

What is Pulmonic Stenosis?

Pulmonic Stenosis is a condition where the valve between the Pulmonary Artery and the Right Ventricle doesn't open up completely. The pulmonary Artery is the vessel that supplies blood to the lungs. When the valve doesn't open completely, the Right ventricle has to work harder than normal.

Pulmonic Stenosis comes in three varieties -- mild, moderate and severe. This is based on the pressure difference across the valve. With mild Stenosis the pressure difference is 0 to 30 mmHg. The doctor is able to hear the sound of extra turbulence of the blood as it goes across a slightly narrowed valve. The work of the heart is essentially normal, and the patient has no symptoms. In moderate stenosis the pressure difference is 30 to 60 mmHg and sometimes the patient may become tired with exercise. These sometimes need to be treated. Severe pulmonic stenosis is when the pressure gradient is greater than 60 mmHg. These always need to be fixed because if allowed to persist the right ventricle will become damaged and this can cause an early death. The pulmonic valve normally has three equal size parts. Sometimes these parts do not separate completely, so that the valve does not open all the way. Sometimes the valve is misshapen and cannot open all the way. Many times if the valve is misshapen it will also leak.

The symptoms associated with pulmonic stenosis vary. There are none with mild stenosis. With increasing narrowing we find shortness of breath with exercise and if severe enough the patient will begin to turn blue because not enough blood is going to the lungs. Sometimes older children will complain of chest pain with exercise. With untreated severe pulmonic stenosis the Right Ventricle will eventually enlarge and fail. In the past it was necessary to open the pulmonic valve surgically with open-heart surgery. However these days we usually can use a special balloon catheter to tear the valve open while doing a cardiac catheterization. This way the patient can go home the next day. Usually the balloon procedure is successful and nothing further is needed. If the valve is very thick then the balloon technique may not help. In this case surgical replacement may be necessary. It is not unusual for the Pulmonic Valve to leak a bit after being ballooned open. This is usually not a problem. We normally recommend that the Pulmonic valve be ballooned open if the pressure gradient is greater than 45 mmHg. The balloon procedure can be done in the newborn period, but we prefer to wait if possible until the infant is bigger.

Most of the time pulmonic stenosis is a random event that just happens. On occasion it can be inherited as part of a syndrome. One Syndrome commonly associated with Pulmonic Stenosis is Noonan's Syndrome. It can also be part of more complex heart defects such as Tetralogy of Fallot.

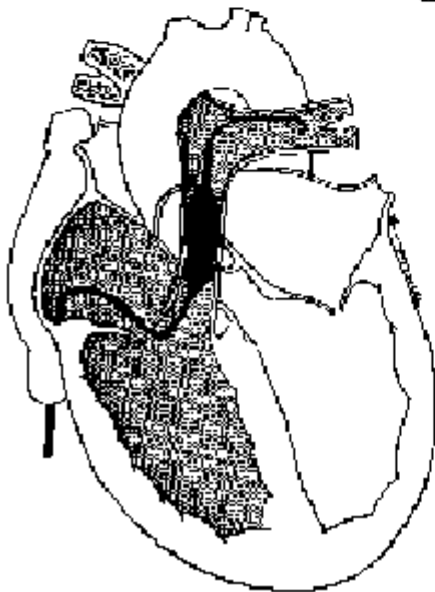
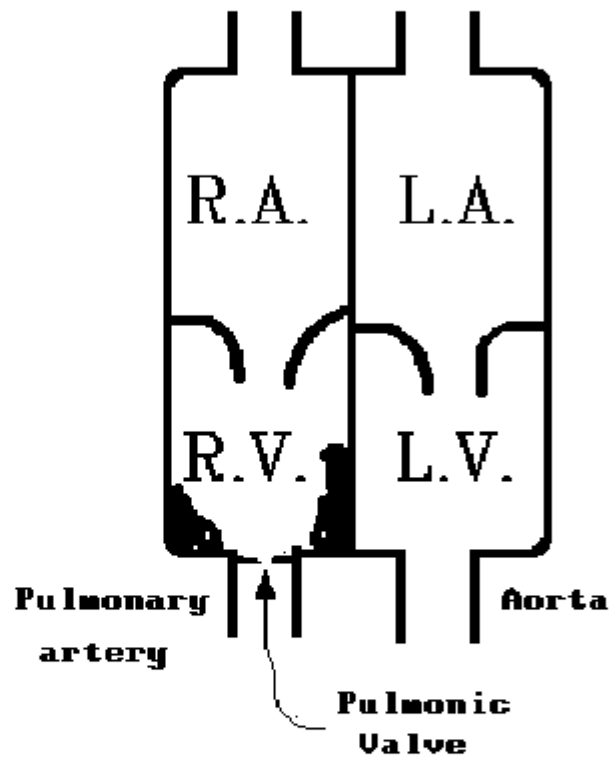
Children with abnormal pulmonic valves are at higher risk of getting an infection of the heart and should take antibiotics prior to going to the dentist and having any kind of operations.

If you have any questions, please ask one of the doctors.

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Normal Pulm.
valve



Balloon catheter across
pulmonic valve