



Azathioprine | 6-mercaptopurine (Imuran® | Purinethol®)

This sheet is about exposure to azathioprine / 6-mercaptopurine (6-MP) in pregnancy and while breastfeeding. This information is based on research studies. It should not take the place of medical care and advice from your healthcare providers.

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 facts sheet on lupus <https://mothertobaby.org/fact-sheets/lupus-pregnancy/>, rheumatoid arthritis <https://mothertobaby.org/fact-sheets/rheumatoid-arthriti/>, 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 your 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?

Birth defects can happen in any pregnancy for different reasons. Out of all babies born each year, about 3 out of 100 (3%) will have a birth defect. We look at published data to try to understand if a certain exposure, like azathioprine / 6-MP, might increase the chance of birth defects or other problems in a pregnancy.

Azathioprine and 6-MP have been studied in over 1,700 pregnancies. Most studies found no increased chance of birth defects. Some studies have found an overall increase in birth defects; however, these increases were usually no different from those in groups of people with similar health conditions. This makes it hard to know if the medication, the medical condition, or other factors were the cause. There was also no consistent pattern of birth defects, which means they could have been caused by chance or other reasons.

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

Some studies on azathioprine and 6-MP 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 increase the chance of these outcomes. This means it is not clear if the outcomes are due to the medical condition being treated, the 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 might 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?

It is not known if azathioprine / 6-MP can increase the chance of behavior or learning issues for the child.

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. About 4 hours after the last dose, the amount of medication in breast milk 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 or increase the chance of birth defects?

No effects on male fertility (ability to get partner pregnant) have been reported with the use of azathioprine / 6-MP. Studies that have looked at pregnancy outcomes after male use of these medications before or during conception have not found an increase chance of birth defects. 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/>.

Please click [here](#) for references.

Questions? Call 866.626.6847 | Text 855.999.3525 | Email or Chat at MotherToBaby.org.

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