

Burns Management



Management of Burns

Burn care is typically categorized into three phases of care:-

1. Emergent / resuscitative phase -From onset of injury to completion of fluid resuscitation.
2. Acute / intermediate phase -From beginning of diuresis to near completion of wound closure.
3. Rehabilitative phase - From major wound closure to return to individual's optimal level of functioning.

Pre-Hospital Setting

- During and immediately after injury, burned patients must be removed from the source and the burning process stopped.
- Next attention should be directed at initial resuscitation, starting with the airway.
 - a) For those burned with flames, inhalation injury should always be suspected and 100% oxygen given by facemask.
- All rings, watches, jewellery, and belts should be removed because they retain heat and can produce a tourniquet like effect.
- Room temperature water should be copiously poured on the

ADMISSION CRITERIA & CRITERIA FOR REFERRAL

The American Burn Association and the American College of Surgeons
Committee on Trauma

1. 100 or more bedded hospital or a burn centre

All major burns like:

- Partial thickness burns of >25% of TBSA in adults.
- >20% burns in children below 10 yrs and adults >50 yrs.
- Full thickness burns >10% TBSA.
- Burns of face, eyes, ears, and perineum.
- Chemical burns, electrical burns, inhalational injury, and underlying debilitating illness.

2. 30-100 bedded community health centre hospital

Initial Assessment

- It is divided into the primary and secondary survey.
- Exposure to heated gases and smoke often results in damage to the upper respiratory tract which results in localized edema,
- In combination with generalized whole-body edema associated with severe burn, may obstruct the airway over the course of hours.
- Airway injury must be suspected with
 - Facial burns,
 - Singed nasal hairs,
 - Carbonaceous sputum
 - Tachypnoea
- Respiratory status must be continually monitored to assess for airway



Facial Burn



Carbonaceous particles staining a patient's face after a burn in

Initial Assessment

Perform an ABCDEF **primary survey**

A—Airway with cervical spine control

B—Breathing and ventilation

C—Circulation

D—Neurological disability

E—Exposure with environmental control

F—Fluid resuscitation

A—Airway with cervical spine control

INDICATIONS FOR EARLY INTUBATION

“Progressive hoarseness is a sign of impending airway obstruction, and endotracheal intubation should be instituted early before oedema irretrievably distorts the upper airway anatomy.”

- Extent of the burn (total body surface area burn > 40%-50%)
- Extensive and deep facial burns
- Burns inside the mouth
 - " Significant edema or risk for edema
- Difficulty swallowing
- Signs of respiratory compromise
- Decreased level of consciousness where airway protective reflexes are impaired
- Anticipated patient transfer of large burn with airway issue without qualified

Definitive airways

OROPHARYNGEAL/ NASOPHARYNGEAL



SUPRAGLOTTIC DEVICES- LMA, IGEL, LTA



- Cuffed Tube below vocal cords.
- Inflated.
- Connected to O2 source.
- Supported with ventilation

Surgical airways

- 1.Needle cricothyroidotomy
- 2.Surgical cricothyroidotomy
- 3.Tracheostomy



B-Breathing and ventilation

- All burn patients should receive 100% oxygen through a humidified non-rebreathing mask on presentation.
- Mechanical restriction of breathing—Deep dermal or full thickness circumferential burns of the chest can limit chest excursion and prevent adequate ventilation.
- Blast injury—If there has been an explosion, blast lung can complicate ventilation. Penetrating injuries can cause tension pneumothoraxes, and the blast itself can cause lung contusions and alveolar trauma and lead to adult respiratory distress syndrome.
- Breathing concerns arise from three general causes:
 1. Hypoxia
 2. Carbon monoxide poisoning,

Hypoxia-Hypoxia is a state in which oxygen is not available in sufficient amounts at the tissue level to maintain adequate homeostasis.

It is common in

1. Smoke Inhalation Injury
2. Circumferential Chest Burns
3. Thoracic trauma unrelated to thermal injury.

Investigation –

- Pulse oximetry
- ABG

Management-

Administer supplemental oxygen with or without intubation.

CO POISONING-It inhibits aerobic metabolism via inhibition of complex IV of ETC (cytochrome c oxidase).

It is common in

1. Motor exhaust.
2. Closed room with Gas heaters.
3. Burned in enclosed areas

Investigation-

- Normal PaO₂.
- Elevated carboxyhemoglobin on co-oximetry.
- Left shift in ODC-- Increase affinity for O₂ – decrease O₂ unloading in tissues.

Management-

Administer 100% oxygen.

SMOKE INHALATIONAL INJURY

Caused by heat, particulates (< 1 μm diameter), or irritants (eg, NH₃)

Criteria to diagnose

1. Exposure to the combustible agent
2. Exposure of smoke to lower airway below vocal cords - seen in bronchoscopy.

Investigation -

- Chest x-ray and
- Arterial blood gas determination.

Management -

Early airway management.
Avoid hypoxia.

"Mortality increases to double in

C- Circulation

- BP, HR, color of unburnt skin
- 2 large bore I.V.s in unburnt skin
- Draw bloodwork.
- Insert urinary catheter.
- Insert nasogastric tube, if necessary
- Doppler exam of circumferentially burnt extremities



D—Neurological disability

- All patients should be assessed for responsiveness with the Glasgow coma scale; they may be confused because of hypoxia or hypovolaemia.

E—Exposure with environment control

- The whole of a patient should be examined (including the back) to get an accurate estimate of the burn area and to check for any concomitant injuries.
- Burn patients, especially children, easily become hypothermic. Patients should be covered and warmed as soon as possible.

F—Fluid resuscitation

- Burns Resuscitation formulae
- Fluid of Choice-Hartmann's solution or Ringer's lactate is the most commonly used crystalloid as it most closely replicates the osmolality of plasma.
- It is considerably less expensive than colloid and can maintain intravascular volume.
- Lactated Ringer's (RL)
NS can produce hyperchloremic acidosis

TABLE 20.2 Resuscitation formulas.

FORMULA	CRYSTALLOID VOLUME
Parkland	4 cc/kg/% TBSA burned
Brooke	2 cc/kg/% TBSA burned
Galveston (pediatric)	5000 cc/m ² burned + 1500 cc/m ² total surface area

TBSA, Total body surface area.

First 1/2 of total volume given in the first 8 hours
Remaining 1/2 of total volume given over following 16 hours

Revised ATLS Burn Resuscitation

TABLE 9-1 BURN RESUSCITATION FLUID RATES AND TARGET URINE OUTPUT BY BURN TYPE AND AGE

CATEGORY OF BURN	AGE AND WEIGHT	ADJUSTED FLUID RATES	URINE OUTPUT
Flame or Scald	Adults and older children (≥ 14 years old)	$2 \text{ mL LR} \times \text{kg} \times \% \text{ TBSA}$	0.5 mL/kg/hr $30\text{-}50 \text{ mL/hr}$
	Children (< 14 years old)	$3 \text{ mL LR} \times \text{kg} \times \% \text{ TBSA}$	1 mL/kg/hr
	Infants and young children ($\leq 30 \text{ kg}$)	$3 \text{ mL LR} \times \text{kg} \times \% \text{ TBSA}$ Plus a sugar-containing solution at maintenance rate	1 mL/kg/hr
Electrical Injury	All ages	$4 \text{ mL LR} \times \text{kg} \times \% \text{ TBSA}$ until urine clears	$1\text{-}1.5 \text{ mL/kg/hr}$ until urine

- In children maintenance fluid must also be given. This is normally dextrose–saline given as follows:

Weight (kg)	Hourly	Daily
<10 kg	4 mL/kg/hr.	100 mL/kg/day
10–20 kg	40 mL + 2 mL/kg for every kg >10 kg	1000 mL + 50 mL/kg/day for every kg >10
>20 kg	60 mL + 1 mL/kg for every kg >20 kg	1500 mL + 20 mL/kg/day for every kg > 20

4-2-1 rule EXAMPLES

For a 5 kg infant, Maintenance Hourly Fluid (water) Requirements would be:

$$4 \times 5 = 20 \text{ mL/hr.}$$

$$\text{Daily rate: } 20 \times (24 \text{ hr}) = 480 \text{ mL/day}$$

For a 15 kg child, Maintenance Hourly Fluid (water) Requirements would be:



Colloid Resuscitation

1. The most commonly used colloid is human albumin solution
2. Albumin should be preferably administered after the first 12 hours post burn as the massive fluid shifts drive proteins out of the cells.
3. The most common colloid-based formula is the Muir and Barclay formula, which estimates the amount of fluid that needs to be infused during the first 36 hours post burn:

Basic formula is: $TBSA\% \times \text{weight (kg)} \times 0.5 = \text{one portion}$

Six portions are given in total over 36 hours:

- ❖ Give one infusion 4 hourly for 12 hours (three portions in total);
- ❖ Then one infusion 6 hourly for 12 hours (two portions in total);
- ❖ The final infusion to be given over 12 hours.

Pain management

- Analgesia is a vital part of burns management.
- Small burns, especially superficial burns, respond well to simple oral analgesia, paracetamol and non-steroidal anti-inflammatory drugs.
- In patients with large burns, continuous analgesia is required, beginning with infusions and continuing with oral tablets.
- Powerful, short-acting analgesia should be administered before dressing changes.

Investigations for major burns

General

- Full blood count, packed cell volume, urea and electrolyte concentration, clotting screen
- Blood group, and save or crossmatch serum

Electrical injuries

- 12 lead electrocardiography
- Cardiac enzymes (for high tension injuries)

Inhalational injuries

- Chest x ray
- Arterial blood gas analysis

Can be useful in any burn, as the base excess is predictive of the amount of fluid resuscitation required

Airway
Compromised or at risk of compromise?

Yes

Intubate

No

Breathing
Compromised?

Yes

Cause:
Mechanical ———> Escharotomies
Carboxyhaemoglobin ———> Intubate and ventilate
Smoke inhalation ———> Nebulisers
Non-invasive ventilation
Invasive ventilation
Blast injury ———> Invasive ventilation
Chest drains

No

Circulation
Compromised perfusion to an extremity?

Yes

Escharotomies

No

Neurological disability
Impaired score on Glasgow coma scale?

Yes

Consider:
Hypoxia (carboxyhaemoglobin level?)
Hypovolaemia

No

Exposure
Fully assess burn area and depth
Full examination for concomitant injuries
Keep warm

Secondary Survey

- This is a head to toe examination to look for any concomitant injuries.
- History: This should aim at evaluating:
 - Time of burn
 - Possibility of being a medicolegal case.
 - **AMPLE** history

Allergies

Medications

Past medical history

Last meal

Events and Environment of burn

B. Physical examination and evaluation of burn wound.

- (i) Depth of burn

I Degree burns: Minor epithelial damage, present as redness, clinically insignificant.

II Degree burns : Partial thickness burns & scalds. These burns are painful

III Degree burns: Full thickness burns, usually painless

- (ii) Calculation of Surface area of burn.
- Wallace's Rule of Nine is useful in adults. In children, Lund & Brewder's Chart can be used.
- A rough guide is - surface area of palm is approximately equal to 1% of Total Body

I- Early Excision and wound debridement

- Early excision and grafting of the burn, noted as crucial during post-burn days 2-12.
- When burn patients undergo early excision and grafting, there is a decrease in the length of stay and faster healing time.
- Goal is to safely excise and debride the largest surface areas first, such as the anterior or posterior trunk or large areas on the extremities.
- For cosmetic areas and functional areas, excision should be performed at least within 7 to 14 days to improve outcomes.



- Surgical excision with the use of surgical knives such as the Weck/Goulian knife and the Blair knife has been the mainstay for surgical debridements.
- When encountering a blister, it is best to un-roof it. If left intact, the blister becomes a potential source of infection, increases healing time, and negatively affects patient comfort and mobility.
- Debridement techniques
 1. Hydrosurgical debridement- Advantage Lowers operative cost
 2. Autolytic/Enzymatic debridement- Disadvantage local redness raise cosmetic concerns, increase pain.
 3. Mechanical debridement- Disadvantage causes significant pain
 4. Sterile maggots- limits real world application.





Versajet™ hydro-surgery system



Nexobrid™ enzymatic debridement



Skin graft harvesting through the use of a Blair's knife



Pilling Weck Goulian Skin Graft Knife



Goulian Skin graft knife

II- Wound dressing

TABLE 20.4 Biologic coverings.

Xenograft	Occlusive closure of the wound, some immunologic benefits
Allograft	Occlusive closure of the wound, provides normal functions of skin, dermal elements can engraft and worsen scarring

- Aims

- 1.To protect damaged epithelium
- 2.Minimize bacterial and fungal contamination
- 3.Occlusive dressing prevents evaporation.

1st Degree burn- Expose the wound

2nd Degree (Superficial)- Vaseline/paraffin gauze

- Collagen dressing (if not infected)

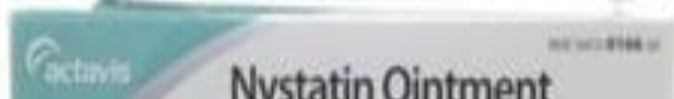
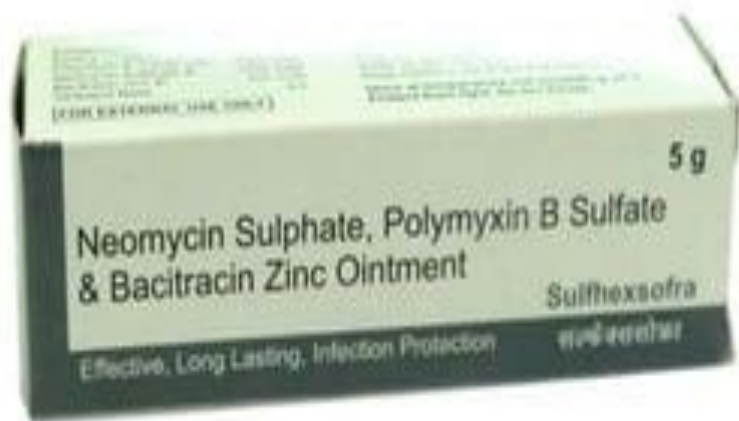
2nd Degree (Deep) - Collagen dressing (if not infected)

- Hydrocolloid dressing

Special Agents;Antimicrobials

- Available topical antibiotics can be divided into three classes: salves, soaks, and antimicrobial dressings.
- Salves are generally applied directly to the wound with cotton dressings placed over them.
- Soaks are solutions poured into cotton dressings on the wound,
- Antimicrobial dressings contain active agents to inhibit microbial growth, generally some form of silver ion or other antibiotic.

Salves



Soaks



Special Agents

Agent	Advantages	Disadvantages
SSD (1%)	Most commonly used, good against pseudomonas and gram negative bacteria	1. Frequent change of dressing. 2. Does not penetrate Eschar
Silver nitrate	Good action against pseudomonas,	Little action against gram negative
Mafenide acetate (5%)	Penetrate Eschar	1. Painful application 2. Can induce Lactic Acidosis or metabolic acidosis
Cerium nitrate	Gram negative bacteria and fungi.	

> [Nanomaterials \(Basel\)](#). 2021 Oct 13;11(10):2704. doi: 10.3390/nano11102704.

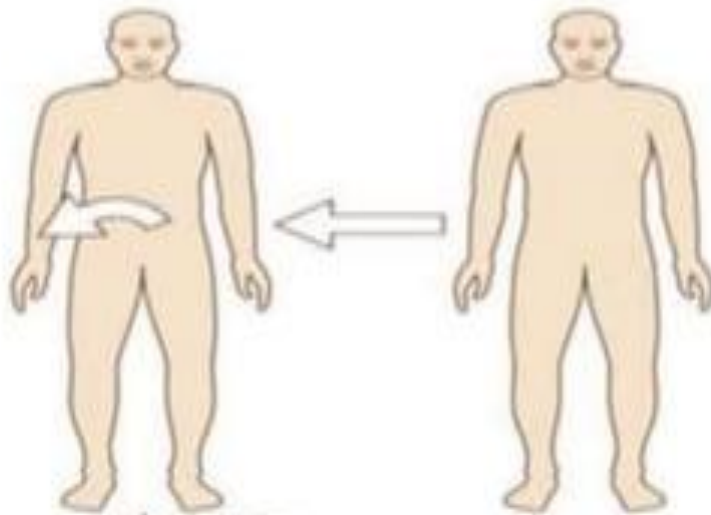
Strong Antibacterial Properties of Cotton Fabrics Coated with Ceria Nanoparticles under High-Power Ultrasound

Anna V Abramova ¹, Vladimir O Abramov ¹, Igor S Fedulov ¹, Alexander E Baranchikov ¹, Daniil A Kozlov ¹, Varvara O Veselova ¹, Svetlana V Kameneva ¹, Vladimir K Ivanov ¹, Giancarlo Cravotto ^{2 3}

- These CeO₂ nanocoating's exhibit low toxicity, are easy to manufacture and have a high level of antimicrobial properties even at very low CeO₂ concentrations. High-power ultrasonic treatment was used to coat the surface of cotton fabric with CeO₂ nanoparticles.
- Cerium Nitrate Treatment Provides Eschar Stabilization through Reduction in Bioburden, DAMPs, and Inflammatory Cytokines.

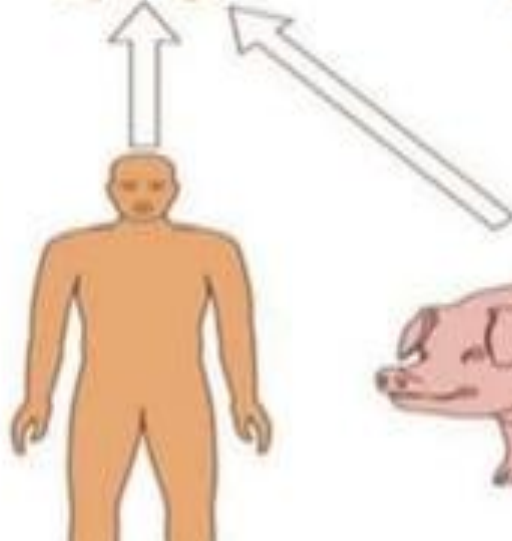
TYPES OF TISSUE GRAFTS

autograft
from one part
of the body
to another
(e.g. trunk
to arm)

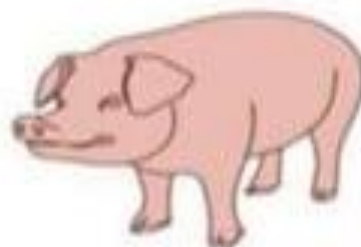


isograft
between
genetically
identical
individuals
(e.g.
monozygotic
twins, or
within an
inbred strain)

allograft
between
different
members
of the same
species
(e.g. Mr Smith
to Mr Jones)



xenograft
between
members of
different
species
(e.g. pig
to human)



III- Synthetic and **Biological Dressing**

- **Allografts**- Skin allograft is obtained from a human donor (deceased or healthy) and used as a temporary cover for burn wounds. It can be classified into the following:

1. Viable:

- a. Fresh (freshly harvested from donor or refrigerated)

- b. Cryopreserved

2. Nonviable:

- a. Lyophilized (glycerol)

- Full-thickness burn wounds should be excised and covered with split-thickness autograft. However, autograft has limitation of donor-site availability and morbidity. When autograft is not available, allograft can be used.



Porcine xenografts vs. (cryopreserved) allografts in the management of partial thickness burns: is there a clinical difference?

- Both allografts and porcine xenograft seem to perform equally well clinically with regard to healing related outcomes
- Clinical aspects being equal, other aspects such as price and availability should be used to decide which material to use for the management of partial thickness burns



Synthetic and Biological Dressing

Acellular

- Biobrane
- Integra
- Matriderm
- Renoskin
- Alloderm
- Various forms of collagen (sheet/gel/flakes)

Cellular autologous

- Cultured epidermal autograft (CEA)

Cellular allogeneic

- Dermagraft
- Apligraf (Graftskin)
- Orcel
- Hyalomatrix

Acellular Synthetic Dressing Material

BIOBRANE 



Smith & Nephew Biobrane 13 CM X 13 CM



INTEGRA™ Bilayer Matrix
Wound Dressing



Cellular Synthetic Dressing Material



Dermagraft®, a bioengineered human dermal equivalent



Meat Band-Aids: Apligraf®

Type	Advantages	Disadvantages
Allograft	<ol style="list-style-type: none"> 1. Presence of a basement membrane 2. More intact and natural extracellular matrix composition 3. Provides growth factors and cytokines (helps in wound bed preparation) 4. Excellent reepithelialisation rate 5. Relatively less expensive 	<ol style="list-style-type: none"> 1. Antigenicity (rejection) 2. Risk of infection 3. Availability of donor
Synthetic skin substitutes	<ol style="list-style-type: none"> 1. Controlled composition of scaffold 2. Growth factors and matrix components can be added as required 3. Reduces pain 4. Less frequent dressing change 	<ol style="list-style-type: none"> 1. Lack of basement membrane 2. High cost 3. Antigenicity (foreign body reaction) 4. Reepithelialization and engraftment rates are similar or less than allograft (inconclusive evidence)

IV- Escharotomies

- When there is deep partial-thickness or full-thickness burns encompass the circumference of an extremity, peripheral circulation to the limb can be compromised.
- Development of generalized edema beneath a nonyielding eschar impedes venous outflow and eventually affects arterial inflow to the distal beds.
- This is recognized by numbness and tingling in the limb and increased pain in the digits.
- General rules-
 1. Extend the wound beyond the deep burn.
 2. Diathermy any significant bleeding vessels



V- Fasciotomies

- Increase muscle compartment pressure after escharotomies may indicate fasciotomy.(tissue pressure >30 mmHg)
- Fasciotomy or fasciectomy is a surgical procedure where the fascia is cut to relieve tension or pressure in order to treat the resulting loss of circulation to an area of tissue or muscle. Fasciotomy is a limb-saving procedure when used to treat acute compartment syndrome.



VI- Skin Grafting

- Langer's Line-Skin tension line along longitudinal axis of elliptical wounds on skin of cadavers.
- Relaxed skin tension lines (RSTL)-Parallel to wrinkles, perpendicular to underlying muscle.

"Langer's lines have relevance to forensic science and the development of surgical techniques."



Skin graft

STSG= Epidermis +
Variable amount of
dermis
(Thiersch)

Thin-0.15-0.3 mm
Intermediate-0.3-0.45 mm
Thick-0.45-0.6 mm

- MC donor site-
Anteromedial thigh,
buttocks.
- No need for suture
- After Healing can be
reused

- Secondary Contracture
Occurs at time of Healing

FTSG= Epidermis +
Entire dermis
(Wolfe)

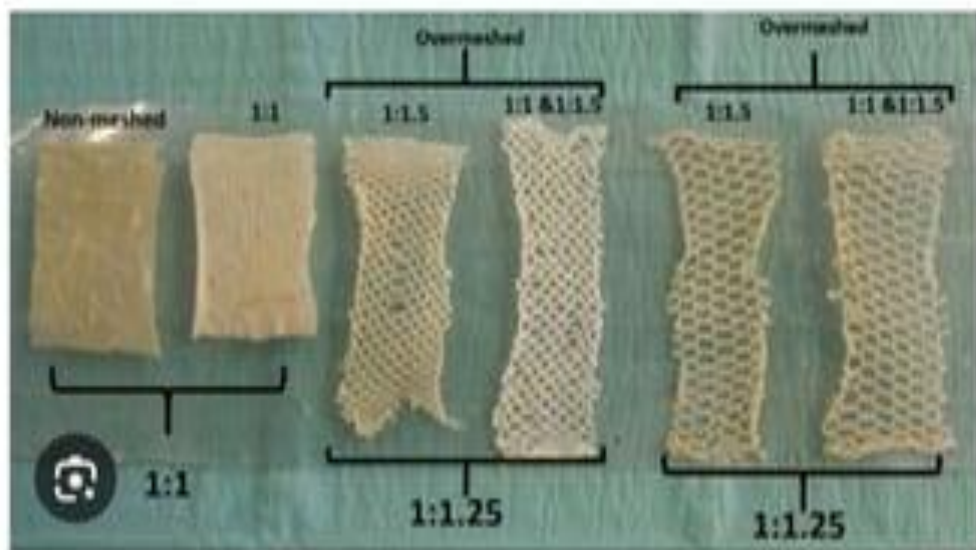
- MC donor site-Post
auricular skin,
supra/infraclavicular
fossa and groin skin
- Need for suture
- After Healing cannot be
reused

- Primary Contracture
Occurs at time of Harvest
- Elastin mediated

VS



Humby's Knife to raise STSG





A

B

C

D

E



F

G

H

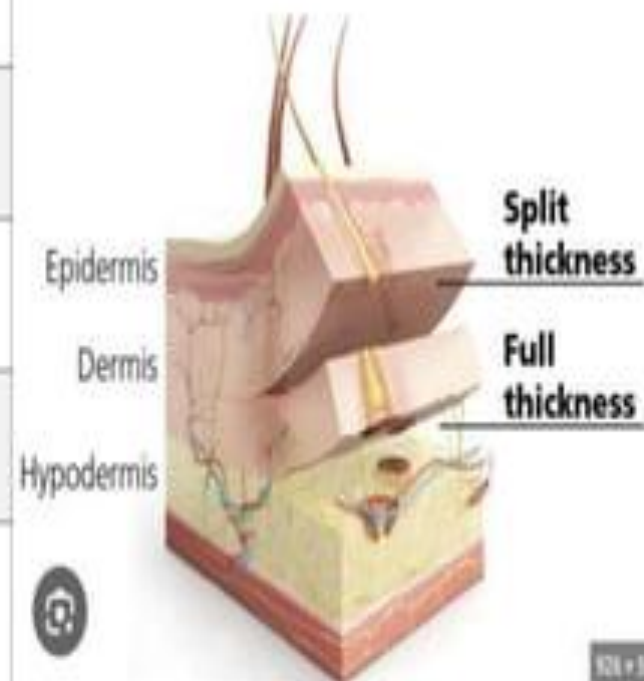
I

J

Total full-thickness skin grafting for treating patients with extensive facial burn injury: A 10-year experience

Full Thickness Skin Grafts

Donor site	Common recipient site(s)
Postauricular skin	Face
Upper eyelid skin	Contralateral eye defect
Supraclavicular skin	Face
Flexural skin (e.g. antecubital fossa)	Hand surgery, flexion contractures
Thigh and abdominal skin	The palms of the hands or soles of the feet



Physiology of Graft Take

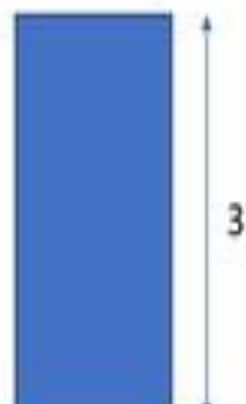
- Graft take is the incorporation of the new graft into implanted site and can be divided into four main stages:
- Haemostasis – Normal physiological response to prevent excessive bleeding following grafting.
- Plasmatic imbibition – occurs around days 1-2, whereby initially fluid migrates into graft bed, becoming oedematous but remains avascular.
- Inosculation – occurs around day 2-4, whereby a vascular network slowly begins to be established.
- Neovascularisation – After 4 days, Angiogenesis established completely, Lymphatic channels established, Oedema resolves, Graft appears pink, Collagen links formed between graft and bed.
- Cellular hyperplasia-After 1-2 weeks, Epidermis thickens 7-8 fold, Scaling and crusting returns to normal by 4 weeks.
- Re-innervation – Begins 4-5 weeks after grafting completed by 12-24 months, pain returns first than light touch and temperature later.

Causes of graft failure

1. Haematoma beneath the graft (MCC).
2. Infection
3. Movement or shearing force
4. Poor recipient bed

VII- Skin Flaps

- A skin flap is where tissue is transferred from a donor site to recipient site along with its corresponding blood supply.
- Better cosmetic result and reduced chances of failure in comparison to skin graft.
- One type is Random Flap-Randomly rotated and based on subdermal plexus
- Limited – 3:1 (L:B)



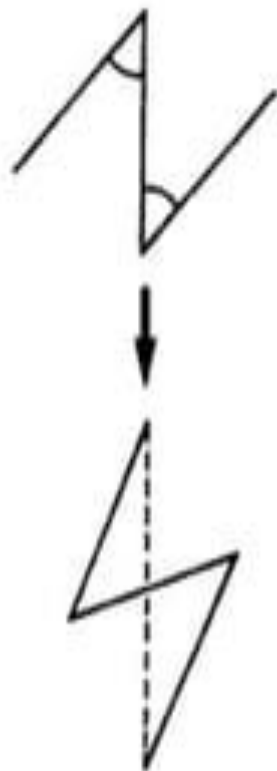
Z plasty

30°-angle z-plasty



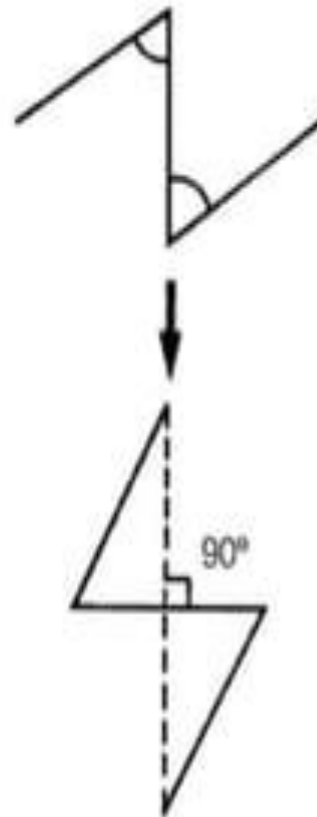
25-percent length gain

45°-angle z-plasty



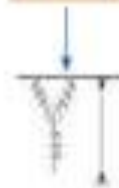
50-percent length gain

60°-angle z-plasty



75-percent length gain

V-Y plasty



Nutrition in burn patient

- Aggressive nutritional support to counterbalance the effect of Hypermetabolism and Protein catabolism following Burns
- ENTERAL feeding is preferred over PARENTERAL feeding
- NG tube if >15% BSA.
- Basal energy expenditure in
 - Normal = 1 (20 Kcal/kg/day)
 - Mild/Moderate sepsis = 1.4
 - Severe sepsis or shock = 1.8
 - Severe burns – 2 (40 Kcal/kg/day).
- Maximum nitrogen loss occurs between Day 5 – Day 10. Therefore 20% of all calories should come from protein.

- Burns patient is hypercatabolic – up to 150- 200% above baseline.
- Burn patient caloric requirement 3000- 5000calories per day.

Curreri formula: Age 16-59 years= (25)W + (40) TBSA
Age >60 years=(20) W + (65) TBSA

Sutherland formula: Children = 60 Kcal/kg + 35 Kcal x %TBSA
Adults = 20 Kcal/kg + 70 Kcal x %TBSA

- **Butter milk diet** 1cal/cc
- 4 Eggs, 4 Bananas, 4tbs Sugar, 1 litre Curd and mixed with water to 1600cc.



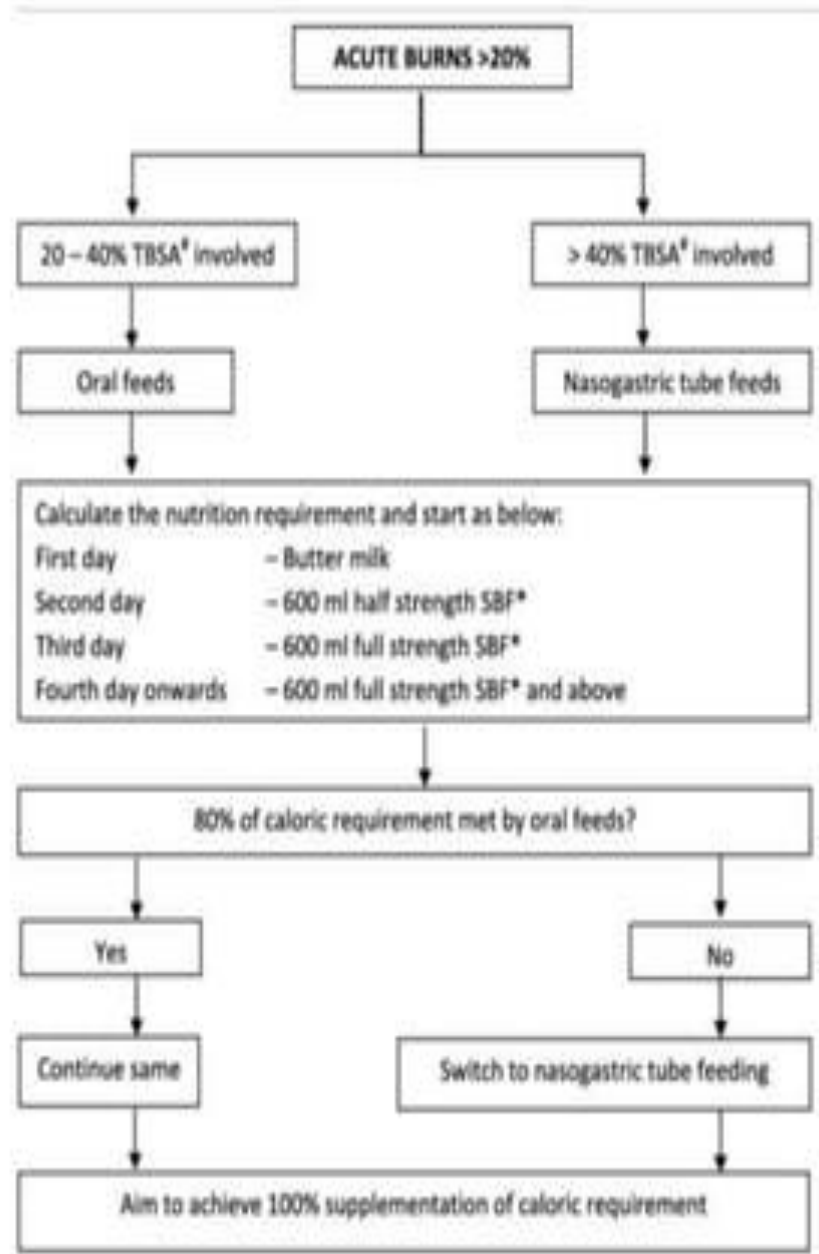


Fig. 1. Algorithm showing feeding plan.

Table 1. Composition of 1.2 L Supplementary burns feed (SBF).

Ingredients	Amount
Pasteurized Cow's Milk	400 ml
Complan	50 gms
Skimmed Milk Powder	120 gms
Sugar	40 gms
Rice flour	80 gms

Table 2. Nutrient information for 1.2 L of SBF.

Component	Grams	% Energy provided
Carbohydrates	224	65.0
Protein	68	20.5
Nitrogen	10.88	-
Fat	21.9	14.5

Total energy provided - 1324 kcal (1.1 kcal/ml).

ORIGINAL ARTICLE

What should be the antibiotic prescription protocol for burn patients admitted in the department of burns, plastic and reconstructive surgery

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Table 2 Bacteria isolated from tissue and blood culture (n=23)

Bacteria	Number of cases	Percentage	% TBSA Burnt	Bacteremia	Mortality
<i>Pseudomonas aeruginosa</i>	10	43	20-40	4	0
MRSA	6	26	41-60	5	0
<i>Staphylococcus aureus</i>	3	13	61-80	14	2
<i>Escherichia coli</i>	2	9			
Proteus	1	4			
Klebsiella	1	4			

Table 4 Relationship of bacteraemia with the percent of TBSA burnt and mortality

TBSA, total body surface area.

The significant correlation of percentage of burn with bacteremia and

Rehabilitation: An Important Step in Recovering From a Burn Injury

- When a person experiences a serious burn, their life can be turned upside down. While initial treatment is focused on healing the burn itself, it's also important to begin the process of rehabilitation as soon as possible so the patient can regain a sense of normalcy.



Rehabilitation

- The rehabilitation phase is defined as beginning when the patient's burn wounds are covered or healed and the patient is able to resume a level of self-care activity
- Complications
 - Skin and joint contractures
 - Hypertrophic scarring
- Both patient and family actively learn how to care for healing wounds
- Role of exercise is emphasized
- Constant encouragement and reassurance
- Address spiritual and cultural needs
- Maintain a high-calorie, high-protein diet
- Occupational therapy – in order to meet the goals to develop, recover and



Scar massage by the rehabilitation therapist



Active ROM exercise with grip



Compression therapy with pressure garment



Static orthoses used in an

Burn battle Survivor - Turia Pitt (36 yrs)

- Pitt was competing in a 100 km [ultramarathon](#) through [Western Australia's Kimberley](#) region, when she was caught in a large bush fire.
- Pitt sustained burns to 65 percent of her body. It was several hours before medical help arrived and she was air-lifted out.
- As a result of her injuries in the fire, she was placed in a medically-induced coma for a month.
- All the fingers of her right hand and two fingers on her left had to be amputated.
- She endured six months in the hospital, underwent over 200 operations and spent two years in recovery.
- During that time, she was required to wear a full-body compression suit and mask and only remove it for an hour daily.
- The mask was needed to help smooth out the [scars](#) on her face and body.



Scars on you soul
scars on your skin;
Some on the outside
some are with in;
Some have a story,
some are are unwritten;
Some you can see
but most are quite hidden;

Thank You