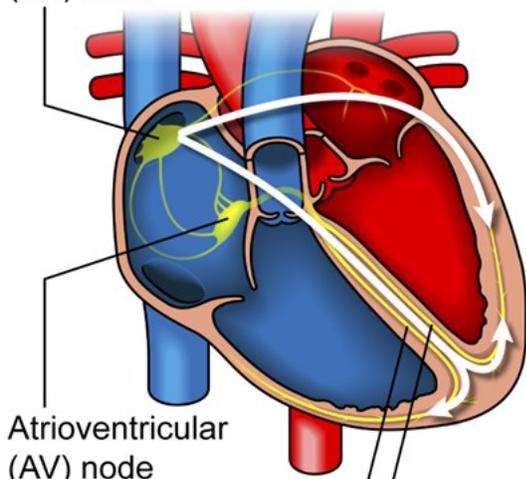


## Wolff-Parkinson-White Syndrome (WPW)

## Supraventricular Tachycardia (SVT)

Sinoatrial (SA) node

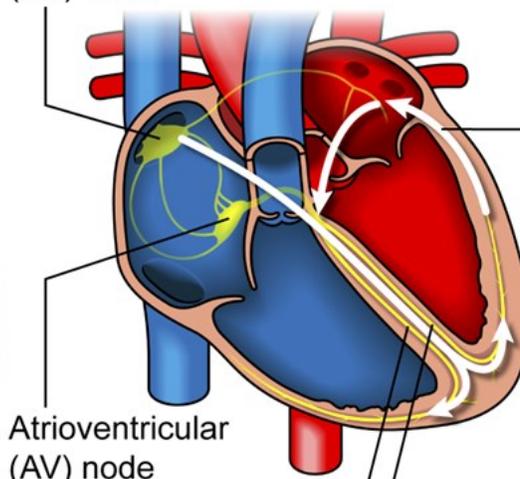


Atrioventricular (AV) node

Right bundle branch

Left bundle branch

Sinoatrial (SA) node



Accessory pathway

Atrioventricular (AV) node

Right bundle branch

Left bundle branch

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Wolff-Parkinson-White Syndrome (WPW)



EKG - Supraventricular Tachycardia (SVT)



NOTES:

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## Supraventricular Tachycardia (SVT)

Supraventricular Tachycardia (SVT) is an abnormal fast heart rate that occurs due to differences in the development of the electrical system in the heart. It is estimated to occur in about 1 in 2500 young people. There are different kinds of SVT and the most common types are:

Atrioventricular reentrant tachycardia (AVRT) – This is due to an extra electrical connection around the valves between the top and bottom chambers in the heart that allows an electrical impulse to travel in a [short circuit](#) within the heart. When we see these on an EKG during normal rhythm that is called *Wolff-Parkinson-White (WPW) syndrome*. This is the more common kind of SVT in infants and younger children.

Atrioventricular nodal reentrant tachycardia (AVNRT) – This is due to abnormal connections within the Atrioventricular (AV) node that allows a short circuit to occur. This is the more common kind of SVT as kids get older.

Ectopic atrial tachycardia (EAT) – This is a small group of cells in the top chambers of the heart that start beating faster than the normal pacemaker of the heart. This is a rarer form of SVT.

### Physical Exam/Symptoms:

- Most common symptoms are palpitations, shortness of breath, chest discomfort, dizziness, and poor feeding in infants.
- Normal baseline physical examination.

### Diagnostics:

- EKG: When done during SVT this is diagnostic and can tell us what type it is. If not having SVT the baseline is often completely normal, unless WPW is present.
- Echo: Most often normal and doesn't help to make the diagnosis of SVT. After diagnosis, an echo is often done to look for rare structural abnormalities that can be associated, as well as to check heart function if the patient has been in SVT for a long time.
- Monitors: Most often we will use a monitor to try and document the rhythm at the time of symptoms. There are various kinds that can be used and your cardiologist can review the different types to see what may work best.

### Medical Management/Treatment:

- If there is no concern about prolonged arrhythmia observation is an option. If there is an episode, vagal maneuvers can be tried to stop it. There is also a medicine called adenosine that can be given through an IV in the emergency room.
- Medications can be used to control the SVT, but they do not make the underlying mechanism go away. They can be used daily or sometimes as needed for an episode that isn't terminating.
- Ablation is a procedure where catheters are placed into the heart through the veins to test the electrical system and a special catheter is used to remove the abnormal connections. This is the only cure for SVT.

### Long-term Outcomes:

- These are all benign rhythms meaning that they do not cause permanent injury to the heart and don't cause sudden death. Patients with SVT live normal lives without restrictions to activities.
- If a patient is in the arrhythmia for days to weeks then the heart muscle can become tired and patients can become more symptomatic with heart failure symptoms. This is called *tachycardia induced cardiomyopathy* and is reversible with rhythm control.
- AVRT if present in an infant can resolve in the first year of life. After this, it is unlikely to resolve on its own. EAT can resolve on its own no matter the age of the patient. AVNRT does not go away on its own.
- If ablation is successful no further follow-up is required after the post-procedure visit. If medications are used patients are often seen once every year or two.