

Journal of the British Association of Sport and Exercise Medicine

Editor-in-Chief

Karim Khan (Canada)

Editors

Babette Pluim (Netherlands) Kay Crossley (Australia)

Editorial Office

BMJ Publishing Group Ltd **BMA** House Tavistock Square London WC1H 9JR, UK

E: bjsm@bmj.com Twitter: @BJSM BMJ

Guidelines for Authors and Reviewers

Full instructions are available online at http://bjsm.bmj.com/pages/authors/. Articles must be submitted electronically http://bjsm.bmj.com/pages/authors/. Authors retain copyright but are required to grant BJSM an exclusive licence to publish (http://authors.bmj.com/ submitting-your-paper/copyright-andauthors-rights/).

ISSN: 0306-3674 (print) ISSN: 1473-0480 (online) Impact factor: 7.867

Disclaimer: BJSM is published by BMJ Publishing Group Ltd (a wholly owned subsidiary of the British Medical Association) and the British Association of Sport and Exercise Medicine. The owners grant editorial freedom to the Editor of BJSM, BJSM follows guidelines on editorial independence produced by the World Association of Medical Editors and the code on good publication practice of the Committee on Publication Ethics.

BJSM is intended for medical professionals and is provided without warranty, express or implied. Statements in the journal are the responsibility of their authors and advertisers and not authors' institutions, the BMJ Publishing Group, the British Association of Sport and Exercise Medicine or the BMA unless otherwise specifi ed or determined by law. Acceptance of advertising does not imply endorsement.

To the fullest extent permitted by law, the BMJ Publishing Group shall not be liable for any loss, injury or damage resulting from the use of Heart or any information in it whether based on contract, tort, or otherwise. Readers are advised to verify any information they choose to rely on.

Copyright: © 2019 BMJ Publishing Group Ltd and British Association of Sport and Exercise Medicine. All rights reserved; no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without prior permission

BJSM is published by BMJ Publishing Group Ltd, typeset by Exeter Premedia Services Private Ltd, Chennai, India and printed in the UK on acid-free

British Journal of Sports Medicine (ISSN: 0306-3674) is published monthly by BMJ Publishing Group and is distributed in the USA by Air Business Ltd. Periodicals postage paid at Jamaica NY 11431 POSTMASTER: send address changes to British Journal of Sports Medicine, Air Business Ltd. c/n Worldnet Shinning Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA.

Volume 53 Issue 1 | BJSM January 2019 Contents

Editorials

Cardiovascular screening in Olympic athletes: time to achieve a uniform standard A Pelliccia, I A Drezner



Reducing the back overuse-related risks in alpine ski racing: let's put research into sports

J Spörri, J Kröll, M Supej, E Müller

3 From guidelines to the sidelines: implementation of cardiovascular preparticipation evaluation in sports clubs is

> K Hedman, S Sunnerud, A Carlén, M Janzon, E Nylander

- 5 Load, capacity and health: critical pieces of the holistic performance puzzle E Verhagen, T Gabbett
- Getting the systematic review basics right 6 helps clinical practice: 4 common pitfalls for systematic review authors to avoid
- Jump load: capturing the next great injury

L R Moran, E J Hegedus, C M Bleakley, I B Taylor

What counts as 'the evidence'? A need for an 10 urgent review of injury risk in school rugby J Piggin, A Bairner

11 Finding the sweet spot via personalised Achilles tendon training: the future is within

> C Pizzolato, D G Lloyd, M H Zheng, T F Besier, V B Shim, S J Obst, R Newsham-West, D I Saxby, R S Barrett

Review

13 Systematic review of musculoskeletal injuries in professional golfers

> P G Robinson, I R Murray, A D Duckworth, R Hawkes, D Glover, NR Tilley, R Hillman, C W Oliver, A D Murray

Systematic review

What are the risk factors for injuries and injury prevention strategies for skiers and snowboarders in terrain parks and half-pipes? A systematic review

O Audet, B E Hagel, A Nettel-Aguirre, T Mitra, CA Emery, A Macpherson, M D Lavoie, C Goulet

Original articles

- Analysis of water polo injuries during 8904 player matches at FINA World Championships and Olympic games to make the sport safer M Mountjoy, J Miller, A Junge
- 32 Medical services at the 2017 Sapporo Asian winter games: injury and illness epidemiology at a 34-nation multisport event

K Watanabe, T Akama, S Asakawa, K Fukuda, H Sakai, T Okuwaki, T Imai, H Sato, M Katayose, M Jegathesan, N A Shamali

Subscription information

British Journal of Sports Medicine is published monthly; subscribers receive all supplements

Institutional rates 2019

Print £888

Online Site licences are priced on FTE basis and allow access by the whole institution. Details available online at http://journals.bmj.com/content/subscribers?bjsm

Personal rates 2019

Print (includes online access at no additional cost) £311

Online only £184

ISSN 0306-3674 (print); 1473-0480 (online)

Personal print or online only and institutional print subscriptions may be purchased online at http://group.bmj.com/subscribe/?bjsm (payment by Visa/ Mastercard only) Residents of some EC countries must pay VAT; for details, call us or http://journals.bmj. com/content/subscribers?bjsm

MORE CONTENTS ▶



This article has been chosen by the Editor to be of special interest or importance and is freely available online.



This article has been made freely available online under the BMJ Journals open access scheme

See http://bjsm.bmj.com/site/about/guidelines.xhtml#open



This journal is a member of and subscribes to the principles of the Committee on Publication Ethics www.publicationethics.org.uk







The online version of this article contains multiple choice questions hosted on BMJ Learning.



Cardiovascular risk profile in Olympic athletes: an unexpected and underestimated risk scenario F D'Ascenzi, S Caselli, F Alvino, B Digiacinto, E Lemme, M Piepoli, A Pelliccia

Discussion



Cardiovascular screening of Paralympic athletes reported by chief medical officers of the PyeongChang 2018 Paralympic Winter Games B G Toresdahl, C Blauwet, C J Chang, D I Ling, I M Asif

Infographics

Infographic. The Adductor Strengthening Programme prevents groin problems among male football players

J Harøy, D Pope, B Clarsen, E G Wiger, M G Øyen, A Serner, K Thorborg, P Hölmich, T E Andersen, R Bahr

47 Infographic. Mechanisms of acute adductor longus injuries in male football players A Serner, A B Mosler, J L Tol, R Bahr, A Weir

Education reviews

New IOC Certificate in Drugs in Sport supports healthcare professionals to lead on effective clinical drug use and doping prevention in athletes

M Stuart, D Mottram

50 Unravelling confusion in sports medicine and sports science practice: a systematic approach to using the best of research and practice-based evidence to make a quality decision

C L Ardern, G Dupont, F M Impellizzeri, G O'Driscoll, G Reurink, C Lewin, A McCall

'Only by speaking out can we create lasting change': what can we learn from the Dr Larry Nassar tragedy?

M Mountjoy



Time-to-event analysis for sports injury research part 1: time-varying exposures

R O Nielsen, M L Bertelsen, D Ramskov, M Møller, A Hulme, D Theisen, C F Finch, L V Fortington, M A Mansournia, E T Parner



Time-to-event analysis for sports injury research part 2: time-varying outcomes

R O Nielsen, M L Bertelsen, D Ramskov, M Møller, A Hulme, D Theisen, C F Finch, L V Fortington, M A Mansournia, E T Parner