

Ambulating With Bilateral Lower Extremity Prosthetic Limbs

Alicia White, PT, DPT, ATC



Learning Objectives

- Conduct a comprehensive evaluation of individuals with bilateral lower extremity limb absence to identify occupational performance needs and contextual factors
- Formulate an individualized treatment plan for persons with bilateral lower extremity limb absence, integrating clinical reasoning and person-centered goals
- Determine prosthetic limb options that align with the functional goals and participation needs of individuals with bilateral lower extremity limb absence
- Enhance functional performance and participation outcomes for individuals with bilateral lower extremity limb absence through targeted intervention strategies

Chapter 1

Evaluating the Patient With Bilateral Lower Extremity Limb Amputations



History Intake / Surgical Information

- Medical diagnosis
- Postoperative precautions
- Weight-bearing status
- Comorbidities
- Energy expenditure

Manual Muscle Test Adaptations

- Communicate with the patient to determine comfortable hand positions
- Document hand placement for manual muscle tests

Special Tests

- Thomas test

Range of Motion and Goniometer Placement

- No distal endpoint
- Use the long bones to align
- Document goniometer placement
- Be sure to measure hip extension

Functional Outcomes Measures

- Amputee Mobility Predictor With Prosthesis
- Amputee Mobility Predictor No Prosthesis
- Prosthetic Limb Users Survey of Mobility (PLUS-M)
- 2-Minute Walk Test

Goal Setting

- Anticipate discharge goals on evaluation day
- Set small, measurable goals
- Work with medical team to determine goals
- Remember the team
 - Medical team is a player
 - Patient is the captain

Chapter 1 Summary

- How to properly evaluate the patient with bilateral lower extremity limb loss, including
 - History
 - MMT
 - Special tests
 - ROM
 - Functional outcomes measures
 - Goal setting

Chapter 2

Understanding Prosthetic Options for Patients With Bilateral Lower Extremity Amputations



Prosthetic Sockets

- Types of suspension
- Socket brim
- Test/transition socket
- Definitive sockets

Stubbies

- Socket
- Pylon
- Foot plates

Progression to Articulating Knees

- Increase the length of the pylons
- Add the knee in a locked position
- ****REVIEW EXPECTATIONS*****
- Ambulate in the bars with one knee unlocked
- Ambulate in the bars with both knees unlocked
- Ambulate out of the bars with assistive devices
- Ambulate out of the bars with no assistive devices

Assistive Devices

- Pediatric versions of typical assistive devices
- Cut the devices if necessary
- Rolling stool for the therapist

Chapter 2 Summary

- What physical therapists need to know about prosthetic sockets
- Components of a prosthetic stubby
- Progressing from stubbies to locking knees to articulating knees
- Assistive devices appropriate for patients with bilateral lower extremity limb loss

Chapter 3

Prosthetic Gait Training and Transfer Training for Patients With Bilateral Lower Extremity Amputations



Video

Donning and Doffing the Device



Video

Sit-to-Stand Transfers



Video

Gait Training in Parallel Bars



Video

Gait Training Out of the Parallel Bars With Stubbies



Video

Gait Training Out of the Parallel Bars With Articulating Knees



Video

Bed/Chair Transfers



Video

Car Transfers



Video

Floor-to-Stand Transfers



Video

Stairs



Video

Navigating Uneven Surfaces



Chapter 3 Summary

- How to don and doff the prosthetic limbs
- How to progress the patient from stubbies to articulating knees
- Gait training in the parallel bars
- Gait training out of the parallel bars
- How to train the patient to transfer with and without prosthetic limbs
- Gait training in the community

Course Summary

- The important details of an evaluation for patients with bilateral lower extremity limb loss
- The specific equipment necessary to teach someone to ambulate with bilateral lower extremity prosthetic limbs

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