
Water In The Juice, Cck-Pz - Increases The Formation Of Pancreatic Enzymes. Pancreatic Secretion Is Also Enhanced By Serotonin, Insulin, Bombesin, Bile Salts, Hydrochloric Acid. Inhibits - Glucagon, Somatostatin, Substance P, Enkephalins, Calcitonin.


It should be noted that the composition of cystic bile differs from that of the liver. In the gallbladder, water and salts are absorbed, so gallbladder bile is more viscous, dark and thick. The dry residue in it is up to 20%. The mucus of the bile ducts and bladder is added to the bile.

The pH decreases to 6.5–6.8. The value of bile:
1) emulsifies fats, increasing their surface for hydrolysis by lipase;
2) increases the activity of pancreatic and intestinal enzymes;
3) neutralizes acidic gastric chyme;
4) inactivates pepsins;
5) promotes the absorption of fat-soluble vitamins, amino acids, cholesterol, calcium salts;
6) participates in parietal digestion, facilitating the fixation of enzymes on the intestinal microvilli;
7) enhances intestinal motility;
8) stimulates bile formation and bile secretion: bile acids in the small intestine are absorbed into the blood, reach the liver through the portal vein, and again participate in choleresis and cholekinesis (the intestinal-hepatic circulation of bile acids is 6–10 cycles per day);
9) inhibits the development of pathogenic flora, prevents putrefactive processes in the intestines.

regulation of bile synthesis. As noted earlier, bile formation (choleresis) occurs continuously in the liver. Bile excretion (cholekinesis) is associated with food intake. The intensity of bile formation and bile excretion directly depend on the diet. Strong stimulants are milk, meat, bread, egg yolks, butter. As for the nervous regulation, the parasympathetic fibers of the vagus nerves increase choleresis and cholekinesis, while the sympathetic ones depress. Humoral stimulants are secretin, bile acids, gastrin, CCK-PZ, the latter becoming the main one.

Digestion in the Small Intestine The small intestine is the main chemical reactor of the digestive tract. Here, abdominal and parietal digestion occurs, which complete the hydrolysis of nutrients, followed by the absorption of hydrolysis products into the blood and lymph. Cavitary digestion consists in the hydrolysis of nutrients by the enzymes of digestive juices. Cavitary digestion provides hydrolysis of 50% of carbohydrate and 10% of proteins, as a result of which oligomers are formed from polymers. Parietal digestion is carried out on the villi and microvilli of the mucous membrane of the small intestine. The outer surface of their plasma membrane is covered with glycocalyx - mucopolysaccharide filaments on which enzymes of pancreatic and intestinal juices are adsorbed, which hydrolyze oligomers to dimers.

Enzymes are built into the membrane of enterocytes, which are synthesized by the enterocytes themselves. These enzymes complete the hydrolysis by breaking down the dimers into monomers. Transport systems are also located here, providing the absorption of monomers, water and electrolytes into the blood and lymph.

secretory activity of the small intestine. Intestinal juice is produced by the glands of the mucous membrane of the small intestine throughout its entire length. 2.5 liters of intestinal juice are produced per day. It is a cloudy viscous liquid. The composition of the intestinal juice: 98% water and 2% solids. In the dry residue, inorganic and organic substances are distinguished. Inorganic substances are represented by chlorides, bicarbonates, phosphates, sodium, potassium, calcium ions, which create an alkaline reaction (pH 7.2–7.5), and with increased secretion up to 8.6–9.3. Organic substances are represented by proteins, amino acids, urea, uric acid. Intestinal juice contains more than 20 different enzymes involved in intestinal digestion: proteases, peptidases, nucleases, amino-, dipeptidases, lipases, phospholipases, amylase, maltase, lactase, enterokinase, etc.
Intestinal juice also contains mucus produced by goblet cells, which forms a protective layer and protects the mucous membrane from damage. Regulation of intestinal secretion. Along with the nervous and humoral mechanisms of regulation of intestinal secretion, the leading role belongs to local mechanisms. Excitation of the parasympathetic fibers of the vagus nerves increases the production of enzymes in the small intestine, without affecting the amount of secreted juice. Excitation of sympathetic nerve fibers, on the contrary, reduces intestinal secretion.

Humoral regulation - duocrinin and enterocrinin, produced in the mucous membrane of the small intestine, VIP, motilin, hormones of the adrenal cortex (cortisol and deoxycorticosterone) stimulate the secretion of intestinal juice, and somatostatin has an inhibitory effect. Local regulatory mechanisms are associated with mechanical irritation of the mucous membrane of the small intestine by chyme, which causes an increase in the secretion of the liquid part of the juice, and the effect of the products of digestion of nutrients contributes to increased production of intestinal juice enzymes. Motor function of the small intestine. Motility of the small intestine promotes hydrolysis and absorption of nutrients. It occurs as a result of coordination oval contractions of the circular and longitudinal layers of muscles that form the wall of the intestine. There are several types of abbreviations.

Literature
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