

## Hypothermia and Frost Bite

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### **Hazards for farmers with disabilities: Working in cold environments**

Geng, Q., Stuthridge, R. W., & Field, W. E. (2013). Hazards for farmers with disabilities: working in cold environments. *Journal of agromedicine*, 18(2), 140-150.

In consequence of working in cold environments, agricultural workers may be exposed to higher risk of cold-related injuries, compared with the general population. These injuries can include tissue damage due to the exposure to subfreezing temperatures, more generalized symptoms caused by hypothermia, and secondary injuries caused by impaired performance. Risk of cold injury is increased for older workers and for those with disabling health conditions, both of which occur in above-average numbers in agriculture. Based on a selective review of the literature and case studies assembled by Purdue's Breaking New Ground Resource Center, an overview is presented of the mechanisms and symptoms of cold injuries, together with practical suggestions to help reduce risks of cold injuries for workers in agricultural settings. Special attention is given to potential risks to individuals with physical disabilities.

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### **Frostbite: Prevention and initial management**

Zafren, K. (2013). Frostbite: prevention and initial management. *High altitude medicine & biology*, 14(1), 9-12.

Frostbite is a local freezing injury that can cause tissue loss. Historically, it has been a disease of wars, but it is a hazard for anyone who ventures outdoors in cold weather. Frozen tissue is damaged both during freezing and rewarming. Frozen tissue is numb. Rewarming causes hyperemia and is often painful. Blisters and edema develop after rewarming. Hard eschar may form with healthy tissue deep to the eschar. Frostbite can be classified as superficial, without permanent tissue loss, or deep, with varying degrees of permanent tissue loss, often less than appearances suggest. It can be difficult to predict the amount of tissue loss at the time of presentation and early in the subsequent course. Prevention is better than treatment. It may be advisable not to rewarm frozen extremities in the field, but spontaneous thawing is often unavoidable. Extremities that have thawed should be protected from refreezing at all costs. Once in a protected environment, extremities that are still frozen should be rapidly thawed in warm water. Therapy with aspirin or ibuprofen may be helpful, but evidence is limited. Thrombolytic treatment within the first 24 hours after rewarming seems to be beneficial in some cases of severe frostbite. Prostacyclin therapy is very promising.

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### **Working in cold environment: Clothing and thermophysiological comfort**

Angelova, R. A. (2017). Working in Cold Environment: Clothing and Thermophysiological Comfort. *Occupational Health*.

The chapter presents an in-depth Discussion over the occupational activities in a cold environment, which can be performed above outdoors and indoors. It explores the differences between working and natural and artificial cold environment. The thermoregulatory system during cold exposure, and cold related injuries are presented and discussed in detail. Clothing as the only isolated barrier between the body and the cold environment is discussed, and high-tech solutions for the development of cold protective clothing are presented. The particular application of standards for the indoor environment is considered, and their input for the proper management of the occupational activities in the cold is analyzed.