Diabetes Professional Care® - DPC®
Foot & Wound Clinic

Life After Amputation

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Learning Outcomes

- When do you perform an amputation.
- Factors that determine level of amputation.
- Functional changes related to the amputation.
- Advantages of planning an amputation.

What Do We Mean by Amputation?

Media

Medical

Why are Amputations Performed?

Control Patients' Symptom

- Mechanical
- Neurological
- Psychological

Control Pathology

- Infection
- Ischaemia
- Tumour

Classification of Amputation.

MINOR - Below Ankle

- Phalangeal
- Metatarsal
- Tarsal

Orthotics

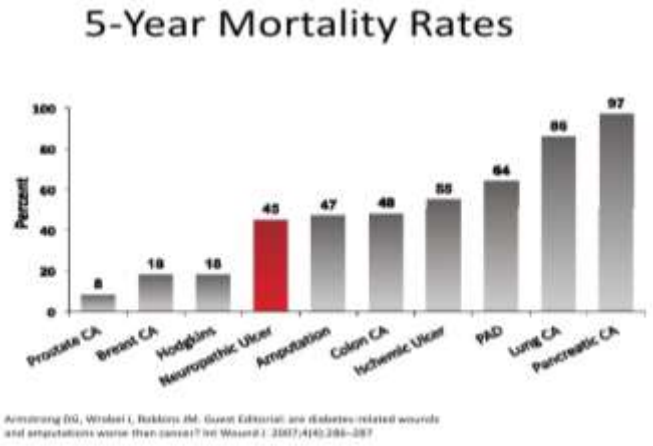
MAJOR - Above Ankle

- Transtibial
- Genicular
- Transfemoral
- Disarticulation

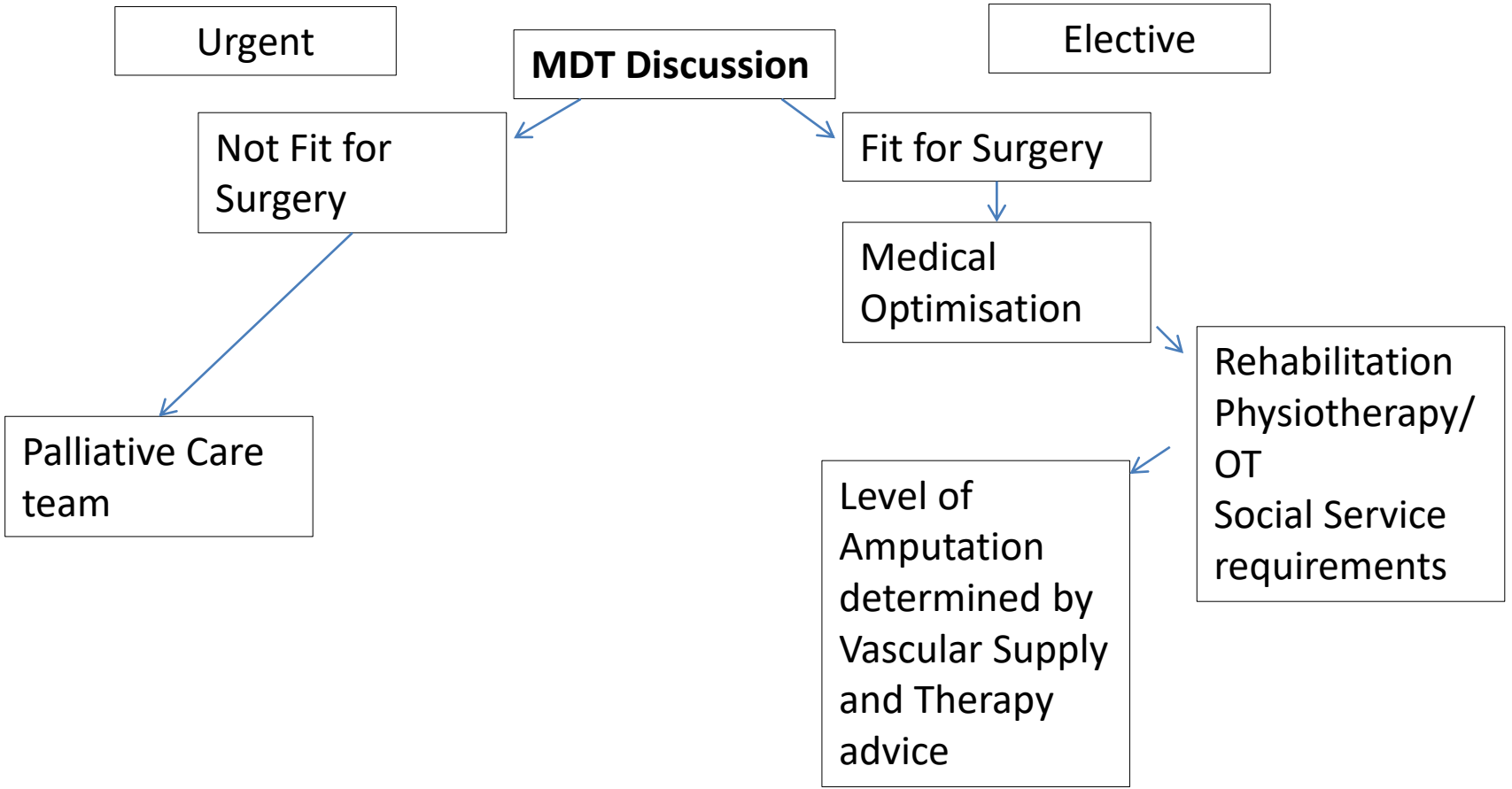
Prosthetics

Common Factors

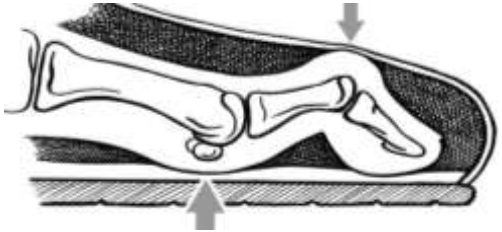
- Transecting Nerves
- Tissue Dead Space
- Predicting Wound Healing
- Predicting Bacterial Load



Amputation Pathway



Phalangeal Amputations

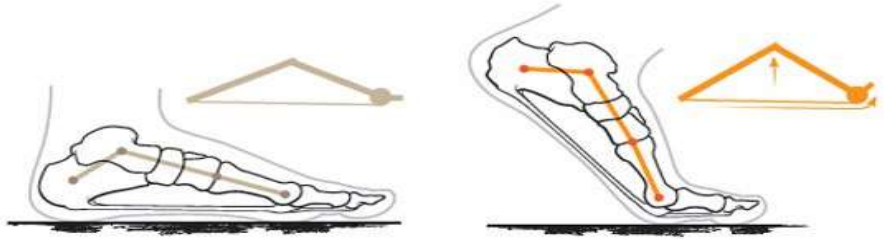


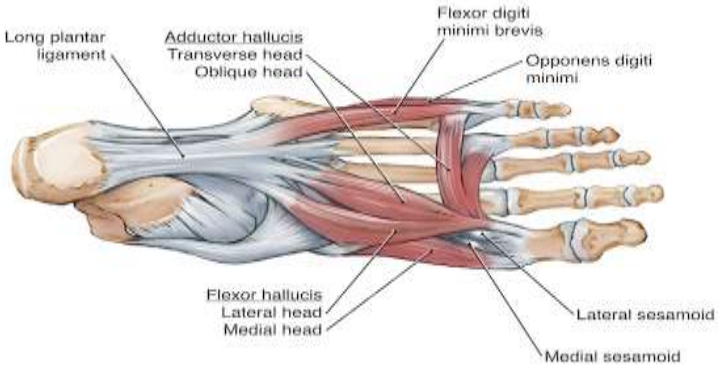
- Medial
- Lateral
- 1st & 5th – retain proximal head
- Best procedure for the future outcome function.
- Retain cartilage?

Biomechanical Changes from Losing a Toe.

<u>Affecting factors</u>

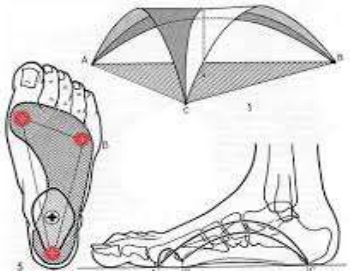
- Impact of neuropathy.
- Changes from infection/ surgery.





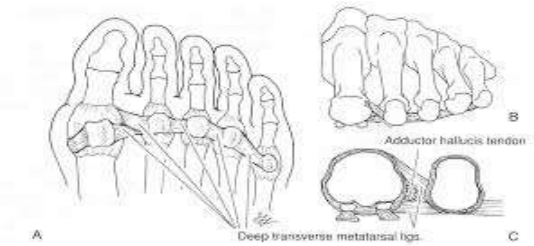
Metatarsal Amputations

- Ray Amputation
- Transmetatarsal



Biomechanical Changes from Disrupting the Forefoot.

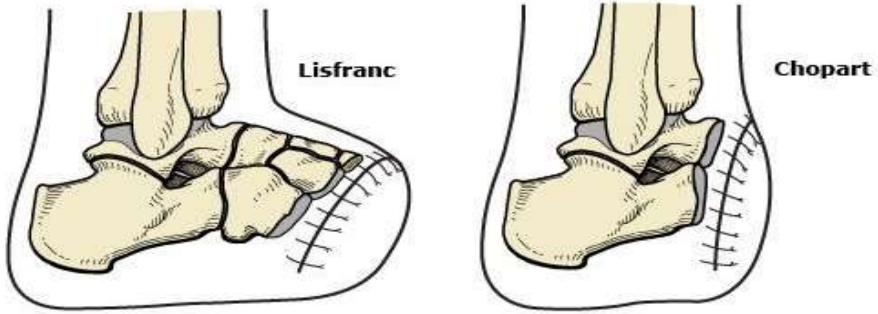
- Decrease power generation across ankle.
- Diabetes has greater effect on gait kinematics.
- Orthotics have little impact on gait restoration.



Tarsal Amputations

- Lisfranc
- Chopart

Need to be combined with a procedure to reduce power from plantar-flexors.



Biomechanical changes of midfoot Amputations

- Unopposed Plantarflexion.
- Minimal mobility requirements.
- Cognitive impairment.

General Facts about Major Amputations

- Using a prosthesis is hard work.
- Motivation/ practise.
- Significant Impact on QoL.

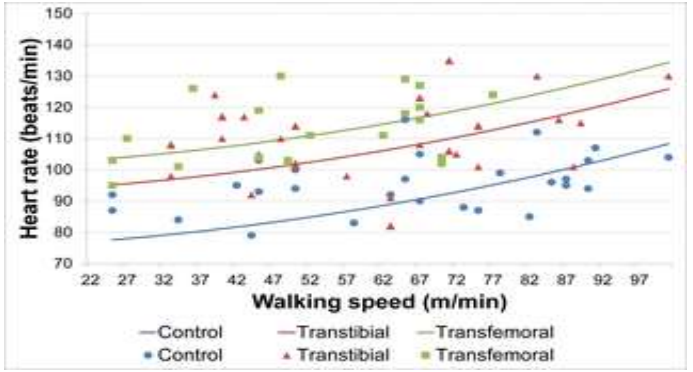
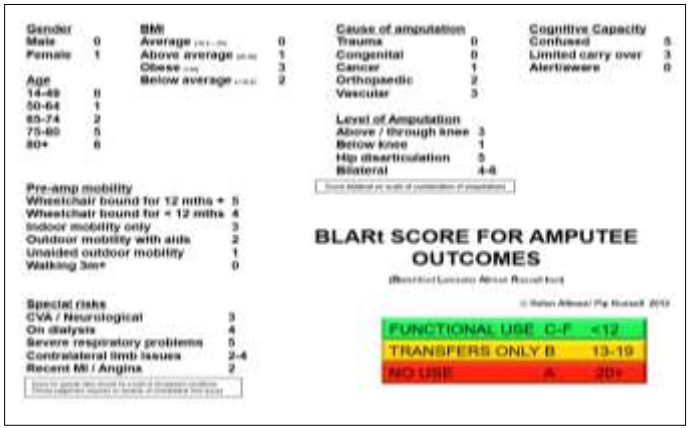


TABLE 2

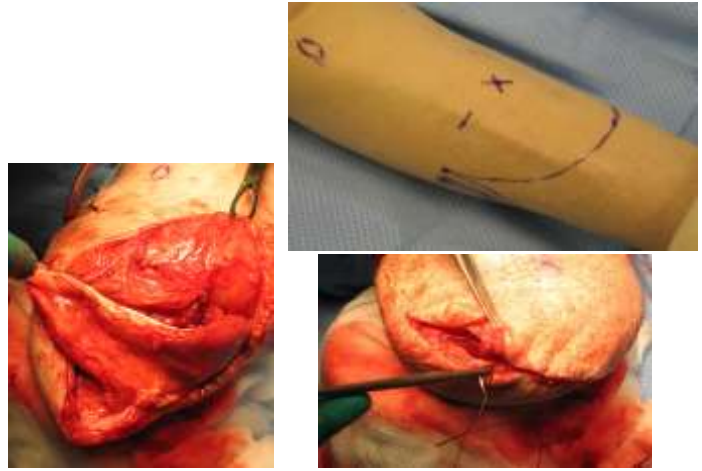
DEMOGRAPHIC	USERS (N=94)	NONUSERS (N=41)
Male gender	79%	71%
Age in years (mean)	55.1	58.3
Type 2 diabetes	37%	46%
Peripheral arterial disease	47%	61%
Atraumatic amputation etiology	69%	88%
Traumatic amputation etiology	31%	22%
Transtibial-level amputation	83%	61%
Transfemoral-level amputation	21%	68%
Bilateral lower-limb amputations	9%	34%

Key demographic findings of users and nonusers of lower-limb prostheses. ***Data from Roffman et al.[2]***



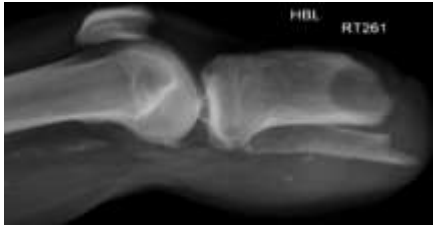
Transtibial Amputations

- Blood supply
- Background mobility/ flexibility
- Preparation for prosthetic interface



Effects of Trans-tibial Amputation.

- Increase effort 40-80%
- Higher risk of breakdown
- Patella Tendon Bearing



Through-Knee Amputation

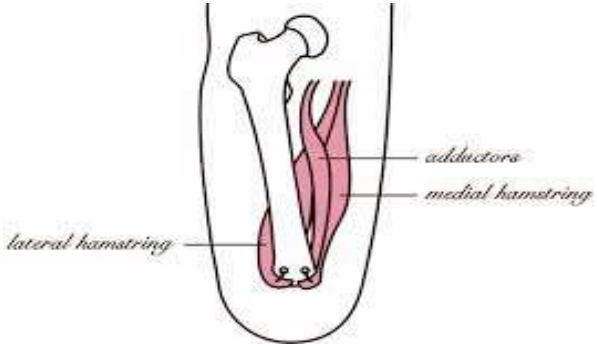
- End Bearing (Mostly)
- Similar Functionality to TFA.
- Shorter socket
- Cosmetic issues

Considerations when going through the Knee

- Skin cover in from below the knee.
- The joint surface is cartilaginous.
- End bearing surface must have good quality skin.

Transfemoral Amputation

- Ischial weight bearing
- Decrease adductor/ extensor function.
- Increase effort 100-150%
- Socket retention/ volume changes.



Impact of losing femoral length.

- Femoral (lap) Length
- ↓ Hip extension.
- Limb Volume
- Arterial perfusion
- Comorbidities

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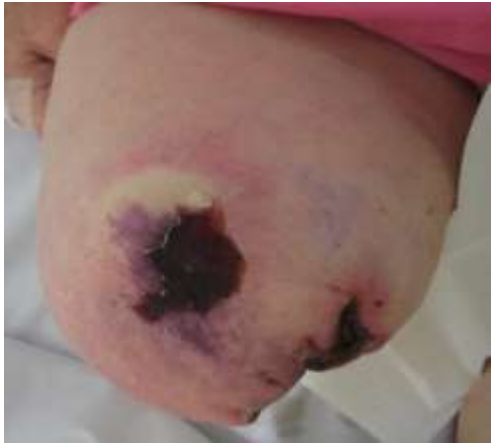

What Does the Future Hold?

Impending Health Burden on the NHS

You Only Get Out What You Put In!

Limbless Association
Providing support to amputees and the limb-loss community

ACSIS (Amputee and Carers Support in Southampton)

Every Amputation has a Significant Impact.

Optimised Healthcare Management can Improve the Patients' Outcome.