

Coping with antibiotic resistance: taming bacteria

Dr. Lon Jones, DO

Published: July 11, 2015

There is information everywhere you look today about our problem with antibiotic resistance and the only solution seen is more antibiotics. The July 2015 issue of *Consumer Reports* has the first of a three part series on the subject. President Obama announced his program in that area last March; one commentator for that announcement called it stupid saying: “you can’t negotiate with bacteria.” While I saw nothing in Obama’s proposal about negotiating our point is that you can, and just as we need to negotiate when we are losing in a military battle that should be an option when we are losing our war with bacteria.

In 2003 I wrote an article to that effect that was published in the journal *Medical Hypotheses*. It was based on my own experience with the use of nasal xylitol and was just a proposal then, but last January Brazilian researchers reviewed the interactions of xylitol and bacteria that was central to my article in a much more rigorous manner, and concluded, without mentioning my article, that I was correct and that we just need to do it.

Xylitol interferes with the bacterial adherence of many different bacteria. That means that the bacteria are less able to hold on to us if xylitol is present. Translated into practice that means that more than 90% of childhood ear infections need not happen. This was my personal experience in my practice. The article where I reported it can be found [here](#). The same with sinus infections. These are the two main upper respiratory infections that are the most common reasons for prescribing antibiotics. No infections means no antibiotics, and no antibiotics means no antibiotic resistance. European researchers found that bacteria often lost their resistance when there were fewer antibiotics. I think that could mean that they are tamed.

This type of taming is central to Paul Ewald’s book, *The Evolution of Infectious Disease*. He points out that bacteria adapt toward resistance when they are threatened, as they are with antibiotics; like all of us they will try to find a way to survive. But if they are just blocked from spreading, like with clean water in cholera, or condoms with HIV, without being threatened, they tend to adapt in friendly ways and are less virulent. That’s negotiation on a bacterial level, and it results in taming. And when you interfere with adherence you apply those same pressures as when you block their transmission.

Likely the best known example of this process is the dental use of xylitol to prevent cavities in our teeth. Tooth decay is very likely the most prevalent infectious disease in all of mankind. It’s infectious because the process is begun when bacteria living on the teeth eat the sugars in our diets and make an acid from them that eats through the enamel surfaces of our teeth. Putting xylitol in this mix on a regular basis alters this process and used five times a day is seen to prevent about 80% of tooth decay. It does this by both interfering with bacterial adherence, so some of them go away, and by changing them so they don’t make the acid. That too is easily seen as taming them.

It is too bad that treatments using xylitol and the mix of sugar, salt and water that make up oral rehydration cannot make a lot of profit for our health care industry and jump through the hoops that would make them drugs. That is not feasible with substances that are readily available at your market. Indeed, if optimally implemented they will cost our health care industry substantially because people will be healthier, which is not good for our GDP and those interested in growing our economy. The mix of salt, sugar and water optimizes our

gastrointestinal washing defenses, and nasal xylitol does the same for those in the nose. If the defense of your favorite football or soccer team is optimal the opposition will be held scoreless. When our defenses against invading bacteria are optimal we can avoid getting infected, avoid relying on antibiotics, and avoid increasing antibiotic resistance. The overwhelming majority of infectious organisms enter our bodies either through the mouth or the nose. Optimizing our defenses there is both wise and simple.

This story is told in more detail, but just as simply in *No More Allergies, Asthma, or Sinus Infections*. If you would like to learn more it is available at Amazon or you can purchase it here and help us out at the same time. Go to the Support section at 'Who We Are.' On a broader level the taming of bacteria is the story of how all living things adapt, and we can help guide that adaptation by making wise choices in setting up public policies. This subject is explored in our book, *The Boids and the Bees: Guiding Adaptation to Improve our Health, Healthcare, Schools, and Society*. found in the same places.