

How red wine may shield brain from stroke damage

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Researchers at Johns Hopkins say they have discovered the way in which red wine consumption may protect the brain from damage following a stroke.

Two hours after feeding [mice](#) a single modest dose of [resveratrol](#), a compound found in the skins and seeds of red grapes, the scientists induced an ischemic [stroke](#) by essentially cutting off [blood supply](#) to the animals' brains. They found that the animals that had preventively ingested the resveratrol suffered significantly less [brain damage](#) than the ones that had not been given the compound.

Sylvain Doré, Ph.D., an associate professor of anesthesiology and critical care medicine and pharmacology and molecular sciences at the Johns Hopkins University School of Medicine, says his study suggests that resveratrol increases levels of an enzyme (heme oxygenase) already known to shield nerve cells in the brain from damage. When the stroke hits, the brain is ready to protect itself because of elevated enzyme levels. In mice that lacked the enzyme, the study found, resveratrol had no significant protective effect and their brain cells died after a stroke.

"Our study adds to evidence that resveratrol can potentially build brain resistance to [ischemic stroke](#)," says Doré, the leader of the study, which appears online in the journal *Experimental Neurology*.

[Red wine](#) has gotten a lot of attention lately for its purported health benefits. Along with reducing stroke, moderate wine consumption has

been linked to a lowered incidence of cardiovascular disease — the so-called French paradox. Despite diets high in butter, cheese and other saturated fats, the paradox goes, the French have a relatively low incidence of cardiovascular events, which some have attributed to the regular drinking of red wine.

Doré cautions against taking resveratrol supplements, available alongside vitamins and minerals and on websites touting its benefits, because it is unclear whether such supplements could do harm or good. He has not tested resveratrol in clinical trials. And while resveratrol is found in red grapes, it's the alcohol in the wine that may be needed to concentrate the amounts of the beneficial compound. Doré also cautions that drinking alcohol carries risks along with potential benefits.

He also notes that even if further research affirms the benefits of red wine, no one yet knows how much would be optimal to protect the brain, or even what kind of red wine might be best, because not all types contain the same amount of resveratrol. More research is needed, he says.

Doré says his research suggests that the amount needed could end up being quite small because the suspected beneficial mechanism is indirect. "Resveratrol itself may not be shielding brain cells from free radical damage directly, but instead, resveratrol, and its metabolites, may be prompting the cells to defend themselves," he suggests.

"It's not likely that [brain](#) cells can have high enough local levels of resveratrol to be protective," he says. The resveratrol is needed to jump-start this protective enzymatic system that is already present within the cells. "Even a small amount may be sufficient," Doré says.

Doré says his ongoing research also suggests some therapeutic benefits to giving resveratrol to mice after a stroke to limit further neuronal

damage.

Provided by Johns Hopkins Medical Institutions

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