1. **Potential benefits of pH 8.8 alkaline drinking water as an adjunct in the treatment of reflux disease** (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.)

2. **Dose-dependent inhibition of gastric injury by hydrogen in alkaline electrolyzed drinking water** (METHODS: In this study, hydrogen-rich alkaline water was obtained by adding H2 to electrolyzed water at one atmosphere pressure. After 2 weeks of drinking, we detected the gastric mucosal damage together with MPO, MDA and 8-OHdG in rat aspirin induced gastric injury model. **RESULTS:** Hydrogen-dose dependent inhibition was observed in stomach mucosal. Under pH 8.5, 0.07, 0.22 and 0.84 ppm hydrogen exhibited a high correlation with inhibitory effects showed by erosion area, MPO activity and MDA content in the stomach. Gastric histology also demonstrated the inhibition of damage by hydrogen-rich alkaline water. However, 8-OHdG level in serum did not have significant hydrogen-dose dependent effect. pH 9.5 showed higher but not significant inhibitory response compared with pH 8.5. **CONCLUSIONS:** Hydrogen is effective in relieving the gastric injury induced by aspirin-HCl, and the inhibitory effect is dose-dependent. The reason behind this may be that hydrogen-rich water directly interacted with the target tissue, while the hydrogen concentration in blood was buffered by liver glycogen, evoking a suppressed dose-response effect. Drinking hydrogen-rich water may protect healthy individuals from gastric damage caused by oxidative stress.)

3. **Effect of electrolyzed high-pH alkaline water on blood viscosity in healthy adults** (RESULTS: After exercise-induced dehydration, consumption of the electrolyzed, high-pH water reduced high-shear viscosity by an average of 6.30% compared to 3.36% with standard purified water (p = 0.03). Other measured biomarkers (plasma osmolality, bioimpedance, and body mass change) revealed no significant difference between the two types of water for rehydration. However, a mixed model analysis validated the effect of high-pH water on high-shear viscosity when compared to standard purified water (p = 0.0213) after controlling for covariates such as age and baseline values. **CONCLUSIONS:** A significant difference in whole blood viscosity was detected in this study when assessing a high-pH, electrolyte water versus an acceptable standard purified water during the recovery phase following strenuous exercise-induced dehydration.)

4. **Ionized alkaline water: new strategy for management of metabolic acidosis in experimental animals** (ABSTRACT: Metabolic acidosis can occur as a result of either the accumulation of endogenous acids or loss of bicarbonate from the gastrointestinal tract or the kidney, which represent common causes of metabolic acidosis. The appropriate treatment of acute metabolic acidosis has been very controversial. Ionized alkaline water was not evaluated in such groups of patients in spite of its safety and reported benefits. So, we aimed to assess its efficacy in the management of metabolic acidosis in animal models. Two models of metabolic acidosis were created in dogs and rats. The first model of renal failure was induced by ligation of both ureters; and the second model was induced by urinary diversion to gut (gastrointestinal bicarbonate loss model). Both models were subjected to ionized alkaline water (orally and by hemodialysis). Dogs with renal failure were assigned to two groups according to the type of dialysate utilized during hemodialysis sessions, the first was utilizing alkaline water and the second was utilizing conventional water. Another two groups of animals with urinary diversion were arranged to receive oral alkaline water and tap water. In renal failure animal models, acid-base parameters improved significantly after hemodialysis with ionized alkaline water compared with the conventional water treated with reverse osmosis (RO). Similar results were observed in urinary diversion models as there was significant improvement of both the partial pressure of carbon dioxide and serum bicarbonate (P = 0.007 and 0.001 respectively) after utilizing alkaline water orally. Alkaline ionized water can be considered as a major safe strategy in the management of metabolic acidosis secondary to renal failure or dialysis or urinary diversion. Human studies are indicated in the near future to confirm this issue in humans.)