



# Musculoskeletal System-III

## Final Year MBBS

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**Khyber Medical University (KMU) Vision:**

Khyber Medical University will be the global leader in health sciences academics and research for efficient and compassionate health care.

**Khyber Medical University (KMU) Mission:**

Khyber Medical University aims to promote professional competence through learning and innovation for providing comprehensive quality health care to the nation.

**Institute of Health Professions Education & Research (IHPER) Mission:**

To produce leaders, innovators and researchers in health professions education who can apply global knowledge to resolve local issues.

# Themes

Table 1: Thematic Distribution

S. No	Themes	Duration in Hours
1	Joint pains	12
2	Aching bones	6
3	Muscle weakness	5
4	Skin rashes and burns	8

\* A minimum of 4 hours daily apart from above hours, must be allocated for clinical teaching and training at bed side in different units.

# Learning Objectives

**By the end of Musculoskeletal-III Module, Final year MBBS students will be able to:**

1. Discuss the diagnostic and therapeutic approach to children and adult patients with arthritides.
2. Explain the surgical management of different arthritic disorders.
3. Elaborate on the management of osteoporosis, Rickets, and Osteomalacia.
4. Explain the types of spine diseases and their management.
5. Explain the types, etiology, clinical features, and management of primary muscle diseases including poliomyelitis
6. Discuss different dermatological conditions in terms of etiology, classification, investigations, and management.
7. Take history and examine a patient with an arthritic condition
8. Counsel a patient with chronic arthritic condition, psoriasis, and muscular dystrophies.

# Specific Learning Objectives

Table 3: Theme Wise Learning objectives

Theme-1: Joint pains					
Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
Medicine	Introduction to arthritides: <ul style="list-style-type: none"> <li>• Classification</li> <li>• Serological tests</li> </ul>	2	1	Cognitive	Classify autoimmune diseases of joints based on the pattern of joint involvement <ul style="list-style-type: none"> <li>A) Peripheral               <ul style="list-style-type: none"> <li>• Symmetrical</li> <li>• Oligoarticular</li> <li>• Monoarticular</li> </ul> </li> <li>B) Axial</li> </ul>
		2	2		Explain the types, and indications of autoimmune markers in different Rheumatological disorders
			3		Describe different modalities of investigations and their indications used in different arthritic disorders
			4		Explain the extra-articular manifestations of inflammatory arthritides
	Management of adult arthritides	1	5		Explain the differential diagnosis, diagnostic and therapeutic approaches to an adult patient with mono-arthritis

			6		Explain the differential diagnosis, diagnostic and therapeutic approaches to an adult patient with symmetrical polyarthritis
			7		Explain the differential diagnosis, diagnostic and therapeutic approaches to an adult patient with oligoarticular arthritis
Management of common arthritic disorders	1	8			Discuss the management of patient and complications with Rheumatoid arthritis
	1	9			Discuss the management, complications, and prognosis of a patient with SLE
	1	10			Explain the management and complications of a patient with Ankylosing spondylitis
		11			Discuss the clinical features and diagnosis of Reiter`s syndrome, Reactive arthritis and Psoriatic arthritis
	1	12			Discuss the management of patient and complications with Osteoarthritis
		13			Discuss the management of patient and complications with acute Gout and Gouty Arthritis
		14	Psychomotor		Take history and perform a physical examination of a patient with symmetrical arthritis
		15	Affective		Counsel a patient with new onset Rheumatoid arthritis.

<b>Pediatrics</b>	Orthopedic evaluation of a child Management of pediatric arthritides	1	16	Cognitive	Perform orthopedic evaluation of a neonate and child
		1	17	Cognitive	Explain the differential diagnosis, diagnostic workup, and therapeutic approaches to a pediatric patient with mono-arthritis
			18	Cognitive	Explain the differential diagnosis, diagnostic workup and therapeutic approaches to a pediatric patient with symmetrical polyarthritis
			19	Cognitive	Explain the differential diagnosis, diagnostic workup, and therapeutic approaches to a pediatric patient with oligoarticular arthritis
	Management of common arthritic disorders in children	1	20	Cognitive	Discuss the management of patient and complications with Juvenile idiopathic arthritis
			21	Psychomotor	Take history and perform a physical examination of a child with Arthritis
			22	Affective	Counsel a child and his parents with new onset Juvenile Chronic arthritis
<b>Orthopedics</b>	Surgical management of disabling Rheumatoid arthritis	1	23	Cognitive	Explain the surgical interventions and their indications in the management of disabling Rheumatoid arthritis <ul style="list-style-type: none"> <li>• Rheumatic hand disorders</li> <li>• Rheumatic foot disorders</li> </ul>
	Tuberculous/ Septic arthritis	1	24	Cognitive	Discuss the etiology, risk factors, Clinical presentation, Diagnostic approach, and management of tuberculous and septic hip and knee arthritis.



Theme-2: Aching Bones					
Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
Medicine	Osteoporosis	1	25	Cognitive	Explain the etiology, risk factors, complications, management, and prevention of Osteoporosis
Pediatrics	Rickets and Osteomalacia	1	26	Cognitive	Discuss the diagnostic approach to a child with Rickets
			27	Cognitive	Discuss the etiology, clinical, radiological, and laboratory features of Rickets and Osteomalacia and their treatments
			28	Psychomotor	Take history and perform a physical examination of a patient with Rickets
Orthopedics	Deformities and congenital disorders	1	29	Cognitive	Classify common deformities and congenital disorders of bones
			30	Cognitive	Discuss the pathophysiology, clinical features and complications of Achondroplasia
		1	31	Cognitive	Discuss the pathophysiology, clinical features and complications of Osteogenesis imperfecta
			32	Cognitive	Discuss the pathophysiology, clinical features and complications of Paget`s disease

	Structural spine abnormalities	1	33	Cognitive	Classify and explain structural spine abnormalities in terms of clinical features, complications, and management
	Osteomyelitis	1	34	Cognitive	Explain the etiology, clinical presentation, investigations, and medical and surgical management of Osteomyelitis
	Caries Spine		35	Cognitive	Explain the etiology, clinical presentation, investigations, and medical and surgical management of Caries spine
<b>Theme-3: Muscle weakness</b>					
<b>Subject</b>	<b>Topic</b>	<b>Hours</b>	<b>S. No</b>	<b>Domain of learning</b>	<b>Learning objectives</b>
<b>Medicine</b>	Proximal myopathy	1	36	Cognitive	Elaborate on the etiology and diagnostic workup of a patient with proximal muscle weakness
	Polymyositis and dermatomyositis	1	37	Cognitive	Discuss the pathogenesis, clinical features, investigations, differential diagnosis and management of Polymyositis and Dermatomyositis
<b>Pediatrics</b>	Muscular dystrophies	1	38	Cognitive	Classify muscular dystrophies
			39	Cognitive	Explain the pathogenesis, clinical features, differential diagnosis, management and prognosis of Duchenne muscular dystrophy

			40	Cognitive	Explain the pathogenesis, clinical features, differential diagnosis, management and prognosis of myotonic dystrophy
			41	Cognitive	Compare the clinical features and prognosis of Becker, limb-girdle, and facioscapulohumeral dystrophies
			42	Psychomotor	Take history and perform a physical examination of a child with muscular dystrophy
			43	Affective	Counsel the parents of a child suffering from Muscular dystrophy
<b>Orthopedics</b>	Poliomyelitis	1	44	Cognitive	Explain the Orthopedic complications of poliomyelitis their Diagnostic workup and Management
<b>Psychiatry</b>	Somatoform disorders	1	45	Cognitive	Classify somatoform disorders
			46	Cognitive	Explain the criteria for the diagnosis of pain somatoform disorders
			47	Cognitive	Explain the clinical presentation, psychiatric assessment, pharmacological and psychological management of a patient with fibromyalgia and other somatoform disorders
			48	Psychomotor	Take psychiatric history from a patient suffering from somatoform disorder
			49	Affective	Counsel a patient with somatoform disorder

### Theme-4: Skin rashes and burns

Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
Dermatology	Cutaneous manifestations of systemic diseases	1	50	Cognitive	Explain the common cutaneous manifestations of metabolic, endocrine, autoimmune, and neoplastic diseases
	Drugs rash	1	51	Cognitive	Classify the different types of drug rashes
			52	Cognitive	Explain the clinical manifestations, differential diagnosis, and management of erythema multiforme/Steven Johnson/Toxic Epidermal Necrolysis.
	Viral Infections of the skin <ul style="list-style-type: none"> <li>• Chicken pox and Herpes Zoster</li> <li>• Warts (Human Papilloma Virus)</li> <li>• Molluscum Contagiosum</li> <li>• Cutaneous manifestation of AIDS</li> </ul>	1	53	Cognitive	Explain the clinical manifestations, differential diagnosis and management of Chicken Pox and Herpes Zoster
			54	Cognitive	Classify Warts
			55	Cognitive	Explain the mode of transmission, differential diagnosis and management of warts
			56	Cognitive	Explain the mode of transmission, clinical presentation, differential diagnosis, and management of Molluscum Contagiosum in children and adults

	Acute Bacterial infections of the skin <ul style="list-style-type: none"> <li>• Impetigo</li> <li>• Folliculitis</li> <li>• Furunculosis</li> <li>• Carbuncles</li> </ul>	1	57	Cognitive	Describe the etiology, clinical features, and management of acute bacterial skin lesions described
	Chronic bacterial infections of the skin <ul style="list-style-type: none"> <li>• Cutaneous Tuberculosis</li> <li>• Leprosy</li> <li>• Syphilis</li> </ul>		58		Discuss the etiology, clinical features, and management of chronic bacterial skin lesions described
	Fungal infections <ul style="list-style-type: none"> <li>• Pityriasis versicolor</li> <li>• Dermatophytosis</li> <li>• Candidiasis</li> </ul>	1	59		Explain the etiology, clinical features, and management of fungal infections described
			60		Explain the different types of Acne

Sebacous glands diseases Acne		61		Explain the pathogenetic mechanisms, clinical features, complications, differential diagnosis, and management of Acne
Autoimmune blistering disorders <ul style="list-style-type: none"> <li>• Pemphigus Vulgaris</li> <li>• Bullous pemphigoid</li> </ul>	1	62		Describe the etiology, clinical features, and management of diseases described
Eczemas	1	63		Classify Eczema
		64		Explain the clinical presentation, differential diagnosis and management of different types of Eczemas
Inflammatory dermatosis <ul style="list-style-type: none"> <li>• Psoriasis</li> <li>• Lichen Planus</li> <li>• Sebbhoric Dermatitis</li> <li>• Erythema Nodosum</li> <li>• Urticaria</li> </ul>		65		Describe the etiology, clinical features, and management of diseases mentioned

	Erythroderma		66		Discuss the etiology, clinical presentation, differential diagnosis, and management of Erythroderma.
			67	Psychomotor	Take history form a patient with generalized Rash.
			68	Affective	Counsel a patient suffering from Psoriasis.
<b>Surgery/ Plastic Surgery</b>	Burns ○ Classification ○ Assessment ○ Management ○ Complications	03	69	Cognitive	Classify burns.
			70	Cognitive	Assess a patient of burns in terms of burn area calculation, fluid assessment, and referral to specialized burn units.
			71	Cognitive	Discuss the initial and long-term management of burns
			72	Cognitive	Explain the early and late complications of burns
			73	Psychomotor	Calculate burn area.
			74	Affective	Counsel a patient and his/her family members with burns.