Cold Weather Physiology

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Cold weather causes vasoconstriction of the peripheral blood vessels (to the toes and fingers). Numbness and tingling of the toes and fingers or a burning sensation of the ears and nose suggest lack of circulation impending frost-bite.

40% of body heat is lost from the skull and head area. The body shivers and shakes to generate muscle activity and therefore warmth.

Perspiration still occurs during physical activity, as the body produces heat. If the moisture remains on the skin an unpleasant feeling of wetness occurs. Sport clothing should maintain warmth and allow evaporation of accumulated sweat. It should be water and wind resistant but allow for evaporation to occur. The fit should be snug but comfortable and not allow too much air between the layer next to the skin and the skin.

Thirst is not as acutely perceived but still occurs. One may feel greater hunger and be a bit more lethargic and sleepy as the days are shorter. Snow makes everything look white so one just wants to stay indoors. Sunshine does not mean warmth.

Breathing cold air may initially cause tightness of the chest. However, this passes as the air is warmed. Changes do not usually occur in menstrual cycle of females. If there is a wind there is greater perception of cold due to the 'wind chill factor'. Muscles function better when warm.

The stadiums, pitch and housing will all be warm. Cold will be encountered during transfers etc.

Suggestions

Top jackets should be able to withstand wind and have hoods. They should fit loosely to accommodate the under layers. Additional ventilation under the arms (mesh) with front zippers and made of micro-fibre are more serviceable. Front zippers allow for easy removal.

Dress in light layers and use undershirts of synthetic material composition. The under layer should be breathable and fit snugly. Also note:

- pants are warmer than skirts;
- panty hose or leggings give another layer;
- hats with ability to cover ears;
- scarves for throat;
- gloves;
- socks should be heavier (bobby socks or woolen);
- shoes/boots for out-doors should be waterproof.

Other suggestions:

- longer warm up periods maybe helpful; start the warm up period fully dressed and remove clothing by layer, as the body becomes warmer;
- if it is very cold start playing with a cap;
- cover up on change over or while sitting on the bench;
- one may not feel thirsty but drinks are needed, room temperature or warmer (hydration can always be assessed by the colour of the urine, very pale yellow is the aim);
- warm hearty breakfast;
- use mild warm water for bathing better than hot water, as it is not as drying to the skin;
- moisturise the skin well;
- heavier hand lotion for hands and cuticles;
- lip balm for lips;
- dressing takes longer when there are more garments to put on, so give yourself more time to get to games etc;
- dry hair before going out to avoid rapid heat loss and development of respiratory problems;
- flat shoes for walking outdoors in case of snow - jogging/running shoes are the best alternative;
- consider taking vitamin C, plus a supply of cough mixtures and sinus medication – however, it is essential to be aware of and conform to the WADA anti-doping rules.

Kathleen R Watson MD
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