



SKIN- BURNS AND CHRONIC WOUNDS, A CLINICAL PERSPECTIVE

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SKIN- BURNS AND CHRONIC WOUNDS, A CLINICAL PERSPECTIVE

SKIN.....Largest organ requiring functional restoration

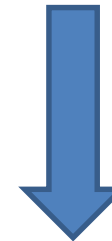
- Infection
- Water loss
- Hypothermia

BURNS.....Major cause of injury to skin
loss of function
life threatening



Need skin to replace skin
Biological /Synthetic

CHRONIC "SKIN" Wounds.....Small in size
but Consume large health care resources



Need to promote healing

CLINICAL PERSPECTIVE



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Mayo Burn Center

94 bedded Burn and Plastic Surgery
facility

CHALLENGES

Major Burns resulting in loss of almost whole of the skin



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More burn victims are being saved
→ complex burn deformities





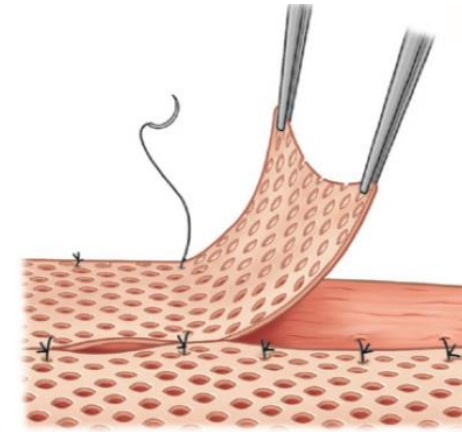
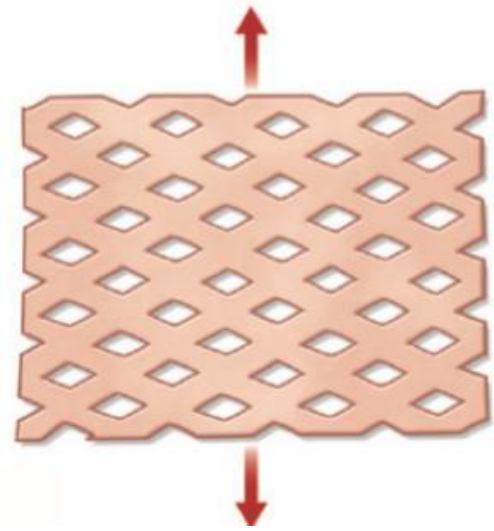
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Meshing the graft



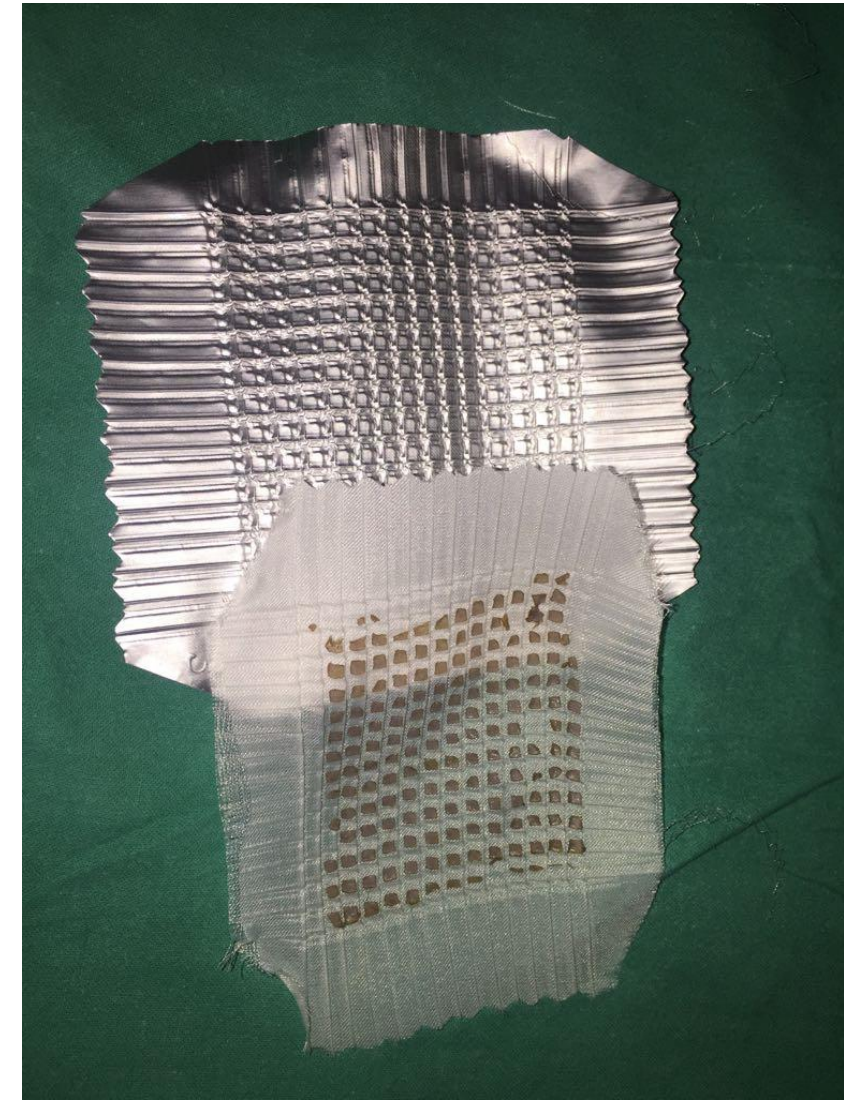
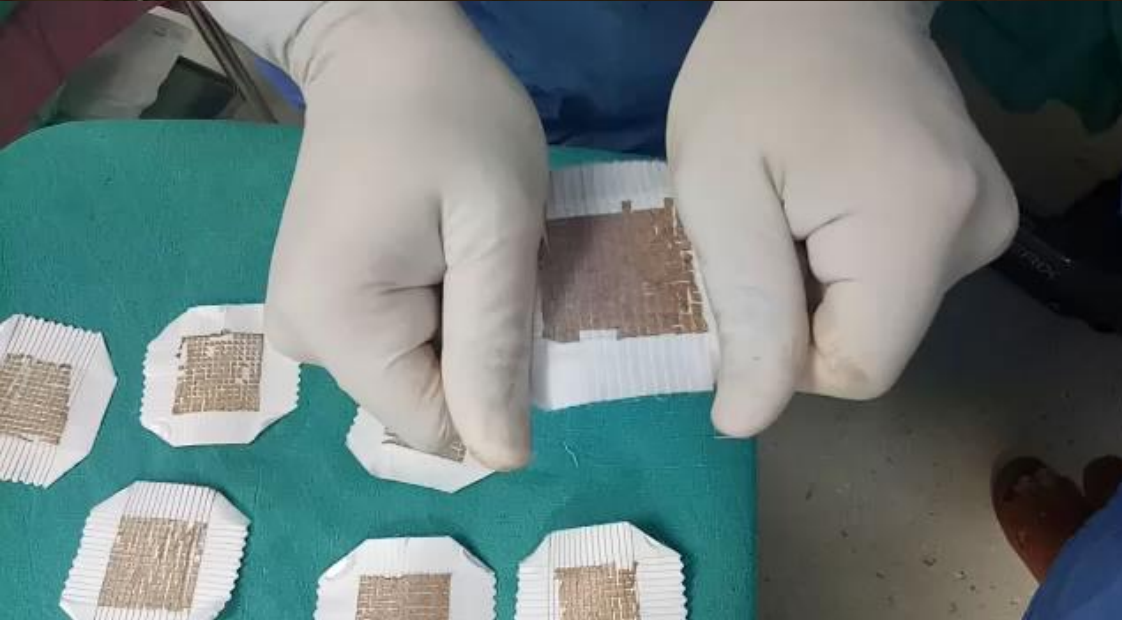
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MEEK Technology (Skin micrografting)



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TISSUE EXPANSION

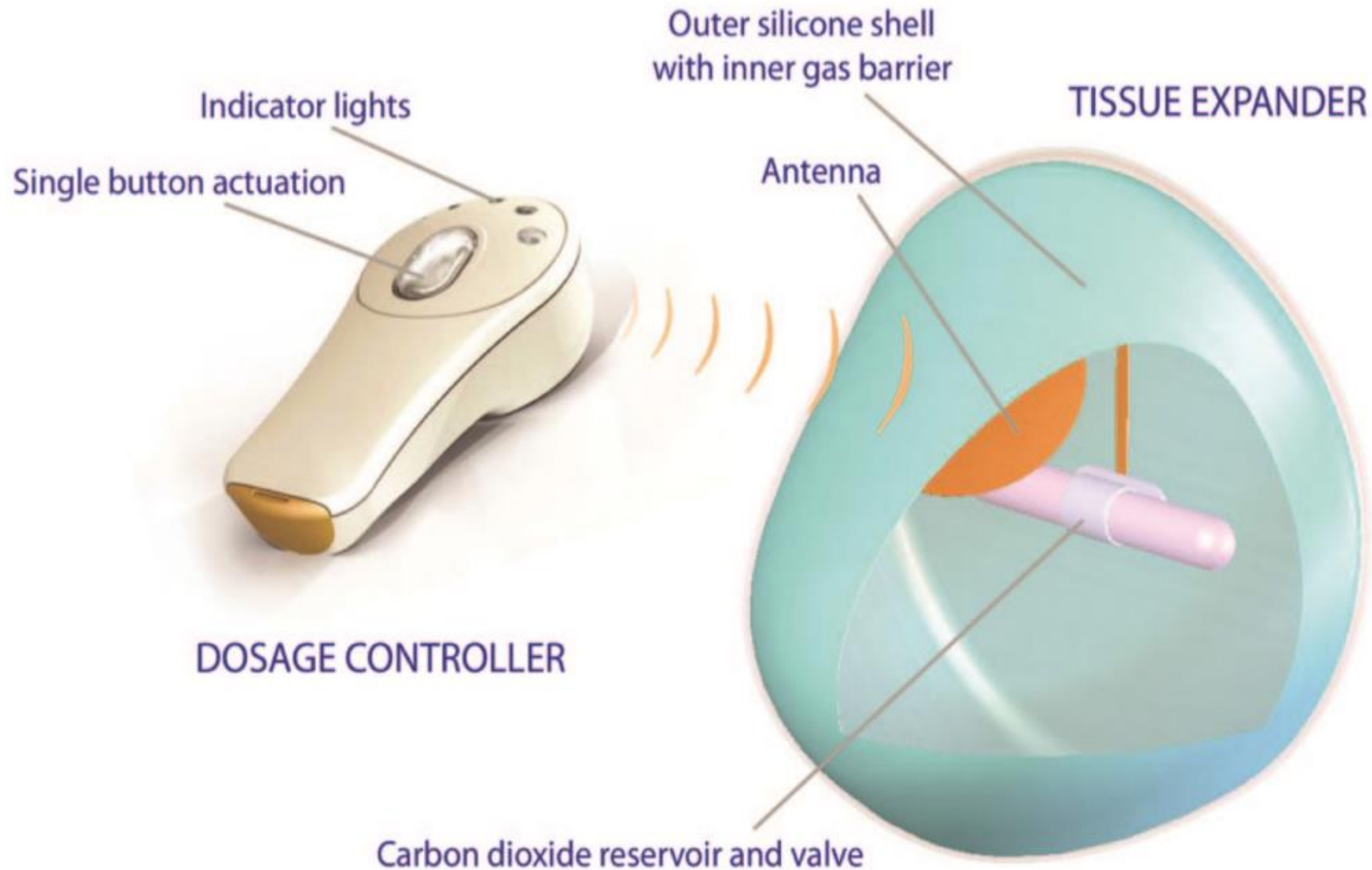


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AirXpanders /AeroForm patient-controlled tissue expander



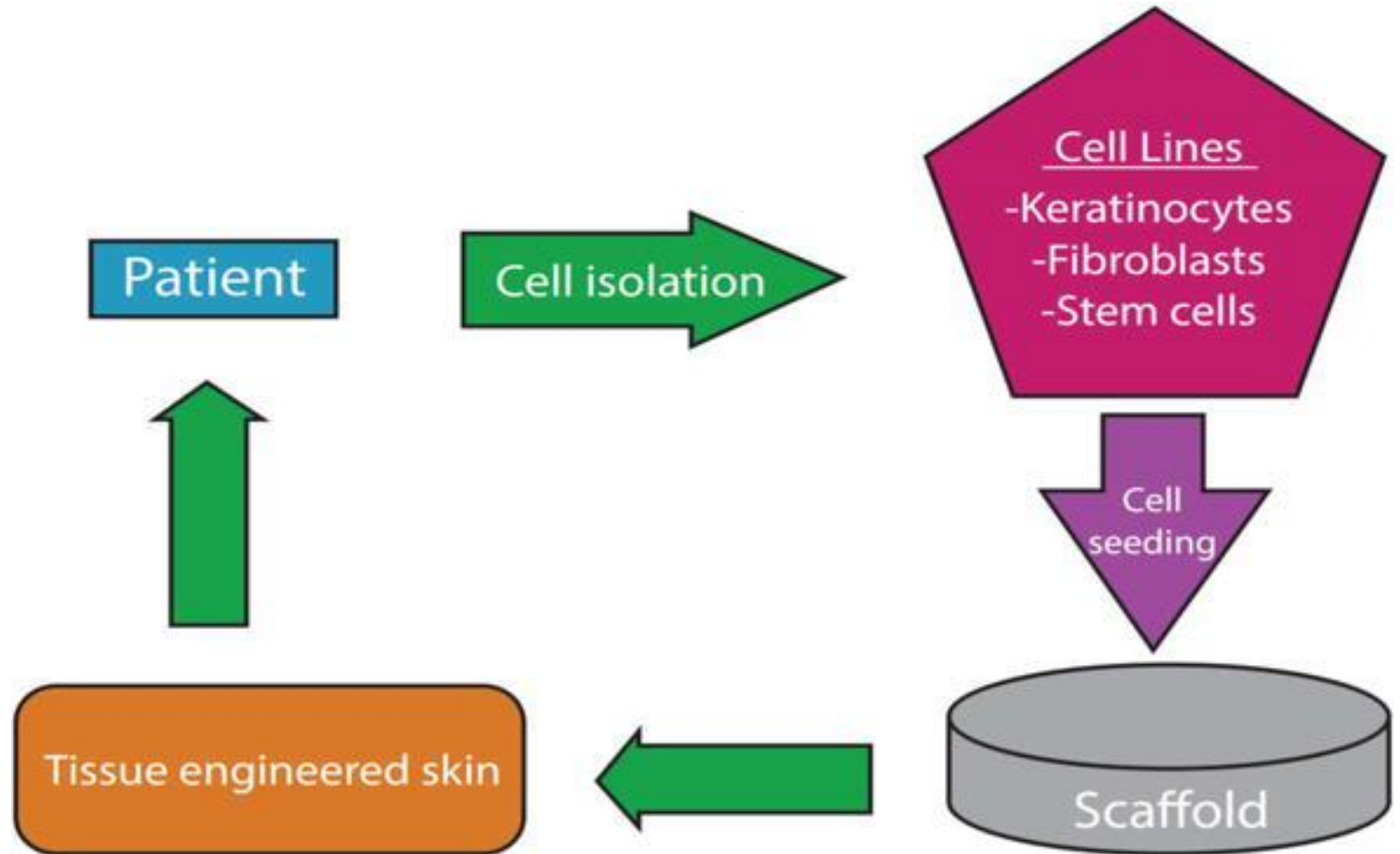
PARADIGM SHIFT IN RECONSTRUCTIVE SURGERY



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Donor area for skin graft is often limited.

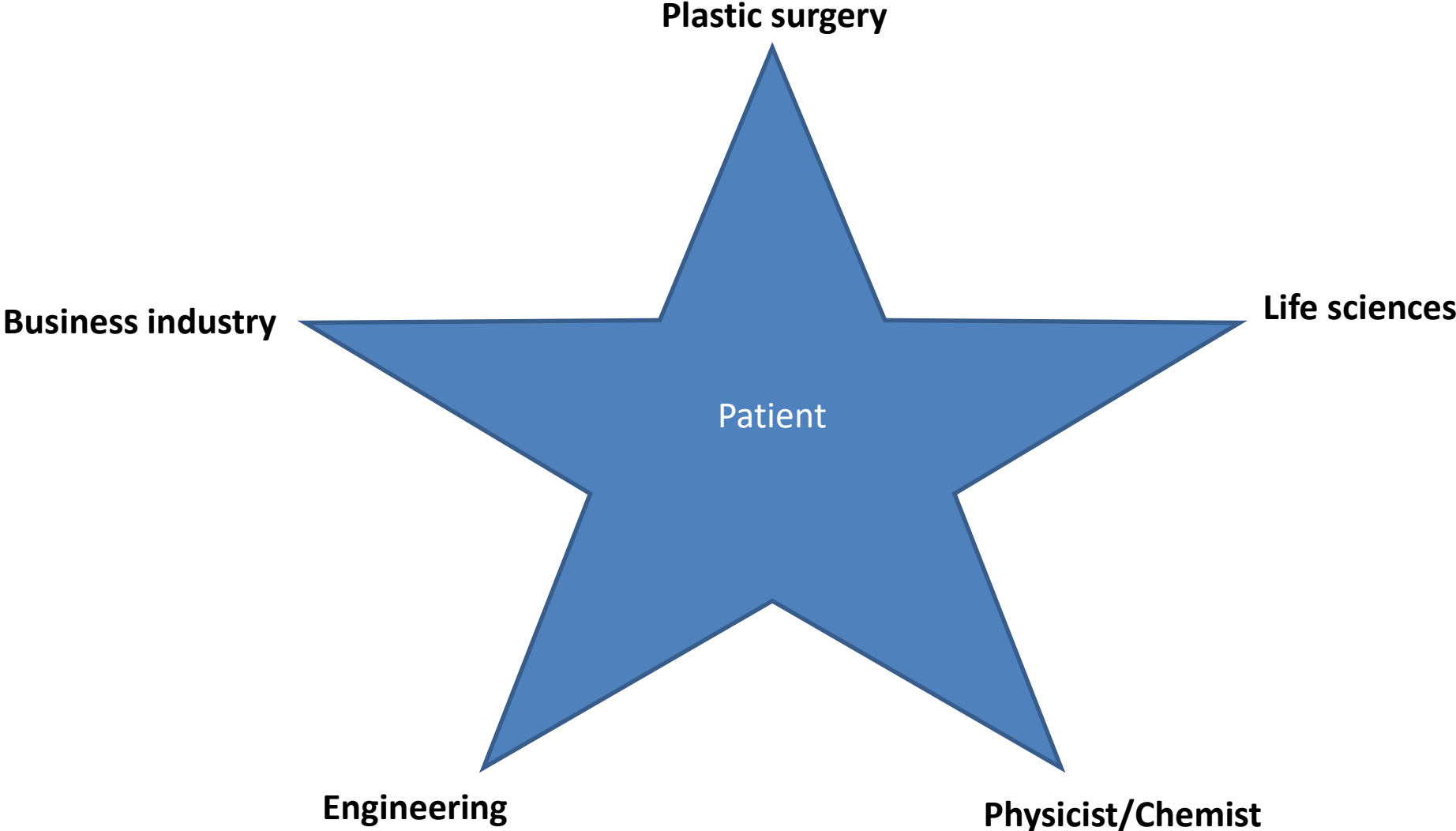
Pain, infection and scarring of the donor site is not uncommon

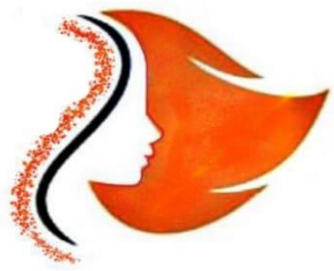


THE MAJOR TEAM PLAYERS



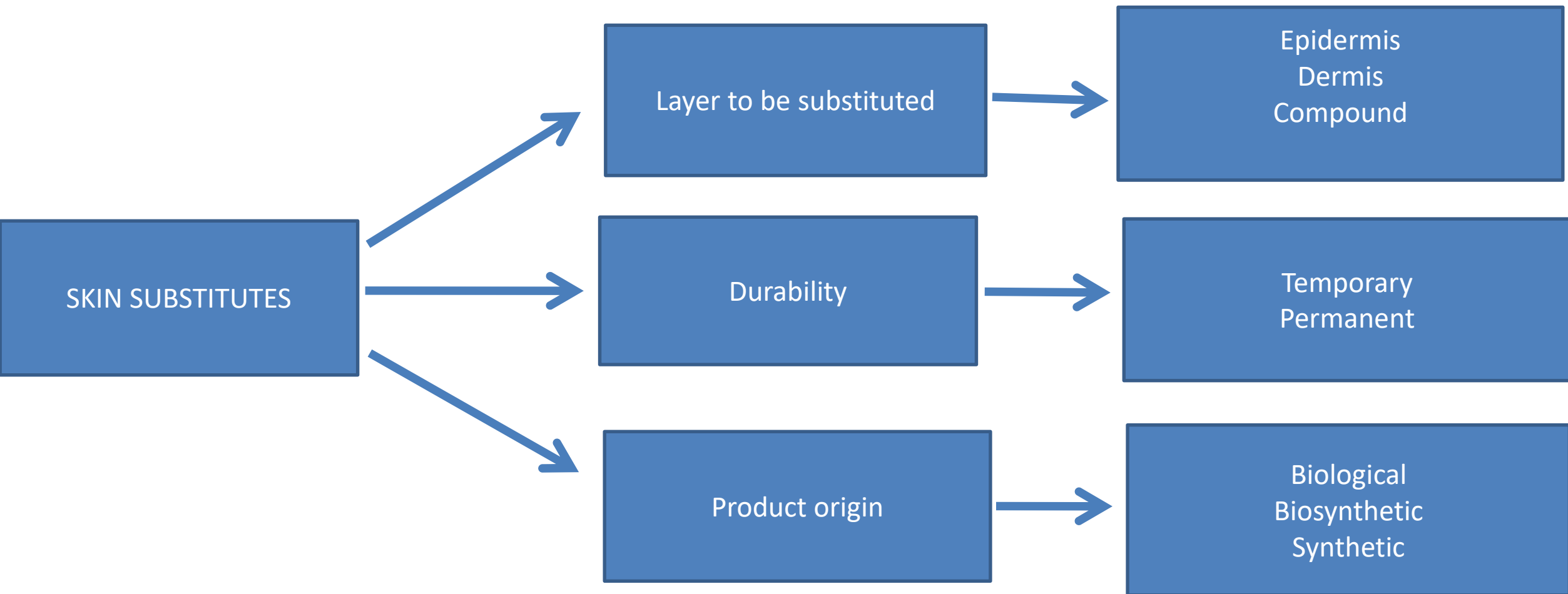
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TISSUE- ENGINEERED SKIN SUBSTITUTES



CHARACTERISTICS OF IDEAL SKIN SUBSTITUTE



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Composition comparable to the skin Presence of dermal and epidermal components

Resistance to shear.....CEA

Tolerant to Hypoxia

Resistance to infection

Low antigenicity..... Xenograft/Allograft

Dermoinductive/Dermoconductive

Cost effective/cheap

Broad availability

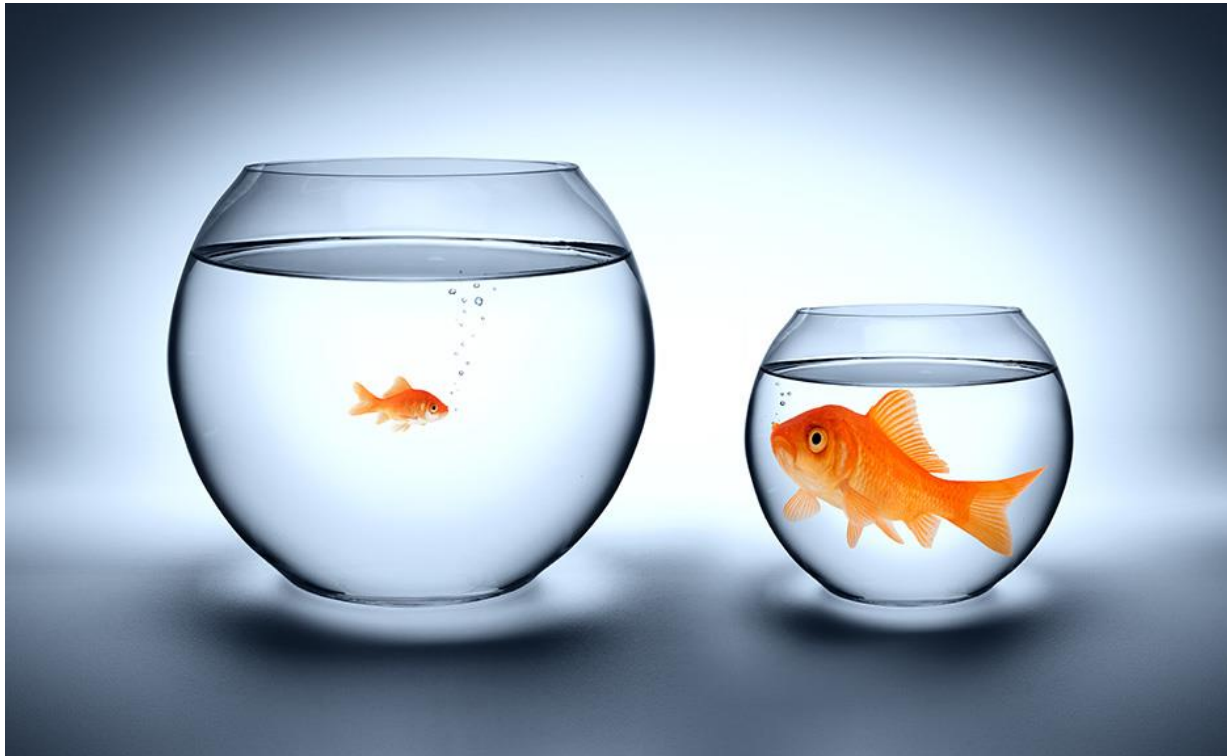
Easy to store and Transport

CURRENT STATUS OF TISSUE ENGINEERED SKIN SUBSTITUTES



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UNIVERSAL SKIN SUBSTITUTE



A DRESSING MUST POSSESS SPECIFIC ATTRIBUTES



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Improve wound reepithelialization
in burn wounds and durable



Chronic wounds
Proangiogenic



Contracture release thick
dermal component

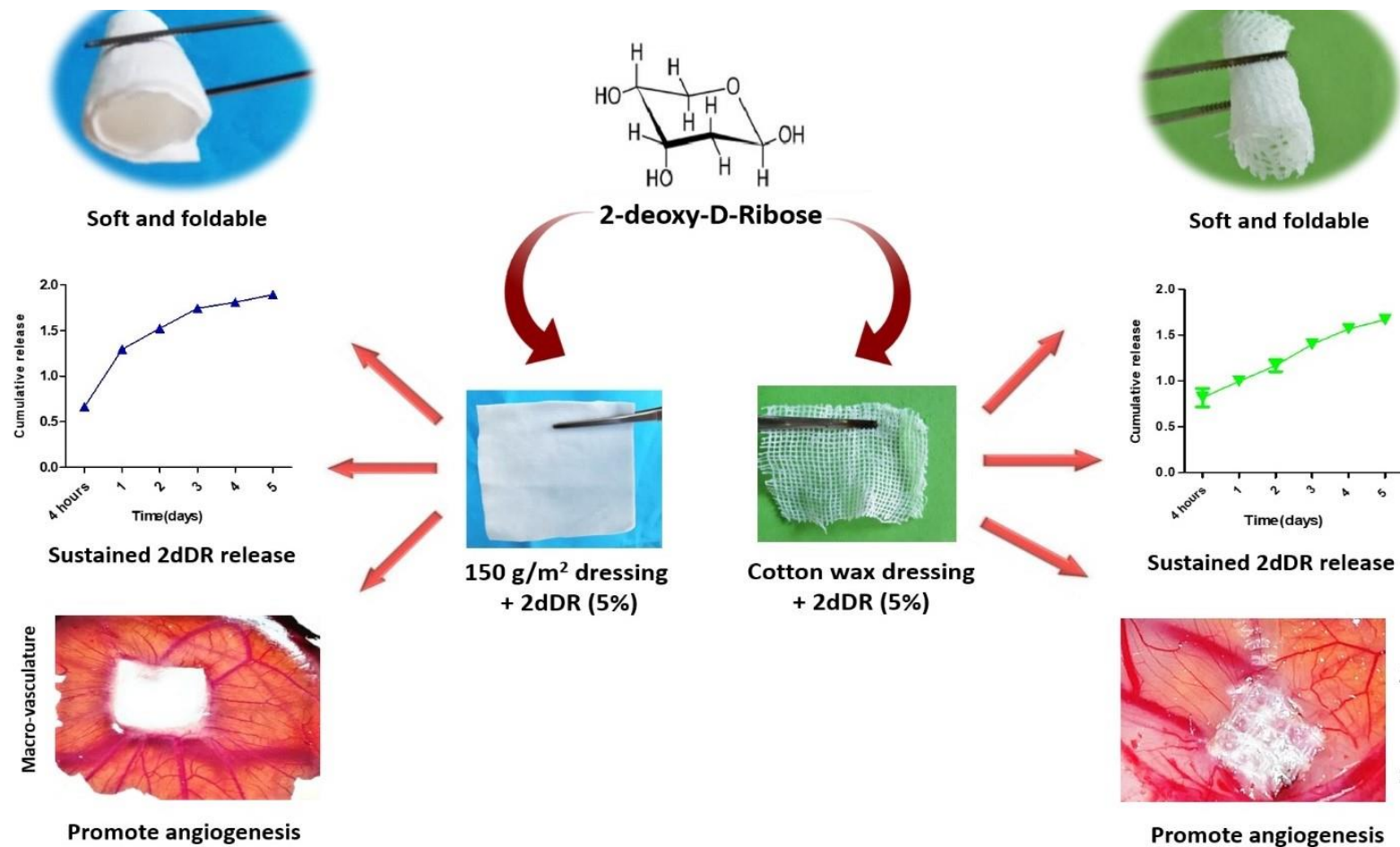




Development of pro-angiogenic wound dressings by incorporation of 2-deoxy-D-ribose into clinically used cotton fibres and wax-coated cotton fibres

Anisa Andleeb^a, Serkan Dikici^b, Tayyaba Sher Waris^a, Muhammad Mustehsan Bashir^c, Shahid

Akhter^d, Aqif Anwar Chaudhry^a, Sheila MacNeil^{b,*}, Muhammad Yar^{a,*}

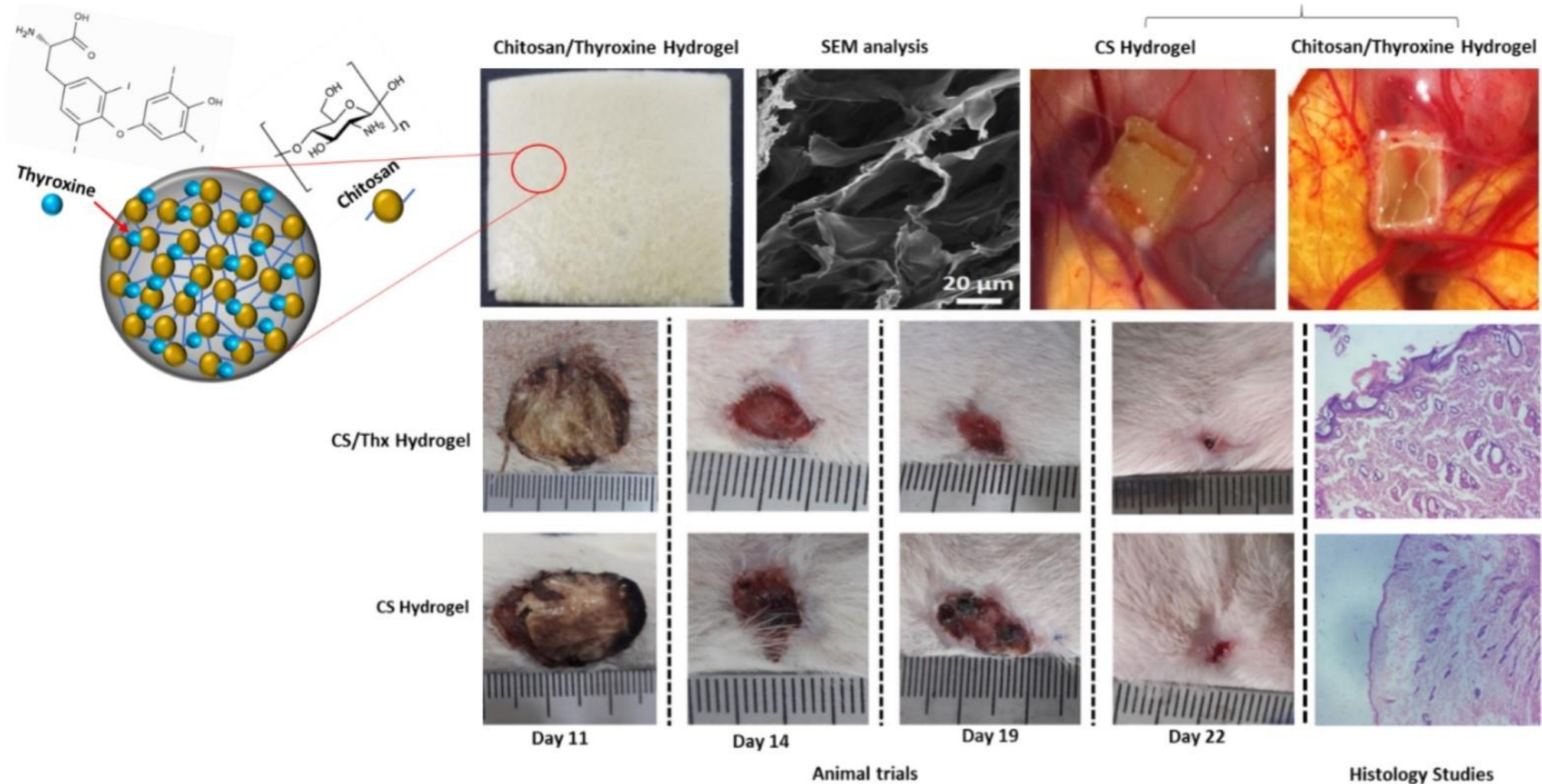


Thyroxine impregnated chitosan-based dressings stimulate angiogenesis and support fast wounds healing in rats: Potential clinical candidates



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Lubna Shahzadi^a, Mustehsan Bashir^b, Saimoon Tehseen^a, Mubashra Zehra^c, Azra Mehmood^c, Aqif Anwar Chaudhry^a, Ihtesham ur Rehman^{a,d}, Muhammad Yar^{a,*}



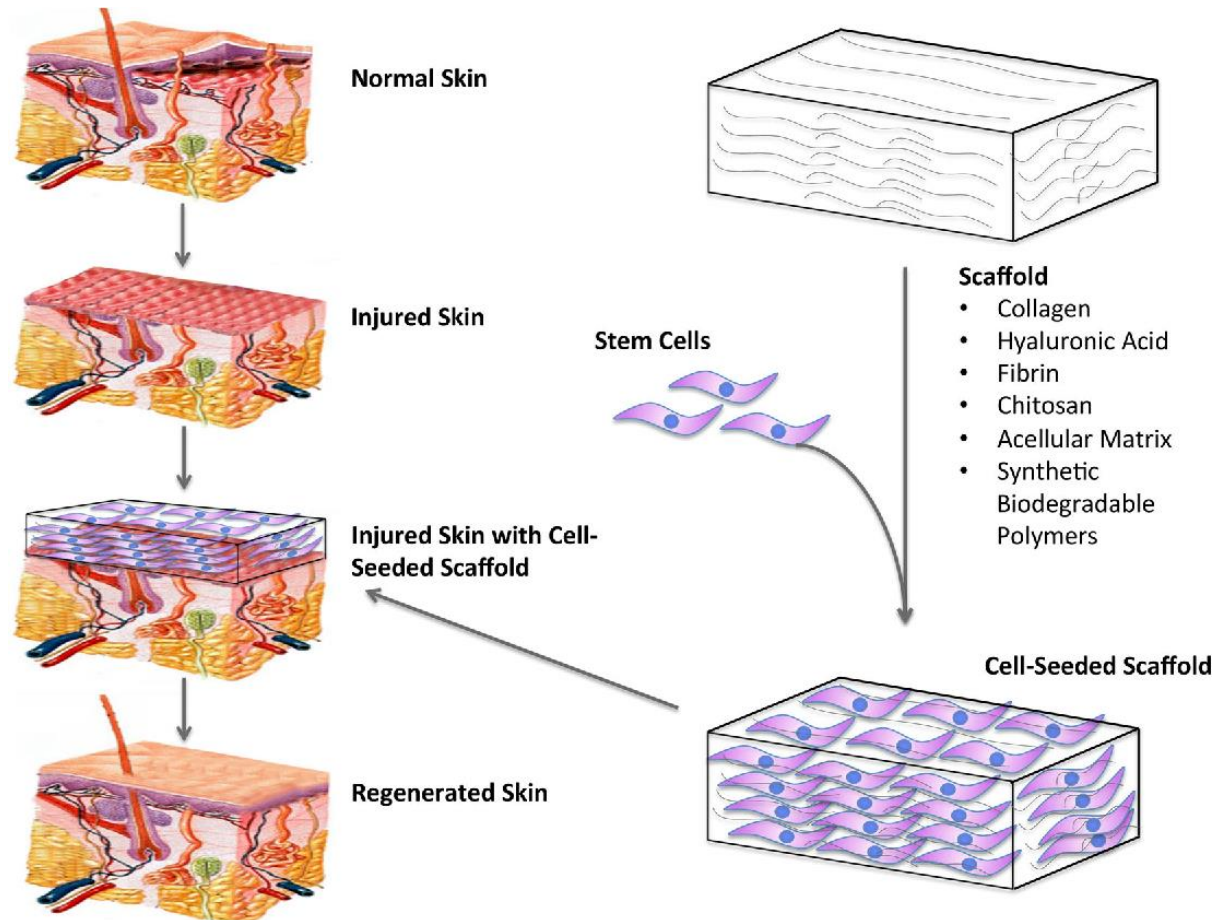


Discolouration and scarring remains a problem

Regeneration of hair follicles, sebaceous and sweat glands remains an elusive goal.



Way Forward



Stem cell-based therapies are becoming a standard of care in the surgical and nonsurgical approach to wound care.

Before

After



Ovid[®]

Search by title, author, DOI, PMID or keyword



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Annals of Plastic Surgery. 82(1):28-33, JAN 2019
DOI: 10.1097/SAP.0000000000001631, PMID: 30285990
Issn Print: 0148-7043
Publication Date: 2019/01/01



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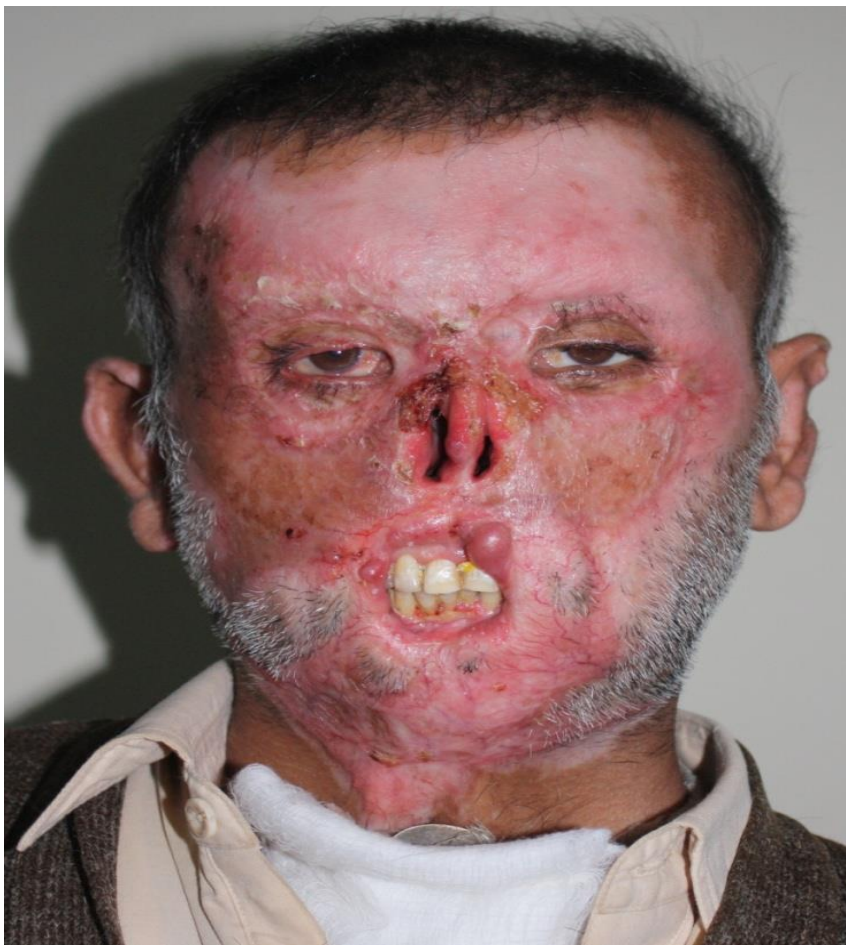
Unfiltered Nanofat Injections Rejuvenate Postburn Scars of Face

Saadia Jan; Muhammad Bashir; Farid Khan; Zohaib Hidayat; Hamid Ansari; Muhammad Sohail; Afzaal Bajwa; Hussan Shami; Asif Hanif; Faiza Aziz; Mahmood Choudhery;

[+ Author Information](#)



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I m not ashamed of my scars; I m ashamed
of the world for not understanding



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