

Healthy peristomal skin: a foundation for successful voice and pulmonary rehabilitation

Why Skin Breaks Down

Drivers of Peristomal Skin Breakdown

Peristomal skin failure rarely develops from a single cause. Most deterioration occurs when surface forces and biological vulnerabilities overlap, exceeding the skin’s ability to recover between adhesive cycles. These drivers can be grouped into intrinsic (patient-related) and extrinsic (surface or care related) influences.

Intrinsic Factors

Intrinsic Driver	Impact on Skin Integrity
Age (Older skin)	Thinner epidermis, reduced lipid content, slower repair = increased susceptibility to stripping and delayed healing.
Race / Ethnicity	Variations in melanin, transepidermal water loss, and scarring response = differing presentations (e.g. post-inflammatory hyperpigmentation vs erythema)
Pre-existing Dermatological Conditions (e.g. eczema, psoriasis, seborrhoeic dermatitis)	Compromised barrier at baseline; higher reactivity to adhesives and increased risk of flare with friction/occlusion
Diabetes	Impaired leucocyte function, reduced micro-vascular perfusion and slowed cell turnover = poor recovery between baseplate changes and elevated infection risk following surface trauma
Renal insufficiency / Venous Hypertension / Chronic Venous Insufficiency	Chronic oedema and impaired lymphatic return = persistent swelling, increased moisture and reduced adhesive stability
Active or Recent Infection	Inflamed tissue exhibits higher moisture and fragility = secondary irritation under adhesive contact
History of Contact Dermatitis (allergic or irritant)	Lower reaction threshold – even mild adhesive or cleanser exposure can trigger recurrence.
Late Mobilisation / Prolonged Hospital Stay	Reduced tissue perfusion and lymphatic clearance = oedematous or fragile skin post-discharge
Low Braden Scale Score (frailty proxy)	Indicates global vulnerability
Dry Skin/Hypoalbuminemia	Protein depletion reducing dermal scaffolding and epidermal hydration = impaired structural integrity and slowed repair between baseplate cycles
Moderate to Severe Oedema / Lymphatic Load	Distorted neck contour undermining baseplate fit = increased likelihood of mucus tracking under the seal and contacting surrounding skin
Hyperthermia	Excess sweating and vasodilation = accelerates moisture-related breakdown
Malnutrition / Dehydration	Reduced epidermal turnover and elasticity = adhesive intolerance and prolonged recovery following minor trauma

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Extrinsic Factors

Extrinsic Driver	Impact on Skin Integrity
Harsh Cleansers / Low Humidity (Excess drying of skin)	Alkaline or detergent-based products stripping the acid mantle and lipid barrier compounded by low ambient humidity accelerating moisture loss = dry, friable peristomal skin with reduced tolerance to adhesive application
Prolonged Exposure to Moisture (Sweat, Condensation, Trapped Mucus)	Overhydration causes maceration; softens tissue = reduces adhesive strength and increases risk of surface erosion under friction
Chemotherapeutic Agents / Long-term Corticosteroids / Anti-inflammatories / Anticoagulants	Impaired cell proliferation, dermal thinning, suppressed inflammatory healing response, and increased capillary fragility = skin that cannot adequately repair micro-damage caused by each adhesive cycle
Immunosuppression (from medication or disease)	Reduced antimicrobial defence; greater likelihood of secondary infection within moist occluded environments under baseplates.
Radiation Therapy (Historical or Ongoing)	Induces permanent microvascular damage, fibrosis, and cellular deterioration in the treated field = irradiated peristomal skin often has reduced capacity to recover from daily baseplate trauma
Photodamage (UV Exposure)	Elastosis and thinning of epidermis = lower tensile strength and irregular surface texture; uneven adhesion and increased shear vulnerability
Repetitive Adhesive Removal	Cumulative mechanical stripping; progressive depletion of corneocytes = exposes deeper epidermal layers increasing pain and irritation
Repeated Adhesive Application	Prevents barrier recovery; sustained occlusion and friction without regeneration time, escalating irritation into erosion

Peristomal skin rarely fails due to a single cause, it’s usually the interaction of intrinsic and extrinsic factors that compound one another. Age-related thinning combined with repetitive adhesive removal can accelerate progression of skin stripping, while diabetes or poor microvascular supply paired with prolonged moisture contact increases the risk of ulceration and infection. Recognising these overlapping vulnerabilities early is key to preventing minor irritation from progressing into more significant skin damage.

For further details and references see: **Atos Medical, 2023. Whitepaper - Healthy Peristomal Skin. Section 5.2.1.**

Clinical insight

Skin breakdown is almost always the result of overlapping vulnerabilities. Identifying both intrinsic and extrinsic drivers early helps prevent minor irritation from progressing into deeper damage.