

## Introduction

- Loss of facial and neck fat from the subcutaneous and deeper planes results in undesirable visibility of anatomic structures under the skin.
- The etiology of soft tissue loss may be traumatic, iatrogenic, or simply a feature of aging.
- There are a variety of methods that have traditionally been used for facial and neck contouring, however, there are limitations to these options. (Table 1)
- The Integra wound matrix was designed to stimulate neodermis formation as an overlay for partial and full thickness wound coverage. Given its pliable, naturally pinchable and stackable properties, free from forming fusion and adhesions between layers, it has potential to be utilized as a volumizing inlay - a premise based on existing evidence. (Image 1.A-D)<sup>1</sup>
- The same product under the name Tenoglide Tendon Protector Sheet is used as an "internal implant" for repaired tendon protection.<sup>2</sup>

Table 1. Traditional methods of volumization.

Method	Application considerations
SMAS "stacking"	<ul style="list-style-type: none"> <li>• May not lead to adequate volumetric enhancement of specific facial topographic areas</li> </ul>
Fat grafting	<ul style="list-style-type: none"> <li>• Unreliable volume retention</li> <li>• Challenging contour maintenance for large areas (e.g., neck)</li> </ul>
Dermis fat grafts	<ul style="list-style-type: none"> <li>• Donor site stigma</li> <li>• Cysts</li> </ul>
Alcellular dermal allogenic grafts (AlloDerm), Biosimilars	<ul style="list-style-type: none"> <li>• Inflammatory complications</li> <li>• Unreliable in mobile areas</li> </ul>
Collagen sheets, Biodegradable matrix (NovoSorb BTM), and Polytetrafluoroethylene (Gore-Tex)	<ul style="list-style-type: none"> <li>• Palpable material</li> <li>• Creates stiffness in mobile areas</li> </ul>

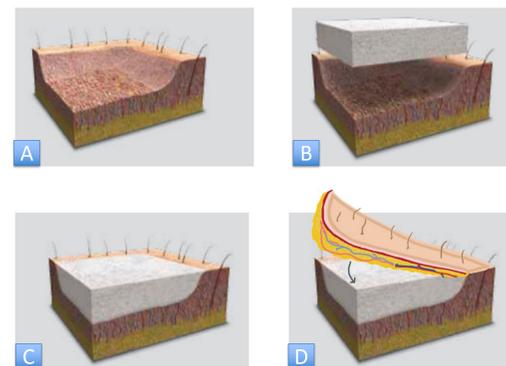


Image 1.

- A) Three-dimensional soft tissue defect  
 B) Integra utilized to fill defect  
 C) Integra as wound coverage overlay  
 D) Integra as wound volumizing inlay.

## Materials and Methods

- In this preliminary series, 6 patients with significant fat atrophy undergoing face/neck lift, soft tissue mass removal or contour reconstruction after traumatic injury were treated with Integra wound matrix implants.
- Implants were placed at the time of surgery prior to wound closure. (Figure 1)
- Photos of the reconstruction were obtained at the time of surgery and incrementally at postoperative clinic appointments.
- Patients were followed for up to 10 years after the initial surgery.

 Gently peel "Integra" from the polyethylene sheet and wash with saline



 Implant as volumizing sheet



Figure 1. Implantation process

## Results

The Wound Matrix\* was successfully incorporated in four cases as flexible, tissue augmenting material, non-extruding with time, not associated with skin thinning, visualization, or palpability of the implant. Additionally, patients did not experience a foreign body sensation. (Image 2.A-C and Image 3.A-E)

Image 2. A) Preoperative photo B) 3 months post operation C) 10 years post operation

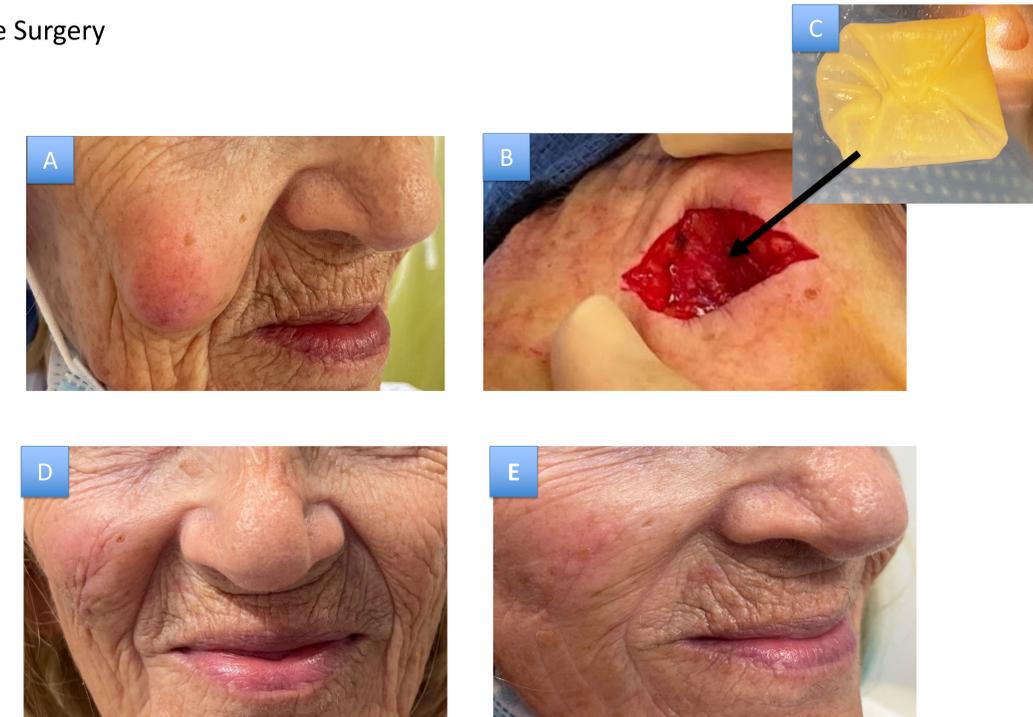
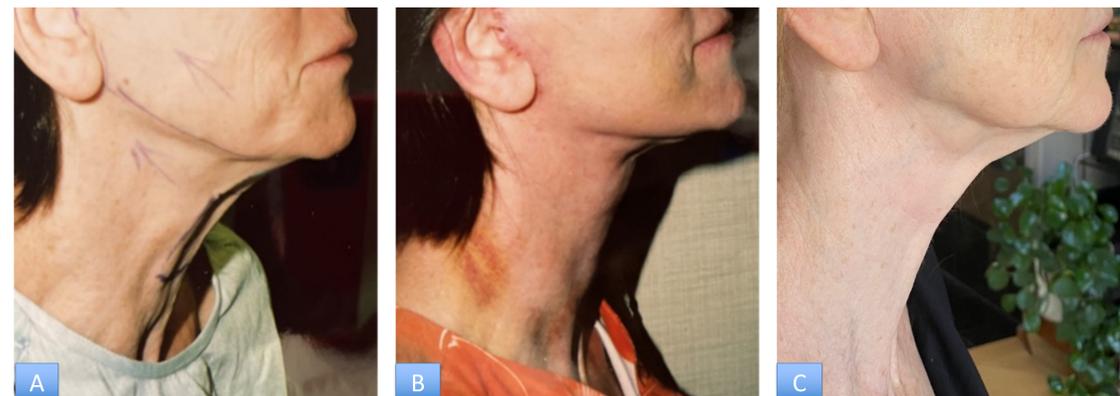


Image 3. A) Preoperative photo of dermal inclusion cyst B) Intraoperative 3 cm deep defect after removal of cyst C) Prepared Integra "thick" inlay, folded into >1cm thick cube D) 4-week post operative visit E) 6-month postoperative photo

## Conclusion

- This study demonstrates encouraging early and long-term results of facial and neck subcutaneous tissue reinforcement utilizing a Wound Matrix implant\* with sheet-style volumization and observed volume retention.
- Although this novel idea was initially an aesthetic model for testing the products efficacy in a new capacity, the senior author has expanded its utility to the treatment of soft tissue defects and wound sequela.
- The results exhibit concealment of visually unappealing anatomical features and contour irregularities, and natural-appearing augmented skin with layers that appear to glide across one another.
- Application of the Wound Matrix yielded outcomes free of adhesions, which negated the risk of contour retraction upon movement of aesthetic units.

## References

- [1] Foley, E., Robinson, A. & Maloney, M. Skin Substitutes and Dermatology: A Review. Curr Derm Rep 2, 101-112 (2013). doi:0.1007/s13671-013-0044-z.  
 [2] Bhavsar D et al. Integra as a biomechanical barrier to reduce postoperative adhesions. Plast Reconstr Surg 2005;11(3):78-79.