

## **Scapulohumeral assessment in the clinical setting: the development of a robust measurement tool**

### Background to the project

#### **Why is this area of research relevant?**

Shoulder pain and disability are highly prevalent in the general population. Alterations in movement of the scapula (shoulder blade) relative to the humerus (upper arm) (figure 1) are implicated in shoulder pathology.



Figure 1  
Posterior view of  
scapulohumeral  
complex

Typically, clinicians will observe scapulohumeral movement (SHM) in their patients and use descriptive terms to describe what is observed.

#### **What is the problem?**

There is inconsistency with how clinicians describe and record SHM – this limits inter/intra Professional communication and continuity of care.

The use of visual observation and descriptive terms means that the objectivity and repeatability of the current measurement approach is very limited.

#### **What are the aims?**

- (i)** To develop a unified approach to *describing* SHM.
- (ii)** To develop a clinically applicable approach to *recording* SHM in an objective and reproducible manner.
- (iii)** To engage the clinical community in the subsequent development and use of a robust measurement tool for assessing SHM.

### Methodology and Impact

#### **(i) Descriptive terminology**

A review of the published scapulohumeral literature since 2000 was undertaken. From the 161 full articles that were identified as relevant, a comprehensive list of descriptive terms were compiled.

#### **(ii) Video recording of scapulohumeral movement**

NHS ethical approval has been granted for the video recording of SHM patterns from patients with shoulder pain.

#### **(iii) Creation of an online community**

The Cardiff Interactive Shoulder Movement Alliance (CISMA) has been launched ([www.cisma.org.uk](http://www.cisma.org.uk)).



This website enables the clinical community to participate in all stages of the measurement tool development:

- Online questionnaire relating to the SHM descriptive terms, which were derived from the review of the literature.
- Online viewing of shoulder patient SHM videos.
- Establishing a consensus regarding SHM descriptive terms and video examples of these terms.
- Ongoing refinement and testing of the measurement tool.
- A freely available online resource for the education of Professionals who assess shoulder pain patients.

#### **The involvement of the clinical community means that:**

- The clinical relevance of the resulting measurement approach is optimised.
- The clinical community are more likely to use a measurement approach whose development they have contributed to.

### Dissemination

#### **Dissemination to date**

1 podium and 1 poster presentation at clinical conferences; each generating published abstracts in peer reviewed journals.

Over 100 clinicians from around the UK signed up to [www.cisma.org.uk](http://www.cisma.org.uk)

#### **Future dissemination**

Manuscript submissions to peer reviewed journals regarding: (i) scapulohumeral literature review data, (ii) SHM terminology questionnaire data, (iii) resulting SHM measurement tool.

Clinical conference presentations and Professional journal articles to publicise the measurement tool.

### Research capacity building

#### **Research team**

Creation of an academic and clinical research team. This comprises an academic lead (MS), academic supervisors (RvD and VS), specialist IT support and 3 expert shoulder clinicians across various clinical locations in South Wales.

#### **Information technology**

The CISMA website and the members of the Cardiff Interactive Shoulder Movement Alliance provide a forum for ongoing research collaboration.

The bespoke online questionnaire contains "logic" which enables it to adapt according to a respondent's actions. This will provide a template for future interactive questionnaires.

#### **First into Research Award recipient**

The First into Research award has provided MS with experience of undertaking a complex, multi-faceted research project. This includes successfully navigating the NHS ethics process, development and use of online tools, project management across institutions and communicating with a diverse research team.