

Chapter 10 - HEAT STRESS

During the summer months, mine operators and employees should be aware of the potential health hazard of heat stress. Outdoor heat exposure, particularly in direct sun, can affect miners who work on the surface, such as shovel operators, bulldozer operators, drillers, laborers, and other workers. Illnesses such as heatstroke and heat exhaustion, as well as general fatigue and effects on performance, are possible.

In addition to high air temperatures, outdoor workers are exposed to radiant heat from the sun, and sometimes high humidity as well. High humidity reduces heat loss from the body by evaporation of perspiration, the main avenue of heat loss in hot environments. In general, increased air velocity or movement increases the cooling effect on the body.

Physical fitness and health are important personal factors in heat exposure. Workers with heart, circulatory, lung, or skin disorders usually do not get along well in the heat. Acclimatization, or the process by which a worker gains increased tolerance to heat exposure gradually as work in that exposure continues, should be considered.

The following measures are suggested as means of reducing heat exposure, preventing heat ailments, and generally increasing efficiency and morale:

1. Arrange for miners who are to be exposed to heat stress to have a medical examination by a physician prior to assignment. Be sure that the physician is informed of the heat exposure so as to make the proper evaluation.
2. Allow new workers in heat exposure a period of 5 to 6 workdays to become acclimatized, by gradually increasing workload and exposure time during this period. Start by allowing new workers to work only 50 percent of regular work time in the heat. Check at the end of the 6 workday period to see how they are getting along.
3. Schedule rest periods during the work shift as necessary to avoid severe strain among acclimatized workers. Schedule the heaviest work, particularly manual labor, for the cooler parts of the shift if possible.
4. See that workers wear light clothing for protection against the sun, not tightly fitted to allow for air circulation, and light protective hard hat.
5. Consider and use engineering controls such as air-conditioning for cabs of heavy equipment, and ventilating and circulating fans, where applicable. Provide shelters for protection against the sun during rest periods.
6. Supply adequate quantities of drinking water, cooled if possible, and salt tablets to workers for their use as desired.
7. Plan in advance to ensure that first-aid treatment for heat ailments is available, as well as transportation for medical treatment, if necessary.