

FEI™ SPORTS FORUM

Improving Human Performance
in Hot Weather

Dr Peter Whitehead

Acclimatisation (Wikipedia)

“The process in which an individual organism adjusts to a change in the environment (such as change in temperature, humidity)”

“acclimation serves to enhance the performance of the organism”

Adaptation and Acclimatisation



Winter coat

Icelandic Horse

Adaptation over generations to aid acclimatization to cold winters



Summer coat

Sport Horse

Adaptation reducing summer coat to aid acclimatisation



Hot weather

Summer marathon

Acclimatisation and appropriate clothing



Cold weather

Antarctic marathon

Acclimatisation and appropriate clothing

Acclimatisation – physiology

Takes 7 – 14 days depending upon aerobic fitness level

Reduces:

- Heart rate
- Core temperature
- Electrolyte loss
- Perceived exertion



Acclimatisation – physiology

Increases:

- Sweating with earlier onset
- Heart function, stroke volume
- Plasma volume
- Overall ability to perform in heat



Cumulative Stress encountering hot climate

Results from failure to recover from previous day(s) exertion

- Typically days 1 – 5
- Primary cause – reduced sweat evaporation due to mild hypohydration
- Lesson – Less likely if fit and prepared for heat stress before travel

Who needs to acclimatise/adapt behaviour and dress?

- Athletes
- Grooms
- Coaches
- Venue staff
- Officials
- Spectators

Common to all

- Health before travel
- Clothing – lightweight, long-sleeved, hats
- Hydration – if thirsty, you are dehydrated
- Shade – do not stand in the sun
- Sunscreen – any exposed skin



Do not ignore early signs of heat stress

Athletes

- Improved fitness prior to travel aids acclimatization
- Graduated training first few days (avoid “ I think I did a bit too much yesterday”)
- Clothing to protect against the sun, promote cooling
- Cooling before and after exercise, air conditioning, shade, cold towels

Athletes

- Maintain hydration, water/isotonic drinks, volumes
- Do not miss meals – fluid and salts replaced during meals
- Good sleep in air conditioned rooms aids recovery from heat stress

Grooms

- Work in the shade, do not stand in the sun watching your rider
- Drink water/sports drinks regularly
- Regular meals
- Protect your sleep, practice with ear plugs and eye masks if sharing a room



Coaches, Stewards, Staff

Liabile to long periods outside

- Appropriate clothing
- Use shade
- Carry drinks with you
- Look for early signs of heat stroke – in yourself and others



Spectators

Preparation essential

- General Health – consult GP if on medication
- Clothing, hats, sunscreen
- Drink frequently – pick up drinks on entry to site
- Be aware of symptoms of heat stress



Heat Stress

- Sweating profusely
- Nausea
- Confusion
- Dizziness
- Fainting
- Cramps
- Headaches

Do not Ignore these Signs or Symptoms – seek advice



ATHLETE HEALTH & SAFETY

- Concussion
- Medical Coverage of Events
- Riding while pregnant
- Safe handling of horses
- Personal Protective Equipment

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HUMAN ATHLETE HEALTH & SAFETY

Welcome to the FEI Medical Committee's information pages, dedicated to key health and safety matters for human Athletes in equestrian sport. The mission of the FEI Medical Committee of the FEI is to advise the FEI Headquarters on matters relating to the health and safety of Athletes and on all matters related to human anti-doping testing.

Knowledge contributes to safety. With these pages the Medical Committee hopes to raise awareness and bring clarity on issues which concern everyone involved in equestrian sport at any competition level. In particular, we strongly recommend that everyone involved in our sport takes the time to read the information on Concussion published in these pages, and familiarize themselves with the **Concussion Recognition Tool (CRTS)**, keeping in mind that where concussion is even suspected expert advice must be sought.

These pages will be updated from time to time with new topics and/or additional information for the existing ones where relevant. If you have queries please feel free to [send us an email](#).

Best regards,
The FEI Medical Committee



[CLICK HERE FOR HEALTH CARE PROFESSIONALS INFORMATION](#)

Harassment and Abuse	Medical Coverage of Events: Guidelines for Organisers	Concussion
Riding while pregnant	Recommendations for the safe handling of horses	Protective Headgear
Medical Information form for Eventing Armband	Information for FEI Officials	Hot Weather & Athlete Performance

- ### Your Role
- Athlete
 - Official
 - Organiser
 - Veterinarian
 - Event Medical Officer
 - National Federation
 - Bidder
 - Media
 - Horse Owner
 - Coach



[EQUINE WELFARE](#)

[ATHLETE HEALTH & WELFARE](#)

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Thank you