

Mindset in Climatic Extremes: Tips and Strategies for Athletes (and Staff)

- 14:15 - 14:30

What are impacts of extrem conditions?

- 14:30 - 14:45

What can athletes do to prepare?

- 14:45 - 14:55

Questions and discussion

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What happens in the mind?

Heat exposure:

Cognitive effects:

- Slower reaction time & impact on decision-making
- Impaired working memory & attention
- Greater impact on complex tasks under pressure
- Mental fatigue & reduced situational awareness

Pain-threshold decreases, subjective stress increases

Mood disturbances: irritability, lowered motivation

Sport-specific impact:

- Risk of tactical errors in competition

Concentration ↓, perceived exertion ↑, sleep quality ↓

What happens in the mind?

Cold exposure

Cognitive effects:

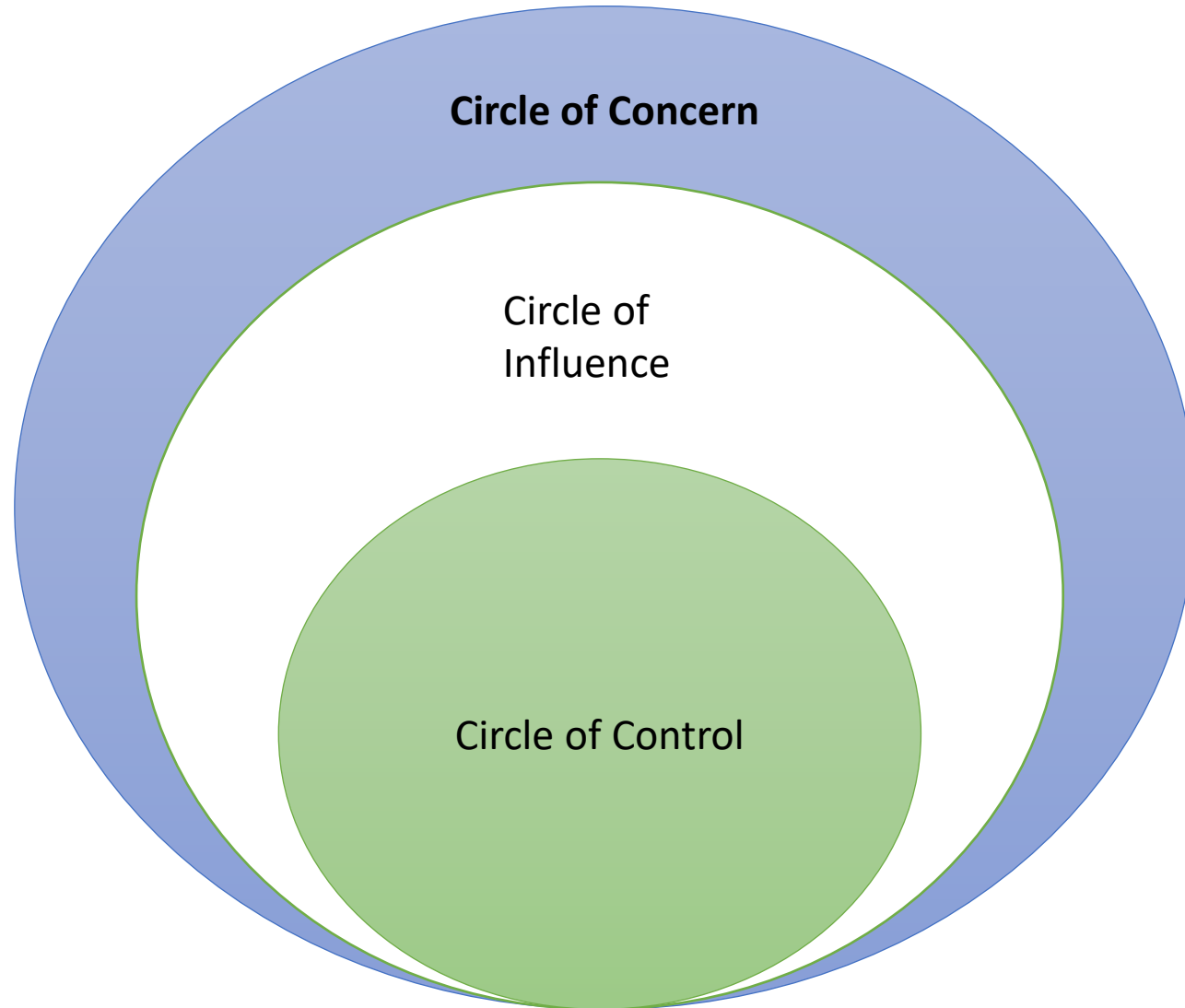
- Early decline in attention and processing speed
- Impaired executive functioning and memory
- Higher risk of errors in decision-making and fine-motor control
- Pain-threshold: increases perception of discomfort

Sport-specific impact:

- Slower reactions and tactical mistakes
- Reduced situational awareness in cold environments

Fine motor skills ↓, perceived control ↓ attention ↓

Circle of Control



Psychological Aspects and Success Factors of Extreme Weather

Heat - Mitigation through:

- heat acclimatisation
- Hydration & cooling strategies (pre-/mid-event)
- Acceptance and normalization
- Self talk, plan, structure, regeneration

Monitor:

- Cognitive & mood checks and perceived exertion
- early signs of heat illness

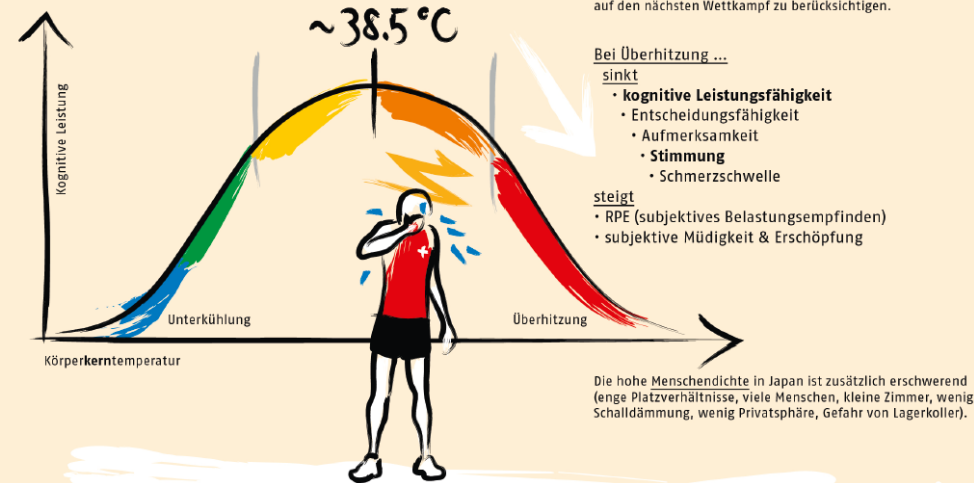
Concentration ↑, perceived exertion ↓, sleep quality ↑

Wie wirkt sich die Hitze auf mich aus?

Daniel Birrer



Hitze und Flüssigkeitsverlust beeinträchtigen die Stimmung und kognitive Leistung



Das Wohlbefinden verbessern



Psychological Aspects and Success Factors of Extreme Weather

Cold - Mitigation through:

- adequate clothing & layering
- pre-warming, active warm-ups & regular movement breaks
- hot fluids/hydration
- Attitude, plan and structure

Monitor:

for early signs of cognitive decline

Fine motor skills ↑, perceived control ↑ attention ↑

What can
athletes do to
prepare?



From a sports psychology perspective

- **Mental Readiness:** develop acceptance of heat/cold stress; train focus and emotional regulation
- **Attitude / Mindset:** foster a “challenge, not threat” appraisal
- **Plan:** prepare for reduced concentration, cognitive endurance and slower decision making.
-> Having a Tool Box & mental strategies
- **Team aspect:** align athletes, coaches and medical staff on common language and plans
- **Individual Strategies:** self-awareness - self-talk, breathing, pre-cooling/warming routines tested in training

Mental Readiness

- Emotions are ok: challenges, respect, fear, stress....
- Suppression makes it worse → Acceptance + Plan = Strength
- Example of a plan: If-then plans (If heat → then cooling + mantra)

Mindfulness and Acceptance Models in Sport Psychology: A Decade of Basic and Applied Scientific Advancements Gardner & Moore (Canadian Psychology, 2012)

The image shows a chalkboard with handwritten mathematical derivations. On the left, a graph of a function $y = g(x)$ is shown with a point $x+h$ on the x-axis. A secant line connects the point $(x, g(x))$ to the point $(x+h, g(x+h))$. A tangent line is drawn at the point $(x, g(x))$. The labels "Secant Lines" and "Tangent Line" are written next to their respective lines. On the right, the derivative $f'(x)$ is defined as the limit of the difference quotient as h approaches 0:

$$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

Below this, the derivative of $f(x) = x^2$ is calculated using the same limit process:

$$\begin{aligned} f(x) &= \lim_{h \rightarrow 0} \frac{(x+h)^2 - x^2}{h} \\ &= \lim_{h \rightarrow 0} \frac{x^2 + 2xh + h^2 - x^2}{h} \\ &= \lim_{h \rightarrow 0} \frac{2xh + h^2}{h} \\ &= \lim_{h \rightarrow 0} h(2x + h) \end{aligned}$$

Attitude & Mindset

- Difference: Problem Focus vs. Solution Focus
- Mindset = process work, not a push of a button

Dweck, C. S. (2006). *Mindset: The New Psychology of Success*.



Plan:

- **Before the Event**

- Simulate extreme conditions in training camps
- Practice mental skills: self-talk, imagery, meditation, acceptance exercises.
- Agree on team routines and communication plans

- **During the Event**

- Monitor mental & physical signals; adapt strategies in real time
- Use agreed individual cooling/warming methods and cue words
- Maintain calm, “light” and consistent team communication

→ Positive - anticipation – feel good – light & easy

Team aspect:

Athletes + staff (coaches, medical, physios, nutritionists & sport psychologists)

→ shared mindset/one plan - common language: solution talk, no problem talk

→ Knowledge, routines & checklists:

- Regular briefings: same vocabulary, same checklist.
- Collective debrief to refine strategies for next events.

Critical Success Factor: Interdisciplinary Collaboration

Organizational psychology in sport: A review. (Wagstaff, 2019, *Sport, Exercise, and Performance Psychology*)

Develop individual strategies

- No one-size-fits-all approach: Athletes need their own personal toolkit
- Test strategies in advance (training, pre-camps)
- Involve staff: same language and routines

Key takeaways



Extreme conditions
are also mental
conditions



Acceptance and
mindset are key



Prepare strategies
individually and
coordinate them
within the team



Mindset is not a
button, but training



Key takeaways

Control the controllables – accept the rest

- Extreme conditions = **mental challenge**
- Preparation + Acceptance + Routines = **Key to success**
- Plan what you can control. Accept what you cannot. Turn the situation into an advantage