

Researchers evaluate red wine compound for treating concussions in pro boxers

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UT Southwestern Medical Center researchers are engaging the help of professional boxers and trainers to study whether a component in red wine and grapes could help reduce the short- and long-term effects of concussions.

Researchers plan to recruit about two dozen professional boxers to take the neuroprotective compound resveratrol after a fight to see if it reduces damage to the brain after impact and helps restore subtle brain functions and connections via its antioxidant effects. If successful, researchers hope the results may be applicable not only to concussions in other sports such as football and hockey, but also to everyday incidents such as falls, auto accidents and other blows to the head.

"We know from animal studies that if we give the drug immediately after or soon after a brain injury, it can dramatically and significantly reduce the damage you see long term," said Dr. Joshua Gatson, assistant professor of surgery in Burn/Trauma/Critical Care and principal investigator for the study. "There haven't been any completed human studies yet, so this is really the first look at resveratrol's effect on [traumatic brain injury](#)."

Resveratrol is already being studied as an agent to lower [blood sugar levels](#), for use against cancer, to protect [cardiovascular health](#), and in stroke and Alzheimer's disease treatments.

"Even though resveratrol is found in [red wine](#), you would need 50 glasses

of wine to get the required dose to get the protection you would need," said Dr. Gatson.

He came up with the idea for the trial, called the REPAIR study, while watching ESPN. Being a sports fan, he saw frequent concussion issues in football.

"The only treatment available is rest and [light exercise](#), but there is no drug therapy to protect the brain from consecutive concussions, which are actually a lot worse than the initial one," said Dr. Gatson, who investigates biomarkers and novel therapies for traumatic [brain injury](#).

"There's been a lot of work with resveratrol showing that it also protects the brain, so we thought this might be the ideal drug."

In this study, researchers are administering the required oral dose once a day for seven days. Pro boxers will take a supplement form of resveratrol within two hours of their match. Researchers will then use neurocognitive tests and novel MRI protocols to track subtle brain activity, inflammation, and restoration of cells and connections.

"The main goal of our research is to protect the brain after each episode so that we can decrease the cumulative effect of these sports concussions," Dr. Gatson said.

Because boxers can have several fights in a short period of time, the researchers decided to target pro boxers with the help of Joseph Mohmed, the study research coordinator, and a coach for USA Boxing, the governing body for all amateur boxing, including the Olympics. Mr. Mohmed also is a former facilities manager at UT Southwestern.

According to the American Association of Neurological Surgeons, 2009 figures showed that 446,788 sports-related head injuries were treated at U.S. hospital emergency rooms, an increase of nearly 95,000 from the

year before, in sports ranging from diving and cycling to baseball, basketball, soccer and football. The annual incidence of football-related [concussion](#) in the U.S. is estimated at 300,000, with about 47,000 football-related head injuries treated in hospital emergency rooms. In addition, more than 85,000 people were treated for bicycle-related head injuries; about two-thirds of 600 bicycling deaths a year are attributed to traumatic [brain](#) injury.

Provided by UT Southwestern Medical Center

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