



MotherToBaby

Medications & More During Pregnancy & Breastfeeding  
Ask The Experts

Fact Sheet

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

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## Hyperthermia

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 hyperthermia may 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 is hyperthermia?***

Hyperthermia refers to an abnormally high body temperature. A person's typical body temperature is around 98.6°F (37°C). In pregnancy, a body temperature over 101°F (38.3°C) can be of concern, especially if it lasts for a long period of time.

### ***What can cause hyperthermia?***

Fever from illness is one of the most common causes of hyperthermia. Extreme exercise or prolonged exposure (longer than 10 minutes) to heat sources such as hot tubs or saunas can also raise body temperature. Prolonged exposure to hot temperatures on hot days (often described at 86°F (30°C) or higher) can also increase body temperature. Very high body temperature can lead to heat exhaustion or heat stroke. Heat stroke occurs when the body temperature reaches 105°F (40.56°C), and would cause medical issues for the mother.

### ***Does hyperthermia in early pregnancy increase the chance for miscarriage?***

Initial studies suggested that there might be an increased chance for miscarriage with fever in pregnancy. A more recent study did not find an increased chance for a miscarriage with fever up to 16 weeks gestation. Further studies are needed to determine if there is a risk of miscarriage due to fever in pregnancy.

### ***Does hyperthermia in early pregnancy increase the chance for a birth defect?***

Studies in humans and animals have reported a small increased chance for birth defects called neural tube defects (NTD) in babies of women who had fevers early in pregnancy. Neural tube defects occur when the spine or skull does not form properly. A few studies have reported a small increased chance for heart defect, abdominal wall defect (organs such as intestines or stomach still work but do not form in their correct spots), or an oral cleft (lip and/or roof of mouth do not form correctly) when a fever occurs in early pregnancy, especially if the fever is untreated. However, there are also studies that have not found these results. Further studies are needed to confirm these risks.

Remember, fevers are often due to infections. The small risks being looked at could be due to the illness/infection, medications used to treat the illness, the fever itself, or a combination of all of these factors. If you are pregnant and have a fever, contact your health care provider right away. Your health care provider can determine if the illness causing your fever needs to be treated. Acetaminophen is usually recommended to reduce fever during pregnancy. Tylenol® is one brand of acetaminophen.

### ***I had a fever in the second trimester. Could this have caused a neural tube defect?***

No. The neural tube (which forms the spinal cord) is formed by the beginning of your 6th week of pregnancy (dating from the first day of your last menstrual period). After the neural tube has closed, a neural tube defect cannot occur. So, if your high temperature occurs after the 6th week of pregnancy, then your pregnancy is not at an increased risk for this birth defect due to the hyperthermia.

### ***I had a fever early in my pregnancy. What testing is available for birth defects during my pregnancy?***

Most neural tube defects can be diagnosed during pregnancy through a combination of ultrasound and alpha-

fetoprotein (AFP) screening at approximately 15-20 weeks. AFP screening is a blood test that measures the level of AFP in the mother's blood. This screen can detect 80-90% of babies with open neural tube defects. AFP screening may also detect up to 85% of abdominal wall defects. A targeted ultrasound will be offered if high levels of AFP are found in this blood screening test. A targeted ultrasound at 18-20 weeks gestation can diagnose most abdominal wall defects and open neural tube defects. Ultrasound can also screen for heart defects and oral clefts; however, ultrasound is not as good at detecting these. If the targeted ultrasound suspects a problem with the baby's heart, a special ultrasound, called a fetal echocardiogram, might be offered between 20 and 24 weeks in the pregnancy to further screen for heart problems. In the U.S., all pregnant women are offered screening for neural tube defects. You can talk with your health care providers if you have questions about these prenatal tests.

***I have been using the hot tub and sauna. Is this a risk during my pregnancy?***

Hot tub or sauna use during pregnancy should be limited to less than 10 minutes. This is because it may take only 10 to 20 minutes in a hot tub or sauna to raise your body temperature to 102°F (38.9°C). You may not feel uncomfortable at this temperature.

Although sauna use alone has not been as strongly associated with an increased chance for neural tube defects, the same screening options for birth defects are available. If you were in a hot tub or sauna for a long period of time early in pregnancy, you can talk with your health care provider about the screening tests (AFP blood test and targeted ultrasound).

***I have a fever and I am breastfeeding. Do I need to stop nursing?***

No. It is very rare for a woman to need to stop breastfeeding due to an illness. There are antibodies in the breast milk to help prevent the baby from getting sick. Be sure to wash your hands frequently and try not to breathe directly on the baby's face while nursing. It is important to treat the fever with a medication that has been approved for use while nursing, such as acetaminophen (Tylenol®). Contact your health care provider as well your baby's health care provider to discuss the best treatment of your fever or illness while breastfeeding.

***Is there a concern if my partner had a fever when I got pregnant?***

Heat can have a negative effect on spermatogenesis, which is the process of making sperm. Studies looking at high temperature to the testes, mostly from occupational heat exposure, have found lower sperm production, which might make it harder to get pregnant. Fever has not been directly associated with this risk, but it could potentially decrease sperm production. Fever in the father at the time of conception or in early pregnancy has not been associated with an increased chance for a birth defect. 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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