

Cardiac Conditions Handout

How the heart works

The heart is a strong muscular pump that collects oxygen-poor blood and pumps it to the lungs to get oxygen. The heart then pumps blood out to the organs, tissues and cells of the body, delivering oxygen and nutrients to every cell and removing carbon dioxide and waste products made by cells. The heart pumps blood to the lungs and body by a sequence of organized contractions of the four chambers.

Cardiac conditions

A congenital (“existing at birth”) heart defect happens when the heart or the blood vessels near the heart don't develop normally before birth. Many congenital heart defects slow down or block the blood flow in the heart or in the blood vessels near the heart.

Arrhythmias are abnormal beats. They may be completely harmless or life-threatening. Arrhythmias may be related to a congenital heart defect or may occur after surgery. Arrhythmias may cause the heart rate to be too slow (bradycardia), too fast (tachycardia) or the heart rhythm to be irregular.

Although rare, cardiac conditions in childhood may occur from infections which is called acquired.

Treatment

Treatments for cardiac conditions may include medication, surgery (e.g., Fontan, heart transplant) or implantation of a pacemaker or defibrillator.

Activity restrictions

Most children with cardiac conditions can participate in physical activities without restrictions. However, some children may not be able to participate in competitive sports where there is strenuous training and prolonged physical exertions (e.g., football, hockey, wrestling, soccer, basketball). If you are unsure about the child's ability to participate in a specific activity, it is recommended to discuss it with her/her parent/guardian.

Congestive heart failure

Congestive heart failure (CHF) results when the heart is unable to pump an adequate amount of blood to meet the needs of the body. CHF does not mean that the heart will stop or that a heart attack will happen. It can take several days or weeks to develop.

Signs of congestive heart failure

- Sweating during quiet time
- Persistently rapid/labored breathing
- Shortness of breath
- Rapid heart rate or irregular heart rate
- Chest pain
- Nasal flaring
- Blueness on or around the mouth, eyes, ears, and/or finger tips
- Listlessness (tired and unwilling to do normal activities)
- Inability to stop coughing
- Skin becomes increasingly pale or blue
- Suddenly tired

Responding to congestive heart failure

1. Have the child rest.
2. If symptoms do not improve, contact the parent/guardian.
3. If symptoms do not improve and you are unable to reach parent/guardian or emergency contact within 5-10 minutes, activate 911/EMS.
4. Place the child on the floor in recovery position (lying on left side).
5. Keep the airway open. Loosen any tight restrictive clothing.
6. Stay with the child until EMS personnel arrive.
7. Inform EMS that the child has a cardiac condition.*

If the child has noisy gurgled breathing (which may be caused by fluid build-up in the lungs) call 911/EMS and notify the parent/guardian.

Infective endocarditis

Infective endocarditis (IE) is an infection caused by bacteria that enters the bloodstream and can lead to permanent damage to the heart. If 911/EMS is called, ensure EMS personnel are aware that the child has a cardiac condition.

Sudden cardiac arrest

If a child has a cardiac condition, they may be at risk for cardiac arrest. Most cardiac arrests occur when the heart's electrical system malfunctions, producing an abnormal rhythm. Cardiac arrest may be reversed if CPR is performed and an artificial external defibrillator (AED) is used to restore a normal heart rhythm. It is highly recommended that community program personnel trained in the use of CPR and AED are available when a child with a cardiac condition attends the community program.

If the child becomes unconscious

1. Call 911/EMS.
2. Implement CPR and the use of an automated external defibrillator (AED), if available.
3. Notify the parent/guardian.
4. Inform EMS that the child has a cardiac condition.