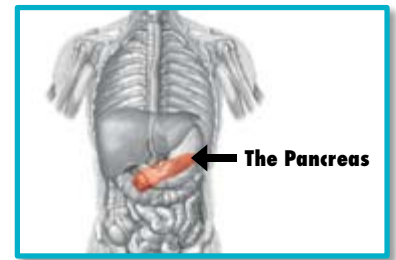


# The Pancreas

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By Dan Young

## THE PANCREAS

Glazed doughnuts, cakes, candies, cookies, pies, ice cream... many of us have grown up with these marvelous sweet treats. In the old days, I mean the really old days; these sweet treats were truly that – treats. It took time to churn a freezer of ice cream by hand or make a cake from scratch. Sweet treats were not a way of life; they were consumed infrequently, few and far between. They were often made from pure maple syrup right from the tree or honey pulled from the beehive. So we indulged infrequently and we savored the moment.

Our digestive systems evolved over millions of years to digest “Whole Foods” primarily from vegetables, fruits, grains, legumes, nuts and proteins. Soon after the turn of the 20th century though, we began eating foods that resembled little from whence they came. Machineries were invented to mass produce food products. We began over-processing all these wholesome foods, adding sugar to everything from ketchup to crackers. Our digestive systems have been trying to play “catch-up” ever since.

Sugar is now in everything and where it is not by virtue of processing these once “wholesome foods” we have changed the Glycemic Index (the rate of digestion) of them dramatically. As a result, these carbohydrates break down so very quickly in our bodies that they turn into glucose or sugar faster than simple white table sugar does! Our bodies digestive system is now working harder than ever to process these processed sugar laden foods. The organ that perhaps is working harder than all the rest is the Pancreas and sooner or later, it just stops working.

## THE KEY TO A HEALTHY LIFE

The Pancreas is an elongated gland that lies behind the abdomen and the stomach. It’s main function is to regulate the sugar that enters the blood system. It consists of both endocrine and exocrine tissue. The exocrine tissue secretes enzymes that enter the duodenum (first part of the small intestine leaving the stomach). These enzymes breakdown and digest proteins, carbohydrates, fats and nucleic acids. The pancreas also secretes bicarbonate to neutralize stomach acid entering the duodenum. The endocrine cells compose more than a million of small clusters of cells known as the islets of Langerhans scattered throughout the Pancreas. About 70% of these cells are beta or B cells and produce the hormone insulin. The remainder of these cells are alpha or A cells and secrete the hormone glucagon. These cells regulate the glucose or sugar levels in the blood.

When there is an abundance of sugar or glucose in the blood, the B cells produce insulin that stimulates the liver to store glucose as glycogen and promotes the storage of fats and proteins to be used during leaner times. The A cells secrete glucagon between meals, when the blood sugar is low. It stimulates the liver to convert glycogen back to glucose and raises the blood sugar level. It causes the adipose tissue to release its stores of fatty acids into the blood.

When this over abundance for sugar either from added sugar or easily broken down processed foods, becomes a way of life, the Pancreas simply begins to wear out and cannot make enough insulin to regulate the excess sugars in the blood stream. As a result, these sugars are quickly metabolized into triglycerides and fat cells. BAD!

What has the sugar craze done to our bodies? Experts now claim that an estimated 20 million Americans either have Type 1 (insulin dependent) or Type 2 Diabetes (non-insulin dependent). Type 2 diabetes is claiming appx. 100 million victims worldwide annually! But diabetes is not the only disease linked to sugar; obesity, hypoglycemia, gum infections, yeast infections, Candida, tooth decay, hyperactivity all can be traced to excessive amounts of sugar and processed carbohydrates.

## AN EXCEPTION TO THE RULE

Immediately following a workout, your glycogen stores are partly or fully exhausted. Our bodies release an enzyme called Glycogen Synthase. This enzyme recognizes the presence of sugar in the blood stream and ushers these sugars directly into the muscles where glycogen is stored, completely bypassing the liver. Carbohydrates and sugars ingested immediately following a workout, usually between 30-45 minutes will help you recover stopping your body from being thrown into a catabolic (muscle wasting) state. These sugars are stored as fat. They re-volumize your muscle cells bringing 2.7 grams of water with every gram of glycogen helping to rehydrate your body too!

Remember, you can reverse disease. Begin taking your life into your own hands and nutrition right; it’s 70% of the battle.

Simple rules to live by:

- Eat 5-7 smaller meals daily
- Combine Carbs, Proteins and Fats at every meal
- Begin eating within 30 minutes of rise
- Eat low glycemic foods except immediately following your workout

## Eat well and remember, you are what your food eats!

Dan Young is President and CEO of Performance Food Centers, Corp. He is certified in personal training, sports nutrition and is a triathlete. He has competed in Body Building as well as Endurance Sports Activities. Accomplished in juice bar concept and design, he applies this knowledge to whole-foods nutrition and the efficiency to serving them.

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