

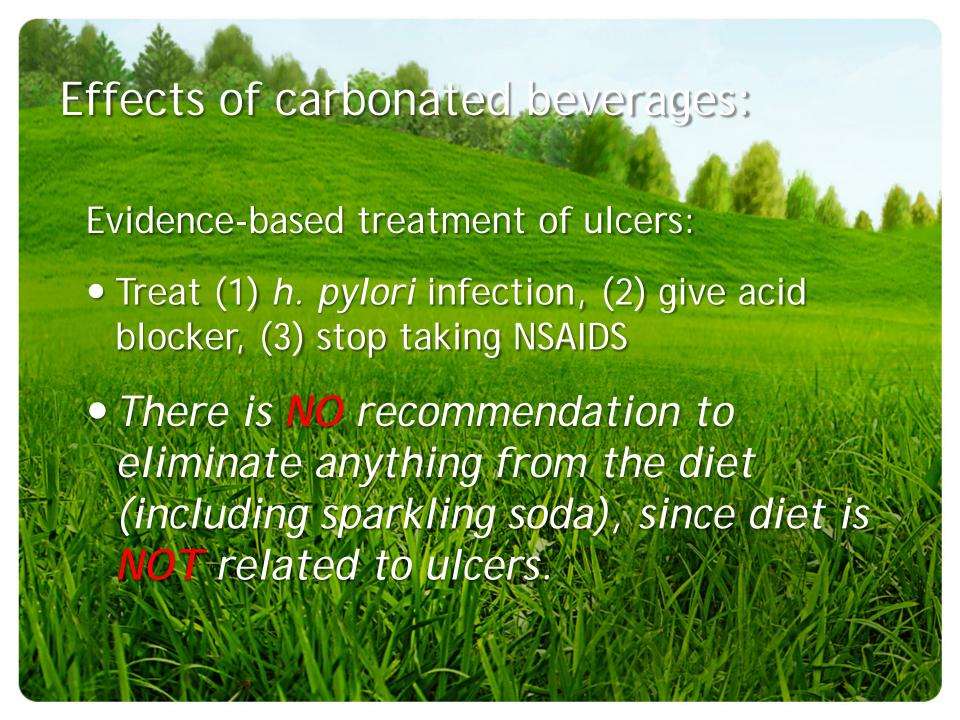




Physiology of the stomach:

- Normal pH (measure of acidity: the lower the pH, the more acid) is 1.8 (The standard carbonated beverages in the market are
- 2.2: less acidic than stomach itself)
- Stomach lining is protected by mucosa (inner layer) that can secrete bicarbonate and other protectants, plus rich blood flow sweeps away acids
- Mucus (water, electrolytes, glycoprotein) is a thick gel that traps food particles and contains bicarbonate to protect stomach lining







Effects of carbonated beverages:

Some concern over osteoporosis

- However, Mayo Clinic states, "no good evidence that carbonated water causes harm to your bones."*
- If there is an effect, it is from not drinking enough milk. Drinking juice and general nondairy drinks instead of milk. It is NOT from the carbonation.

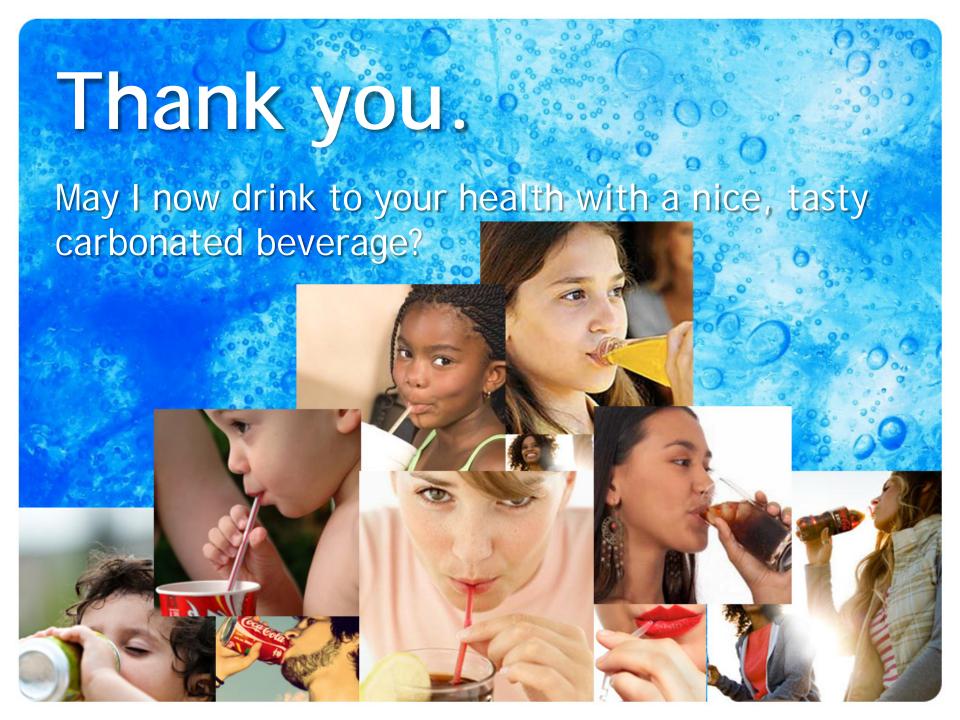
Comparing beverages:

- Red wine and whisky cause more ulcer symptoms than the carbonated beverages: "related to carbonation".*
- Any beverage with sugar may be related to obesity but that is MOT related to carbonation.

Effects of carbonated beverages:

Summary:

- Carbonated beverages do not cause ulcers
- Some carbonated beverages may be helpful in digestion and general health
- There is MC evidence of harm from the carbonation, although sugary beverages generally may have some problems, such as obesity.
- Any law directed specifically at carbonated beverages is not based on science at all and it is a scientific untruth to state that it is.



Effects of carbonated beverages:

- References:
- Protection of the Gastrointestinal Tract Epithelium against Damage from Low pH Beverages, Kleinman, R.E., JOURNAL OF FOOD SCIENCE Vol. 73, Nr. 7, 2008
- Effects of carbonated water on functional dyspepsia and constipation, Cuomo, R., Grasso, R., et. al., EUROPEAN JOURNAL OF GASTROENTEROLOGY & HEPATOLOGY 14: 1-9, 2002
- A Humble Bacterium Sweeps this Year's Nobel Prize, Megraud, F., CELL 123,975-976, 2005
- Carbonated water and bone health, Nelson, J.K., RD, MAYO CLINIC: HEALTHY LIFESTYLE, 2011.
 http://www.mayoclinic.org/healthy-living/nutrition-and-healthy-eating/expert-blog/carbonated-water/bgp-20056174