Risk factors for CO poisoning andrecommendations for avoidance

Risk factor for CO poisoning	Recommendation for avoidance
Cooking	Avoid prolonged simmering Keep stove highly pressurized Use a maximum blue flame and avoid low flames Use small-diameter pans Keep pot out of flame Use white pure fuels
Yellow flame	Turn stove off, repressurize, relight Maximum tent ventilation for few min
Inadequate ventilation causing: 1. Lowered O_2 and incomplete combustion	Ventilation area at least 50 cm^2 Ventilation CO egress port as high as possible Ventilation O_2 ingress port sited low
2. CO buildup	Avoid minimal ventilation which paradoxically elevates CO concentration Note higher CO risk in tents in zero-wind conditions
3. CO_2 buildup exacerbating incomplete combustion	
Insidious onset if sedentary	Beware headache and tachycardia Regular trips outside to unmask symptoms
Duration of CO exposure	
Stale air in tents (low O_2)	Ventilate tent at regular intervals Ventilation does not have to be continuous
Dehydration	Good hydration
Snow holes are worse than tents	Attention to above recommendations
Altitude	
Hyperventilation	
Tent icing and snow cover	Attempt to keep tent fabric porous by regular clearing

General Effects of Various COHb levels at sea level

0-10%	Generally does not cause symptoms for healthy folks.
10-20%	Mild frontal headache, malaise, nausea, vomiting, dizziness and loss of manual dexterity
20-30%	Headache with rapid heartbeat, confusion, lethargy, visual disturbances. This level may lead to death as the victim loses both the interest and the ability to leave a danger area (such as fire)
30-40%	Collapse
40-50%	Seizures
50-60%	Coma
60-70%	Death in 2 hours
80-90%	Death in less than 1 hour
90-100%	Death in minutes

Leigh-Smith S. Carbon monoxide poisoning in tents--a review.
Wilderness and Environmental Medicine. 2004 Fall;15(3):157-63. and other sources