

## **POTENTIAL BENEFITS OF PH 8.8 ALKALINE DRINKING WATER AS AN ADJUNCT IN THE TREATMENT OF REFLUX DISEASE**

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Ann Otol Rhinol Laryngol. 2012 Jul;121(7):431-4.  
Koufman JA, Johnston N.

### Source

Voice Institute of New York, NY 10019, USA.

### Abstract

**OBJECTIVES:** At the cellular level, tissue-bound pepsin is fundamental to the pathophysiologic mechanism of reflux disease, and although the thresholds for laryngeal damage in laryngopharyngeal reflux and for esophageal damage in gastroesophageal reflux disease differ, both forms of damage are due to pepsin, which requires acid for its activation. In addition, human pepsin remains stable at pH 7.4 and may be reactivated by hydrogen ions from any source. Thus, most tap and bottled waters (typically pH 6.7 to 7.4) would not be expected to affect pepsin stability. The purposes of these in vitro studies were to investigate whether artesian well water containing natural bicarbonate (pH 8.8) might irreversibly denature (inactivate) human pepsin, and to establish its potential acid-buffering capacity.

**METHODS:** Laboratory studies were performed to determine whether human pepsin was inactivated by pH 8.8 alkaline water. In addition, the buffering capacity of the alkaline water was measured and compared to that of the two most popular commercially available bottled waters.

**RESULTS:** The pH 8.8 alkaline water irreversibly inactivated human pepsin (in vitro), and its hydrochloric acid-buffering capacity far exceeded that of the conventional-pH waters.

**CONCLUSIONS:** Unlike conventional drinking water, pH 8.8 alkaline water instantly denatures pepsin, rendering it permanently inactive. In addition, it has good acid-buffering capacity. Thus, the consumption of alkaline water may have therapeutic benefits for patients with reflux disease.

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PubMed: National Center for Biotechnology Information (NCBI) is a division of the U.S. National Library of Medicine (NLM) at the National Institutes of Health (NIH).

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# SELECTIVE STIMULATION OF THE GROWTH OF ANAEROBIC MICROFLORA IN THE HUMAN INTESTINAL TRACT BY ELECTROLYZED REDUCING WATER

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Med Hypotheses. 2005;64(3):543-6.  
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## Source

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## Abstract

96-99% of the "friendly" or residential microflora of intestinal tract of humans consists of strict anaerobes and only 1-4% of aerobes. Many diseases of the intestine are due to a disturbance in the balance of the microorganisms inhabiting the gut. The treatment of such diseases involves the restoration of the quantity and/or balance of residential microflora in the intestinal tract. It is known that aerobes and anaerobes grow at different oxidation-reduction potentials (ORP). The former require positive E(h) values up to +400 mV. Anaerobes do not grow unless the E(h) value is negative between -300 and -400 mV. In this work, it is suggested that prerequisite for the recovery and maintenance of obligatory anaerobic microflora in the intestinal tract is a negative ORP value of the intestinal milieu. Electrolyzed reducing water with E(h) values between 0 and -300 mV produced in electrolysis devices possesses this property. Drinking such water favours the growth of residential microflora in the gut. A sufficient array of data confirms this idea. However, most researchers explain the mechanism of its action by an antioxidant properties destined to detox the oxidants in the gut and other host tissues. Evidence is presented in favour of the hypothesis that the primary target for electrolyzed reducing water is the residential microflora in the gut.

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PubMed: National Center for Biotechnology Information (NCBI) is a division of the U.S. National Library of Medicine (NLM) at the National Institutes of Health (NIH).

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**FDA ALERT**  
**PPI ACID REFLUX DRUGS CAUSE C.DIFF,**  
**MAGNESIUM LOSS & BONE FRACTURES**

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According to a study by Johns Hopkins University researchers, heartburn medication has also been linked to Chronic Kidney Disease (CKD). The research raises serious questions about commonly used acid reflux drugs such as Nexium, Prevacid, Prilosec and other proton pump inhibitors (PPIs). Stanford University researchers also revealed evidence linking acid reflux medications to a greater risk of heart attacks.

Prior studies have linked these acid reflux medications to bone fractures, gut infections, dementia, pneumonia, magnesium loss and various health problems.

**POSSIBLE INCREASED RISK OF BONE FRACTURES**  
**WITH CERTAIN ANTACID DRUGS**

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Source: FDA

There is a possible increased risk of fractures of the hip, wrist, and spine if you take certain drugs for heartburn, acid reflux, or ulcers, warns the Food and Drug Administration (FDA).

The drugs belong to a class of medications called proton pump inhibitors (PPIs), which work by reducing the amount of acid in the stomach. They are available both as prescription and as over-the-counter (OTC) medications.

The prescription PPIs treat conditions such as gastroesophageal reflux disease (GERD), ulcers in the stomach and small intestine, and inflammation of the esophagus. The PPIs available over-the-counter are used to treat frequent heartburn.

The prescription PPIs are:

- |            |            |
|------------|------------|
| * Nexium   | * Prevacid |
| * Dexilant | * Protonix |
| * Prilosec | * Aciphex  |
| * Zegerid  | * Vimovo   |

The over-the-counter PPIs are:

- \* Prilosec OTC (omeprazole)
- \* Zegerid OTC (omeprazole)
- \* Prevacid 24HR (lansoprazole)

Be aware that the over-the-counter PPIs should only be used as directed for 14 days for the treatment of frequent heartburn. If your heartburn continues, talk to your health care professional. No more than three 14-day treatment courses should be used in one year.

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**FDA DRUG SAFETY COMMUNICATION  
CLOSTRIDIUM DIFFICILE-ASSOCIATED DIARRHEA  
CAN BE ASSOCIATED WITH STOMACH ACID DRUGS  
KNOWN AS PROTON PUMP INHIBITORS (PPIS)**

Source: FDA

**Safety Announcement**

The U.S. Food and Drug Administration (FDA) is informing the public that the use of stomach acid drugs known as proton pump inhibitors (PPIs) may be associated with an increased risk of Clostridium difficile–associated diarrhea (CDAD). A diagnosis of CDAD should be considered for patients taking PPIs who develop diarrhea that does not improve.

Patients should immediately contact their healthcare professional and seek care if they take PPIs and develop diarrhea that does not improve.

Clostridium difficile (C. difficile, aka: C.diff) is a bacterium that can cause diarrhea that does not improve. Symptoms include watery stool, abdominal pain, and fever, and patients may go on to develop more serious intestinal conditions. The disease can also be spread in the hospital. Factors that may predispose an individual to developing CDAD include advanced age, certain chronic medical conditions, and taking broad spectrum antibiotics. Treatment for CDAD includes the replacement of fluids and electrolytes and the use of special antibiotics.

FDA is also reviewing the risk of CDAD in users of histamine H2 receptor blockers. H2 receptor blockers are used to treat conditions such as gastroesophageal reflux disease (GERD), stomach and small intestine ulcers, and heartburn. H2 receptor blockers are marketed under various brand and generic drug names (see Tables 3 and 4) as prescription and OTC products.

<p><b>Table 1:</b> <b><u>Prescription Proton Pump Inhibitor (PPI) Drugs</u></b> <i>Generic name - Found in brand name(s)</i> Dexlansoprazole = Dexilant Esomeprazole magnesium = Nexium Esomeprazole magnesium and naproxen = Vimovo Lansoprazole = Prevacid Omeprazole = Prilosec Omeprazole and Sodium bicarbonate = Zegerid Pantoprazole sodium = Protonix Rabeprazole sodium = Aciphex</p>	<p><b>Table 2:</b> <b><u>Over-the-Counter (OTC) Proton Pump Inhibitor (PPI) Drugs</u></b> <i>Generic name - Found in brand name(s)</i> Lansoprazole = Prevacid 24HR Omeprazole magnesium = Prilosec OTC Omeprazole and sodium bicarbonate = Zegerid OTC Omeprazole = Omeprazole</p>
<p><b>Table 3:</b> <b><u>Prescription H2 Receptor Blocker Drugs</u></b> <i>Generic name - Found in brand name(s)</i> Cimetidine = Tagamet Famotidine = Pepcid, Duexis Nizatidine = Axid, Nizatidine Ranitidine = Zantac, Tritac</p>	<p><b>Table 4:</b> <b><u>Over-the-Counter (OTC) H2 Receptor Blocker Drugs</u></b> <i>Generic name - Found in brand name(s)</i> Cimetidine = Tagamet HB Famotidine = Pepcid Complete, Pepcid AC Nizatidine = Axid AR Ranitidine = Zantac</p>

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**FDA DRUG SAFETY COMMUNICATION**  
**LOW MAGNESIUM LEVELS CAN BE ASSOCIATED WITH**  
**LONG-TERM USE OF PROTON PUMP INHIBITOR DRUGS (PPIS)**

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Source: FDA

**Safety Announcement**

The U.S. Food and Drug Administration (FDA) is informing the public that prescription proton pump inhibitor (PPI) drugs may cause low serum magnesium levels (hypomagnesemia) if taken for prolonged periods of time (in most cases, longer than one year). In approximately one-quarter of the cases reviewed, magnesium supplementation alone did not improve low serum magnesium levels and the PPI had to be discontinued.

PPIs work by reducing the amount of acid in the stomach and are used to treat conditions such as gastroesophageal reflux disease (GERD), stomach and small intestine ulcers, and inflammation of the esophagus. In 2009, approximately 21 million patients filled PPI prescriptions at outpatient retail pharmacies in the United States.

Prescription PPIs include Nexium (esomeprazole magnesium), Dexilant (dexlansoprazole), Prilosec omeprazole), Zegerid (omeprazole and sodium bicarbonate), Prevacid (lansoprazole), Protonix (pantoprazole sodium), and AcipHex (rabeprazole sodium). Vimovo is a prescription combination drug product that contains a PPI (esomeprazole magnesium and naproxen).

Over-the-counter (OTC) PPIs include Prilosec OTC (omeprazole), Zegerid OTC (omeprazole and sodium bicarbonate), and Prevacid 24HR (lansoprazole). OTC PPIs are marketed at low doses and are only intended for a 14 day course of treatment up to 3 times per year. Low serum magnesium levels can result in serious adverse events including muscle spasm (tetany), irregular heartbeat (arrhythmias), and convulsions (seizures).

Healthcare professionals should consider obtaining serum magnesium levels prior to initiation of prescription PPI treatment in patients... who take PPIs with medications such as digoxin, diuretics or drugs that may cause hypomagnesemia.

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