The Amputee Patient: Preparing for the Prosthesis

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Objectives

Participants will understand the principles involved in preparing the Amputee Patient for a prosthesis during the pre-prosthetic phase.

Participants will understand K-levels for the Amputee Patient and the determining factors in selecting a prosthesis.
HealthSouth Harmarville AMPUTEE PROGRAM
Joint Commission Certification
Follow the Department of Defense (DOD) Guidelines ¹
Define the phases of rehabilitation care and the steps included in each phase

Recognizes the importance of comprehensive interdisciplinary assessment of the patient before and after surgery and understanding the physical and social support system

Recognizes the importance of the decision about the appropriate level of amputation to maximize function

Discusses surgical principles to optimize wound healing and shaping of the residual limb for prosthetic training

Discusses immediate postoperative dressing and management of the residual limb to maximize healing and functional outcome
Identifies key elements of the rehabilitation treatment and prosthetic training across all phases of the rehabilitation process

Emphasizes the importance of foot care to prevent future amputation and optimize the condition of the contralateral limb

Describes the key components of medical management of medical comorbidities and prevention of complication

Addresses strategies for pain management across all phases of the rehabilitation process

Emphasizes the contribution of behavioral health assessment and intervention

Emphasizes the importance of patient education

Emphasizes the need for life-long follow-up care
Types and Levels

- Types of Amputations
  - Non-Traumatic
  - Traumatic

- Levels of Lower Extremity Amputations
  - Hip Disarticulation
  - Transfemoral
  - Knee Disarticulation
  - Transtibial
  - Ankle Disarticulation
  - Transmetatarsal
Statistics on Limb Loss

- Approximately 2.1 million people living with limb loss and it is expected to double by 2050
- 185,000 Amputations/year in United States
  - 300-500/day
- Of persons with diabetes who have a lower extremity amputation, up to 55% will require amputation of the second leg within 2-3 years
- 85% of lower limb amputations are proceeded by a foot ulcer
Statistics on Limb Loss

- Causes of amputations:
  - 54% Vascular Disease
  - 45% Trauma
  - <2% Cancer

- Five year Mortality Rate: Nearly 50% for amputees due to vascular disease (This is higher than Breast CA, Colon CA, and Prostate CA)

- The number of amputations caused by Diabetes increased by 24% from 1988 to 2009.

- Hospital costs associated with amputation totaled >$8.7 billion in 2013
Statistics on Limb Loss

• Waiting to be seen by a doctor for a diabetic foot ulcer for longer than 6 weeks can increase the likelihood that the ulcer will result in an amputation.

• The risk for amputation may be decreased by up to 75% if a team specializing in the care of diabetic foot ulcers is involved. This team may consist of specialists in wound care, diabetes, podiatry, infectious disease, and a vascular specialist.

• A foot ulcer is the initial event in more than 85% of major amputations that are performed on people with diabetes.
Phases of Rehabilitation

- **Pre-Prosthetic**
  - Time immediately following the amputation
    - Acute care hospital
    - Home
    - SNF
    - IP Rehab

- **Prosthetic**
  - Time after patient has received prosthesis
    - IP Rehab
    - Home (Home Care/OP services)
    - SNF
Pre-Prosthetic Phase

GOALS:

- Heal Incision
- Medical Stabilization
- Shape the Residual Limb
- Address ROM and Strength Deficits
- Promote Independence with Mobility
- Address Pain
- Provide DME
- Education
Prosthetic Training Phase

Goals:
- Education/instruction on care and use of prosthesis
- Achieve the highest functional level using the prosthetic leg
Pre-Prosthetic Phase

- Positioning
- Skin Integrity/Shaping the Residual Limb
- Weight bearing
- Range of Motion
- Strengthening and Conditioning
- Safe mobility
- Pain Management
- Education
Positioning

- In Bed
  - Avoid hip flexed/abducted position
  - Avoid knee flexion
    - If elevating limb, do not use the folding bed feature
    - Use pillows under entire leg/distal leg
    - Guard against pressure areas

Hand outs for nursing/signs above bed to remind family
Bed Positioning

Proper positioning

Improper positioning
Positioning

Wheelchair

- Promote knee extension (transtibial amputees)
- Utilize proper seat cushion
  - Pressure mapping if indicated
- Seat belt
- Anti-tippers
Positioning in Wheelchairs

Use of Gerber attachment to maintain knee extension
What if you don’t have an elevating leg rest or residual limb support attachment??
Positioning: Wheelchair

You can position the transfer board between the wheelchair seat and the wheelchair cushion. Here we used a blanket to pad the surface.
Positioning in Wheelchairs

This simple technique serves the same purpose in maintaining knee extension in transtibial amputees.
Positioning in Wheelchair

Fall Prevention: Provide safe seating with proper cushion, seat belt and anti-tippers (front anti-tippers for bilateral amputees).
Skin Integrity/Shaping the Residual Limb

- Sensation Testing

- Removable Rigid Dressing
  - Mainly used with Transtibial Amputations
  - Protection
  - Maintains knee extension

- Ace-Wrap

- Shrinker
Skin Integrity: Sensation

Monofilament Testing and Skin Checks on contra-lateral limb!
Skin Integrity/ Shaping the Residual Limb

Rigid or Semi-Rigid Removable Dressings (RRD’S)
One issue with using RRD’s is decreased skin integrity due to pressure areas. Close skin monitoring is imperative!
Skin Integrity/ Shaping the Residual Limb

Rigid or Semi-Rigid Dressings

- No studies found any negative wound healing effects as a result of the application of rigid dressings.

- Following transtibial amputation, primarily in dysvascular patients, RRDs and SRRDs were found to reduce acute post-amputation edema, healing time, hospitalization time, wound infection rate, and time to prosthetic fitting compared with elastic (i.e., soft) dressings.

- Rigid or semi-rigid dressings include: • Short removable rigid casts • Thigh-level, non-removable rigid casts • Thigh-level, non-removable rigid casts with removable immediate post-operative prosthesis • Prefabricated pneumatic immediate post-operative prosthesis

- Selection of soft, rigid, or semi-rigid dressings should consider trade-offs for individual patients (e.g., protection of the limb, risk of infection, need to inspect the incision site and skin, other factors).

- Based on the low quality evidence for transtibial amputation, the lack of evidence for postsurgical care of transfemoral amputation, and the difficulty with standardizing post-operative rigid dressings, this is a priority area for future research, education, and clinical training.

DOD Guidelines
Skin Integrity/ Shaping the Residual Limb

DOD Guidelines also state:

“Note that weak (For or Against) recommendations may also be termed “Conditional,” “Discretionary,” or “Qualified.” Recommendations may be conditional based upon 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 or they may be qualified with an explanation about the issues that would lead decisions to vary.”

DOD Guidelines

In our experience, RRD’s are not consistently used in this area. As stated above, it is at the discretion of the physician, taking into consideration all the indications of the patient and his/her environment.
Skin Integrity/ Shaping the Residual Limb

Residual Limb Wrapping

**Purpose:** Wrapping aids in the shrinkage and shaping of a patient’s residual limb. For optimal fit of the prosthesis, the limb should be firm and have a cylindrical or tapered shape.

**General considerations of Ace Wrapping:**

1. Do not use an ace wrap that has lost its stretch
2. The ace wrap is to be worn constantly, except:
   a. During bathing
   b. After bathing when the limb is air drying
   c. When wearing a shrinker
   d. When wearing a prosthesis
3. **Wrap in figure 8 turns. NEVER use circular turns;** this causes too much constriction of the residual limb and can compromise circulation.
4. When wrapping, exert the greatest amount of pressure at the end of the residual limb but **wrap the proximal limb without pressure** so that you can easily place a finger under the wrap. Wrapping too tight proximally can cut off circulation to the limb.

5. Make sure you cover all areas of the skin to achieve enough pressure.

6. Avoid wrinkles in the bandage.

7. Secure the bandage with tape.
   a. NEVER put tape directly on the patient’s skin.
   b. NEVER use metal clips that come with some Ace bandages.
   c. Make sure to **sign, date, and time the tape** so staff can monitor when the wrap was applied.

8. For a patient with a transtibial amputation (BKA) you will need...
   a. Two sets of two 4 inch wrap or a total of four 4 inch ace wrap  
      I. For a BKA two 4 inch wraps should be used  
      II. The second set is used when the first is being washed.

9. When wrapping a BKA the wrap should come up at least **6 inches above the knee and cover all areas of the residual limb at least twice.**
Residual Limb Wrapping Cont.

10. For a patient with a transfemoral amputation (AKA) you will need....
   a. Two sets of two 4 inch and one 6 inch wrap or a total of four 4 inch and two 6 inch wraps.
      i. For an AKA two 4 inch wraps and one 6 inch wrap should be applied
      ii. The second set is used when the first is being washed.

11. When wrapping an AKA, make sure to wrap as high into the groin as possible to include the adductor roll.

12. The 6 inch wrap used for an AKA is used as a stay to keep the 4 inch wrap from coming off. Be sure to place it under the patient’s undergarments so that toileting can be completed without removal of the wrap.

13. To ensure constant pressure, remove and reapply the wrap at least twice a day.

14. Wash bandages at least once a week and more frequently when soiled with mild soap. Rinse at least 3 times to remove soap. DRY FLAT. Hanging destroys the elasticity.

15. When applying the wrap, do not place the Velcro over bony prominences.

16. If the patient is issued a shrinker, the shrinker will be used for shrinkage and shaping of the residual limb and they no longer need to use the Ace wrap.
Residual Limb Wrapping Cont.

17. When you re-roll a wrap start with the Velcro facing you and roll it away from you so that it is ready for reapplication with the Velcro in the proper position.

18. Wrapping over the knee is permitted unless there is skin breakdown at that area. If breakdown is present at the patella, one should leave a window in the wrap.
Wrapping a Below the Knee Amputation

To begin, you must gather two rolls of 4 inch wrap, paper tape and a pen. You begin by placing the wrap at an angle as seen in Figure 1. Pull the ace wrap firmly around the residual limb from posterior to anterior and bring it up so that it catches onto the Velcro as in Figure 2.
Wrapping a Below the Knee Amputation Cont.
Continue wrapping in a figure 8 pattern up around the knee and down around the distal residual limb applying pressure at the distal end but rolling without any pressure at the proximal end as in figures 3 and 4.
Wrapping a Below the Knee Amputation Cont.

Continue wrapping using a figure 8 pattern and be sure to cover all areas of the residual limb at least 2 times. For the majority of patients you will need two Ace wraps to achieve this. Figures 5 and 6.
Wrapping a Below the Knee Amputation Cont.

Wrap above the knee so that the ace wrap is at least 6 inches above the knee cap. Attach the Velcro of the wrap and fasten with tape. Make sure to sign, date, and time the tape so that staff can monitor when it was applied as in figure 7. This wrap should be re-applied at least twice a day.
Wrapping an Above the Knee Amputation

To begin you must gather two rolls of 4 inch wrap, one 6 inch wrap, paper tape, and a pen. You begin by placing the wrap at an angle as seen in figure 1. Pull the wrap firmly around the residual limb and bring it up so that it catches onto the Velcro as in figure 2.
Wrapping an Above the Knee Amputation, Cont.

Continue wrapping in a figure 8 pattern applying pressure distally while wrapping without pressure proximally as in figures 3 and 4.
Wrapping an Above the Knee Amputation, Cont.
Make sure to wrap the residual limb high in the groin so that you contain the adductor tissue. Continue wrapping in a figure 8 pattern making sure that all areas of the residual limb are covered with at least two layers of wrap. For the majority of patients this will require two wraps. A second wrap was started with Velcro up as seen in figure 6.

Figure 5

Figure 6
Wrapping an Above the Knee Amputation, Cont.
Continue wrapping the second 4 inch wrap in a figure 8 pattern high into the groin as seen in figure 7.

Figure 7
Wrapping an Above the Knee Amputation, Cont.

After the residual limb is wrapped with at least 2 layers of 4 inch wrap you can apply the 6 inch wrap to act as a stay so that the wrap does not slide off. It is important to start medially and wrap this in a figure 8 pattern applying greater pressure distally but no pressure proximally as in figures 8 and 9.
Wrapping an Above the Knee Amputation, Cont.

Pull the wrap across the front of the thigh to enforce hip adduction and internal rotation as in figure 10. Continue across the hips and around the back as in figure 11.
Wrapping an Above the Knee Amputation, Cont.
Continue wrapping the 6 inch stay in a figure 8 pattern on the residual limb to finish the wrap as in figure 12. Make sure to fasten the wrap with paper tape and sign, date, and time the tape so that staff can monitor when it was applied. This wrap should be re-applied at least twice a day.

*It is important to feed the wrap under the patient’s clothing and undergarments so that it will not need to be removed for toileting. This was not illustrated in these figures.*
Ace Wrapping

- Figure 8 Wrapping
  - TFA-1 six inch, 1 four inch wraps
  - TTA-1 or 2 four inch wraps
- Compression decreases distal to proximal
- Two layers of wrap on all areas
- Re-wrap residual BID
- Sign, date and time

Education:
- Nursing Staff
- Family Members
- Patient
- Therapy Staff

Provide written hand outs for home health follow-through or other D/C location
Skin Integrity/ Shaping the Residual Limb

Shrinkers
Weight Bearing

- Immediate Post Operative Prosthesis (IPOP)
Immediate Post Operative Prosthetic

While there is limited evidence to support out-of-bed activities and mobility training in the early postamputation period, these are generally well-accepted rehabilitation practices.[77,82] During the early post-operative period, the clinician must consider several factors that may influence the timing, frequency, and intensity of mobility training. These factors include overall medical stability, hemodynamic stability, residual limb healing status, pain management, mental status, and fall risk. These variables and potential risks need to be weighed against the benefits of early mobilization, which include improvements in strength, cardiovascular fitness, bone health, and functional independence. One consideration in the early mobilization after LLA is whether or not to utilize a weight-bearing prosthetic device in the early post-amputation phase before the residual limb is healed. In addition to the general benefits of early mobilization noted above, the potential advantages of using an early weight-bearing prosthetic device include facilitating early mobilization, gait re-education, accelerated stump healing, reduced complications, and facilitation of early definitive prosthetic fitting. The potential disadvantages of this intervention include the risk of skin breakdown of the residual limb, increased residual limb pain, and increased risk of falls. For some patients, there may be a psychological benefit from early prosthetic device fitting.[83] When the decision is made to utilize an early weight-bearing prosthetic device for a person with a transtibial level amputation, there are options for use of an articulated prosthetic device that includes a thigh cuff and knee joints or a non-articulated device that does not cross the knee. These devices can be initiated within the first week following amputation and may include simple pylon and foot structures with adjustable sockets or sockets that include pneumatic bladders for adjustability over time.[83] While confidence in the quality of evidence examining the differences between articulated and nonarticulated early weight-bearing prosthetic devices is very low, the evidence supports improved outcomes with the use of these systems.[83]

DOD Guidelines
Immediate Post Operative Prosthesis

- In a controlled study, 29 subjects were randomized to receive either an articulated or pneumactic, non-articulated early weight-bearing prosthetic device. Subjects were included in the study if they were determined to tolerate an early walk aid and were expected to receive a functional prosthetic device in the long term. Subjects were excluded if they were non-ambulatory prior to the amputation surgery. The study noted improvements in both groups, but no statistically significant differences between the groups with regard to long-term walking ability up to four years after surgery. Limitations of this single study include a lack of outcome assessment blinding and an unclear randomization process.[83] Access to early weight-bearing prosthetic devices has expanded through the introduction of several different prefabricated systems that are commercially available. Additional research is required to further delineate the risks and benefits associated with this intervention as well as to further determine the differences between articulated and non-articulated devices. Despite the need for additional research, evidence suggests that mobility training should begin as soon as possible in the postamputation phase of rehabilitation.

DOD Guidelines
Weight Bearing

Weight bearing on residual limb with activities
Range Of Motion

Prone Lying

- 30 Minutes BID
  - Recommended by DOD Guidelines
  - Assess tolerance
  - Nursing involvement
  - MD order

- If unable to lay prone:
  - Provide patient and family members with HEP with alternative hip flexor stretching
    - Side Lying Hip Flexor Stretch
    - Modified Thomas Position
Range Of Motion

ROM: Prone Lying

Prone lying promotes both hip and knee extension. May progress as patient tolerates.
Range Of Motion

- Hip flexor stretch
- Hip Adductor stretch
- Piriformis stretch
- Hamstring stretch
Discussion: While there is limited evidence to support out-of-bed activities and mobility training in the early postamputation period, these are generally well-accepted rehabilitation practices.[77,82] During the early post-operative period, the clinician must consider several factors that may influence the timing, frequency, and intensity of mobility training. These factors include overall medical stability, hemodynamic stability, residual limb healing status, pain management, mental status, and fall risk. These variables and potential risks need to be weighed against the benefits of early mobilization, which include improvements in strength, cardiovascular fitness, bone health, and functional independence.

DOD Guidelines
**Strengthening**

- Challenge the patient
- Pain will likely limit most activities
- Four way hip strengthening
- Bilateral knee strengthening
  - Core Strengthening
- Initiate closed chain TE as soon as possible
  - Especially hip extension \(^2\) (i.e. bridges on bolster)
Strengthen hip abductors, extensors, and upper extremities. Progress with resistance as patient tolerates.
Strengthening

- **Contralateral limb**
  (Especially hip extensors/abductors)
  - Don’t forget the ankle

- **Standing on intact limb**
  - Prosthetic success when patient’s pre-prosthetic single limb stance is good

Develop a routine early
Utilize UBE for cardiac conditioning
Strengthening and Conditioning

Work on balance and trunk control
Strengthening and Conditioning

Progress from static to dynamic sitting balance.
Increase challenge and resistance as the patient progresses.
Strengthening and Conditioning

Include trunk and multiple muscle groups.
Safe Mobility

- Transfers
  - lateral scoot with or without transfer board
  - amputee crawl
- Household Ambulation
- Wheelchair Mobility
Safe Mobility

Sliding board transfers
Safe Mobility

Amputee Crawl

Safe transfer for bilateral amputee
Guard incision(s) or skin areas.
Safe Mobility

Use of Low Friction Sheet to prevent sheering
Safe Mobility

DME/Orthotics for Safe Mobility

Wheelchair        Walker           Crutches
Knee Walker             iWALKER
Fore foot Unloading Shoe
Pain Management

- Pain

- Phantom Limb Pain
  - Desensitization
  - Mirror Therapy

- Education on difference between medication for muscle pain versus nerve pain
Pain Management

Desensitization techniques
Up to 50% of diabetic foot ulcer cases can be prevented with appropriate education focused on teaching people with diabetes how to care for their feet.

Education

- Peer Visitor/Amputee Support Group
- Community Resources
  - Amputee Coalition
- Skin Integrity/Sensation – Skin Checks
- Shrinker Use
- Carryover of pre-prosthetic training to prosthetic gait training
  - Make therapeutic exercises meaningful, and thus, increase compliance
  - Good foundation for success
Pre-Prosthetic Phase

- DoD Recommends IRF during the pre-prosthetic phase
- Inter-disciplinary Team Approach
  - Physicians
  - Therapists
  - Nursing Staff
  - Case Managers
  - Psychiatry
    - Depression
Choosing the Correct Prosthesis

What are we preparing our patients for?

The Prosthesis

Which one???

The prosthetic selection process and K levels.
Choosing the Correct Prosthesis

- Determine the patient’s needs
Choosing the Correct Prosthesis

- Medicare Functional Classification Level (MFCL) is the current method for classifying amputee activity levels.
- These are called K levels and are rated from K-0 to K-4.
- K-Levels are the driving factor in determining the type of prosthesis and its payment.
- Used to justify certain types of prosthetic components.
- All Medicare Patients must use this rating system.
K Levels

K-Level 0

Does not have the ability or potential to ambulate or transfer safely with or without assistance, and a prosthesis does not enhance quality of life or mobility.

Not eligible for prosthesis

- But still benefits with training phase
K Levels

K-Level 1

Has the ability or potential to use prosthesis for transfers or ambulation in level surfaces at a fixed cadence. Typical of the limited and unlimited household ambulator.

- External keel, SACH feet or single axis ankle/feet
- Manual locking knee
- Single-axis, constant friction knee
K Levels

- K-Level 1
K Levels

K-Level 2
Has the ability or potential for ambulation with the ability to transverse low-level environmental barriers such as curbs, stairs, or uneven surfaces. Typical of the limited community ambulator.

- Flexible-keel feet and multi-axial ankle/feet
- Single axis, constant friction knee
- **Single speed**
- Mechanical knee, not hydraulic
K Levels

K-Level 2
K Levels

- K-Level 3
- Has the ability or potential for ambulation with **variable cadence**. Typical of the community ambulator who has the ability to transverse most environmental barriers and may have vocational, therapeutic, or exercise activity that demands prosthetic use beyond simple locomotion.

- Flex foot and flex-walk systems,
- energy storing feet, multi-axial ankle/feet
- or dynamic response feet
- Fluid and pneumatic control knees
- **Variable speeds**
- Any computer knee
K Levels

- K-Level 3
K Levels

- **K-Level 4**
- Has the ability or potential for prosthetic ambulation that exceeds basic ambulation skills, exhibiting high impact, stress, or energy levels. Typical of the prosthetic demands of the child, active adult, or athlete.

- Any ankle foot system appropriate
- Any ankle knee system appropriate
K Levels

- K-Level 4
Choosing the Correct K Level

- **Self Report**
  - Previous activity
  - Patient’s Goals

- **Physician Exam**
  - Dx, Hx, co-morbidities, wt./ht., environment, limitations both physical and cognitive
  - Observation of Gait

- **Prosthetist**
  - records must corroborate with information in medical chart
Choosing the Correct K Level

- Cognition
- Patient’s Motivation
- Other indicators
  - Six minute walk test (vs. 12 min)
  - Single Leg Stance Test
  - Amputee Activity Survey (AAS)
  - Prosthetic Goal and Achievement Test
Choosing the Correct K Level

- Public and private payers are increasingly demanding objective, quantitative data to justify claims
  - AMPPRO/AMPnoPRO
  - PAVET
  - Functional Level Assessment System
AMPPRO/ AMPnoPRO

- Amputee Mobility Predictor test
- Twenty-one Tasks
- Administered with (AMPPRO) or without a prosthesis (AMPnoPRO)
- Assesses the Amputee’s mobility and potential functional ambulation
- Final score indicates K level
AMPPRO/AMPnoPRO

- Amputee Mobility Predictor (AMP)
  - Easily understood
  - Limited need for equipment
  - Short administration time (<15 minutes)
  - Performed with or without a prosthesis
  - High inter- and intrarater reliability
**PAVET™**

- Patient Assessment Validation Evaluation Test
  - Patent Pending, copyrighted and the property of Hanger Orthopedic Group, Inc.
  - Evaluation Form and PAVET is licensed to Health Care Service Corporation under License Agreement
- Thirty-three tasks
- Four Categories
  - Activities of Daily Living
  - Functional Requirements
  - Physical Capabilities
  - Special Considerations
Functional Level Assessment System

- Sponsored by Orthocare Innovations
- Utilizes Orthocare’s StepWatch Activity Monitor
- Collects one week’s worth of functional activity
- Analysis of patient’s mobility determines K Level
- Uses quantified data vs patient self report
Choosing the Correct Prosthesis

- K Levels indicate the patient’s POTENTIAL
Physical
- Stabilize medically
  - Physicians, Nurses
- Maintain/Increase ROM
  - PT, OT, Nursing
  - Exercise, positioning
- Maintain/Increase strength
  - PT, OT
- Increase Functional Mobility
  - PT, OT, Nursing
  - Bed mobility, transfers, sit-to-stand
- Optimize gait performance
  - PT
  - Provide appropriate DME
Building a Potential

- Emotional
  - Anxiety - What now?
    - Physician (meds), Psychology
    - Family and Peer support
    - Education (all staff)
  - Depression (Limb loss, change of life roles, loneliness)
    - Physician (meds), Psychology, Peer support
    - Education (patient, family)
  - Self-Image
    - Rehab team
    - Family/Friends
Building a Potential

- Cognition
  - Minimize anesthetic response from surgery
    - Physicians, nursing
  - Address co-morbidities
    - Physicians, nursing, therapies (including Speech Therapy)

- Life Roles
  - Employment
    - Case management, Vo-Tech
  - Family/Home roles
    - Support groups
    - Family education
    - Leisure activities
Building a Potential

- Health and Wellness
  - Nutrition
    - Dietician
    - Endocrinologist (maintaining proper glucose levels)
  - Skin integrity
    - Healing of residual limb
    - Prevention on sound side
  - Healthy habits
    - Smoking cessation
    - Regular exercise
  - Meaningful Goals

Stop Smoking.
K-Level indicates technology
- Giving a K2 patient a locking knee (K1) may cause frustration causing patient to not use the prosthesis or to look for new components

Designated K-Level may limit available technology
- Once designated K2 they may not qualify for the technology
- There is argument that a K3 knee or foot is safer for K2 patient (fall prevention)

Can technology indicate K-Level??
- “We frequently see housebound people functioning at the K2 level suddenly become community ambulators (K3) when they put on the BIOM” (computerized ankle with bionic propulsion) (Dr. Hugh Herr)
Conclusion

- We, the professionals, must advocate for our patients!
- We must help them achieve their highest potential so as to make available to them the most appropriate technology.
- Objective reliable measures are needed to determine K level. (AMPPRO and AMPnoPRO are becoming the accepted tool to indicate K-Level)
- Public and private payers demand objective, quantitative data to justify claims, especially for advanced prostheses.
You, as wound care specialists, have an integral role in the Amputee population as many of these patients began their journey with a wound. As always, prevention is the key, but when the Amputee’s progress is delayed due to a wound, we must continue to prepare them for the day that they will be able to don a prosthesis and walk!
Questions?
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