Bogerd et al. Extreme Physiology & Medicine 2015, 4(Suppl 1):A71
http://www.extremephysiolmed.com/content/4/S1/A71

Extreme Physiology & Medicine

MEETING ABSTRACT Open Access

Thermal effects of headgear: state-of-the-art and way forward

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From 15th International Conference on Environmental Ergonomics (ICEE XV)
Portsmouth, UK. 28 June - 3 July 2015

Introduction

Headgear is widely used in both work and leisure. Much research attention has been spent on optimizing impact properties of helmets [1], [2]. However, thermal comfort of headgear is suboptimal in neutral and warm environments. In fact, thermal discomfort is often given as a reason to not wear protective headgear [3], [4]. Enhanced thermal comfort of headgear is likely to improve the willingness to wear protective headgear, and motivated an increasing number of studies, of which most were published in the last decade. The available body of literature allows for a valuable first review on the thermal effects of headgear.

Methods

The literature on thermal effects of headgear was reviewed for the purpose of providing a sound basis for improving helmet design, and for effective future studies.

Results

Four topics will be addressed: (i) the effect on thermal physiology, health and performance, (ii) heat and mass transfer, (iii) methods for studying thermal effects of headgear, (iv) design considerations (Bogerd et al., 2015). Several topics will be detailed by other contributions to this conference from COST Action TU1101, which enhances the accessibility of the subject on ergonomics of headgear for the audience of this conference.

Acknowledgements

We are grateful to our colleagues from COST Action TU1101 "Towards safer bicycling through optimization of bicycle helmets and usage" for fruitful collaboration and discussions. COST is supported by the EU Framework Programme for Research and Innovation Horizon 2020.

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Published: 14 September 2015

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doi:10.1186/2046-7648-4-S1-A71
Cite this article as: Bogerd *et al.*: Thermal effects of headgear: state-of-the-art and way forward. *Extreme Physiology & Medicine* 2015 **4**(Suppl 1): A71.

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