



General information and Course programme of the

**5th MUSCULOSKELETAL SONOGRAPHY COURSE FOR RHEUMATOLOGISTS  
-BASIC LEVEL-**

**3rd MUSCULOSKELETAL SONOGRAPHY COURSE FOR RHEUMATOLOGISTS  
-INTERMEDIATE LEVEL-**

Zagreb, March 30<sup>th</sup> – April 1<sup>st</sup>, 2023.



This course is endorsed by **EULAR**

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EUROPEAN ALLIANCE  
OF ASSOCIATIONS  
FOR RHEUMATOLOGY



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## ORGANIZATION AND COMMITTEE

### Scientific Director

Prof. Annamaria Iagnocco

### Executive director of the Course

Prof. Porin Perić, MD, PHD

### Faculty

The speakers will come from major European musculo-skeletal ultrasound research centers and are rheumatologists mostly involved in previous EULAR courses. The contacted faculty is:

**Peter Balint, Hungary; Nemanja Damjanov, Serbia; Christian Dejaco, Italy; Annamaria Iagnocco, Italy; Zunaid Karim, UK; Nadica Laktašić Žerjavić, Croatia; Mihaela Micu, Romania; Francesco Porta, Italy; Porin Perić, Croatia; Goran Radunović, Serbia; Wolfgang Schmidt, Germany; Violeta Vlad, Romania**

### Instructors

**Mislav Cerovec, Croatia; Darija Granec, Croatia; Tatjana Kehler, Croatia; Kristina Kovač, Croatia; Nadica Laktašić-Žerjavić, Croatia; Miroslav Mayer, Croatia; Mihaela Micu, Romania; Francesco Porta, Italy; Porin Perić, Croatia; Goran Radunović, Serbia; Violeta Vlad, Romania**

## GENERAL INFORMATION

**Course opening** Thursday, March 30<sup>th</sup>, 2023. - h 12 00

**Participants**  
The number of participants is limited to 30.

**Course closing** Saturday, April 1<sup>st</sup>, 2023.- h 15 00

**Official language**  
English

**Congress Venue:** **Hotel Sheraton**, Kneza Borne 2, 10000 Zagreb, Croatia

**Reservations:** phone: +385 1 48 111 55, Fax: +385 1 48 189 14, E-mail: zagreb@atlantis-travel.hr, www.atlantis-travel.hr

**Scientific Organizer: Prof. Annamaria Iagnocco, Professor of Rheumatology**, Dipartimento Scienze Cliniche e Biologiche – Università degli Studi di Torino Turin, Italy

**Executive director of the Course: Porin Perić, MD, PHD, Professor**, Department of Rheumatology, Clinical Hospital Center, Zagreb, Kišpatićeva 12, 10000 Zagreb, Croatia, e-mail: porin.peric@gmail.com

**Organizing Secretariat: Croatian Society for Rheumatology**  
Šubićeva 9, 10000 Zagreb, Croatia  
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**Institutional  
Organizer:**

Clinical Hospital  
Center Zagreb,  
Department of  
Rheumatology,  
University of  
Zagreb, Croatia.

**Scientific  
Indorsement:**

European League  
Against Rheumatism  
(EULAR)  
Croatian Medical  
Association  
Croatian Society for  
Rheumatology

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**Musculoskeletal sonography course for rheumatologists, Zagreb 2020** is intended to be a combination of lectures and practical sessions. The course is consisted of theoretical talks and supervised hands-on scanning of healthy persons and/or patients with musculoskeletal disorders.

**Sponsorship:** Abbvie, Canon, Esaote, Fresenius Kabi, GE, Lilly, Medis, MSD, Novartis, Pfizer, Philips, Sandoz.  
Esaote, Phillips, Canon and GE will provide ultrasound equipment free of charge. Sponsors will not have any influence on the course programme, scientific and other content, or speakers in any way.

The Course is in a proces of CME accreditation at the Croatian Ministry of Health.

Registration is intended to be opened for all EULAR member countries.

Formal evaluation of the course will be performed by all attendees at the end of the Course.

Registration fee: **1.000,00 EUR** per person ( three days course). Food and accomodation are included in the price.

The number of participants will be 30 people.

**OBJECTIVES**

- To learn technical characteristics and setting of ultrasound equipments for rheumatology
- To learn basic normal musculoskeletal ultrasonographic anatomy (MSUS)
- To learn basic pathological MSUS findings
- To learn the systematic standardized sonographic scanning method of each anatomical region, according to the EULAR guidelines
- Applications, indications and limitations of MSUS in rheumatology
- Image documentation
- Basics of Colour and Power Doppler application to detect synovial and entheseal inflammation

**MAIN TOPICS**

- Ultrasound physics and technology, technical characteristics of ultrasound equipments in rheumatology, applications, indications and limitations of MSUS
- MSUS anatomy, artefacts and misinterpretation in MSUS
- Standardized sonographic scanning method of each anatomical region (shoulder, elbow, wrist and hand, hip, knee, ankle and foot) according to the EULAR guidelines

- Basic pathological sonographic findings ( tendinosis, tenosynovitis, partial and complete tendon tear, entesopathy, bursitis, calcifications, articular cartilage lesions, cortical abnormalities and joint synovitis).
- Reporting US findings and diagnosis

**WORKSHOP**

- Practical handling of the ultrasound system settings
- Supervised identification of musculoskeletal sonoanatomy
- Supervised standardized sonographic scanning of the shoulder, elbow, wrist and hand, hip, knee, ankle and foot
- Supervised hands-on scanning of patients with basic musculoskeletal lesions
- Supervised assesment of the basic somographic symptoms or inflammation severity in grades

**TIMETABLE**

- Musculoskeletal Sonography Course for Rheumatologists, Basic Level, consists of 20 hours of activities within 3 days (lectures: 30% of total time; practical training on models and/or patients with musculoskeletal disorders : 70%)

# SCIENTIFIC PROGRAMME

Thursday, March 30<sup>th</sup>, 2023.

TIME	PROGRAMME
12:00 - 14:00	<b>Registration</b>
12:00 - 13:30	<b>Lunch</b>
14:00 - 14:15	<b>Welcome A. Iagnocco, B. Anić, P. Perić</b>
14:15 - 14:30	<b>Entering test of knowledge</b>
<b>Chairpersons: P. Balint, P. Perić</b>	
14:30 - 15:00	History and basic physics of MSUS. <b>C. Dejaco</b>
15:00 - 15:20	<b>Coffee break</b>
15:20 - 16:00	Normal tissue and joint anatomy. US and correlative gross anatomy and histology. <b>P. Balint</b>

TIME	PROGRAMME
16:00 - 16:25	Artifacts and misinterpretation in MSUS. <b>P. Balint</b>
16:25 - 16:50	Technical characteristics and setting of ultrasound equipments for rheumatology. <b>A. Iagnocco</b>
16:50 - 17:10	<b>Coffee break</b>
17:10 - 18:40	<b>Workshop:</b> Supervised practical handling of the ultrasound machine settings. Normal MSUS anatomy.
<b>Chairpersons: F.Porta, P.Perić</b>	
18:40 - 19:10	Reporting ultrasound findings and diagnosis. <b>F. Porta</b>
19:10 - 20:30	<b>Workshop:</b> Supervised reporting of ultrasound findings and diagnosis
20:30	<b>Dinner</b>

Friday, March 31<sup>st</sup> 2023.

TIME	PROGRAMME
<b>Chairpersons: T.Kehler, N.Damjanov</b>	
09:00 - 09:40	Sonographic semiology (tendinosis, tenosynovitis, partial and complete tendon tear, entesopathy, bursitis, calcifications, articular cartilage lesions, cortical abnormalities and joint synovitis). <b>N. Damjanov</b>
09:40 - 10:20	Enthesitis and enthesopathy. V.Vlad
10:20 - 10:40	<b>Coffee break</b>
10:40 - 11:10	Standardized scanning of the hip: normal and basic pathologic findings. <b>M. Micu</b>
11:10 - 12:30	<b>Workshop:</b> Supervised scanning technique of hip. Normal and basic pathological findings
12:30 - 13:00	Standardized scanning of the knee: normal and basic pathological findings <b>Z. Karim</b>

TIME	PROGRAMME
13:00 - 14:20	<b>Workshop:</b> Supervised scanning technique of knee. Normal and basic pathological findings
14:20 - 15:30	<b>Lunch</b>
<b>Chairpersons: W. Schmidt, P. Perić</b>	
15:30 - 15:50	Standardized scanning of the shoulder: normal and basic pathological findings. <b>W.Schmidt</b>
15:50 - 18:00	<b>Workshop:</b> Supervised scanning technique of shoulder. Normal and basic pathological findings
20:00	<b>Dinner</b>



Saturday, April 1 <sup>st</sup> 2023.	
TIME	PROGRAMME
<b>Chairpersons: N. Laktašić-Žerjavić, P. Perić</b>	
09:00 - 09:20	Standardized scanning of the wrist and hand: normal and basic pathological findings. <b>P.Perić</b>
09:20 - 09:40	Standardized scanning of the elbow: normal and basic pathological findings. <b>N.Laktašić-Žerjavić</b>
09:40 - 11:00	<b>Workshop:</b> Supervised scanning technique of wrist and hand Normal and basic pathological findings
11:00 - 12:00	<b>Workshop:</b> Supervised scanning technique of wrist and hand Normal and basic pathological findings
12:00 - 12:20	<b>Coffee break</b>
12:20 - 12:40	Standardized scanning of the ankle and foot: normal and basic pathological findings. <b>G.Radunović</b>

TIME	PROGRAMME
12:40 - 13:30	<b>Workshop:</b> Supervised scanning technique of ankle and feet. Normal and basic pathological findings.
13:30 - 14:00	Test of knowledge
14:00 - 15:00	<b>Lunch and certificate issuing</b>

**OBJECTIVES**

- To review the systematic standardized sonographic scanning method of each anatomical region, according to the EULAR guidelines
- To learn colour and power Doppler physics, application, indications and limitations
- To learn definition, ultrasound presentation and quantification of synovitis, synovial hypertrophy, effusion, erosion, tendinopathy, tenosynovitis, entesitis and degenerative lesions
- To assess, quantify and/or score joint lesions
- To learn basic skills to perform sonographic-guided musculoskeletal injections
- To understand the role of musculoskeletal US in clinical and research practice

**MAIN TOPICS**

- Role of colour and power Doppler in rheumatology
- Colour and power Doppler physics and technology
- Applications, indication and limitations of colour and power Doppler in rheumatology
- Use of the colour and power Doppler settings colour and power Doppler artefacts
- Ultrasound presentation of synovitis, effusion, erosions, tendinopathies, tenosynovitis, entesitis and degenerative lesions
- Use of colour and power Doppler to detect synovial and enthesal inflammation

- Assessment and quantification of structural joint damage (bone, tendons, ligaments)
- Role of ultrasound in diagnosis and monitoring of metabolic arthritis
- Role of ultrasound in assessment of skin
- Role of ultrasound in monitoring patients with inflammatory joint diseases
- Sonographic-guided periarticular and articular injections

**INTERMEDIATE COURSE PATHOLOGIES**

- Joint synovitis, synovial hypertrophy, tenosynovitis
- Tendon calcification, enthesopathy, tendinosis, paratenonitis
- Tendon subluxation/luxation Intrastance tendon lesions, tendon impingement
- Complete tendon tear, partial tendon tear
- Bone erosions, osteophytes
- Ganglia and cysts
- Articular cartilage lesions, peri- and intra-articular microcrystal deposit
- Ligament, muscle, cartilage, fibrocartilage and synovial calcification

**WORKSHOP**

- Practical handling of the ultrasound machine settings and use of colour and power Doppler technology
- Supervised scanning of the patients with inflammatory and degenerative joint disease focused on detection of synovitis, effusion, erosions, tendinopathies, tenosynovitis, entesitis and degenerative lesions.
- Supervised basic sonographic-guided musculoskeletal injections

**EULAR Competency Assessment system for the MSUS intermediate courses**, which consists of the following requirements:

- Participants should have attended the EULAR introductory US online course, a EULAR basic MSUS course or a EULAR scientifically-endorsed basic MSUS course.
- Prior to acceptance to the course, applicants should send to the Faculty members a total of 6 normal examinations of each joint region in one Power Point file (i.e. shoulder, elbow, wrist & hand, hip, knee, ankle & foot), according to the EULAR Guidelines for Musculoskeletal Ultrasound in Rheumatology (Ref. Backhaus M, et al. Ann Rheum Dis 2001).

- Images should be presented in a power point file. Important: Each slide should include: - One imaged structure each in longitudinal and transverse plane - A legend with the anatomic area, imaged structure and scanning planes - Parameters of the ultrasound machine - Identity of the person scanned should be removed.
- The Faculty members need to provide assessment and feedback. Applicants might need to be asked to repeat the ultrasound examinations and submit the images again for assessment by the Faculty.
- Upon approval of the assessment, the applicant needs to be asked to register for the course.
- The organization and procedures for the above process should be provided by the convenor/organiser of the MSUS intermediate course
- Participants should be asked to bring a total of 60 normal ultrasound examinations (each in a power point presentation) on a USB stick to the course. The Faculty reserves the right to randomly request and audit the full set of ultrasound examinations from each participant.

**Scientific organizers of this intermediate MSUS course have previously organized 2 Basic-level MSUS courses scientifically endorsed by EULAR in the previous 5 years (2015, 2017).**

# SCIENTIFIC PROGRAMME

**Thursday, March 30<sup>th</sup>, 2023.**

TIME	PROGRAMME
12:00 - 14:00	<b>Registration</b>
12:00 - 13:30	<b>Lunch</b>
14:00 - 14:15	<b>Welcome A. Iagnocco, B. Anić, P. Perić</b>
14:15 - 14:40	<b>Entering test of knowledge</b>
<b>Chairpersons: A. Iagnocco, C. Dejaco</b>	
14:40 - 15:20	Sonographic pattern of the musculoskeletal tissues and technical characteristics and setting of ultrasound equipments for rheumatology ( <b>A. Iagnocco</b> )
15:20 - 16:00	Color Doppler and Power Doppler (i.e. basis, optimizing setting and applications) ( <b>C. Dejaco</b> )

TIME	PROGRAMME
16:00 - 16:20	<b>Coffee break</b>
16:20 - 17:40	<b>Workshop:</b> Supervised practical handling on the US machine settings. Sonoanatomy: correct acquisition of images in normal musculoskeletal structures (muscles, tendons, bursae, ligaments, nerves, articular cartilage, joint space, joint recesses, joint capsules and bony profile). Colour and Power Doppler settings and its optimization.
17:40 - 18:40	Colour and Power Doppler artifacts ( <b>N.Damjanov</b> )

Friday, March 31<sup>st</sup> 2023.

TIME	PROGRAMME
09:00 - 10:20	<b>Workshop:</b> Supervised hands-on scanning of patients with inflammatory and degenerative joint disorders. How to detect and quantify synovitis (including Power Doppler), cartilage and bony lesions.
10:20 - 10:30	<b>Coffee break</b>
<b>Chairpersons: A. Iagnocco, P. Balint</b>	
10:30 - 11:00	Basic US lesions: synovitis, bony cortex and cartilage. Definition, detection and quantification. <b>(C. Dejaco)</b>
11:00 - 11:30	Basic US lesions: tendinopathies, tenosynovitis. <b>(A. Iagnocco)</b>
11:30 - 12:00	Basic US lesions: enthesitis, enthesopathy. <b>(P. Balint)</b>
12:00 - 13:00	<b>Workshop:</b> Supervised hands-on scanning of patients with inflammatory and degenerative joint and periarticular soft tissues disorders. How to detect and quantify muscu-

TIME	PROGRAMME
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	loskeletal lesions
13:00 - 14:30	<b>Lunch</b>
<b>Chairpersons: P. Peric, Z. Karim</b>	
14:30 - 14:50	Basic US lesions: cartilage and bone lesions in osteoarthritis. <b>(F. Porta)</b>
14:50 - 15:15	Standardized scanning of the inflammatory and degenerative shoulder. <b>(P. Peric)</b>
15:15 - 15:40	Standardized scanning of the inflammatory and degenerative elbow <b>(Z.Karim)</b>
15:40 - 16:00	Standardized scanning of the inflammatory and degenerative hip. <b>(W.Schmidt)</b>
16:00 - 16:20	<b>Coffee break</b>
16:20 - 18:20	<b>Workshop:</b> Supervised hands-on scanning of patients with inflammatory and degenerative shoulder, elbow, hip

Saturday, April 1<sup>st</sup> 2023.

TIME	PROGRAMME
<b>Chairpersons: P. Peric, G. Radunovic</b>	
09:00 - 09:25	Standardized scanning of the inflammatory and degenerative hand and wrist. <b>(V. Vlad)</b>
09:25 - 09:50	Standardized scanning of the inflammatory and degenerative ankle and foot. <b>(G. Radunovic)</b>
09:50 - 10:15	Role of US in the diagnosis of crystal arthropathy. <b>(M. Micu)</b>
10:15 - 10:40	Standardized scanning of the inflammatory and degenerative knee. <b>(W.Schmidt)</b>
10:40 - 11:00	<b>Coffee break</b>
11:00 - 11:40	<b>Workshop:</b> Supervised hands-on scanning of patients with inflammatory and degenerative hand, and wrist
12:00 - 12:20	<b>Workshop:</b> Supervised hands-on scanning of patients with inflam-

TIME	PROGRAMME
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	matory and degenerative knee, ankle and foot
12:30 - 13:15	Basic skills in sonographic-guided arthrocentesis. <b>(N. Damjanov)</b>
13:15 - 14:30	<b>Workshop:</b> Basic skills in sonographic-guided arthrocentesis
14:30 - 15:00	Exit test of knowledge and closing remarks
14:00 - 15:00	<b>Lunch and certificate issuing</b>

**Registration fees:**

This 3-day course fee will be **1000 EUR** per participant (lodging and food is included in the course price).

It is recommended to make reservation of accommodation directly to Atlantis Travel agency:

Email: zagreb@atlantis-travel.hr

Phone: +385 1 48 111 55

Fax: +385 1 48 189 14

Registration deadline: **January 30<sup>th</sup> 2023.**

**Registration fee includes:**

- 2 nights in single room, BB, hotel Sheraton - 30.03.-1.04.2023.
- Admission to all conference sessions
- Conference KIT
- Conference session materials
- Certificate of attendance and CME certificate
- Coffee breaks and lunches, as specified in the program

**Registration instructions:**

To register for the Course you must fill in the form and send it, together with the payment of the registration fee to the Organizational Secretariat.

No registrations will be made without payment of the registration fee.

The Organizational Secretariat will inform the participant that he or she has been registered for the Course.

**BANK DETAILS:**

Raiffeisen bank Austria dd

Address: Petrinjska 59, Zagreb

In favour of : Atlantis Travel d.o.o.

IBAN: HR 4324840081500155209

SWIFT CODE : RZBHR2X

Reference number : 67-2020

**BANK DETAILS:**

**(for payment in Kunas)**

Atlantis Travel d.o.o.

Petrinjska 59, Zagreb,

Account: HR5524840081100439430

Reference number : 67-2020

***Please ask proforma invoice!***

**Amount should be net of bank commission !**

**Methods of payment:**

The registration fee may be paid by bank transfer. Kuna and foreign currency account of Atlantis Travel.

The copy of bank transfer must be sent together with the registration form to the Organizational Secretariat. No registration will be made without payment.

**Cancellations:**

The Secretariat must be informed in writing of any cancellations.

Eighty percent of the sum paid will be refunded for cancellations made before **January 30<sup>th</sup> 2023**. No money will be refunded for cancellations made after that date.

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**5<sup>th</sup> MUSCULOSKELETAL SONOGRAPHY  
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Zagreb, March 30<sup>th</sup> - April 1<sup>st</sup> 2023.

This course is endorsed by EULAR

For more information, please visit the web sites:

[www.reumatologija.org](http://www.reumatologija.org) | [www.eular.org](http://www.eular.org) |  
[www.atlantis-travel.hr](http://www.atlantis-travel.hr)



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