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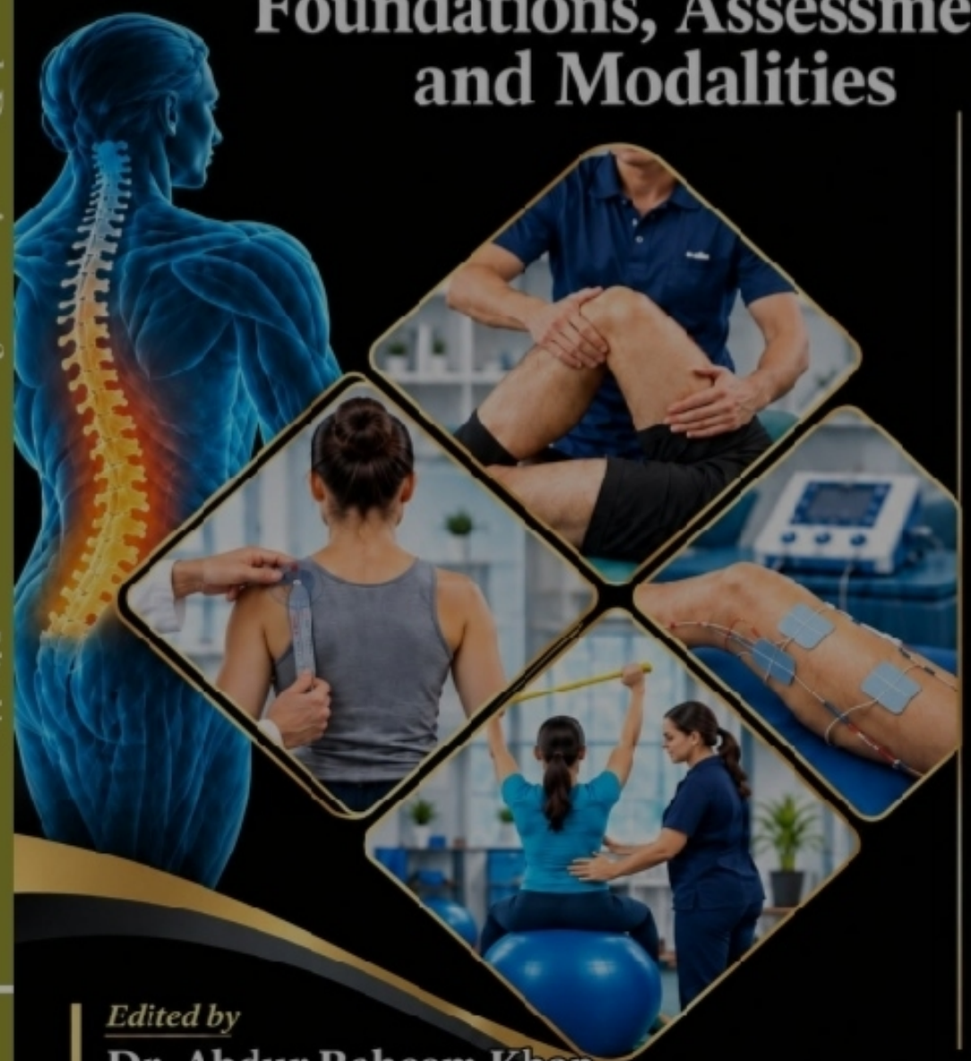
Principles and Practices of Physiotherapy

Edited by
Dr. Abdur Raheem Khan
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Principles and Practice *of* Physiotherapy:

Foundations, Assessment, and Modalities



FOUNDATIONS

ASSESSMENT

THERAPEUTIC EXERCISE

ELECTROTHERAPY & OTHER MODALITIES

FUNCTIONAL REHABILITATION

Edited by

Dr. Abdur Raheem Khan
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Chapter-3
Functional Anatomy for Physiotherapy Practice

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Abstract

Functional anatomy is a crucial component of physiotherapy practice that describes how anatomical elements work together to produce, govern, and adjust human movement. The interaction between bones, joints, muscles, connective tissues, and the nervous system during functional activities is the emphasis of functional anatomy, as opposed to descriptive anatomy. This chapter examines the application of functional anatomy in physiotherapy, with emphasis on the musculoskeletal system, muscle contractions, joint motions, kinetic-chain interactions, posture, and functional activities.

It illustrates how the upper limb, spine, pelvis, hip, knee, ankle, and foot contribute to actions including walking, squatting, sit-to-stand, reaching, running, jumping, and throwing. The chapter also emphasizes the significance of functional anatomy in sports rehabilitation, therapeutic exercise, clinical evaluation, injury prevention, and return-to-function initiatives.

Movement analysis and contemporary technologies such as video analysis, wearable sensors, electromyography, and motion-capture systems are considered as techniques for analyzing movement objectively. Integrating functional anatomy with evidence-based practice helps physiotherapists to diagnose mobility abnormalities, understand injury processes, devise tailored rehabilitation programs, and enhance functional outcomes.

Keywords: Functional anatomy, muscle contractions, musculoskeletal system, posture, kinetic chain, movement analysis.

1. Introduction

Functional anatomy is the study of anatomical structures in relation to the way they contribute to movement, posture, stability, and performance of functional activities. Traditional anatomy primarily describes the location, shape, attachment, and structure of body parts, whereas functional anatomy goes a step