Postgraduate Certificate in Amputee Rehabilitation

Prosthetic Prescription and Fitting

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Introduction

Prosthetic prescription and fitting are essential components of amputee rehabilitation. The process involves assessing the individual's needs, determining the appropriate prosthetic device, customizing the device to fit the individual's residual limb, and ensuring proper alignment and function. This course aims to provide healthcare professionals with the knowledge and skills needed to effectively prescribe and fit prosthetic devices for amputees.

Key Terms and Vocabulary

1. Residual Limb: The remaining portion of a limb after amputation. It is crucial to assess the residual limb's shape, size, and condition to ensure proper prosthetic fitting.

2. Prosthetic Socket: The part of the prosthetic device that encloses the residual limb. It is custom-made to provide a secure and comfortable fit while distributing pressure evenly.

3. Suspension: The method used to hold the prosthetic device onto the residual limb. Common suspension systems include suction, straps, and sleeves.

4. Alignment: The correct positioning of the prosthetic device in relation to the individual's body. Proper alignment is essential for optimal function and comfort.

5. Gait Analysis: The assessment of how a person walks with a prosthetic device. Gait analysis helps identify issues with alignment, fit, or function that need to be addressed.

6. Socket Interface: The interface between the residual limb and the prosthetic socket. It plays a crucial role in weight distribution, comfort, and control.

7. Prosthetic Components: The various parts of a prosthetic device, including the socket, suspension system, pylon, and foot. Each component contributes to the overall function and comfort of the prosthetic device.

8. Prosthetic Foot: The part of the prosthetic device that comes into contact with the ground. Different types of prosthetic feet are available, such as solid ankle cushion heel (SACH) feet, dynamic response feet, and energy storage and return (ESAR) feet.

9. Socket Design: The shape and configuration of the prosthetic socket. Socket design should be customized to fit the individual's residual limb anatomy and provide optimal comfort and function.

10. Prosthetic Alignment: The positioning of the prosthetic device in relation to the individual's body. Proper

alignment is crucial for stability, balance, and efficient gait.

11. Prosthetic Training: The process of teaching individuals how to use their prosthetic device effectively. Training may include exercises, gait training, and activities of daily living.

12. Prosthetic Maintenance: The regular care and maintenance of the prosthetic device to ensure optimal function and longevity. This may include cleaning, adjustment, and component replacement.

13. Prosthetic Outcome Measures: Objective measures used to assess the effectiveness of the prosthetic device and the individual's functional performance. Outcome measures may include gait speed, step length, and energy expenditure.

14. Prosthetic Rehabilitation: The multidisciplinary approach to helping individuals adapt to and optimize the use of their prosthetic device. Rehabilitation may involve physical therapy, occupational therapy, and psychological support.

15. Cosmesis: The aesthetic appearance of the prosthetic device. Cosmesis is important for individuals who want their prosthetic device to look natural and blend in with their remaining limb.

16. Prosthetic Alignment: The proper alignment of the prosthetic device in relation to the individual's body. Correct alignment is crucial for stability, balance, and efficient gait.

17. Prosthetic Socks: Socks worn over the residual limb to provide cushioning, absorb sweat, and adjust the fit of the prosthetic socket. Prosthetic socks come in various thicknesses and materials.

18. Prosthetic Liners: Silicone or gel liners worn between the residual limb and the prosthetic socket. Liners help cushion the limb, reduce friction, and improve comfort.

19. Prosthetic Knees: The component of the prosthetic device that allows for knee movement during walking. Prosthetic knees may be mechanical, hydraulic, or microprocessor-controlled.

20. Prosthetic Elbows: The component of the prosthetic device that allows for elbow movement. Prosthetic elbows may be body-powered or myoelectric.

21. Prosthetic Hands: The component of the prosthetic device that replaces the hand. Prosthetic hands may be cosmetic or functional, with options for grasping and manipulation.

22. Prosthetic Wrist Units: The component of the prosthetic device that allows for wrist movement. Wrist units can be mechanical or powered.

23. Prosthetic Ankle Units: The component of the prosthetic device that allows for ankle movement. Ankle units may provide dorsiflexion, plantarflexion, and inversion/eversion.

24. Prosthetic Control Systems: Systems that allow individuals to control their prosthetic device. Control systems may include body-powered controls, myoelectric controls, or microprocessor controls.

25. Prosthetic Sockets: The part of the prosthetic device that encloses the residual limb. Sockets are custom-

made to provide a secure and comfortable fit while distributing pressure evenly.

26. Prosthetic Suspension Systems: Systems that hold the prosthetic device onto the residual limb. Suspension systems may include suction, straps, or sleeves.

27. Prosthetic Components: The various parts of a prosthetic device, including the socket, pylon, knee unit, and foot. Each component contributes to the overall function and comfort of the prosthetic device.

28. Prosthetic Alignment: The correct positioning of the prosthetic device in relation to the individual's body. Proper alignment is essential for optimal function and comfort.

29. Prosthetic Gait Training: The process of teaching individuals how to walk with a prosthetic device. Gait training focuses on improving balance, coordination, and efficiency.

30. Prosthetic Energy Return: The ability of a prosthetic device to store and release energy during walking. Energy-returning prosthetic devices can improve gait efficiency and reduce fatigue.

31. Prosthetic Socket Fit: The snugness and comfort of the prosthetic socket on the residual limb. Proper socket fit is essential for stability, control, and comfort.

32. Prosthetic Socket Material: The material used to make the prosthetic socket. Common materials include carbon fiber, thermoplastics, and silicone.

33. Prosthetic Socket Design: The shape and configuration of the prosthetic socket. Socket design should be customized to fit the individual's residual limb anatomy and provide optimal comfort and function.

34. Prosthetic Socket Comfort: The absence of pain, pressure, or discomfort while wearing the prosthetic socket. Comfort is essential for long-term prosthetic use.

35. Prosthetic Socket Adjustments: Changes made to the prosthetic socket to improve fit, comfort, or function. Socket adjustments may be necessary as the residual limb changes shape or size.

36. Prosthetic Socket Liners: Silicone or gel liners worn between the residual limb and the prosthetic socket. Liners help cushion the limb, reduce friction, and improve comfort.

37. Prosthetic Socket Volume Management: The process of managing changes in residual limb volume. Volume management may involve adding or removing prosthetic socks or adjusting the socket fit.

38. Prosthetic Socket Suspension: The method used to hold the prosthetic device onto the residual limb. Common suspension systems include suction, straps, or sleeves.

39. Prosthetic Foot Types: Different types of prosthetic feet available, including solid ankle cushion heel (SACH) feet, dynamic response feet, and energy storage and return (ESAR) feet.

40. Prosthetic Foot Alignment: The correct positioning of the prosthetic foot in relation to the individual's body. Proper alignment is essential for stability, balance, and efficient gait.

41. Prosthetic Foot Function: The ability of the prosthetic foot to mimic the function of a natural foot. Prosthetic feet should provide shock absorption, propulsion, and stability.

42. Prosthetic Foot Selection: The process of choosing the most appropriate prosthetic foot for the individual based on their activity level, mobility needs, and functional goals.

43. Prosthetic Foot Maintenance: The regular care and maintenance of the prosthetic foot to ensure optimal function and longevity. Maintenance may include cleaning, lubrication, and component replacement.

44. Prosthetic Foot Adaptation: The process of getting used to a new prosthetic foot. Adaptation may involve adjusting walking patterns, balance, and footwear.

45. Prosthetic Foot Alignment: The correct positioning of the prosthetic foot in relation to the individual's body. Proper alignment is essential for stability, balance, and efficient gait.

46. Prosthetic Foot Componentry: The various parts of a prosthetic foot, including the foot shell, keel, and ankle unit. Each component contributes to the overall function and comfort of the prosthetic foot.

47. Prosthetic Foot Shock Absorption: The ability of the prosthetic foot to absorb and dissipate shock during walking or running. Shock absorption helps reduce impact on the residual limb and joints.

48. Prosthetic Foot Stability: The ability of the prosthetic foot to provide a stable base during standing and walking. Stability is essential for balance and confidence.

49. Prosthetic Foot Propulsion: The ability of the prosthetic foot to assist with forward movement during walking. Propulsion is crucial for efficient gait and energy conservation.

50. Prosthetic Foot Adaptation: The process of adjusting to a new prosthetic foot. Adaptation may involve changes in walking patterns, balance, and footwear.

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60. Prosthetic Knee Types: Different types of prosthetic knees available, including mechanical, hydraulic, and microprocessor-controlled knees.

61. Prosthetic Knee Alignment: The correct positioning of the prosthetic knee joint in relation to the individual's body. Proper alignment is essential for stability, balance, and efficient gait.

62. Prosthetic Knee Function: The ability of the prosthetic knee to provide controlled movement during walking. Prosthetic knees should allow for flexion, extension, and stability.

63. Prosthetic Knee Selection: The process of choosing the most appropriate prosthetic knee for the individual based on their mobility needs, activity level, and functional goals.

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67. Prosthetic Knee Componentry: The various parts of a prosthetic knee, including the knee joint, extension aid, and locking mechanism. Each component contributes to the overall function and comfort of the prosthetic knee.

68. Prosthetic Knee Flexion: The ability of the prosthetic knee to bend during walking, climbing stairs, or sitting. Proper knee flexion is essential for a natural gait pattern.

69. Prosthetic Knee Extension: The ability of the prosthetic knee to straighten during walking, standing, or running. Proper knee extension is crucial for stability and energy efficiency.

70. Prosthetic Knee Stability: The ability of the prosthetic knee to provide support and control during weight-bearing activities. Stability is essential for balance and confidence.

71. Prosthetic Knee Control: The user's ability to control the movement of the prosthetic knee. Control may be achieved through manual adjustments, hydraulic systems, or microprocessors.

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