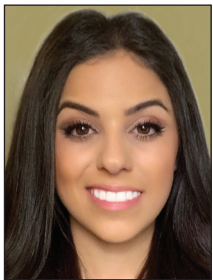


## Comprehensive Guide to Skin Grafts

by Atieh Jibbe, MD

Stages of graft	Duration	Description
Imbibition	0-48 hours (ischemic period)	Nutrients from plasma exudate of wound bed; fibrinous attachments to wound bed; Graft edema
Inosculation	~48 hrs – 10 days	Graft vessels anastomose with recipient bed native vessels
Neovascularization	Concurrently with inosculation; Complete by day 7	Microvascular plexus grows into graft supplementing anastomosed native vessels
Maturation/ Re-innervation	2 weeks and onward	Re-innervation around 2 weeks but lasts for months to years

Types of grafts	Description	Advantages	Disadvantages
Full thickness	Epidermis + FULL dermis	<ul style="list-style-type: none"> <li>• Better cosmetic appearance</li> <li>• Retains adnexal structures</li> <li>• Less wound contraction</li> <li>• Lower Infection risk</li> <li>• Can be used for extremely deep defects after 1-3 weeks of granulation (“delayed grafting”)</li> </ul>	<ul style="list-style-type: none"> <li>• Higher rate of graft failure due to increased metabolic need</li> </ul>
Split thickness	Epidermis + partial dermis (thickness ranges from 0.13 mm – 0.78 mm)	<ul style="list-style-type: none"> <li>• Ability to cover large defects especially when fenestrated with “mesh-er” tool</li> <li>• Less metabolic demand → increased likelihood of survival</li> <li>• Allow early visualization of tumor recurrence</li> </ul>	<ul style="list-style-type: none"> <li>• Less desirable cosmetic appearance (pale, smooth, and hairless)</li> <li>• Wound contraction (up to 70%)</li> <li>• Lacks adnexal structures</li> </ul>
Composite	Tissue of two germ layers: Epidermis + dermis + variable tissue (ie. Cartilage)	<ul style="list-style-type: none"> <li>• Restore structural integrity and restores missing cartilage in areas such as nasal ala typically grafted from helical crus/rim donor site</li> </ul>	<ul style="list-style-type: none"> <li>• Limited to 1-2 cm in size (bc dependent on lateral wound edges for nutrition)</li> <li>• High rate of graft failure due to HIGHEST metabolic demand especially in patients with vascular compromise or smokers</li> </ul>
Xenograft	Tissue from different species than recipient	<ul style="list-style-type: none"> <li>• Fewer wound care demands bc acts as a biologic dressing → Promotes granulation</li> <li>• Protect underlying structures</li> <li>• Post op pain</li> </ul>	<ul style="list-style-type: none"> <li>• Contraindicated with swine allergies</li> <li>• Must be replaced 1-2 weeks post application</li> <li>• Malodorous</li> </ul>

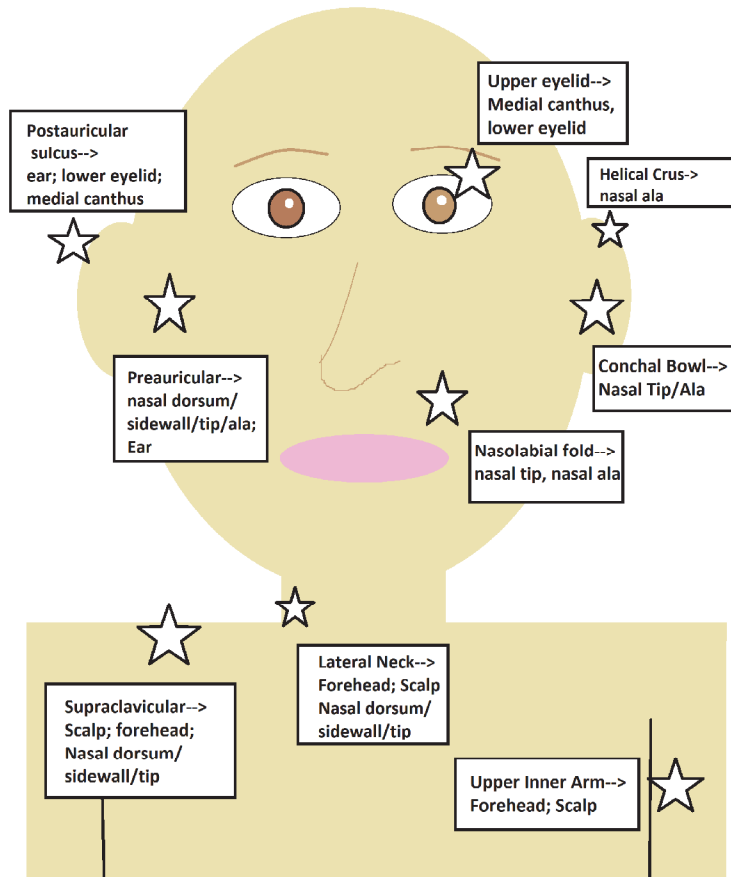


**Atieh Jibbe, MD**, is PGY-3 at University of Kansas department of dermatology.

# Comprehensive Guide to Skin Grafts (continued)

by Atieh Jibbe, MD

Figure 1: Graft Site Selection (☆=donor site)



Artwork provided by Atieh Jibbe, MD

Graft Complications and Management		
Early discoloration	Dusky Blue	Normal and typically occurs at 24 hrs; indicates venous congestion
	Pink	Normal and typically seen around day 7; indicates graft survival
	Black	Indicates necrosis; do not remove graft because it will function as a biological dressing
Graft shearing	<ul style="list-style-type: none"> <li>Prevented with "bolster dressing" which immobilizes graft</li> <li>Bolster dressing: bulky non-adherent gauze + layer of emollient loosely sutured in place over graft</li> </ul>	
Graft contraction	<ul style="list-style-type: none"> <li>Maximal in first 2 months</li> <li>Intralesional steroids 6-8 weeks post-op</li> <li>Massaging with emollient 6-8 weeks post-op</li> </ul>	
Poor cosmetic appearance	<ul style="list-style-type: none"> <li>Dermabrasion 4-6 weeks post-op</li> <li>Prevention of hyperpigmentation via aggressive sunscreen</li> </ul>	
Pain at donor site	<ul style="list-style-type: none"> <li>Highest in first 24 hours; manage with similar analgesics as used for dermatologic surgery</li> </ul>	

**Information References**

1. Hocker, Thomas L. H., and Ali Alikhan. *Review of Dermatology*. Elsevier - Health Sciences Div, 2016.
2. Jain, Sima. *Dermatology - Illustrated Study Guide and Comprehensive Board Review*. Springer International Publish, 2017.
3. Mariwalla, Kavita, and David J. Leffell. *Primer in Dermatologic Surgery: a Study Companion*. American Society for Dermatologic Surgery, 2011.
4. Rohrer, Thomas E., et al. *Flaps and Grafts in Dermatologic Surgery*. Elsevier, 2018.

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