

Preventing and Treating Heat Exhaustion

As we enter the hottest time of our year I thought it may be useful to refresh my own knowledge of Heat exhaustion (HE), and pass this data on to you.

A - Day before your hike.

Two factors have the most effect in increasing the risk of HE.

1/ Humidity. Most forecast Apps give the expected humidity. A typical reading might be - 80% humidity and a temperature of 18 deg around early morning.

Humidity will fall slowly during the day to reach a typical mid-afternoon point of 50%.

The higher the humidity, the less your body is able to sweat effectively; and you need to sweat!

Counter intuitive - as you will lose body water when you sweat - but the fact is that losing moisture by sweat is a major factor in the body's ability to maintain an even temperature, as moisture evaporates from your skin.

2/ Outside temperature. Again, your Apps will tell you the forecast temperature. As we know different forecasts can vary alarmingly, so to be safe, take the higher reading.

So, the day before you go on your hike add the two together to get the Heat Index. The nearer you get to 90, the more danger there is of HE.

Do the maths - **07:00hrs** 83% humidity + 17deg = Heat Index of 100. This is why, although cooler in the morning, you will still sweat so much, and you can overheat on that early ascent.

Maths at **14:00hrs** 65% humidity + 31deg = 96. Less humidity but higher temperature, plus - if you are standing in full sunshine the Heat Index will be even higher.

If both **Heat Index** figures are above 90 - unless you take precautions, there is a real danger one or more of your party will suffer from HE. .

B - Morning of your hike.

1/ The alarm goes off. Feed the cat and have breakfast. Every bit of moisture you put into your body will assist you especially when you are on the first part of your hike, which often entails a hot sweaty climb. Try not to have coffee - this is a diuretic and will increase the body's tendency to expel water through urination. Try to have a glass of water when you wake. More water as you eat breakfast. And even though you don't feel like it - drink another glass of water just before you leave the house. This will give your body a supply of water when you really need it for that sweaty early climb.

2/ Preparation for the water you carry. In the summer I carry two litres. Often the hike description will tell you if you can expect water en-route. Nevertheless carry at least two litres.

As your body sweats it depletes your body's salt supply leading sometimes to debilitating muscle cramps. I add a pinch of salt to each litre. Not enough to spoil the taste, but I have found it really helps in fighting cramps, not just during the hike, but also in the evening when cramps often strike.

C - During the hike.

Water is better inside your body than inside your rucksack. Yes, you have to spread it across the hike, but top up at breather stops as you make that initial climb.

I wear a vest that will wick sweat away from my body. Cotton and other natural fibres do not do this well. Look in outdoor shops with vests or shirts that advertise wicking ability.

Cotton T shirts are hydrophilic and absorb your sweat and do not want to let it go. Cotton sweatshirts slow your body's ability to cool.

Obviously, a wide brimmed hat. It not only takes the sweat from my head and stops sweat going in my eyes. The wide brim also keeps the sun from your head and neck and also increases wicking and evaporation. A baseball type hat does not protect you except to keep the sun from your eyes.

Indications of HE:

Confusion,
Dark yellow urine.
Dizziness
Fainting
Fatigue
Headache
Muscle cramps
Nausea
Pale skin
Profuse sweating
Rapid Heartbeat.

First signs that as hikers, we usually see on the hill.

Dark urine - Typically as your kidneys filter out waste products from stressed muscles your urine will become dark yellow, indicating an imbalance, and your body is saying I need more water to get back to a nice straw coloured yellow.

Cramps - usually in the major leg muscles. Indicating the bodies lack of salts, electrolytes and other trace minerals.

Dizziness - which can lead to a stumbling / falling accident.

The hike leader must look out for these symptoms, also the whole hike group must (and invariably does) look out for other members of the group.

Treatment:

- Drink plenty of fluids. Sports drinks can be useful to replace lost minerals (avoid alcohol and energy drinks with caffeine). Carry rehydration powders in your 1st aid kit.
- Move patient into shade or provide shade by placing spares clothing across bushes and/or hiking poles.
- Offer the patient Crampeze - or other similar product. The patient has the right to refuse any medication you offer. Cramp tabs have an almost miraculously quick effect in easing cramped muscles.
- Remove any tight or unnecessary clothing.
- Apply other cooling measures such as fanning and cold wet towels.
- Reassure the patient.

Some of us carry a small container holding a little water and a special towel. We take out the towel and shake it vigorously. This causes the towel to cool and can be put on the patient.

Best cooling points are the major blood supplies where any cooling will have the best effect on lowering body temperature.

Front and back of the neck. Forehead. Hands. Do what you can to cool these areas.

Face the patient forward and pour a little water over the head. This will aid heat loss through evaporation.

After recovery, take the patient down the easiest way from your hike.

I have not touched on Heat Stroke, which is much more serious, as when hiking we will usually see HE first.

Obviously make use of stops during the hike in shady places, and or in any breeze that you may find.

Looking into the future, dehydrating your body can have longer term debilitating effects. Lack of sufficient water passing through the kidneys allowing that organ to do its cleansing work, may lead

to a build-up of salt and minerals that can coalesce into stones. When these stones pass through the urinary tract it gives a pain such that you will really wish you had drunk more water.

Some of you will know much or all of the above, but I am happy that I have refreshed my own knowledge.

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Happy Hiking
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