

# Sinus Tachycardia, SVT

## Information for women who have rapid heartbeat (tachyarrhythmia) during pregnancy or breastfeeding

The information provided below is for readers based in the United States of America. Readers outside of the United States of America should seek the information from local sources.

### What is tachyarrhythmia?

The term *tachyarrhythmia*, also called *tachycardia*, refers to a rapid heartbeat, meaning the heart rate is higher than the normal rate of the heart during rest (as opposed to during exercise). For an adult, this means a heart rate that is more than 100 beats per minute (bpm). This can be part of a normal process during pregnancy, as the heart rate in pregnant women normally increases by about 25 percent. Since many women have a resting heart rate of around 80 bpm, the normal increase in heart rate over the course of pregnancy can take you into the range of 100 bpm when you are resting, such that technically you have a tachyarrhythmia, while you feel perfectly normal. As the resting heart rate increases, however, it is common to feel *palpitations*, a sensation that your heart is beating more strongly than usual, or a sensation that your heart is beating with some kind of irregularity.

Often, tachycardia during pregnancy is what's called *sinus tachycardia*. This is basically the same kind of tachycardia that occurs during exercise, or when you get excited or frightened suddenly, except that it goes on for a long time. If you have sinus tachycardia, it means that your heart is absolutely normal, but its beating fast because outside forces are causing the heart's natural pacemaker, called the sinoatrial (SA) node, to work faster than it usually does. Located in the upper right region of the heart, the SA node consists of specialized muscle cells that send out electrical impulses that cause the muscle cells surrounding the heart's two upper chambers, the right and left atria, to contract simultaneously. For each atrial contraction to occur, a wave of electrical impulses must travel throughout the two atria whose walls are made of muscle cells that contract when they are stimulated. In one area of the right atrium, however, downward from the SA node, is another node of specialized muscle fibers, called the atrioventricular (AV) node. When stimulated by the impulse from the SA node, the cells of the AV node react, not by contracting, but by sending out their own impulse, this one bound for the heart's two

lower chambers, the right and left ventricles. The AV node is thus a kind of relay station, for signals generated by the SA node. As long as the AV node is getting impulses only from the SA node, and as long as the ventricles are contracting only due to impulses relayed by the AV node, the pathways of electrical signals in the heart are normal, and that's sinus tachycardia if you have a rate above 100 bpm.

In some cases, however, the AV node can be stimulated to send its impulse toward the ventricles before the signal impulse wave from the SA has time to arrive. This can happen because of the presence of what doctors call an *ectopic pacemaker*, a node of impulse-transmitting muscle cells, other than the SA node, but located somewhere in the atria, usually near the AV node. Competing with the SA node, an ectopic pacemaker causes the AV node to fire too frequently, resulting in tachycardia. This is called *supraventricular tachyarrhythmia (SVT)*, because the problem is coming from above the ventricles. This is different from tachycardia that is generated from problems within the ventricles themselves, called ventricular tachycardia (VT or v-tach), which is the worst kind of tachycardia, but fortunately is rare in pregnancy.

It's possible to have SVT due to many ectopic pacemakers within the atria, but this usually doesn't happen in women of reproductive age. The two most common types of SVT in pregnancy are called AV nodal reentrant tachycardia (AVNRT) and atrioventricular reciprocating tachycardia (AVRT). Often, the ectopic pacemaker gets excited just once in a while, causing episodes of tachyarrhythmia that are intense and begin suddenly. This situation is called *paroxysmal SVT (PSVT)*.

### **How common is tachyarrhythmia during pregnancy?**

Present in about 24 per 100,000 patients who are admitted to the hospital, SVT is the most common [heart arrhythmia](#) in women of reproductive age. About 20 percent of pregnant women have an SVT that was diagnosed previously that is exacerbated by the pregnancy. The risk of developing SVT increases as pregnancy progresses toward, and through, labor and delivery. The commonality of particular types of SVT varies greatly in pregnancy.

### **How is tachyarrhythmia diagnosed?**

Tachyarrhythmia is diagnosed by way of *electrocardiography* (ECG, sometimes abbreviated EKG), and also through *Holter* monitoring. Both are non-invasive procedures that work through electrodes that are attached to your skin. In ECG, electrodes are attached on your arms, leg, and chest, and in some cases additional sites, to provide your family doctor, obstetrician, and cardiologist with detailed information of the heart's electrical activity from numerous angles in order to detect problems in different regions of the heart. This can be done in the doctor's office or the hospital. With Holter monitoring, the principle

is the same as ECG, but you are fitted with a device that you wear for a day or more while you go about your normal activities. Various types of Holter monitors are available with varying numbers of electrodes, depending on how much detail is needed about different parts of your heart. In all cases, however, unlike ECG, the Holter monitor records data constantly and transmits those data to your doctor (or the data are downloaded when you return to the doctor). Consequently, if some electrical event happens just once in a while, your doctors can see it.

If ECG or Holter shows that you merely have sinus tachycardia, doctors may also run tests for some common conditions, other than pregnancy, that cause the SA node to work too quickly and that are common in young to middle-aged women. Such conditions include [anemia](#) and an [overactive thyroid](#), both of which can be diagnosed with blood tests and also can be unmasked by pregnancy.

### **Does tachyarrhythmia cause problems during pregnancy?**

Sinus tachycardia is not harmful, so long as you don't have a problem with the blood supply to the heart muscle (ischemia), which is very uncommon among women of reproductive age. But sinus tachycardia can be a warning sign of some underlying problem, such as anemia, an overactive thyroid, generalized [anxiety](#) disorder, and [panic attack disorder](#).

Unlike sinus tachycardia, SVT is not normal. As mentioned above, it happens because some concentration of muscle cells in the atria is present and competing with the SA node. A potential consequence of an SVT episode is what doctors call hemodynamic instability, meaning that the cardiovascular system is unstable and potentially can collapse, leading to a substantial drop in blood pressure, which could lead you to pass out.

### **Does tachyarrhythmia during pregnancy cause problems for the baby?**

An SVT episode that destabilizes your cardiovascular system can put the health and life of the developing baby at risk by causing a reduction of blood circulation through the uterus and placenta.

### **What to consider about taking medications when you are pregnant or breastfeeding:**

- The risks to yourself and your baby if you do not treat the tachyarrhythmia
- The risks and benefits of each medication you use when you are pregnant
- The risks and benefits of each medication you use when you are breastfeeding

### **What should I know about using medication to treat my tachyarrhythmia during pregnancy?**

The first choice of medication to treat an episode of PSVT is called *adenosine*, which is given intravenously to calm down the heart. This drug disappears from the mothers bloodstream in a matter of seconds, so it has virtually no effect on the developing baby and thus is considered extremely safe in pregnancy. To treat SVT for the long-term, and also to treat an attack if two doses of adenosine fail to work, doctors can give you a type of drug called a [beta-blocker](#) - such as propranolol, metoprolol, or [labetalol](#). These medications are considered relatively safe during pregnancy. Beta-blockers also are an option against sinus tachycardia, if your doctor decides that your heart rate should be slowed, and no underlying problem is detected.

### **Who should NOT stop taking medication for tachyarrhythmia during pregnancy?**

Any pregnant woman who experiences an SVT attack should receive adenosine, or another drug to stop the attack, due to the risk of cardiovascular collapse.

### **What should I know about choosing a medication for my tachyarrhythmia during pregnancy?**

You may find Pregistrys expert reports about the individual medications used to treat tachyarrhythmia [here](#). Additional information can also be found in the sources listed at the end of this report.

### **What should I know about taking a medication for my tachyarrhythmia when I am breastfeeding?**

Propranolol, metoprolol, and labetalol are considered safe during breastfeeding as there is minimal absorption into the breastmilk. Adenosine given to a mother is not dangerous to the nursing infant since it disappears very rapidly from the mothers blood.

### **What alternative therapies besides medications can I use to treat tachyarrhythmia during pregnancy?**

Various types of SVT are treated effectively, with a permanent cure - a technique called ablation, in which a specially-trained cardiologist guides instruments through tubes through your blood vessels to the site of the ectopic pacemaker and destroys it. This procedure can be done safely during pregnancy. A short-term treatment that often can end an SVT episode in an emergency is vagus nerve stimulation. This can be achieved by massaging the carotid area of the neck, or by dipping the womans head partly in cold water. In the event that you have an SVT episode that cannot be stabilized, a cesarean section may become necessary.

### **What can I do for myself and my baby when I have tachyarrhythmia during pregnancy?**

Cooperate with your physicians. If medications are recommended to stabilize your condition, keep in mind that this is generally safe.

### **Resources for tachyarrhythmia in pregnancy:**

For more information about **tachyarrhythmia** during and after pregnancy, contact

<http://www.womenshealth.gov/> (800-994-9662 [TDD: 888-220-5446]) or check the following links:

- Mayo Clinic: [Supraventricular Tachycardia](#)
- Steadyhealth: [Causes of Tachycardia in Pregnancy](#)

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## **General information**

It is very common for women to worry about having a miscarriage or giving birth to a child with a birth defect while they are pregnant. Many decisions that women make about their health during pregnancy are made with these concerns in mind.

For many women these concerns are very real. As many as 1 in 5 pregnancies end in a miscarriage, and 1 in 33 babies are born with a birth defect. These rates are considered the background population risk, which means they do not take into consideration anything about the health of the mom, the medications she is taking, or the family history of the mom or the baby's dad. A number of different things can increase these risks, including taking certain medications during pregnancy.

It is known that most medications, including over-the-counter medications, taken during pregnancy do get passed on to the baby. Fortunately, most medicines are not harmful to the baby and can be safely taken during pregnancy. But there are some that are known to be harmful to a baby's normal development and growth, especially when they are taken during certain times of the pregnancy. Because of this, it is important to talk with your doctor or midwife about any medications you are taking, ideally before you even try to get pregnant.

If a doctor other than the one caring for your pregnancy recommends that you start a new medicine while you are pregnant, it is important that you let them know you are pregnant.

If you do need to take a new medication while pregnant, it is important to discuss the possible risks the medicine may pose on your pregnancy with your doctor or midwife. They can help you understand the benefits and the risks of taking the medicine.

Ultimately, the decision to start, stop, or change medications during pregnancy is up to you to make, along with input from your doctor or midwife. If you do take medications during pregnancy, be sure to keep track of all the medications you are taking.