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## Hyperthermia and Pregnancy

This sheet talks about the risks that hyperthermia can have during pregnancy. With each pregnancy, all women have a 3% to 5% chance of having a baby with a birth defect. 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 normal body temperature averages about 98.6°F (37°C). In pregnancy, a body temperature of at least 101°F (38.3°C) or higher can be of concern, especially if it lasts for an extended period of time.

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

Hyperthermia most often occurs from a fever due to illness. Extremely heavy exercise or prolonged exposure (longer than 10 minutes) to heat sources such as hot tubs, very hot baths, or saunas can also raise body temperature.

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

Studies have shown an increased risk for birth defects called neural tube defects (NTD) in babies of women who had high temperatures early in pregnancy. Neural tube defects occur when the spine or skull does not close properly. About 1 to 2 out of every 1,000 births has a neural tube defect. The most common types of neural tube defects are spina bifida and anencephaly. An opening in the spinal column is called spina bifida. The majority of babies with spina bifida grow to adulthood. The most severe open skull defect is called anencephaly. Infants with anencephaly have a severely underdeveloped brain and usually die at or shortly after birth.

A few studies have found a small increased risk for a heart defect, an abdominal wall defect, or an oral cleft when a fever occurs in early pregnancy, especially if the fever is untreated. However, there are studies which have not found these results. Further studies are needed to confirm these risks.

Risks associated with fever in pregnancy may be due to the illness, 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 completely closed by the beginning of your 6<sup>th</sup> 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. Therefore, if your high temperature occurs after the 6<sup>th</sup> week of pregnancy, the neural tube has already closed. 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?***

Neural tube defects are detectable 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.

Elevated levels of AFP in maternal blood indicate an increased risk for neural tube defects and suggest a need for further diagnostic testing, such as amniocentesis or a targeted ultrasound exam. AFP screening in combination with a targeted ultrasound at 18-20 weeks gestation can detect the majority of babies with an open neural tube defect.

A comprehensive ultrasound as well as a specific ultrasound of the baby's heart, called a fetal echocardiogram, can be done between 20 and 24 weeks in the pregnancy to screen the baby for other physical birth defects. Please talk to your health care provider if you have questions about these prenatal tests.

### ***Does hyperthermia in pregnancy increase the risk for a miscarriage?***

Initial studies suggested there may be an increased risk for miscarriage with fever in pregnancy. A more recent study did not find an increase risk 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.

### ***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 even feel uncomfortable at this temperature.

Although sauna use alone has not been as strongly associated with an increased risk for neural tube defects, the same safety measures are recommended. If you were in a hot tub or sauna for a long period of time early in pregnancy, you may want to talk with your health care provider about ways to detect neural tube defects during pregnancy.

### ***Can ultrasound hurt my baby?***

The use of ultrasound has not been associated with adverse pregnancy outcomes. Ultrasound uses sound waves to create an image of a fetus on a screen. Although this procedure can slightly increase body temperature, even a lengthy ultrasound exposure is unlikely to increase your body temperature significantly.

### ***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 physician as well as the physician taking care of your baby 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, or the process of making sperm. Studies looking at increased temperature or heat to the testes, mostly from occupational heat exposure, have found decreased sperm production, which may 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 risk for a birth defect.

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*If you have questions about the information on this fact sheet or other exposures during pregnancy, call OTIS at 1-866-626-6847.*