

Urinary Infections that kill?

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Reading the news about antibiotic resistant germs causing urinary tract infections? As we have written, this is a war we have little chance of winning. The other side is just too good at coping with our weapons and we can't adapt near as fast. We need another option!

In our real world wars we look to negotiate when we are losing. Nathan Sharon showed that we can use sugars to do this, and he specifically was looking at bugs like the ones causing urinary infections. The resistant bug that people are worried about is a strain of *Escherichia coli* and what these infecting bugs hang on to in the body is usually a sugar called mannose that is fairly common on our cells surfaces, especially in the urinary tract. Sharon demonstrated that putting mannose in the mix caused many of the bugs to hang on to it rather than the mannose on the cell surface. It's a process known in medicine as competitive inhibition, and it works. Sharon and his colleagues showed that when you eat mannose the coliforms in your GI tract change over to the ones that don't hang on to mannose, and since most urinary infections in women come from bacteria in their own GI tracts that means that there are no more urinary tract infections. A little bit of mannose every day, like the apple, keeps the doctors away.

The really nice part of this is that mannose and other such sugars and sugar-like molecules—like xylitol—work on individual bacteria and do not kill them; they just tend to make them go away—and they are not drugs so they are not that expensive. In this process there is no drive to develop resistance on the part of the bugs. Resistance is developed in a community of bacteria; these sugars work on individuals.