/MotherToBaby or @MotherToBaby on Twitter

## Azathioprine | 6-mercaptopurine

This sheet talks about using azathioprine or 6-mercaptopurine (6-MP) in a pregnancy and while breastfeeding. This information should not take the place of medical care and advice from your healthcare provider.

### ***What are azathioprine and 6-MP?***

Azathioprine and 6-MP are medications that decrease the activity of the body's immune system. These medications are closely related to each other. In the body, azathioprine breaks down into 6-MP.

Azathioprine and 6-MP are used to treat autoimmune conditions like lupus, rheumatoid arthritis, and inflammatory bowel diseases like Crohn's disease and ulcerative colitis. Azathioprine is also used to help prevent the body from rejecting an organ transplant. 6-MP is used to treat some cancers.

The brand name of azathioprine is Imuran<sup>®</sup>. The brand name of 6-MP is Purinethol<sup>®</sup>.

### ***I take azathioprine / 6MP. Will they make it harder for me to become pregnant?***

At this time there are no studies on the possible effects of azathioprine and 6MP on fertility in humans. This means it is not known if the medications could affect your ability to become pregnant.

### ***I just found out I'm pregnant. Should I stop taking azathioprine or 6MP?***

You should not change or stop this medication without first speaking to your healthcare providers.

### ***Does taking azathioprine or 6MP increase the chance for miscarriage?***

Miscarriage can occur in any pregnancy. Taking azathioprine or 6MP is not expected to increase the chance of miscarriage.

### ***Does taking azathioprine or 6MP in the first trimester increase the chance of 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. Azathioprine and 6-MP have been studied in over 1,500 pregnancies, and have not been shown to increase the chance of birth defects. Azathioprine and 6-MP are knowingly given for medical reasons during pregnancy. These medications work by interfering with genetic material, which has raised concern for pregnancy risks, but the majority of the studied pregnancies have not had birth defects. Some studies have found an overall increase in birth defects, but these increases were usually no different from those in groups of women with similar health conditions. There was also no consistent pattern to the birth defects, which means they could have been caused by chance or other reasons.

### ***Could taking azathioprine or 6-MP in the second or third trimester cause other pregnancy complications?***

Some, but not all, studies on azathioprine and 6MP find higher rates of babies being born early or with low birth weight. The illnesses these medications are used to treat can also contribute to these outcomes, so it isn't clear if the outcomes are due to the mother's medical conditions, the medications, or other factors.

### ***Does taking azathioprine or 6-MP cause problems for my baby's immune system?***

Use of azathioprine or 6-MP near delivery has been associated with temporary problems with the immune system and low blood counts in the newborn. This seems more likely with higher doses, such as those used to treat cancer and organ transplantation. It also may be more likely when the mother experiences low white blood cells herself.

***Can I breastfeed while taking azathioprine or 6-MP?***

Yes. Only small amounts of azathioprine and 6-MP have been found to enter breast milk in women who are able to break down these medications normally. The highest amount of 6-MP has been found in the breast milk around 1-2 hours after the mother's last dose. At 4 hours after the last dose, the amount of medication remaining is very small. Most babies whose mothers choose to breastfeed while taking these medications have been found to have normal blood counts and they do not have higher rates of infection. Talk with your healthcare provider about all of your breastfeeding questions.

***If a man takes azathioprine or 6-MP, could it affect his fertility (ability to get his partner pregnant) or increase the chance of birth defects?***

Because these medications can interfere with genetic material, more pregnancy studies have been done on a father's exposure to azathioprine and 6MP, as compared to other medications. No effects on a man's fertility have been reported. Studies that have looked at pregnancy outcomes when the father took these medications before or during the time the pregnancy was conceived have not found an increase in birth defects, preterm birth or small size in babies.

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/>.

**Please click [here](#) for references.**

**January, 2019**