

# Azathioprine | 6-mercaptopurine

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

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

Azathioprine and 6-MP are medications that lower the body's immune system. These medications are closely related to each other. In the body, azathioprine breaks down into 6-MP. The brand name of azathioprine is Imuran®. The brand name of 6-MP is Purinethol®.

Azathioprine and 6-MP have been used to treat autoimmune conditions like lupus and rheumatoid arthritis. It has also been used to treat inflammatory bowel diseases like Crohn's disease and ulcerative colitis. MotherToBaby has fact sheets on lupus <https://mothertobaby.org/fact-sheets/lupus-pregnancy/>, rheumatoid arthritis <https://mothertobaby.org/fact-sheets/rheumatoid-arthritis/>, and inflammatory bowel disease <https://mothertobaby.org/fact-sheets/inflammatory-bowel-disease-pregnancy/>.

Azathioprine is also used to help prevent the body from rejecting an organ transplant. 6-MP is used to treat some cancers.

Sometimes when people find out they are pregnant, they think about changing how they take their medication, or stopping their medication altogether. However, it is important to talk with your healthcare providers before making any changes to how you take this medication. Your healthcare providers can talk with you about the benefits of treating your condition and the risks of untreated illness during pregnancy.

## **I take azathioprine / 6MP. Can it make it harder for me to get pregnant?**

It is not known if taking azathioprine or 6MP can make it harder to become pregnant.

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

Miscarriage is common and can occur in any pregnancy for many different reasons. Taking azathioprine or 6MP is not expected to increase the chance of miscarriage.

## **Does taking azathioprine / 6MP increase the chance of birth defects?**

Every pregnancy starts out with a 3-5% chance of having a birth defect. This is called the 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. Some studies have found an overall increase in birth defects, but these increases were usually no different from those in groups of people with similar health conditions. This means that it is hard to know if a medication, the medical condition, or other factors were the cause. There was also no consistent pattern to the birth defects, which means they could have been caused by chance or other reasons.

## **Does taking azathioprine / 6-MP in pregnancy increase the change of other pregnancy related problems?**

Some studies on azathioprine and 6MP have reported higher rates of babies being born early (birth before week 37) or with low birth weight (weighing less than 5 pounds, 8 ounces [2500 grams] at birth). 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 person's medical conditions, medication, or other factors.

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 person who is pregnant has low white blood cells themselves.

## **Does taking azathioprine / 6-MP affect future behavior or learning for the baby?**

Studies have not been done to see if azathioprine / 6-MP can cause behavior or learning issues.

**Breastfeeding while taking azathioprine or 6-MP:**

Small amounts of azathioprine and 6-MP have been found to enter breast milk in people whose bodies are able to break down these medications as expected. The highest amount of 6-MP has been found in the breast milk around 1-2 hours after the person's last dose. At about 4 hours after the last dose, the amount of medication remaining is very small. Most babies exposed to these medications through breastmilk have been found to have normal blood counts and do not have higher rates of infection. Be sure to talk to your healthcare provider about all your breastfeeding questions.

**If a male takes azathioprine / 6-MP, could it affect fertility (ability to get partner pregnant) or increase the chance of birth defects in a partner's pregnancy?**

No effects on male fertility have been reported. Studies that have looked at pregnancy outcomes when the father or sperm donor took these medications before or during the time the pregnancy was conceived have not found an increase in birth defects, preterm birth (birth before 37 weeks of pregnancy) or small size in babies.

In general, exposures that fathers or sperm donors have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures at <https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/>.

*MotherToBaby is currently conducting a study looking at lupus and the medications used to treat lupus in pregnancy. If you would like to learn more, please call 1-877-311-8972 or sign up at <https://mothertobaby.org/join-study>.*

**Please click here for references.**

**Questions? Call 866.626.6847 | Text 855.999.3525 | Email or Chat at [MotherToBaby.org](https://mothertobaby.org).**

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