



MotherToBaby

Medications & More During Pregnancy & Breastfeeding
Ask The Experts

Fact Sheet

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

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Azathioprine | 6-mercaptopurine

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 azathioprine or 6-mercaptopurine (6-MP) might 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 azathioprine and 6-MP?

Azathioprine and 6-MP are medicines that decrease the activity of your body's immune system. These medicines are closely related. 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 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®. The brand name of 6-MP is Purinethol®.

How long do azathioprine and 6MP stay in the body? Should I stop taking them before I try to get pregnant?

Individuals can break down medicines at different rates. However, azathioprine and 6-MP leave the body quickly. These medicines should be gone from the body by the next day after your last dose. However, you should not change or stop your medicine without first speaking to your health care providers.

Can taking azathioprine or 6MP during my pregnancy cause birth defects?

Azathioprine and 6-MP are knowingly given during pregnancy. These medicines work by interfering with genetic material. This process has raised concern for pregnancy risks, but these medicines have not been proven to cause birth defects. The majority of pregnancies studied (over 1,300) have no birth defects. Some studies have found an overall increase in birth defects although often not different from women with similar health conditions. There is also no pattern to the birth defects to show that the medicine alone is the cause of the birth defects. If there is a risk for birth defects from these medicines it is thought to be small.

Will it be harder for me to get pregnant if I keep taking my azathioprine?

We don't think so but we can't be sure. No studies have been published on human fertility with these medicines. Animal studies do not show poor fertility, even at doses up to 200 times the maximum dose given to humans.

Can taking azathioprine or 6-MP cause pregnancy complications?

Some studies find higher rates of babies being born early or with low birth weight. Because the mother's illness that is being treated can also contribute to these outcomes, it isn't clear what is due to the mother's medical condition or medicines or other factors.

Can 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 with low blood counts. 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 take azathioprine or 6-MP while breastfeeding?

Yes. Only small amounts of azathioprine/6-MP have been found to enter breastmilk in women who are able to break down these medicines normally. The highest amount of 6-MP has been found in the breastmilk around 1-2 hours

after the mother's last dose, and at 4 hours after the last dose, the amount of medicine is very small. Most babies whose mothers chose to breastfeed while taking these medicines have been found to have normal blood counts, and they do not have higher rates of infection. Be sure to talk to your health care provider about all of your breastfeeding questions.

What if the father of the baby takes azathioprine or 6-MP?

Because these medicines can interfere with genetic material, more pregnancy studies have been done on the father's exposure compared to other medicines. Studies that have looked at pregnancy outcomes when the father took these medicines during conception have not found an increase in birth defects.

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/>.

References Available Upon Request

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