Coconut oil could combat tooth decay

The natural antibiotic would be added to commercial dental care products

Digested coconut oil is able to attack the bacteria that cause tooth decay. It is a natural antibiotic that could be incorporated into commercial dental care products, say scientists presenting their work at the Society for General Microbiology’s Autumn Conference at the University of Warwick, in Ireland.

Inhibited the growth of most strains of Streptococcus bacteria

The team from the Athlone Institute of Technology in Ireland tested the antibacterial action of coconut oil in its natural state and coconut oil that had been treated with enzymes, in a process similar to digestion.

The oils were tested against strains of Streptococcus bacteria that are common inhabitants of the mouth. The team of researchers found that enzyme-modified coconut oil strongly inhibited the growth of most strains of Streptococcus bacteria, including Streptococcus mutans—an acid-producing bacterium that is a major cause of tooth decay.

Earlier foodstuff studies prompted coconut-oil research

Many previous studies have shown that partially digested foodstuffs are active against microorganisms. Earlier work on enzyme-modified milk showed that it was able to reduce the binding of S. mutans to tooth enamel, which prompted the group to investigate the effect of other enzyme-modified foods on bacteria.

Further work will examine how coconut oil interacts with Streptococcus bacteria at the molecular level and which other strains of harmful bacteria and yeasts it is active against.

Additional testing by the group at the Athlone Institute of Technology found that enzyme-modified coconut oil was also harmful to the yeast Candida albicans, which can cause thrush.

No chemical additives and avoids concerns with antibiotic resistance

The researchers suggest that enzyme-modified coconut oil has potential as a marketable antimicrobial, which could be of particular interest to the oral health care industry.

Dr. Damien Brady, who is leading the research, said, "Dental caries is a commonly overlooked health problem affecting 60 to 90 percent of children and the majority of adults in industrialized countries."

"Incorporating enzyme-modified coconut oil into dental hygiene products would be an attractive alternative to chemical additives, particularly as it works at relatively low concentrations. Also, with increasing antibiotic resistance, it is important that we turn our attention to new ways to combat microbial infection."

The work also contributes to our understanding of antibacterial activity in the human gut.

"Our data suggests that products of human digestion show antimicrobial activity. This could have implications for how bacteria colonize the cells lining the digestive tract and for overall gut health," Brady said. "Our research has shown that digested milk protein not only reduced the adherence of harmful bacteria to human intestinal cells but also prevented some of them from gaining entrance into the cell. We are currently researching coconut oil and other enzyme-modified foodstuff to identify how they interfere with the way bacteria cause illness and disease," he said.

(Source: Society for General Microbiology, Athlone Institute of Technology, AlphaGalileo Foundation and Science Daily)