

University of Medical Technology, Yangon

Department of Prosthetics& Orthotics

CHAPTER 5: AD ASSESSMENT & CASTING

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8:30-12:00

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CONTENT:

I. Review:
   - why do we need to do Patient Assessment & Casting?
   - Subjective Assessment & Objective Assessment

II. Patient Assessment

III. Casting Procedure

I. REVIEW

Why do we need to do Patient Assessment & Casting?

We need to do assessment for :

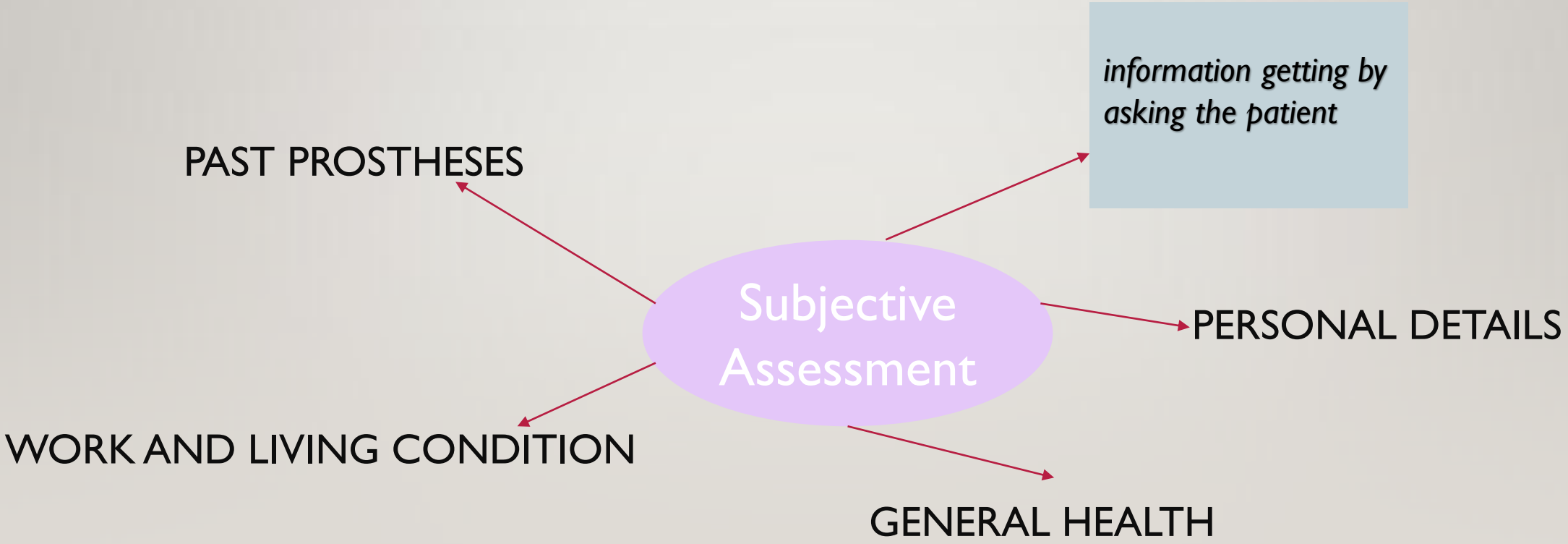
1) To understand the patient and gain more information to prescribe the right prosthesis for the patient
2) To determine whether patient is ready for a prosthesis
3) To get information for future treatment and follow up
4) To refer patient to other available service
5) As legal evidence

I. REVIEW

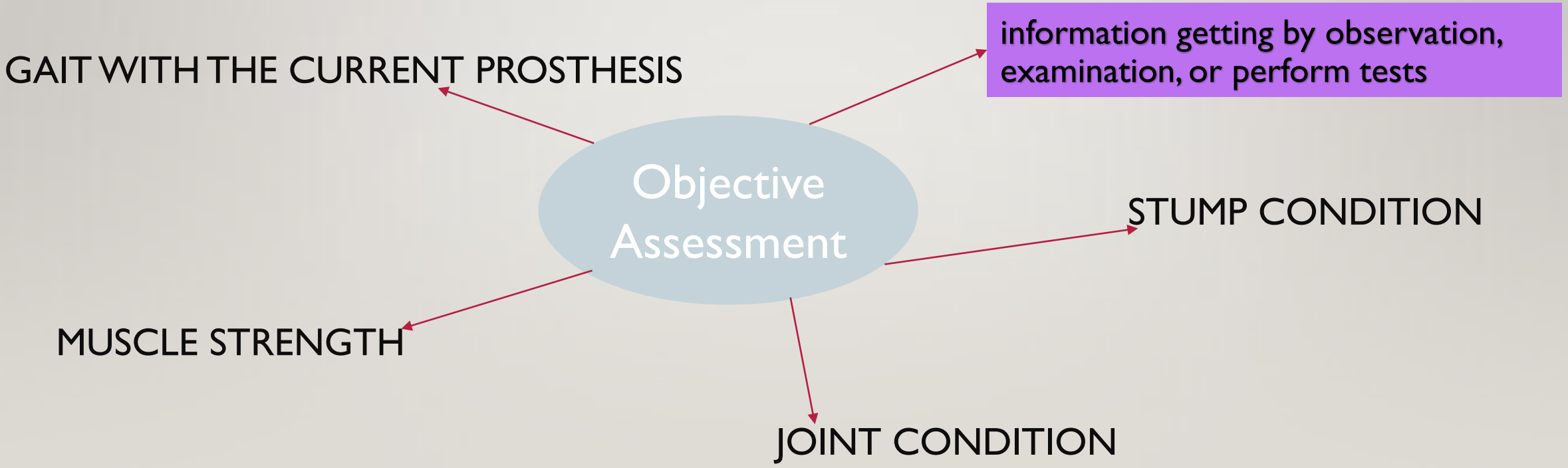
We need to do casting for:

1) Capture the model of the stump in load bearing position
2) To obtain fitting and alignment correctly

I. REVIEW


information getting by asking the patient
PAST PROSTHESES
Subjective Assessment
PERSONAL DETAILS
WORK AND LIVING CONDITION
GENERAL HEALTH

I. REVIEW


GAIT WITH THE CURRENT PROSTHESIS
information getting by observation, examination, or perform tests
Objective Assessment
STUMP CONDITION
MUSCLE STRENGTH
JOINT CONDITION

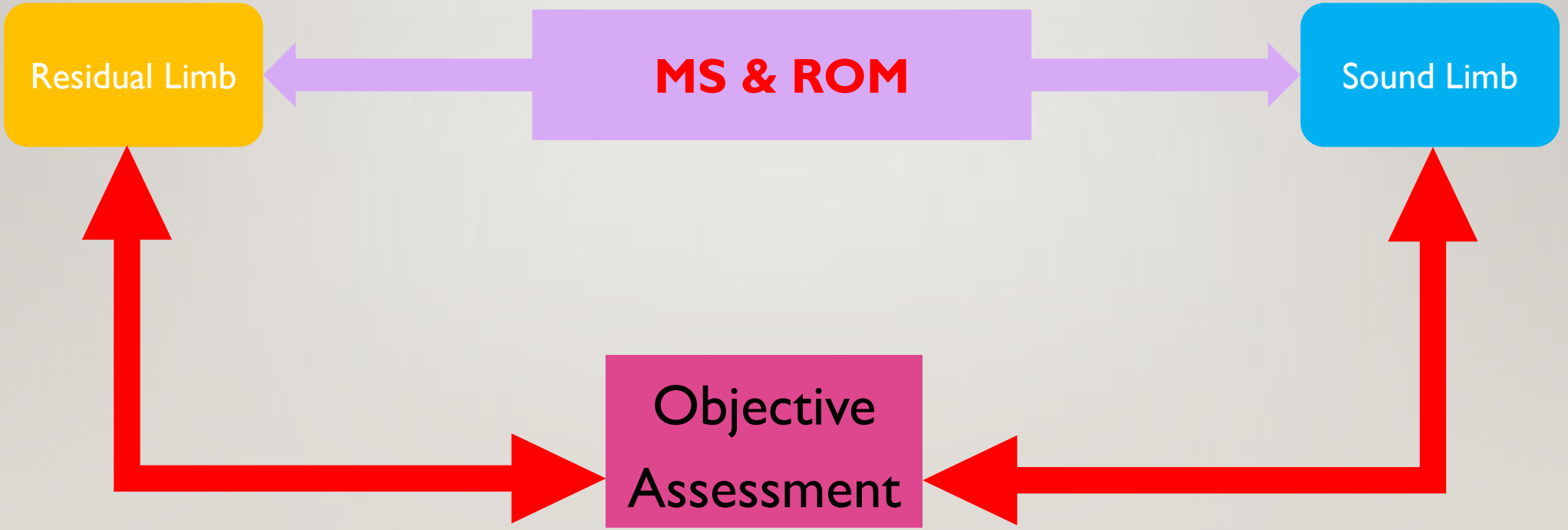
II. PATIENT ASSESSMENT

II. PATIENT ASSESSMENT

Subjective Assessment

- ❑ Name, Age, Gender
- ❑ Date of Amputation
- ❑ Reason for amputation
- ❑ Living condition
- ❑ Work Condition
- ❑ Type & number of prosthesis using
- ❑ Fitting & Main complain from current prosthesis
- ❑ Patient's preference

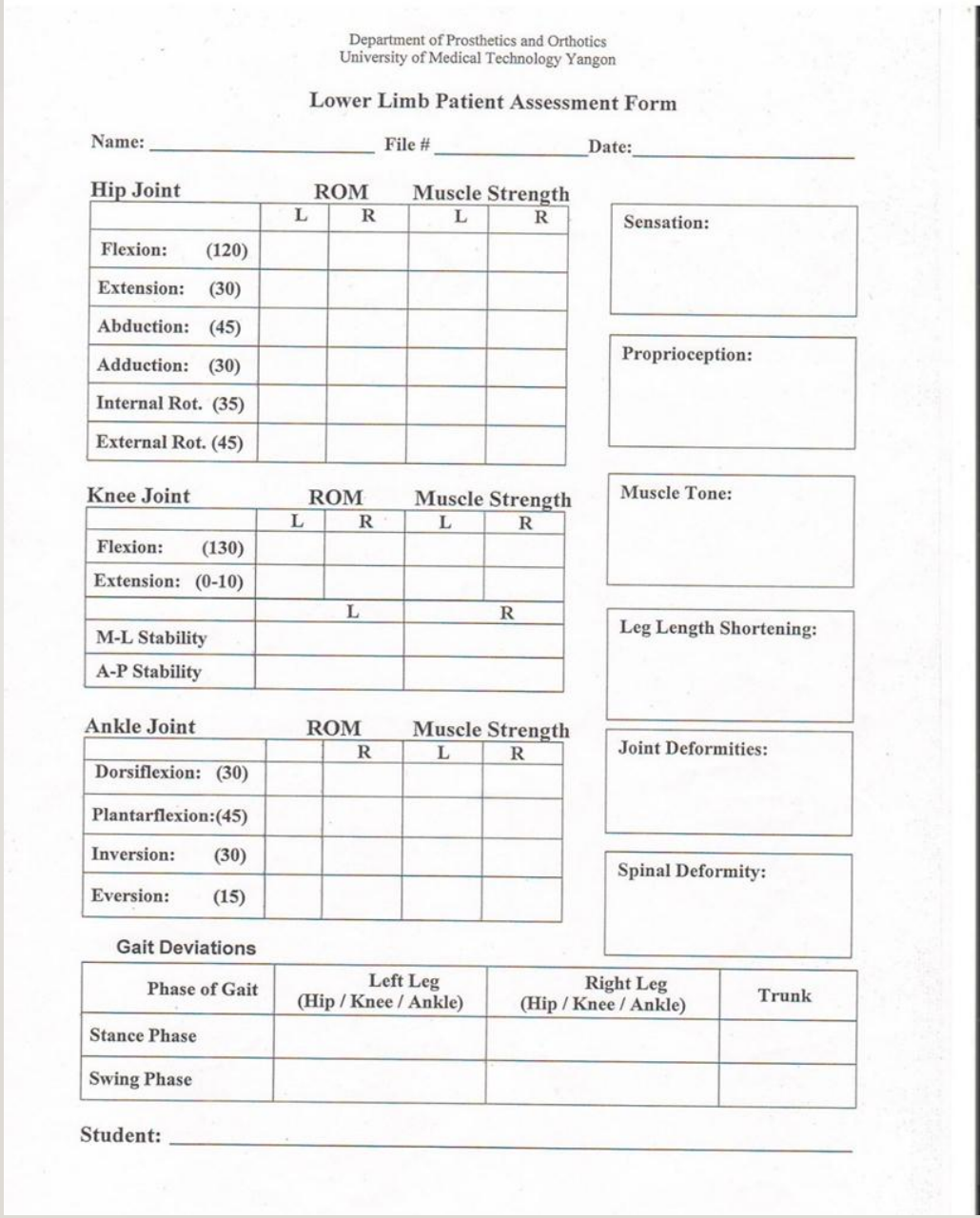
II. PATIENT ASSESSMENT



Using Oxford Scale to grade the muscle strength

0 no visible contraction
1 visible or palpable contraction without active movement
2 full range of movement with gravity eliminated
3 full range of movement against gravity
4 full range of movement against gravity plus resistance
5 full range of movement against gravity plus maximal resistance

MS & ROM



Department of Prosthetics and Orthotics
University of Medical Technology Yangon

Lower Limb Patient Assessment Form

Name: _____ File # _____ Date: _____

Hip Joint	ROM		Muscle Strength	
	L	R	L	R
Flexion: (120)				
Extension: (30)				
Abduction: (45)				
Adduction: (30)				
Internal Rot. (35)				
External Rot. (45)				

Knee Joint	ROM		Muscle Strength	
	L	R	L	R
Flexion: (130)				
Extension: (0-10)				
	L		R	
M-L Stability				
A-P Stability				

Ankle Joint	ROM		Muscle Strength	
		R	L	R
Dorsiflexion: (30)				
Plantarflexion:(45)				
Inversion: (30)				
Eversion: (15)				

Sensation:

Proprioception:

Muscle Tone:

Leg Length Shortening:

Joint Deformities:

Spinal Deformity:

Gait Deviations

Phase of Gait	Left Leg (Hip / Knee / Ankle)	Right Leg (Hip / Knee / Ankle)	Trunk
Stance Phase			
Swing Phase			

Student: _____

II. PATIENT ASSESSMENT



Objective Assessment

1) Stump Condition:
2) End Bearing:
3) Heel pad:
4) LLD
5) Landmarks and measurement

II. PATIENT ASSESSMENT

Residual Limb

1). Stump Condition:

a. Scar tissue
b. Bony prominence
c. Skin area for some weigh distribution

II. PATIENT ASSESSMENT



Residual Limb



…..cm?

2). End Bearing :

a. Full end bearing or Partial

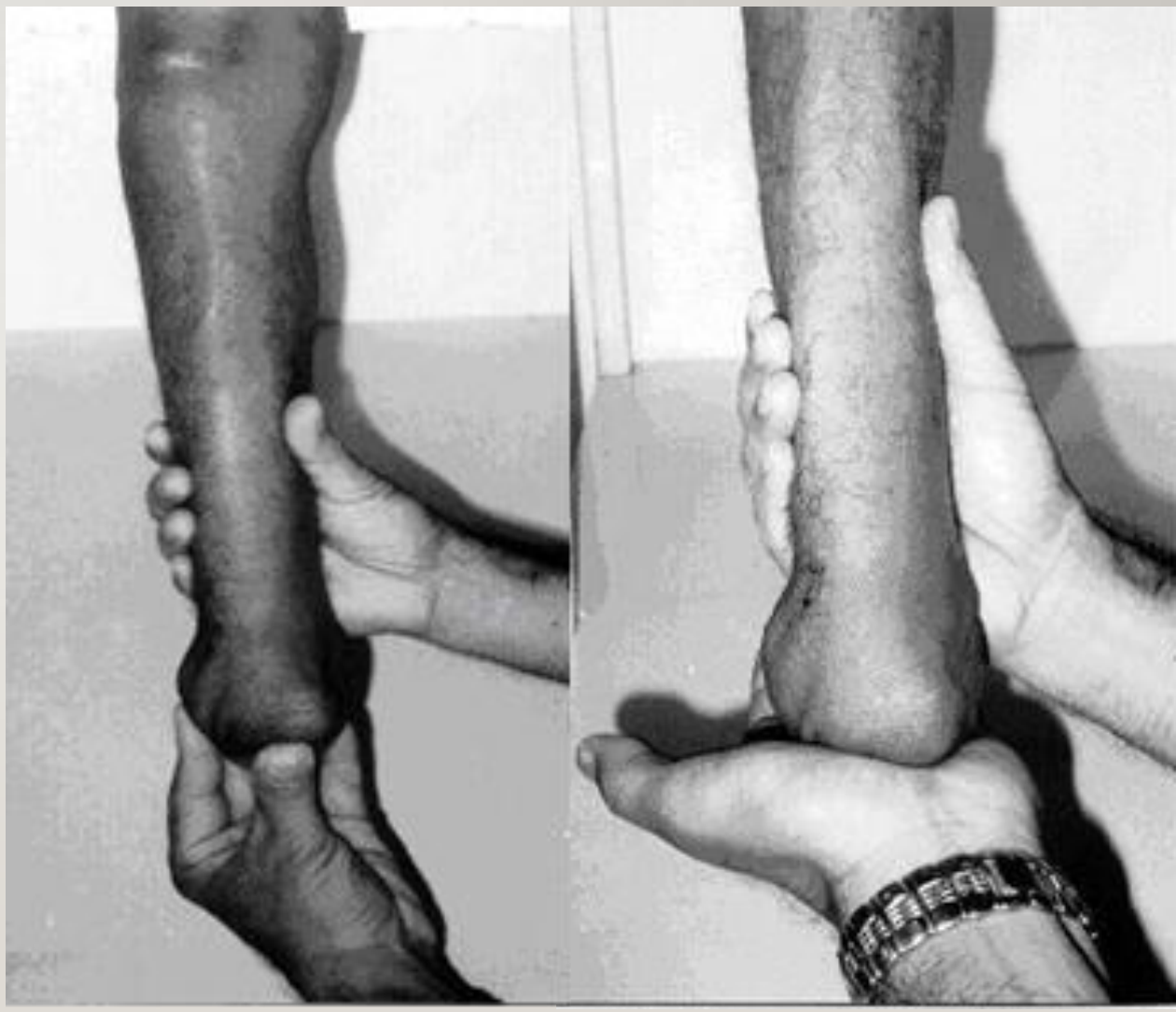
II. PATIENT ASSESSMENT

Residual Limb

3). Heel Pad

❖ *Stable or migrate*

a. *Put hand under the heel pad*
b. *Check if it is stable during weight bearing, sometime it can move.*
c. *identify the comfortable position for casting.*



II. PATIENT ASSESSMENT

Residual Limb

4). Leg Length discrepancy :

- *Measure the height of the built up*
- *Measure the overall height from floor to MPT (Measure the height of block from the compression of the EVA to the floor)*





II. PATIENT ASSESSMENT



Objective Assessment

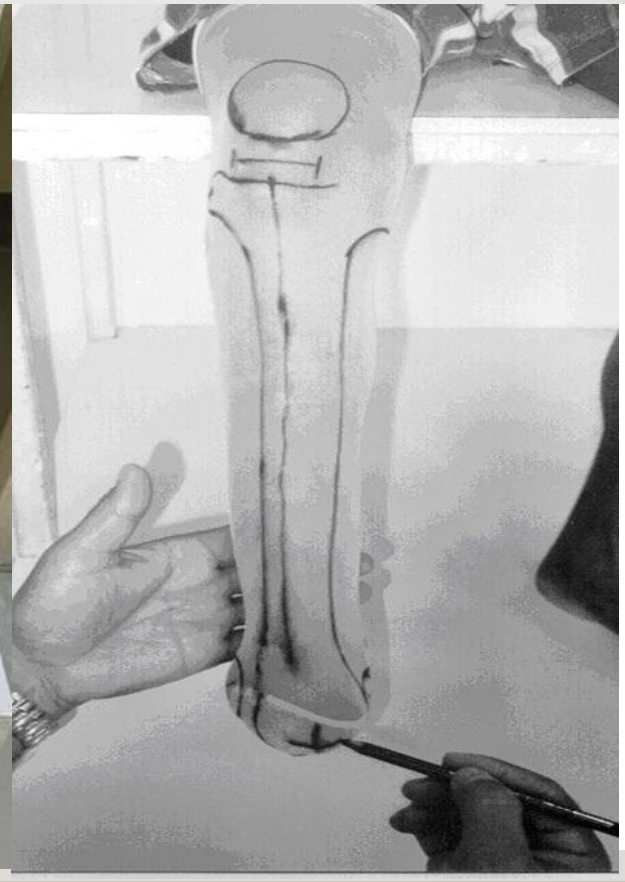
1) Measure from MTP ➡ floor
2) Foot's length
3) Checking shoes size and heel height
4) Take circumference for cosmetic goals

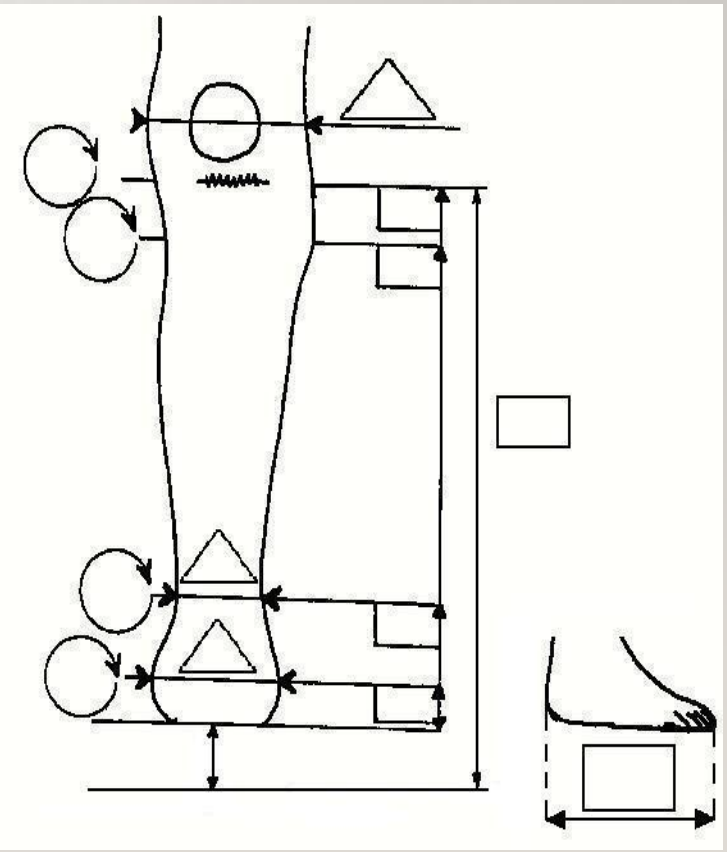
III. CASTING PROCEDURE

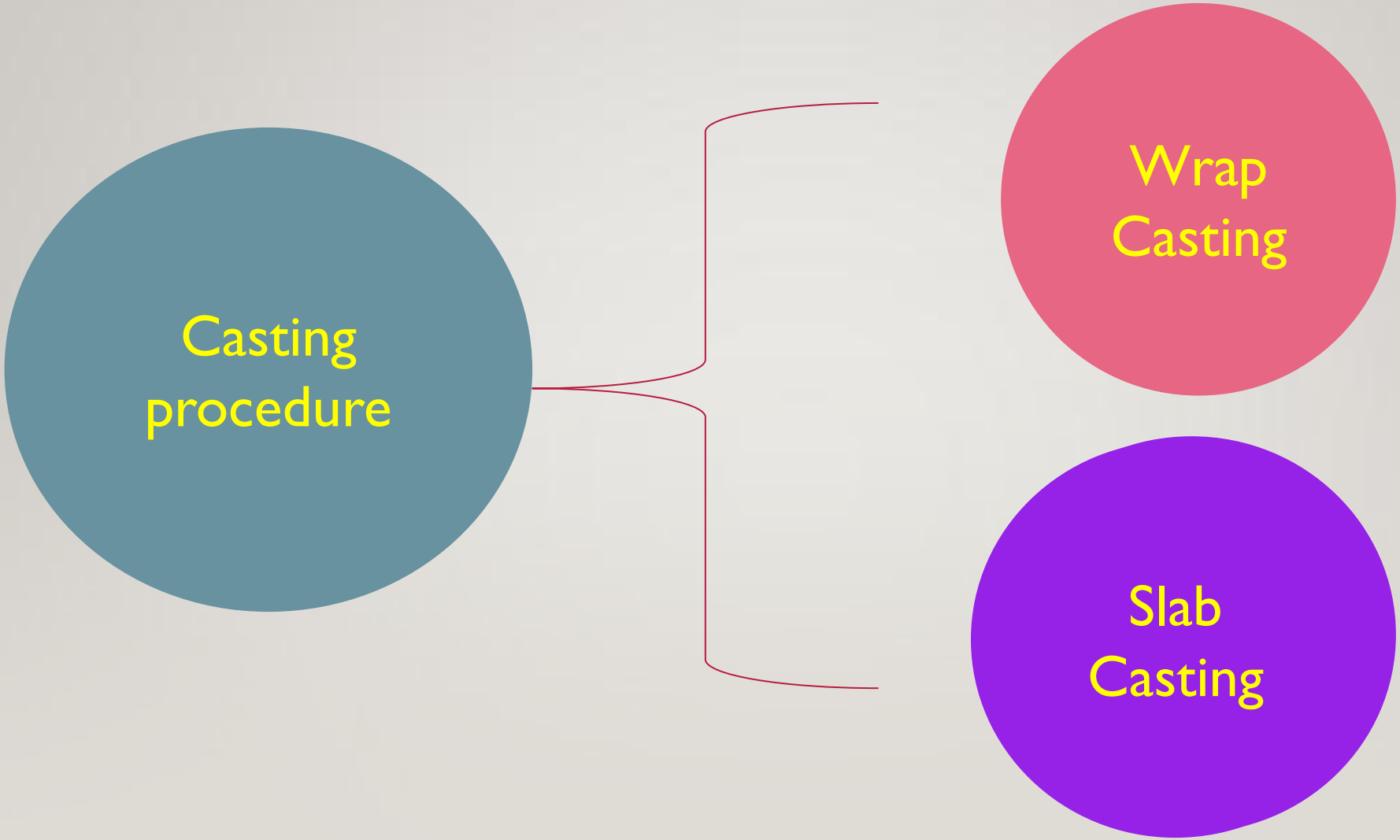
Landmarks and Measurement:

Using P&O UMTY-AD Casting/measurement Chart








Casting procedure
Wrap Casting
Slab Casting

Wrap Casting



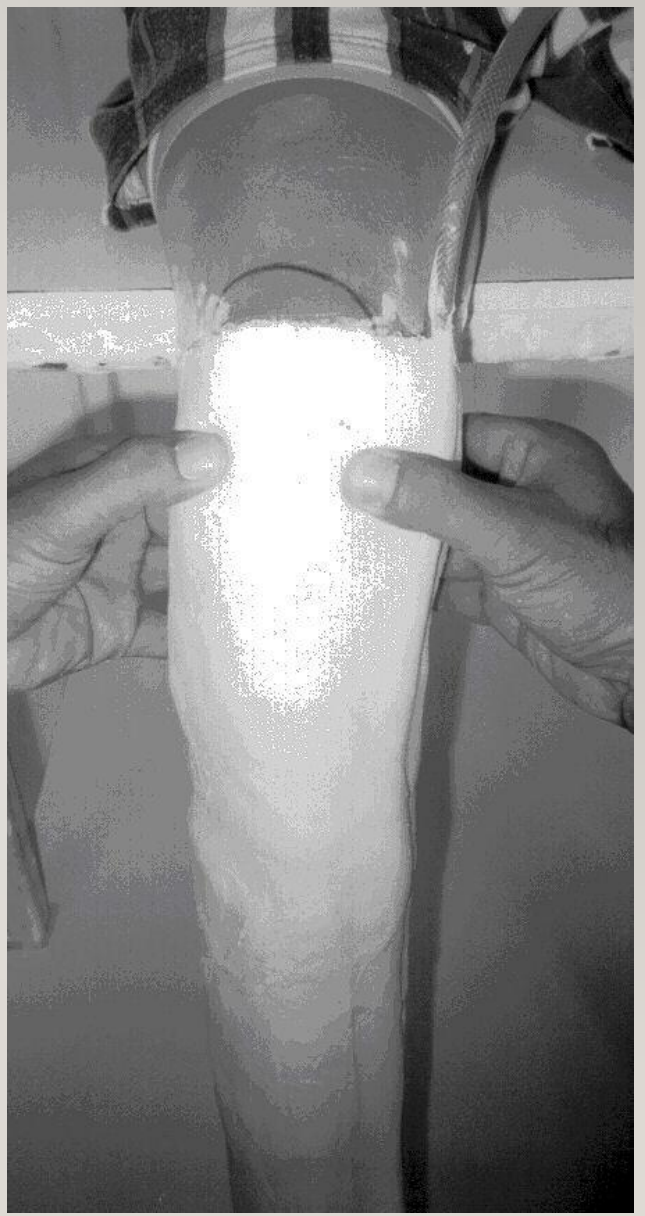
Wrap Casting

- Patient is usually stands
- Place the Plastic cutting strip on the anterior of tibia *(one or two cutting strips are using. if one, place it on the medial side of the tibial. If two palce it on both lateral and medial side of the tibial.)*
- Wrap the distal half with the patient sitting down
- Weight bearing is needed to flatten out the bulbous distal end
- Be sure that a mobile heel pad is positioned correctly



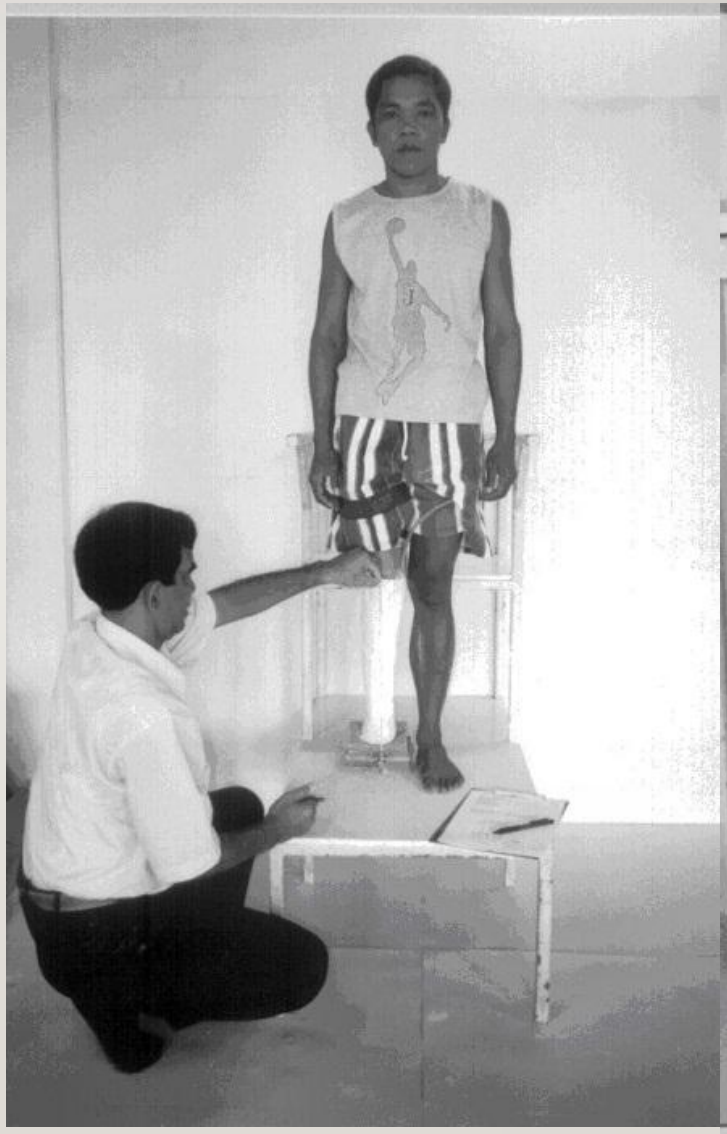
Wrap Casting

- wrap the rest of the cast up to the level of the proximal patella.
- Mould the cast to flatten out the posterior area and mould into the tibialis anterior and medial tibial flare to create a good triangular shape *(control rotation of the prosthesis on the stump and share weight bearing)*
- Position the hand on MPT like TT casting *(the amount of pressure depends on the amount of distal weight bearing)*



Wrap Casting

- Make reference marks that show the adduction and flexion angles of the stump when the patient is standing straight and looking straight ahead





Wrap Casting

- Make reference marks before cutting down the cutting strips for realigning the cast.
- Carefully remove the cast and reassemble it according to your reference marks by not deform the shape.



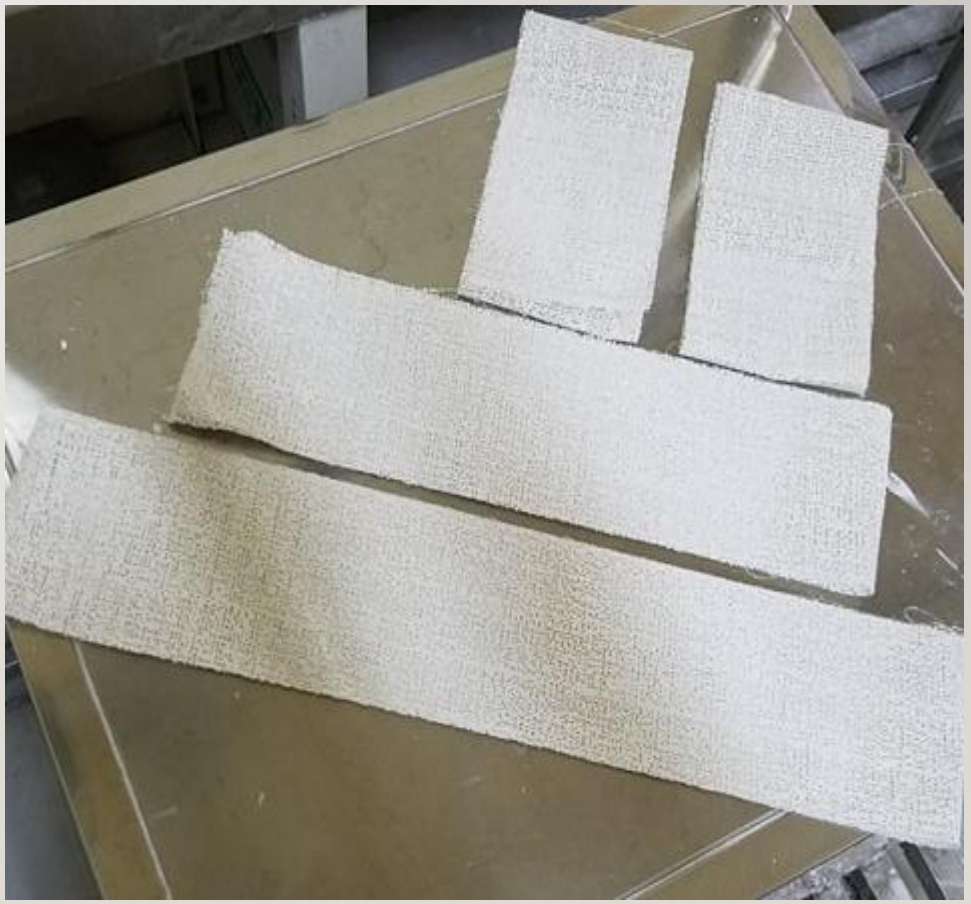


The end of stump is bulbous and irregular distal end, often make difficult to remove the cast from the stump. The Heel pad can deform easily.



Slab Casting





Slab Casting



Apply the slap along the medial edge of the stump

Apply the seam anteriorly

Apply Vaseline along the edge for easily remove the slap of cast

Apply the other slap

Apply pressure as well as wrap casting technique then draw the reference line

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REFERENCES

- University od Medical Technology Yangon, Dept. of P&O, Ankle Disarticulation Prosthetics Training Course Manual
- Atlas of Amputations and Limb Deficiencies: Surgical, Prosthetic ..., Volume 1: Surgical, Prosthetic, and Rehabilitation Principles, Joseph Ivan Krajbich, Michael S. Pinzur, Benjamin K. Potter, Phillip M. Stevens