**SHOULDER REHABILITATION: WHAT’S NEW FROM A SCIENTIFIC AND CLINICAL POINT OF VIEW?**

**Level I**

ANN COOLS, PT, PhD

1. **GENERAL COURSE GOALS AND CONTENT**

The goal of this 2-day shoulder course is to update knowledge and practical skills with respect to shoulder rehabilitation, debating the most common shoulder disorders like rotator cuff disorders, traumatic and atraumatic instability, shoulder stiffness, the involvement of the scapula, sportspecific shoulder pain etc…The theoretical background is updated based on recent literature and immediately applied into the practice. New insights as well as points of debate are presented and discussed in an interactive manner. We perform clinical examination based on evidence based practice principles, including scientific evidence and clinical expertise. Several approaches of clinical examination are critically discussed. During the rehabilitation part of this course, general clinical reasoning principles, as well as specific therapeutic indications are discussed and put into practice during interactive workshops, in which all demonstrated and discussed exercises and additional modalities are performed and experienced.

This 2- day course consists of theoretical background sessions (30%), critical interactive discussions (20%) and practical sessions (50%). The target public is physiotherapists with a special interest for shoulder rehabilitation. Novice as well as experienced physiotherapists have the opportunity to update their knowledge and skills. General insights in shoulder anatomy, biomechanics, including pathomechanical injury mechanisms, are assumed to be acquired.

1. **GOALS AND COMPETENCES TO ACHIEVE**

After completion of this course, the participant will have reached the following competences:

* The participant has updated **insights** in the most common **disorders** of the shoulder girdle, including rotator cuff tendinopathy, rotator cuff tears, traumatic, atraumatic and acquired shoulder instability, , scapular dyskinesis, the sporting shoulder and throwing related shoulder pain.
* The participant can apply clinical reasoning principles and algorithms for the functional **clinical examination** of the shoulder girdle
* The participant can apply clinical reasoning principles and algorithms for the **treatment** of the most common shoulder pathologies
* The participant can **conceptualize, organize, perform, critically reflect, and remediate** a progressive treatment program for the patient with shoulder pain
* The participant performs all skills and exercises, comprised in the course, during the **practical sessions** of the course
* The participant can **critically discuss** examination and treatment principles with the course teacher and his peers during the interactive sessions.
* the participant can integrate **recent scientific knowledge** (provided by scientific papers) into the clinical reasoning process of shoulder examination and rehabilitation
1. **COURSE PROGRAM AND TIME-TABLE**

**DAY 1**:

9-10.30h: THEORY PART 1:
From impingement symptoms towards the underlying pathology and impairments: critical discussion with respect to the traditional labelling of shoulder pain into “impingement”, moving towards a moren function-based classification, update scientific literature and critical papers. Discussion regarding rotator cuff dysfunction, tendinopathy, degenerative RC tears, and muscular imbalance. Shoulder instability: differential diagnosis and approach for the 3 most common types of instability: traumatic dislocation, overload functional instability in the overhead athlete, atraumatic multidirectional instability based on generalized hyperlaxity. Biceps related pathology: disorders of the long head of the biceps and SLAP lesions as biceps related labral pathology.

10.30-11h: Break

11-12.30h: THEORY PART 2
Glenohumeral ROM deficits in the overhead athlete and its relation to overuse shoulder pain. the role of the scapula in shoulder pain, biomechanical and clinical perspectives. The theoretical session ends with a critical interactive discussion on the possible causes of shoulder pain, including central sensitization, kinetic chain disorders and psychosocial factors.

12.30-13.30h: break

13.30-15h: CLINICAL EXAMINATION PART 1

Clinical reasoning in the assessment of the patient, using science-based clinical reasoning algorithms. Symptom provocation and reduction tests, traditional orthopedic tests, including critical discussion with respect to the interpretation. Case-based interpretation of clinical examination during interactive practical session.

15-15.30: break

15.30-17h: CLINICAL EXAMINATION PART 2

Continued. At the end of this session, participants are able to share their personal experience and expertise in a peer-learning moment.

**DAY 2**:

9-10.30: REHABILITATION PART 1: ROTATOR CUFF

Scientific background for the conservative treatment of rotator cuff tendinopathy and muscular imbalances, scientific rationale for exercise choice, practical session.

10.30-11h: break

11-12.30: REHABILITATION PART 2: SHOULDER INSTABILITY

Specific exercises for shoulder instability, exercises for local neuromuscular control, closed chain exercises in progression (algorithm + practice), differential approach based on instability-type, scientific rationale for kinetic chain exercises, sportspecific approach including throwing exercises, exercises for swimmers, practical session.

12.30-13.30h: break

13.30-15h: REHABILITATION PART 3: MOBILISATION TECHNIQUES

Angular stretching and non-angular joint mobilization techniques, home stretching program, mobilization with movement techniques for the shoulder with posterior shoulder stiffness. Principles of mobilization techniques applied to frozen shoulder contracture. Practical session.

15.15.30h: break

15.30-17h: REHABILITATION PART 4: SCAPULAR REHABILITATION

Clinical reasoning algorithm for scapular rehab, specific exercise selection for muscular imbalance and progression, scientific rationale for exercise selection, soft tissue techniques for pectoralis minor treatment

1. **COURSE PREPARATION**
	1. the participant has to update his knowledge on basic anatomy and kinesiology of the shoulder girdle, and on the kinematics of the throwing shoulder (phases of throwing, joint positions and possible threats to injury, muscle activity patterns). Additionally, the participant needs to have basic knowledge on the most common shoulder disorders, namely rotator cuff tendinopathy, degenerative tears, instability, biceps pathology, SLAP lesions, frozen shoulder, scapular disorders.
	2. It is advised that the forwarded literature (scientific papers) is read prior to the start of the course. The papers will be used during the course in a clinically relevant application, while critically interpreted.
	3. the participant should critically reflect on his/her own clinical reasoning for shoulder examination and rehabilitation.
2. **PROFILE OF INSTRUCTOR**

Ann Cools is a physiotherapist, working as an associate professor at the Department of Rehabilitation Sciences and Physiotherapy at the Ghent University, Belgium. Her topic of research and teaching expertise, is shoulder rehabilitation in general, and sport specific approach and scapular involvement in particular. Besides her academic work, she runs a shoulder clinic in a private practice. She finished her PhD in 2003, debating scapular involvement in sports related shoulder pain in the overhead athlete, and she has published numerous papers in peer-reviewed international journals, wrote contributions and chapters in several international recognized books, and gives courses on a national and international level. She was head of the Physical Therapy Education at the Ghent University 2008-2016, and was founding member and president of the European Society of Shoulder and Elbow Rehabilitation (EUSSER) 2008-2012. Since 2016, she is also affiliated as senior researcher to the Department of Physiotherapy of the Bispebjerg Hospital and the Department of Sports Medicine, University of Copenhagen, Denmark. She is currently a member of the Board of the International Congress of Shoulder and Elbow Therapists, organizing the 3-annual world congress for shoulder and elbow therapists, and is founding board member of the Flemish Shoulder Network.

1. **COURSE MATERIAL PROVIDED BY THE ORGANIZER**

**Handouts** (pdf-2slides/page) will be sent to the organizer prior to the course for printing purposes. In addition background literature is provided (pdf – scientific papers). these should be forwarded to the participants (no print needed), prior to the course.

For this course the following **exercise/treatment equipment** is needed (provided by the course organizer or the participant):

* 1 treatment bench/2 persons
* Elastic band or elastic tubing
* Dumbbells from ½ to 3 kg
* Plyoballs from ½ to 3 kg
* Swiss balls and small balls (no weight)
* If possible bosu ball, Xco
1. **RESEARCH PAPERS**

Consist of both **clinical** papers (clinical commentaries, invited narrative reviews, state of the art..) and **academic** systematic reviews for all topics discussed in the course. Literature is provided together with the handouts