Burns, wounds and pressure injuries

Burn depth, rule of nines, airway and fluids; drainage, dressings and drains; pressure injury stages

ON THIS SHEET 1 At a glance 2 Priority and safety calls 3 Exam anchors 4 Self-quiz 5 Sources ★ high yield

1 AT A GLANCE

Airway first after an enclosed-space fire. Purulent drainage is never normal. Relieve pressure, and never massage red areas.

Burn depth

Depth	Looks like	Pain
Superficial	Dry, red, like sunburn	Painful
Superficial partial	Moist, red, blistered	Extremely painful
Deep partial	Pale, drier; 3 weeks or more to heal	Less pain
★ **Full-thickness**	Leathery, white or black	May be numb

Watch: Pain doesn't track severity: the deepest burns can be painless. Face, hands, feet, genitals or a major joint: especially serious.

Adult rule of nines

Area	Percent
Head and neck; each arm	9 each
★ **Front of the trunk; back of the trunk; each leg**	18 each
Genitals	1

Children: Use the age-adjusted Lund-Browder chart. The client's palm plus fingers is about 1%. Superficial burns don't count in the size.

Inhalation injury: airway first

- ★ **Suspect it after a fire in a closed space.**
- Clues: singed eyebrows or nose hairs, burned lips, face or neck burns; a hoarse voice, wheezing, trouble breathing, dark sooty sputum.
- Airway swelling can close the airway; lung damage can take 2 to 3 days to show.
- Give oxygen when carbon monoxide is possible.

Emergency care

- ★ Stop the burning, keeping rescuers safe. Electrical injury: **power off before you approach**.
- Early burn deaths come from airway or inhalation injury, other trauma, and shock: look for each.
- Small burns: cool water for at least 20 minutes, **never ice**. Large burns: cool only if still hot.
- Clean, dry cover; elevate burned limbs. No butter or ointments on a severe burn, no breaking blisters, nothing by mouth.

Fluid resuscitation

- Start IV fluid early through a large-bore catheter, **two for burns over 20%**, in unburned skin when possible. Keep the client warm.
- ★ The formula estimates the **total fluid for the first 24 hours from the time of burn**, counting only partial- and full-thickness burns.
- Adult thermal burns (a federal guide): 2 mL lactated Ringer's × kg × percent burned; children 3, electrical 4. Starting estimates, not set doses; some references use 4 for adults, so follow the order.
- ★ Then **adjust the rate to perfusion, urine output and response**. Too little harms organs; too much causes dangerous swelling.

Pressure injury stages

Stage	What you see
★ **Stage 1**	Intact skin, redness that **doesn't blanch**. In darker skin, compare color with baseline; check temperature, firmness, sensation
★ **Stage 2**	Exposed dermis: a pink, viable wound bed, or a serum-filled blister. Not for moisture damage, skin tears or blood-filled blisters
Stage 3	Full-thickness loss, fat visible, but no bone, tendon or muscle. May have undermining or tunneling
Stage 4	Deep structures, like fascia, muscle, tendon or bone, exposed or directly palpable
Unstageable	Base hidden by slough (soft, yellow) or eschar (dark, leathery). Dry, stable heel eschar is usually left in place
Deep tissue	Persistent deep red, maroon or purple skin, or a blood-filled blister; can worsen quickly

What it is: Skin or deeper tissue damage, usually over a bony spot or under a device, from pressure alone or with shear.

Preventing pressure injuries

- ★ Braden Scale: **lower score, higher risk**. 15 to 18 mild, 13 to 14 moderate, 10 to 12 high, 9 or below severe. Score on admission, then regularly.
- Turn on an individual plan; two hours isn't universal.
- Float the heels. Head of the bed at 30 degrees or lower when you can, to reduce shear.
- Move clients up with friction-reducing or mechanical equipment and enough trained staff, per policy; never drag them. Keep skin clean and dry.

Wound drainage

Type	Looks like
Serous	Clear, watery; small amounts are normal
Sanguineous	Fresh blood
Serosanguineous	Watery, with a little blood
★ **Purulent**	Thick, opaque, tan to green: **never normal**

Educational use only. Not a substitute for clinical judgment, your facility's policy or the provider's orders. Where practice varies, follow facility policy and state law. No patient information.

Burns, wounds and pressure injuries

1 AT A GLANCE, CONTINUED

How wounds heal

- Four phases: hemostasis, inflammation, proliferation, maturation. Closure time varies with the wound, perfusion, infection and other illness.
- ★ **Healthy granulation is pink, moist, painless and bumpy.** Dark red tissue that bleeds easily, or a shiny white or yellow film, suggests infection.
- Report slough and eschar. Stable, dry heel eschar stays until circulation is checked.
- Measure length head to toe, width and depth in centimeters, by one consistent method.

Drains and staples

- Wound vac: foam sealed under film, with suction. Keep the seal intact.
- ★ Bulb drain: empty and measure, then **compress the bulb before closing it**. Pin it below the wound, with slack.
- Report drainage that increases or changes.
- Sutures or staples: provider order, inspect first, then **remove every other one first**, checking healing as you go.

Cleansing and dressings

Dressing	Use it for	Watch
Gauze	Packing deep wounds loosely, moistened	Dry gauze can stick and tear new tissue
Transparent film	Wounds with little drainage	Not fragile skin
★ **Hydrocolloid**	Keeps wounds moist for 3 to 5 days	**Not on infected wounds**
Hydrogel	Moistening dry wounds	Cover only the wound, not the skin around it
Alginate	Heavy drainage; packing deep wounds	Not dry wounds. Green drainage may still be pus: assess fully

Every change: Cleanse with normal saline; avoid hydrogen peroxide, iodine and acetic acid, which can harm tissue. Keep the bed moist, not wet. Give pain medicine before a painful change.

2 PRIORITY AND SAFETY CALLS

★ Singed nose hairs, a hoarse voice and sooty sputum after a house fire, with only small skin burns: **the airway comes first**.

A full-thickness burn all the way around the forearm and a weakening radial pulse: expect an escharotomy.

Neck burn: no pillow under the head, to prevent contracture. Inhalation injury needs airway assessment and individual positioning.

★ Edges separate during staple removal: **stop, assess, and notify per protocol**. Deep dehiscence or evisceration needs urgent escalation, not just Steri-Strips.

New thick, green drainage: report it, and expect a wound culture.

★ A red area over the hip that stays red when pressed: **relieve the pressure, document it and report it**. Massage would make it worse.

3 EXAM ANCHORS

1. Burn traps: ice or butter, ignoring hoarseness because the skin burns look small, and counting superficial burns.
2. Rule of nines: the front of the trunk (18) plus the whole right arm (9) is 27%.
3. Wound traps: hydrogen peroxide, dry gauze on new tissue, a hydrocolloid on an infected wound, and forgetting to compress the bulb.
4. Pressure injury traps: massaging red skin, a high head of bed for hours, and staging a wound covered by eschar.
5. A shallow, open wound with a pink base and no fat visible is stage 2.

4 SELF-QUIZ

1. Full-thickness burns are leathery and may be _____.
2. Adult rule of nines: each leg is _____ percent.
3. Cool a small burn with cool water for at least _____ minutes.
4. Purulent drainage is _____ normal.
5. After emptying a bulb drain, _____ it before closing it.
6. Stage 1 is intact skin with redness that doesn't _____.
7. A Braden score of 9 or below means _____ risk.

ANSWER KEY 1. numb · 2. 18 · 3. 20 · 4. never · 5. compress · 6. blanch · 7. severe

5 SOURCES

1. HHS REMM, Burn Triage and Treatment of Thermal Injuries. remm.hhs.gov/burns.htm
2. MedlinePlus, Burns. medlineplus.gov/ency/article/000030.htm
3. Open RN, Nursing Skills 2e, 20.3 Assessing Wounds. wtcs.pressbooks.pub/nursingskills/chapter/20-3-assessin…
4. Open RN, Nursing Skills 2e, 20.5 Wound Dressings. wtcs.pressbooks.pub/nursingskills/chapter/20-5-wound-dr…
5. NPIAP, Pressure Injury Stages. cdn.ymaws.com/npiap.com/resource/resmgr/online_st…
6. Open RN, Nursing Fundamentals 2e, 10.5 Braden Scale. wtcs.pressbooks.pub/nursingfundamentals/chapter/10-5-br…

Built from RN PocketPal course lessons: Burns (c15-l03); Wounds, drains and negative-pressure therapy (c15-l04); Skin integrity and pressure injuries (c03-l06). Every line on this sheet comes from those lesson scripts.

Educational use only. Not a substitute for clinical judgment, your facility's policy or the provider's orders. Where practice varies, follow facility policy and state law. No patient information.