Purpose of this Guide
This MEDIC First Aid Child/Infant Version 8.0 Student Book is solely intended to facilitate certification in a MEDIC First Aid Child/Infant CPR and AED Supplement training class. The information in this book is furnished for that purpose and is subject to change without notice.

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Secondary Cardiac Arrest

Cardiac arrest in children is usually the end result of the loss of breathing. This is known as secondary cardiac arrest.

Causes of secondary cardiac arrest include the following:

- Hazardous breathing conditions
- Sudden Infant Death Syndrome (SIDS)
- Suffocation
- Entrapment
- Drowning
- Choking
- Drug overdoses

With no incoming oxygen, the heart progressively becomes weaker until signs of life become difficult or impossible to assess.

When a child’s heart is too weak to create obvious signs of life, early CPR, with an emphasis on effective rescue breaths, offers the best chance for survival.¹
CPR skills vary a bit, depending on age. When describing age groups in relation to CPR:

- An infant is younger than 1 year of age.
- A child is 1 year of age until the onset of puberty. Puberty can be estimated by breast development in females and the presence of armpit hair in males.
- An adult is from the onset of puberty and older.

**Pediatric Chain of Survival**

The pediatric chain of survival is often used to describe the best approach for treating a child in cardiac arrest. Each link in the chain is essential for a child to survive. If a single link is weak or missing, the chances for survival are greatly reduced. The greatest chance exists when all the links are strong.

- Prevention of the typical causes for airway and breathing emergencies
- Early CPR, with an emphasis on effective rescue breaths
- Prompt activation of EMS to quickly get professional care
- Effective basic and advanced EMS care and transport, and
- Effective post-cardiac arrest care at a hospital

**Sudden Cardiac Arrest in Children**

Although rare, children can experience sudden cardiac arrest with ventricular fibrillation due to existing heart problems or an accident such as a blow to the chest or an electrocution. When available, include the use of an AED when cardiac arrest of a child or infant occurs.

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**Knowledge Check**

The pediatric chain of survival is often used to describe the best approach for treating secondary cardiac arrest of a child or infant. Since secondary cardiac arrest is a result of the loss of breathing, resulting in a weakened heart and the inability to detect signs of life, how is CPR described as a link in the chain?
The compression technique for children is similar to that of adults. You can use the heel of one hand on the lower half of the breastbone to compress the chest of a child. If this is difficult, or you are getting tired, use two hands to perform compressions.

Use the tips of two fingers on the breastbone, just below the nipple line, to compress the chest of an infant.

**Knowledge Check**
What are the 3 measures of high-quality chest compressions for a child?
Chest Compressions — Children

Position Your Hand(s)
- Position child face up on a firm, flat surface. Kneel close to chest.
- Place heel of one hand on lower half of breastbone, just above point where ribs meet. Use both hands if needed.

Position Your Body
- Bring your body up and over chest so your shoulders are directly above your hand. Straighten your arm and lock your elbow.

Compress
- Bending at waist, use upper body weight to push straight down $\frac{1}{3}$ depth of chest, or about 2 inches.
- Lift your hand and allow chest to return fully to its normal position. Move immediately into downstroke of next compression.
- Avoid leaning on chest at top of each compression.
- Continue compressions at a rate of 100–120 times per minute.