

Learning Objectives

MedBridge

Lower Extremity Alignment: A Proximal Rehabilitation Approach

Steven Dischiavi, PT, DPT, SCS, ATC, COMT

Course Objectives:

- Define the proximal control theory of lower extremity alignment.
- Discuss local, regional, and global interventions and give rationale for each.
- Understand the dynamic alignment of the patellofemoral joint during closed chain mechanics.
- Define dynamic lower extremity valgus and its combined motions.
- Define medial knee displacement and understand the differences compared to dynamic valgus.
- Discuss the clinical implications of understanding dynamic lower extremity alignment.
- Understand how polyarticular muscle chains influence human movement.
- Discuss how the pelvis is stabilized in three planes during functional closed chain movements.
- Identify evidence based exercises that are appropriate for the athlete based on EMG literature.
- Identify the various components identified within the hip focused exercise interventions.
- Explain the concept that strength is a non-linear progression.
- Describe what is meant by reverse engineering an athlete's needs analysis.

Chapter 1: Historical Review of a Hip Focused Proximal Control Theory

Hip impingement surgery rate has increased by over 600% among newly trained surgeons from 2006-2010. It will be expected that the physical therapist become an expert in the prevention and rehabilitation of the hip, particularly with the growing post-operative population. This chapter will describe local, regional, and proximal interventions and discuss the evidence for each.

Chapter 2: Dynamic Lower Extremity Alignment

Dynamic lower extremity alignment refers to the position of the lower extremity under certain dynamic conditions. The literature has different names and ways of describing the way this dynamic alignment is quantified; these concepts are discussed in this chapter.

Chapter 3: Functional Anatomy and EMG Literature

This chapter will outline the functional anatomy related to the hip and its surrounding musculature. Particular attention is paid to the three dimensional nature of muscular control on the skeletal system, and how the pelvis is stabilized functionally in three planes. The chapter concludes with a review of EMG literature and how it impacts exercise selection.

Chapter 4: Evidence-Based Review of Hip Focused Literature

The final chapter of this course will discuss the current state of the literature for hip focused exercise interventions. The concept of strength as a non-linear progression is presented and will be a tenet of the following courses. The course concludes with the introduction of the Global Dynamic Functional Stability paradigm and the concept of Dynamic Kinetic Chain Integration.