

Red wine grapes may help prevent tooth decay, research shows

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Red wine has long been known to contain a substance, resveratrol, that is heart-healthy. Now research shows that both red wine grapes and winemaking residue, known as pomace, contain substances that may help prevent tooth decay.

A study published online in November in the *Journal of Agricultural and Food Chemistry* suggests that specific polyphenols ---- chemicals present in large amounts in fermented seeds and skins that are cast away after grapes are pressed ---- interfere with the ability of bacteria to contribute to tooth decay.

The study may also hold clues for new ways to reduce life-threatening, systemic infections caused by bacteria.

The findings are the result of a collaboration between Cornell's New York State Agricultural Experiment Station in Geneva, N.Y., and the University of Rochester Medical Center.

"Overall, the phenolic extracts disrupt essential virulence traits for a widespread, destructive oral pathogen, but without killing it," said Olga I. Padilla-Zakour, associate professor of food processing at the experiment station. That pathogen is *Streptococcus mutans*, a bacterium that produces the substances most responsible for tooth decay.

Grapes are one of the world's largest fruit crops, with more than 80 percent of grapes used to make wine. Fermented winemaking waste

contains at least as many polyphenols as whole fruit, so potential drugs could be made directly from the waste, she said. Red grapes have been shown to contain 40 percent more phenols than white grapes.

To examine the makeup of polyphenols in red-wine grape varieties and their ability to interfere with *S. mutans*, the researchers prescreened 2005 grape varieties from New York's Finger Lakes region and prepared polyphenolic extracts from them.

Hyun Koo, assistant professor of dentistry at the Rochester Medical Center, said the hope now is to isolate the key compounds within pomace that render bacteria harmless, perhaps by developing a new kind of mouthwash.

Source: Cornell University

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