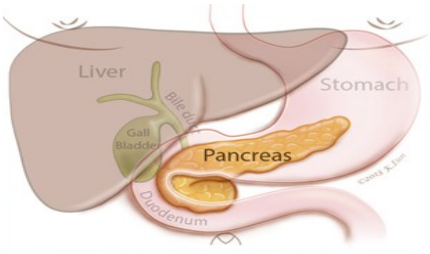
Acute Pancreatitis in Children

UCSF Benioff Children's Hospitals
UCSF Pediatric Gastroenterology
Pancreas Program

1825 Fourth Street, Sixth Floor
San Francisco, CA 94158
Tel: (415) 476-5892 / Fax: (415) 476-1343
www.ucsfbenioffchildrens.org

What role does the pancreas play in digestion?

The pancreas is an organ located behind the stomach and liver. The pancreas has 2 main functions—endocrine and exocrine function. The pancreas makes fluid and enzymes that help digest food (exocrine function). It also produces insulin and glucagon (endocrine function), two hormones that are important for blood sugar control.



What is acute pancreatitis?

Pancreatitis occurs when the pancreas becomes irritated. Enzymes from the pancreas that are supposed to drain into the intestine and help with digestion get stuck inside the pancreas, causing irritation and damage to the pancreas. Acute means that this irritation comes on suddenly and typically gets better once treatment is given.

In many cases, a child will only have one attack and pancreatitis will not happen again. However, if a child with a history of pancreatitis experiences similar symptoms again, it is important to contact a medical professional immediately.

What are the symptoms of pancreatitis?

The most common symptoms include upper abdominal pain, which can sometimes extend through the body and feel like back pain. This discomfort can range from mild to severe, and may feel worse after eating. Other symptoms such as nausea and vomiting or a fever may also occur. The symptoms may vary depending upon the severity of the attack.

What causes acute pancreatitis in children?

There are many reasons pancreatitis can occur.
These causes include:

- Some kinds of medications
- Stones in the gallbladder
- Genetic mutations
- Abdominal injury
- Autoimmunity (an immune reaction against the pancreas)
- Tumors and/or infections
- Problems with the structure of the pancreas
- Increased levels of fats and/or calcium in the blood
- Alcohol consumption

Some causes of pancreatitis are more or less common depending on the person's age. A cause of pancreatitis is not always determined; in this case, the term "idiopathic" pancreatitis is used.

How is the condition diagnosed?

The pancreas makes two key enzymes, amylase and lipase. They can be measured with a simple blood test, so that is usually the first step in diagnosing pancreatitis. During an attack, these enzymes usually rise above the

normal limit, indicating that there is irritation within the pancreas.

Imaging of the pancreas can also be helpful. This might include:

- Abdominal ultrasound
- Specialized imaging, such as computerized axial tomography (CAT) scans or magnetic resonance imaging (MRI)
- In some cases, a procedure known as an ERCP may be necessary; this involves passing a tube with a light and camera through the mouth, past the stomach and into the small intestine until it reaches the pancreas. With ERCP, we can get detailed pictures of the ducts (tubes) that drain the pancreas and treat the ducts to improve drainage. Improved pancreatic drainage can decrease the frequency and severity of pancreatitis flares.

How is acute pancreatitis treated?

Pancreatitis can cause a lot of pain, so children often stay in the hospital where they can receive medications to make them more comfortable.

When the pancreas is inflamed and irritated, eating and drinking might make symptoms worse. If this is the case, pain treatment may include stopping/decreasing food or drink by mouth until the pain improves. During this time fluids are given through an intravenous line (IV). If the symptoms take a long time to improve or complications occur, it may be necessary to use other nutrition sources (e.g. passage of a feeding tube and use of a special formula that does not make the pain worse) while a normal diet is avoided.

In addition, your child may benefit from taking pancreatic enzymes by mouth before snacks and meals. These pills contain enzymes that are similar to the enzymes made by the pancreas and help with digestion. Taking enzyme pills decrease the natural production of pancreatic enzymes in the body, which may help decrease pain and possibly prevent future attacks.

Where can I find more information?

In addition to speaking with your child's healthcare provider(s), there are excellent resources available online. Please consider visiting:

INSPIRE Pediatric Pancreatitis Research Project

http://www.medicine.uiowa.edu/pediatrics/insppire/

The National Pancreas Foundation

www.pancreasfoundation.org

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

http://www.niddk.nih.gov

UCSF Pediatric Pancreas Program

https://www.ucsfbenioffchildrens.org/clinics/pancreas_program/

References

1) **Johns Hopkins Medicine**

   http://pathology.jhu.edu/pc/BasicOverview1.php?area=ba

2) **Mayo Clinic**

   http://www.mayoclinic.org/diseases-conditions/pancreatitis/basics/definition/con-20028421

3) **National Institute of Diabetes and Digestive and Kidney Diseases**

   http://www.niddk.nih.gov/health-information/health-topics/liver-disease/pancreatitis/Pages/facts.aspx

   http://www.niddk.nih.gov/health-information/health-topics/liver-disease/pancreatitis/Documents/Pancreatitis_508.pdf

4) **The National Pancreas Foundation**

   https://www.pancreasfoundation.org/patient-information/acute-pancreatitis/

   https://www.pancreasfoundation.org/patient-information/childrenpediatric-pancreatitis/acute-pancreatitis-in-children/

   https://www.pancreasfoundation.org/patient-information/chronic-pancreatitis/

5) **Up to Date**

   http://www.uptodate.com/contents/acute-pancreatitis-beyond-the-basics

6) **WebMD**

   http://www.webmd.com/digestive-disorders/digestive-diseases-pancreatitis

Bai, H. X., Lowe, M. E., Husain, S. Z. (2011). What have we learned about acute pancreatitis in children? *Journal of Pediatric Gastroenterology and Nutrition*, *52*(3), 262-270. doi:10.1097/MPG.0b013e3182061d75