

# Basic Lower-limb Prosthetic Training

- Learning to use a prosthesis effectively involves being able to don it correctly, develop good balance and coordination, walk in a safe and reasonably symmetrical manner, and perform other ambulatory and self-care activities.
- Using pros only to assist in transferring from the wheelchair to toilet ..... Appropriate outcome for an elderly person
- Whereas the program for the youngster with traumatic amputation might extend to a full range of sports.

# Donning

- Correct application and frequent inspection.....very imp
- Pt with *foot, Syme and transtibial amp* can don the prosthesis while seated, after having applied the correct no. and sequence of socks or sheath.
- In most instances, the individual simply inserts the amputated limb into the socket

- *Transfemoral amputation*..... Begin the donning process while seated. Total suction wearers may use either a pulling or pushing method.
- To pull oneself into socket, the patient applies a light dusting of talcum powder to the thigh to reduce friction.
- Another approach to donning is to coat the thigh with a lubricating lotion, push it into the socket, then install the valve.

# Balancing and coordination

- Ex are similar with L/E amputation, although with transfemoral pros..... Encounter more difficulty
- A graduated program for increasing prosthetic tolerance..... minimizes skin abrasion
- Pt should alternately ex and rest , with cardiopulmonary monitoring a routine part of the program.

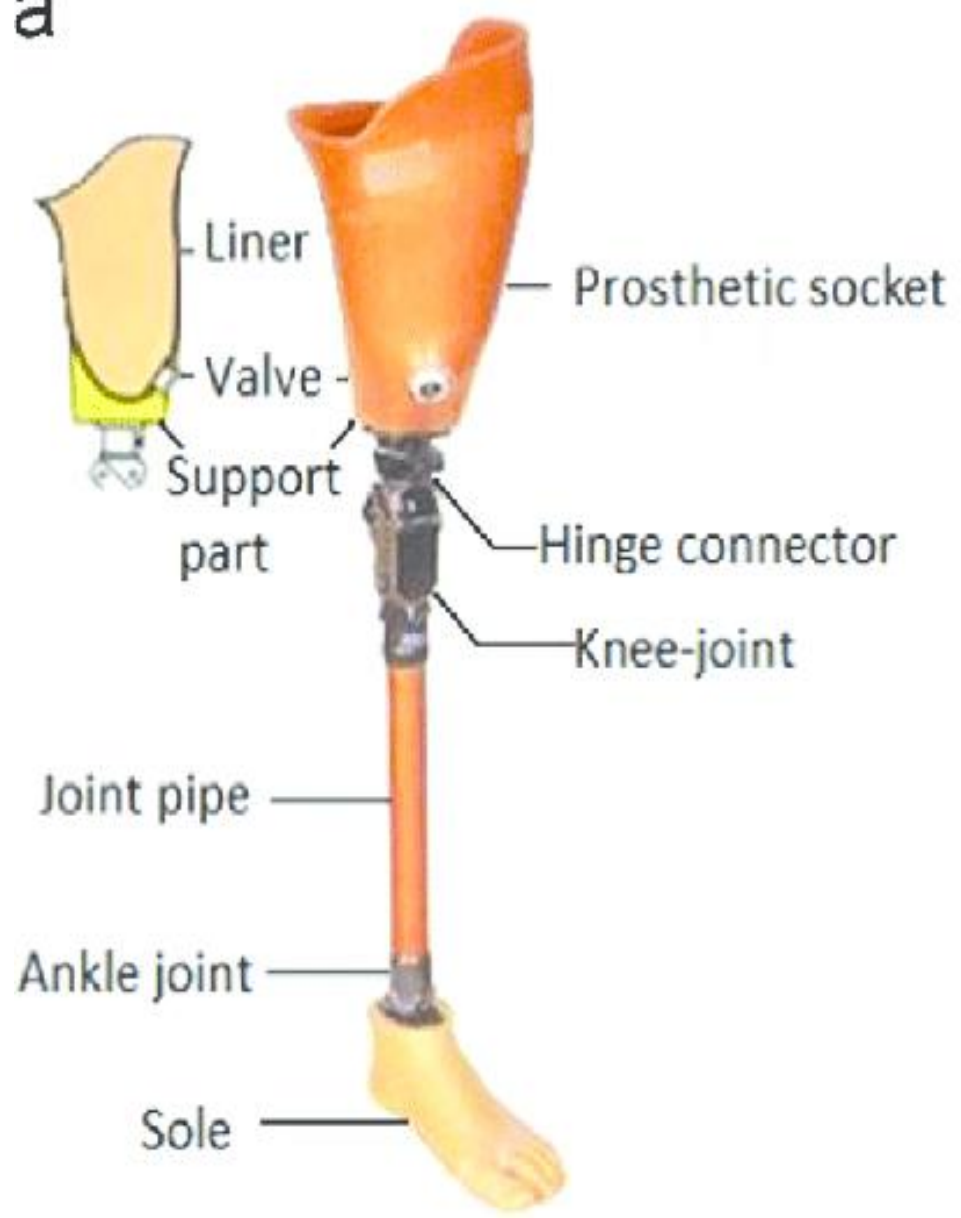
- Eschew parallel bars
- Static erect balance..... Bipedal posture.
- Pt should strive for level pelvis and shoulder, vertical trunk without excessive lordosis and equal weight bearing
- Therapist..... guard and assist pt
- Stands near the prosthesis ..... encourages shift balance



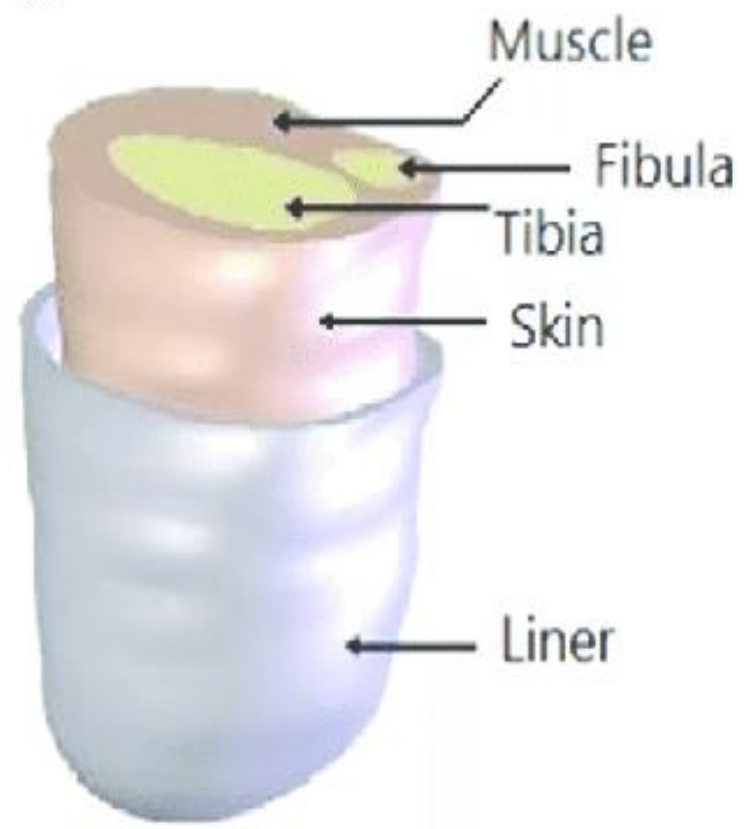




a



b



- Suggest symmetrical performance..... Right and left
- Respond well..... visual feedback
- Dynamic exercises ..... improve medial lateral sagittal and rotatory control.
- Placing the sound foot ahead of the prosthesis..... Prosthetic knee more stable

# Gait training

- Walking is a natural progression from dynamic balance exercises as pt takes successive steps.
- Some people respond well to PNF
- **Rhythmic counting** and **walking** in time with music in 2/4 time also improves gait symmetry and speed.
- Apparatus that includes a suspension harness provides a protected environment for the patients to learn gradual weightbearing on the prosthesis.

# SUSPENSION TRAUMA STANDING STEP

Completed Standing Step  
After 15 minutes  
of work.



Using the Standing Step  
Technique to maintain  
circulation to the lower  
limbs.



Let the device handle  
most of the weight  
and maintain the  
weight of the most  
heavy body.



Use the Standing Step  
Technique to maintain  
circulation to the lower  
limbs. Use the Standing  
Step Technique to  
maintain circulation to  
the lower limbs.

- **Another training option:-**
- A balance apparatus providing electronic feedback with or without emphasis on psychological awareness of bodily positions
- **Cane or pair of forearm crutches**
- Cane is used only outdoors to aid in negotiating curbs And other ground irregularities

- Ordinarily cane is used on the contralateral side to enhance the frontal plane balance
- If bilateral assistance is required, a forearm crutch is preferable to two canes.
- Axillary crutches tempt the patient to lean on the axillary bars, risking impingement of the radial nerve; they r also inconvenient when climbing stairs.
- An aluminum walker provides more stability, which is particularly useful for those patients with generalized weakness.

- **Functional training:-**

Prosthesis wearer who is learning to walk also should gain experience in performing a wide variety of functional mobility skills.

Activities..... Transferring to various chairs

Training programs for vigorous individuals includes stair climbing, negotiating ramps, retrieving objects from floor, kneeling, sitting on the floor, running, driving a car, and engaging in sports.

Walking implies symmetrical usage

Other activities are done asymmetrically, with greater reliance on the strength, agility, & sensory control of the sound limb.

- **transfers**

- Rising from different chairs, the toilet, and car are primary skills even for people who are elderly.
- Most patient enter in physical therapy dept in a wheelchair

Initially patient can park the chair at the parallel bars or at a plinth.

After locking the wheel chair , and raising the footrest, the patient should sit forward and transfer weight to the intact leg, then push down on the chair armrests.

Sitting and standing ..... Sound limb should be near to the chair

For both standing and sitting, the beginner should have the advantage of a chair with arm rest that enable use of the hands to control and assist trunk movt.



- In Later the person should practice.... Sitting  
In deep upholstered sofas and low chairs as well as benches, the toilet, and other seats that don't have armrests.

Transfer into an automobile should be an integral part of the training activities, otherwise patient faces a gloomy future, confined to home or dependent on special transportation systems.

procedure..... ?

- **Climbing stairs ,ramps, and curbs**