



What is Heat Stress?

As part of Safety Day: Do the Right Thing in Managing Fatigue, we are presenting a series of short articles to raise your awareness of fatigue and fatigue-related risks as well to give you some ideas and tips as to avoid these hazards and keep you and your family safe.

What is heat stress?

Heat stress is defined as the load of heat that must be lost by the body to maintain the core body temperature below 38°C. When the surrounding environment is warmer than the body temperature and very humid, the human body has to work harder to lose the required heat load. Under these conditions, sweating is the key mechanism by which the body loses heat. When sweating is profuse or not enough to maintain the core body temperature, the individual experiences heat stress and dehydration which may lead to heat related fatigue and illnesses.

The risk of heat stress and fatigue is more to those who have inadequate sleeping pattern, eat inappropriately, consume excessive alcohol, and have pre-existing medical conditions and/or under medication.

What you can do to manage heat stress and prevent heat-related fatigue...

1. Wear light long sleeves cotton clothing.
2. Stay well hydrated by regularly drinking plenty of fluids.
3. Work under shaded areas whenever practical.
4. Take regular short breaks under shaded areas.
5. Monitor the color of your urine, it should be pale yellow, if it gets dark yellow it means you need to drink more fluids.
6. Work in pairs or small groups.
7. Gradually build up to heavy work (acclimatization).
8. Avoid drinks with caffeine, alcohol, and large amounts of sugar.
9. If you experience any signs of heat stress illnesses, notify your colleagues and supervisors.
10. Use mechanized equipments (cranes, forklifts, hoists, etc) for physically demanding jobs such as digging and excessive lifting.
11. Schedule heavy work which is physically demanding early or late during the day.

Details of individual heat-related illnesses & preventative measures

Heat Rash

Red rashes usually appear in area where the clothing is restrictive.

Preventative measures:

- Rinse skin with cool water,
- Avoid hot environments,
- Practice good personal hygiene,
- Keep the skin clean and the pores unclogged, and
- Wear loose clothing.

See your doctor if rash persists.

Sunburn

This happens when the body gets exposed to sun and usually manifested as red hot skin with moderate skin burn.

Preventative measures:

- Move to shade,
- Loosen clothing if necessary,
- Apply moisturizing lotion to the affected areas,
- Do not break blisters, and
- Hydrate with fluids.

See your doctor if rash persists.

Heat Cramps:

Heat cramps usually affect people who sweat a lot during strenuous activity. The sweating depletes the body's salt and moisture. This condition leads to muscle spasm - usually in the abdomen, arms, or legs - that may occur in association with strenuous activity. Heat cramps may also be a symptom of heat exhaustion.

Preventative measures -- if medical attention is not necessary, take these steps:

- Stop all activity and rest in a cool place,
- Drink room temperature beverage low in sugar content, and
- Do not return to strenuous activity for a few hours after the cramps subsides, because further exertion may lead to heat exhaustion or heat stroke.

Seek medical attention for heat cramps if they do not subside in 15 minutes.

Heat Stroke

Heat Stroke happens when the thermoregulation mechanism fails and the temperature rises to critical level. Heat stroke is a life threatening condition and occurs when the body is unable to regulate its temperature. The body's core temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. Heat stroke can cause death or permanent disability if emergency treatment is not provided.

Warning signs of heat stroke vary but may include the following: very high body temperature, red, hot, and dry skin (no sweating), rapid, strong pulse, throbbing headache, dizziness, nausea, confusion and unconsciousness. When the core body temperature rises, this may damage the brain or other vital organs (kidney, liver, heart etc.)

In case of Heat Stroke:

- Get the victim to a shady area.
- Cool the victim rapidly using whatever methods you can e.g. immerse the victim in a tub of cool water; place the person in a cool shower, spray the victim with cool water, sponge the person with cool water, or wrap the victim in a cool, wet sheet and fan him or her vigorously.
- Measure and monitor body temperature using a thermometer placed under the armpit.
- Continue cooling efforts.
- If victim's muscles begin to twitch, keep the victim from injuring himself, but do not place any object in the mouth and do not give fluids.
- If the victim is vomiting, make sure the airway remains open by turning the victim on his or her side.
- Do not give the victim fluids to drink.

Get medical assistance as soon as possible.

If emergency medical personnel are delayed, call the nearest clinic for further instructions.

DO THE RIGHT THING IN MANAGING FATIGUE... IN THE HEAT

اتخذ الإجراء المناسب للسيطرة على الإجهاد... مع حرارة الشمس

- Take regular breaks in shaded areas.
- Avoid dehydration by drinking plenty of water.
- Maintain a healthy and balanced lifestyle.
- Remember: Don't think you can beat the heat - Heat does cause fatigue!

- خذ فترات راحة منتظمة في الأماكن الظليلة.
- تجنب الجفاف بشرب الماء بكثرة.
- تابع بأسلوب حياة صحي ومتوازن.
- تذكر: لا تفكر أنه باستطاعتك التغلب على الحرارة - تعبهر الحرارة من أحد أسباب الإجهاد!

Heat Exhaustion

Heat exhaustion is a milder form of heat-related illness that can develop after several days of exposure to high temperatures and inadequate or unbalanced replacement of fluids. When the heat load is high and the fluid loss is high, the body temperature exceeds 38.3°C.

The warning signs of heat exhaustion include the following: heavy sweating, paleness, muscle cramps, tiredness, weakness, dizziness, headache, nausea or vomiting and fainting. The skin may be cool and moist. The victim's pulse rate will be fast and weak, and breathing will be fast and shallow.

In Case of Heat Exhaustion:

- Take cool, non-alcoholic beverages,
- Stop work and rest in air conditioned environment, and
- Take a cool shower, bath, or sponge bath.

Seek medical attention if not symptoms persist.

For more information, please check the Safety Day 2010 website at:
<http://sww1.pdo.shell.om/dept/cd/csm/blocks/hsefunction/safetyday2010.asp>.