



Cold Weather Effects on Major Military Campaigns¹

Date	Campaign	Who	Events
401BC	Battle of Cunaxa	Greeks	10,000 men on a 1,000 mile retreat through the mountains of Armenia. 6,000 dead from exposure
218BC	Hannibal invasion of Italy	Hannibal & Carthaginians	47,000 men and 80 elephants crossing the Alps 28,000 men died
1709	Great Northern War with Sweden - The battle of Poltava	Charles XII of Sweden	20,000 Swedish troops faced 50,000 Russian troops. The Swedish troops were significantly depleted by one of the coldest winters every in Europe. 15,000 Swedish troops died
1718	Sweden invades Norway	Charles XII of Sweden	Swedish troops caught in a 3 day storm crossing a high ridge. 3,700 Swedes died of hypothermia & frostbite with another 600 permanently disabled
1777	Valley Forge	General Washington	11,000 men retreated to Valley Forge in December of 1777. 2,000 without shoes or boots. No record of numbers but Lafayette wrote "Feet and legs froze until they became black and it was often necessary to amputate them"

¹ Textbooks of Military Medicine – Medical Aspects of Harsh Environments Volume 1 – Office of the Surgeon General, Department of the Army

1812	Napoleon's retreat from Russia	Napoleon	The initial campaign started with 612,000 troops with 25,000 wagons & 200,000 animals. At the start of the retreat Napoleon's army was reduced to 110,000 men. The retreat was started in October in the rain and with falling temperatures. One month later 60,000 men had died. During the next 6 weeks another 30,000 men were killed. 100,000 killed in action; 200,000 died from other causes; 100,000 became POW's. During this campaign, the thoughts about slow or no rewarming came into being. Napoleon's Surgeon-General, Baron Larrey wrote: " Woe to the man benumbed with cold... if he enters suddenly into a too warm room, or came too near to the great fire of a bivouac. The benumbed or frozen extremities... were struck with gangrene, which manifested itself at the very instant, and developed itself with such rapidity that its progress was perceptible to the eye. Or else, the individual was suddenly suffocated by a kind of Putrescence, which appeared to seize upon the pulmonary and cerebral systems: he perished as in asphyxia."
1853	Crimean War	British	1,924 cold casualties out of a force of 50,000.
1861	American Civil War		15,000 cold injuries of which 1,075 were serious. Amputations were common with a mortality rate of ~30%
1914	WW1		Within 4 months of the outbreak the British had suffered 9,000 cases of "frostbite" and by the end of the war had suffered 115,000 cold & frostbite injuries. On the eastern front the Russians reported 12,000 cases of frostbite. ~8% of all casualties were due to the cold. The Germans reported 10,000 cases of frostbite in a single night.
1939	Russo-Finnish War	Stalin	1M Russian soldiers against 300,000 Finnish troops. In the battle for Suomussalmi the Russians lost 27,500 killed or frozen to death. Over the campaign the Russians lost 200,000 troops, many to cold injuries, while the Fins lost 25,000.
1941	WW II	German & Russian	3M German troops move into Russia. One Dr alone supervised the treatment of 18,500 cases of frostbite. 1/3 of all German autopsies showed frostbite.
1945	WW II	US	The US had a total of 13,000 cases of frostbite and 25,000 cases of trench foot.