



THE UNIVERSITY *of* EDINBURGH

## *News Release*

Issued: Tuesday 06 October 2015

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**UNDER STRICT EMBARGO UNTIL: 1500 GMT WEDNESDAY 07 OCTOBER 2015**

### **Brain cooling lessens chances of head injury recovery, study finds**

Head injury patients do not benefit from a therapy that involves cooling their bodies to reduce brain swelling, research has found.

Lowering body temperature – a therapy known as induced hypothermia – did not improve patients' chances of recovery, the study showed.

Doctors say the therapy may increase patients' risk of death and disability and should not be used to treat traumatic brain injuries.

Cooling the brain helps to reduce the build-up of pressure inside the head, which is strongly linked to long-term disability and death following head injury.

The treatment is widely used in some intensive care units in Europe and North America, but there have been few clinical trials to assess the effects on patients' long-term recovery.

The major international study – led by the University of Edinburgh – tracked the outcomes of almost 400 cases of traumatic brain injuries from 18 different countries.

Around half of the patients were treated with standard procedures. The other half were treated with induced hypothermia to try to protect the brain from further damage caused by swelling.

The team found that induced hypothermia was successful at reducing the build-up of pressure in the skull after head injury. Six months later, however, patients who had received the therapy were more likely to fare worse than those treated with standard care.

Favourable outcomes, ranging from moderate disability to good recovery, occurred in only a quarter of the patients in the hypothermia group compared with more than a third of patients in the control group.

Doctors ended the trial early because of fears that the therapy may cause harm to some patients.

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Two million people experience a traumatic brain injury worldwide each year, mostly as a result of a road accidents or falls. The condition claims 50,000 lives and causes 80,000 people to suffer long-term disability.

Induced hypothermia involves cooling the body between two and five degrees below normal body temperature of 37 degrees Celsius. Patients are given ice cold intravenous drips within 10 days of their accident. They are kept cool using either cold water blankets or cooling pads for at least 48 hours, after which they are gradually re-warmed to normal body temperature.

The results of the Eurotherm3235 trial are published in the *New England Journal of Medicine*. The study was funded by the National Institute for Health Research's Health Technology Assessment Programme.

Researchers will present their findings at the European Society of Intensive Care Medicine Annual Congress in Berlin on 7 October. They will also discuss the results of the trial at the Neurocritical Care Society annual meeting in Scottsdale, Arizona, USA on 9 October.

Professor Peter Andrews, Head of Critical Care Medicine at the University of Edinburgh, said: "This well conducted trial has shown that hypothermia can successfully reduce brain pressure following trauma, but after 6 months functional recovery was significantly worse than standard care alone."

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