

Researcher discusses novel ways to limit stroke damage

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Can using a simple blood-pressure cuff limit damage from strokes caused by decreased blood supply to the brain?

An emerging field of study is working to see whether using this blood-pressure cuff or other methods of "training the brain" could help reduce damage from a stroke as it is occurring while a patient is being transported to the hospital.

An up-to-date review of the research - called stroke ischemic preconditioning - will be presented by Brian Silver, M.D., a Henry Ford Hospital neurologist and stroke specialist, at the International Stroke Conference held in San Antonio.

"Ischemic preconditioning is a novel technique for potentially improving tissue survival following [acute stroke](#)," says Dr. Silver. "Human trials in a variety of conditions, including stroke, are underway to assess the efficacy and safety of this intervention."

Ischemic preconditioning has been tested as a way to limit harmful effects of reduced blood flow to the heart and liver, as well as a potential means to improve performance in competition swimmers. The goal of preconditioning is to prepare the brain to tolerate reduced [blood flow](#) without lasting damage.

Ischemic preconditioning is an intervention whereby reduction of blood supply to an organ is applied in order to produce tolerance to reduced

blood supply in that organ or a remote organ. The intervention should not produce [tissue damage](#) when applied but rather stress the organ so that it can adapt to a lower level of blood supply.

The National Institutes of Health list 53 human studies of ischemic preconditioning to date, most targeting conditions other than stroke.

In an ongoing study in Denmark, Dr. Silver says a blood-pressure cuff is inflated above the patient's normal pressure for five minutes, then released for a five-minute rest period. This is repeated four times. The ischemic intervention is applied to the arm with the aim of limiting the damage occurring in the brain.

"All of this research is driving us to re-think how we can develop new ways to limit the damage caused by [stroke](#), one of the leading causes of disability in the U.S.," says Dr. Silver. "Even though precondition is still in its infancy, it's a field that shows great promise."

Provided by Henry Ford Health System

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