

Dying of cold: Hypothermia in trauma victims

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Hypothermia in trauma victims is a serious complication and is associated with an increased risk of dying. A new study published in BioMed Central's open access journal *Critical Care* has found that the key risk factor was severity of injury. However, environmental conditions and medical care, such as the temperature of the ambulance or temperature of any fluids administered intravenously, also increased risk.

A multicentre study, carried out by the [emergency medical services](#) of eight hospitals across France, looked at the injuries, care and outcomes for all adult trauma victims, over a three year period, who received pre-hospital care and were transported to hospital in an ambulance. Body temperature was continuously measured using a infrared tympanic thermometer and hypothermia was defined as below 35C.

The study found that 14% of patients had hypothermia on arrival at the hospital. Dr Frédéric Lapostolle from SAMU 93 - Unité recherche-enseignement-qualité, Hôpital Avicenne, who led this study, explained, "As expected the severity of hypothermia was linked to the severity of injury. Blood loss and spine or head injury impair body temperature regulation and in our study we found that head injury, and intubation to aid breathing, were independently associated with hypothermia."

While external air and ground temperatures seemed to have little effect on risk of hypothermia, the study found that infusion fluid temperature and the temperature inside the ambulances were both significant [risk](#)

[factors.](#)

Dr Lapostolle continued, "The temperature of infused fluid for 75% of our patients was below 21C and usually at ambient air temperature. We suggest that, to reduce the incidence of [hypothermia](#), the temperature of infusion fluids need to be controlled, and that a small a volume as possible is used. Temperature of infusion fluids can be easily and rapidly measured in pre-hospital settings. We also recommend that ambulances should be heated and that as much as possible the patient should remain clothed, because attempting to warm the patients did not compensate for the effect of them being undressed even if it can make examination more difficult."

More information: Risk factors for onset of hypothermia in trauma victims: The HypoTraum study Frederic Lapostolle, Jean Luc Sebbah, James Couvreur, Francois X Koch, Dominique Savary, Karim Tazarourte, Gerald Egman, Lynda Mzabi, Michel Galinski and Frederic Adnet, *Critical Care* (in press)

Provided by BioMed Central

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