Infographic. International Olympic Committee consensus statement on pain management in athletes: non-pharmacological strategies

Brian Hainline 1, Wayne Derman,2,3 Alan Verne,4 Richard Budgett,5 Masataka Deie,6 Jiri Dvorak,7,8 Christopher A Harle,9 Stanley Herring,10 Michael McNamee,11 Willem Meeuwisse,12 G Lorimer Moseley,13 Bade Omololu,14 John Orchard,15 Andrew Pipe,16 Babette M Pluim,16,17 Johan Raeder,18 Christian Siebert,19 Mike Stewart,20 Mark Campbell Stuart,21 Judith Turner,22 Mark Ware,23 David Zideman,24 Lars Engebretsen25

Pain and injury are not synonymous. Pain can occur without sport injury, and sport injury may not necessarily manifest with pain. It is important to understand the basis of pain in elite athletes and then to begin non-pharmacological treatment based on the underlying aetiology. Pharmacological strategies can complement non-pharmacological management but should not be used as stand-alone treatment. Multidisciplinary pain management offers the best chance of addressing any combination of biomechanical maladaptations, aberrant neurophysiology and psychosocial influencers of pain.

1National Collegiate Athletic Association (NCAA), Indianapolis, Indiana, USA
2Institute of Sport and Exercise Medicine, Department of Surgical Sciences, Stellenbosch University, Cape Town, South Africa
3International Olympic Committee Research Centre, Cape Town, South Africa
4WADA, Montreal, Quebec, Canada
5International Olympic Committee, Lausanne, Switzerland
6Orthopedic Surgery, Aichi Ika Daigaku, Aichi-gun, Japan
7Swiss Concussion Center, Zurich, Switzerland
8Spine Unit, Schulthess Clinic, Zurich, Switzerland
9Health Policy and Management, Indiana University, Indianapolis, Indiana, USA
10Rehabilitation Medicine, University of Washington, Seattle, Washington, USA
11College of Engineering, Swansea University, Swansea, UK
12Sport Injury Prevention Research Centre, Faculty of Kinesiology, University of Calgary, Calgary, Alberta, Canada
13University of South Australia, Adelaide, South Australia, Australia
14Orthopaedic Surgery, University of Ibadan College of Medicine, Ibadan, Nigeria
15School of Public Health, University of Sydney, Sydney, New South Wales, Australia
16Sports Medicine, Royal Netherlands Lawn Tennis Association, Amersfoort, The Netherlands
17Home, Ede, The Netherlands
18Anaesthesiology, Oslo University, Oslo, Norway
19Hanover Medical School, Hanover, Germany
20Physical Therapy, East Kent Hospitals University, Canterbury, UK
21BMJ Learning, BMJ Group, London, UK
22Psychology, University of Washington School of Medicine, Seattle, Washington, USA

Infographic: IOC Consensus Statement on Pain Management in Elite Athletes

Non-Pharmacological Strategies

- Physical therapy techniques: no clear benefit for most of them
- Low-level laser therapy: possibly beneficial (tendinopathy & acute muscle recovery)
- Cryotherapy: little evidence from prospective studies
- Ultrasound therapy: unclear benefit
- Electrical stimulation, massage therapy, myofascial trigger point treatments and acupuncture: poor reliability and consistent efficacy for relief of pain resulting from musculoskeletal injury

Movement, Strength & Conditioning

- Exercise-based approaches are effective for managing pain in individuals with chronic painful conditions and can also improve patient self-efficacy for managing pain and fear of re-injury
- Cognitive restructuring (identifying and challenging negatively biased appraisals) & developing plans for maintaining treatment gains and coping with setbacks and pain flare-ups
- Psychologically informed physical therapy, which incorporates cognitive and behavioural principles and strategies (e.g., techniques to reduce harm-avoidance, use of graded activity and exposure techniques), and education about pain during physical rehabilitation, is a promising approach

Supplementation vs

- Persistent pain is influenced by any proinflammatory load, which makes nutrition possibly relevant to managing pain in athletes. However, studies demonstrating benefits from nutritional supplements are not methodologically sound and have unclear relevance to elite athletes
- Cognitive restructuring (identifying and challenging negatively biased appraisals) & developing plans for maintaining treatment gains and coping with setbacks and pain flare-ups
- Psychologically informed physical therapy, which incorporates cognitive and behavioural principles and strategies (e.g., techniques to reduce harm-avoidance, use of graded activity and exposure techniques), and education about pain during physical rehabilitation, is a promising approach

Sleep

- Sleep disturbances, and poor sleep quality or duration increases pain levels and decreases pain thresholds. Psychological strategies to address sleep disorders include cognitive-based therapy, self-hypnosis & mindfulness-based stress reduction

Surgery

- Surgery should not be performed to treat chronic pain simply because all other interventions have failed but should rather be used when a structural problem associated with the pain has been identified

Infographic designed by eYMSportScience
Correction: Infographic. International Olympic Committee consensus statement on pain management in athletes: non-pharmacological strategies


The author David Siebert was mistakenly added to this article in place of Christian Siebert. The correct affiliation for Christian Siebert should be: Hanover Medical School, Hanover, Germany.

© Author(s) (or their employer(s)) 2021. No commercial re-use. See rights and permissions. Published by BMJ.