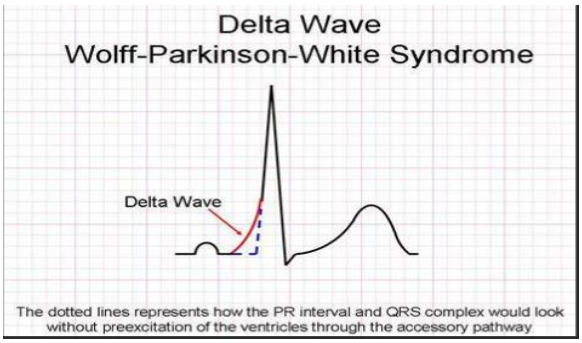
Wolff-Parkinson-White Syndrome (WPW)

Wolff-Parkinson-White Syndrome (WPW) is diagnosed when a patient has an abnormal finding on their ECG and has a history of a fast heart rate. This abnormal ECG finding is called a delta wave, a finding not seen in the normal heart.



To better understand WPW we need to compare to the normal heart.

Normal Heart Electricity
In the normal heart, the electricity of the heart begins in the atria, the top chambers of the heart. The electricity then passes through the atria and to the AV node. The AV node is a muscular bridge that allows the electricity to slowly pass from the atria to the ventricles. The electricity then completes its path by passing through the ventricles. Each time the electricity passes through the heart it causes the heart muscle to squeeze, resulting in a heartbeat. The electricity then begins again, and the process repeats itself.

Normally the only electrical connection between the atria and the ventricles is at the AV node. People with WPW syndrome have an extra electrical pathway between the atria and the ventricles, known as an "accessory pathway." An accessory pathway allows the electrical signal to travel from the atria to the ventricles more quickly than normal. This allows the impulse traveling through the accessory pathway to reach the ventricle earlier than when through the AV node, causing what is termed "preexcitation" or a “delta wave” on an ECG (see image above).

How will I know if my child has WPW?
Your child will have pre-excitation or delta wave seen on ECG. Symptoms of rapid heartbeat (palpitations) may occur if your child develops episodes of SVT (see next section)

Complications of WPW
WPW can result in a "short circuit" of the normal electrical pathways of the heart, which can result in an abnormally fast heart rate called **supraventricular tachycardia (SVT)**. In general **SVT is not a dangerous heart rhythm**.

A very rare complication of WPW is a different life-threatening arrhythmia caused by rapid conduction of atrial fibrillation via the accessory pathway.

Common Symptoms of SVT
Infants may be:

- Cranky
- Pale
- Tired
- Have a hard time eating

Older children may say:

- “My chest hurts”
- “My heart is beating fast”
- “I feel dizzy”
- “It’s hard to breathe”

In SVT, a child’s heart rate is often over 200 beats per minute and is too fast to count. Fainting may happen but is rare.

Types of Tests to Expect

ECG is a test that records the electrical activity of the heart. The purpose for doing An ECG is to show us if the rhythm is coming from a normal or abnormal part of your child's heart. In WPW the ECG shows the extra conduction pathway. It is called a delta wave, or pre-excitation because it shows early electrical stimulation of the lower heart chamber. See image above.

Holter Monitor is a small monitor that is worn for 24 hours. It is a continuous 24-hour recording of the heart rate and rhythm. This is often done to see if the pre-excitation goes away when the heart rate is faster.

Event Monitor is a device that is often used for people who have sensations of a rapid heart rate. This can be used for 1-4 weeks. You or your child push a button during times your child has symptoms. The monitor documents the heart rate and rhythm during these times and can diagnose SVT.

Echocardiogram is a test that uses sound waves to take pictures of the structure and function of the heart. This includes looking at the valves and chamber sizes of the heart.

For more information and videos of these tests, please visit **uwhealthkids.org**.

Treatment for WPW

Patients can undergo monitoring, medicine or a procedure for WPW treatment. Some children do not need treatment if they are not having episodes of SVT.

Children who Have SVT

Medicines

The most common medicine used to treat WPW is a beta-blocker. These beta-blockers slow your child's heart rate and makes it less likely to have SVT.

- Propranolol
- Atenolol

Vagal Maneuvers

If your child has SVT there are things to try at home to slow it down. These are called vagal maneuvers. They work on the vagal nerve which can slow the fast heart rate.

Vagal Maneuvers for Infants

- Push their knees to their chest like you want them to have a bowel movement.
- Fill a small bag with ice and cold water. Hold it on your baby's face for 5-10 seconds. Be careful not to cover his mouth so he can still breathe.
- Hold your baby in a head down position making sure to support his head.

Vagal Maneuvers for Older Children

- Ask your child to bear down as if trying to have a bowel movement.
- Close your child's lips around his thumb and blow hard for 10-15 seconds.
- Help your child to stand on his head against a wall for several seconds.

Take your child to the emergency room if these do not work after about 30 minutes or if at any time your child is not feeling or looking well.

Electrophysiology Study with Ablation
Electrophysiology studies (**EP study**) with ablation can be done to cure WPW and SVT. This is done under general anesthesia as an outpatient. Small flexible tubes, called catheters, are placed in the vein in the groin area. They float through the veins to the heart. The catheters provide information about the electrical pathways in the heart. The WPW pathway is found by mapping the electrical signals in the heart. Freezing (cryoenergy) or heating (radiofrequency energy) can be applied to the pathway to get rid of (or ablate) the abnormal pathway. If this treatment is recommended for your child, you will talk about this with your child's heart doctor in more detail.

More information can be found at: www.uwhealthkids.org.

Wolff Parkinson White Syndrome Clinic
https://www.uwhealth.org/locations/american-family-childrens-hospital-169/wolff-parkinson-white-syndrome-clinic-1244

Who to Call
If you have questions, please contact your provider through MyChart or call your provider listed in your After Visit Summary or After Hospital Care Plan.

For a list of UW Health Clinics, please visit www.uwhealth.org/.

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911.Copyright 6/2026 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#7173