

Pectus Excavatum

BIRTH DEFECT RESEARCH FOR CHILDREN



What is Pectus Excavatum?

Pectus Excavatum is the most common chest wall deformity seen in children. PE is also called sunken chest or funnel chest. It is an abnormality of the chest characterized by depression of the lower part of the sternum (breastbone) caused by an overgrowth of cartilage between the ribs and the sternum pushing inward. The most recessed or deepest area is most often the point where the chest and abdomen meet. More severe depressions can cause the heart to be displaced to the left and cause pressure on the pulmonary artery, which carries blood from the heart to the lungs.



Pectus Excavatum (PE)



What are the symptoms associated with Pectus Excavatum?

Children with mild cases of PE may never experience any symptoms. More severe cases of Pectus Excavatum may cause symptoms when the child participates in athletic or other high-stress, physical activity. Older children with more severe Pectus Excavatum may begin to experience easy fatigability and decreased stamina and endurance.

What causes these symptoms?

The pressure placed by the depression on the pulmonary artery decreases blood flow from the heart to the lungs. This lack of blood flow, in turn causes a lack of oxygen, responsible for the fatigue and lack of endurance. If there is enough pressure placed on the artery, it is possible that a murmur could occur. A murmur is a sound created within the lung tissue related to movement of the heart that can be detected by an electrocardiogram. This is because pressure on the system causes blood flow to be rough instead of smooth. Respiratory problems and asthma may also occur more frequently among children with Pectus Excavatum.

How often does Pectus Excavatum occur?

Pectus Excavatum occurs in about 1 out of every 500 births. PE is more frequent in boys than girls.

What Causes Pectus Excavatum?

The cause of PE is not known, but the tendency to have PE may be found more frequently in some families. PE may also be associated with Poland's Syndrome, Marfan's Syndrome, scoliosis and other musculoskeletal abnormalities.

How is Pectus Excavatum detected?

The vast majority of Pectus Excavatum cases are visible; however an X-ray from the front and side is necessary to determine if surgery should be performed.

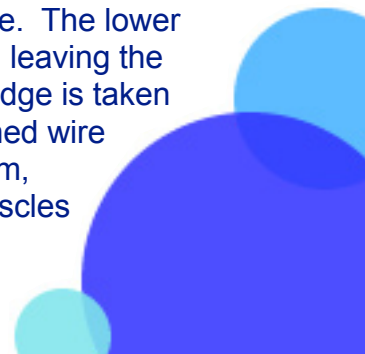
Can Pectus Excavatum be corrected?

There are a number of surgical procedures that have proven very successful. Three popular procedures are:

The Ravitch Procedure: The Ravitch Procedure is the oldest and most widely used method of repair for Pectus Excavatum. During this 4-5 hour surgery, the abnormal cartilage is removed. The sternum is raised to the correct position and supported by a metal support bar. The support bar is attached to a rib on either side. New cartilage will form and become solid in 4 to 6 weeks. The average hospital stay is three days.

The Nuss Procedure: The Nuss Procedure is much newer and less invasive than the Ravitch Procedure. It is generally used on children rather than adults because the child's ribcage is more flexible. The operation only takes about 30 minutes. The Nuss Procedure involves making two small incisions on either side of the child's ribs and then threading a large, stainless steel bar through the ribcage facing towards the spine. Then, the bar is flipped up to cause the sunken chest to "pop out." No cartilage is removed in this surgery. The bar stays in place for two years.

The Leonard Procedure: The Leonard Procedure involves a bracing technique. The lower 4-5 cartilages are removed, leaving the covering in place, and a wedge is taken from the sternum. A sheathed wire is placed behind the sternum, brought out through the muscles and skin and attached to a brace for 6 weeks.



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During that time, the cartilages reform in the new position and the defect is corrected.

Are there non-surgical options for Pectus Excavatum repair?

If the chest depression is not severe and your child has no physical symptoms, exercise programs such as martial arts, gymnastics, swimming, yoga or other orthopedic programs may help to improve the physical appearance of the chest. However, if your child has a more severe case of Pectus Excavatum, strenuous physical activity could worsen the condition.

What is Pectus Carinatum?

In 15 % of children with chest deformities, Pectus Carinatum or Pigeon Breast, a condition opposite of Pectus Excavatum occurs. The breast protrudes out, rather than caves in. This is due to an overgrowth of cartilage that pushes the sternum outward.

Fact Sheet by:

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