

Reference	Comments on the paper	Comments on the methodological quality of the supporting evidence.
<p><b>Bristow GK, Giesbrecht GG. Contribution of exercise and shivering to recovery from induced hypothermia (31.2 degrees C) in one subject. <i>Aviat Space Environ Med.</i> Jun 1988;59(6):549-552.</b></p>	<p>Laboratory study with 1 subject who was cooled by immersion to 32°C and who rewarmed spontaneously and by exercising on a treadmill. Afterdrop was 0.8°C. Rewarming rate was 5.2°C/h. Most of the heat production resulted from shivering. Maximal heat production, almost all of which was due to shivering, occurred at the minimum temperature (31.2°C). Demonstrates that shivering can contribute effectively to rewarming below 32°C.</p>	<p>Overwhelming evidence from observational study.</p>
<p><b>Vanggaard L, Eyolfson D, Xu X, Weseen G, Giesbrecht GG. Immersion of distal arms and legs in warm water (AVA rewarming) effectively rewarms mildly hypothermic humans. <i>Aviat Space Environ Med.</i> Nov 1999;70(11):1081-1088.</b></p>	<p>Controlled trial (laboratory study) with 6 subjects (70.8±11.7 kg) who served as their own controls. Subjects were cooled by immersion and warmed by shivering alone or by immersion of distal extremities to the elbows and knees in 42 or 45°C water. Afterdrop in 42 or 45°C water (0.4±0.2°C) was less than with shivering alone (0.6±0.4°C) (p&lt;0.05). Rate of rewarming was greater in 45° water (9.9±3.2°C/h) than both 42°C water (6.1±1.2°C/h) and shivering alone (3.4±1.5°C/h) (p&lt;0.05). Rectal temperature lagged behind esophageal and epitympanic temperature during extremity rewarming. Effective perfused mass calculated to be about 18.5 kg.</p>	<p>RCT without important limitations. Subjects were mildly hypothermic. (Overwhelming evidence from observational study for lag of rectal temperature compared to esophageal and epitympanic temperature during rewarming and for reduced effective perfused body mass in hypothermia).</p>
<p><b>Oberhammer R, Beikircher W, Hormann C, et al. Full recovery of an avalanche victim with profound hypothermia and prolonged cardiac arrest treated by extracorporeal re-warming. <i>Resuscitation.</i> Mar 2008;76(3):474-480.</b></p>	<p>Case report. Survival with full neurologic recovery from witnessed ventricular fibrillation cardiac arrest after extrication of a 29-year old male avalanche victim with core temperature 22°C. CPR was not started for 15 minutes. Demonstrates that full recovery can occur without immediate CPR in a severely hypothermic patient in cardiac arrest.</p>	<p>Overwhelming evidence from observational study.</p>

<p><b>Giesbrecht GG, Goheen MS, Johnston CE, Kenny GP, Bristow GK, Hayward JS. Inhibition of shivering increases core temperature afterdrop and attenuates rewarming in hypothermic humans. <i>J Appl Physiol.</i> Nov 1997;83(5):1630-1634.</b></p>	<p>Controlled trial (laboratory study) with 8 subjects who served as their own controls. Inhibition of shivering was used to simulate severe hypothermia in subjects cooled by immersion. Inhibition of shivering increased afterdrop size (<math>1.1\pm 0.6</math> vs <math>0.4\pm 0.2^{\circ}\text{C}</math>) and duration (<math>89.4\pm 3.1</math> vs <math>20.9\pm 5.7</math> min) and decreased rewarming rate (<math>1.2\pm 0.5</math> vs <math>1.9\pm 0.9^{\circ}\text{C/h}</math>).</p>	<p>RCT without important limitations. The study was limited by the fact that subjects were not actually severely hypothermic.</p>
<p><b>Hayward JS, Eckerson JD, Kemna D. Thermal and cardiovascular changes during three methods of resuscitation from mild hypothermia. <i>Resuscitation.</i> Feb 1984;11(1-2):21-33.</b></p>	<p>Controlled trial (laboratory study) with 1 subject. Additional subjects could not be recruited due to use of Swan-Ganz catheterization. Compared rewarming from mild immersion hypothermia by peripheral heat (bath), "core heat" (inhalation) and no heat ("spontaneous"). Unlike the other 2 methods, bath rewarming caused afterdrop of cardiac temperature, hypotension, increased heart rate and increased cardiac output.</p>	<p>Controlled trial with important limitations. Single subject study.</p>
<p><b>Goheen MS, Ducharme MB, Kenny GP, et al. Efficacy of forced-air and inhalation rewarming by using a human model for severe hypothermia. <i>J Appl Physiol.</i> Nov 1997;83(5):1635-1640.</b></p>	<p>Controlled trial (laboratory study) with 8 subjects who served as their own controls. Inhibition of shivering was used to simulate severe hypothermia in subjects cooled by immersion. Subjects were rewarmed with spontaneous rewarming, inhalation rewarming or forced-air warming. Rewarming took place in a room at <math>-20^{\circ}\text{C}</math>. Afterdrop was less during forced-air warming (<math>0.9^{\circ}\text{C}</math>) than during spontaneous rewarming (<math>1.4^{\circ}\text{C}</math>) and inhalation rewarming (<math>1.2^{\circ}\text{C}</math>) (<math>p&lt;0.05</math>). Rewarming rate was 6-10 times greater during forced air warming (<math>2.4^{\circ}\text{C/h}</math>) than during control (<math>0.4^{\circ}\text{C/h}</math>) and inhalation rewarming (<math>0.23^{\circ}\text{C/h}</math>) (<math>p&lt;0.05</math>).</p>	<p>RCT without important limitations. The study was limited by the fact that subjects were not actually severely hypothermic.</p>
<p><b>Mekjavic IB, Eiken O. Inhalation rewarming from hypothermia: an evaluation in <math>-20</math> degrees C simulated field conditions. <i>Aviat Space Environ Med.</i> May 1995;66(5):424-429.</b></p>	<p>Controlled trial (laboratory study) with 8 subjects who served as their own controls. Inhalation was compared with passive rewarming and passive rewarming with a respiratory heat exchanger after immersion cooling. Rewarming took place in a room at <math>-20^{\circ}\text{C}</math>. Afterdrop was less with inhalation</p>	<p>RCT without important limitations. The study was limited by the fact that subjects were not hypothermic.</p>

	and heat exchanger than with passive rewarming.	
<b>Sterba JA. Efficacy and safety of prehospital rewarming techniques to treat accidental hypothermia. <i>Ann Emerg Med.</i> Aug 1991;20(8):896-901.</b>	Controlled trial (laboratory study) with 8 subjects who served as their own controls. Subjects were cooled by immersion to 35°C. Inhalation rewarming or peripheral rewarming (with a charcoal Heat Pac) alone or in combination did not significantly influence afterdrop duration, afterdrop recover or rewarming rates.	RCT without important limitations. Subjects were mildly hypothermic.
<b>Giesbrecht GG, Bristow GK. A second postcooling afterdrop: more evidence for a convective mechanism. <i>J Appl Physiol.</i> Oct 1992;73(4):1253-1258.</b>	Controlled trial (laboratory study) with 5 subjects who served as their own controls. Subjects were cooled by immersion and rewarmed by shivering or by treadmill exercise. They were then placed in a warm (40°C) bath. Afterdrop was greater during exercise (0.65±0.10°C than during shivering (0.41±0.06°C) (p<0.005). Within 5 minutes of being placed in the bath, the initial rate of rewarming decreased. In 4/10 trials (2 after shivering, 2 after exercise) a very small second afterdrop (<0.1°C) occurred. The second afterdrop is unlikely to be clinically significant in mild hypothermia.	RCT without important limitations. Subjects were mildly hypothermic.
<b>Romet TT. Mechanism of afterdrop after cold water immersion. <i>J Appl Physiol.</i> Oct 1988;65(4):1535-1538.</b>	Controlled trial (laboratory study) with 8 subjects who served as their own controls. Subjects were cooled by immersion and rewarmed by spontaneous shivering, inhalation of heated (45°C) humidified air and immersion in 40°C water. Afterdrop rates during the first 10 minutes of spontaneous and inhalation rewarming were not significantly different than the cooling rates of the preceding 30 minutes. During immersion rewarming afterdrop rate ( $T_{es}$ 1.97±0.60°C/h) was significantly higher than the cooling rate ( $T_{es}$ 1.08±0.71) (p<0.05). This indicates that convection (countercurrent exchange) contributes to afterdrop.	RCT without important limitations. Subjects were mildly hypothermic.
<b>Fox JB, Thomas F, Clemmer TP, Grossman</b>	Observational study of 17 hypothermic patients	Overwhelming evidence from

<p><b>M. A retrospective analysis of air-evacuated hypothermia patients. <i>Aviat Space Environ Med.</i> Nov 1988;59(11 Pt 1):1070-1075.</b></p>	<p>evacuated by helicopter. 6 patients had core temperature &gt;35°C, 5 were 31.5-35°C, 3 were 31.5-25.5°C and 3 were &lt;25.5°C. Rewarming was by multiple methods. All 3 patients with a temperature in the Emergency Department for whom the scene temperature was known were rewarmed only passively. These 3 patients all had afterdrops: 31.9 to 25.4°C (6.5°C), 20.0 to 17.0°C (3.0°C) and 35.1-30.5°C (4.6°C). Demonstrates that significant afterdrops can occur during transport from scene to hospital.</p>	<p>observational study.</p>
<p><b>Giesbrecht GG, Bristow GK. The convective afterdrop component during hypothermic exercise decreases with delayed exercise onset. <i>Aviat Space Environ Med.</i> Jan 1998;69(1):17-22.</b></p>	<p>Controlled trial (laboratory study) with 6 subjects who served as their own controls. Each was cooled 3 times by immersion. Subjects were rewarmed by shivering alone, exercise or exercise starting when shivering afterdrop was complete. Afterdrop was greater during exercise only (0.1±0.4°C) than shivering only (0.35±0.3°C) or shivering-exercise (0.45±0.2°C).</p>	<p>RCT without important limitations. Subjects were mildly hypothermic.</p>
<p><b>Althaus U, Aeberhard P, Schupbach P, Nachbur BH, Muhlemann W. Management of profound accidental hypothermia with cardiorespiratory arrest. <i>Ann Surg.</i> Apr 1982;195(4):492-495.</b></p>	<p>Case series. One patient, a 42-year old male was extricated from a crevasse after an avalanche with asystole and had no CPR for 70 minutes after rescue. He was subsequently treated with CPR and the cardiopulmonary bypass. After over 3 hours of cardiac arrest, the patient was defibrillated. He eventually made a full neurologic recovery. Demonstrates that full recovery can occur without immediate CPR in a severely hypothermic patient in cardiac arrest.</p>	<p>Case series. Overwhelming evidence from observational study.</p>
<p><b>Henriksson O, Lundgren P, Kuklane K, Holmer I, Bjornstig U. Protection against cold in prehospital care - thermal insulation properties of blankets and rescue bags in different wind conditions. <i>Prehosp Disaster Med.</i> 2009;24(5):408-415.</b></p>	<p>Controlled trial (laboratory study). Various insulation ensembles were tested using a thermal manikin at different temperatures (0, 15 and 25°C) and different wind conditions. In low wind conditions thermal insulation correlated to thickness of the ensemble. In windy conditions, insulation was best preserved for windproof ensembles that resisted compression by the wind.</p>	<p>RCT with important limitations (thermal manikin study)</p>

<p><b>Thomassen O, Faerevik H, Osteras O, et al. Comparison of three different prehospital wrapping methods for preventing hypothermia--a crossover study in humans. <i>Scand J Trauma Resusc Emerg Med.</i> 2011;19:41.</b></p>	<p>Controlled trial (laboratory study) with 8 subjects who served as their own controls. Subjects were exposed to a cold, windy environment were wrapped with ambulance blankets and quilts, insulation with a plastic cover or bubble wrap. Skin temperature was higher and thermal comfort better with the insulation with a plastic cover compared to the other methods. Bubble wrap was the least effective method. Core temperature did not decrease.</p>	<p>RCT with important limitations. Subjects were not hypothermic.</p>
<p><b>Henriksson O, Lundgren P, Kuklane K, Holmer I, Naredi P, Bjornstig U. Protection against cold in prehospital care: evaporative heat loss reduction by wet clothing removal or the addition of a vapor barrier - a thermal manikin study. <i>Prehosp Disaster Med.</i> 2012;27(1):53-58.</b></p>	<p>Controlled trial (laboratory study). Thermal manikin dressed in wet clothing at -15 and +10°C with three different insulation ensembles and 5 test conditions (dry underwear or wet underwear with or without a vapor barrier, no underwear). Removal of wet clothing or addition of a vapor barrier resulted in decreased heat loss. Similar reduction in heat loss was also achieved by increasing blanket thickness.</p>	<p>RCT with important limitations (thermal manikin study)</p>
<p><b>Giesbrecht GG, Sessler DI, Mekjavic IB, Schroeder M, Bristow GK. Treatment of mild immersion hypothermia by direct body-to-body contact. <i>J Appl Physiol.</i> Jun 1994;76(6):2373-2379.</b></p>	<p>Controlled trial (laboratory study) with 6 subjects who served as their own controls. Subjects were rewarmed after immersion hypothermia by shivering only, body-to-body rewarming (human heat "donors") and constant heat source thermal manikin. Afterdrop was about 0.5-0.6°C and rewarming rate about 2.5°C/hr with no significant differences among the methods. With body-to-body and thermal manikin rewarming, the normal early increase in shivering thermogenesis is blunted.</p>	<p>RCT without important limitations. Subjects were mildly hypothermic.</p>
<p><b>Hultzer MV, Xu X, Marrao C, Bristow G, Chochinov A, Giesbrecht GG. Pre-hospital torso-warming modalities for severe hypothermia: a comparative study using a human model. <i>CJEM.</i> Nov 2005;7(6):378-386.</b></p>	<p>Controlled trial (laboratory study) with 6 subjects and 6 different methods of rewarming: spontaneous rewarming, forced air warming (600-W with blanket or rigid cover and 850-W with rigid cover), charcoal heater on chest, body-to-body contact. Meperidine was used to inhibit shivering. Initial afterdrop was about 1°C and continued to</p>	<p>RCT without important limitations. Subjects were not actually severely hypothermic.</p>

	drop by about 0.45°C in spontaneous or body-to-body. Afterdrop was less with 600-W heater and rigid cover and charcoal heater (about 0.26°C) and least with the 850-W heater and rigid cover (0.17°C). Core rewarming rates were highest with the 850-W heater and rigid cover (1.45°C/h) and less than 0.7°C/h with the other methods.	
<b>Watts DD, Roche M, Tricarico R, et al. The utility of traditional prehospital interventions in maintaining thermostasis. <i>Prehosp Emerg Care.</i> Apr-Jun 1999;3(2):115-122.</b>	RCT with 174 trauma patients transported by air or ground were randomized to receive passive or no rewarming or passive rewarming with active rewarming (reflective blankets, hot packs or warmed IV fluids). 134 patients were included in the final analysis. Patients who received hot pack rewarming had increased core temperature during transport (mean +0.74°C), while all other groups showed decrease (mean -0.2-0.4°C) (p<0.001). All patients in hot pack group had an increase, while other groups had patients with increase or decrease.	RCT with important limitations. Most patients were not hypothermic. The mean initial temperature in the groups differed significantly, with the hot pack group being the coldest (mean temperature 36.2°C)
<b>Lundgren P, Henriksson O, Naredi P, Bjornstig U. The effect of active warming in prehospital trauma care during road and air ambulance transportation - a clinical randomized trial. <i>Scand J Trauma Resusc Emerg Med.</i> 2011;19:59.</b>	RCT. 51 trauma patients were assigned to passive warming or additional active warming with a large chemical heat pad. 48 patients were included in the final analysis. Mean temperature increased from 35.1 to 36°C (p<0.05) in the passive warming group and from 35.6 to 36.4°C (p<0.05) in the active warming group with no significant differences between groups. Cold discomfort decreased in 2/3 of passive warming group and all of active warming group (p<0.05). Patients with active rewarming had significant decrease in heart rate and respiratory rate (p<0.05).	RCT with important limitations. Most patients were not hypothermic or mildly hypothermic. All patients were blunt trauma patients with GCS=15.
<b>Lundgren JP, Henriksson O, Pretorius T, et al. Field torso-warming modalities: a comparative study using a human model. <i>Prehosp Emerg Care.</i> Jul-Sep 2009;13(3):371-378.</b>	RCT with 5 subjects who served as their own controls. Subjects were rewarmed after immersion using spontaneous warming, charcoal heater on the chest, hot water bags or chemical heating pads. Shivering was inhibited pharmacologically.	RCT with important limitations. Small sample size. Underpowered for most intergroup comparisons.

	<p>Afterdrop was greatest (2.2°C) with spontaneous warming and less for chemical heating pads (1.5°C), hot water bags (1.6°C p&lt;0.05) and charcoal heater (1.8°C). Subsequent core rewarming rates for hot water bags (0.7°C/h) and charcoal heater (0.6°C/h) were significantly higher than for spontaneous warming (0.1°C/h).</p>	
<p><b>Giesbrecht GG, Bristow GK, Uin A, Ready AE, Jones RA. Effectiveness of three field treatments for induced mild (33.0 degrees C) hypothermia. <i>J Appl Physiol.</i> Dec 1987;63(6):2375-2379.</b></p>	<p>RCT (laboratory study) with 6 subjects who served as their own controls. Subjects were cooled by immersion to as low as 33°C and rewarmed by shivering, external heat (Norwegian heatpac) and treadmill exercise. Rate of core temperature increase for exercise (4.98±0.8°C/h) was significantly higher than for shivering (3.45±1.2°C/hr) (p&lt;0.05) but not for external heat (3.79±1.4°C/h). Afterdrop for exercise (0.95°C) and afterdrop duration (24 min) were significantly higher than for shivering (0.33°C -15 min) and external heat (0.32°C - 14 min). Total recovery time did not differ among the 3 groups.</p>	<p>RCT without important limitations. Subjects were mildly hypothermic.</p>
<p><b>Allen PB, Salyer SW, Dubick MA, Holcomb JB, Blackburne LH. Preventing hypothermia: comparison of current devices used by the US Army in an in vitro warmed fluid model. <i>J Trauma.</i> 2010; Jul 69 Suppl 1:S154-161.</b></p>	<p>RCT (laboratory study) using thermal manikin. 3 active methods (Hypothermia Prevention and Management Kit - HPMK, Ready-Heat and Bair Hugger) and 5 passive methods were used on warmed and non-warmed manikin. The original HPMK maintained the highest temperatures (mean 36.7°C) at 120 minutes (p&lt;0.05). The best passive methods performed the same as the other 2 active methods at 120 minutes.</p>	<p>RCT with important limitations. Manikin study with manikin heated to 37°C vs control without a warming device.</p>
<p><b>Ducharme MB, Giesbrecht GG, Frim J, et al. Forced-air rewarming in -20 degrees C simulated field conditions. <i>Ann N Y Acad Sci.</i> Mar 15 1997;813:676-681.</b></p>	<p>RCT (laboratory study) with 8 subjects in human model of severe hypothermia (shivering inhibited pharmacologically) and 5 subjects with mild hypothermia rewarmed with forced air. All subjects served as their own controls (no exogenous heat source). In the non-shivering model, afterdrop was greater for controls than for subjects who had forced air warming (1.4±0.1 vs</p>	<p>RCT with important limitations. Rewarming was done with forced air from fans – not available in the field. Subjects were mildly hypothermic, including those with simulated severe hypothermia. P-values were not reported.</p>

	<p>0.9±0.1°C). Afterdrop duration was longer in the control group (77.9±11.5 vs 13.1±5.8 min). Rewarming rate was slower for controls (0.4±0.1 vs 2.4±0.1°C/h). In the mild hypothermia group, afterdrop magnitude and afterdrop duration did not differ between control and forced air warming groups. Rate of rewarming was slower in the control group (3.4±0.3 vs 5.8±0.3°C/h). P-values were not reported.</p>	
<p><b>Steele MT, Nelson MJ, Sessler DI, et al. Forced air speeds rewarming in accidental hypothermia. <i>Ann Emerg Med.</i> Apr 1996;27(4):479-484.</b></p>	<p>Prospective RCT with 16 adult hypothermia victims whose core temperatures were &lt;32°C in 2 Emergency Departments. Patients were rewarmed with forced air or blankets. All patients received warmed (38°C) IV fluids and warmed (40°C) humidified oxygen inhalation. Core temperature was 28.8±2.5°C (range 25.5-31.9°C) in patients who had forced-air rewarming and 29.8±1.5°C (range 28.2-31.9°C) in patients given blankets. Core temperature increased about 2.4°C/h with forced-air rewarming and about 1.4°C/h with blankets (p=0.01). Core temperature afterdrop was not observed.</p>	<p>RCT without important limitations. Afterdrop was not observed in this Emergency Department study.</p>
<p><b>Giesbrecht GG, Schroeder M, Bristow GK. Treatment of mild immersion hypothermia by forced-air warming. <i>Aviat Space Environ Med.</i> Sep 1994;65(9):803-808.</b></p>	<p>Controlled trial (laboratory study) of 8 subjects cooled by immersion rewarmed by shivering only in a sleeping bag or forced-air warming. After drop during forced-air warming (0.43±0.26°C) was less than during shivering (0.61±0.26°C) (p&lt;0.001). Rewarming rates during forced-air warming (3.26±1.8°C/h) and shivering (3.02±1.2°C/h) were not significantly different. Forced-air warming attenuated shivering.</p>	<p>RCT without important limitations. Subjects were mildly hypothermic.</p>
<p><b>Walpoth BH, Walpoth-Aslan BN, Mattle HP, et al. Outcome of survivors of accidental deep hypothermia and circulatory arrest treated with extracorporeal blood warming. <i>N Engl J Med.</i> Nov 20 1997;337(21):1500-1505.</b></p>	<p>Case series of 46 hospitalized patients with deep hypothermia and circulatory arrest. 32 patients were rewarmed with cardiopulmonary bypass. Cardiopulmonary bypass was started 141±50 minutes after the patient was discovered (range 30-240 min). There were 15 long-term survivors</p>	<p>Overwhelming evidence from observational study. The main outcome measure was neurologic status at follow-up.</p>

	<p>followed up at 6.7±4.0 years. “At follow-up there were no hypothermia-related sequelae that impaired the quality of life.” Of the 15 survivors, 6 were found without vital signs. Demonstrates that full recovery can occur without immediate CPR in severely hypothermic patients in cardiac arrest.</p>	
<p><b>Lexow K. Severe accidental hypothermia: survival after 6 hours 30 minutes of cardiopulmonary resuscitation. <i>Arctic Med Res.</i> 1991;50 Suppl 6:112-114.</b></p>	<p>Case report. Neurologically intact survival of severely hypothermic (23.2°C) 42-year old man. CPR was continued without interruption for 6 h 30 min. Demonstrates that neurologically intact survival is possible with extremely prolonged CPR without extracorporeal circulation in a severely hypothermic patient in cardiac arrest.</p>	<p>Overwhelming evidence from observational study.</p>
<p><b>Meyer M, Pelurson N, Khabiri E, Siegenthaler N, Walpoth BH. Sequela-free long-term survival of a 65-year-old woman after 8 hours and 40 minutes of cardiac arrest from deep accidental hypothermia. <i>J Thorac Cardiovasc Surg.</i> Jan 2014; 147(1):e1-2.</b></p>	<p>Case report. Survival neurologically intact of a severely hypothermic (20.8°F post-afterdrop) 65-year old woman with cardiac arrest. CPR was continued for 288 minutes (4 h 48 min) followed by cardiopulmonary bypass for a total of 520 minutes (8 h 40 min) of mechanical circulatory support. Demonstrates that neurologically intact survival is possible with extremely prolonged circulatory support in a severely hypothermic patient in cardiac arrest.</p>	<p>Overwhelming evidence from observational study.</p>
<p><b>Boue Y, Lavolaine J, Bouzat P, Matraxia S, Chavanon O, Payen JF. Neurologic Recovery From Profound Accidental Hypothermia After 5 Hours of Cardiopulmonary Resuscitation. <i>Crit Care Med.</i> Feb 2014; 42(2):e167-170.</b></p>	<p>Case report. Survival with good neurologic recovery of a severely hypothermic (16.9°F) 57-year old woman with cardiac arrest. CPR was begun immediately, but it was impossible to move the patient and do CPR simultaneously during evacuation. Rescuers alternated chest compressions for 1 minute (100 compressions) with walking for 1 minute until they reached the road in 25 minutes. CPR was performed for over 5 hours until ECMO could be established. Demonstrates that neurologically intact survival is possible with CPR that is not continuous in a severely hypothermic patient in cardiac arrest.</p>	<p>Overwhelming evidence from observational study.</p>

<p><b>Gilbert M, Busund R, Skagseth A, Nilsen PA, Solbo JP. Resuscitation from accidental hypothermia of 13.7 degrees C with circulatory arrest. <i>Lancet</i>. Jan 29 2000;355(9201):375-376.</b></p>	<p>Case report. Survival with full neurologic recovery of a 29-year old woman with severe hypothermia and cardiac arrest. Core temperature was 14.4°C before afterdrop and 13.7°C post-afterdrop. She was treated with prolonged CPB and ECMO. Demonstrates that neurologically intact survival is possible with extremely prolonged circulatory support in a severely hypothermic patient.</p>	<p>Overwhelming evidence from observational study.</p>
<p><b>Koller R, Schnider TW, Neidhart P. Deep accidental hypothermia and cardiac arrest--rewarming with forced air. <i>Acta Anaesthesiol Scand</i>. Nov 1997;41(10):1359-1364.</b></p>	<p>Case series. 5 hospitalized patients with core temperature &lt;30°C treated with active external rewarming using forced air rather than extracorporeal circulation and heat exchanger. 2 patients were initially in cardiac arrest. No afterdrop was observed. All patients survived without neurologic sequelae. Demonstrates that neurologically intact survival is possible in severely hypothermic patients without the use of extracorporeal circulation.</p>	<p>Overwhelming evidence from observational study. Afterdrop was not observed in this hospital-based study.</p>

RCT - randomized controlled trial (includes controlled laboratory trials with subjects as their own controls)

T<sub>es</sub> - esophageal temperature

Numbers are given as mean±standard deviation.