

Screening for Participation in Ultra-Endurance Events

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Wilderness & Expedition Medicine

- Grand to Grand Ultra (MDSU)
Utah/Arizona
- Desert RATS (MDSU)
Colorado/Utah
- Jungle Marathon (MDSU)
Brazil
- Ancient Khmer Path (MDSU)
Cambodia
- Wild Elephant Trail (MDSU)
Sri Lanka
- The Last Secret (MDSU)
Bhutan
- Ironman 70.3 Syracuse
- Empire State Marathon
- Miscellaneous fun runs and other races



Special Considerations in Medical Screening for Participants in Remote Endurance Events

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Abstract As participation at remote endurance events increases, so does the need to screen participants for potentially problematic medical conditions, but this process has been ill-defined to date. This article aims to outline a general approach to screening and discusses common or important medical conditions that may need consideration in the screening process. Medical conditions that are considered low risk may translate to high-risk conditions in the setting of a remote and austere location. Medical directors of remote endurance events should have a familiarity with assessing risks and applying informed consent principles to participation. While there are no specific standards on medical disqualification from an event based on medical history alone, several systematic considerations should be made that allow for an assessment of risk to an individual for a specific event. The medical director and event director, in discussion with the athlete and treating clinician when appropriate, should come to a consensus on participation when high-risk medical conditions become

apparent during the screening process. Both modifications and accommodations to participation may be used to mitigate both clinical and medicolegal risk and allow for participation.

Key Points

Participants of remote endurance events may arrive with pre-existing medical conditions that confer various amounts of risk to their health and safety. Important considerations include anaphylaxis and allergies, seizure, diabetes mellitus, heat stroke, exercise-associated hyponatremia, kidney injury, heart disease, gastrointestinal bleeding, pregnancy, mental health conditions, and altitude illness.

Medical providers of these events should have knowledge and understanding of how these pre-existing conditions relate to the specific

Case 1

- You're providing medical direction for 170 mile foot race in the Sahara Desert. During the race medical check-in a 32 yo male discloses that he has a seizure disorder. He has not had a seizure in 2 years. Last time he had a seizure it was because he missed a dose of his dilantin. He's paid at least \$8k to get here and wants to race.
- Do you let him race?

Case 2

- You're providing medical direction for a 170 mile foot race in Cambodia. During the race medical check-in a 29 yo female discloses that she had a positive pregnancy test 2 weeks before the race. She's spent \$7k to get to this race and will sign any waiver you give her.
- Do you let her race?

Case 3

- You're providing medical direction for a 170 mile foot race in the Amazon Jungle. During the race medical check-in a 54 yo male discloses that he had 3 vessel coronary artery bypass 9 weeks before the race. He shows you the healing zipper-shaped scar on his chest. He's spent \$6k to get to this race and brings a normal EKG to show you.
- Do you let him race?

The Concept of Screening

- Good to know about medical conditions ahead of the event
- Best to screen well in advance of the event
- Some problems that might be OK to have at endurance race in urban environment might be a bad decision to allow in wilderness environment

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Dear Medical Provider,

Your patient has chosen to participate in the Wild Elephant Trail race, a 210 km staged foot race in Sri Lanka. Participants will engage in strenuous, extended physical exertion through the environmental extremes of a hot, humid climate. Locations will be remote, and access to health care limited.

We respectfully request your assistance in ensuring the health and safety of both participants and race staff by addressing the following pre-participation requirements:

- 1.) Complete the attached pre-participation form in coordination with an appropriate history, physical, and any additional diagnostics deemed relevant.
- 2.) Ensure up to date immunization status (specifically tetanus within 5 years).
- 3.) Ensure an adequate supply of all current medications.
- 4.) Food and water borne illness is possible with travel. Please provide appropriate counseling and prescription medications for patient-directed recognition and treatment of common GI illnesses among travelers. We recommend ciprofloxacin 500mg (6 tabs), loperamide 2mg (10 tabs), and ondansetron 4mg (10 orally disintegrating tabs).
- 5.) Provide appropriate counseling for the prevention of race/environmental related illnesses (ie. sunburn, heat stress and heat illness, dehydration, electrolyte imbalance, etc). We would also suggest a prescription and counseling for patient-directed recognition and treatment of exertional gastroparesis ("slosh stomach" in race vernacular), which can cause vomiting and can contribute to dehydration and ultimately renal injury. We recommend the use of ondansetron 4mg orally dissolving tablets for this as well.

If your patient has any known medial problems which may limit or restrict their participation in this event (such as structural cardiac abnormalities, arrhythmias, uncontrolled hypertension, seizure disorder requiring medication, or history of previous heat injury which elevates risk of a repeat injury), we ask that you perform any testing deemed prudent (EKG, stress test, echo, renal or hepatic function, etc), and indicate your recommendations regarding participation on the attached form.

Thank you for your assistance in making this event safe and enjoyable for all involved. You may email me securely and confidentially (please indicate) with specific questions or concerns: joslinj@upstate.edu

Respectfully submitted,

Jeremy D. Joslin, MD
Race Medical Director

Complete form

Check immunizations

Check medications

Travel scripts

EAG scripts

Prudent testing
(stress, renal, EKG)

Screening for Rx, illness, injury

Emergency contact

Checklist for provider

Any comments from provider?

Clearance statement

I do not do clearance at race

I do reserve right to medically disqualify

experience your Limits
at Global adventures...



CAMBODIA THE ANCIENT KHMER PATH

Pre-participation History & Physical

Section 1 (To be completed by the participant).

Participant's Name: _____
Age: _____ Sex: M F DOB (mm/dd/yyyy): _____

Please circle yes or no to the following. Be sure to discuss any yes answers with your physician:

1.) Are you currently taking any prescription or over the counter medications, supplements, or vitamins?
Y N

2.) Do you have any current injury/illness that may impact your participation in this event?
Y N

3.) What is your current weight while wearing race clothes and shoes? _____

4.) Emergency contact during the race Name/Relationship: _____

Phone with Country Code: _____

Section 2 (To be completed in conjunction with history, physical exam, and any additional assessment modalities as deemed appropriate by a licensed primary care physician or equivalent).

Please indicate yes or no to the following:

1.) Did you review the pre-participation letter and counsel your patient accordingly? Y N

2.) Allergies/sensitivities? Y N

3.) Current medications/supplements? Y N

4.) Active medical conditions requiring care? Y N

5.) Pertinent history (cardiac, neurologic, endocrinologic) and physical findings? Y N

Please provide a brief explanation for any yes answers:

Recommendations:

- Cleared for participation in the Event WITHOUT limitations.
- Cleared for participation in the Event WITH limitations describe under separate cover.
- This patient is NOT cleared for participation in the Event.

I, the undersigned, am licensed to elicit and interpret the medical history, pharmaceutical history and clinical findings of a complete assessment for participation in a strenuous event such as a multi-day adventure ultramarathon. I have completed this assessment and recorded all pertinent findings along with recommendations for participation above.

Licensed Medical Provider signature

Date completed

Stamp or printed name

Contact information

Approach to Screening

- Acknowledge adventure requires risk
- Approach screening as an exercise in risk mitigation
- Goal should be to allow participation when where possible
- Put decisions in writing regarding any agreements or alterations in standard operations

Specific Goals

- Determine the risks to the athlete and other athletes on the course

- Contemplate and define the role of the athlete, event medical director, race director, and treating physician in the decision process

- Place the athlete's abilities in the context of previous training and competition

- Consider alterations of expectations with or without the addition of accommodations

Special Considerations

Anaphylaxis & Allergy

- Most common causes are antibiotics, NSAIDs, foods, insect stings
- Athlete must be prepared to self-administer epinephrine and have second dose considered
- Epinephrine can degrade, but should be fine for a single event (7)
- EIA should MDQ unless known confounders can be avoided

Seizure Disorder

- Consider triggers
 - Hypoglycemia, hyperventilation, sleep deprivation, hypoxia, temperature extremes, hyponatremia
- Consider medications pharmacokinetics

Diabetes Mellitus

- DM-1 and DM-2 very different diseases
- Insulin degradation considerations
- Complications of DM-2 medications
 - confounding by EAG

Heat Stroke

- Prior EHS increases risk of EHS
- Understanding of “return to play” guidelines
- Consider request heat tolerance test or documentation of heat rehabilitation

Heart Disease

- Coronary disease uncommon but present in the endurance athlete demographic
- Consider LQTS and Brugada type syndromes
- Variable advice on return to play after interventions (months to 2 years)
- Anti-platelet and other anticoagulant use

Current Pregnancy

- First trimester
 - Elemental intake
- Second trimester
 - Risk, doubt, and guilt
- Third trimester
 - Case report- “simultaneously an outrage and admirable”

GI Bleed

- Occult vs Gross
- Identify and resolve causes before event

EAH

- EAH becoming less common
- If athlete has had in the past, need to identify the behaviors that contributed and correct
- No genetic predilection known

Mental Illness

- Beware of medications used and the pharmacologic implications
 - methylphenidate - dehydration - overdose
 - phenothiazines - inhibition of sweating
 - anticholinergics - dry mouth - more water - EAH
- Stress of the event and travel

Altitude Illness

- Fitness is not a protective factor
- Beware medications - diuretics and NSAIDs
- Genetic susceptibility present

Cases 4

- You're providing medical direction for a 170 mile foot race in Cambodia. During the pre-race clearance process, a 39 year old male discloses he is completely blind and wishes to run with the assistance of his brother and a tether which he has used in the past for other events.

