The Individuality of Amputees

- Every person with an amputation is unique, presenting diverse characteristics that affect prosthetic foot selection.
- This decision affects safety, performance, and satisfaction, making it vital to match the foot perfectly with the patient.

Selection Criteria

- Among the vast array of choices from manufacturers, we must prioritize an individual's current and potential abilities and needs.
- The selection process isn't merely about the type of foot; it's about the patient's history, the performance features, specifications, and appearance of available feet.

Main types of prosthetics

1. Below-elbow prosthetic.
2. Above-elbow prosthetic.
3. Below-knee prosthetic.
4. Above-knee prosthetic.

Types of prosthetics according to their movement mechanism

Cosmetic prosthetics.

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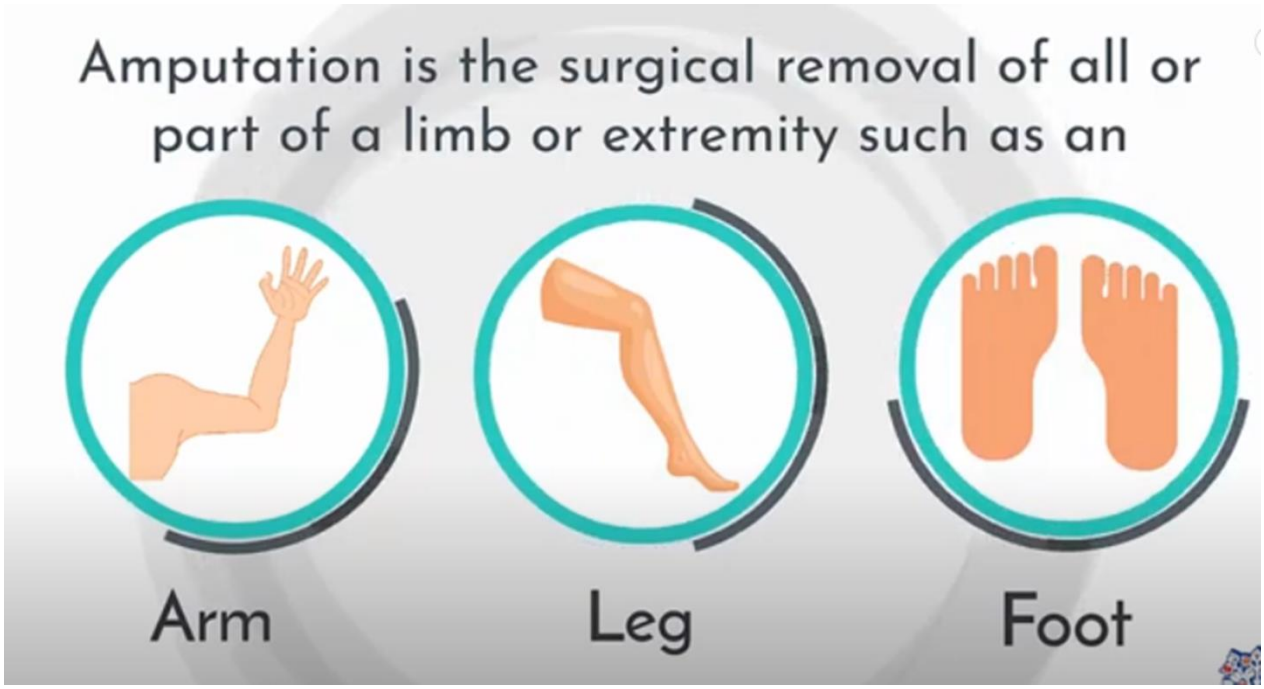
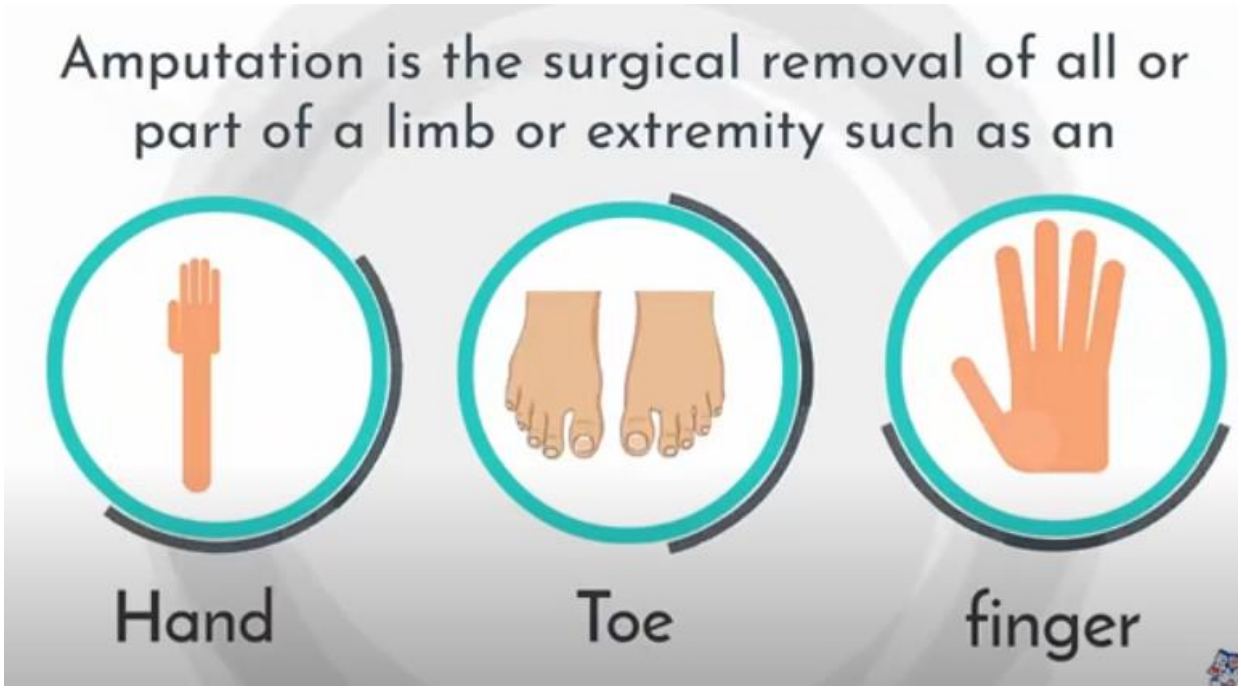

Amputation is the surgical removal of all or part of a limb or extremity such as an
Arm
Leg
Foot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Hand
Toe
finger

The Research Paradigm

- While past research has provided data on foot performance and patient preferences, we still lack definitive clinical pathways to successful foot selection.

The Ideal Prosthetic Foot

- The ultimate aim is to provide a foot that offers shock absorption, compliance to uneven terrain, push-off, and other features mirroring a natural foot.
- However, the reality is a compromise. No prosthetic foot today can emulate the human foot in all aspects.

Customization and Maintenance

- Once chosen, the foot needs to be tailored to an individual's weight and activity level.
- Physical or lifestyle changes necessitate replacement or modification of the foot.
- It's crucial to monitor prosthetics for wear and tear, ensuring longevity and functionality.

Factors in Selection

- When crafting a tailored prosthesis, a holistic team approach involving the physiatrist, surgeon, primary care physician, physical therapist, and prosthetist is imperative.
- Factors influencing foot component selection:

1. **Patient's Medical History** What has been the patient's journey so far? Previous surgeries, complications, and other medical conditions can influence the foot's design and functionality.
2. **Physical Capabilities** The level of physical activity, weight, and specific needs like running, climbing, or dancing, affect foot selection.

3. **Aesthetics and Comfort** Beyond functionality, how does the foot look and feel? This can influence the patient's self-esteem and social interactions.
4. **Patient Education** An informed patient is an empowered one. Understanding why a specific foot was chosen can enhance their satisfaction and compliance.

- **The Classification and Selection of Prosthetic Feet**
- **Functional Levels and Patient**

1. The Medicare Functional Level Framework

- **Definition and Purpose** Medicare's functional level classification offers a systematic way to assess and categorize the current and potential functional capabilities of individuals with lower-limb amputations.
- **Medicare's Policy** A lower limb prosthesis is covered under specific conditions:
    1. The patient will attain or maintain a specific functional state within a reasonable timeframe.
    2. There's an evident motivation to ambulate.

2. Classification Levels Explained

- **Level 0** Patients who neither have the capability nor the potential to safely ambulate or transfer. Prosthesis doesn't necessarily improve their quality of life.
- **Level 1** Primarily for individuals who can ambulate or transfer on level terrains at a fixed pace. A good fit for both limited and extensive household ambulators.
- **Level 2** Suits those who can navigate minor barriers, such as curbs or uneven surfaces. Typically for limited community ambulators.

- **Level 3** Designed for individuals with the capability for ambulation at varying cadences, navigating most barriers, and demanding more from their prosthesis than mere locomotion.
- **Level 4** Catered to individuals, including children, active adults, or athletes, whose prosthetic demands exceed basic ambulation, demanding more energy, stress, or impact.

Note, Bilateral amputees are not constrained by these functional levels, and potential functional abilities are assessed holistically.

3. Clinical Assessments and "Potential"

- The term “potential” is crucial. The rehabilitation team, by examining and interviewing, must forecast future outcomes based on past performance and other variable factors.
- An important implication: A patient currently at K2 but deemed capable of reaching K3 should be fitted with a K3-level prosthesis immediately, for efficiency in both rehabilitation and cost.
- The Amputee Mobility Predictor instrument provides an empirical approach to ascertain future potential.

4. Factors Influencing Prosthetic Foot Selection

- **Activities of Daily Living** Understanding daily routines and extracurricular activities helps tailor the prosthesis. A multi-axial ankle might suit an office worker who plays golf during weekends.
- **Patient's Weight** The patient's weight plays a pivotal role in prosthetic selection. Even patients with significant weight can be fitted successfully with a prosthesis, eliminating the myth of impossibility. However, the demands on the prosthesis change, making it heavier and demanding more robust materials.
- **Amputation Level & Residual Limb Characteristics** The selected foot influences the health of the residual limb. For instance, a compliant heel

action can mitigate impact forces. The foot's properties can enhance or inhibit the energy dynamics during walking.

5. Rehabilitation and Motivation

Overweight patients can make significant progress with apt care and therapy, transcending from being bedridden to walking independently. The pivotal element remains their motivation and determination.