Principles of plastic surgery

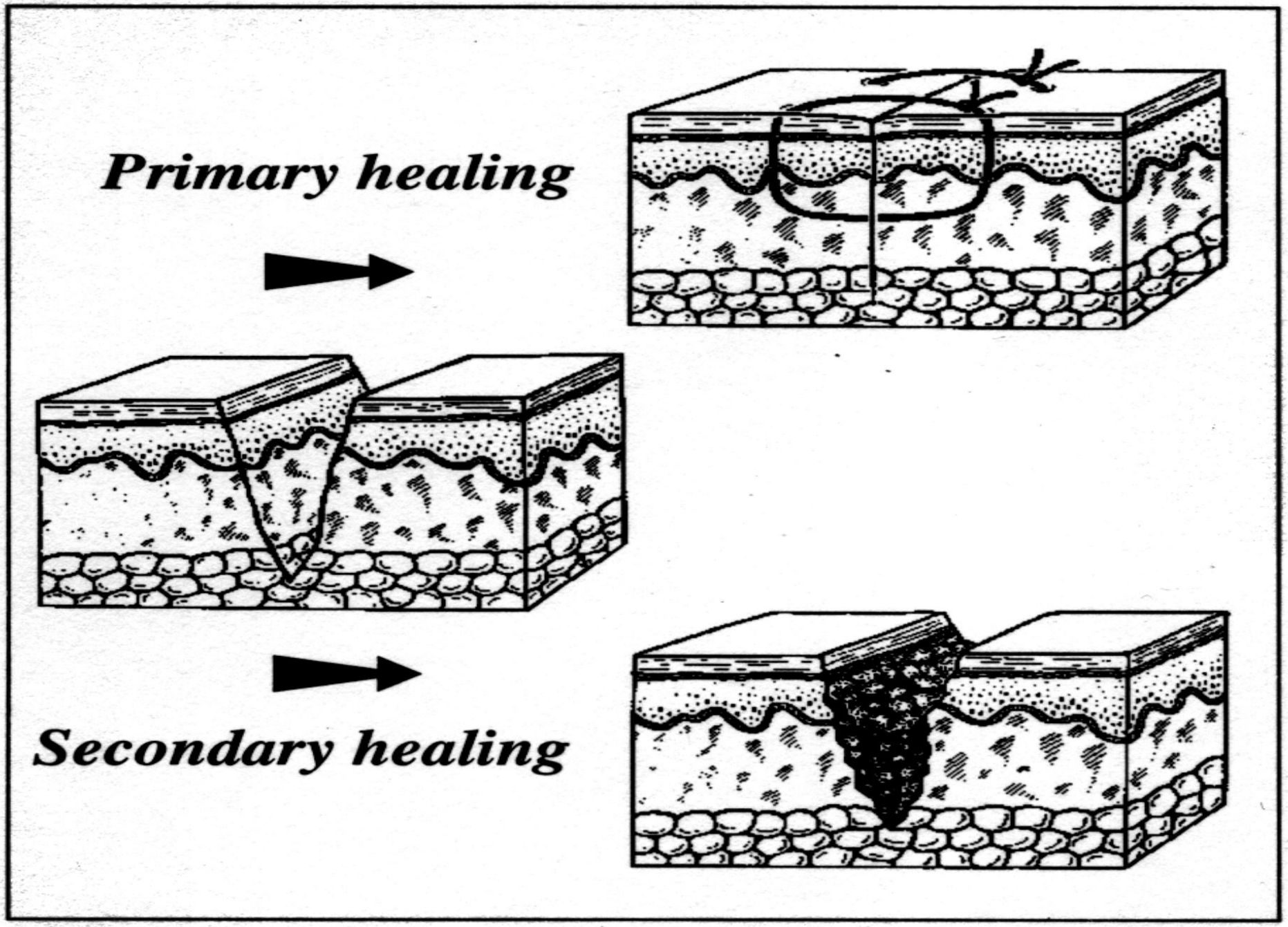
Plastic surgery techniques

Spontaneous wound healing
Direct surgical wound closure
Skin grafts, other types of graft materials
Flaps
Free tissue transfer
Tissue expansion
Ablative techniques
Other reconstructive problems
Aesthetic or plastic cosmetic surgery

Classification of WOUNDS

Wound may be defined as a defect or break in the skin that results from physical, mechanical or thermal damage.

Healing is complete when the skin surface has reformed and the skin has regained most of its tensile strenght.



Primary and secondary healing

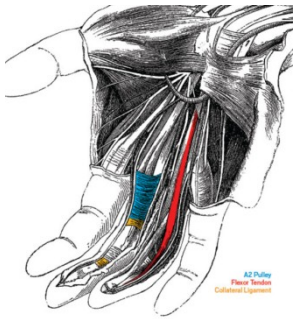
Healing time and chronicity

Primary intention – Minor tissue loss, wound edges can be apposed minimising the necessary repair

Secondary intention – Larger tissue losses, contraction occures and eventually the wound re-epithelialises. This healing by secondary intention requires considerable time

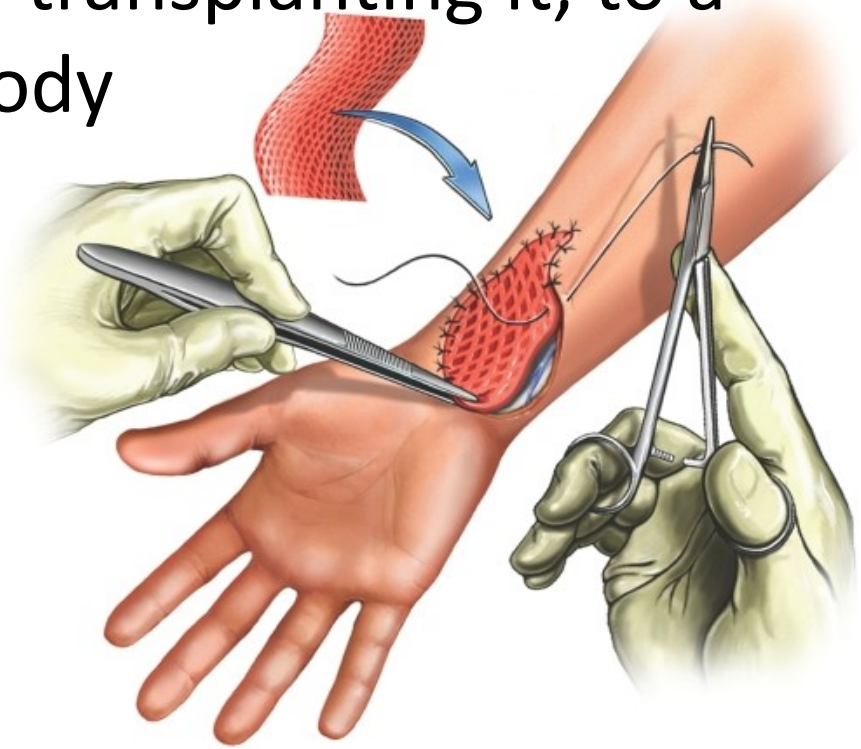
Types of problem involning the plastic surgeon

Aetiology defect	Example
Congenital abnormity	Cleft lip and palate Congenital hand abnormalies
Trauma	Lover limb soft tissue loss Hand injury Pressure sore – decubitus ulcer
Burns	Extensive skin loss
Neoplasma	Skin cancer Intraoral cancerexcision and recontruction Brest reconstruction following mastectomy
Degenerative process	Rheumatoid hand deformities



Skin Graft

- Skin grafting is a surgical procedure that involves removing skin from one area of the body and moving it, or transplanting it, to a different area of the body



Why are skin grafts done

Common reasons for a skin graft include:

skin infections

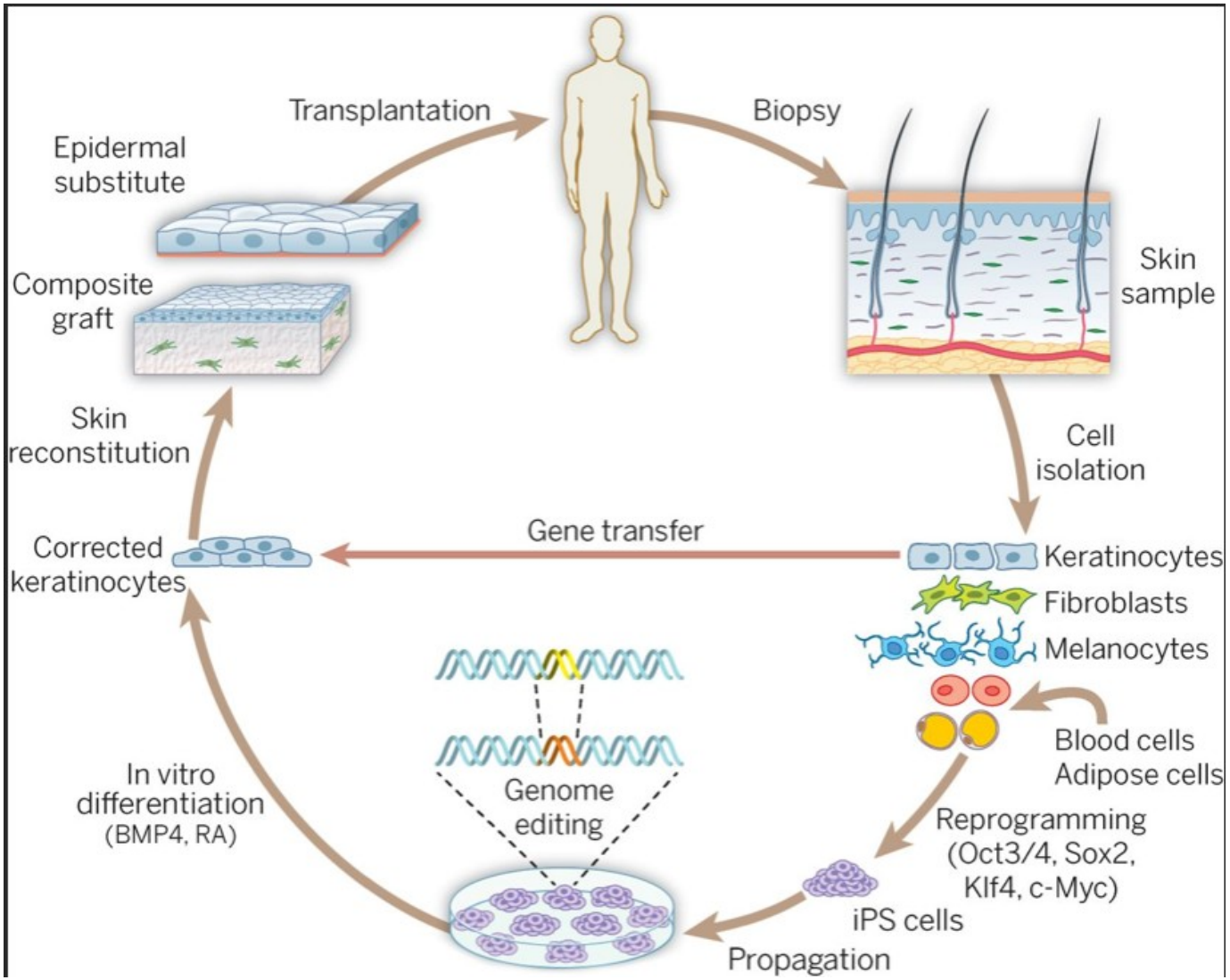
deep burns

large, open wounds

Bed sores or other ulcers on the skin that haven’t healed well

skin cancer surgery

Advances in skin grafting and treatment of cutaneous wounds



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Types of skin grafts

There are two basic types of skin grafts: **split-thickness and full-thickness grafts.**

A split-thickness graft involves removing the top layer of the skin — the epidermis — as well as a portion of the deeper layer of the skin, called the dermis.

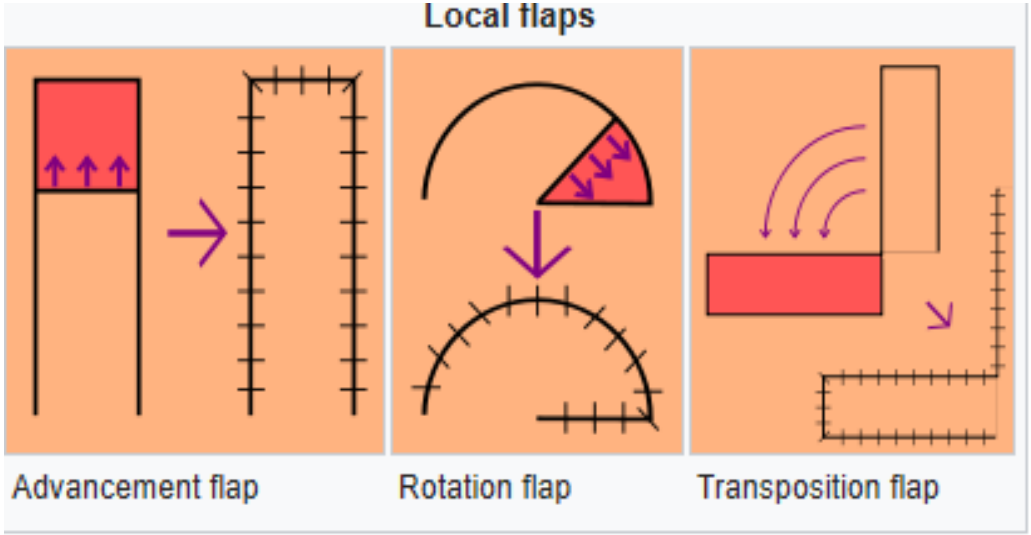
- Split-thickness skin grafts are usually harvested from the front or outer thigh, abdomen, buttocks, or back. Split-thickness grafts are used to cover large areas. These grafts tend to be fragile and typically have a shiny or smooth appearance.

Types of skin grafts

- **A full-thickness graft** involves removing all of the epidermis and dermis from the donor site.
  - These are usually taken from the abdomen, groin, forearm, or area above the clavicle (collarbone).
  - They tend to be smaller pieces of skin, as the donor site from where it's harvested is usually pulled together and closed in a straight-line incision with stitches or staples.
- Full-thickness grafts are generally used for small wounds on highly visible parts of the body, such as the face.
- Unlike split-thickness grafts, full-thickness grafts blend in well with the skin around them and tend to have a better cosmetic outcome.

Flap

- **Flap surgery** is a technique in plastic and Reconstructive surgery where any type of tissue is lifted from a donor site and moved to a recipient site with an intact blood supply. This is distinct from a graft, which does not have an intact blood supply and therefore relies on growth of new blood vessels.
- **Local flaps**
- **Regional flaps**
- **Distant flaps**



Flap *classifications by tissue type*

Cutaneous flaps contain the full thickness of the skin and superficial fascia and are used to fill small defects.

Fasciocutaneous flaps add subcutaneous tissue and deep fascia, resulting in a more robust blood supply and ability to fill a larger defect.

Musculocutaneous flaps further add a layer of muscle to provide bulk that can fill a deeper defect.

Muscle flaps can provide bulk or functional muscle.

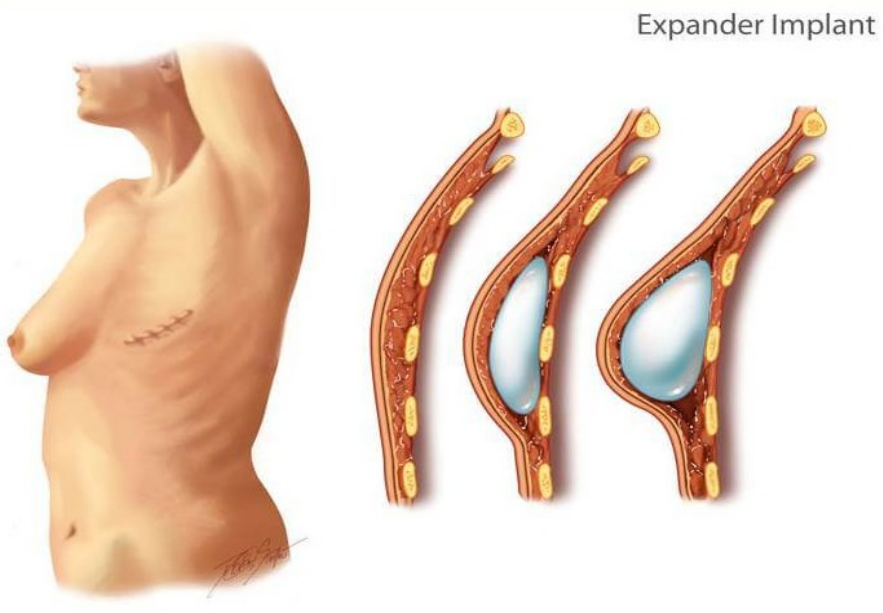
Bone flaps are used to replace bone, such as in jaw reconstruction.

Flap *classifications by* Vascular

- Classification based on blood supply to the flap:
- ***Axial flaps*** are supplied by a named artery and vein. This allows for a larger area to be freed from surrounding and underlying tissue, leaving only a small pedicle containing the vessels.
  - Reverse-flow flaps are a type of axial flap in which the supply artery is cut on one end and blood is supplied by backwards flow from the other direction.
- ***Random flaps*** are simpler and have no named blood supply.
- ***Pedicled flaps*** remain attached to the donor site via a pedicle that contains the blood supply.

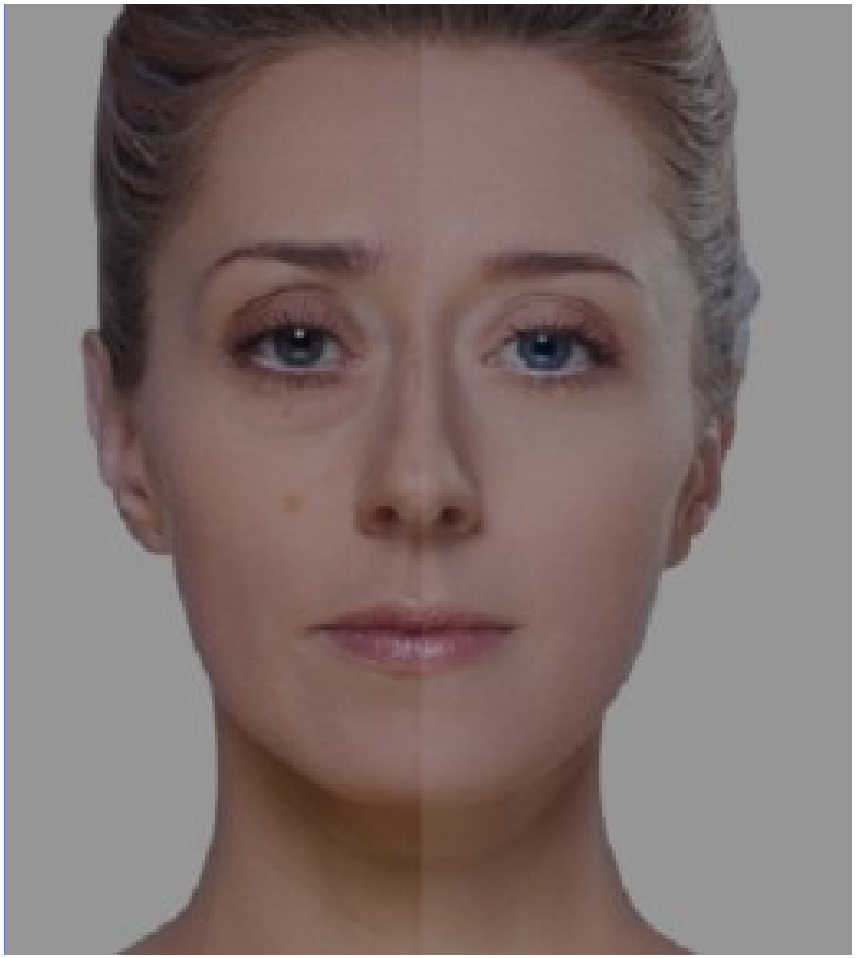
Tissue expansion

- Skin expansion is a common surgical procedure to grow extra skin through controlled mechanical overstretch. It creates skin that matches the color, texture, and thickness of the surrounding tissue, while minimizing scars and risk of rejection



Ablative Techniques

- These techniques involve creating a uniform wounding of the top layer of the skin, which when heals, grows back uniform and firmer.
- There are two very common Ablative Techniques, which are used by the majority of the plastic surgeons
  - ***CO2 Laser*** – this has been used for a long time for treatment of issues like scars, wrinkles, warts etc.
  - ***Erbium Laser*** – this is a comparatively newer procedure used for treatment of deep lines, wrinkles on not just the face, but also on the neck, hands and feet.



Aesthetic or plastic cosmetic surgery

In cosmetic surgery there is no obvious surgical pathology

- **Face**
  - Facelift, Eyalid surgery, Nose surgery, Era surgery
- **Breast**
  - Breast augmentation, Breast lift, Breast reduction
- **Body**
  - Tummy tuck, Liposuction
- **Male cosmetic surgery**
  - Male breast surgery
- **Non surgical treatment**
  - Botulinium treatment, Facial fillers, Chemical peels