

Safety Topic	Site Safety - Heat and Hydration
BLU by Adcorp Consultant	
Client Name	
Assignee/Employee Name	
Date	/ /
Interpreter Required	<input type="checkbox"/> Yes <input type="checkbox"/> No

Explain



How we stay cool:

Our engine's cooling systems

People are like cars: both have a very efficient cooling system to dissipate the heat.

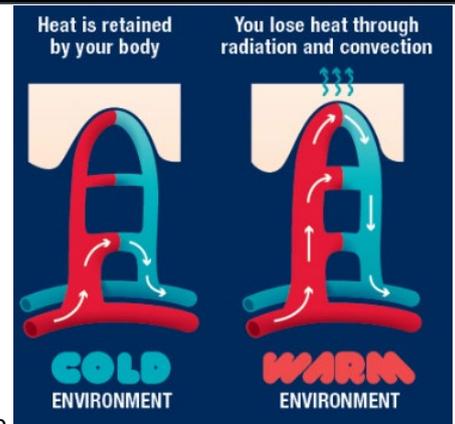
As our core temperature begins to rise, our body's hypothalamus (our 'thermostat'), tells the heart to pump harder.

Blood vessels in our skin enlarge to allow more blood to be exposed to the (hopefully) cooler surrounding air before flowing back inside us to help lower our core temperature.

However, if the air temperature is higher, the warm blood won't transfer heat to the surrounding air.

To cool ourselves, we begin to sweat - one of the body's most important cooling mechanisms. As sweat evaporates it cools the skin, much like the car's radiator.

It's important to note that when you are working in highly physical roles your working muscles need blood flow so there is competition between blood going to muscles and blood going to skin surface.



Discuss



Maintaining a fluid motion:

Failing to drink enough fluid is the cause of most heat-related illnesses.

Unfortunately, our thirst mechanism doesn't work as effectively as it sometimes should. In fact, thirst can be a poor indicator of the need to replace fluid.

2/3 of our total body weight is water. That's:

- 83% of your blood
- 76% of your muscles
- 75% of your brain
- 25% of your bones made up of H2O.

By the time we feel thirsty we may have already lost 1-2% body water. A person can lose 2% body weight of water in an hour in hot conditions when we are working physically.

A loss as small as 2% body weight can affect our performance significantly with physical and cognitive functions affected leading to an increased risk of injury and accidents.

- 1-2% loss body water = 6-7% reduction in physical work capacity
- 3-4% loss body water = 22% reduction in physical work capacity
- 4% loss body water in a hot environment = 50% reduction in physical work capacity.

When it comes to fluid replacement...

Water is the essential component. You can add low-sugar cordial or juice to water, but coffee, tea, soft drinks aren't as effective, and alcohol only accelerates dehydration.

Drink frequently in small quantities. Pre- and post-hydration is especially important when a worker is not able to drink frequently.

Check your urine colour. If it's dark or bright yellow drink some more water until it's a pale yellow.

Drink water until you're no longer thirsty... then drink a bit more. It's a good rule of thumb.

Urine colour charts are a great way to give individuals an idea of how hydrated they are. However, they are a guide only and some vitamins and supplements can affect the colour of urine over the course of a few hours. No method is completely accurate, and some are quite complex, but the use of urine specific gravity (SG) tests to assess hydration levels is now popular.



Which fluids are best?

Water vs sports drinks:

What should I drink to replace fluid lost through sweating?

Cool water.

The modern diet is already heavy on salt. For anyone acclimatised to working in heat, the human hormone aldosterone reduces the amount of electrolytes lost in our sweat. So, for light to moderate work, water is usually enough.

However, if you plan to work hard (or play intensive sport) in high temperatures, look for/use an electrolyte-replacement drink before you start, midway through, and afterwards. In between, drink cool water.

Another plus for these drinks is their taste: They encourage workers/players to consume enough fluid to maintain hydration levels. Rehydration icy poles are also now available, however be mindful of your calorie consumption of sports drinks and icy poles as they can contain added sugar.

Heat and alcohol - a heady mix:

Rather than providing hydration, alcohol dehydrates - rapidly. A 200ml glass of beer could result in you passing 300ml of fluid, as well as losing electrolytes.

Morning-after hangovers are due in part to dehydration. Being severely dehydrated before starting work dramatically increases the chances of a heat-related illness or accident on the job.

If you plan to drink at a social occasion:

- Hydrate well before your first alcoholic drink.
- Drink a glass or two of water during the event.
- Before bed, drink more water or an electrolyte-replacement drink (to help restore your electrolyte balance).

The take-home message is: Water is usually the best choice for rehydration. Drink until you're no longer thirsty, then drink a little more - just to be sure.

Factors behind heat stress:

The human body's normal body temperature is 36.8 (plus or minus 0.4°C), but an increase of just 2-3°C in our core temperature can be potentially life threatening.

Early signs of heat stress appear when core body temperature is between 37-39 °C. At 40°C we can experience heat stroke, while death can occur at 42°C.

The factors of heat stress are temperature, humidity, air movement (or lack of it), the radiant temperature of the surroundings, the type of clothing being worn, and the level of physical activity.

But, everyone's different: How quickly we progress to heat stress depends on our age, general health, weight and physical fitness, hydration level, and degree of acclimatization. Certain drugs - both illicit and medicinal - can also interfere with the body's ability to regulate temperature.



1. When it comes to fluid replacement - You can add low-sugar cordial or juice to water?

- a) TRUE
- b) FALSE

2. What urine indication best identifies a high level of dehydration?

- a) Light yellow
- b) Medium yellow
- c) Mild yellow
- d) Dark yellow
- e) None of the above

3. What is the human bodies normal temperature?

- a) 39%
- b) 42%
- c) 36.8%
- d) None of the above

4. What are the factors of heat stress?

- a) Humidity
- b) Type of clothing
- c) Temperature
- d) Weight and physical fitness
- e) All the above

X

Assignee/Employee Signature

Safety Topic	Site Safety - Workplace Fatigue
BLU by Adcorp Consultant	[] []
Client Name	[] []
Assignee/Employee Name	[] []
Date	[] []
Interpreter Required	<input type="checkbox"/> Yes <input type="checkbox"/> No

Explain	
	<p>We know that fatigue is not the most exciting topic to talk about, but it is an important one, especially in context to the workplace.</p> <p>Fatigue is not just feeling tired or sleepy. It is the state of mental and/or physical exhaustion, which reduces your ability to safely perform your job. It can occur because of sustained mental or physical activity, sleep loss and/or disruption of your internal body clock.</p> <p>Fatigue can cause big problems in the workplace as it reduces alertness, which leads to errors and an increase in injuries and accidents.</p> <p>To help manage fatigue in your workplace, this Toolbox Talk covers topics such as:</p> <ul style="list-style-type: none"> • Definition of fatigue • Impact of fatigue • Signs of fatigue • Tips to manage fatigue

Discuss	
 	<p>Definition of fatigue:</p> <p>Fatigue is the state of feeling very tired, weary or sleepy resulting from insufficient sleep, prolonged mental or physical work, or extended periods of stress or anxiety. Boring or repetitive tasks can intensify feelings of fatigue.</p> <p>Fatigue is the loss of alertness and capacity to perform work safely that results from:</p> <ul style="list-style-type: none"> • too little or poor quality sleep • working at times you would normally be asleep, or • carrying mentally or physically demanding activities <p>Impact and Signs of fatigue:</p> <ul style="list-style-type: none"> • slower reaction times than usual • failure to respond to things going on around you • inability to concentrate • depressive symptoms such as feeling down

Physical	Mental	Emotional
<ul style="list-style-type: none"> • Yawning • Slowed blinking • Eye-rubbing • Head droops • Micro sleeps 	<ul style="list-style-type: none"> • Difficulty concentrating on tasks • Lapses in attention • Difficulty remembering what you were doing • Failure to communicate important information 	<ul style="list-style-type: none"> • More quite or withdrawn • Lacking in energy • Lacking in motivation to do the task well • Irritable or bad tempered

Tips to manage fatigue:

There are some factors that we cannot control that can lead to fatigue, however there are many factors that we can have an influence on:

- healthy lifestyle
- physical activities
- keeping the mind active
- implementing strategies to combat fatigue

Sleep Tips

- keep bedroom cool, dark and quiet
- avoid exercise & alcohol 1 to 2 hours before sleep
- avoid caffeine and nicotine before going to bed as they are stimulants
 - smokers tend to sleep very lightly and often wake up early due to nicotine withdrawal
 - alcohol deprives people of deep sleep and keeps them in the lighter stages of sleep
- eat dinner at least 2 hours before bed

Exercise & eating for good health

- it is recommended you do 30 minutes of exercise most days of the week
- exercising helps your metabolism run at its optimum speed
- food eaten at night is digested at a slower rate
- food you eat has a significant impact on the way you feel, your energy levels and how well you sleep

Your responsibility as a worker (Safe Work Australia):

Workers have a duty to take reasonable care for their own safety and health and make sure their acts or omissions do not adversely affect the health or safety of others.

There are different ways workers can make sure they are not at risk of fatigue in the workplace. To reduce the risk of being involved in a work incident caused by fatigue, you should:

- Comply with your organisation’s policies and procedures relating to fatigue - POL-031 Fatigue Management Policy and utilise FM-019 Fatigue Checklist Form.
- Understand your sleep, rest and recovery needs and get adequate rest and sleep away from work

- Seek medical advice and help if you have or are concerned about a health condition that affects your sleep and/or causes fatigue
- Assess your own fitness for work before starting
- Monitor your level of alertness and concentration while you are at work
- Look out for signs of fatigue in the people you work with
- In consultation with your supervisor take steps to manage fatigue, for example take a break or shift naps (night shift), drink water, do some stretching or physical exercise, adjust the work environment (for example lighting and/or temperature)
- Talk to your supervisor if you think you are at risk of fatigue
- Assess your fatigue levels after work and make sensible commuting and accommodation decisions (for example avoid driving if you are feeling fatigued).



1. **Fatigue in the workplace does not only affect workers' mental and physical health, it can also affect the health and safety of those around them?**
 - a) TRUE
 - b) FALSE

2. **Fatigue can result in a lack of alertness, slower reactions to signals or situations, and affect a worker's ability to make good decisions?**
 - a) TRUE
 - b) FALSE

3. **What are the first signs of fatigue?**
 - a) chronic tiredness or sleepiness
 - b) slowed reflexes and responses
 - c) impaired decision-making and judgement
 - d) reduced ability to pay attention to the situation at hand
 - e) All the above

4. **Hazards from fatigue can also result in:**
 - a) increased errors in judgement
 - b) increased sick time, absenteeism, and rate of turnover
 - c) increased medical costs
 - d) All the above

X

Assignee/Employee Signature