IMAGE AWARENESS HEALTHLETTER

THE IMMUNE SYSTEM

Digestion in the Stomach

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Notice

This newsletter is designed for educational purposes only. Any individual suffering from health problems which are mentioned or discussed should consult a physician for proper diagnosis and treatment.

Introduction

The ability to properly digest food is a crucial factor involved in an individual's overall health. Without an ability to produce stomach acid, mineral absorption rapidly deteriorates. Protein foods are not only poorly digested, but can also trigger allergic responses. The importance of hydrochloric acid for health has been recognized in the medical literature for over 50 years.

Not only physiological, but also psychological factors influence stomach acid secretion. Alvarez writes,

A child who has suffered injury or severe fright shortly after a meal is likely, after several hours, to vomit food, quite undigested. I remember once examining a neurotic young man with the X-rays and finding every bit of a meal eaten six hours before still in his stomach. Because he had no symptoms of organic disease...I questioned him and learned that all that day he had been upset over a political row in his lodge. Later when he had calmed down, his stomach emptied perfectly."

Reference:
Alvarez, Walter, M. D., Nervousness, Indigestion and Pain, New York: Harper and Brothers, 1954, p. 6.

Early Work: Asthma and Allergies

George Bray published one of the earliest articles on the importance of stomach acid. Bray felt that food allergy was a complicating factor in asthma. Stomach acid breaks food down and decreases its allergenicity.

Digestion begins in the stomach which overrules the digestive process.

Bray wrote,

"...when whole proteins give a strong skin or constitutional reaction the amino acid of the corresponding protein does not. In other words, the further one gets from the true protein the less the reaction; so one infers that these 'reaction producing substances' are destroyed by digestive processes."[1]

Bray's considerable experience with stomach acid in treatment of asthma led him to conclude:

"With acid therapy, plus removal of the chief offending allergens as determined by skin tests, there is an immediate improvement in appetite, weight, sleep, and freedom from attacks. If the medicine is continued for some months, preferably till over the following winter, the child remains quite free, and then the medicine may be discontinued without further recurrence."[2]

Bray was working with young children. Use of stomach acid in these situations should take place

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only with careful medical supervision.

Bray's work illustrates the probable relationship between inability to digest foods and subsequent allergic responses. With all the current medical attention upon the problem of food allergies remarkably little attention has been given to this aspect of the problem.

Recent studies have noted that individuals with disturbed stomach function are more likely to absorb large food molecules which can create an allergic response. Walker wrote,

"We have observed that the local intestinal response to orally administered antigens is enhanced when antigens are given in a bicarbonate buffer."[3]

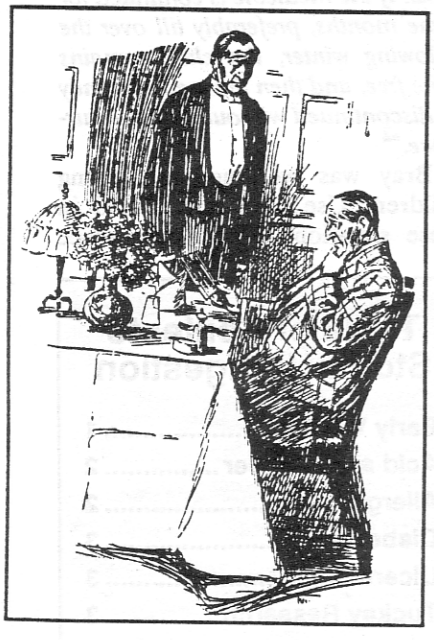
Put in plain English, Walker was saying that if stomach acid is neutralized, allergy provoking substances create stronger responses. Walker neutralized stomach acid by giving test subjects bicarbonates.[3] Commonly used and prescribed antacids are bicarbonates as well and might be suspected of increasing the severity of allergic responses according to this research.

References:

1. Bray, George, "The Hypochlorhydria of Asthma in Childhood," Quarterly Journal of Medicine, Jan 1931, p. 181-2.

2. Bray, p. 195.

3. Walker, W. A., "Uptake and Transport of Macromolecules by the Intestine," Progress in Gastroenterology, Vol. 67, No. 3, 1974, p. 541.



Stomach Acid as a Defender

Defender Against Nitrites

In 1976 the prestigious medical journal Lancet contained an article entitled "Gastric-Juice Nitrite." The article discusses the fact that if secretion of stomach acid is inadequate bacteria can survive and multiply in the stomach. These bacteria have the ability to convert nitrates in food and saliva to nitrite. They also convert nitrite to nitrosamines which have the ability to cause cancer.

In the summary of the research the writers state,

"In this way an intragastric environment suitable for the formation of carcinogenic nitrosamines exists in the hypochlorhydric and achlorhydric stomach, providing a possible mechanism for the high incidence of gastric cancer in these subjects."

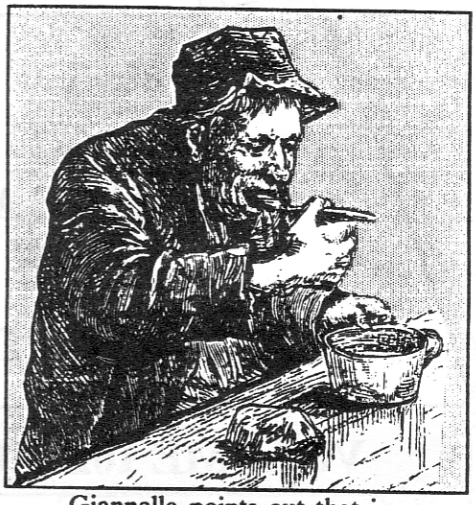
Researchers found an inverse relationship between the amount of stomach acid and the amount of nitrite in the stomach. In other words, the more stomach acid, the less nitrite was found in the stomach. The less stomach acid, the more nitrite was found.

Hydrochloric acid has thus been shown to kill bacteria which might otherwise survive in the stomach. The greater the quantity of stomach acid, the fewer bacteria that can survive in the stomach. Thus supplementation with stomach acid may protect against stomach cancer if a person's normal secretion is low.[1]

Defender Against Bacteria

Research has long indicated that stomach acid protects against harmful bacteria and other microorganisms ingested with food. Giannella writes,

"We believe that the available data, although incomplete, support the concept that gastric hypochlorhydria or achlorhydria increases both susceptibility to and severity of bacterial and perhaps also of certain parasitic enteric infections."



Giannella points out that in one study 54% of those with the water born parasite *giardia* had low or nonexistant stomach acid. Loss of stomach acid may increase likelihood of infections with this organism or severity of the disease.

This study also suggests that increased numbers of bacteria entering the intestine due to low stomach acid can create inflammation and irritation of the small intestine.[2]

An earlier newsletter has discussed the fact that those with low stomach acid suffered more severe salmonella poisoning than did those with normal stomach acid. The disease lasted up to twice as long and the volume of diarrhea was 3.5 to 10.5 times more severe among those with low stomach acid.[2]

It was also pointed out that infection of laboratory animals with bacteria was aided when antacids were given with the bacteria. Routine use of antacids has the potential for substantially weakening the immune system.[2]

Walker suggests that

"gastric function is essential in controlling the proliferation of intestinal bacteria and hence the uptake and breakdown of products of these organisms."[3]

References:

1. Ruddell, W.S., et al., "Gastric-Juice Nitrite," The Lancet, November 13, 1976, p. 1037.

2. Giannella, Ralph, Broitman, Selwyn, and Zamcheck, Norman, "Influence of Gastric Acidity on Bacterial and Parasitic Enteric Infections," Annals of Internal Medicine, 78: 271-276, 1973.

See also Dupont, H. L., et al., "Pathogenesis of Escherichia coli diarrhea,"

New England Journal of Medicine 285: 1-9, 1971.

3. Walker, W. A., "Uptake and transport of macromolecules by the intestine," Gastroenterology 67: 541, 1974.

Stomach Acid and Allergy

Recently researchers have learned that inhibition of stomach acid secretion can contribute to allergy to foods.

Walker writes,

We have observed that the local intestinal response to orally administered antigens is enhanced when antigens are given in a bicarbonate buffer...Northrup et al. reported the same result when dogs were orally immunized with cholera toxoid. Thus individuals with disturbed gastric function are potentially more likely to absorb increased quantities of macromolecules.

References:

Walker, W. A., "Uptake and transport of macromolecules by the intestine," Gastroenterology 67:541, 1974.

Stomach Acid and Diabetes

As early as 1931 thirty-nine percent of diabetic patients in one study were identified as having very low or nonexistant stomach acid.[1]

A later study found 33 percent of these patients with low stomach acid. Stomach acid also appears to benefit the neuritis and anemia common in diabetes.[2]

References:

1. Rabinowitch, I. M., et al., "Gastric acidity in diabetes melitus," Achives of Internal Medicine, 47:384, 1936.

2. Rabinowitch, I. M., "Achlorhydria and Its Clinical Significance in Diabetes Mellitus," American Journal of Digestive Diseases, Sept. 1949, pp. 323.

Stomach Acid and Ulcers

One normally thinks of ulcers as being caused by an excess of stomach acid. This is not always the case. In one study 36.2 percent of those with ulcers were totally lacking in stomach acid.[1]

Sugar may contribute to ulcers. In one study young men were given 150 grams of sugar a day in place of starch in their diet. Within two weeks hydrochloric acid production of the stomach increased 20 percent and pepsin secretion increased 200 percent. Yudkin writes,

"...these results suggest that sucrose is involved in the production of gastritis, and perhaps also gastric and duodenal ulcers."[2]

The amino acid glutamine has been shown to promote the healing of ulcers. This substance was identified from raw cabbage juice which was shown as early as 1949 to promote healing of ulcers. Emphasis should be upon the "raw" since glutamine is readily destroyed by cooking foods. Glutamine stimulates the production of mucin which protects the lining of the stomach from acid and pepsin.[3]

Iced beverages and cold temperatures hinder production of stomach acid to a sufficient extent that they have been used to treat ulcers.[4] Iced beverages should not be consumed with meals by those with digestive problems. A warm soup with a protein content will actually tend to aid digestion of foods.

Reference:

1. Rabinowitch, I. M., "Achlorhydria and Its Clinical Significance in Diabetes Mellitus," American Journal of Digestive Diseases, Sept. 1949, pp. 323.

2. Yudkin, John, "Sugar and Disease", Nature, Vol. 239, Sept. 22, 1972.

3. Shive, William, "Glutamine in Treatment of Peptic Ulcer," Texas State Journal of Medicine, November 1957, p. 540.

4. Cain, Harvey, M.D., Flint's Emergency Treatment and Management, Philadelphia: W. B. Saunders Co., 1980, p. 266.

Tuckey found that patients living on splendid diets would suffer all the afflictions of those leading dissolute lives if they lacked stomach acid.

The Tuckey Research

Dr. Hugh Tuckey and his physician wife conducted research for 30 years on the importance of hydrochloric acid. His 30 years of research led him to the conclusion that a great many individuals in the western world suffered from "hypochlorhydria" (low stomach acid) or "achlorhydria" (lack of stomach acid).

Tuckey graphically portrays the consequences of lack of stomach acid,

"We have seen people by the hundreds come into the office who were living on a splendid, balanced diet, yet had bloat, gas, often a foul breath, constipation, and all of the conditions that you would expect to find in persons who were living helter-skelter – not watching their diet at all."

Trying to help these patients was an exercise in frustration until Tuckey began to work with hydro-chloric acid. The liquid form taken with a glass tube did not result in permanent improvement. Tablets that were composed of betaine HCL with pepsin added worked well. Other forms did not seem to be as effective.[1]

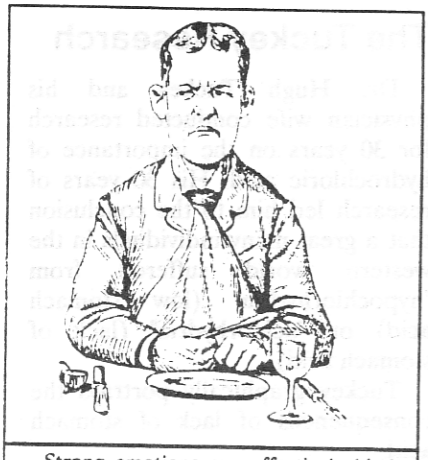
Signs of Deficiency

Tuckey found that those with low stomach acid could experience the following:

- Inability to digest protein.
- Slowing down of the emptying of the stomach.
- Acid-fast bacteria not destroyed in stomach.
- Inadequate digestion of food and its rotting in the stomach.
- Heartburn
- Itching of the rectum (pruritis ani)
- Bad breath (halitosis)
- Bloating or belching
- Intolerance of fruit juice[1]

Alsleben attempts to list complications from lack of stomach acid in order of their appearance, "If we were to summarize the sequence of events occurring as a result of hydrochloric acid deficiency we would list the following:

- improper digestion



Strong emotions can effectively hinder the production of sufficient quantities of stomach acid or cause overproduction.

- fermentation and later putrifaction
- reduced absorption
- reduced liver and pancreas function
- ulcer formation
- elevated blood sugar
- reduced oxidation of lactic acid
- retention of carbon dioxide
- reduced activity of white blood cells
- reduced destruction of bacteria
- unbalanced mineral levels."[3]

Tourista

Tuckey learned about the ability of stomach acid to destroy bacteria from his patients who went to Mexico. Most people who eat and drink indesciminately in Mexico come back with "tourista," a violent diarrhea caused by internal parasites. Some of his patients had suffered with the disease for three or four years after a trip to Mexico. After giving them stomach acid to take with meals they never again acquired the disease.[1]

Cancer

Tuckey found that those with severe deficiencies of stomach acid "eventually died of cancer of the stomach."[1] Alsleben notes that a good many diseases show alterations in stomach acid secretion. These diseases include,

"cancer, diabetes, acute infection, neurosis, passive congestions, gastric catarrh, severe anemia, arteriosclerosis, hypertension, chemical poisoning, affections of the heart, neoplastic growths, metabolic and endocrine disorders, senile insanities, dyspepsia (indigestion), chronic ulcers of the stomach and duodenum, cholecystitis, appendicitis, duodenitis, worry, anxiety and pyloric obstruction..."[3]

Immunity to Disease

Alsleben suggests that stomach acid plays a critical role in the functioning of the immune system. He writes,

"When hydrochloric acid is injected into the body in very dilute, physiologic amounts, the white blood cell systems increase their activity, the blood pH returns to normal regardless of whether it is too acid or too alkaline and the number of white cells increase."

Alsleben found the acid-base balance of the blood very important for health and believes, "When this condition of physiologic balance exists the individual is in the state of absolute immunity."[3]

Stomach Acid and Nutrition

Without stomach acid, absorption of minerals, which takes place just below the stomach, becomes extremely difficult. Tuckey believed that most anemias were caused by lack of stomach acid. He also found it extremely difficult to properly use calcium without adequate stomach acid. He treated arthritics with stomach acid and calcium with good results.[1]

It is also difficult to properly break down protein without sufficient stomach acid. Protein is important for an adequate immune system, hormone balance, and muscle construction by body tissues, not to speak of its importance in the production of digestive substances themselves (especially pancreatic enzymes).

Causes for Low Stomach Acid

Lack of the B vitamins can result in loss of ability to produce stomach acid. Trace minerals such as potassium are also important in production of this vital substance. Emotional and physical stress can destroy the ability to produce digestive substances and so can severe illness.[2, 3]

References:

1. Tuckey, E. Hugh, M.D., "The Human Need for Hydrochloric Acid," National Health Federation Bulletin, October 1967.

2. Clark, Linda, Secrets of Health and Beauty, New York:Pyramid Books, 1975, pp.40-49.

3. Alsleben, Rudloph, M.D. and Shute, Wilfrid, M.D., How to Survive the New Health Catastrophes, Anaheim, Ca., Survival Publications, Inc., 1973, p. 3-36 to 3-44.