



Rheumatology

Maintenance of Certification Examination Blueprint

What Does the Examination Cover?

The examination is designed to evaluate the extent of the candidate's knowledge and clinical judgment in the areas in which a consultant in rheumatology should possess a high level of competence. Expertise in the broad domain of rheumatology and the diagnosis and treatment of both common and rare conditions that have important consequences for patients, will be assessed.

Examination content is consistent with a pre-established blueprint, or table of specifications. The blueprint is developed by the Subspecialty Board on Rheumatology and is reviewed and revised annually to ensure that it is current. In addition, practicing rheumatology trainees, and training program directors are surveyed periodically to provide feedback on the blueprinting process. The blueprint is used as a guide in developing the examination.

The majority of questions (over 75 percent) are based on patient presentations occurring in settings that reflect current medical practice. Questions requiring simple recall of medical facts are in the minority; the majority of questions require integration of information from several sources, prioritization of alternatives, and/or utilization of clinical judgment in reaching a correct conclusion. Some questions require interpretation of pictorial material such as histologic and radiographic findings in rheumatic diseases.

Topics covered may include the following:

- Normal and pathologic anatomy of the musculoskeletal system
- Humoral and cellular immunology
- Role of immunogenetics in predisposition to rheumatic diseases
- Biochemistry of connective tissue
- Mechanisms and pathways of inflammation
- Diagnostic use of laboratory tests, imaging studies, and histopathologic examination
- Pharmacology, epidemiology, biostatistics, and ethics
- General internal medicine as encountered in the practice of rheumatology (including some general pediatrics with an emphasis on adolescent medicine)

The content areas covered and their relative proportions on the exam are as follows:

Medical Content Category	Relative Percentage
Other Rheumatic and Connective Tissue Diseases	18%
Nonrheumatic Systemic Diseases	12%
Infectious and Other Reactive Arthritides	10%
Rheumatoid Arthritis	10%
Lupus Erythematosus	7%
Nonarticular and Regional Musculoskeletal Disorders	7%
Vasculitides	7%
Basic and Clinical Sciences	6%
Seronegative Spondyloarthropathies	6%
Osteoarthritis — Primary and Secondary Osteoarthritis	5%
Miscellaneous	5%
Crystal-induced Arthropathies	4%
Metabolic Bone Disease	3%
Total	100%

Content Outline of the Maintenance of Certification Examination

This content outline describes a *typical* Rheumatology Maintenance of Certification Examination; actual content on a specific examination may vary. Each medical content category from the examination blueprint is listed in boldface below, along with target blueprint percentage and total number of questions in the category. Within each category, the approximate distribution of questions in specified areas is also listed.

Medical Content Category (Relative Percentage)	Number of Questions
Other Rheumatic and Connective Tissue Diseases (18%)	22-27 as follows:
Systemic connective diseases	20-23
Pediatric rheumatic diseases (diseases occurring primarily in childhood)	2-4

Nonrheumatic Systemic Diseases (12%)	18-24 as follows:
Hereditary, congenital, and inborn errors of metabolism associated with rheumatic syndromes	2-3
Immunodeficiency	0-1
Metabolic	0-1
Endocrine-associated rheumatic syndromes	1-5
Hematologic/oncologic	3-5
Arthritic and rheumatic syndromes	10-12
Neurologic (including ALS)	1-2
Pregnancy	0-1

Infectious and Other Reactive Arthritides (10%)	11-18 as follows:
Infectious arthritides	9-16
Other reactive arthritides	1-2

Rheumatoid Arthritis (10%)	20-26 as follows:
Pathophysiology	0-1
Diagnosis (including clinical, imaging, laboratory testing, and pathology)	10-15
Prognosis/outcome	0-2
Treatment (including NSAIDs, corticosteroids, hydroxychloroquine, sulfasalazine, methotrexate, leflunomide, biologic, and others)	7-14

Lupus Erythematosus (7%)	16-19 as follows:
Drug-related	0-2
Discoid	0-1
Systemic	16-19

Medical Content Category (Relative Percentage)	Number of Questions
Nonarticular and Regional Musculoskeletal Disorders (7%)	15-16 as follows:
Chronic pain syndromes	1-2
Axial syndromes	0-1
Regional musculoskeletal illnesses	10-13
Neuropathic joints	0-1
Malignant and nonmalignant tumor of bone, tendon, and joint	0-1
Malignancy-associated rheumatic syndromes	0-1
Osteonecrosis	0-1
Other (including hypertrophic osteoarthropathy)	0-1

Vasculitides (7%)	9-13 as follows:
Temporal arteritis	1-3
Takayasu's arteritis	0-1
Polyarteritis nodosa and systemic necrotizing vasculitis overlaps	1-2
Churg-Strauss granulomatosis	0-1
Wegener's granulomatosis and other ANCA-associated diseases	0-1
Behçet's disease	0-1
Hypersensitivity and small vessel vasculitis	1-2
Cryoglobulinemia	0-1
Microscopic polyangiitis	1-2
Henoch-Schönlein purpura	0-1
Cogan's syndrome	0-1
Buerger's disease	0-1
Cholesterol emboli syndrome	0-1

Basic and Clinical Sciences (6%)	6-9 as follows:
Human biology (including embryology, development, biochemistry and metabolism, and structure and function)	0-1
Anatomy and biology of musculoskeletal tissues	1-3
Immunology (including anatomy and cellular elements, immune and inflammatory mechanisms, cellular interactions and immunomodulation, immune responses, and immunoregulation)	5-8
Purine and uric acid metabolism	0-1
Biomechanics of bones, joints, and muscles	0-1
Research principles in basic and clinical investigation (including epidemiology, experimental protocols, laboratory techniques, data analysis and biostatistics, health status and disease activity, and bioethics)	0-1

Medical Content Category (Relative Percentage)	Number of Questions
Seronegative Spondyloarthropathies (6%)	7-10 as follows:
Ankylosing spondylitis	2-4
Reactive arthritis	2-3
Psoriatic arthritis	1-2
Inflammatory bowel disease-associated arthritis	1-2
Arthritis associated with acne and other skin diseases	0-1
SAPHO syndrome	0-1
Undifferentiated spondyloarthropathies	0-1

Osteoarthritis — Primary and Secondary Osteoarthritis (5%)	11-17 as follows:
Pathophysiology	0-1
Diagnosis (including clinical, imaging, laboratory testing, and pathology)	6-12
Prognosis/outcome	0-1
Treatment (including physical measures — medical and surgical, complications/sequelae, and prognosis/outcome)	3-4

Medical Content Category (Relative Percentage)	Number of Questions
Miscellaneous (5%)	5-10 as follows:
Data analysis, biostatistics, meta-analysis, and medical informatics	2-4
Health status, disease activity, accumulated damage, functional, and quality-of-life measurements/assessments	0-1
Bioethics of basic research and clinical trials	0-1
Medicolegal issues (including HIPAA compliance)	0-1
Athrocentesis (including anatomy, precautions including OSHA requirements, and potential sequelae)	0-1
Synovial fluid analysis	0-1
Interpretation of results of specific laboratory tests	0-1
Plain radiographs: assessment of radiographs of normal and diseased joints, bones, periarticular structures, and prosthetic joints	1-2
Diagnostic imaging techniques (including arthrography, ultrasonography, computed tomography, and magnetic resonance imaging)	0-1
Radionuclide scanning techniques (including joint and bone scan, parotid scans and salivary flow studies, and bone densitometry)	0-1
Arteriograms in the vasculitides	0-1
Electromyograms and nerve conduction studies — basic	0-1
Biopsy specimens including biochemistry and immunofluorescence of tissues relevant to the diagnosis of rheumatic disease	0-1
Other procedures (including nailfold capillary examination, ischemic forearm muscle test, Schirmer's and rose Bengal tests, closed needle synovial biopsy, and arthroscopy)	0-1
Pharmacology: dosing, pharmacokinetics, metabolism, mechanisms of action, side effects, drug interactions, compliance issues, costs, and use in patients including fertile, lactating, and pregnant women	3-4
Apheresis for rheumatic diseases	0-1
Rehabilitation in rheumatic diseases (including methods of rehabilitation and pain management)	0-1
Psychosocial aspects of rheumatic diseases (including sexuality, economic and vocational issues, disability determination, and compliance issues)	0-1
Surgical management of rheumatic diseases (including indications for surgical/orthopedic consultation; preoperation assessment; and indications, preoperative evaluation and medication adjustments, contraindications, and complications for specific procedures)	0-1
Alternative practices (including diet, nutritional supplements, acupuncture, homeopathic remedies, venoms, and others)	0-1

Medical Content Category (Relative Percentage)	Number of Questions
Crystal-induced Arthropathies (4%)	7-10 as follows:
Monosodium urate monohydrate (gout)	3-5
Calcium pyrophosphate dehydrate deposition disease	2-3
Basic calcium phosphate (hydroxyapatite)	1-2
Calcium oxalate	0-1

Metabolic Bone Disease (3%)	4-7 as follows:
Osteoporosis	3-5
Osteomalacia	0-1
Bone disease related to renal disease	0-1
Bone disease related to endocrine disorders	0-1
Paget's disease	0-1