

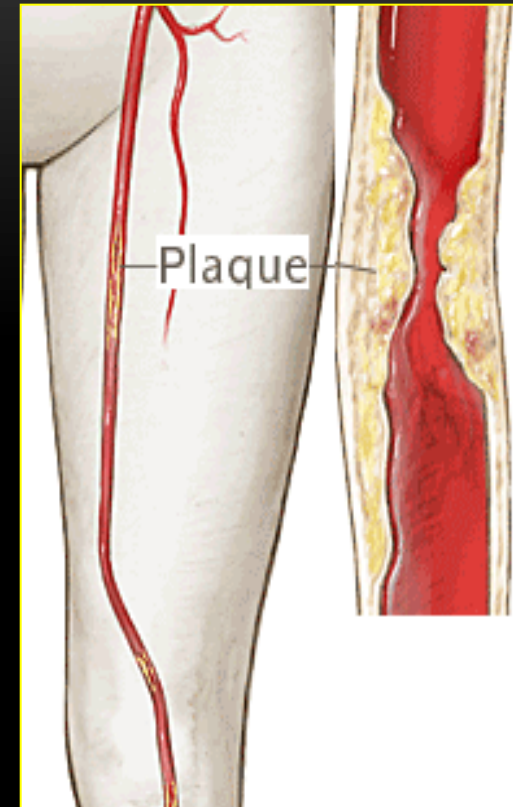
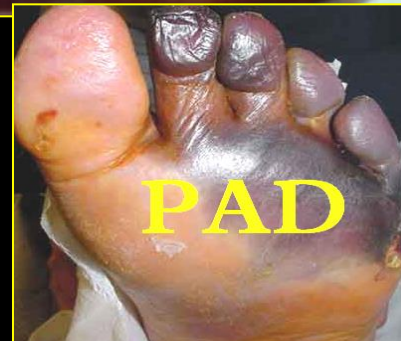
Amputation

is the 1st step of rehabilitation

Indications:

1/Dead or dying → peripheral vascular disease(90%).

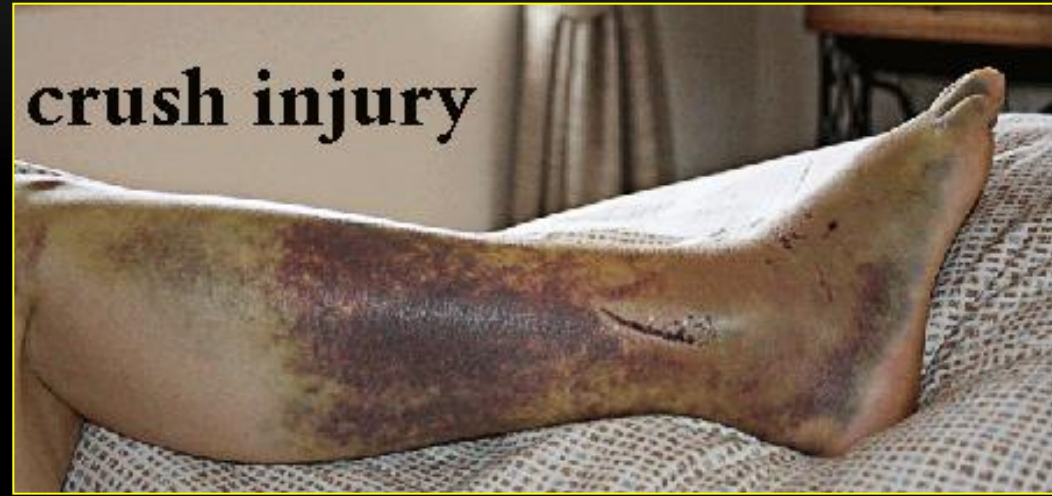
Severe trauma, burn, frostbite



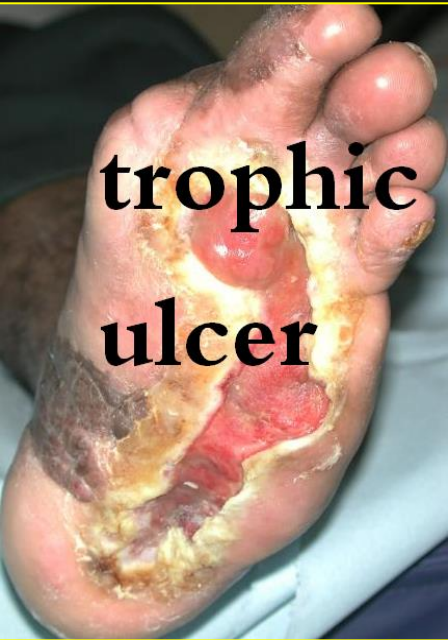
2/ Dangerous → malignant tumor

Potentially lethal sepsis (gas gangrene)

Crush injury (crush syndrome)



3/Damn nuisance → when retaining a limb is **worse** than no limb because of **pain**, **gross malformation**, **recurrent sepsis**, loss of **sensation** (with pressure **ulcer**) or severe loss of **function**



Varieties:

Provisional amputation:

if primary healing is unlikely, amputation is done as distal as possible. The skin is closed loosely over a pack.

Re-amputation is performed when stump condition is favorable

Definitive : 1/end-bearing amputation

the scar should not be terminal & the bone should not be hollow e.g. through knee & Syme's amputations



Definitive:2/ non-end-bearing amputation:
the scar can be **terminal** e.g. all upper limb
& most **lower** limb amputations

Technique

tourniquet

Skin → equal flap or long post flap

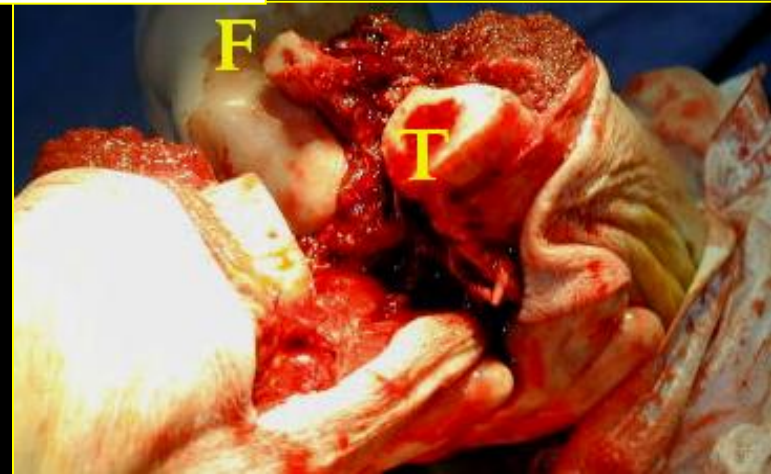
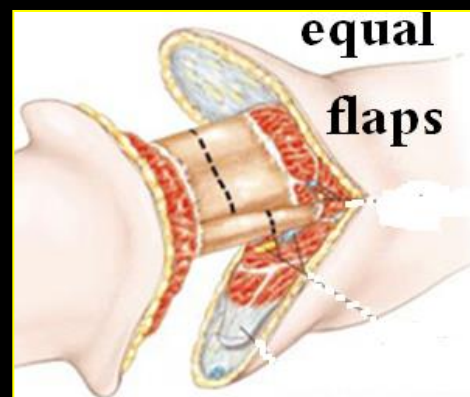
Muscle → myodesis & myoplasty

Nerves → cut proximal

Bone → sawed

Vessels → ligated

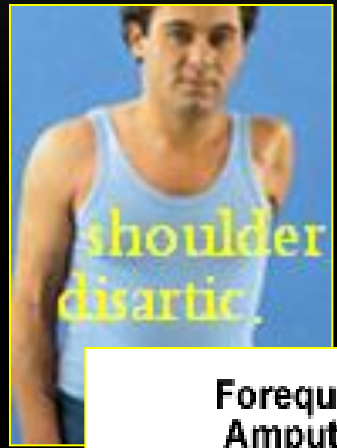
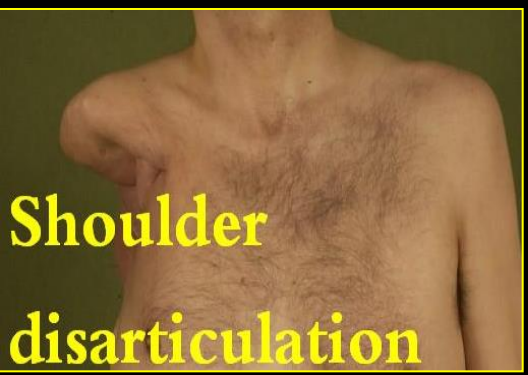
Skin → closed without tension
over a **drain** with **firm** bandage



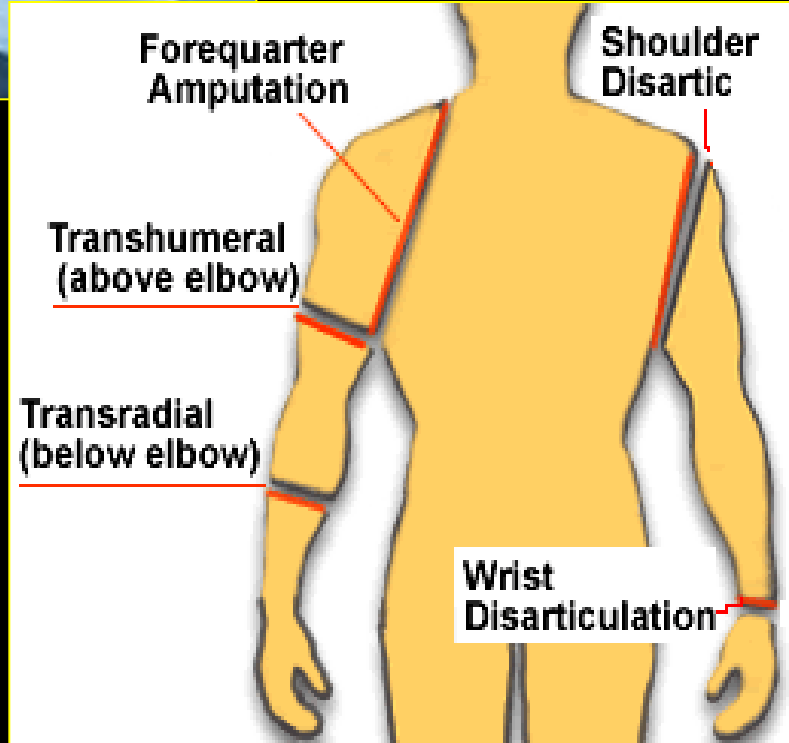
Amputation other than at the site of election:

Forequarter (interscapulothoracic) amputation:
for severe trauma or to eradicate malignant tumor

Shoulder disarticulation:

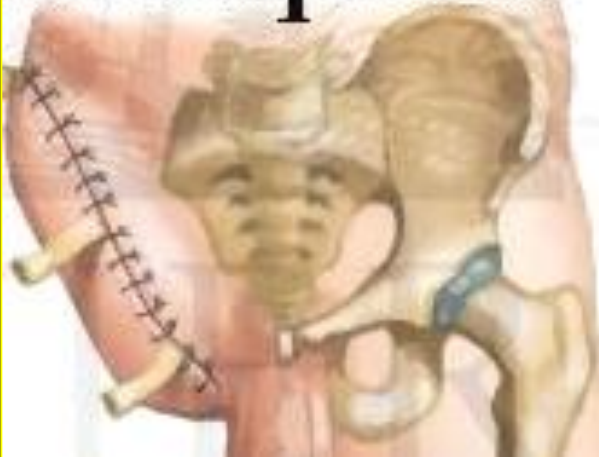


Below elbow (transradial) amputation



Hindquarter (hemipelvectomy) amputation:
for **malignant** tumor

Hindquarter



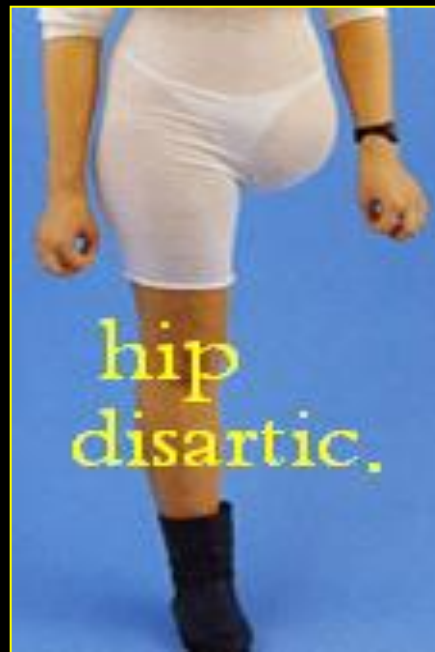
Hindquarter



**internal
hemipelvectomy**

Hip disarticulation

Hip disartic.



**hip
disartic.**

Transfemoral amputation:
at least **12cm**
should be left for
knee mechanism

AKA



Through knee amputation:
for **vascular** disease & for **children**

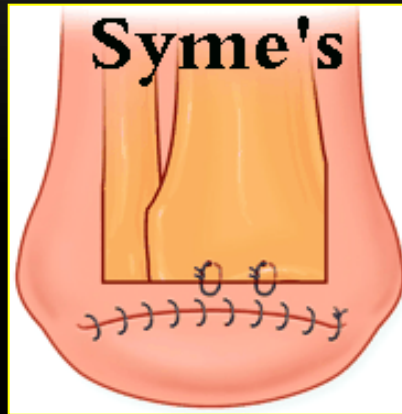
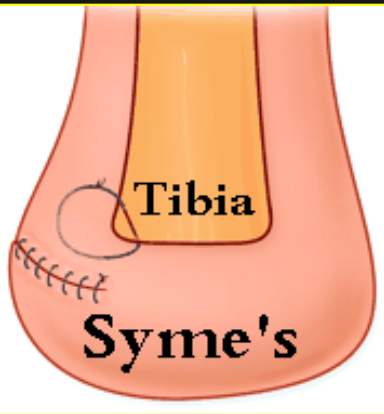
Below knee (transtibial) amputation:
if **<3cm** stump → **slip**.

At least **5- 6cm** a stump to fit a prosthesis.
The ideal is **14cm**, if **longer** → it has **no advantage**

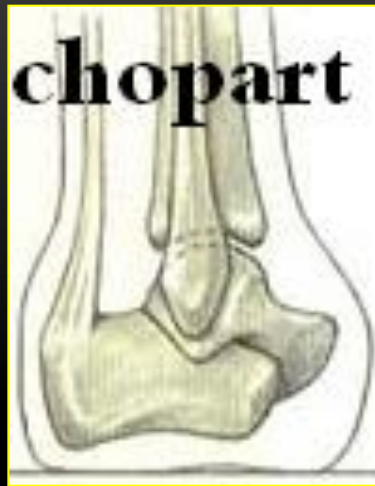


Above ankle (Syme's) amputation: just above the **malleoli** & the **fibrofatty** tissue of the heel should **stuck** to the bone ends.

Used for **men & children**



Partial foot amputation:
through **midtarsal** joint
(**Chopart**)



Chopart



Chopart
R

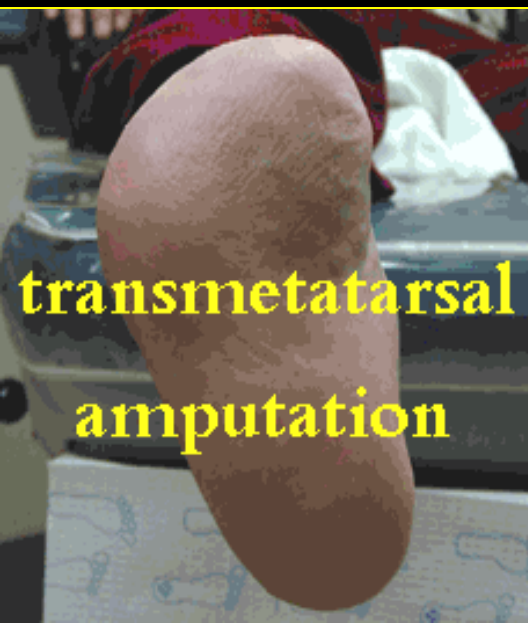


through **tarsometatarsal** joints (**Lisfranc**)

Lisfranc

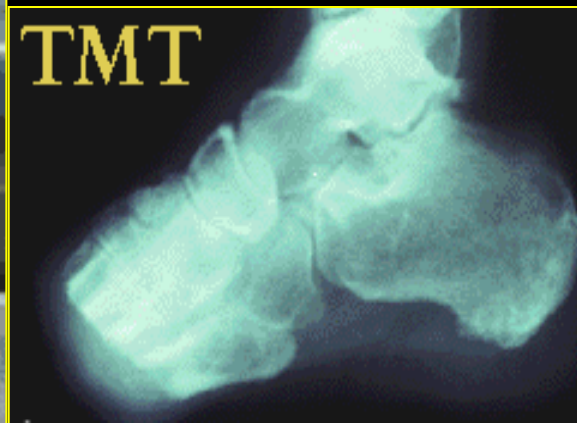


through **metatarsal** bones



transmetatarsal
amputation

TMT



1st ray amp



Prostheses:

A prosthesis must fit **comfortably**,
function **well** & look **presentable**.

It should also be used **early**

Electrically powered prosthesis for **upper** limb





Complications of amputation stumps:

Early:

1-secondary hemorrhage: due to infection.

2-breakdown of skin flap: due to ischemia or suture under excessive tension.

3-gas gangrene: may occur in high thigh amputation if the site is contaminated from the perineum especially if the stump is ischemic

closure over excessive tension



wound breakdown

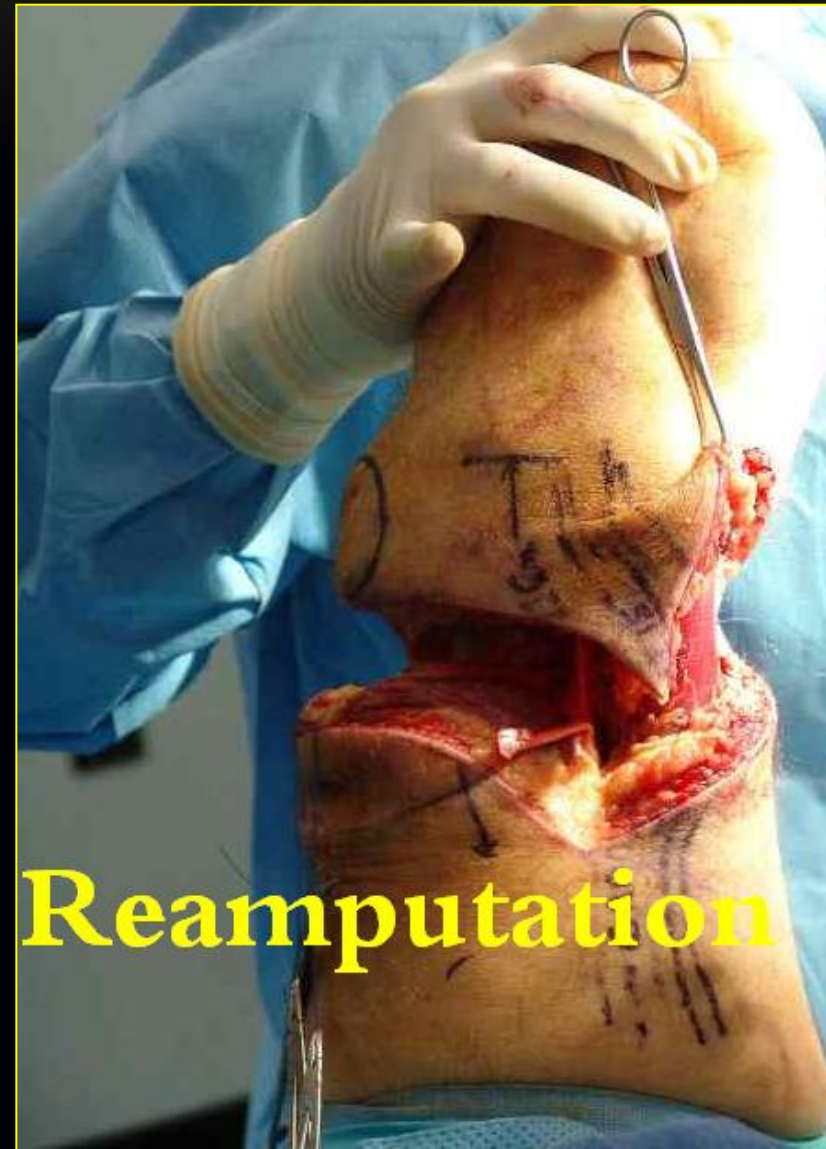
necrosis & wound breakdown



Late:

1- **Skin: Eczema** & tender inguinal LN, R₅ → rest from prosthesis.

Ulceration due to **ischemia**, R₅ → re-amputation at **higher** level



2-Muscle: if **too** much is left at the stump, it leads to **unstable** cushion & **insecure** prosthesis, R → **excise** the **excess** tissue

4-Nerve:

Tender neuroma,

R → nerve should be cut **more proximally** & **buried** within soft tissue **away** from pressure **points**

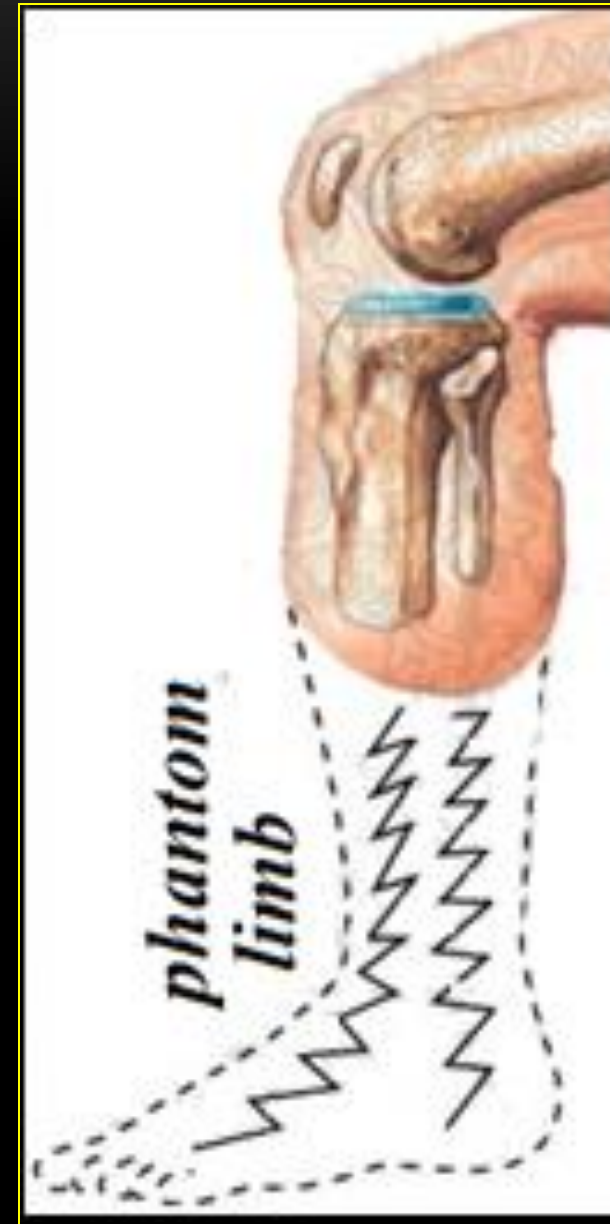


Phantom limb:

is **feeling** of the amputated limb is **still present**, **later** this recedes or **disappears**.

A **painful phantom limb** is difficult to **treat**, though, **intermittent percussion** to the **end** of the stump **may help**

5-Joint: the joint **proximal** to the stump may be **stiff** or **deformed** e.g. knee fixed **flexion** in below knee amputation which makes **walking** difficult



6-Bone:

Bony spur: usually painless, if there is infection it may become larger & painful, $R \rightarrow$ excision of bone end with the spur

Fracture

