

PEARL



The Pancreas Education and Research Letter

Smoking and Pancreatic Cancer

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It is widely known that smoking greatly increases the risk of lung cancer; however, many people do not realize that smoking also increases the risk of pancreatic cancer, doubling it for most people.^(1,2,3)

Smokers who have additional risk factors for pancreatic cancer, such as chronic pancreatitis, a family history of pancreatic cancer, or hereditary pancreatitis, are at even greater risk. People who smoke and have a family history of pancreatic cancer have been found to develop pancreatic cancer ten years earlier than nonsmokers with the same family history.⁽⁴⁾ When individuals with hereditary pancreatitis smoke, they tend to develop pancreatic cancer 20 years earlier (at a much younger age) than if they had not smoked. This means that instead of having about a 40% risk of developing pancreatic cancer 70 years after experiencing their first symptoms of pancreatitis, individuals who smoke have about a 40% chance of developing pancreatic cancer 50 years after their first symptoms.⁽⁵⁾



Studies have shown that when people stop smoking, their risk of pancreatic cancer gradually decreases over time.⁽⁶⁾ This makes smoking the only controllable risk factor for pancreatic cancer.

Due to the risks of smoking, it would be beneficial for anyone who smokes to quit and join a smoking cessation program for support. There are several websites which may be helpful including: www.quitnet.com which has online support and a directory of smoking cessation programs, and www.smokefree.gov which has an online quit guide. Your physician can also work with you to help you attain your goal of quitting.

It is advisable for many health reasons for families to talk with children early and often about the risks of smoking. Children who have a family history of pancreas-related problems should be aware that they face higher risks than other children if they begin to smoke. Providing them with this information can give them a good reason not to start smoking. There are excellent resources available to help parents talk with their kids about smoking such as www.keepkidsfromsmoking.com. ○

Hereditary Pancreatitis Study: Moving Forward

As research on Hereditary Pancreatitis has advanced, we have improved the questionnaire for the Hereditary Pancreatitis Study. We would like to have as many individuals as possible fill out the new questionnaire. Doing so will ensure that the research team has the best information possible in order to search for a treatment or cure for this disease. If you and/or family members have already enrolled in our study (or want to participate) and would be willing to complete our new, updated questionnaire, please call our toll free number at **1-888-PITT-DNA** and speak with our coordinator. We would also like to thank everyone who has already returned our new questionnaire. ○

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On the Internet:
www.pancreas.org

Toll-Free Phone:
1-888-PITT-DNA
(1-888-748-8362)

What is an Enzyme?

Enzymes work to speed up your body's processes, like eating and breathing. Speed can be very important. Imagine what would happen if it took you a week to digest a meal. Enzymes are special proteins that help the body quickly complete activities, such as digestion (breaking down food into very small pieces that can be used by your body), that would normally take a very long time or not be possible at all. Without enzymes, the body's jobs such as breathing and digestion would take too long and we could not survive.

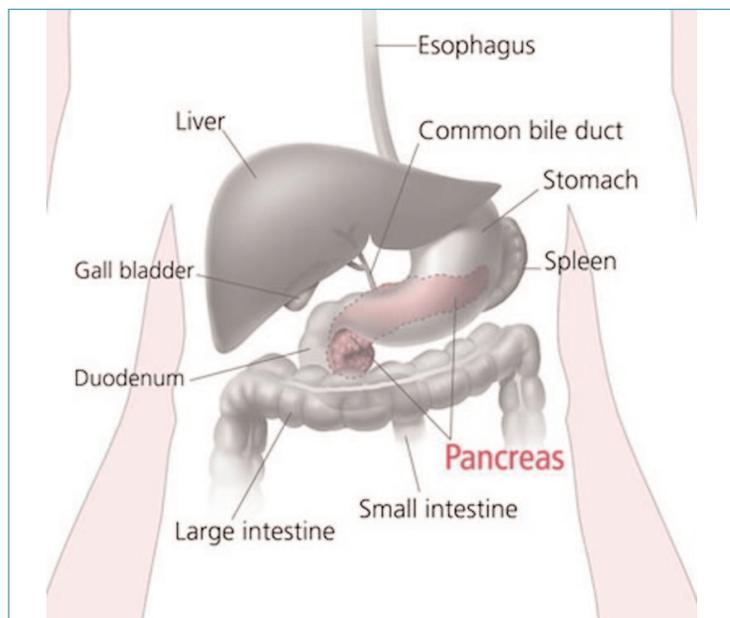
Every part of the body uses enzymes. In fact, scientists have found over 5,000 types of enzymes in the human body. Each type of enzyme has a special shape that determines its job. Enzymes must work together in order for us to stay alive, grow, and have energy to work and play.

After you swallow your food, the food travels down your esophagus (a tube through your chest) and enters your stomach. As food leaves your stomach and enters the small intestine, enzymes from the pancreas are squirted onto the food to help to break it down. The pancreas has the important job of making over 30 different enzymes.

These enzymes act like little scissors that cut food up into such small pieces that the food becomes a liquid. Once the food is a liquid, it can enter the blood, which carries it to all the different parts of the body that need energy. Can you imagine what it might be like if pieces of food went from your stomach directly into your blood? Would you have pieces of hamburger, lettuce, or noodles tumbling through your veins?

Amylase is a special enzyme that helps break down the sugars found in bread, potatoes, and vegetables. Lipase helps break down the fats in foods like meats, cheeses, and butter. Trypsin is the master digestive enzyme. It turns on other enzymes, like amylase and lipase, so that they can begin breaking down food. If trypsin is active more than normal (this happens in hereditary pancreatitis), it can make other enzymes turn on too soon. The enzymes can then start to digest the pancreas and cause acute pancreatitis.

Sometimes a person's pancreas does not make enough enzymes to digest their food. This can happen if the pancreas is sick (acute pancreatitis), injured (chronic pancreatitis), or if it did not grow well before birth. The body only needs a small amount of each enzyme because enzymes are used over and over. This is why a person can lose most of their pancreas before beginning to have problems with digestion. When a person's pancreas does not make enough enzymes, that person is said to have maldigestion and malabsorption. Individuals with maldigestion and malabsorption can eat food, but they are unable to digest and absorb the nutrients from the food. This causes diarrhea, weight loss, and lack of energy. These people often remain hungry, even though they are eating large amounts of food. Individuals with maldigestion and malabsorption need to take pancreatic enzyme pills every time they eat to help them digest their food. Enzymes are fragile and can be damaged if they are kept in an area that is too hot or cold. This is why it is not a good idea to keep pancreatic enzymes in the glove box of a car, by the oven or stove, or in the refrigerator. Do you know of anyone who takes pancreatic enzyme pills? ○



NAPS2 Reaches Goal

The North American Pancreatitis Study II (NAPS2), which was designed to look at recurrent acute and chronic pancreatitis with the help of 20 sites across the country, has reached its enrollment goal. NAPS2 first started to enroll participants in 2002, and had been designed to enroll 1,000 patients with either recurrent acute or chronic pancreatitis in order to determine the genetic and environmental factors that combine to cause pancreatitis. On April 28, 2006, enrollment was stopped at all of the sites, as the enrollment goal had been met. At right is a list of the all the enrollment sites and the number of participants each site enrolled. We thank all the sites for their dedicated support, for without them, this study would not have been possible. Data analysis of the information has begun, so look for results in future installments of [PEARL](#). ○

Clinical Review on Acute Pancreatitis

Dr. David Whitcomb published a clinical practice review in the May 18th issue of the *New England Journal of Medicine*. The article highlights the presentation of acute pancreatitis, presents evidence supporting different treatment strategies, reviews formal treatment guidelines, and makes clinical recommendations. It is our hope that this article will help raise physicians' awareness of pancreatitis and improve the care that patients with pancreatitis receive. For further information and to read this article please go to our website, www.pancreas.org. ○

Site	Patients Enrolled	Controls Enrolled	Total
01 - University of Pittsburgh	279	126	405
02 - Brigham and Women's Hospital	61	40	101
03 - Dartmouth-Hitchcock Medical Center	42	19	61
04 - Dr. Steinberg	4	3	7
06 - University of Pennsylvania	7	1	8
07 - Duke University Medical Center	44	33	77
08 - MAYO Jacksonville	34	51	85
09 - Medical University of South Carolina	162	129	291
10 - University of Florida	5	4	9
12 - Evanston Northwestern Healthcare	64	70	134
14 - Indiana University	68	9	77
15 - North Mississippi Medical Center	36	14	50
16 - Rush University Medical Center	5	4	9
17 - St. Louis University	45	11	56
19 - University of Cincinnati	33	15	48
21 - University of Michigan	75	31	106
23 - University of Utah	54	15	69
24 - Cedars-Sinai Medical Center	12	4	16
29 - Ochsner Clinic and Foundation	8	0	8
99 - Dr. Mary Money	0	100	100
TOTALS	1038	679	1717

Goodbye and Good Luck...

Beth Elinoff, RN, MPH, CCRC left full-time employment with the Pancreatic Study Office at the end of April and joined the Thomas E. Starzl Transplantation Institute at the University of Pittsburgh. Beth will continue to work with the Pancreatic Study Office on a part-time basis. During her three and a half years with the Pancreatic Study Office, many participants came into contact with Beth as she worked as the coordinator for the NAPS2 study, PAGER study, and at times the HP study. She also coordinated the first clinical trial of a medication to help treat hereditary pancreatitis. We certainly appreciate the hard work that Beth has done for pancreatic diseases and we wish her great success in her new position. ○



Ask Dr. Whitcomb

Dear Dr. Whitcomb:

What causes pancreatic duct narrowing?

Answer: The pancreatic duct is a narrow passage that runs the length of the pancreas. The duct is normally the same size for its entire length except for a slight enlargement near the place where it empties into the intestine. The size of the duct is important because it determines how easily pancreatic juice moves out of the pancreas.

A backup of pancreatic juice can sometimes arise if the duct is narrowed. This can cause pain. When a backup occurs, enzymes in the pancreatic juice (*see Kids' Corner*) can become active in the pancreas and cause injury.

If there is narrowing of the duct with scar tissue, the narrowing is called a *stricture*. A stricture can occur if there has been an injury to the pancreas followed by some scarring. It is sometimes related to

either a non-cancerous or a cancerous tumor. It is important to know why a stricture has developed so that special treatment can be given if necessary.

Narrowing of the pancreatic duct may also be a sign of something compressing the pancreatic duct. This type of narrowing usually extends over a longer distance than a stricture. Things that can compress the pancreatic duct include cysts, pseudocysts (fluid collections that are left after acute pancreatitis) or tumors. If compression of the duct is caused by a pseudocyst, it may get better on its own as the pseudocyst goes away.

In autoimmune pancreatitis, the whole duct may be narrow. This is because the duct is compressed by inflammation and swelling of the entire pancreas. Treatment with steroids can reverse this type of narrowing.

A variety of different things can cause narrowing of the pancreatic duct. Some types of narrowing are more concerning than other types.

If you have any questions for Dr. Whitcomb about the pancreas or management of pancreatic diseases, please e-mail the newsletter at askpearl@pitt.edu. We want to share the answers to your questions each **PEARL** publication in order to help educate everyone about pancreatic disease. ○



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