

# **Sugar and Spice, Aren't They Nice? Is Garlic, Ginger, Cinnamon, or Honey More Effective than Antibiotics against Bacteria?**

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Over the years too many people have been prescribed antibiotics for unnecessary reasons such as colds. This impacts not only people having side effects associated with antibiotics but also causes the bacteria to become stronger. When the bacteria becomes more resistant than sicknesses can be harder to treat and the antibiotics will not be as effective. In response to this problem natural substances that have shown bacterial inhibition such as garlic, ginger, honey, and cinnamon should be used as a first line of defense for minor illnesses. The procedure began with producing 1 cup each of the honey, garlic, ginger, and cinnamon. The pH was tested on each substance: ginger 6, cinnamon 5, garlic 4.5, and honey 4.5. All filter disks of the substances and antibiotics were placed on their petri dishes of E Coli and Bacillus Cereus. After 24hours the zones of inhibition were measured, larger measurements means the substance was more effective. It was found that on Bacillus the garlic had 2.23cm, cinnamon 0.9cm, ginger 2.23cm, and honey 0.47cm. It was found on E Coli honey was .43cm, ginger 1.8cm, garlic 4.4cm, and cinnamon .23cm. In conclusion the data revealed that the hypothesis was not supported the honey was not the most effective, but the garlic was effective against both gram positive and gram-negative bacteria in the same level as the antibiotics.