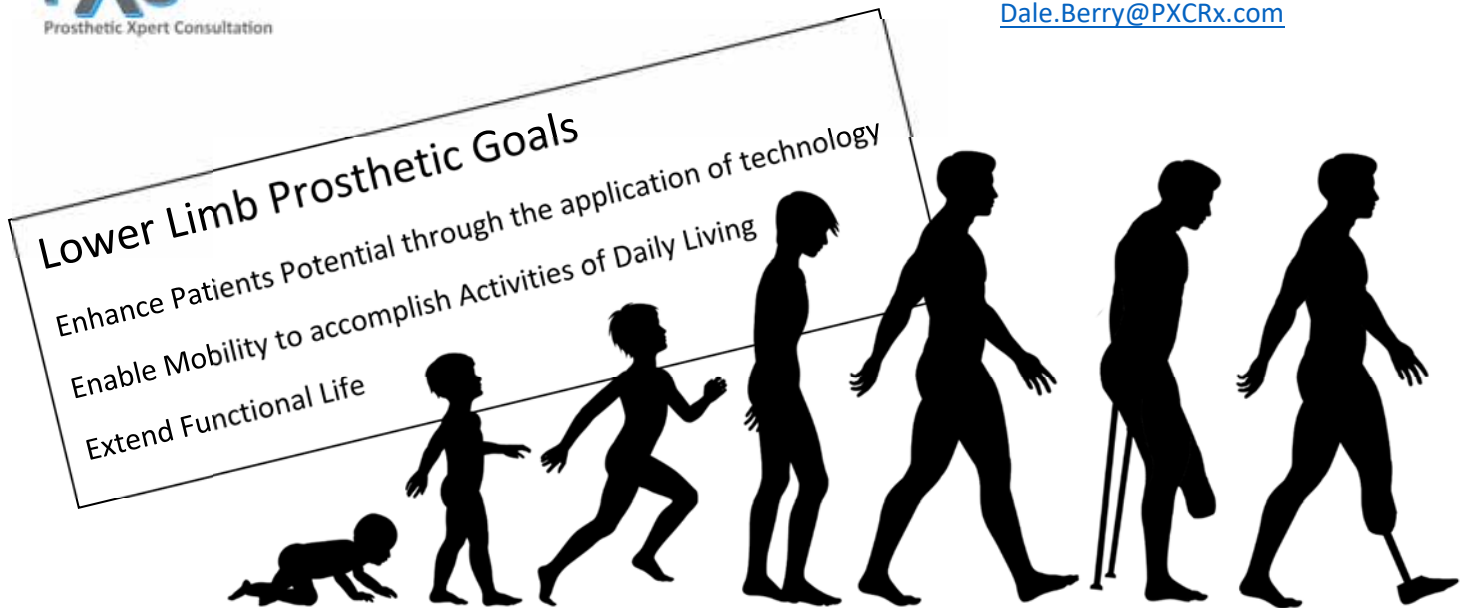


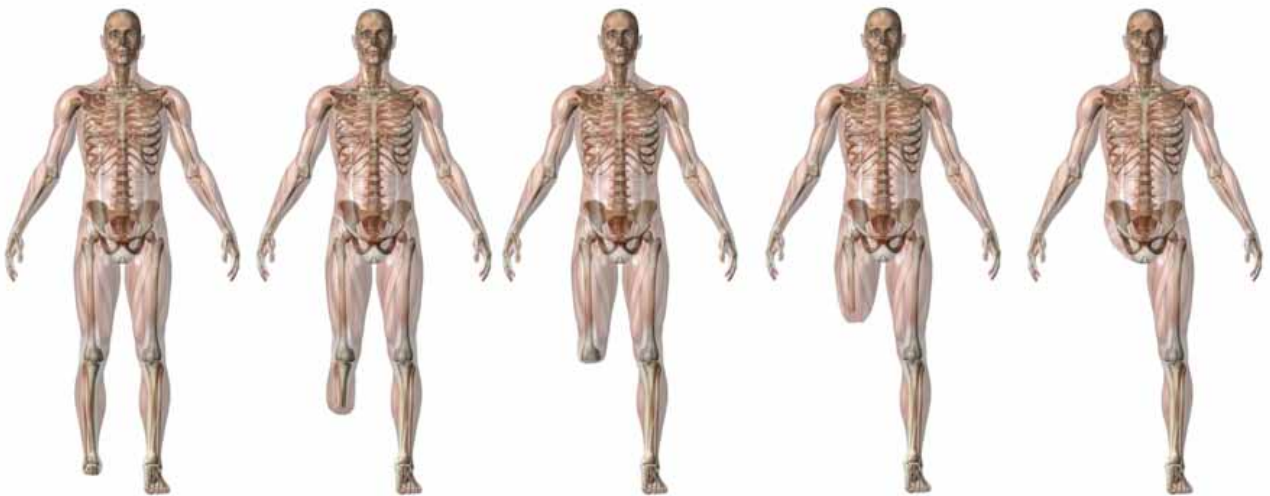
Presented at  
International Association of Rehabilitation Professionals Conference  
October 31 – November 2  
Portland Oregon





## Surgical Intervention

- Disease
  - Typically, longer healing time due to circulatory compromise
  - Health related co-morbidities
- Trauma
  - Injury related co-morbidities
  - Possibility of revision
- Congenital
  - If no surgical intervention, technically not an amputation however treated as limb loss



Partial Foot  
Ankle Disarticulation

Trans Tibial

Knee Disarticulation

Trans Femoral

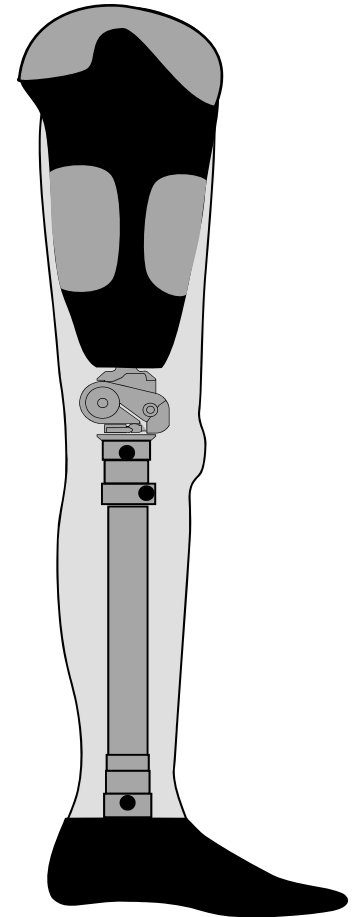
Hip Disarticulation  
Hemi-Pelvectomy

## Prosthetic Design Structure

1. Socket custom made from raw materials.
2. Functional components acquired and installed.
3. Socket and components aligned, programed and adjusted.

## Prosthetic Coding

- Each "FEATURE" has a specific L-code and allocated price.
- Typical prosthesis has 10-20 L-Codes.
- Functional components are based upon functional level.
- Functional level is based upon patient abilities and potential.
- Optimum performance is achieved with patient functional level is aligned with functional components.



## Functional Levels

**K1**

Has the ability or potential to use a prosthesis for transfers or ambulation on level surfaces at fixed cadence.

Typical of the limited and unlimited household ambulator



**K2**

Has the ability or potential for ambulation with the ability to traverse low level environmental barriers such as curbs, stairs or uneven surfaces.

Typical of the limited community ambulator.



**K4**

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.



**K3**

Has the ability or potential for ambulation with variable cadence.

Typical of the community ambulator who has the ability to traverse most environmental barriers and may have vocational, therapeutic, or exercise activity that demands prosthetic utilization beyond simple locomotion.



## Rehabilitation Process

### Initial/Preparatory Prosthesis

- Socket shapes residual limb.
- Re-establishing skeletal alignment.
- Fine tune prosthetic alignment.
- Implementing gait dynamics.
- Patient functional level may change during the rehabilitation process.



### Residual Limb Maturation

Limb will change size and shape due to

- Increased mobility.
- Increased activity.
- Improved venous return.
- Reduced edema.
- Muscle atrophy.



### Replacement Socket

- Accommodate residual limb shrinkage due to post surgical edema and Atrophy.
- Modular components allow for efficient socket replacement.
- Patient can undergo numerous socket changes depending upon the degree of change in the residual limb.



## Advanced Technologies

### Micro Processor Knee

- Majority of MPK are designed for K3 functional level.
- One model only designed for K2 Functional level.
- On-board computer analysis gait, movement and strain to adjust hydraulic resistance in the knee.
- Clinically established to provide optimum stability and function for Activities of Daily Living (ADL).



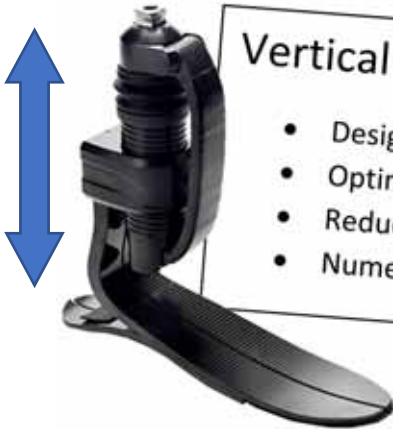
### Micro Processor Foot

- Designed exclusively for K3 functional level.
- On-board computer analysis gait, movement and strain to adjust hydraulic resistance in foot to control floor reaction and resistance.
- Designed for ALD's with a focus on gait symmetry and energy consumption.



### Vertical Shock Ankle Foot System

- Designed for K3 and K4
- Optimum ankle foot design for sports and high activity
- Reduces stress and strain on knee, hips and back on heel strike impact during gait
- Numerous designs including waterproof systems for activities in and around water.



### Waterproof Cover

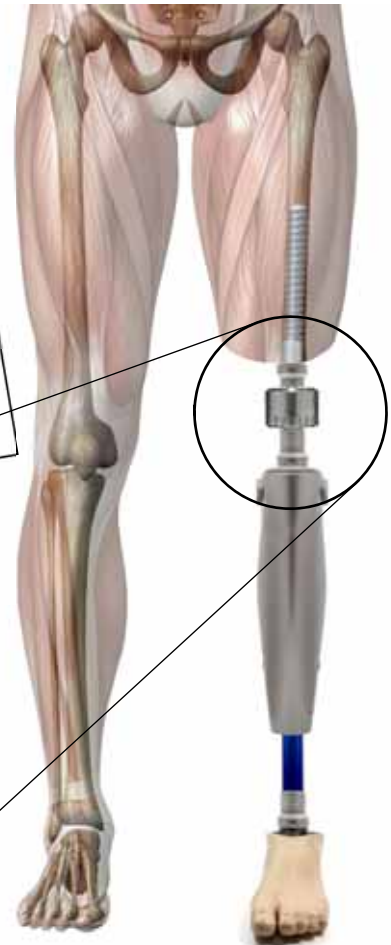
- It is NOT recommended to shower or bathe with a prosthesis.
  - The residual limb cannot be washed with the prosthesis on.
  - High risk of slipping and falling on the slippery floor.
- Water sealed protector seals the prosthesis and provides a non-slip foot surface
- Optimum for vacation or at the gym, protector can be folded and easily transported
- Allows for easy and immediate access to water environments.



## Experimental and Investigational Technologies

### Osseointegration

- Direct attachment of the prosthesis to the bone.
- Specialty pin implanted into the medullary canal.
- Under strict FDA supervision.
- Limited components approved for application.
- Dramatically Reduces long term prosthetic costs.
  - Excluding 1-time surgical expenses.



### Powered Prosthesis

- Contain internal motors and hydraulics to provide powered propulsion.
- Design criteria to mimic natural gait dynamics.
- Weight and battery life affect patient acceptance.



## Prosthetic Life Care Considerations

### Functional Level

- Identify patients Activities of Daily Living.
- Support functional level current status and potential.
- Functional level establishes style, type and value of prosthetic components for life care plan.

### Clinical History Vs. Life Care Projection

- Post-operative and rehabilitation prosthetic devices, services, and cost of care does not reflect or represent prosthetic devices, service and cost of for long term care.



### Pricing History Vs. Life Care Projection

- Previous cost of services and prosthesis may or may not represent nor reflect costs for long term care.

				
Private Insurance*	Medicare Floor	Medicare Average	Medicare Ceiling	Usual & Customary
\$15,354	\$16,069	\$18,747	\$21,425	\$23,621
*In Network discount rate				

### Independent Non-Interested Party

- Obtain 3rd party clinical insight that is free from a financial interest in the outcome of the claim.
- Local treating clinicians...
  - Provide local clinical expertise and insight.
  - May or may not have life care projection experience.
  - May lack experience or knowledge related to financial aspects of long-term care.

## Life Care Projection Key Points

### ADL Prosthesis

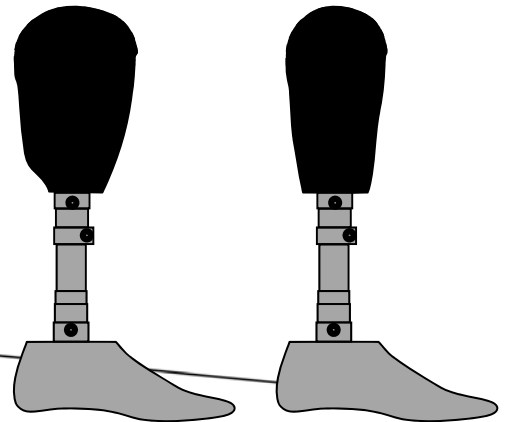
- Life Care Plan to provide a prosthesis to enable the patient to accomplish Activities of Daily Living at an appropriate functional level.

### Activity Prosthesis

- Based upon reasonable expectations, consideration should be afforded to provide an activity prosthesis to enable access to vocational and avocational activities.

### Replacement Socket

- Replacement sockets accommodate for changes in the residual limb and can be secured to prosthetic components that are fully functional.



### Supplies & Maintenance

- Supplies and maintenance are based upon specific aspects of the patient's prosthesis.
- Supplies and Maintenance costs ***are not*** based upon, associated with or calculated as a percentage of the cost of a prosthesis.

### Reasonable Useful Life

- Industry standards, published peer reviewed studies and government regulatory published criteria establish the reasonable useful life of a prosthesis at 5 years.

5



## **Resources**

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- VA/Dod Clinical Practice Guideline for Rehabilitation of Lower Limb Amputation. Department of Veterans Affairs Department of Defense, Guideline Summary, January 2008
- Medicare Supplier Manual, Chapter 3, Summer 2019, <https://www.cmsmedicare.com/jc/pubs/pdf/Chpt3.pdf>
- AETNA Lower Limb Policy, 07/12/2019, [http://www.aetna.com/cpb/medical/data/500\\_599/0578.html](http://www.aetna.com/cpb/medical/data/500_599/0578.html)
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