The Utility of Individual Baseline Versus Normative Reference Values for the SCAT3

Following Concussion in Professional Ice Hockey Players

Objective & Design

To characterize whether individual SCAT3 baseline scores are more useful than normative reference values following acute concussion.

Participants

- SCAT3 baseline testing has been mandatory in the Finnish ice hockey league since 2013 and the league recommends day of injury testing for all players with suspected concussion.
- Of the reported injuries, between seasons 2013-2016, all cases (n=33) with a day of injury SCAT3 symptom scale completed were selected.

Outcome Measures

The performance was ruled as abnormal (pink/red in tables) if:

- scored within the worst 10th percentile of the league’s normative reference values [based on 2013-2014 preseason baselines (n=304)]
- the score differed from the player’s own baseline more than the cut-offs for 90% normal variation [based on preseason baselines 2013-2014 and 2014-2015 (n=179)].

Results

Abnormal performance on post-injury testing:

[scores compared to individual baseline vs. normative reference values]

- Symptoms: 96% vs. 100%;
- SAC: 31% vs. 22%;
- M-BESS: 50% vs. 50%;
- Tandem gait: 18% vs. 29%;
- Coordination: 7% vs. 7%.

Conclusion

The league normative reference values of SCAT3 scores were as sensitive as the individual baseline in sideline recognition of acute concussion among professional ice-hockey players.

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<th>Timo. Hänninen</th>
<th>Jari Parkkari</th>
<th>Markku Tuominen</th>
<th>Matti Vartiainen</th>
<th>Juha, Öhman</th>
<th>Grant L. Iverson</th>
<th>Teemu M. Luoto</th>
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<td>MD²</td>
<td>MD, PhD¹</td>
<td>MD²</td>
<td>MSc²</td>
<td>MD, PhD¹</td>
<td>PhD³</td>
<td>MD, PhD³</td>
</tr>
</tbody>
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1. Tampere Research Center of Sports Medicine, UKK Institute for Health Promotion Research, Tampere, Finland
2. International Ice Hockey Federation (IIHF) / Medical Committee; Finnish Ice Hockey Association & Medisport Inc, Tampere, Finland
3. Department of Behavioural Sciences, Division of Cognitive Psychology and Neuropsychology, University of Helsinki, Helsinki, Finland
4. Department of Neurosurgery, Tampere University Hospital, Tampere, Finland
5. Department of Physical Medicine and Rehabilitation, Harvard Medical School; Spaulding Rehabilitation Hospital; MassGeneral Hospital for Children Sports Concussion Program; & Home Base, A Red Sox Foundation and Massachusetts General Hospital Program, Boston, MA, USA

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