

# A case for allied specialties: Could preventative measures, recommended for athletes, reduce the incidence of diagnoses that are commonly encountered on expedition?

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## Introduction

Sports and Exercise Medicine has been a recognised medical specialty, in the UK since 2005<sup>[1]</sup>. The British Association of Sports and Exercise Medicine (BASEM) was founded even earlier, in 1953<sup>[2,3]</sup>. As such, there is an increasing quantity and quality of literature is being produced in this field<sup>[4,5]</sup>.

By contrast, the practice of Wilderness medicine is not a recognised medical specialty in the UK, nor is it a subspecialty of any other specialty<sup>[6]</sup> and does not benefit from having a society akin to FSEM or BASEM) for providing evidence-based guidance.

It is therefore advisable to prevent duplication of research by collaborating as allied specialties.

## Aim

The aim of this review was to address the following question:

**Are preventative interventions, recommended for athletes, associated with a decreased incidence of diagnoses, that are commonly encountered during expeditions?**

Population	Athletes (amateur and professional)
Intervention	Preventative interventions (Multiple)
Control	No preventative intervention
Outcome	Relative risk of clinical conditions

## Objectives

1. To identify data in Sports medicine on preventing morbidity/mortality from clinical conditions that encountered on expedition to the wilderness environment, for which there is currently insufficient Wilderness medicine guidance.
2. To evaluate data from Sports medicine research and formulate recommendations for Wilderness medicine practice, as regards morbidity/mortality prevention.
3. To identify clinical conditions associated with morbidity/mortality on expedition to the Wilderness environment, for which neither sufficient Wilderness medicine guidance or high-quality Sports medicine data exists, with a view to making recommendations for future research.

## Methods

Relevant diagnoses were identified using epidemiological data, spanning sourced from 3 frequently cited publications by organizers of wilderness expeditions 3'823 incidents occurring on expedition over a 24-year period<sup>[11-13]</sup>.

From this, the variable search terms [Table 2] of this review were generated. These search terms were then used to identify relevant papers from the PUBMED database, using the following search format:

**(Prevention [Title/Abstract]) AND ((Sport [Title/Abstract]) OR (Exercise [Title/Abstract]) OR (Exertion [Title/Abstract])) AND ("Variable search term" [Title/Abstract])**

Ankle Injury
Blisters
Bronchoconstriction
Cardiology
GI Distress
Infectious Diseases
Knee injury
Oral Health
Psychiatry

Inclusion criteria – Containing data or expert recommendations relevant to the prevention of a clinical condition(s) encountered on expedition, occurring either;

- During sport OR exercise OR exertion.
- As a result of sport OR exercise OR exertion.
- Specifically in athletes (amateur or professional) as a study population.

## Results

Study design	Intervention	Outcome
Systematic review N=18,215	Hamstring Eccentric Exercises	Lower Limb Injury Risk Ratio 0.66-0.78
Systematic review N=13,503	Neuromuscular warm-up strategies	Lower Limb Injury Risk Ratio 0.42-0.48
Systematic review N=26,225	Neuromuscular/proprioceptive exercise	Knee Injury Risk Ratio 0.73
Systematic review N=5,187	Neuromuscular training	Ankle Injury
Randomised control trial N=62	Standardised ECG interpretation criteria	Correct ECG interpretation Odds Ratio 1.72
Guideline inc, systemic review	Symptom screening and 24–48-hour ECG	Sudden Cardiac Death Risk factors identified
Systematic review N=280	Nedocromil	Bronchoconstriction Reduced severity + recovery time
Systematic review N=518	Multiple (Pharmacological)	Bronchoconstriction Reduced severity
Systematic review N=162	Corticosteroids	Bronchoconstriction Reduced severity
Randomised control trial N=16	Hyaluronic acid	Bronchoconstriction No benefit
Report inc, systemic review	Multiple (Pharmacological)	Bronchoconstriction Mixed benefits

## Discussion

1. 10 of 11 publications demonstrate effective prevention of 6 diagnoses relevant to wilderness medicine.
2. From this data, 11 recommendations for preventative practice in wilderness medicine were made.
3. Insufficient numbers of high-quality publications were identified studying the prevention of blisters, gastrointestinal distress, infectious disease, mental illness, oral health issues. These topics would benefit from further study.

## Conclusion

There is a demonstrable amount of overlap in diagnoses that are managed by both Wilderness and Sports practitioners, for some of which high quality Sports research already exists.

For other areas of overlap for which this is not the case, it would be sensible for Wilderness and Sports practitioners to engage in co-learning and advance as allied specialties.

## Limitations

The common practice of recruiting from sports teams resulted in a sample bias which predominantly focused on a small number of sports, particularly football.

This was also a single author review. Methodology was designed around the PRISMA 2020 checklist for systematic reviews,

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