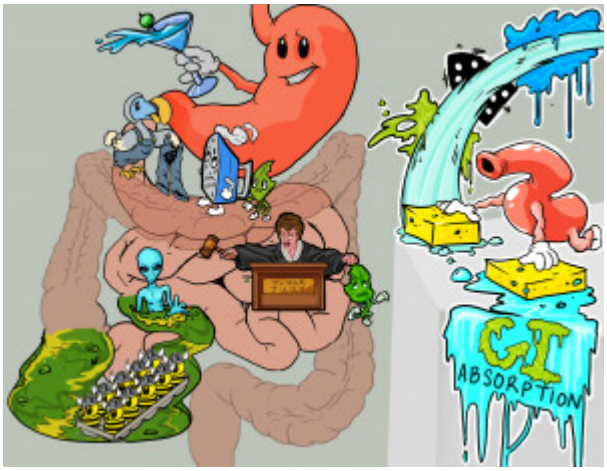
GI Absorption

The human body can absorb almost anything. It is important to understand where the bulk of this absorption occurs. This Picmonic covers basic absorption, describing hallmark nutrients. The stomach can absorb trace elements and water, but plays an important role in alcohol absorption. The duodenum is notable for absorbing iron and folate, though it also an absorb fat and water soluble vitamins. The jejunum also absorbs folate, but can also absorb fat and water soluble vitamins. The terminal ileum is the site where vitamin B12 is absorbed with the help of intrinsic factor, along with bile.



PLAY PICMONIC

Stomach

Stomach

The stomach is the first (major) site of absorption in the GI system after ingestion. It is notable for absorbing alcohol, but also plays a role in absorbing water, and elements such as fluoride, copper, iron and molybdenum.

Alcohol

Alcoholic-martini

Alcohol is absorbed in the stomach, though some absorption can occur in the small intestine. Once introduced into the stomach, alcohol can reach the bloodstream and brain in as quickly as 1 minute. The rate of absorption depends on a number of factors including the presence of food, carbohydrate, fat and protein content in the stomach, as well as the patient's genetic make up.

Duodenum

Dodo-denim

The duodenum can vary in length, but is roughly 1 foot long, and begins from the stomach, ending at the ligament of Treitz, where it continues as the jejunum. It is notable for iron absorption and folate absorption, but also plays a role in absorbing fat soluble vitamins (ADEK), thiamin, riboflavin, and niacin.

Iron

Iron

The bulk of iron absorption in the body occurs in the duodenum. Thus, patients who have had duodenal surgery or ulceration, Crohn's disease, or Celiac disease can have iron deficiency. This disorder usually manifests as iron deficiency anemia, which is a microcytic anemia.

Jejunum

Judge-Judy

The jejunum is roughly 2.5 meters long, and is the middle portion of the small intestine, lying between the duodenum and ileum. It is most notable for folate absorption, but also works to absorb lipids, small peptides and monosaccharides. It also absorbs various fat and water soluble vitamins.

Folate

Foliage

Folate absorption occurs in both the duodenum and proximal jejunum. Folate is an important vitamin which cannot be created de novo, and is essential for numerous body functions. Folate deficiency can lead to macrocytic anemia, neural tube defects in a fetus, diarrhea, neuropathy, heart

problems and encephalopathy.

Terminal Ileum

Alien

The ileum is the last part of the small intestine, and is between 2-4 meters in length. It connects to the cecum of the large intestine. The terminal ileum is important in absorbing vitamin B12, also known as cobalamin, and resorption of bile salts and acids. It also plays a minor role in absorption of vitamins C, D, K, folate and magnesium.

Vitamin B12

(12) Dozen Viking (B) Bees

Vitamin B12, or cobalamin, is absorbed in the terminal ileum, and requires intrinsic factor for absorption. It cannot be produced by the body, and is involved in the metabolism of every cell of the human body, especially affecting DNA synthesis and regulation, along with fatty acid synthesis. Deficiency can lead to macrocytic anemia, along with severe nervous system impairment, centrally and peripherally.

Bile Resorption

Bile-Nile

Bile acids are introduced to the digestive tract in the duodenum, and are recycled several times each day. About 95% of bile acids are reabsorbed by active transport in the ileum and recycled back to the liver for further secretion into the biliary system and gallbladder.