

Ginseng doesn't help patients with early diabetes

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(PhysOrg.com) -- Despite promising findings in the laboratory, nutrition researchers at Washington University School of Medicine in St. Louis have found that ginseng does not improve insulin sensitivity in diabetics who are overweight.

Ginseng has been used in Eastern medicine for more than 4,000 years. The widely used herbal supplement often is given to people to prevent or treat diabetes, but there have been few controlled studies to determine whether it really works.

The new research, published online in the journal [Diabetes Care](#), followed 15 overweight or obese adults who recently had been diagnosed with diabetes or with impaired glucose tolerance, a condition that often leads to diabetes. The fact that they had a new diagnosis was important because diabetes is most easily stopped, or even reversed, in patients with a recent diagnosis.

Researchers randomly divided the subjects into three groups: one that took capsules containing Korean red ginseng extract, another that received capsules containing ginsenoside Re (thought to be the active ingredient in ginseng) and a third group that took [placebo](#) capsules. Neither study

volunteers nor investigators knew who got what capsules until the after the study concluded.

"We saw no improvements in either [insulin sensitivity](#) or pancreatic function," says first author Dominic N. Reeds, MD. "Previously, we had shown that ginseng did have an effect in [muscle tissue](#) from obese people. It also improved insulin sensitivity in overweight rats, but when we gave it to humans who had early diabetes and were overweight, we failed to see any benefit at all."

That could be because ginseng and ginsenoside Re aren't well absorbed in the blood. Reeds, an assistant professor of medicine in the Division of Geriatrics and Nutritional Science, notes that the rats got ginseng injections while humans took the substance by mouth.

"We measured levels of ginseng and ginsenoside Re in patients' blood after they had taken capsules for a month," Reeds says. "And even using highly sophisticated, state-of-the-art techniques, we simply weren't able to detect any of these components in the bloodstream."

Previous studies in overweight diabetics suggested that ginseng provided a benefit, but Reeds says those studies had some problems. In one study, almost 40 percent of the subjects dropped out. In another, subjects were encouraged to lose weight and modify their diet and lifestyle.

"So it wasn't really clear whether it was the lifestyle modifications and the weight loss that caused the benefits or whether it was the use of ginseng," he explains.

The researchers evaluated the effects of ginseng on [glucose tolerance](#) and pancreas function by giving a sugar drink and measuring glucose and insulin levels. They also examined insulin sensitivity in fat, liver and muscle tissue. The test infuses both insulin and glucose into the system through an IV

and uses stable tracers to track how well insulin helps the body to reduce fat release and remove sugar from the bloodstream. The testing was conducted both at the start of the study and again after four weeks of treatment.

Reeds believes that perhaps if ginseng could be modified to be better absorbed into the system, it may have benefits for people with diabetes similar to those seen in animals and in muscle tissue in the test tube.

"I think it's likely that if we could increase the absorption of these products, we may see some benefit, and I believe this field is ripe for researchers who want to explore ways in which ginseng could be made more biologically available," Reeds says. "But for now we know that even modest weight loss, combined with physical activity three times a week reduces by 50 percent the likelihood that someone with insulin resistance will develop full-blown [diabetes](#). Although we cannot recommend [ginseng](#) at this time, diet and exercise remain very helpful."

More information: Reeds DN, Patterson BW, Okunade A, Holloszy JO, Polonsky KS, Klein S. Ginseng and ginsenoside Re do not improve β -cell function or insulin sensitivity in overweight and obese subjects with impaired glucose tolerance or diabetes, *Diabetes Care*, online March 16, 2011. [doi:10.2337/dc10-2299](https://doi.org/10.2337/dc10-2299)

Provided by Washington University School of Medicine in St. Louis

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