

# Practical tips for heat acclimatisation

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Heat acclimatisation refers to changes that your body makes so you can cope better in a hot environment, however the adaptations that your body makes will also help you go faster no matter what the temperature. It costs nothing, doesn't take any extra time, and can make you go faster by increasing your blood volume allowing you to perform to your potential, legally!



## How will heat acclimatisation help me go faster?

- An increased blood plasma and total blood volume which aids cooling and oxygen transport to the exercising muscles.
- You start sweating earlier therefore you don't become so hot as fast.
- You sweat more which means you have a greater capacity to cool yourself down.
- Improved sweat distribution – you sweat more evenly over your body to make use of the entire body surface for evaporative cooling to lose heat.
- Your blood is redirected to your skin earlier which means that you stay cooler for longer.
- Your sweat is more dilute therefore you don't lose as much salt (sodium).
- Can offset the possibility of muscle cramps as a loss of sodium is one of the causes of cramping, some others maybe; not physically conditioned enough for the duration and intensity of exercise, or dehydration.
- Your body heat production is lower for any given workload.
- Your core temperature is reduced.
- Your thirst response is improved so you feel like drinking more often.
- Reduced your heart rate is lowered for any given workload.
- Organ protection is improved as you are less likely to get heat stroke.
- You feel more comfortable in hot conditions.
- Exercise Performance – Improved.

(Aoyagi, McLellan & Shepard, 1997; McArdle, Katch & Katch, 2001)

## How do you acclimatise to the heat?

- Allow 10-14 days (however 75% of your capacity to acclimatise is completed in first four days) (Armstrong, 1998).
- Consecutive daily exposure is better than intermittent exposure.
- Complete your normal training sessions as part of your taper and include the heat stress.
- Exposure to the heat could include a hot bath or sauna for approximately 30mins on your rest days.
- Monitor your recovery due to the added stress of the session from the heat.
- The same session will feel harder in the heat as more blood is travelling to your skin to help keep you cool rather than travelling to your muscles to help you exercise.
- Avoid air conditioning – you need to get used to the heat.
- Mimic the competition temperature and humidity if you are competing in a hot environment.
- As the body is about 60% water you need to drink lots of water, have a drink bottle with you at all times.

- Use a sports drink before, during and after training to replenish sodium, water and glucose.
- As a general guideline you should be drinking at a rate of 750ml of fluid per hour to offset the effects of dehydration. Weigh yourself before and after you training session to help determine how much you should be drinking.
- Weigh yourself each day to make sure that you are maintaining body weight. Any quick decreases in body weight will be due to dehydration.

A recent study from Otago University showed that by completing 30minutes of high intensity running followed by sitting in a sauna for 30mins also caused the same physiological responses as described above (Scoon, Hopkins, Mayhew & Cotter, 2007).

#### **How can I acclimatise if I live in Dunedin...?**

- Wear more layers of breathable clothing while you are training (including a hat).

or make your own climate chamber –

- By heating a small room and boiling a jug of water to increase the humidity.
- Doing your training session on your Windtrainer without a fan to cool you down.
- Monitor the temperature and keep a close eye on stress levels and weight loss (3-4% of body weight loss is too much – need to replace these fluids).

#### **Safety considerations**

- Ensure that you are fit and healthy before you start using any heat acclimatisation protocols as it will increase the stress placed on your body.
- This includes colds and flues as your core temperature will already be elevated. If you are unsure don't hesitate to contact us or see your health professional.
- Ensure that you always have a drink bottle with you and remain hydrated. You will be sweating more therefore you need to replace the fluid that is lost before during and after your session. A sports drink is best as it contains glucose and sodium as well as water.
- Increase the heat exposure gradually
- Ideally train with someone else so you can monitor each other. If you or your partner's skin goes pale you are too hot and need to cool down immediately.

For help designing your own heat acclimatisation plan [contact us](#)

#### **REFERENCES**

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