

## International Movement Screening and Interventions Group (IMSIG) Update January 2018

We are delighted to report that the Arthritis Research UK Centre for Sport, Exercise and Osteoarthritis has received funding for a further five years from Arthritis Research UK. We are therefore able to continue to host the IMSIG and provide administrative support.

This update summarises achievements in 2017 and then looks forwards to priorities for the group in 2018, proposed by the Core Group.

Group achievements in 2017 include: a systematic review; influencing policy; new projects; growing membership (>100), notably public representatives from recreational and professional football; workshop to steer future research on injury prevention and performance in football.

### 1 Membership

We now have over 100 members representing 11 countries: Australia, Canada, Germany, Ireland, Italy, New Zealand, Poland, South Africa, Sweden, UK and USA. If you would like a list of members (only available to other members), please contact Jo Bartram (see page 3).

### 2 Terminology and definitions on the IMSIG website

Since posting the IMSIG aims and definitions on the website in December 2016, feedback was received, particularly that 'movement performance tests' would be more appropriate than 'quantitative movement tests'. We had debated this at length and it was felt that performance implied sport performance. Further discussions by the Core Group considered the feedback received and led to the decision to keep the definitions as they are, as follows:

#### **Overall definition**

*Movement screening involves the quantitative or qualitative observation of a single movement and/or a composite battery of movements to predict injury or direct management of physical conditioning, injury prevention, rehabilitation, etc.*

#### **Types of movement screening**

##### *Quantitative Movement Tests:*

*The measurement of a quantitative outcome(s) of strength, power, balance or agility; often through multi-joint movements. An example is the distance covered during the Triple Single Leg Hop or Star Excursion Balance Test. The variables produced by these tests are continuous variables, e.g. the distance (cm) covered during a Triple Single Leg Hop or Star Excursion Balance Test. These tests are sometimes referred to Physical Performance Tests but performance testing is often used to describe more challenging tasks than some of the quantitative movement tests, so it is not an alternative term for this category of tests.*

##### *Movement Quality Tests:*

*The identification and rating of compensations, asymmetries, impairments or efficiency of movement through transitional (e.g. squat, sit-stand, lunge) or dynamic (hopping, walking, landing, cutting) movement tasks. The variables produced by these tests are typically categorical variables. For example, some variables are dichotomous, such as yes/no, pass/fail, while others have more than two options, so are ordinal (e.g. poor/ fair/ good).*

### 3 Task Group Activities

If you are interested in joining a Task Group, please contact Jo Bartram.

#### 3.1 Literature & terminology group

Published a systematic review, which supports a move to using movement screening tools for injury pattern recognition and informing exercise interventions, rather than risk prediction:

Whittaker JL, Booyesen N, de la Motte S, Dennett L, Lewis CL, Wilson D, McKay C, Warner M, Padua D, Emery CA, Stokes M. Predicting sport and occupation lower extremity injury risk through movement quality screening: A systematic review. *British Journal of Sports Medicine* 2017;51:580–585.

#### 3.2 Military Group – UK & USA

Four collaborative activities in this group (for other projects, see projects document):

**a) Retrospective analysis of Royal Navy (RN) data**

Paper in preparation (C Power PhD project, Southampton UK).

**b) Movement Quality Studies using Hip and Lower Limb Movement Screen (H&LLMS) and Exercise Programmes**

The H&LLMS and exercise programme (developed by Nadine Booyesen for her PhD on young footballers) are being used in research within the military. Studies are at various stages, with some involving biomechanical assessment to further validate and understand the mechanisms of movement dysfunction. A training manual for the H&LLMS is being developed (led by Nadine Booyesen & Cara Lewis) and will be available via IMSIG website.

**c) Position Paper on Movement Screening in the UK military**

An internal Ministry of Defence Position Paper (led by Jo Fallowfield), which was reviewed by the IMSIG, has influenced the policy on movement screening in the UK military, who are looking to the IMSIG to provide guidance on future screening as research progresses.

**d) Scoping Review of Movement Screening in the Military**

A survey (led by Sarah de la Motte, US Military) is scoping the use of movement screening tools across the military to determine types and purpose of screening used.

#### 3.3 Biomechanics Group

A systematic review is in progress (led by Martin Warner, Southampton, UK).

#### 3.4 Football Group

An interactive workshop on 'Movement Quality for Injury Prevention and Performance in Youth Football' was held on 10 October 2017 at St Mary's Stadium, Southampton Football Club. The purpose was to promote awareness of warm-up exercise programmes in community based youth football and engagement in research. Thirty five delegates included football coaches and players (mainly from grass roots clubs), and national and international researchers. Several delegates volunteered to become involved as public representatives in our research. Key messages from discussions are informing the next steps in our football movement quality research into warm-up programmes to improve injury prevention and performance (see IMSIG website for Workshop summary notes).

#### 3.5 New Task Groups – forming and yet to become active – Lead: Carly McKay (Bath, UK).

**a) Clinical Screening and Interventions to Improve Movement Quality**

A number of IMSIG members are involved in. The group will provide oversight of projects developing exercise interventions to improve movement quality for injury prevention and management of osteoarthritis (see projects document: IMSIG\_Projects\_31January2018.doc)

**b) Astronauts**

The focus will be on musculoskeletal health of astronauts, in relation to movement quality, control and functional performance. Some members identified - lead yet to be confirmed.

**3. How the IMSIG operates**

The Core Group and Task Groups meet periodically, as required, via teleconference to review the IMSIG goals and achievements. Outcomes of groups are summarised in these updates, which are circulated to all members and posted on the website. Workshops are held on relevant themes and have specific goals. Details of Core Group and Task Group members, and workshop summaries can be found on the IMSIG website. Jo Bartram (Nottingham, UK) provides administrative support and Maria Stokes co-ordinates activities, assisted by Nadine Booyesen and Paul Muckelt (Southampton, UK).

**4. Communication - Arthritis Research UK Centre for SEOA website**

The main means of communication for the group is through the public area on the Arthritis Research UK Centre for Sport, Exercise and Osteoarthritis website (see link below). Alerts about any activities, such as workshops, are emailed to all members on the database.

**5. Other News**

Congratulations to Paul Muckelt, who has been appointed as a Research Fellow at the University of Southampton to work in the Arthritis Research UK Centre for Sport, Exercise and Osteoarthritis. His main role is to develop funding bids for trials on exercise interventions to improve movement quality. Paul has been an Intern in the Centre for two years and a member of IMSIG, working on various projects. He will take over from Nadine Booyesen to help with co-ordination of the IMSIG, as Nadine will complete her PhD in March.

**6. Priorities for 2018**

Discussed by the Core Group (16<sup>th</sup> January 2018)

6.1 Literature Task Group:

- a. Produce and Editorial on movement quality to follow on from systematic review (Lead: Jackie Whittaker)
- b. Develop a list of terms used in the literature on movement screening and maintain on the IMSIG website. The eventual aim is to gain more consistency between studies.

6.2 Football Task Group - develop proposal for mixed methods trial on adherence to warm-up exercise programme in grass roots youth football (Lead: Richard Jones)

6.3 Interventions Task Group – develop warm-up programme for FUTSAL (Project Lead: Duncan Reid)

6.4 List current projects on movement screening and interventions – update on website

6.5 Carolyn Emery visit to UK – engaging stakeholders and influencing policy

6.6 Workshops:

Manchester Institute for Health & Performance will be hosting workshops on football medicine and functional screening – details to follow.

Call to all members - please let us know if you have any suggestions for workshops you would like to happen / host.

6.7 Communication

- a. Infographic – information flyer to highlight movement quality work being done around the globe
- b. IMSIG Skype address

**Contact details:**

Jo Bartram – Administrator – email: [joanne.bartram@nottingham.ac.uk](mailto:joanne.bartram@nottingham.ac.uk)

**Link to IMSIG Website:**

<http://www.sportsarthritisresearchuk.org/international-movement-screening-and-interventions-group-imsig/imsig.aspx>