

## Food and Water During Cold Weather Operations:

Although warm clothing and proper shelter are the first line of defense in protecting against the effects of cold weather, adequate food and water consumption are also important. Food and water requirements of soldiers are high during cold weather operations and the effects of dehydration and inadequate diet are as serious as in hot climates.

Understanding the Problems:

1. Soldiers often become dehydrated during cold weather operations.

a. Dehydration increases susceptibility to cold injuries.

b. Dehydration reduces work capacity, appetite, alertness, and can lead to medical problems such as constipation, kidney disorders and urinary infections.

2. **The body's requirement for water is high during cold weather operations.**

a. Even in cold weather, sweating can contribute to body water losses. Heavy clothing can cause overheating, especially during heavy work, which in turn leads to sweating. In cold dry conditions, sweat may evaporate readily without the individual sensing it.

b. Unless water intake equals body water losses, dehydration will result.

3. Soldiers involuntarily reduce their fluid intake during all field operations, but especially during cold weather.

a. Because field rations contain less water than garrison food, soldiers take in less water with the food they eat, and they usually do not drink enough to compensate.

b. Most people do not feel thirsty until they are already significantly dehydrated, and **thirst may even be less noticeable in cold than in hot weather.**

c. When weather is particularly cold and/or rainy, many soldiers purposely allow themselves to become dehydrated to avoid having to leave comfortable shelter to urinate outdoors.

d. When temperatures are extremely low, water in canteens and bulk supply containers may freeze, restricting water availability.

4. Water consumption requirements are more difficult to predict for cold weather operations than hot, because the effects of the environment are greatly modified by an individual's own bodily responses, the workload, and the amount of clothing worn. This individual variability affects the amount of water required to maintain proper hydration.

5. Caloric requirements of soldiers are 25 to 50% higher during cold weather operations than in warm or hot weather.

a. Soldiers expend more energy during cold weather, due to wearing heavy cold weather gear and the increased effort required for working or walking in snow or mud or for preparing positions in frozen ground.

b. The body uses more calories keeping itself warm when the weather is cold which also contributes to the increased energy requirement.

6. Ensuring that soldiers in the field receive adequate amounts of **hot** rations is a major challenge for leaders during cold weather operations, especially when soldiers are not stationed close to field feeding facilities or kitchens where rations can be heated and kept warm.

7. Other field feeding problems often arise from freezing of rations and a lack of readily available liquid water to rehydrate dry ration components.

a. The most common individual ration soldiers receive during cold weather operations is the Meal-Ready-To-Eat (MRE). Four standard MREs per day must be eaten to supply a soldier the necessary calories during cold weather, if no other rations are provided. The MREs include liquid containing components, which can freeze during cold weather operations if these items are not kept warm by carrying them inside the clothing.

b. Two other individual rations that U.S. soldiers may receive during cold weather operations are the Ration, Cold Weather (RCW) and the Long-Life Ration Packet (LLRP). Soldiers must eat one RCW per day or three LLRPs per day to obtain the necessary calories during cold weather operations.

c. Even when troops in the field are served hot rations, meal items which are not normally heated (e.g. milk, juice, fruit cocktails, etc.) can freeze making it difficult to serve and consume these items.