# Rehabilitation of Lower Limb Amputation

## Module A: Pre-Amputation

1 Patient is considered for lower limb amputation

2 Is a lower limb amputation surgery emergently needed?
- Yes → 3 Refer to **Module B**
- No

4 Comprehensive Pre-Amputation Evaluation (See **Sidebars A and B**)
- Consider implications of amputation for every level being considered and for alternative lower limb management strategies (e.g., alternate surgical approach or conservative management)
- Consider how timing of amputation may affect functional outcomes.

5 Are there structural barriers, equipment needs, or other therapy goals that could improve anticipated function after amputation?
- Yes → 6 Refer to appropriate therapy discipline(s)
- No

7 Does the patient have psychosocial/behavioral health concerns related to amputation?
- Yes → 8 Refer to SW or BH and treat
- No

9 Are there medical factors impacting function that could be addressed?
- Yes → 10 Refer to appropriate medical providers and treatments
- No

11 If a lower limb amputation is performed, continue to **Module B: Post-Amputation** (See **Box 12**)

Abbreviations: BH: behavioral health; SW: social work

## Module B: Post-Amputation

### Peri-Operative

12 Amputation surgery has occurred

13 Engage the ACT in conducting comprehensive perioperative assessment and shared decision making. (See **Sidebar A**)

14 Is the patient ready for initiation of comprehensive rehabilitation services?
- Yes → 16 Develop a goal-oriented care plan. (See **LLA CPG - Appendix D. Routine Care**) → 17 Provide appropriate education. (See **LLA CPG - Appendix D. Routine Care**) → 18 Ensure patient achieves the highest level of independence without a prosthesis (See **Sidebar D**)
- No → 15 Refer the patient to appropriate services for care and management

### Post-Amputation Rehabilitation

19 Is the patient a candidate for a prosthesis OR pre-prosthetic training?
- Yes → 20 Engage the ACT to provide appropriate pre-prosthetic training (See **Sidebar A**) → 21 Determine most appropriate prosthetic device(s) → 22 Develop prosthetic prescription including all necessary components → 23 Initiate lower limb prosthetic fabrication, fitting, and delivery
- No

### Prosthetic Training

24 Conduct final prosthesis check out including all appropriate members of the care team

25 Does the prosthetic device improve functional status and meet realistic patient goals?
- Yes → 26 Engage the ACT to administer prosthetic training, education, and rehabilitation (See **Sidebar D**) → 27 Does the patient require additional activity specific prosthesis?
  - Yes
  - No
- No

### Lifelong Care

28 Continue rehabilitation to ensure patient achieves highest level of functional independence without a prosthesis (See **Sidebar D**)

29 Recommend and coordinate lifelong care and management of lower limb amputation

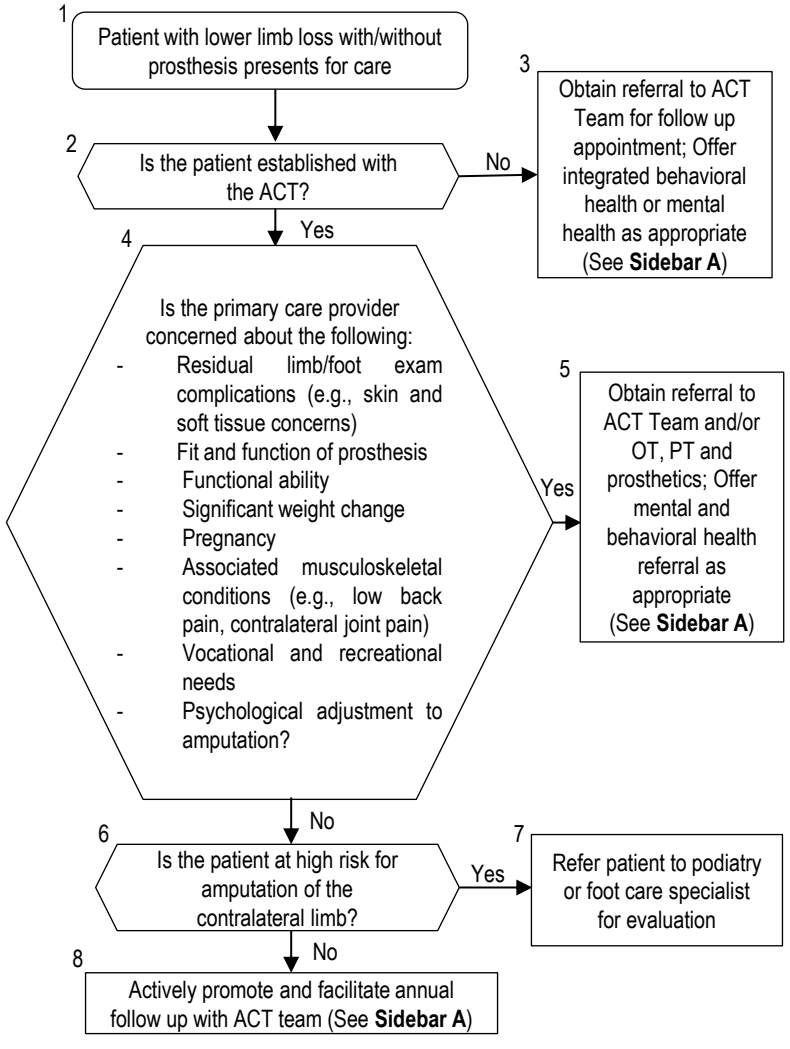
30 Provide routine care as needed and schedule follow-up at least every 12 months (See **Sidebar A**)

31 Provide education on current management and practices; refer patient as appropriate to address medical, mental health, prosthetic or rehabilitation needs (Refer to **Box 19** when appropriate)

Abbreviations: ACT: Amputation Care Team; CPG: clinical practice guideline; LLA: lower limb amputation

Recommendations can be accessed in the full guideline.
Available at: https://www.healthquality.va.gov/.

## Module C: Primary Care




Abbreviations: ACT: Transdisciplinary Amputation Care Team; OT: occupational therapy; PT: physical therapy

## Sidebar A: Amputation Care Team (ACT)

The ACT is a physician-led, patient-centered, transdisciplinary approach to provide a comprehensive treatment plan, limb preservation, and ensure lifelong management. The specialists involved may include:

- Rehabilitation physicians
- Pain management specialists
- Surgeons (e.g., vascular, orthopedic)
- Mental and behavioral health providers
- Case managers
- Nurses
- Occupational and physical therapists
- Certified prosthetists
- Social workers
- Trained peer visitors
- Recreational Therapists and Adaptive Sports Providers
- Others (e.g., podiatrist, cardiologist)

Abbreviations: ACT: Amputation Care

## Sidebar B: Comprehensive Pre-Amputation Evaluation

**For amputation or other management approaches being considered, assess the following:**

- Preliminary prosthesis candidacy
- Functional implications of amputation if not using a prosthesis (applies to all patients at times)
- Equipment or home modification needs to prepare for post-amputation
- Specific rehabilitation goals such as optimizing mobility with the contralateral limb
- Psychosocial and behavioral health
- Medical factors affecting function
- Alternative surgical approaches or conservative management

See **Appendix D** in the full LLA CPG for further recommendations.

## Sidebar C: Pain Management

**Perioperative Pain Management:**

- Intraoperative placement of a perineural catheter for the post operative delivery of local anesthetic can reduce pain following amputation surgery. (Recommendation 4)
- Insufficient evidence to recommend for or against targeted muscle reinnervation (peripheral nerve management) for phantom limb pain. (Recommendation 3)

**Residual Limb Pain Management:**

- Insufficient evidence for or against neurostimulation (e.g., peripheral nerve stimulation, or spinal cord stimulation) or neuroablation (e.g., cryoneurolysis, radio frequency ablation) interventions for the management of residual limb pain (Recommendation 21)

**Chronic Phantom Limb Pain:**

- Perineural catheter delivered anesthetic for the treatment of chronic severe phantom limb pain with functional impairment (Recommendation 22)
- Consult for mirror therapy, alone or in combination with other therapies, to improve pain, function and quality of life for individuals with phantom limb pain. (Recommendation 11)
- Insufficient evidence to recommend for or against any systemic pharmacologic intervention for the management of phantom limb pain. (Recommendation 23)
- Insufficient evidence for or against neurostimulation (e.g., peripheral nerve stimulation, or spinal cord stimulation) or neuroablation (e.g., cryoneurolysis, radio frequency ablation) interventions for the management of phantom limb pain (Recommendation 21)

## Sidebar D: Functional Activity List

Below are categories of activities to include throughout the rehabilitation process of individuals with lower limb amputation. These activities are dependent on patient preference, level of functioning, and overall clinical judgment to ensure safety.

| | |
|---|---|
| • Activities of Daily Living | • Community Tasks |
| • Functional Mobility | • Return to Work |
| • Household Tasks | • Return to Sport/Leisure |
| • Caregiving | • Return to Travel |

**Please see LLA CPG page 28 for the full list of functional activities**