2017 VA/DoD Clinical Practice Guideline
Rehabilitation of Individuals with Lower Limb Amputation

Amputation Care ECHO
November 29, 2017

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Agenda

• Scope of the Problem
• Guideline Working Group and Project Team
• Development Process
• Grading Recommendations
• Evidence-based Clinical Practice Recommendations
• Clinical Care Algorithms
Update of 2007 Clinical Practice Guideline

- Existing evidence-based CPG is outdated – published in 2007
  - Included 215 “recommendations,” many based on expert opinion only

- New Guideline was updated with evidence from January 2007 – July 2016

- Evaluation of new research to establish evidence-based recommendations in key areas of amputation rehabilitation
Scope of the Guideline

- Pre-operative rehabilitation interventions
- Surgical interventions
- Interventions in immediate post-operative period
- Gait and mobility training
- Prosthetic componentry selection
- Factors affecting patient outcomes
- Outcome measures
- Pain management
- Unique subgroup considerations
# Guideline Working Group

<table>
<thead>
<tr>
<th>Department of Veterans Affairs</th>
<th>Department of Defense</th>
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<tbody>
<tr>
<td>Billie Randolph, PT, PhD (Champion)</td>
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<td>LCDR Lynita Mullins, DO</td>
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<td>Annemarie Orr, OTD, OTR/L</td>
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<td>LTC Benjamin K. Potter, MD</td>
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<td></td>
<td>Alison Pruziner, PT, DPT, ATC</td>
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# Project Team

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<tr>
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Anita Ramanathan, BA |
Guideline Development Process

- Topic selection by EBPWG
- Development of key questions
- Evidence review
- In-person workshop
- Draft products
- Final products

20 subject matter experts from VA/DoD

- Evidence-based CPG
- Algorithm
- Toolkit

- Iterative process
- Includes peer-review
Strength of a Recommendation

- Strength of a recommendation on a continuum:
  - **Strong For** (or “We recommend offering this option ...”)
  - **Weak For** (or “We suggest offering this option ...”)
  - **Weak Against** (or “We suggest not offering this option ...”)
  - **Strong Against** (or “We recommend against offering this option ...”)
- Note: Weak (For or Against) recommendations may also be termed “conditional,” “discretionary,” or “qualified”
  - Recommendations may be **conditional** based on patient values and preferences, the resources available, or the setting in which the intervention will be implemented
  - Recommendations may be at the **discretion** of the patient and clinician
  - Recommendations may be **qualified** with an explanation about the issues that would lead decisions to vary

Grading Recommendations - GRADE

Decision Domains (4)

- Balance of desirable and undesirable outcomes
- Confidence in the quality of the evidence
- Values and preferences
- Other implications, as appropriate, e.g.:
  - Subgroup considerations
  - Acceptability
  - Feasibility
  - Equity
  - Resource use
### Updating and Categorizing Recommendations

<table>
<thead>
<tr>
<th>Evidence Reviewed*</th>
<th>Recommendation Category*</th>
<th>Definition*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reviewed</td>
<td>New- added</td>
<td>New recommendation following review of the evidence</td>
</tr>
<tr>
<td></td>
<td>New- replaced</td>
<td>Recommendation from previous CPG that has been carried over to the updated CPG that has been changed following review of the evidence.</td>
</tr>
<tr>
<td></td>
<td>Not changed</td>
<td>Recommendation from previous CPG that has been carried forward to the updated CPG where the evidence has been reviewed but the recommendation is not changed</td>
</tr>
<tr>
<td></td>
<td>Amended</td>
<td>Recommendation from the previous CPG that has been carried forward to the updated CPG where the evidence has been reviewed and a minor amendment has been made</td>
</tr>
<tr>
<td></td>
<td>Deleted</td>
<td>Recommendation from the previous CPG that has been removed based on review of the evidence</td>
</tr>
<tr>
<td>Not reviewed</td>
<td>Not changed</td>
<td>Recommendation from previous CPG that has been carried forward to the updated CPG, but for which the evidence has not been reviewed</td>
</tr>
<tr>
<td></td>
<td>Amended</td>
<td>Recommendation from the previous CPG that has been carried forward to the updated CPG where the evidence has not been reviewed and a minor amendment has been made</td>
</tr>
<tr>
<td></td>
<td>Deleted</td>
<td>Recommendation from the previous CPG that has been removed because it was deemed out of scope for the updated CPG</td>
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*Adapted from the NICE guideline manual (2012) and Garcia et al. (2014).
Structure of the Clinical Practice Guideline

• Importance and consideration of patient preferences, safety, and education is reflected throughout the CPG, in the background, recommendations, and appendices.

• Patient-centered care and shared decision making are described in the background section and referenced throughout the document to emphasize their use.

• Recommendations were made taking into consideration all four GRADE domains.
Clinical Practice Recommendation Summary

• Recommendations more narrow in scope
  18 recommendations compared to 215 in 2007

• Recommendations by Phase of Rehabilitation
  6 All phases, 8 peri-operative, 1 pre-prosthetic, 3 prosthetic training

• Recommendations by Strength of Recommendation
  4 Strong for, 13 Weak for, and 1 Neither

• Recommendations by New vs. Prior
  11 New Recommendations
<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Strength</th>
<th>Category</th>
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</thead>
<tbody>
<tr>
<td><strong>All Phases of Amputation Rehabilitation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. We suggest patient education be provided by the rehabilitation care team throughout all phases of amputation rehabilitation.</td>
<td>Weak for</td>
<td>Reviewed, Amended</td>
</tr>
<tr>
<td>2. We suggest an assessment of behavioral health and psychosocial functioning at every phase of amputation management and rehabilitation.</td>
<td>Weak for</td>
<td>Reviewed, Amended</td>
</tr>
<tr>
<td>3. When assessing pain, we suggest that measurement of the intensity of pain and interference with function should be separately assessed for each pain type and location using standardized tools.</td>
<td>Weak for</td>
<td>Reviewed, Amended</td>
</tr>
<tr>
<td>4. We suggest offering a multi-modal, transdisciplinary individualized approach to pain management including transition to a non-narcotic pharmacological regimen combined with physical, psychological, and mechanical modalities throughout the rehabilitation process. (For the treatment of chronic pain, the 2017 VA/DoD CPG for the Management of Opioid Therapy for Chronic Pain recommends alternatives to opioid therapy such as self-management strategies, other non-pharmacological treatments, and non-opioids over opioids [see the 2017 VA/DoD OT CPG1]).</td>
<td>Weak for</td>
<td>Reviewed, New-replaced</td>
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VA/DoD Clinical Practice Guideline for Rehabilitation of Individuals with Lower Limb Amputation
### Clinical Practice Recommendations

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<tr>
<th>Recommendation</th>
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<tbody>
<tr>
<td><strong>All Phases of Amputation Rehabilitation (cont.)</strong></td>
<td></td>
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<tr>
<td>5. We recommend providers consider the patient’s birth sex and self-identified gender identity in developing individualized treatment plans.</td>
<td>Strong for</td>
<td>Reviewed, New-added</td>
</tr>
<tr>
<td>6. We suggest offering peer support interventions, including visitation by a certified peer visitor, as early as feasible and throughout the rehabilitation process.</td>
<td>Weak for</td>
<td>Reviewed, Amended</td>
</tr>
<tr>
<td><strong>Perioperative Phase</strong></td>
<td></td>
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<tr>
<td>7. Prior to surgery, we suggest that rehabilitation goals, outcomes, and other implications be included in shared decision making about residual limb length and amputation level.</td>
<td>Weak for</td>
<td>Reviewed, Amended</td>
</tr>
<tr>
<td>8. There is insufficient evidence to recommend one surgical amputation procedure over another.</td>
<td>Not applicable</td>
<td>Reviewed, New-added</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Strength</td>
<td>Category</td>
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<tr>
<td>----------------</td>
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<tr>
<td><strong>Perioperative Phase (cont.)</strong></td>
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<tr>
<td>9. We suggest use of a rigid or semi-rigid dressing to promote healing and early prosthetic use as soon as feasible post-amputation in transtibial amputation. Rigid post-operative dressings are preferred in situations where limb protection is a priority.</td>
<td>Weak for</td>
<td>Reviewed, Amended</td>
</tr>
<tr>
<td>10. We suggest performing cognitive screening prior to establishing rehabilitation goals, to assess the patient’s ability and suitability for appropriate prosthetic technology.</td>
<td>Weak for</td>
<td>Reviewed, New-replaced</td>
</tr>
<tr>
<td>11. We suggest that in the perioperative phase following amputation, patients receive physical rehabilitation and appropriate durable medical equipment/assistive technology.</td>
<td>Weak for</td>
<td>Reviewed, New-replaced</td>
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</table>
## Clinical Practice Recommendations

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<tr>
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<tbody>
<tr>
<td><strong>Perioperative Phase (cont.)</strong></td>
<td></td>
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<tr>
<td>12. We suggest, when applicable, treatment in an acute inpatient rehabilitation program over a skilled nursing facility.</td>
<td>Weak for</td>
<td>Reviewed, New-replaced</td>
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<tr>
<td>13. We suggest the initiation of mobility training as soon as feasible post-amputation. In appropriate patients, this may include ipsilateral side weight-bearing ambulation with a pylon to improve physical function and gait parameters.</td>
<td>Weak for</td>
<td>Reviewed, New-replaced</td>
</tr>
<tr>
<td>14. We recommend instituting rehabilitation training interventions, using both open and closed chain exercises and progressive resistance to improve gait, mobility, strength, cardiovascular fitness and activities of daily living performance in order to maximize function.</td>
<td>Strong for</td>
<td>Reviewed, New-replaced</td>
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<tr>
<td><strong>Pre-Prosthetic Phase</strong></td>
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<tr>
<td>15. We suggest offering microprocessor knee units over non-microprocessor knee units for ambulation to reduce risk of falls and maximize patient satisfaction. There is insufficient evidence to recommend for or against socket design, prosthetic foot categories, and suspensions and interfaces.</td>
<td>Weak for</td>
<td>Reviewed, New-added</td>
</tr>
<tr>
<td><strong>Prosthetic Training Phase</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. We recommend the use of valid, reliable, and responsive functional outcome measures, including, but not limited to, the Comprehensive High-level Activity Mobility Predictor, Amputee Mobility Predictor, 10-meter walk test, and 6-minute walk test.</td>
<td>Strong for</td>
<td>Reviewed, New-replaced</td>
</tr>
<tr>
<td>17. We suggest the use of a combination of measures with acceptable psychometric properties to assess functional outcomes.</td>
<td>Weak for</td>
<td>Reviewed, New-replaced</td>
</tr>
<tr>
<td>18. We recommend an assessment of factors that are associated with poorer outcomes following acquired limb loss, such as smoking, comorbid injuries or illnesses, psychosocial functioning, and pain.</td>
<td>Strong for</td>
<td>Reviewed, Amended</td>
</tr>
</tbody>
</table>
Algorithm Module A: Transdisciplinary Amputation Care Team Approach (TACT)

1. Patient has or is a candidate for lower limb amputation

2. Does the patient require surgery or is in the immediate perioperative period?
   - Yes
   - No

3. Engage the TACT in conducting comprehensive perioperative assessment and shared decision making (See Sidebar A)

4. Is the patient ready for initiation of comprehensive rehabilitation services?
   - Yes
   - No

5. Ensure appropriate medical, surgical, and behavioral health teams are engaged

6. Provide appropriate education regarding currently available technology, surgical, and rehabilitation procedure options to the patient, family, and caregiver(s)

7. Develop a patient-centered rehabilitation goal-directed care plan, including pain management, limb preservation, choice of care setting, and assistive technologies

Sidebar A: TACT
The TACT 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
- Case managers
- Nurses
- Occupational and physical therapists
- Certified prosthetists
- Social workers
- Trained peer visitors
- Others (e.g., podiatrist, cardiologist)

Abbreviations: TACT: Transdisciplinary Amputation Care Team
Algorithm Module B: Primary Care Follow-up and Lifelong Care

1. Patient with lower limb loss with/without prosthesis

2. Provide follow-up assessment and treatment as well as secondary amputation prevention (See Sidebar A)

3. Has the patient had a change in:
   - Functional ability
   - Pain control
   - Skin integrity
   - Associated musculoskeletal conditions (e.g., low back pain, contralateral joint pain)
   - Satisfaction with prosthetic device
   - Vocational and recreational needs
   - Psychological adjustment to amputation?

   Yes 4 Refer to Module A: TACT

   No

Sidebar A: Lower Limb Loss Assessment and Secondary Amputation Prevention

- Assessment of risk factors
- Lower limb/foot preservation care
- Patient education for lifestyle modification (Encourage exercise and cardiovascular fitness, nutrition and smoking cessation)
- Diabetes control (see VA/DoD Diabetes CPG)
- Mental health
- Monitor for:
  - Pain control (see VA/DoD Opioid Therapy CPG)
  - Skin integrity
  - Associated musculoskeletal conditions

Note: Boxes 5-7 and Sidebar B are depicted on the next slide.
- Box 3 (No) connects to box 4
Algorithm Module B: Primary Care Follow-up and Lifelong Care (cont.)

Does the patient have vascular disease or diabetes?

- Yes: Refer patient to podiatrist
- No: Continue intermittent/regular follow-up

Ensure that a follow-up appointment is scheduled with the TACT on an annual basis or more frequently, as required (See Sidebar B)

Sidebar B: TACT
The TACT 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
- Case managers
- Nurses
- Occupational and physical therapists
- Certified prosthetists
- Social workers
- Trained peer visitors
- Others (e.g., podiatrist, cardiologist)

Note: Boxes 1-4 and Sidebar A are depicted on the previous slide.
- Box 3 (No) connects to box 5
Questions and Discussion