Caring for Patients with Amputations

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PHYSICAL MEDICINE AND REHABILITATION

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- Ann Wilson, MS, RN, CRRN
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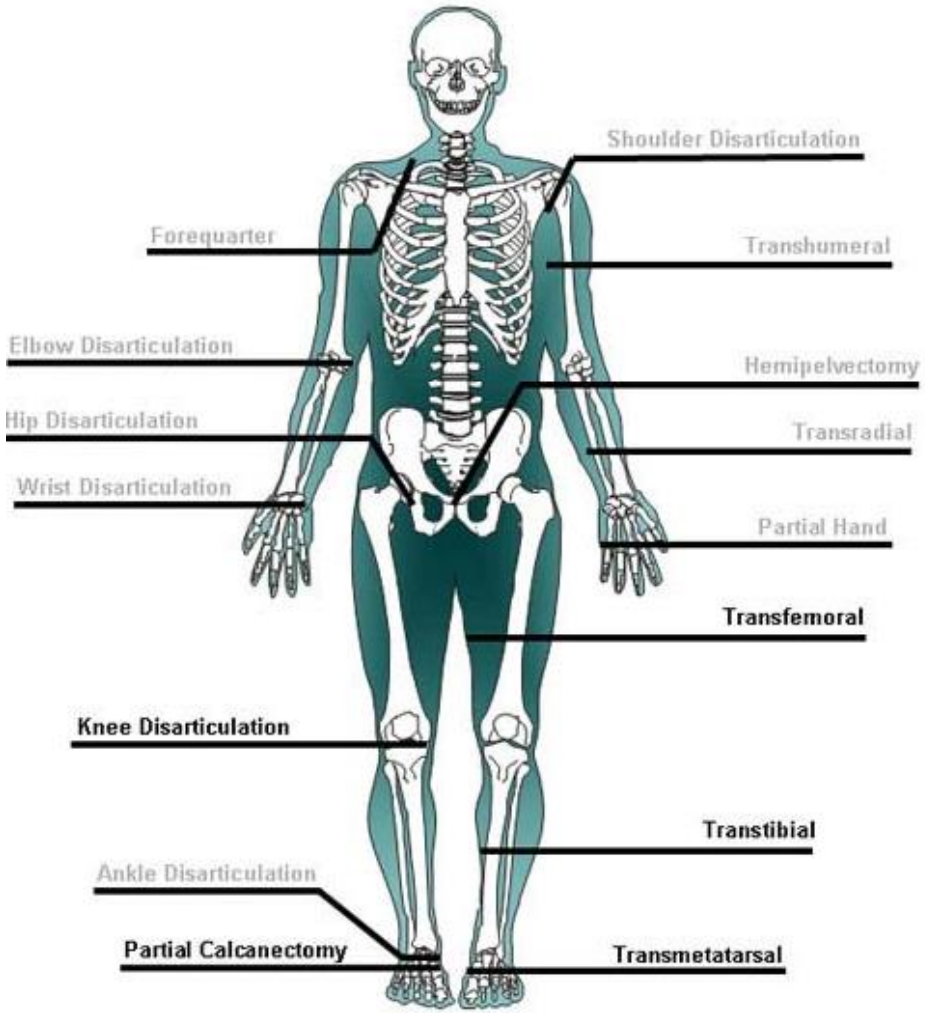
- VA- Amputation System of Care
- Florida State Association of Rehabilitation Nurses

Objectives

- Understanding the causes of amputation
- Comprehending the significance and importance of immediate postoperative care of the residual limb
- Recognizing the various physical changes of a residual limb after amputation
- Identifying possible complications to prosthetic treatment after amputation
- Describing common postoperative management strategies for a patient with a transtibial level amputation.

Amputation Causes

- Disease – Diabetes & Peripheral Vascular Disease
  - ~60 %-80% of all amputations
- Injury/ Trauma- MVA, GSW, Burns
- Congenital- Born with limb deficiency
- Cancer/Tumors – Osteosarcoma



https://orthop.washington.edu/patient-care/limb-loss

Amputation Levels

Factors for Recovery and Wound Healing

Age

Comorbidities

Activity Level

Compliance

Overall psyche

Motivation

Degree of acceptance

Post- Operative Care Phases

Phase 1- Inflammatory

Phase 2- Proliferative

Phase 3- Maturation

Post- Operative Care Phases

Phase 1- Inflammatory

- Duration: 3-4 days
- Avoid infection and vascular compromise
- Draining, Phantom limb pain or sensation, Edema

Phase 2- Proliferative

- Duration: 5-20 days
- Epidermal regeneration and collagen formation

Phase 3- Maturation

- Duration: up to 1 year
- Remodeling and volume stabilization

Post- Operative Goals

Promote wound healing

Edema Management

Pain Management

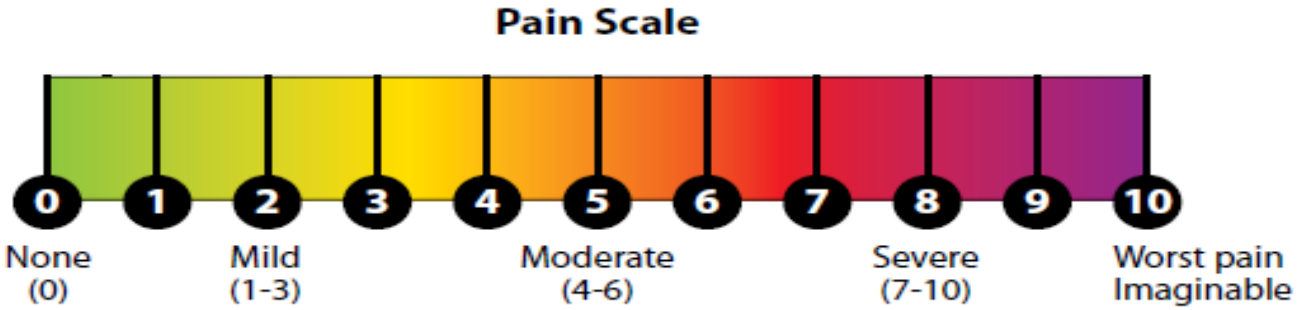
Prevent skin breakdown

Prevent Contractures

Limb protection

SAFTEY- Fall prevention

Phantom Limb Pain



Phantom Limb Pain vs Sensation

Pharmaceutical options

Compression Therapy

Mirror Therapy

Message

Tapping

Psychological State

Time since amputation

Post- Surgical Pain

Pain can also be an indication of infection, circulatory problems or ill-fitting compression or postoperative interventions

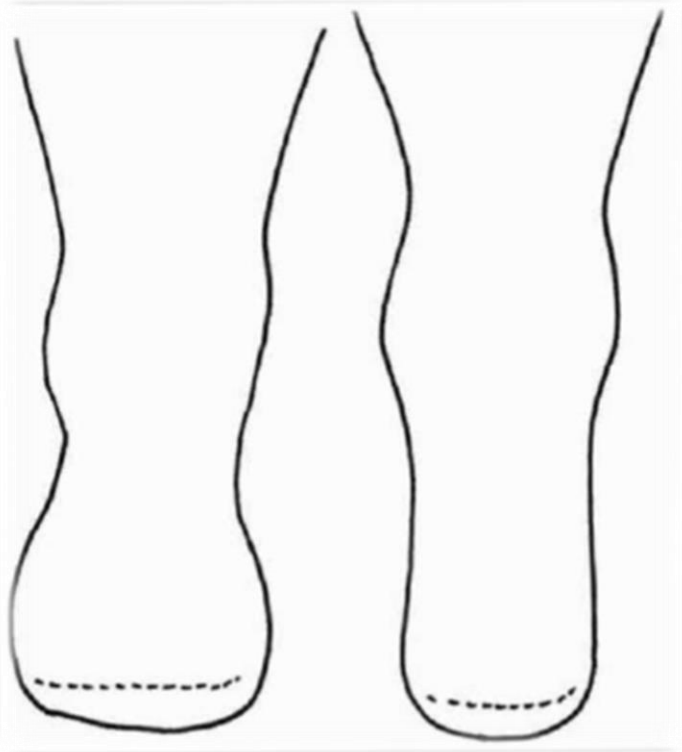
•The problem facing the clinic team is to determine if the pain is due to trauma of amputation or if it is indicative of a more serious problem

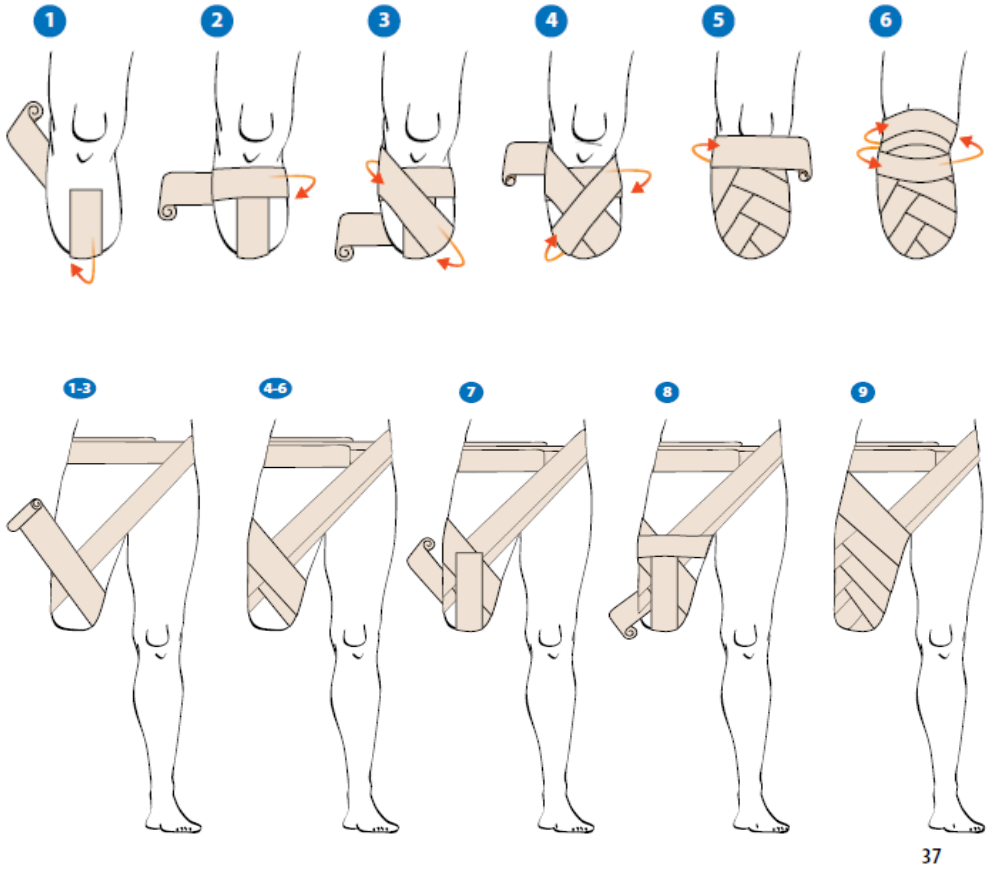
•Pain management through medication and a rigid dressing is important during the first 2-3 days postoperatively Generalized pain and phantom pain tend to persist for longer periods if not controlled during the first few post operative days

•Regardless of the cause, pain can be sufficiently debilitating to prevent a patient from successfully wearing a prosthesis

•Pain can be described in many ways

Edema Management





Edema Management

Elastic bandages

Compressogrip/shrinkers

Shrinkers

Goals:

Reduce post-op edema to reduce compression on nerve endings reducing pain response

Reduce edema to limit delay in healing

Limb Shaping in preparation for a prosthesis

Edema Management

Elastic bandages

Compressogrip/shrinkers

- **Elastic Compression 15-20 mmHg**
- **Can be used over post- op dressings, sutures and staples**
- **Can be washed for daily use**

Shrinkers

Edema Management

Elastic bandages

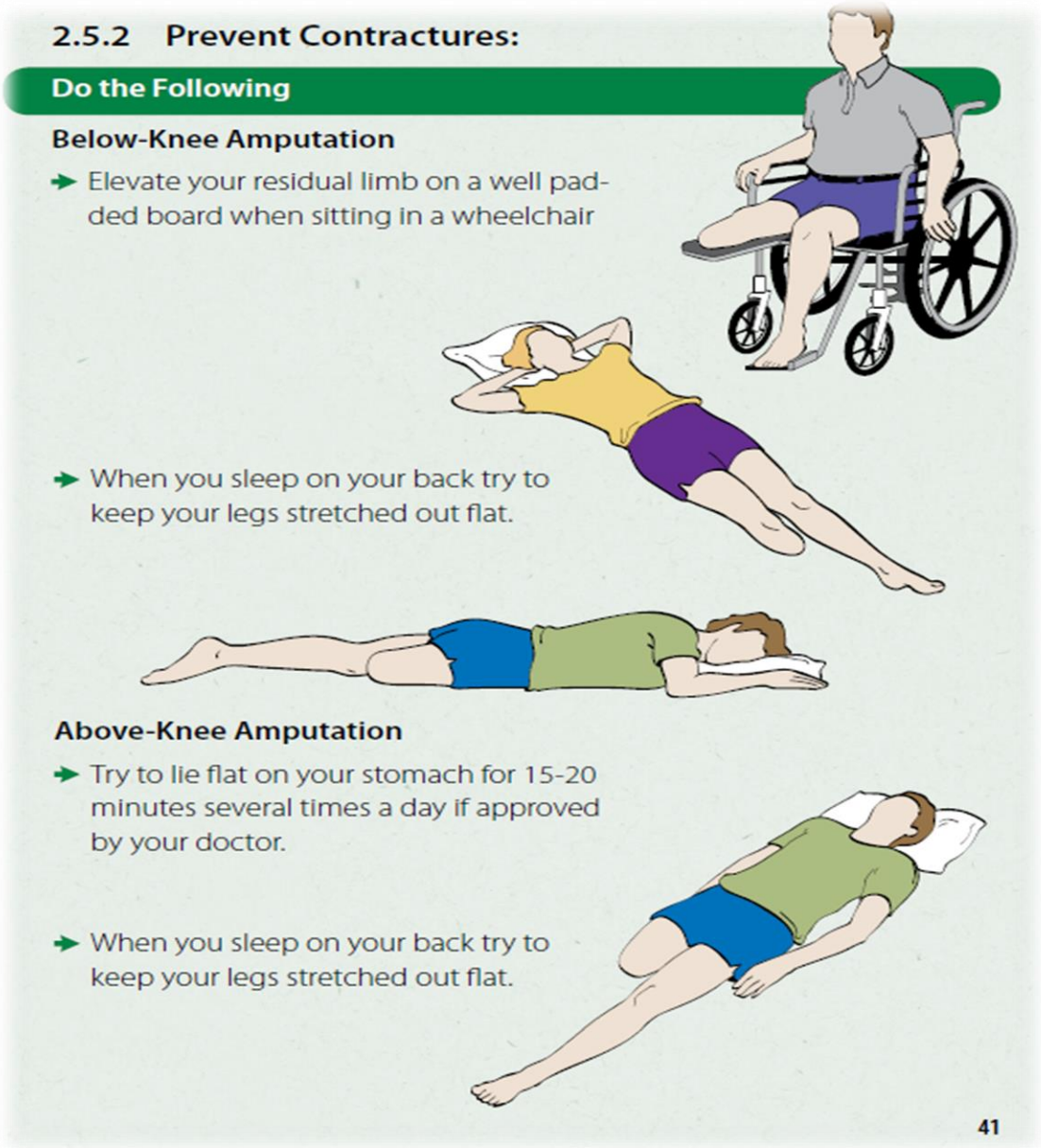
Compressogrip/shrinkers

Shrinkers

- **More Compression than Ace bandage**
- **Gradient Compression 20-30mmhg & 30-40mmHg**
- **Can be used over post- op dressings, sutures and staples**
- **Can be washed for daily use**

https://www.juzo.com/

Residual Limb Positioning



Prevention of Contractures

Below the knee amputation-

Prevent Hip flexion

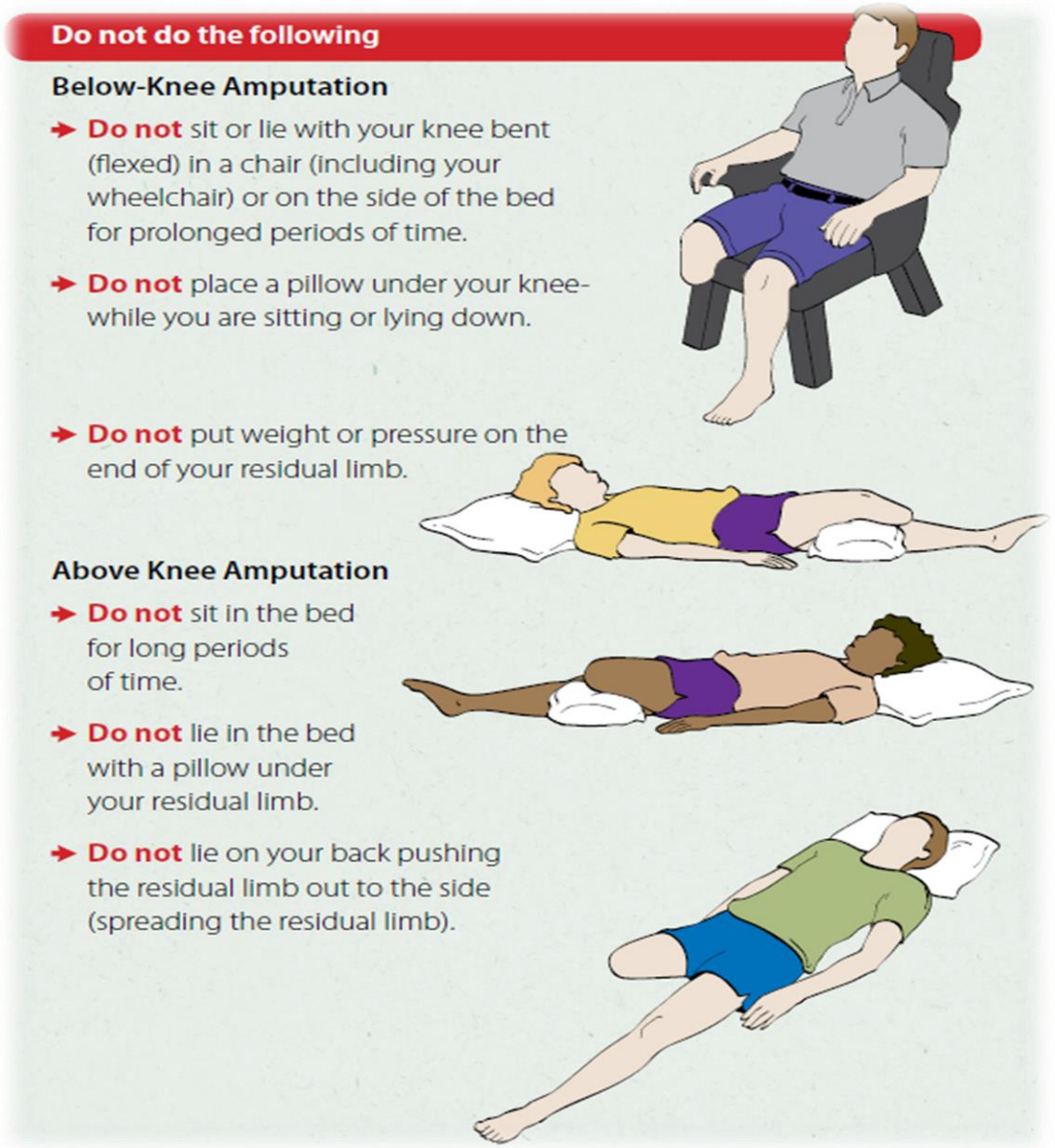
Prevent hip abduction

Promote prone positron-

- When sutures are removed

Avoid prolonged sitting

Use limb protectors



Prevention of Contractures

Prevent Hip flexion

Prevent hip abduction

Promote prone positron-

- When sutures are removed

Avoid prolonged sitting

Use limb protectors

Residual Limb Protection

Options

Soft Dressings

Rigid total contact dressing

Removeable rigid dressing

Soft limb protectors

Immediate post-operative prosthesis

Goals:

Reduce post-op edema to reduce compression on nerve endings reducing pain response

Reduce edema to limit delay in healing

Limb Shaping in preparation for a prosthesis

Limb Protection – Soft Dressing

Ease of use

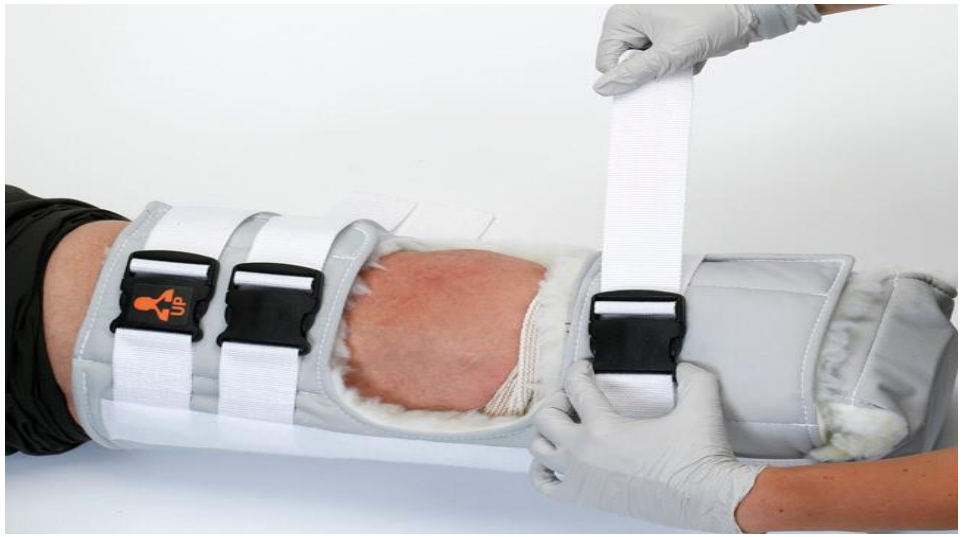
Accessibility to the wound

Disadvantages

Dressings can become loose and fall off

Lack of knee flexion prevention

Proper application to reduce localized pressure areas



Limb Protection-

Plaster or fiberglass cast with changes needed frequently
Wound inspection is possible
Can be worn over post- operative sock or compression garment
Reduce swelling with adjustability
Removable for range of motion activity

Disadvantages
Skilled clinician for application of rigid dressings
Proper placement and observation needed

Limb Protection and post op prosthesis-

Removeable designs
Non removable designs

Promote early weight bearing and ambulation

Limb Protection- Transfemoral or above knee

Patient Education for Gait Training

Residual limb Care

Hygiene of socks and liners

Foot Care

Proper donning of liner, socks and prosthesis

Continued use of compression garments

Limb positioning while seated

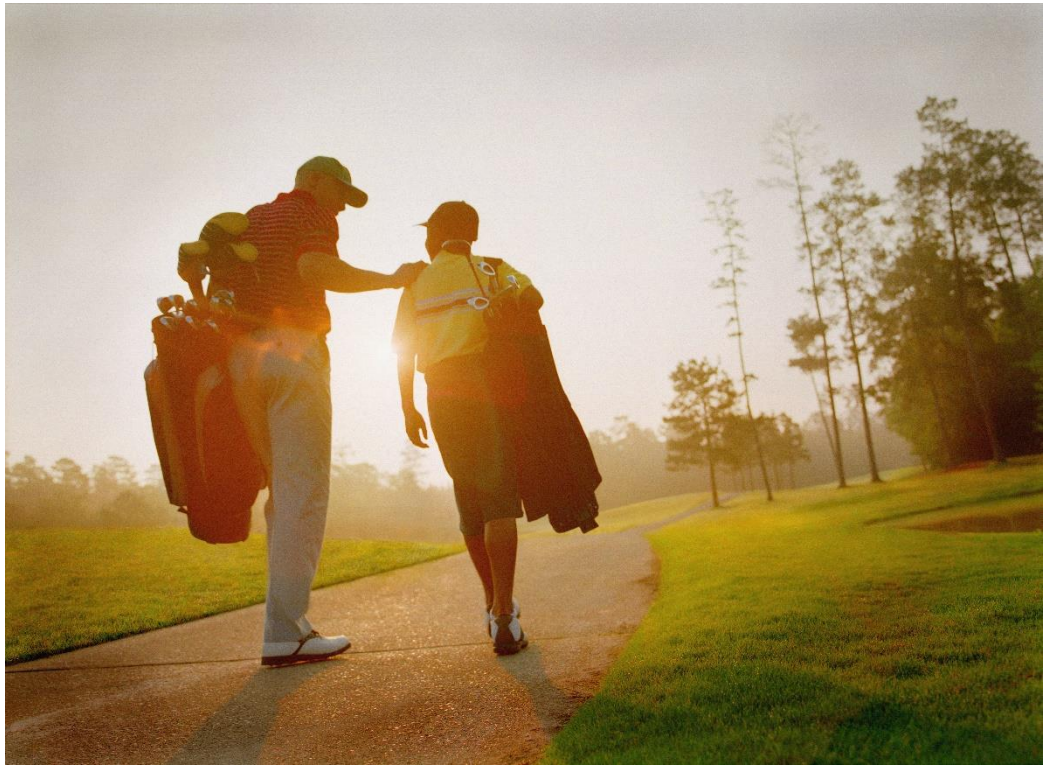
Safe Transfers with prosthesis

Additional Support

Peer Support

- Match age, gender, level of amputation and cause considerations

Family and friends support



Transition to increased safe ambulation with a prosthesis

References

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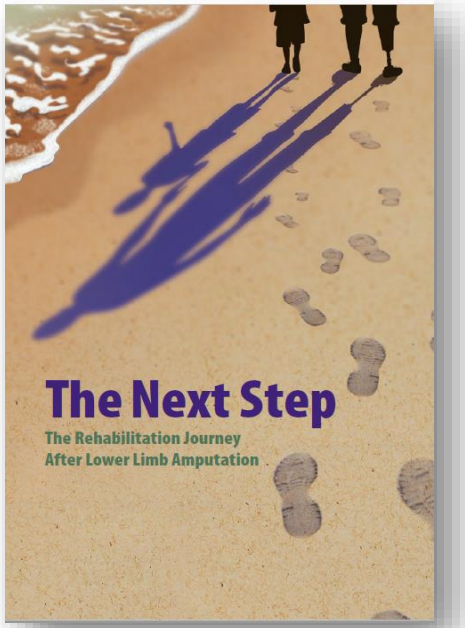
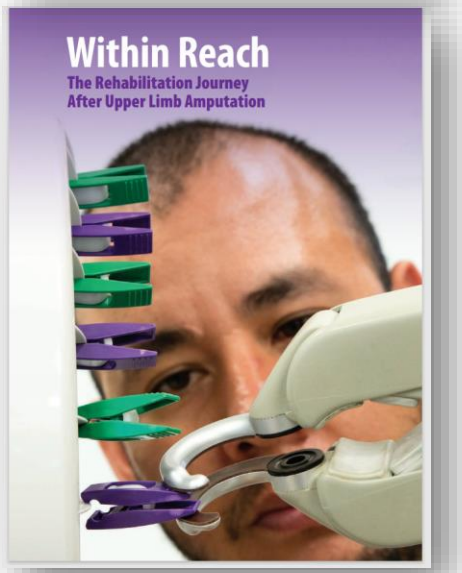
Smith, Michael, Bowker. AAOS Atlas of Amputations and Limb Deficiencies, 3rd edition,





Additional Resources

The Next Step- The Rehabilitation Journey After Lower Limb Amputation (pdf provided)

Within Reach- The rehabilitation Journey After Upper Limb Amputation (pdf provided)

Amputation System of Care (ASoC) - Rehabilitation and Prosthetic Services (va.gov)