Hyperpigmented Scar

The role of RES™ in the clinician’s toolkit.

- Restores normal skin functionality and appearance\(^{14,15}\)
- Non-cultured and immediately available within minutes\(^2\)
- Completed in a simple, single procedure at the point of care

The Case: Fast Facts

- A 27-year-old Caucasian female with a scar approximately 300cm\(^2\) caused by a childhood flame injury desired scar revision
- The treatment area was mechanically dermabraded down to viable dermis and RES™ was applied
- The scar appearance was greatly improved, appearing more like normal skin

How RES™ works...

Effective healing and the formation of good quality skin requires the presence and products of keratinocytes, fibroblasts and melanocytes.\(^1,3\) These cells are highly interactive and communicate with each other via secreted factors, their receptors and via cell/cell contacts to regulate the function and phenotype of the skin.\(^5,6,16\) RES™ contains viable populations of all the skin cell phenotypes\(^2\) that have been shown to be essential for normal regeneration and pigmentation of the skin.

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Background
A 27-year-old Caucasian female presented to a plastic surgery outpatient clinic for the revision of a scar approximately 300 cm² caused by a childhood flame injury to the neck and chest. The scarred skin was patchy in colour with significant hyperpigmented areas. The scar’s texture was also very uneven with evidence of hypertrophy across the entire scar. The clinician recommended treatment with RES™ produced using ReCell®, a skin-regeneration therapy that uses the patient’s skin cells to enhance the restoration of skin. The use of autologous cells allows the regenerated skin to match surrounding skin in both colour and texture.1-4

Treatment
A thin, split-thickness skin sample of the patient’s normal skin was harvested from the post-auricular region using a Zimmer® dermatome. The skin sample was processed for 20 minutes, resulting in RES™ which comprises of multiple cell phenotypes including healthy melanocytes and keratinocytes. While the skin sample was being processed, the neck was mechanically demembraded down to viable dermis. Haemostasis was achieved with adrenaline soaked gauze. RES™ was applied to the prepared neck region and the donor site using the ReCell® spray activator. The neck and donor site were then dressed with SurfaSoft® fixation material, a non-woven nylon dressing, and held in place with Fixomull® Stretch dressing. The patient was discharged home that day with instructions to keep the dressing intact until follow-up one week later.

Results
On presentation to the outpatient department one week after treatment, dressings were removed and the wound was cleansed. The neck was considered to be 98% epithelialised with no signs of infection or significant inflammation. The neck wound was redressed with SurfaSoft® and Fixomull®. The donor site had fully epithelialised by one week with no signs of infection, and was left undressed. The patient described the donor site as being “mildly uncomfortable”. One week later, both the neck and the donor site were considered fully healed and the patient described pain as being “non-existent”. The patient was reviewed at three and twelve months following surgery. At both of these appointments, the wound areas remained free from infection and erythema. Skin remodeling continued and the early stage hypopigmentation resolved. The new skin’s texture was described as much improved and remained soft at the twelve month review.

Benefits
In this case study, a mature dyspigmented flame burn scar was successfully restored to near normal colour and texture through a one-step treatment using RES™ produced with ReCell®. Effective skin regeneration requires the presence and products of keratinocytes, fibroblasts and melanocytes.1-3,6,16 RESTM contains viable populations of all the skin cell phenotypes2 that are required for restoration of good quality pigmented skin. Previous studies of wounds treated with RES™ have shown relatively rapid healing, with the regenerated skin closely matched in colour and texture to surrounding skin with minimal scarring.17,19,20 and are consistent with the observation that improving the healing rate of a wound reduces the likelihood of scarring and infection.18,19 The effectiveness of RES™ to restore normal pigmentation and texture to skin has been demonstrated for scar revision14,15, treatment of vitiligo10-12,21 and congenital melanocytic nevus.7

Clinical References
7. O’Neill TB, Rawlins J, Rea S & Wood F. Treatment of a large congenital melanocytic nevus using a non-woven nylon dressing, and held in place with Fixomull® Stretch dressing. The patient was discharged home that day with instructions to keep the dressing intact until follow-up one week later.
12. Mulekar SV, Ghwish B, Al Issa A & Al Eisa A. Treatment of vitiligo lesions by ReCell® of Western Australia, Royal Perth Hospital, University of Western Australia, Perth Australia.

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