22nd EULAR Sonography Course
Intermediate and Advanced
Musculoskeletal Ultrasound (MSUS) in Rheumatology

7 – 10 June 2015, Rome, Italy
Scientific organiser
Annamaria Iagnocco

Local organiser
Georgios Filippou

Local organizing team
Antonella Adinolfi, Marco Antonelli, Ilaria Bertoldi, Marco Canzoni, Valentina Di Sabatino, Valentina Picerno

Venue
Mercure Roma West Hotel (Four Points by Sheraton Roma West Hotel) Viale Degli Eroi di Cefalonia 301, Rome, Italy

Course opening
The course opens on Sunday, 7 June 2015 at 12.30 13.00

Course closing
The course finishes on Wednesday, 10 June 2015 at 13.00

Participants
- 120 in total
- The number of participants is limited per course
  - Intermediate course: 60 participants
  - Advanced course: 60 participants

Official language
English

Structure
The 22nd EULAR Sonography Course will be run simultaneously at two levels, intermediate and advanced, each of them being a combination of lectures and hands-on scanning of models and/or patients with musculoskeletal disorders in small groups with experienced tutors. The course has been designed following the recommendations for the content and conduct of EULAR musculoskeletal ultrasound courses (Naredo E, Bijlsma JWJ, et al. Ann Rheum Dis 2008; 67:1017-1022).

Faculty
Peter Balint, Hungary; Michael Benjamin, UK; David Bong, Spain; Jose Antonio Bouffard, USA; George AW Bruyn, The Netherlands; Paz Collado, Spain; Maria Antonietta D’Agostino, France; Nemanja Damjanov, Serbia; Andrea Delle Sedie, Italy; Georgios Filippou, Italy; Emilio Filippucci, Italy; Walter Grassi, Italy; Hilde Berner Hammer, Norway; Annamaria Iagnocco, Italy; Sandrine Jousse-Joulin, France; David Kane, Ireland; Juhani M Koski, Finland; Tore Kvien, Norway; Peter Mandl, Austria; Ingrid Möller, Spain; Esperanza Naredo, Spain; Jordi Palau, Spain; Wolfgang Schmidt, Germany; Nanno Swen, The Netherlands; Marcin Szkudlarek, Denmark; Lene Terslev, Denmark; Jelena Vojinovic, Serbia; Richard J Wakefield, UK; Ximena Wortsman, Chile
Hands on tutors
Adham Aboul Fotouh Khalil, Egypt; Artur Bachta, Poland; Fulvia Ceccarelli, Italy; Dana Fodor, Romania; Frédérique Gandjbakhch, France; Giasna G. Kakavouli, Greece; Zunaid Karim, UK; Mihaela Micu, Romania; Rodina Nestorova, Bulgaria; Sarah Ohrndorf, Germany; Carlo Perricone, Italy; Francesco Porta, Italy; Johannes Roth, Canada; Giarfalia Sakellariou, Italy; Carlo Alberto Scirià, Italy; Porin Peric, Croatia; Goran Radunovic, Serbia; Giorgio Tambroni, Switzerland; Violeta Vlad, Romania

The courses
Please note that in order to be able to successfully register for course attendance, certain requirements are mandatory, depending on the desired course. Please refer to "the evaluation procedure of the competency assessment"

The INTERMEDIATE COURSE will focus on a wide spectrum of rheumatologic pathologies. Previous performance of >100 musculoskeletal ultrasound scans and attendance at a basic musculoskeletal ultrasound course (either EULAR or National Course) is recommended before participating in an intermediate-level course.

Learning objectives
- To know the Doppler physics, technology and artefacts
- To know the application, indications and limitations of Doppler in rheumatology
- To optimize Doppler settings
- To use colour and power Doppler to detect synovial and entheseal inflammation
- To detect structural joint damage (i.e. bone, tendons, cartilage)
- To perform sonographic-guided periarticular and articular injections
- To identify the spectrum of musculoskeletal abnormalities in each anatomic area (e.g. joint synovitis, tenosynovitis, enthesopathy/enthesitis, tendinosis/tendinitis, paratendonitis, dactylitis, tendon luxation, tendon impingement, tendon tears, bone erosions, osteophytes, ganglia and cysts, articular cartilage lesions, peri- and intra-articular microcrystal deposit, soft tissue calcifications)
- To know the role of musculoskeletal ultrasound in paediatrics

The ADVANCED COURSE will focus on more complex, “difficult” or uncommon pathologies, newer technological developments, pathological findings in other musculoskeletal fields such as nerve, ligament, and muscle lesions and research related aspects of musculoskeletal ultrasound. It will include paediatrics, vasculitis and sport related lesions. Previous performance of > 300 musculoskeletal ultrasound scans and attendance at an intermediate musculoskeletal ultrasound course (either EULAR or National Course) is recommended before participating in an advanced-level course.

Learning objectives
- To assess and score synovial, tenosynovial and entheseal inflammatory activity
- To assess and score structural joint damage (i.e. bone, tendons, cartilage)
- To perform sonographic-guided complex musculoskeletal interventional procedures
- To know the role of ultrasound in extra-articular rheumatic diseases (e.g. salivary glands, skin, and lung involvement)
- To know the role of ultrasound in vasculitis and other vessel pathologies (e.g. atherosclerosis, thrombosis)
- To learn musculoskeletal ultrasound anatomy and pathological findings in paediatric rheumatic diseases
- To know and acquire hands-on experience with new technological developments in rheumatological ultrasound (e.g. 3D ultrasound, fusion imaging, sonoelastography)
- To detect uncommon sonographic pathological findings in rheumatology
- To detect peripheral nerve, ligament, and fibrocartilage lesions, myositis, muscle injury, soft tissue masses, loose bodies, foreign bodies, and bone fractures
- To update evidence-based knowledge and emerging research fields on musculoskeletal ultrasound in rheumatology
- To learn how to write a paper on musculoskeletal ultrasound in rheumatology
Courses certification
A certificate of attendance and competency assessment will be supplied

Courses evaluation
You will be asked to evaluate the courses with respect to educational content, organisation and venue. It is mandatory to fill out the online survey.

Registration fee
1800 € (VAT included) including:

Sunday, 7 June 2015
• Full access to the 22nd EULAR Sonography Course
• 1 night accommodation at the Mercure Roma West hotel in single room, breakfast included
• Afternoon coffee break
• Dinner

Monday, 8 June 2015
• Full access to the 22nd EULAR Sonography Course
• 1 night accommodation at the Mercure Roma West hotel in single room, breakfast included
• Morning & Afternoon coffee breaks
• Lunch & Dinner

Tuesday, 9 June 2015
• Full access to the 22nd EULAR Sonography Course
• 1 night accommodation at the Mercure Roma West hotel in single room, breakfast included
• Morning & Afternoon coffee breaks
• Lunch & Dinner

Wednesday, 10 June 2015
• Full access to the 22nd EULAR Sonography Course
• Morning coffee break

*For local participants without hotel accommodation (upon request): 1700 € (VAT included)*
Intermediate course - Programme

Sunday, 7 June 2015

12.30-14.30  **Registration**
14.30-14.50  Welcome – Professor *M. Cutolo* (EULAR President), *A. Iagnocco*  
Chairs  *W. Grassi, J. Koski*
14.50-15.20  Doppler physics, technology and artefacts. Doppler setting optimization - *P. Mandl*  
Live demo - *M. Szkudlarek*
15.20-15.50  Application, indications and limitations of Doppler in rheumatology – *N. Swen*
15.50-16.10  Which is the most appropriate ultrasound equipment for rheumatological applications? – *W. Grassi*
16.10-16.30  Colour Doppler and power Doppler. Correlations between US imaging and hystopathological findings – *J. Koski*
16.30-17.00  **Coffee break**
17.00-18.30  Workshop. Supervised practical scanning of the different Doppler modalities. How to use and set the ultrasound equipment. The choice of the appropriate probe. Optimisation of Doppler settings. PDUS artefacts – *Faculty and tutors*
20.00  **Dinner**

Monday, 8 June 2015

Chairs  *G.Bruyn, P. Balint*
08.30-08.50  B-mode and Doppler synovitis. Definition, detection and pitfalls – *M. Szkudlarek*
08.50-09.10  B-mode and Doppler tenosynovitis. Definition, detection and pitfalls – *G. Bruyn*
09.10-09.30  B-mode and Doppler enthesopathy and enthesitis. Definition, detection and pitfalls – *P. Balint*
09.30-09.50  B-mode and Doppler tendinosis and tendon tear. Definition, detection and pitfalls – *N. Swen*
09.50-10.10  US bone abnormalities. Definition, detection and pitfalls – *M. Szkudlarek*
10.10-10.30  US cartilage abnormalities. Definition, detection and pitfalls – *W. Grassi*
10.30-11.00  **Coffee break**
11.00-13.00  Workshop. Supervised hands-on scanning of patients with synovitis and tenosynovitis, enthesopathy/ enthesis, tendinosis and tendon tear, bone and cartilage abnormalities
13.00-14.30  **Lunch**
Chairs  *R. Wakefield, N. Damjanov*
14.30-15.10  US diagnosis of ankle and foot pathology – *L. Terslev*  
Live demo – *R. Wakefield*
15.10-15.50  US diagnosis of knee pathology – *N. Damjanov*
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| 15.50-16.30 | Live demo – **P. Balint**  
US diagnosis of hip pathology – **P. Mandl**  
Live demo – **J. Koski** |
| 16.30-17.00 | **Coffee break**                                                             |
| 17.00-18.30 | Workshop. Supervised hands-on scanning of patients with lower extremity pathology |
| 20.00    | **Dinner**                                                                      |

**Tuesday, 9 June 2015**

**Chairs**  
**N. Swen, S. Jousse-Joulin**

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| 08.30-09.10 | US diagnosis of wrist and hand pathology – **S. Jousse-Joulin**  
Live demo – **M. Szkudlarek** |
| 09.10-09.50 | US diagnosis of elbow pathology – **G. Bruyn**  
Live demo – **H.B. Hammer** |
| 09.50-10.30 | US diagnosis of shoulder pathology – **D. Kane**  
Live demo – **N. Swen** |
| 10.30-11.00 | **Coffee break**                                                             |
| 11.00-13.00 | Workshop. Supervised hands-on scanning of patients with upper extremity pathology |
| 13.00-14.30 | **Lunch**                                                                      |

**Chairs**  
**I. Möller, D. Bong**

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<tr>
<td>14.30-15.00</td>
<td>General principles of anatomy as seen in the limbs – <strong>M. Benjamin</strong></td>
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<tr>
<td>15.00-15.30</td>
<td>Functional anatomy of tendons, entheses, ligaments and associated structures – <strong>M. Benjamin</strong></td>
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| 15.30-16.00 | US examination of the extremities: A systematic approach to the muscles of the limbs – **I. Möller**  
Live demo – **D. Bong** |
| 16.00-16.30 | US pathology of ligaments, fibrocartilage and muscles – **J. Palau**  
Live demo – **P. Balint** |
| 16.30-17.00 | **Coffee break**                                                             |
| 17.00-17.30 | A different sonoanatomical approach to the rotator cuff and the clinical relevance of the US evaluation – **I. Möller** |
| 17.30-19.00 | Workshop. Supervised hands-on scanning of tendons, ligaments, fibrocartilage, muscle and associated structures |
| 20.00    | **Dinner**                                                                      |
Wednesday, 10 June 2015

Chairs

**H.B. Hammer, P. Collado**

09.00-09.30 MSUS in paediatrics. Normal and pathological findings – **P. Collado**

09.30-10.30 Sonographic-guided periarticular and articular injections – **D. Kane**

Live demo – **H.B. Hammer**

10.30-11.00 **Coffee break**

11.00-12.15 Workshop. Supervised sonographic-guided injections

12.15-12.30 Closing remarks

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Advanced course - Programme

Sunday, 7 June 2015

12.30-14.30 **Registration**

14.30-14.45 Welcome – Professor **M. Cutolo** (EULAR President), **A. Iagnocco**

Chairs

**D. Kane, H.B. Hammer**

14.45-15.20 Principles of anatomy for medical imaging – **M. Benjamin**

15.20-15.55 Functional anatomy of muscles, entheses, tendons, ligaments and associated structures – **M. Benjamin**

15.55-16.30 US diagnosis of tendons, ligaments, muscles and bone traumatic lesions – **J. Palau**

16.30-17.00 **Coffee break**

17.00-17.45 Functional anatomy of peripheral nerves and US diagnosis of peripheral nerve lesions – **D. Bong**

Live Demo – **J. Palau**

17.45-18.45 Workshop. Supervised hands-on scanning of tendons, ligaments, fibrocartilage, muscle, nerves and associated structures

20.00 **Dinner**

Monday, 8 June 2015

Chairs

**E. Filippucci, D. Kane**

08.30-09.00 Validation and scoring of synovial, tenosynovial and enthesal inflammation – **D. Kane**

09.00-09.30 Validation and scoring of bone and cartilage lesions – **E. Filippucci**

09.30-10.00 MSUS anatomy and scanning in paediatrics – **P. Collado**

10.00-10.30 MSUS in paediatric rheumatic diseases – **J. Vojinovic**

10.30-11.00 **Coffee break**

11.00-13.00 Workshop. Supervised hands-on scanning of inflammatory and structural lesions
13.00-14.30  Lunch  
Chairs  
W. Schmidt, S. Jousse-Joulin  
14.30-15.00  Role of ultrasound in vasculitis and other vessel pathologies – W. Schmidt  
15.30-16.00  US of skin and subcutaneous lesions in rheumatic diseases – X. Wortsman  
16.00-16.30  Elastography of the skin and salivary glands in rheumatic diseases – A. Iagnocco  
16.30-17.00  Coffee break  
17.00-18.30  Workshop. Supervised hands-on scanning of skin, salivary glands and vessels  
20.00  Dinner  

Tuesday, 9 June 2015  
Chairs  
I. Moller, W. Schmidt  
08.30-08.50  Complex anatomic areas and difficult US diagnosis in the shoulder – J.A. Bouffard  
Live Demo – I. Moller  
08.50-09.10  Complex anatomic areas and difficult US diagnosis in the elbow – I. Moller  
Live Demo – J. Palau  
09.10-09.30  Complex anatomic areas and difficult US diagnosis in the wrist and hand – J. Palau  
Live Demo – I. Moller  
09.30-09.50  Complex anatomic areas and difficult US diagnosis in the hip and sacroiliac region – D. Bong  
Live Demo – I. Moller  
09.50-10.10  Complex anatomic areas and difficult US diagnosis in the knee – E. Filippucci  
Live Demo – W. Schmidt  
10.10-10.30  Complex anatomic areas and difficult US diagnosis in the ankle and foot – W. Schmidt  
Live Demo – E. Filippucci  
10.30-11.00  Coffee break  
11.00-13.00  Workshop. Supervised hands-on scanning of complex anatomic areas  
13.00-14.30  Lunch  
Chairs  
A. Iagnocco, M.A. D’agostino  
14.30-14.50  Evidence-based role of US in rheumatoid arthritis and research agenda – E. Naredo  
14.50-15.10  Evidence-based role of US in spondyloarthritis and research agenda – M.A. D’agostino  
15.10-15.30  Evidence-based role of US in osteoarthritis and research agenda – A. Iagnocco  
15.30-15.50  How to write a scientific paper – T. Kvien  
15.50-16.10  How to write a scientific paper on US in rheumatic diseases – M.A. D’agostino  
16.10-16.40  Coffee break
16.40-17.10  US in microcrystal diseases: gout – L. Terslev
17.10-17.40  US in microcrystal diseases: CPDD – G. Filippou
17.40-18.10  New technological developments in US. Validity and role in rheumatology – W. Grassi
18.10-19.30  Workshop. Supervised hands-on scanning on new tools (3D ultrasound, fusion imaging, elastography)
20.00        Dinner

Wednesday, 10 June 2015

08.30-10.30  Competency assessment
10.30-11.00  Coffee break
Chair        J. Koski
11.00-11.20  Sonographic guided complex interventional procedures – J. Koski
             Live demo – J. A. Bouffard
11.20-12.15  Workshop. Supervised sonographic guided complex procedures
12.15-12.30  Closing remarks

Organising secretariat
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