In order to understand heart surgery you must learn normal heart anatomy and how it works. While reading this guide please refer back to this section to help you understand your child’s heart problem.

The heart has four chambers-two atria and two ventricles, and it has four valves-the tricuspid and pulmonary on the right side of the heart and the mitral and aortic on the left side of the heart.

Blood circulates throughout the body and returns to the heart in the right atrium. It then passes through the tricuspid valve to get to the right ventricle and then through the pulmonary valve to get to the pulmonary artery, which takes the blood to the lungs. In the lungs the blood gets oxygenated and returns to the heart in the left atrium. It then passes through the mitral valve to the left ventricle. From there it is pumped out the aortic valve to the aorta, which carries the blood to the body.
When blood circulates abnormally because of a defect, mixing of oxygenated and unoxygenated blood occurs. This results in blood flow with a decreased amount of oxygen or cyanosis. Cyanosis is defined as blueness of the skin or nails. In mild forms children may look ruddy or dusky, whereas in severe cyanosis the child may look dark blue.

**Congenital Heart Defects**

Congenital means inborn or existing at birth. A congenital heart defect is a malformation of the heart existing at birth. This defect results from the failure of the heart or major blood vessel to mature and form normally during gestation.

Congenital heart disease affects twenty five to thirty thousand children a year. That is eight out of every 1000 birth each year. Medical and surgical treatment now offers these children an opportunity to grow and mature into adult life, an option that once was not available.

Heart defects that are fixed during surgery are grouped into two categories: open and closed. Closed heart surgery implies that the "heart
"lungenmaschine" oder "bypass" Maschine ist nicht verwendet und das Herz wird nur visualisiert, ohne geöffnet zu werden. Offene Herzsurgery bedeutet, dass das Herz geöffnet werden muss, um die Lücke zu reparieren und daher die "bypass" Maschine verwendet wird, um das Blut zu oxygenerieren und zu circulieren ohne das Herz oder die Lungen zu verwenden. Diese bypass Maschine wird verwendet, um offene Herzsurgery sicher durchführen zu können.