



# RHEUMATOLOGY Blueprint

For traditional, 10-year Maintenance of Certification (MOC) exam and Longitudinal Knowledge Assessment (LKA)

## ABIM invites diplomates to help develop the Rheumatology MOC exam blueprint

Based on feedback from physicians that MOC assessments should better reflect what they see in practice, in 2016 the American Board of Internal Medicine (ABIM) invited all certified rheumatologists to provide ratings of the relative frequency and importance of blueprint topics in practice.

This review process, which resulted in a new MOC exam blueprint, will be used on a periodic basis to inform and update all MOC assessments created by ABIM. No matter what form ABIM's assessments ultimately take, they will need to be informed by front-line clinicians sharing their perspective on what is important to know.

A sample of over 200 rheumatologists, similar to the total invited population of rheumatologists in age, gender, geographic region, and time spent in direct patient care, provided the blueprint topic ratings. ABIM used this feedback to update the blueprint for MOC assessments (beginning with the Fall 2016 administration of the traditional, 10-year MOC exam).

To inform how assessment content should be distributed across the major blueprint content categories, ABIM considered the average respondent ratings of topic frequency and importance in each of the content categories. A second source of information was the relative frequency of patient conditions in the content categories, as seen by certified rheumatologists and documented by national health care data (described further under *Content distribution* below).

To determine prioritization of specific assessment content within each major medical content category, ABIM used the respondent ratings of topic frequency and importance to set thresholds for these parameters in the exam assembly process (described further under *Detailed content outline* below).

## Purpose of the Rheumatology MOC Assessments

MOC assessments are designed to evaluate whether a certified rheumatologist has maintained competence and currency in the knowledge and judgment required for practice. The MOC assessments emphasize diagnosis and management of prevalent conditions, particularly in areas where practice has changed in recent years. As a result of the blueprint review by ABIM diplomates, assessments place less emphasis on rare conditions and focus more on situations in which physician intervention can have important consequences for patients. For conditions that are usually managed by other specialists, the focus will be on recognition rather than on management.

## Assessment format

The traditional, 10-year MOC exam is composed of 220 single-best-answer multiple-choice questions, of which approximately 50 are new questions that do not count in the examinee's score. Examinees taking the traditional, 10-year MOC exam will have access to an external resource (i.e., UpToDate®) for the entire exam.

ABIM's LKA for MOC, is a five-year cycle in which physicians answer questions on an ongoing basis and receive feedback on how they're performing along the way. More information on how assessments are developed can be found at [abim.org/about/exam-information/exam-development.aspx](https://abim.org/about/exam-information/exam-development.aspx).

Most questions describe patient scenarios and ask about the work done (that is, tasks performed) by physicians in the course of practice:

- **Diagnosis:** making a diagnosis or identifying an underlying condition
- **Testing:** ordering tests for diagnosis, staging, or follow-up
- **Treatment/Care Decisions:** recommending treatment or other patient care
- **Risk Assessment/Prognosis/Epidemiology:** assessing risk, determining prognosis, and applying principles from epidemiologic studies
- **Pathophysiology/Basic Science:** understanding the pathophysiology of disease and basic science knowledge applicable to patient care

ABIM is committed to working toward health equity and believes that board-certified physicians should have an understanding of health care disparities. Therefore, health equity content that is clinically important to each discipline will be included in assessments, and the use of gender, race, and ethnicity identifiers will be re-evaluated.

Clinical scenarios presented take place in outpatient or inpatient settings as appropriate to a typical rheumatology practice. Clinical information presented may include patient photographs, radiographs, micrographs, DXA scans, electrocardiograms, angiograms, and other media to illustrate relevant patient findings.

Assessment tutorials, including examples of question format, can be found at [abim.org/maintenance-of-certification/exam-information/rheumatology/exam-tutorial.aspx](http://abim.org/maintenance-of-certification/exam-information/rheumatology/exam-tutorial.aspx).

## Content distribution

Listed below are the major medical content categories that define the domain for the Rheumatology traditional, 10-year MOC exam and LKA. The relative distribution of content is expressed as a percentage of the total assessment. To determine the content distribution, ABIM considered the average respondent ratings of topic frequency and importance. To cross-validate these self-reported ratings, ABIM also considered the relative frequency of conditions seen in Medicare patients by a cohort of certified rheumatologists.

CONTENT CATEGORY	TARGET %
Basic and Clinical Sciences	3.5%
Crystal-induced Arthropathies	8%
Infections and Related Arthritides	5%
Metabolic Bone Disease	7.5%
Osteoarthritis and Related Disorders	7%
Rheumatoid Arthritis	14%
Spondyloarthritis	7%
Other Rheumatic and Connective Tissue Disorders (ORCT)	15.5%
Lupus Erythematosus	9.5%
Nonarticular and Regional Musculoskeletal Disorders	7.5%
Nonrheumatic Systemic Disorders	5%
Vasculitides	8.5%
Miscellaneous Topics	2%
<b>Total</b>	<b>100%</b>

Informed by these data, the Rheumatology Approval Committee and Board have determined the content category targets shown below.

The Rheumatology MOC assessments may cover other dimensions of medicine as applicable to the medical content categories, such as geriatrics, pediatrics, pharmacology, and topics in general internal medicine that are important to the practice of rheumatology.

## How the blueprint ratings are used to assemble the MOC assessment

Blueprint reviewers provided ratings of relative frequency in practice for each of the detailed content topics in the blueprint and provided ratings of the relative importance of the topics for each of the tasks described in *Assessment format* above. In rating importance, reviewers were asked to consider factors such as the following:

- High risk of a significant adverse outcome
- Cost of care and stewardship of resources
- Common errors in diagnosis or management
- Effect on population health
- Effect on quality of life
- When failure to intervene by the physician deprives a patient of significant benefit

Frequency and importance were rated on a three-point scale corresponding to low, medium, or high. The median importance ratings are reflected in the *Detailed content outline* below. The Rheumatology Approval Committee and Board, in partnership with the physician community, have set the following parameters for selecting MOC assessment questions according to the blueprint review ratings:




- At least 75% of questions will address high-importance content (indicated in green)
- No more than 25% of questions will address medium-importance content (indicated in yellow)
- No exam questions will address low-importance content (indicated in red)

Independent of the importance and task ratings, no more than 25% of questions will address low-frequency content (indicated by “LF” following the topic description).

The content selection priorities below are applicable beginning with the Fall 2016 traditional, 10-year MOC exam and are subject to change in response to future blueprint review.

**Note:** The same topic may appear in more than one medical content category.

## Detailed content outline for the Rheumatology traditional, 10-year MOC exam and LKA




<p> – <b>High Importance:</b> At least 75% of questions will address topics and tasks with this designation.</p>	<p> – <b>Medium Importance:</b> No more than 25% of questions will address topics and tasks with this designation.</p>	<p> – <b>Low Importance:</b> No questions will address topics and tasks with this designation.</p>
<p><b>LF – Low Frequency:</b> No more than 25% of questions will address topics with this designation, regardless of task or importance.</p>		

BASIC AND CLINICAL SCIENCES (3.5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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### ANATOMY, BIOLOGY, AND STRUCTURE OF MUSCULOSKELETAL TISSUES (<2% of exam)

<p>Joints and ligaments, intervertebral discs, synovium, and cartilage</p>			Not Applicable		
<p>Connective tissue cells, matrix components and macromolecules</p>	LF		Not Applicable		
<p>Bone</p>			Not Applicable		
<p>Muscles, tendons, and bursae</p>			Not Applicable		
<p>Blood vessels</p>	LF		Not Applicable		
<p>Nerves</p>			Not Applicable		

### IMMUNOLOGY (<2% of exam)

Anatomy and cellular elements of the immune system					
<p>Lymphoid organs: gross and microscopic anatomy and function</p>	LF		Not Applicable		
<p>Organization of immune system: innate and adaptive responses</p>	LF		Not Applicable		
<p>Specific cell types: ontogeny, structure, phenotype, function, and activation markers and cell membrane receptors</p>	LF		Not Applicable		

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BASIC AND CLINICAL SCIENCES <i>continued...</i> (3.5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**IMMUNOLOGY** *continued...* (<2% of exam)

Immune and inflammatory mechanisms					
Antigens: types, structure, processing, presentation and elimination	LF		Not Applicable		✘
Components and regulation of innate immune system	LF		Not Applicable		✘
Major histocompatibility complex: structure, function, and nomenclature	LF		Not Applicable		✘
B-cell receptors and immunoglobulins: structure, function, antigen binding, signaling, genetic basis, and effector function	LF		Not Applicable		⚠
T-cell receptors: structure, function, antigen binding, signaling, and genetic basis	LF		Not Applicable		⚠
Receptor-ligand interactions, adhesion molecules, complement receptors, Fc receptors, and signal transduction	LF		Not Applicable		✘
Complement and kinin systems: structure, function and regulation	LF		Not Applicable		✘
Acute-phase reactants and enzymatic defenses			Not Applicable		⚠
Cellular interactions, immune regulation, and immunomodulation					
Activating and inhibitory immune receptors	LF		Not Applicable		✘
Cellular activation, suppression, and regulation of each cell type	LF		Not Applicable		✘
Origin, structure, effect, site of action, metabolism, and regulation of cytokines, chemokines, and other inflammatory mediators	LF		Not Applicable		⚠
Mechanisms of immune tolerance	LF		Not Applicable		✘

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**IMMUNOLOGY** *continued...* (<2% of exam)

Immune responses					
IgE-mediated: acute and late-phase reactions	LF		Not Applicable		✘
Immunoglobulin-mediated: opsonization, complement fixation, and antibody-dependent cellular cytotoxicity	LF		Not Applicable		✘
Immune complex-mediated: physiochemical properties and clearance of immune complexes	LF		Not Applicable		✘
Cell-mediated: cells and effector mechanisms in cellular cytotoxicity and granuloma formation	LF		Not Applicable		✘
Mucosal immunity: interactions between gut and bronchus-associated lymphoid tissue and secretory IgA	LF		Not Applicable		✘
Natural killer cells, lymphokine-activated killer cells, and graft-versus-host reaction	LF		Not Applicable		✘
Autoantibodies			Not Applicable		⚠
Tissue destruction and repair					
Cellular and molecular mediators	LF		Not Applicable		✘
Proteases and collagenases	LF		Not Applicable		✘

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**RESEARCH PRINCIPLES IN BASIC AND CLINICAL INVESTIGATION (<2% of exam)**

Design of experimental protocols, clinical trials, and outcomes research					
Controls, validity, reliability, and responsiveness	LF		Not Applicable		⚠
Outcome assessment techniques: scales, questionnaires, performance-based and capacity-based measurements, health status, disease activity, and functional assessment			Not Applicable		⚠
Other design of experimental protocols, clinical trials, and outcomes research			Not Applicable		⚠
Principles of epidemiology and health services research					
Prevalence and incidence			Not Applicable		⚠
Measurement of disease frequency	LF		Not Applicable		⚠
Application of epidemiologic data			Not Applicable		⚠
Data analysis, biostatistics, meta-analysis, and medical informatics	LF		Not Applicable		⚠
Principles of quality assessment and improvement			Not Applicable		⚠
Ethical and legal issues					
Bioethics of basic research and clinical trials	LF		Not Applicable		✘
Patient rights and confidentiality			Not Applicable		⚠

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**RESEARCH PRINCIPLES IN BASIC AND CLINICAL INVESTIGATION** *continued...* (<2% of exam)

Laboratory and research techniques					
Serologic: enzyme-linked immunosorbent assay (ELISA), radioimmunoassay (RIA), radial immunodiffusion (RID), nephelometry, immunoblots, protein electrophoresis, and circulating immune complex assays			Not Applicable		⚡
Cellular: lymphocyte proliferation, flow cytometry	LF		Not Applicable		✘
Histochemistry and immunofluorescence of biopsied tissues	LF		Not Applicable		⚡
Molecular: Northern, Southern, and Western blotting, polymerase chain reaction, genetic mapping techniques, gene sequencing, and gene expression analysis	LF		Not Applicable		✘
Monoclonal antibody production	LF		Not Applicable		⚡
Transgenic and gene knockout animals	LF		Not Applicable		✘
Principles of genetic and proteomic analysis: genetic epidemiology, gene transcription, and protein expression analysis	LF		Not Applicable		✘

**CLINICAL ANALYSIS** (<2% of exam)

Synovial fluid analysis			Not Applicable		✔
Appropriate use and interpretation of serologic, chemical, biochemical, and microbiologic laboratory tests			Not Applicable		✔

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**CLINICAL ANALYSIS** *continued...* (<2% of exam)

Diagnostic imaging techniques					
Plain radiographs: in the assessment of normal and diseased joints, bones, and periarticular structures and prosthetic joints			Not Applicable		✔
Computed tomography, magnetic resonance imaging, radionuclide scanning, bone densitometry, and arteriography: principles of imaging of joints, bones, and periarticular structures and tissues			Not Applicable		✔
Ultrasonography: principles of imaging of joints and periarticular structures and tissues			Not Applicable		⚠
Electromyograms and nerve conduction studies: indications for and interpretation of results			Not Applicable		⚠
Biopsy and pathology: diagnostic interpretation of pathologic specimens of specific tissues			Not Applicable		⚠

**PHARMACOLOGY: DOSING, PHARMACOKINETICS, METABOLISM, MECHANISMS OF ACTION, ADVERSE EFFECTS, AND DRUG INTERACTIONS** (2% of exam)

Nonsteroidal anti-inflammatory drugs			Not Applicable		✔
Glucocorticoids: topical, intra-articular, and systemic			Not Applicable		✔
Systemic antirheumatic drugs					
Conventional synthetic disease-modifying antirheumatic drugs (DMARDs)			Not Applicable		✔
Targeted synthetic DMARDs*			Not Applicable		✔
Biologics			Not Applicable		✔
Urate-lowering therapy			Not Applicable		✔
Agents for bone health			Not Applicable		✔
Opioid and nonopioid analgesics			Not Applicable		✔

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<b>BASIC AND CLINICAL SCIENCES</b> <i>continued...</i> (3.5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**PHARMACOLOGY: DOSING, PHARMACOKINETICS, METABOLISM, MECHANISMS OF ACTION, ADVERSE EFFECTS, AND DRUG INTERACTIONS** *continued...* (2% of exam)

Colchicine		Not Applicable			✔
Plasma exchange	LF	Not Applicable			⚡
Vaccines		Not Applicable			✔
Intravenous immunoglobulin (IVIG)	LF	Not Applicable			⚡
Vasodilator medications*	LF	Not Applicable			⚡
Anti-fibrotic agents*	LF	Not Applicable			⚡
Agents to prevent opportunistic infections*	LF	Not Applicable	✔	✔	✘

<b>CRYSTAL-INDUCED ARTHROPATHIES</b> (8% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**GOUT** (5% of exam)

Primary gout					
Asymptomatic hyperuricemia	✔	✔	✔	⚡	⚡
Acute gout	✔	✔	✔	✔	⚡
Intercritical periods	✔	✔	✔	⚡	⚡
Tophaceous gout	✔	✔	✔	✔	⚡
Conditions associated with gout	✔	✔	✔	⚡	⚡
Lead intoxication	LF	⚡	⚡	✘	✘
Secondary gout		⚡	⚡	⚡	✘

**CALCIUM PYROPHOSPHATE DIHYDRATE DEPOSITION (CPPD)** (<2% of exam)

Familial	LF	⚡	⚡	⚡	⚡	✘
Secondary to primary metabolic disorders		⚡	⚡	⚡	⚡	✘
Idiopathic CPPD		✔	✔	✔	⚡	⚡

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<b>CRYSTAL-INDUCED ARTHROPATHIES</b> <i>continued...</i> (8% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**BASIC CALCIUM PHOSPHATE CRYSTAL DEPOSITION** (2% of exam)

Basic calcium phosphate crystal deposition	⚡	⚡	⚡	⚡	✘
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<b>INFECTIONS AND RELATED ARTHRITIDES</b> (5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**INFECTIONS** (4% of exam)

Bacterial (nongonococcal and gonococcal)					
Native Joint	LF	✔	✔	✔	⚡
Prosthetic joint	LF	✔	✔	⚡	✘
Spine	LF	✔	✔	⚡	✘
Bone	LF	✔	⚡	⚡	✘
Soft tissue		✔	⚡	⚡	✘
Mycobacterial	LF	✔	✔	⚡	✘
Spirochetal (syphilis, Lyme disease)	LF	✔	✔	✔	✘
Viral (human immunodeficiency virus [HIV], hepatitis B virus, hepatitis C virus, parvovirus, chikungunya virus, and others)		✔	✔	✔	⚡
Fungal	LF	⚡	⚡	⚡	✘
Parasitic	LF	✘	✘	✘	✘
Whipple disease	LF	⚡	⚡	✘	✘

**RELATED ARTHRITIDES** (<2% of exam)

Acute rheumatic fever and poststreptococcal arthritis	LF	⚡	⚡	⚡	✘
Arthritis associated with bacterial endocarditis	LF	✔	✔	⚡	✘
Postimmunization arthritis	LF	⚡	✘	⚡	✘

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<b>METABOLIC BONE DISEASE</b> (7.5% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
<b>LOW BONE MASS</b> (<2% of exam)						
Low bone mass		✔	✔	✔	✔	⚠
<b>OSTEOPOROSIS</b> (4% of exam)						
Primary						
Postmenopausal		✔	✔	✔	✔	⚠
Male		✔	✔	✔	⚠	⚠
Secondary						
		✔	✔	✔	✔	⚠
<b>OTHER CAUSES OF BONE LOSS</b> (<2% of exam)						
Other causes of bone loss	LF	⚠	⚠	⚠	⚠	✘
<b>PAGET DISEASE OF BONE</b> (<2% of exam)						
Paget disease of bone	LF	⚠	⚠	⚠	⚠	✘
<b>BONE DISEASE RELATED TO RENAL DISEASE</b> (<2% of exam)						
Bone disease related to renal disease		⚠	⚠	⚠	⚠	⚠
<b>OSTEOMALACIA</b> (<2% of exam)						
Osteomalacia	LF	⚠	⚠	⚠	✘	✘
<b>OSTEOARTHRITIS AND RELATED DISORDERS</b> (7% of exam)						
		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
<b>OSTEOARTHRITIS</b> (5% of exam)						
Osteoarthritis		✔	✔	✔	✔	⚠
<b>DIFFUSE IDIOPATHIC SKELETAL HYPEROSTOSIS (DISH)</b> (<2% of exam)						
Diffuse idiopathic skeletal hyperostosis (DISH)		⚠	⚠	⚠	⚠	✘
<b>HYPERTROPHIC OSTEOARTHROPATHY</b> (<2% of exam)						
Hypertrophic osteoarthropathy		⚠	⚠	⚠	⚠	✘

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<b>OSTEOARTHRITIS AND RELATED DISORDERS</b> <i>continued...</i> (7% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**MALIGNANT AND NONMALIGNANT TUMORS OF BONES, TENDONS, AND JOINTS (<2% of exam)**

Benign tumors	LF	⚠	⚠	⚠	✘	✘
Malignant tumors	LF	✔	⚠	⚠	⚠	✘

**OSTEONECROSIS (<2% of exam)**

Osteonecrosis		✔	✔	✔	⚠	✘
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<b>RHEUMATOID ARTHRITIS</b> (14% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**SEROPOSITIVE RHEUMATOID ARTHRITIS (8% of exam)**

Early disease		✔	✔	✔	✔	⚠
Established disease		✔	✔	✔	✔	⚠
Felty's syndrome		✔	✔	✔	✔	⚠

**SERONEGATIVE INFLAMMATORY POLYARTHRITIS (<2% of exam)**

Seronegative inflammatory polyarthritis		✔	✔	✔	✔	⚠
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**COMPLICATIONS OF ESTABLISHED DISEASE (4.5% of exam)**

Extra-articular manifestations		✔	✔	✔	✔	⚠
Cardiovascular disease: atherosclerotic cardiovascular disease and congestive heart failure		⚠	⚠	⚠	⚠	⚠
Malignancy	LF	✔	⚠	⚠	⚠	✘
Vasculitis	LF	✔	✔	✔	⚠	⚠
Immunologic considerations		⚠	⚠	⚠	⚠	⚠

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<b>SPONDYLOARTHRITIS</b> (7% of exam)	<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**AXIAL SPONDYLOARTHRITIS (<2% of exam)**

Ankylosing spondylitis					
Skeletal manifestations	✔	✔	✔	⚠	⚠
Extra-articular manifestations	✔	✔	✔	⚠	✘

**NONRADIOGRAPHIC AXIAL SPONDYLOARTHRITIS (<2% of exam)**

Skeletal manifestations*	✔	✔	✔	⚠	✘
Extra-articular manifestations*	✔	✔	✔	⚠	✘

**REACTIVE ARTHRITIS (<2% of exam)**

Skeletal manifestations	✔	✔	✔	⚠	✘
Extra-articular manifestations <b>LF</b>	✔	✔	✔	⚠	✘

**ARTHRITIS ASSOCIATED WITH INFLAMMATORY BOWEL DISEASE (IBD) (<2% of exam)**

Skeletal manifestations	✔	✔	✔	⚠	⚠
Extra-articular manifestations	✔	✔	✔	⚠	✘

**PSORIATIC ARTHRITIS (2% of exam)**

Skeletal manifestations	✔	✔	✔	⚠	⚠
Extra-articular manifestations	✔	✔	✔	⚠	✘

**ARTHRITIS ASSOCIATED WITH OTHER SKIN DISEASES (<2% of exam)**

SAPHO syndrome (synovitis, acne, pustulosis, hyperostosis, and osteitis) <b>LF</b>	⚠	⚠	⚠	✘	✘
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**PERIPHERAL SPONDYLOARTHRITIS (<2% of exam)**

Skeletal manifestations	✔	✔	✔	⚠	✘
Extra-articular manifestations	⚠	⚠	⚠	⚠	✘

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<b>OTHER RHEUMATIC AND CONNECTIVE TISSUE DISORDERS (ORCT)</b> (15.5% of exam)	<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**RAYNAUD PHENOMENON** (<2% of exam)

Primary*	✔	✔	✔	✔	⚠
Secondary*	✔	✔	✔	✔	⚠

**PRIMARILY FIBROSING RHEUMATIC DISEASES** (4% of exam)

Systemic sclerosis					
Skin	✔	✔	✔	⚠	⚠
Gastrointestinal	✔	⚠	⚠	⚠	⚠
Cardiac	LF	⚠	⚠	⚠	✘
Pulmonary	✔	✔	✔	✔	⚠
Renal	LF	✔	✔	✔	⚠
Scleroderma mimics		⚠	⚠	✘	✘
Eosinophilic fasciitis	LF	⚠	⚠	⚠	✘
Retroperitoneal fibrosis (Ormond disease)	LF	⚠	⚠	⚠	✘

**MYOPATHIES** (3% of exam)

Idiopathic inflammatory myopathies	✔	✔	✔	✔	⚠
Metabolic myopathies	LF	⚠	⚠	✘	✘
Medication-associated	✔	✔	✔	⚠	⚠
Critical illness-associated	LF	⚠	⚠	⚠	✘

**SJÖGREN SYNDROME** (2% of exam)

Sjögren syndrome	✔	✔	✔	✔	⚠
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**PRIMARY ANTIPHOSPHOLIPID ANTIBODY SYNDROME** (<2% of exam)

Primary antiphospholipid antibody syndrome	✔	✔	✔	✔	⚠
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<b>OTHER RHEUMATIC AND CONNECTIVE TISSUE DISORDERS (ORCT) continued...</b> (15.5% of exam)		Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**SKIN-ASSOCIATED RHEUMATIC DISEASES (<2% of exam)**

Erythema nodosum		✔	✔	⚡	⚡	✘
Other forms of panniculitis	LF	⚡	⚡	⚡	✘	✘
Multicentric reticulohistiocytosis	LF	⚡	✘	✘	✘	✘

**FEVER-ASSOCIATED RHEUMATIC DISORDERS (<2% of exam)**

Autoinflammatory disorders	LF	⚡	⚡	⚡	⚡	✘
Adult-onset Still disease (AOSD)	LF	✔	✔	✔	⚡	⚡
Hemophagocytic lymphohistiocytosis and macrophage activation syndrome (HLH/MAS)	LF	⚡	✔	⚡	⚡	✘

**JOINT-ASSOCIATED RHEUMATIC DISEASES (<2% of exam)**

Polymyalgia rheumatica (PMR)		✔	✔	✔	✔	⚡
Remitting seronegative symmetric synovitis with pitting edema (RS3PE)	LF	⚡	⚡	⚡	⚡	✘
Palindromic rheumatism	LF	⚡	⚡	⚡	⚡	✘

**MISCELLANEOUS RHEUMATIC DISORDERS (<2% of exam)**

Autoimmune hearing loss	LF	⚡	⚡	⚡	✘	✘
Autoimmune eye disease		✔	⚡	⚡	⚡	✘
IgG4-related disease	LF	✔	✔	✔	⚡	✘
Relapsing polychondritis	LF	✔	⚡	⚡	⚡	✘
Overlap syndromes		✔	✔	✔	⚡	✘
Undifferentiated connective tissue disease		✔	✔	✔	⚡	✘
Mixed connective tissue disease		✔	✔	✔	⚡	⚡
Autoimmune encephalitis		✔	✔	✔	⚡	⚡
VEXAS	LF	✔	✔	⚡	⚡	⚡

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<b>OTHER RHEUMATIC AND CONNECTIVE TISSUE DISORDERS (ORCT) continued...</b> (15.5% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**PEDIATRIC DISORDERS** (<2% of exam)

Juvenile idiopathic arthritis (JIA)						
Childhood disease	LF	⚡	⚡	⚡	⚡	✘
Complications in adulthood	LF	⚡	⚡	⚡	⚡	✘
Kawasaki disease (KD)	LF	⚡	⚡	⚡	⚡	✘
Juvenile dermatomyositis (JDM)	LF	⚡	⚡	⚡	✘	✘
Juvenile localized scleroderma (JLS)	LF	✘	✘	✘	✘	✘
Pediatric joint disorders seen in adulthood						
Developmental dysplasia of the hip (DDH)	LF	✘	✘	✘	✘	✘
Slipped capital femoral epiphysis (SCFE)	LF	⚡	✘	✘	✘	✘
Legg-Calve-Perthes disease	LF	✘	✘	✘	✘	✘

<b>LUPUS ERYTHEMATOSUS</b> (9.5% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**DRUG-INDUCED** (<2% of exam)

Drug-induced		✔	✔	✔	⚡	⚡
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**CUTANEOUS** (<2% of exam)

Isolated		✔	✔	✔	⚡	✘
In systemic disease		✔	✔	✔	⚡	⚡

**SYSTEMIC** (7.5% of exam)

Renal						
Immune-mediated glomerular and tubular disease		✔	✔	✔	⚡	⚡
Antiphospholipid antibody syndrome and microangiopathies	LF	✔	✔	✔	⚡	⚡
Renal insufficiency and hypertension		✔	✔	✔	⚡	⚡
Urologic complications	LF	⚡	⚡	⚡	✘	✘



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<b>LUPUS ERYTHEMATOSUS</b> <i>continued...</i> (9.5% of exam)		Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**SYSTEMIC** *continued...* (7.5% of exam)

Neurologic						
Central nervous system: inflammatory, vaso-occlusive, microangiopathies, and others	LF	✔	✔	✔	⚠	⚠
Spinal cord	LF	✔	✔	✔	⚠	✘
Peripheral nerves	LF	✔	⚠	⚠	⚠	✘
Neuromyelitis optica	LF	✔	⚠	⚠	⚠	✘
Pulmonary						
Pneumonitis	LF	✔	✔	✔	⚠	✘
Thromboembolism		✔	✔	✔	⚠	⚠
Pulmonary hypertension	LF	✔	✔	✔	⚠	⚠
Cardiovascular						
Myocardial disease	LF	✔	✔	✔	⚠	✘
Valvular disease	LF	⚠	⚠	⚠	⚠	✘
Accelerated atherosclerosis		✔	⚠	⚠	⚠	✘
Serositis						
Pleuritis*		✔	✔	✔	⚠	✘
Pericarditis*		✔	✔	✔	⚠	✘
Peritonitis*		⚠	⚠	⚠	✘	✘
Hematologic						
Autoimmune cytopenias		✔	✔	✔	⚠	⚠
Hemolytic uremic syndrome (HUS) and thrombotic thrombocytopenic purpura (TTP)	LF	✔	✔	✔	⚠	⚠
Automimmune clotting factor deficiencies (overlap with antiphospholipid antibody syndrome)	LF	⚠	⚠	⚠	⚠	✘

\*This topic was added or revised after the blueprint was reviewed by the Rheumatology diplomates; it has been provisionally rated by the Rheumatology Approval Committee, pending the next blueprint review process.

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<b>LUPUS ERYTHEMATOSUS</b> <i>continued...</i> (9.5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**SYSTEMIC** *continued...* (7.5% of exam)

Musculoskeletal					
Joints, tendons, and ligaments	✔	✔	✔	⚠	✘
Muscle disease	✔	✔	✔	⚠	✘
Lupus in pregnancy	✔	✔	✔	✔	⚠
Neonatal lupus	LF	✔	✔	⚠	⚠
Vasculitis	LF	✔	✔	✔	⚠
Antiphospholipid antibody syndrome (APS)					
Clinical features excluding pregnancy	✔	✔	✔	⚠	⚠
Pregnancy	LF	✔	✔	✔	✘
Catastrophic APS	LF	✔	✔	✔	⚠

<b>NONARTICULAR AND REGIONAL MUSCULOSKELETAL DISORDERS</b> (7.5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**DIFFUSE PAIN SYNDROMES** (<2% of exam)

Fibromyalgia	✔	✔	✔	⚠	⚠
Complex regional pain syndrome (reflex sympathetic dystrophy)	LF	⚠	⚠	⚠	✘
Medication-induced diffuse pain	⚠	⚠	⚠	⚠	✘

**REGIONAL MUSCULOSKELETAL DISORDERS** (6.5% of exam)

Axial syndromes					
Back pain	✔	✔	✔	⚠	⚠
Neck pain	✔	✔	✔	⚠	⚠
Thoracic outlet syndrome	LF	⚠	⚠	✘	✘
Shoulder disorders					
Joint	✔	✔	✔	⚠	✘
Soft tissue	✔	✔	✔	⚠	✘

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NONARTICULAR AND REGIONAL MUSCULOSKELETAL DISORDERS <i>continued...</i> (7.5% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**REGIONAL MUSCULOSKELETAL DISORDERS** *continued...* (6.5% of exam)

Elbow disorders					
Joint	✔	⚠	⚠	⚠	✘
Soft tissue	✔	⚠	⚠	⚠	✘
Wrist and hand disorders					
Joint	✔	✔	✔	⚠	⚠
Soft tissue	✔	⚠	✔	⚠	✘
Hip disorders					
Joint	✔	✔	✔	⚠	✘
Soft tissue	✔	✔	✔	⚠	✘
Knee disorders					
Joint	✔	✔	✔	⚠	⚠
Soft tissue	✔	✔	✔	⚠	✘
Ankle and foot disorders					
Joint	✔	⚠	✔	⚠	✘
Soft tissue	⚠	⚠	⚠	⚠	✘
Leg disorders	⚠	⚠	⚠	⚠	✘

**NEUROPATHIES** (<2% of exam)

Axial disorders	✔	✔	✔	⚠	✘
Peripheral disorders					
Entrapment neuropathies	✔	✔	✔	⚠	✘
Mononeuritis multiplex	✔	✔	✔	⚠	⚠
Polyneuropathy	✔	⚠	⚠	⚠	✘
Small fiber neuropathy	⚠	⚠	⚠	✘	✘

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NONRHEUMATIC SYSTEMIC DISORDERS (5% of exam)		Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**HEREDITARY, CONGENITAL, AND INBORN ERRORS OF METABOLISM ASSOCIATED WITH RHEUMATIC SYNDROMES (<2% of exam)**

Disorders of connective tissue						
Marfan syndrome	LF	⚠	⚠	⚠	⚠	✘
Osteogenesis imperfecta	LF	⚠	⚠	✘	✘	✘
Ehlers-Danlos syndromes including hypermobility	LF	⚠	⚠	⚠	⚠	✘
Mucopolysaccharidoses	LF	✘	✘	✘	✘	✘
Osteochondrodysplasias						
Multiple epiphyseal dysplasia	LF	✘	✘	✘	✘	✘
Spondyloepiphyseal dysplasia	LF	✘	✘	✘	✘	✘
Inborn errors of metabolism affecting connective tissue						
Homocystinuria	LF	✘	✘	✘	✘	✘
Ochronosis	LF	✘	✘	✘	✘	✘
Storage disorders	LF	✘	✘	✘	✘	✘

**IMMUNODEFICIENCIES (<2% of exam)**

Immunoglobulin A (IgA) deficiency	LF	⚠	⚠	⚠	✘	✘
Complement component deficiencies	LF	⚠	⚠	⚠	✘	✘
Common variable immunodeficiency	LF	⚠	⚠	⚠	✘	✘

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<b>NONRHEUMATIC SYSTEMIC DISORDERS</b> <i>continued...</i> (5% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**METABOLIC-ASSOCIATED RHEUMATIC DISORDERS (2.5% of exam)**

Diabetes mellitus		✔	⦿	⦿	⦿	⦿
Acromegaly	LF	⦿	⦿	✘	✘	✘
Thyroid disease		✔	✔	⦿	⦿	⦿
Cushing disease	LF	⦿	⦿	⦿	⦿	⦿
Parathyroid disease		⦿	⦿	⦿	⦿	⦿
Renal failure and dialysis		⦿	⦿	⦿	⦿	✘

**HEMATOLOGIC AND ONCOLOGIC MALIGNANCY-ASSOCIATED RHEUMATIC DISORDERS (<2% of exam)**

Amyloidosis						
Primary	LF	⦿	⦿	⦿	⦿	✘
Secondary	LF	⦿	⦿	⦿	⦿	⦿
Hereditary	LF	⦿	✘	✘	✘	✘
Lymphoma	LF	✔	✔	⦿	⦿	✘
Myelodysplastic syndromes	LF	⦿	⦿	⦿	⦿	✘
Leukemia	LF	⦿	⦿	⦿	✘	✘
Solid tumors		⦿	⦿	⦿	⦿	✘
Plasma cell dyscrasias	LF	⦿	⦿	⦿	⦿	✘
Hemoglobinopathies						
Sickle cell	LF	⦿	⦿	✘	✘	✘
Hemophilias	LF	⦿	✘	✘	✘	✘

**ARTHRITIC AND RHEUMATIC DISORDERS (2% of exam)**

Hemochromatosis	LF	✔	⦿	⦿	⦿	⦿
Myositis ossificans progressiva	LF	✘	✘	✘	✘	✘
Wilson disease	LF	⦿	⦿	✘	✘	✘
Sarcoidosis		✔	✔	✔	⦿	⦿

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<b>NONRHEUMATIC SYSTEMIC DISORDERS</b> <i>continued...</i> (5% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**ARTHRITIC AND RHEUMATIC DISORDERS** *continued...* (2% of exam)

Scurvy	LF	⚠	⚠	✘	✘	✘
Pancreatic disease	LF	⚠	⚠	✘	✘	✘
Primary biliary cholangitis	LF	⚠	⚠	⚠	⚠	✘
Cystic fibrosis	LF	⚠	✘	✘	✘	✘
Graft-versus-host disease	LF	⚠	✘	✘	✘	✘
Celiac disease		⚠	⚠	⚠	⚠	⚠
Drug-associated		✔	⚠	✔	⚠	⚠
Environmental agent-associated	LF	⚠	⚠	⚠	⚠	✘

**NEUROLOGIC** (<2% of exam)

Amyotrophic lateral sclerosis (ALS)	LF	⚠	✘	✘	✘	✘
Neuropathic arthropathy	LF	⚠	⚠	⚠	⚠	✘

<b>VASCULITIDES</b> (8.5% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**LARGE-VESSEL VASCULITIS** (<2% of exam)

Takayasu arteritis	LF	✔	✔	✔	⚠	⚠
Giant cell arteritis		✔	✔	✔	✔	⚠

**MEDIUM-VESSEL VASCULITIS** (<2% of exam)

Polyarteritis nodosa	LF	✔	✔	✔	✔	⚠
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**SMALL-VESSEL VASCULITIS** (3% of exam)

Antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis						
Granulomatosis with polyangiitis		✔	✔	✔	✔	⚠
Microscopic polyangiitis	LF	✔	✔	✔	✔	⚠
Eosinophilic granulomatosis with polyangiitis (Churg-Strauss)	LF	✔	✔	✔	⚠	⚠

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<b>VASCULITIDES</b> <i>continued...</i> (8.5% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**SMALL-VESSEL VASCULITIS** *continued...* (3% of exam)

Immune complex small-vessel vasculitis						
Anti-glomerular basement membrane disease	LF	✔	⚡	⚡	⚡	⚡
Cryoglobulinemic vasculitis	LF	✔	✔	✔	✔	⚡
IgA vasculitis (Henoch-Schonlein purpura)	LF	✔	✔	✔	⚡	⚡
Hypocomplementemic urticarial vasculitis (anti-C1q vasculitis)	LF	⚡	⚡	⚡	⚡	⚡

**VARIABLE-VESSEL VASCULITIS** (<2% of exam)

Behçet disease	LF	✔	✔	✔	⚡	✘
Cogan syndrome	LF	⚡	⚡	⚡	⚡	✘

**SINGLE-ORGAN VASCULITIS** (<2% of exam)

Cutaneous leukocytoclastic angiitis		✔	✔	✔	⚡	⚡
Cutaneous arteritis	LF	⚡	⚡	⚡	⚡	✘
Primary central nervous system angiitis	LF	✔	✔	✔	⚡	✘
Isolated aortitis	LF	⚡	⚡	⚡	⚡	✘

**VASCULITIS ASSOCIATED WITH PROBABLE ETIOLOGY** (<2% of exam)

Hepatitis C virus-associated cryoglobulinemic vasculitis	LF	✔	✔	✔	⚡	⚡
Hepatitis B virus-associated vasculitis	LF	✔	✔	⚡	⚡	⚡
Syphilis-associated aortitis	LF	⚡	⚡	✘	✘	✘

**Drug-induced vasculitis**

Drug-induced ANCA-associated vasculitis	LF	✔	⚡	✔	⚡	✘
Drug-induced immune complex vasculitis	LF	✔	⚡	⚡	⚡	✘
Other drug-induced vasculitis	LF	⚡	⚡	⚡	⚡	✘
Cancer-associated vasculitis	LF	⚡	⚡	⚡	⚡	✘

✔ – **High Importance:** At least 75% of questions will address topics and tasks with this designation.

⚡ – **Medium Importance:** No more than 25% of questions will address topics and tasks with this designation.

✘ – **Low Importance:** No questions will address topics and tasks with this designation.

**LF – Low Frequency:** No more than 25% of questions will address topics with this designation, regardless of task or importance.

<b>VASCULITIDES</b> <i>continued...</i> (8.5% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**VASCULITIS MIMICKERS (<2% of exam)**

Buerger disease (thromboangiitis obliterans)	LF	✔	⚡	✔	⚡	✘
Cholesterol emboli	LF	⚡	⚡	⚡	⚡	✘
Fibromuscular dysplasia	LF	⚡	⚡	✘	✘	✘
Segmented arterial mediolysis	LF	⚡	⚡	✘	✘	✘
Warfarin necrosis	LF	⚡	⚡	⚡	⚡	✘
Reversible cerebral vasoconstriction syndrome	LF	⚡	⚡	⚡	⚡	✘
Moyamoya disease	LF	⚡	⚡	✘	✘	✘
Atrial myxoma	LF	⚡	⚡	⚡	✘	✘
Endocarditis	LF	✔	✔	⚡	⚡	✘
Calciphylaxis	LF	⚡	⚡	⚡	✘	✘
Amyloid angiopathy	LF	⚡	✘	✘	✘	✘

<b>MISCELLANEOUS TOPICS</b> (2% of exam)		<b>Diagnosis</b>	<b>Testing</b>	<b>Treatment/ Care Decisions</b>	<b>Risk Assessment/ Prognosis/ Epidemiology</b>	<b>Pathophysiology/ Basic Science</b>
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**ARTHROCENTESIS AND INJECTIONS (<2% of exam)**

Anatomy		✔	Not Applicable	✔	Not Applicable	⚡
Precautions		Not Applicable	✔	✔	✔	Not Applicable
Potential sequelae		✔	Not Applicable	✔	✔	Not Applicable



✔ – **High Importance:** At least 75% of questions will address topics and tasks with this designation.

⦿ – **Medium Importance:** No more than 25% of questions will address topics and tasks with this designation.

✘ – **Low Importance:** No questions will address topics and tasks with this designation.

**LF – Low Frequency:** No more than 25% of questions will address topics with this designation, regardless of task or importance.

MISCELLANEOUS TOPICS <i>continued...</i> (2% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**GENERAL CLINICAL CARE** (<2% of exam)

Rehabilitation in rheumatic diseases					
Exercise	⦿ – Task not otherwise specified		⦿	⦿ – Task not otherwise specified	
Therapeutic modalities	⦿ – Task not otherwise specified		⦿	⦿ – Task not otherwise specified	
Thermal modalities	⦿ – Task not otherwise specified				
Adaptive equipment and assistive devices	⦿ – Task not otherwise specified		⦿	⦿ – Task not otherwise specified	
Footwear and orthotics	⦿ – Task not otherwise specified		⦿	⦿ – Task not otherwise specified	
Functional status and disability determination	⦿ – Task not otherwise specified				

Pain management					
Physiology of pain	Not Applicable				⦿
Opioid contract	Not Applicable	⦿	⦿	Not Applicable	

Psychosocial aspects of rheumatic diseases					
Psychological and emotional factors including sexuality	⦿ – Task not otherwise specified				
Economic and vocational issues	⦿ – Task not otherwise specified				

Perioperative management of rheumatic diseases	⦿	✔	✔	✔	✘
Nutrition	⦿	⦿	⦿	✘	✘
Complementary and alternative practices	⦿ – Task not otherwise specified				

**TREATMENT ADHERENCE** (<2% of exam)

Barriers	Not Applicable	⦿	Not Applicable		
Health literacy	Not Applicable	⦿	Not Applicable		

✔ – **High Importance:** At least 75% of questions will address topics and tasks with this designation.

⚠ – **Medium Importance:** No more than 25% of questions will address topics and tasks with this designation.

✘ – **Low Importance:** No questions will address topics and tasks with this designation.

**LF – Low Frequency:** No more than 25% of questions will address topics with this designation, regardless of task or importance.

MISCELLANEOUS TOPICS <i>continued...</i> (2% of exam)	Diagnosis	Testing	Treatment/ Care Decisions	Risk Assessment/ Prognosis/ Epidemiology	Pathophysiology/ Basic Science
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**PROFESSIONALISM AND ETHICAL BEHAVIOR** (<2% of exam)

Ethical dilemmas	LF	⚠	<i>Not Applicable</i>	⚠	⚠	<i>Not Applicable</i>
Professionalism		⚠	<i>Not Applicable</i>	⚠	⚠	<i>Not Applicable</i>

Communication						
Interpersonal communication skills		✔	<i>Not Applicable</i>	⚠	⚠	<i>Not Applicable</i>
Use of medical interpreters	LF	⚠	<i>Not Applicable</i>	⚠	⚠	<i>Not Applicable</i>