

INTEGRA Dermal Regeneration Template

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Bothin Burn Center

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INTEGRA Template Products:

- Integra Dermal Regeneration Template
- Integra Meshed Dermal Regeneration Template

Expected Treatment Outcome:

- To provide needed framework for blood vessels and dermal skin cells
- Temporary wound closure to protect against infection, fluid loss, and heat loss
- To induce organized regeneration of normal dermal tissue

Indications for Use:

- Full-thickness burns
- Deep partial thickness
- Scar revisions / reconstruction
- Contracture revisions / reconstruction

Contraindications:

- Allergies to bovine collagen or chondroitin material (Cows / Cattle)

General Product Description:

- Bilayer Membrane System
 - Dermal replacement layer:
 - Collagen and Glycosaminoglycan (Chondroitin-6-sulfate) 92:8 ratio
 - Temporary epidermal substitute layer:
 - Silicone (polysiloxane) layer

- Dermal layer provides a framework for the re-growth of blood vessels and skin cells
- Silicone layer controls fluid loss and acts as bacterial barrier
- Treatment course last approximately 30 days
- Requires an auto graft over matured INTEGRA
- Must be stored flat and refrigerated
- May be meshed at 1:1 ratio
- Two-year shelf life

INTEGRA Template Mechanism of Action:

- Skin cells migrate into the matrix collagen
- Matrix collagen is absorbed into the body
- Matrix collagen is replaced by proteins produced by the skin

Clinical Sequence:

- Day 1-7 (Week 1)
 - Wound is excised to viable tissue
 - INTEGRA is applied
 - Blood and bodily fluids are immediately absorbed in the matrix
 - Appearance on day 0: Red
- Day 7-14 (Week 2)
 - Dermal cells migrate into the matrix (cellular infiltration)
 - New vascular network are created (neovascularization)
 - INTEGRA collagen is replaced by patient's own collagen (native collagen deposition)

- Appearance on day 7: Pinkish
- Appearance on day 14: Orange Peach
- Day 21 + (Week 3 +)
 - Integra collagen is fully absorbed by the body
 - New dermal layer is produced (Neodermis without appendages)
 - The silicone is removed
 - An epidermal autograft is applied over new dermal layer
 - Appearance on day 21: Vanilla
- Day 25-56 (Week 3-8)
 - Engraftment and confluence of epidermal graft
 - Skin is fully regenerated
 - Permanent and lasting wound closure

Registered Nurse's Role in Patient Management:

- Securing INTEGRA
 - May be sutured or stapled
- Primary dressings
 - Primary purpose is to provide moist wound environment and control infection
 - May use silver impregnated dressing (Acticoat) to control bacteria
 - Control of bacteria is most critical during the first week
 - Keep wound site moist with topical antimicrobials
 - May use sulfamylon solution 5% or silver nitrate 0.5%
- Secondary dressings

- Primary purpose is to prevent shearing and dislodgement
- Apply absorbent dressing
- Use anti shear dressing
- May apply compression dressings for slight pressure over site
- Dressing changes
 - Week 1: Change daily
 - Week 2: Change every other day
 - Weeks 3 Change every third day
- Immobilization of site (first 5-7 days)
 - Use bolsters as appropriate
 - Immobilize joints and limbs as appropriate (consult with PT)
- Adjunct therapy
 - May be used with a wound vacuum assisted closure
 - Gentle ROM can begin in POD 5-7

Special Precautions with INTEGRA Template Products:

- Minimize risk of shearing or displacing INTEGRA
- Do not use Dakin's
- No petroleum based products (Xeroform, Bacitracin, Collagenase)

Possible Complications With the Use of INTEGRA Template Products:

- Formation of hematomas
- Fluid accumulation
- Infection (Often due to non-viable tissue in wound bed)
- Infection at staple sites

- Non-taken areas (Causes include shear, dislodgment, granulations tissue formation, premature silicone separation, damaged matrix, hematomas, and infections)