

**International Movement Screening and Interventions Group (IMSIG)
Ongoing Projects
15th February 2018**

1. Specific IMSIG Task Group Projects

Military Task Group

Retrospective analysis of Royal Navy (RN) data

C Power (PhD student), M Warner, M Stokes, M Heller, D Böhning, J Fallowfield (University of Southampton & Institute of Naval Medicine, UK.)

Aim: To better understand the relationship between FMS score and injury (type, severity and rate) in navy recruits.

Funded by: Southampton Maritime and Marine Institute

Scoping Review of Movement Screening in the Military

S de la Motte, P Muckelt, T Gribbin, M Stokes

Aim: conduct a survey to scope the use of movement screening tools across the military to determine types and purpose of screening used.

Funding: Arthritis Research UK Centre for Sport, Exercise & Osteoarthritis (supporting P Muckelt)

Biomechanics Task Group

The discriminating biomechanical parameters during squat-based tasks: A systematic review

M Warner, C Lewis, D Wilson, C Power, M Heller, P Carden, S Dixon, L Herrington, R Jones.

Aim: What are the biomechanical parameters during squat-based tasks that discriminate between groups and/or conditions?

Funding: Arthritis Research UK Centre for Sport, Exercise & Osteoarthritis (supporting M Warner)

Interventions & Implementation Task Group

Feasibility of warm-up exercise programmes in young recreational footballers (PhD project)

N Booyesen, M Warner, N Arden, M Stokes

Aim: To examine proof of concept for retraining of movement control and assessing the feasibility of processes key to conducting a cluster RCT in a community setting.

Funded by: National Institute for Health Research, UK

Preliminary project using Hip and Lower Limb Movement Screen (HLLMS) in people with femoroacetabular impingement (FAI)

CL Lewis, N Booyesen, L Marinko, M Stokes

Aim: Using the HLLMS, investigate the movement patterns in individuals diagnosed with FAI syndrome compared to individuals without lower extremity musculoskeletal pain. This work will progress to use an intervention informed by the HLLMS

Funded by: National Institute of Arthritis And Musculoskeletal And Skin Diseases of the National Institutes of Health

Accuracy of the hip and lower limb movement screen for documenting changes in movement quality post-exercise intervention programme (PhD project)

D Wilson, M Stokes, M Warner, C Cooper

Aim: reliability and validity of the hip and lower limb movement screen

Funded by: Arthritis Research UK Centre for Sport, Exercise and Osteoarthritis, and University of Southampton

Improving Movement Quality of Military Personnel to Protect Hips and Lower Limbs from Injury (PhD project)

C Power, M Warner, M Stokes, M Heller, D Böhning, J Fallowfield

Aim: 1) To assess whether a gender difference in movement control exists. 2) Does carrying load (absolute load and percentage of bodyweight) effect movement control? 3) Can an intervention to improve hip movement control improve movement screen scores?

Funded by: Southampton Maritime and Marine Institute

Integrating movement quality screening into clinical assessment to stratify conservative management of hip and knee OA in primary care (PhD project)

U Sheikh, D Lambrick, M Batt, M Stokes

Aim: To develop a stratified care pathway using exercise interventions for people with hip and knee osteoarthritis

Funded by: Department of Health

Reducing Injury with Training Enhancement, Targeted Rehabilitation, and Core Conditioning (RITE-TRACC)

de la Motte, SJ, T Gribbin, C Dartt, C Donahue, Z Johnson, P Deuster

Aim: Develop predictive models and evaluate changes in risk factors for musculoskeletal injury (MSK-I) and successful return to duty based on current injury history, functional movement, physical fitness, lifestyle behaviors, and psychosocial status in a training Marine population. Our secondary aim is to determine the effects of an integrated comprehensive injury prevention curriculum developed based on predictive risk factors in a training Marine population.

Funded by: Congressionally Directed Medical Research Programs (CDMRP) Clinical Research Initiative, Intramural Military Training Injuries Research Award

2. Other Relevant Projects being conducted by IMSIG Members

Initiation of Marine Physiological Assessment of Combat Training (IMPACT)/ Predicting Early Career Success in Female Marine Officers

de la Motte, SJ, C Goforth, T Gribbin, A Barrett, Z Johnson, M Silverman, P Deuster

Aim: Our overall objective is to characterize successful Marine Corps Officer graduates from The Basic School and evaluate early career outcomes. Specific factors to be studied include: psychosocial status, physical fitness and conditioning, balance and movement quality (jump-landing measure, movement screening tasks), psychological hardiness, and biochemical measures. With this knowledge, our secondary aim is to characterize early career performance in order to inform Command elements about potential strategies to change the concepts and methods surrounding optimized officer performance.

Funded by: Congressionally Directed Medical Research Programs (CDMRP) Joint Program Committee-5/Uniformed Services University Military Women's Health Research Award

Adherence in FUTSAL (indoor soccer) – qualitative study

D Reid

Aim: This is a two-stage project. First: to develop a short (approx. 10 minute) player driven warm up routine for Futsal. Secondly to measure the effectiveness via monitoring injury rates over a Futsal season.

Funded by: NZ Football and the NZ Accident Compensation Corporation

Movements Competency Screen in Collegiate Athletes: sway, electrography and movement screening:

D Reid

Aims: 1) To establish baseline MCS scores in collegiate athletes from men's and women's soccer, Baseball, and softball and to examine the difference of those scores between athletes and non-athletes. 2) To examine the effects of gender on MCS in collegiate athletes. 3) To examine sport-specific differences in MCS overall and component (upper body versus lower body versus trunk) scores in collegiate athletes. 4) To measure the relationship between static balance, functional movement tests, tissue stiffness (via elastography), and specific test scores in the MCS protocol in sport-specific athletes
Funded by: PhD Scholarship via Texas Tech University.

Qualitative screening tools in assessment of lower limb injury prediction

G. Parry, L. Herrington, R. Jones (University of Salford)

Aim: firstly, assess the reliability, validity and sensitivity of currently available qualitative screening tools for lower limb tasks. Secondly, establish normative data across gender, age groups and high risk sports, thirdly, assess discriminatory ability to identify individuals at risk of injury

Funding: Graduate teaching Assistant programme, University of Salford

Validating models of injury risk prediction in football players

F Philip, D Blana, E K Chadwick, C Stewart, C Stapleton, K major, A D Pandyan

Aims: 1) investigating the validity of the Functional Moment Screen in which, during a preseason period, participants completed the FMS alongside simultaneous capture of their performance against a 3D motion capture system. A preliminary stage to this was codification of the FMS rules and scoring criteria to allow for determination of a score based on objective kinematic measures. The FMS scoring scales performance and predictive ability, could then be evaluated and compared for all of the FMS exercise tests. 2) Develop a model based on clinical measures to facilitate clinical decision making process for prospective injury modelling.

Funding: Keele University

The Military Hip Rehabilitation Outcome (MILO) Study.

R Coppack, J Bilzon, A Wills, R Cassidy, I McCurdie, A Nicol, A Bennett.

Study 1: Randomised Controlled Trial – Intervention study.

Primary aim: To compare the effects of a 7-day residential multidisciplinary intervention, to usual outpatient care, on pain and physical function in military patients with non-arthritis intra-articular hip pain.

Study 2: Case-Control Study – Risk factors associated with cumulative occupational loading of the hip.

Primary Aim: To evaluate the risk of non-arthritis hip pain in relation to lifelong cumulative occupational physical workload in UK military personnel.

Study 3: Questionnaire Reliability Study.

Primary Aim: To assess the test-retest reliability and internal consistency of the Military Physical Loading Questionnaire (MPLQ).

Funded by: Arthritis Research UK Centre for Sport, Exercise & Osteoarthritis and UK Ministry of Defence (MOD) (supporting R Coppack). Projected completion Jun 2020

Low-Intensity Blood Flow Restriction (LI-BFR) Training in MSKI Rehabilitation: a randomised controlled trial

P Ladlow, R Coppack, S Dharm-Datta, D Conway, E Sellon, S Patterson, A Bennett

Primary aim(s): 1) To determine the feasibility of a RCT investigating LI-BFR training in a residential, multi-disciplinary treatment programme. 2) Provide preliminary data describing the within and between-group treatment effects of a LI-BFR intervention versus

conventional strength training on muscle volume, strength and functional outcomes in UK military personnel.

Funded by: UK Ministry of Defence (MOD)

Other projects will be added to this list as members send us the details

Please Contact:

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Link to IMSIG Website:

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