Pancreatitis

What Is It?

The pancreas is a large gland located behind the stomach and close to the duodenum (upper portion of the small intestine). Pancreatitis involves inflammation of this gland. When functioning properly, the pancreas secretes digestive enzymes (exocrine function), and releases the hormones glucagon and insulin that regulate blood sugar levels (endocrine function). Pancreatitis primarily affects the exocrine pancreas, but, in severe chronic cases, the endocrine pancreas may also be affected.

There are two types of pancreatitis: acute and chronic. The onset of symptoms is sudden in acute pancreatitis and, while the attack may be severe, or even life-threatening, recovery is usually complete without permanent damage to the pancreas. Chronic pancreatitis, on the other hand, involves continuous low-grade persistent inflammation and scarring of the gland, resulting in permanent damage and impaired pancreatic function.

The enzymes produced by the pancreas serve the purpose of breaking down food into its component parts. Lipase breaks fat down into fatty acids; amylase breaks carbohydrates down into glucose, and protease splits proteins into amino acids. These powerful digestive enzymes normally become active only within the cavity (lumen) of the bowel, where they are sealed off from the rest of the body.\(^1\) However, in pancreatitis, a process of auto-digestion occurs as pancreatic enzymes are activated within the gland itself, and leak out into adjacent tissue causing severe tissue damage.

What Causes It?

Alcoholism, alcohol abuse, gallstones or other gallbladder diseases are the major causes of pancreatitis. Gallstones may be able to block the flow of pancreatic juice from the pancreatic duct, trapping digestive enzymes in the pancreas. The result is inflammation of the gland and leakage of enzymes. Over-consumption of alcohol can result in premature activation of pancreatic enzymes.

Other causes and factors contributing to pancreatitis may include:

- Viral infection (hepatitis A or D, Epstein-Barr virus, mumps, coxsackie B, mycoplasma pneumonia, campylobacter)
- Hyperparathyroidism (metabolic disorder causing elevated levels of calcium in the blood)
- Hyperlipidemia (metabolic disorder involving high concentrations of fat circulating in the blood)
- Traumatic injury (or surgery) to the abdomen
- Excess iron in the blood
- Hypothermia (accidental exposure to low temperatures)
- Kidney transplants
- Certain medications
- Leaky gut

Among the medications linked to pancreatitis are thiazide diuretics, antibiotics (sulfonamides, salazopyrine, tetracycline), high-dose estrogens, corticosteroids, several immunosuppressive drugs, azathioprine, divalproex and the chemotherapy drug 6-MP.\(^2\)\(^4\)

In children, pancreatitis may be associated with some of the factors listed above (mumps, abdominal trauma,
viral illnesses and medications), as well as cystic fibrosis, hemolytic uremic syndrome, Kawasaki disease and Reye’s syndrome. In some cases of pancreatitis, the cause is unknown.

Pancreatitis is most likely to affect alcoholics, people who abuse alcohol and people with gallstones and other gallbladder problems. Those suffering from the conditions listed above or taking the drugs listed above would also be at increased risk for developing the disease. Also at increased risk would be women with a history of several pregnancies, and people who go on crash diets.

Pancreatitis affects more men than women, presumably due to the fact that more men abuse alcohol. Onset of symptoms usually occurs between the ages of 30 and 40. In some cases, the disease may be inherited.

Leaky gut, or intestinal permeability, may be an underlying feature of pancreatitis. Leaky gut has been associated with an increase in bacterial toxins, organ failure and even death in people with acute pancreatitis. Because leaky gut leads to an increase of toxins in the bloodstream, it is very important to heal the intestines. (See the Leaky Gut Syndrome section for more information on this condition.)

What Are the Signs and Symptoms?

The most prominent symptom of acute pancreatitis is pain above the naval that may spread across the abdomen and to the back. The pain of acute pancreatitis often comes on suddenly and intensely, but it may be mild in the beginning and gradually increase in severity. It is usually worse when lying down or moving, and tends to diminish upon sitting up and leaning forward. Other symptoms of acute pancreatitis may include:

- Nausea/vomiting
- Fever
- Mild jaundice (yellow tint to skin and whites of the eyes)
- Fatty (clay-colored) stools
- Anxiety
- Chills
- Sweating
- Weakness
- Abdominal swelling/gas
- Increased pulse rate

The symptoms of chronic pancreatitis may be similar to those of pancreatic cancer, and indeed pancreatitis can lead to pancreatic cancer.

Symptoms of chronic pancreatitis are much the same as those of the acute variety, except for the fact that some level of pain tends to linger, interspersed with episodes of acute pain. In some rare cases of chronic pancreatitis, pain may be entirely absent. It is possible that pain may disappear as the condition advances, and the pancreas loses its ability to make enzymes. Repeated episodes of gallbladder infection and gallstones are often involved in chronic pancreatitis.

Complications of acute pancreatitis may include the following:

- Low blood pressure
- Heart failure
- Kidney failure
- ARDS (adult respiratory distress syndrome)
- Ascites (accumulation of fluid in the abdomen)
- Cysts or abscesses in the pancreas
Complications of chronic pancreatitis may include:

- Obstruction of the small intestine or bile duct
- Pancreatic insufficiency, leading to diabetes (from damage to insulin-producing cells in the pancreas)
- Fat malabsorption (and accompanying weight loss)
- Ascites
- Pancreatic pseudocysts (fluid collections), which may become infected
- Blood clots in the splenic (related to the spleen) vein
- Pancreatic cancer

Severe cases of pancreatitis can involve bleeding into the pancreas (leading to shock and sometimes death), dehydration, infection, cysts, and serious tissue and organ damage as enzymes and toxins enter the bloodstream.

**How Is It Diagnosed?**

Blood tests may be done to identify abnormal enzyme levels. Blood levels of the carbohydrate-digesting enzyme amylase may be elevated in pancreatitis as a result of leakage of the enzyme into the blood when the gland is inflamed. Blood levels of the fat-digesting enzyme lipase may likewise be elevated, while trypsinogen levels may be low. Pancreas function tests may be ordered to confirm the diagnosis of pancreatitis. Evidence of malabsorption may be found through a test for fecal fat. Changes in blood levels of calcium, magnesium, potassium, sodium and bicarbonate are typically seen with pancreatitis, as are elevated sugar and fat levels in the blood.

Abdominal x-rays, ultrasound, or CT scan may also be performed to provide images of the upper abdomen.

These tests may show inflammation and swelling, as well as reveal gallstones and obstruction of bile flow, if present. Endoscopic retrograde cholangio-pancreatography (ERCP) is a procedure done under anesthesia that uses a gastroduodenal endoscope with special dye-injecting capabilities. The endoscope is placed through the mouth, esophagus, stomach, and into the duodenum. The tip of the scope is then placed into the opening of the common bile duct and pancreas duct (just inside the ampulla of Vater) in the duodenum. Next, dye is injected into the ducts and pictures are taken to show the anatomy of the bile and pancreatic ducts and their branches. This can be very helpful in finding stones, strictures (narrowed areas), leaks and even cancer. The endoscopist can then simultaneously use the scope to remove stones, dilate strictures, and place either permanent or temporary stents in the ducts to control damaged areas that demonstrate leaks. The risks of ERCP include anesthesia, bleeding, and pancreatitis in about five percent of the cases.

**Did You Know**

- Pancreatitis affects approximately 50,000 to 80,000 people in the United States each year, and is a common reason for people to be admitted to the hospital.
- In about 30 percent of cases, no cause can be found.
- Approximately 10 percent of patients with alcohol-related acute pancreatitis develop chronic pancreatitis.
- Pancreatitis caused by heavy drinking is likely to recur if drinking continues.

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Another noninvasive option is the use of magnetic resonance cholangio-pancreatography (MRCP). With this noninvasive, awake procedure, the patient drinks contrast material, and magnetic resonance imaging (MRI) is done over the upper abdomen. The information obtained with MRCP is considered to be as accurate as ERCP, but with less danger.

In either case, when the information is obtained regarding stones, strictures, or leaks of the ducts, it is a great medical advance that these problems may now be solved endoscopically rather than with major surgery.

In fact, the whole approach to pancreatitis has been revolutionized by this approach. Today, a patient with pancreatitis will likely undergo imaging studies which may show a leak in the main pancreatic duct. If this is the case, the endoscopist could place a stent in the pancreatic duct, which could block the leak, and still allow pancreatic juice to flow into the duodenum. This procedure prevents the leaking pancreatic juice from damaging adjacent structures, and speeds healing and recovery from pancreatitis as well.

**What Is the Standard Medical Treatment?**

An attack of pancreatitis will typically last only a few days, though it can last much longer. The patient is typically hospitalized, and, in an effort to rest the pancreas, no food will be given by mouth for a few days in mild cases. Circulation will be supported with intravenous fluids. In severe cases, IV feeding may be necessary for three to six weeks while the pancreas heals.

For chronic pancreatitis, analgesics or nerve blocks will likely be used for pain relief rather than risk use of potentially addictive narcotics. High doses of pancreatic enzymes may also help control pain by reducing the secretion of juices from the pancreas. These exogenous enzymes will help rest the pancreas, and also correct its underproduction of enzymes assisting the body
In digestion of food once a normal diet is resumed. Pancreatic extract may also be used in the long term. It can help correct greasy stools and weight loss resulting from underproduction of digestive enzymes and malabsorption of fat. If gallstones are blocking ducts, the gallbladder will likely be removed.

In severe cases, or if complications such as infection, cysts, or bleeding occur, surgical intervention may be necessary. Surgery will be necessary to drain the pancreas if it is infected or necrotic. If diabetes has developed, blood sugar levels will be controlled with insulin. Dietary and lifestyle modifications may be recommended. These typically include:

- No alcohol
- No smoking
- Reduction of fat in the diet
- Reduction of sugar in the diet
- Correction of underlying disorders (such as gallbladder disease and metabolic disorders)
- No large meals
- Use of digestive enzyme supplements

By adhering to the above recommendations, most patients with acute pancreatitis will be able to prevent it from becoming chronic. Additional measures, such as supplementation with antioxidant nutrients, may also assist toward this end.
I have occasionally seen patients who had severe pancreatitis secondary to small gallstones that became lodged in the end of the common bile duct at the ampulla of Vater, which disrupts the flow of pancreatic juice, as well as bile. Usually patients recover within a few days and have the problem corrected with laparoscopic cholecystectomy. In some cases, however, the pancreatitis can be severe and even lead to death. This is one reason to consider cholecystectomy if there are multiple small stones.

Some patients are very sensitive to alcohol consumption, which is probably the major cause of pancreatitis. In some of these cases, there are genetic defects that do not allow for the production of inhibitory proteins, which keep the pancreas from prematurely releasing its enzymes. This would be like having too sensitive of a trigger on a gun. The inappropriate release of the enzymes can cause the pancreas to digest itself, ranging from a mild to fatal condition.

Autoimmune chronic pancreatitis has become an important clinical problem, and is easily confused with pancreatic cancer. This misdiagnosis can lead to removal of part or all of the pancreas instead of medical treatment with anti-inflammatory steroids. This condition, again, can be due to auto-antibodies. Such antibodies are produced in response to unrecognized, partially digested food or microbial products from leaky gut syndrome. It is these auto-antibodies that cross react with pancreatic tissue (which they view as foreign tissue) and cause major damage to the pancreatic cells and ducts.

Finally, chronic pancreatitis can be due to toxic and/or infected bile washing into the pancreatic duct causing inflammation. It is easy to see, as mentioned before, that healing the leaky gut and liberal use of antioxidants and natural anti-inflammatories could be beneficial.
Digestive System

During my years of practice, one of the most devastating illnesses I have observed was pancreatic cancer. It left a huge impression on me. The pancreas is an important part of the digestive system, secreting digestive enzymes, as well as controlling blood sugar levels through the production of insulin. Pancreatitis can lead to the development of pancreatic cancer, making it a very important condition to control, and hopefully avoid.

Pancreatitis can be a severe condition. If you develop symptoms of pancreatitis, consult a physician immediately. Since pancreatic conditions are closely associated with excessive alcohol consumption, abstinence from alcohol would be recommended. Pancreatitis can also be related to gallbladder problems. (See the Gallstones section for more information.)

Healing pancreatitis can take a long time, and healing the gut is a key component of this process. Leaky gut can lead to severe complications in people with pancreatitis, illustrating the importance of a healthy digestive tract in this condition.

Diet

• A two- to three-day juice fast would be beneficial.
• Do not consume alcohol.
• Follow the Fiber 35 Eating Plan found in the Appendix of this book. Include plenty of raw fruits and vegetables.

Lifestyle

• Medications can be stressful for the pancreas. Take with caution.
• Do not become constipated. Use the LifeStep (see the Resource Directory) for proper elimination posture.
• Do not smoke and avoid second-hand smoke.
• Clean up your environment, as all chemicals and toxins can affect pancreatic function.

Brenda’s Bottom Line

Complementary Mind / Body Therapies

• Colon hydrotherapy is helpful for eliminating toxins from the colon. Use it with the Total Body Cleanse and the Liver Detox protocols. (See the Appendix.)
• Stress can be a major component of this disease, so find ways to reduce it with therapies such as meditation, yoga, deep breathing, massage, biofeedback, or music therapy.
• Acupuncture could be beneficial in this condition when the inflammation has been reduced.
<table>
<thead>
<tr>
<th><strong>Recommended Nutraceuticals</strong></th>
<th><strong>Dosage</strong></th>
<th><strong>Benefit</strong></th>
<th><strong>Comments</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical Phase</strong></td>
<td>Daily maintenance recommendations should also be taken during this phase unless otherwise indicated.</td>
<td></td>
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</tr>
<tr>
<td>Total Body Cleanse</td>
<td>See Appendix</td>
<td>Encourages elimination and detoxification.</td>
<td>If antibiotic prescribed, do cleanse afterward.</td>
</tr>
<tr>
<td>Liver Detox</td>
<td>This should follow the Total Body Cleanse. See Appendix</td>
<td>Encourages detoxification involving the liver.</td>
<td>Should contain milk thistle seed extract containing silymarin, phosphatidylcholine selenium and herbs.</td>
</tr>
<tr>
<td>Probiotics</td>
<td>200 billion daily for two weeks</td>
<td>Restores bacterial gut balance, protecting gut lining.</td>
<td>Look for high amount of bifidobacteria, the main beneficial bacteria in colon.</td>
</tr>
<tr>
<td><strong>Helpful</strong></td>
<td></td>
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<tr>
<td>High Potency Multi-vitamin/mineral</td>
<td>Use as directed</td>
<td>Provides needed nutrients that may be deficient.</td>
<td>Powder or liquid formulation would be helpful as it is easier assimilated and absorbed.</td>
</tr>
<tr>
<td>Antioxidant Supplement</td>
<td>Use as directed</td>
<td>Protects tissue from damage.</td>
<td>You can purchase a high potency antioxidant formulation from most health food stores.</td>
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<tr>
<td><strong>Daily Maintenance</strong></td>
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<tr>
<td>Digestive Enzymes</td>
<td>Take with meals</td>
<td>Helps digest and absorb nutrients from food to reduce stress on the pancreas.</td>
<td>If low stomach acid is found, find a formula that contains hydrochloric acid.</td>
</tr>
<tr>
<td>Fiber</td>
<td>4-5 grams twice daily</td>
<td>Reduces acidity, reduces rate of recurrence.</td>
<td>Look for flax based fiber with added ingredients such as glutamine, probiotics and healing herbs.</td>
</tr>
<tr>
<td>Omega-3 Fatty Acids</td>
<td>3-6 grams daily of EPA/DHA combination</td>
<td>Reduces inflammation.</td>
<td>Look for a concentrated, enteric coated fish oil.</td>
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<td>Probiotics</td>
<td>30 - 80 billion culture count twice daily after critical phase</td>
<td>Restores bacterial balance and pH of colon and promotes regularity.</td>
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See further explanation of supplements in the Appendix