

REGIONAL WOUND CARE CLINICAL PRACTICE GUIDELINES

Glossary



Winnipeg Regional
Health Authority
Caring for Health

Office régional de la
santé de Winnipeg
À l'écoute de notre santé

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GLOSSARY OF TERMS

Acute Wound

A wound that progresses through the normal stages of healing without delay

Adjuvant

A substance (or therapy) that aids or heightens the action of another

Advanced Wound Care Clinician

A Nurse Practitioner with specific training in wound care; or Other Health Care Professional (RN, CNS, OT, PT, etc) who has completed a Recognized Wound Care Program

Albumin

Albumin makes up 60% of total protein in the blood. It decreases with stress, age, and impaired liver function. Albumin serves to maintain colloid osmotic pressure and as a transport protein for certain ions, hormones, medications, enzymes, fatty acids, amino acids, and bilirubin. It decreases with overhydration, stress, infection, impaired renal function, and liver disease, etc. Normal blood level in 3.5 to 5.4 gm/dL. Normal values may vary with lab used.

Angiogenesis

The process of developing new blood vessels in the wound space; an integral part of wound healing

Ankle Brachial Pressure Index (ABPI)

Is a numerical figure which indicates a quantifiable pressure index. The pressure index is determined by Doppler Sound. The ABPI is obtained by dividing the systolic ankle pressure by the systolic brachial pressure

Antibacterial

An agent inhibiting the growth of bacteria

Antibiotic

A natural substance with the capacity to destroy or inhibit bacterial growth

Antimicrobial

A substance that acts directly on a microorganism to destroy the bacteria and prevent the development of new bacterial colonies

Antiseptic

A chemical agent that prevents or inhibits the growth of microorganisms; may damage cells

Autolysis

The disintegration of devitalized cells or tissue by endogenous enzymes that interact with a moist dressing to soften and remove necrotic tissue

Avascular

Lacking or without blood supply; includes slough and eschar

Bacterial number and effect on a host can be categorized as

Contamination: The presence of bacteria on the wound surface without bacterial multiplication

Colonization: The replication of microorganisms on the surface of the wound without invasion into wound tissue and without host immune response

Critical colonization: Also called localized infection; a wound that fails to heal even with low numbers of planktonic bacteria ($\leq 10^5$ CFU/gm). The wound may have a biofilm present.

Infection: The presence of bacteria or other microorganisms in sufficient quantity to damage tissue and/or impair healing. A wound is classified as infected when the tissue contains 10⁵ (100,000) or more microorganisms per gram of tissue. Typical signs and symptoms of infection include purulent exudates, odor, erythema, warmth, tenderness, edema, pain, fever, and elevated white blood count. In some instances, clinical signs of infection may not be present, especially in the immunocompromised individual or individual with poor perfusion

Bacteremia

Presence of bacteria in the circulating blood

Barrier film/cream/ointment

Substance used as a protective layer (barrier) to prevent or correct skin irritation

Bioburden

The quantity of microorganisms present

Biofilm

An aggregate of microorganisms known to cause chronic inflammation such as periodontal disease surgical device infections, urinary catheter infections, etc. Biofilms have enhanced resistance to destruction by endogenous antibodies and phagocytic cells, as well as exogenous antibiotics and antiseptics. Biofilms play an important role in maintaining a chronic inflammation state ultimately leading to the failure to heal of skin wounds

Biophysical Agent

Any agent which uses physical energy to induce biological changes in a wound that are supportive of healing (e.g. electrical stimulation, negative pressure wound therapy, ultrasound). Biophysical agents may also deliver specific treatment substances to a wound.

Blanchable erythema

An area of reddened skin that temporarily turns white or pale when pressure is applied to the skin by the fingertip. Over a pressure site, this is due to a normal hyperemic response.

Boggy

Tissue that feels spongy to palpation, perhaps indicating tissue edema.

Bottoming out

A mattress or support surface that compresses when a hand is placed palm up under it so that the support materials feel less than an inch thick

Callus

Painless thickening of the skin at locations of pressure or friction, frequently seen on the foot.

Cellulitis

Diffuse, acute inflammation and infection of skin or subcutaneous tissues that signifies a spreading infectious process

Charcot foot (Acute)

Foot deformity with sudden onset of swelling, increased local skin temperature, erythema, rapid joint changes, looseness of ligaments, dislocation and fractures without apparent cause

Charcot foot (Chronic)

Progressive degeneration of the stress-bearing portion of a joint, with hypertrophic changes at the periphery. It is manifested by rapid joint changes, looseness of ligaments, dislocation and fractures.

Chemotherapy

The use of a drug (chemical agent) to treat cancers that have a specific and toxic effect of the disease causing organism. A wide variety of chemotherapy drugs are used in the treatment of cancer.

Chronic wound

A wound that does not proceed through the normal stages of healing in an orderly fashion but becomes stuck in one phase

Claudication

Is severe cramp-like pain to the legs (and occasionally the arms) that occurs during exercise or walking and ceases when the activity is stopped. It is caused by insufficient blood flow to the muscles due to obstructed or partially obstructed arteries and is the most common symptom of peripheral arterial disease.

Collagen

The most abundant protein of the dermis, accounting for 70-80% of its dry weight; the main supportive protein of the skin and connective tissue

Contraction

Pulling together wound edges in the healing process

Contour seating

A seating product that increases contact area with the body of providing a contour that resembles the typical human form

Crepitus

A cracking, crunchy, or popping sensation upon palpitation of soft tissue related to underlying gas in the tissue released by anaerobes; indicative of the presence of air bubbles in the tissue

Culture

A laboratory test involving the growth of bacteria or other cells in special growth medium. Cultures are grown to identify an organism as well as which antibiotics are effective in combating the organism (s).

Cutaneous pain

Pain caused by stimulation of nerves in the skin

Cytotoxic

A substance that damages or kills living cells

Dead space

An area of tissue loss in a cavity or tract

Debridement

The removal of devitalized tissue. The process effaces the wound bed of exudates, detached bacterial colonies, and allows a stimulatory environment to be established

Autolytic debridement: The removal of devitalized tissue using moisture-retentive dressings

Biodebridement: The use of maggots to remove necrotic tissue

Enzymatic (chemical) debridement: The removal of devitalized tissue by applying proteolytic enzymes

Maintenance debridement: Repeated debridement until necrotic, devitalized tissue is removed from the wound bed

Mechanical debridement: The removal of devitalized tissue by physical forces

Sharp (surgical) debridement: The removal of devitalized tissue by a sharp instrument, e.g. scalpel, scissors, curette

Denuded

Loss of epidermis

Dependent rubor: Dusty purple colour of lower extremity when positioned lower than heart. Disappears when extremity elevated

Dermatitis

An inflammatory rash marked by itching and redness

Dermis

The layer of skin that lies beneath the epidermis. It is highly vascular, tough connective tissue that contains nerves, lymphatics, sebaceous glands, and hair follicles.

Desiccation

The drying of the wound bed

Devitalized tissue

Tissue that is devoid of vitality or life. It is normally moist, yellow, green, tan, or gray and may become thick and leathery with dry black and brown eschar.

Disinfectant

A substance or agent that destroys infection-producing organisms on inanimate objects, with the exception of spores

Dressing

A material applied to a wound for a variety of reasons, including protection, absorption, and drainage

Types of dressings:

Alginate: A highly absorbent, biodegradable dressing derived from non-woven absorptive material manufactured from seaweed. They are available in sheet and rope form

Cadexomer iodine dressing: Dressing consisting of spherical hydrophilic beads of cadexomer-starch that contain iodine. It is highly absorbent, releases iodine slowly in the wound area, and is available in an ointment or dressing.

Collagen matrix: A dressing manufactured from bovine, porcine, or avian collagen. It is available in sheets and pads, and as particles and gels.

Composite: A dressing that is a combination of two or more types of dressing

Cover dressing: Dressing used as the top layer to cover other absorbent dressings

Filler dressing: Dressing material used to fill dead space in a wound bed

Foam: A sponge-like polymer dressing that may be impregnated or coated with other materials and has some absorptive properties. Simple foams wick drainage from the wound bed and move it to the surface of the dressing. Complex foam dressings absorb the fluid, move it throughout the dressing, and retain it. Foam dressings also allow fluid to evaporate

Gauze: A woven dressing, usually made from cotton or synthetic material, that is absorptive and permeable to water, water vapor, and oxygen. Gauze can be impregnated with petroleum, antiseptic, or other agents

Hydrocolloid: Highly absorbent dressing, chemically similar to a hydrocolloid

Hydrofiber: Highly absorbent dressing, chemically similar to a hydrocolloid

Hydrogel: A water-based, non-adherent gel that contains hydrated hydrophilic polymers, which produce a moist environment that improves wound healing. The dressing is able to absorb excess exudates from exuding wounds but donate moisture to dry, necrotic tissue or slough. The dressing facilitates autolytic debridement

Polymeric membrane: A foam dressing combined with glycerin to soften devitalized tissue in the ulcer and starch to wick away exudates. The dressing also contains a surfactant that loosens necrotic tissue from the wound bed

Silicone: A dressing composed of silicone, which is chemically inert and, therefore does not chemically interact with the wound. It is insoluble in wound exudates. This dressing provides a wound contact layer that can be removed atraumatically and without pain for the patient.

Silver: Any wound dressing containing silver

Transparent film: A transparent dressing that is non-absorptive and polymer-based, making it permeable to oxygen and water vapour but not to water

Wet-to-dry saline gauze: A technique whereby gauze is moistened with normal saline, applied wet to the wound, and allowed to dry, then removed when adhered to the wound bed. As the dressing is removed, the wound is non-specifically debrided.

Electrical stimulation

The use of an electrical current to transfer energy to a wound. The type of electricity transferred is controlled by the electrical source. Electrodes are usually placed over a wet conductive medium (saline soaked gauze, gel, or conductive gel) in the wound bed and on the skin a distance away from the wound or by indirectly by placing electrodes on opposite sides (bracketing) of the wound.

Electromagnetic spectrum

A sources of energy that passes through space and effects living systems. It includes electrical stimulation, electromagnetic fields, and phototherapy (infrared, ultraviolet light, laser, and monochromatic emitting light diode).

Emollient

A substance applied externally to soothe and hydrate the skin by contributing to the stratum corneum hydration

Epibole

A condition that exists when the edges of the top layers of epidermis have rolled down and healing stops

Epidermis

The outer most layer of skin that is thin and avascular

Epithelialization

The process of becoming covered with or converted to epithelium. The new epithelial cells advance across the wound bed until they meet epithelial cells coming from the opposite direction.

Erthema

Redness of skin surface produced by vasodilatation

Erythrocycle Sedimentation Rate (ESR)

Blood test performed to compare with other laboratory values diagnosing inflammatory conditions. Increased rate may indicate acute inflammatory process, acute and chronic infections, tissue damage, rheumatoid collagen disease, malignancies, and physiologic stress situations

Eschar

Black or brown necrotic, devitalized tissue. The tissue can be loose or firmly adherent and hard, soft or somewhat soggy

Excoriation

The loss or stripping of superficial skin, usually in the perineal/buttocks areas, from the presence of moisture or caustic substances

Extrinsic factors

Due to causes from outside the body

Extrusive tumor

A tumor that extends outward away from normal skin surface

Exudate

Accumulation of fluids in a wound; may contain serum, cellular debris, bacteria and leukocytes

Fascia

A sheet or band of fibrous tissue that lies deep below the skin or enclosed muscles and various organs of the body

Fibrin

A stringy, insoluble protein, responsible for the semi-solid character of a blood clot

Fibrinous

Accumulation of fluids and fibrin (a stringy insoluble protein)

Fibroblast

The cells from which connective tissue develops. Fibroblasts proliferate in the deeper parts of a wound. They begin synthesizing small amounts of collagen, which services as a scaffold for migration of cells and further fibroblast proliferation.

Fistula

An abnormal passage from an internal organ to the body surface or between two internal organs

Flap

A piece of skin and underlying structures cut away and rotated to a neighboring site to replace devitalized skin and underlying structures

Friable

Fragile, easily injured, characteristic of newly healed tissue

Friction (frictional force)

The resistance to motion in a parallel direction relative to the common boundary of two surfaces, e.g., when skin is dragged across a coarse surface, such as bed linens

Full thickness skin loss

Ulceration that extends through the dermis to involve the subcutaneous tissue and if Stage IV, the muscle and possibly down to the bone.

Functional life span

The designated time period for which a support surface as designed and intended to fulfill its original function

Granulation tissue

The pink/red, moist, shiny tissue that glistens and is composed of new blood vessels, connective tissue, fibroblasts, and inflammatory cells that fills an open wound when it begins to heal. It typically appears deep pink or red with an irregular, granular surface.

Heel positioning device

Device designed to reduce or relieve pressure at the heels

HgbA1c

Glycated hemoglobin, also known as glycohemoglobin, glycosylated hemoglobin, HbA1c or HbA1, refers to a series of stable hemoglobin components formed by the combination of glucose and hemoglobin. Individuals with higher levels of blood glucose will have higher levels of glycated hemoglobin. Because the hemoglobin components are stable, the level provides an average indication of the overall blood glucose levels over the prior two to three month period. The most commonly used version of the glycated hemoglobin test is the HbA1c

Hematoma

A collection of blood as a result of bleeding

Hemorrhage

Bleeding (may be internal or external)

Host response

The reaction of the individual to the invasion of the microorganism

Hydrotherapy

The use of a whirlpool or other submersion in water for cleansing

Hyperbaric oxygen

Therapy in which the individual breaths 100% oxygen at pressure greater than normal atmospheric (sea-level) pressure of more than 1 atmosphere absolute (ATA).

Hyperemia

Presence of excess blood in the vessels, engorgement

Hypergranulation

Proliferation of granulation tissue protruding above the level of surrounding skin

Hyperkeratotic

Hypertrophy of the horny layer of skin

Incontinence-associated dermatitis (IAD)

“Reactive response of the skin to chronic exposure to urine and fecal material, which could be observed as inflammation and erythema with or without erosion or denudation”

Induration

Abnormal firmness of tissue with definite margin resulting from injury, inflammation, or infection

Infection

The presence of bacteria or other microorganisms in sufficient quantity to damage tissue or impair healing. Clinical signs of infection may not be present in the immunocompromised patient or the patient with a chronic wound

Infection (clinical)

The presence of bacteria or other microorganisms in sufficient quantity to overwhelm the tissue defenses and produce inflammatory signs of infection, e.g., purulent exudates, odor, erythema, warmth, swelling, tenderness, pain, fever, and elevated WBC

Infrared therapy

Treatment using thermal radiation, a phototherapeutic agent that is part of the electromagnetic spectrum

Interface pressure (tissue)

The force per unit area that acts perpendicularly between the body and a support surface. The parameter is affected by the stiffness of the support surface, the composition of body tissue, and the geometry of the body being supported

Intertrigo

An erythematous skin eruption that occurs on opposing surfaces of the skin from moisture, warmth, friction, and/or infectious agents, e.g. develops in the creases of the neck, folds of the groin and armpit, or beneath pendulous breasts. It occurs more commonly in obese individuals.

Intrinsic factors

Due to causes or elements within the body

La Place's Law

$$P = \frac{T \times N \times \text{constant}}{C \times W}$$

P = sub-bandage pressure **T** = tension **N** = number of layers

C = limb circumference **W** = width of bandage

The sub-bandage pressure will increase as more layers are applied

Laser

Coherent and monochromatic light, a phototherapeutic agent that is part of the electromagnetic spectrum

Lateral-rotation therapy

A continuous, slow rotation cycle that redistributes pressure in high-risk, critically ill individuals. The degree of rotation can be adjusted to the individual's tolerance, although it is commonly set at 40 degrees in cases of respiratory distress. Specific criteria for the use of this therapy have been established

Lymphedema

Also known as lymphatic obstruction, is a condition of localized fluid retention and tissue swelling caused by a compromised lymphatic system

Maceration

To soften by wetting or soaking. In this context it refers to degenerative changes and disintegration of skin when it has been kept too moist

Maggot therapy

The use of medical-grade (biological) maggots to debride a necrotic wound bed of devitalized tissue and bacteria. Maggots are believed to secrete a proteinase enzyme that degrades necrotic tissue, digests bacteria, and stimulates granulation tissue

Malignant/malignancy

A neoplasm or tumor that is cancerous as opposed to being benign

Malignant Wound

A cancerous lesion involving the skin, which is open and may be draining. The lesion may be a result of a primary cancer, or a metastasis to the skin from a local tumour in a distant site. It may take the form of a cavity, an open area on the surface of the skin, skin nodules, or a nodular growth extending from the surface of the skin.

Malleolus

Either of the two rounded protuberances on the side of the ankle, the inner formed by a projection of the tibia and outer projection of the fibula

Matrix metalloprotease (MMP)

A cell protein that plays an essential role in wound healing, including contraction of the wound matrix through the use of myofibroblasts, implementation of angiogenesis, cell migration, remodeling of scar extracellular matrix (ECM), and removal of damaged ECM

Microclimate

The local tissue temperature and moisture (relative humidity) level at the body/support surface interface

Monofilament Test or Semmes Weinstein Monofilament Test

Is a sensory exam of the foot to detect sensory neuropathy – a 10 gram monofilament which is pressed to several sights on the feet for 1.5 seconds on each sight and the patient is asked to say “yes” when the monofilament is felt

Necrosis

The death of tissue

Necrosis tissue

Tissue that has died, also called “devitalized tissue”

Negative-pressure wound therapy (NPWT)

A wound treatment modality designed to create a negative pressure environment at the wound site.

Neuropathic pain

Refers to pain or discomfort resulting from injury to the nervous system either centrally or peripherally with loss of normal ascending sensory functions

Neuropathy

Any functional and/or pathological changes in the nervous system

Neuropathy (Autonomic)

Nerve damage that affects the body’s ability to regulate temperature and is manifested by the decreased function of sweat glands

Neuropathy (Motor)

Damage to the nerves that affect the body’s ability to receive and send appropriate message to the muscles that flex and extend the joints of the foot

Neuropathy (Sensory)

Nerve damage that inhibits the sensory pathways of the individual, and is manifested by sensations of tingling, burning, pain and numbness

Nociceptive pain

A free nerve ending that is a receptor for pain

Nocturnal pain

Pain occurring at night

Nutritional supplement

A commercial or other prepared food or beverage that supplements energy, protein, carbohydrate, and/or fiber

Offload

To remove pressure from any area

Opioids

Any synthetic narcotic derived from opium

Orthotics

A full contact semi rigid, soft insert designed to redistribute pressure, reduce impact, shear and stabilize involved joints. A suitable prescription should include a complete diagnosis, reflecting the risk category of the patient. Orthotics must be casted and fitted appropriately by an experienced professionally trained clinician.

Osteomyelitis

The inflammation of bone and bone marrow, usually caused by pathogens that enter the bone during an injury or surgery

Overlay

An additional support surface designed to be placed directly on top of an existing surface

Pannus

A hanging flap of tissue; abdominal tissue in a bariatric patient.

Parenteral nutrition (PN)

The provision of macronutrients, vitamins, minerals, electrolytes, and fluids via a central or peripheral vein. PN is indicated when the GI tract cannot be used for nutritional support. Total parenteral nutrition (TPN) provides all essential nutrients and is delivered through of central vein.

Partial thickness of skin loss

Skin damage that involves the epidermis and can penetrate into but through the dermis. Wound include Stage I and II pressure ulcers.

Pedal Pulses

Pulses in the foot – the dorsalis pedis and posterior tibial artery

Peri-wound

The skin region immediately surrounding a wound

Phagocytosis

The process of the ingestion and digestion of bacteria, cells, necrotic tissue, or debris by WBCs in an injured area

Phototherapy

An agent that employs energy waves from the infrared, visible, and ultraviolet region of the electromagnetic spectrum. Combination of these technologies are often used (20)

Planktonic bacteria

Free-floating bacteria (i.e. bacteria not embedded in biofilm)

Pocketing

This occurs when granulation tissue does not grow in a uniform manner across the entire wound or when healing does not progress from the bottom up to the top of the wound. Pockets can harbor bacteria

Post-phlebotic syndrome (also known as post-thrombotic syndrome)

Occurs following a blood clot to a vein in the leg (deep vein thrombosis). It may occur weeks to months after the initial blood clot. It can result in pain, swelling, a brownish-red discoloration, thickening and a glossy appearance to the skin and skin ulcerations

Potable water

Water that is fit for consumption by humans and animals

Pounds per square inch (PSI)

A unit of pressure exerted by a stream of fluid against one square inch of skin or wound surface

Pressure ulcer

Localized injury to the skin and/or underlying tissue, usually over a bony prominence, as a result of pressure or pressure in combination with shear. A number of contributing or confounding factors are also associated with pressure ulcers; the significance of these factors has yet to be elucidated.

Pre-albumin

A blood test used as a protein status indicator; also sensitive to inflammatory stress and infection. It has a half-life of 2-3 days, and can be used as an indicator of nutritional improvement and as a measure of how well nutritional interventions are working

Protease

A proteolytic enzyme

Protein

A complex organic compound made up of chains of amino acid molecules. Proteins are responsible for the repair of injured tissue, fluid balance, antibody production, cellular function, and hormonal and enzymatic function. Proteins are a source of building material for muscle and for healing wounds

Protein-calorie malnutrition

This occurs when both protein and energy intake are insufficient to meet an individual's metabolic demands. The wasting and excessive loss of lean body mass resulting from too little energy being supplied to the body tissue can be reversed solely by the administration of nutrients

Proteolytic enzyme

An endogenous substance such as collagenase, elastase, myeloperoxidase, acid hydrolase, and lysozymes that selectively liquefies and separates necrotic tissue and eschar from healthy tissue

Pruritis

Severe itching

Pulsatile lavage

The delivery of irrigation fluid in rapid, discrete pulses via a disposable, battery-powered unit that delivers variable irrigation pressures with or without concurrent suction. The pulsation of the irrigation fluid may increase the amount of debris removed. Concurrent suction immediately removes irrigation fluid that has been contaminated by contact with the wound

Pyoderma gangrenosum

Is an ulcerating condition of the skin leading to hollowed-out ulcers with raised, purple-red borders and a typical appearance. PG is thought to be mediated by the immune system, but the exact sequence of events is unknown. It is associated with several other diseases, including ulcerative colitis, Crohn disease, rheumatoid arthritis, leukemia, and cryoglobulinemia

Radiation

Ionizing rays used for therapeutic purposes (cancer treatment)

Reepithelialization

The replacement of the epithelial layers of the tissue

Reverse staging

Using pressure ulcer staging systems in reverse order to describe improvement in a pressure ulcer

Risk assessment

An assessment to determine which, if any, risk factors are present that might contribute to the development of a pressure ulcer

Sanguinous

Bloody, having an abundance of blood

Sepsis

A clinical syndrome with both infection and systemic inflammatory response. Sepsis encompasses a spectrum of illness that ranges from minor signs and symptoms through to organ dysfunction and shock.

Serous

Containing or producing serum or a substance having a watery consistency

Sinus tract

A course or path of tissue destruction, sometimes called a “tunnel” occurring in any direction from the surface or edge of a wound. It results in dead space with a potential for abscess formation. A sinus can be distinguished from undermining in that it involves only a small portion of the wound edge; undermining involves a significant portion of the wound edge

Slough

Soft, moist, devitalized (avascular) tissue. It may be white, yellow, tan or green, and it may be loose or firmly adherent

Silver sulfadiazine

A silver-based, rapidly absorbed, and fairly quickly excreted antibacterial agent

Standard hospital mattress

A non-powered foam or spring-based mattress

Subcutaneous

Tissue beneath the dermal layer of skin, which stores fat for temperature regulation

Support surface

A specialized device for pressure redistribution designed for management of tissue loads, microclimate, and/or other therapeutic functions, e.g. a mattress, integrated bed system, mattress replacement or overlay, or seat cushion, or seat cushion overlay

Physical concepts related to support surfaces:

Active support surface: A powered support surface, with the capability to change its load distribution properties, with or without applied load

Coefficient of friction: A measurement of the amount of friction existing between two surfaces

Envelopment: The ability of a support surface to conform to irregularities in the body

Fatigue: The reduced capacity of a surface or its component to perform as specified. This change may be the result of intended or unintended use and/or prolonged exposure to chemical, thermal, or physical forces

Force: A push/pull vector with magnitude (quantity) and direction (pressure and shear) that is capable of maintaining or altering the position of a body

Friction (frictional force): The resistance to motion in a parallel direction relative to the common boundary of two surfaces

Immersion: The depth of penetration (sinking) into a support surface

Life expectancy: The defined period of time during which a product is expected to effectively fulfill its designated purpose

Mechanical load: The force distribution acting on a surface

Pressure: The force per unit area exerted perpendicular to the plane of interest

Pressure redistribution: The ability of a support surface to distribute load over the contact areas of the human body. This term replaces prior terminology of pressure reduction and pressure relief surfaces

Pressure reduction: This term is no longer used to describe classes of support surfaces. The currently used term is pressure redistribution; see above

Pressure relief: This term is no longer used to describe classes of support surfaces. The currently used term is pressure redistribution; see above

Reactive support surface: A powered or non-powered support surface with the capability to change its load distribution properties only in response to applied load

Shear (shear stress): The force per unit area exerted parallel to the plane of interest

Shear strain: The distortion or deformation of tissue as a result of shear stress

Components of supports surfaces:

Note: Components of any support surface may be used alone or in combination.

Air: A low-density fluid with minimal resistance to flow

Cell/bladder: A means of encapsulating a support medium

Closed-cell foam: A non-permeable structure in which there is a barrier between cells, preventing gases or liquids from passing through the foam

Elastic foam: A type of porous polymer material that conforms in proportion to the applied weight. Air enters and exits the foam cells more rapidly due to greater density (non-memory)

Elastomer: Any material that can repeatedly stretched to at least twice its original length. Upon release, the stretch will return to approximately its original length

Gel: A semi-solid system of a network of solid aggregates, colloidal dispersions, or polymers, which may exhibit elastic properties. Gels can range from hard to soft

Open cell foam: A permeable structure in which there is no barrier between cells, and gases or liquids can pass through the foam

Pad: A cushion-like mass of soft material used for comfort, protection, or positioning

Solid: A substance that does not flow perceptibly under stress. Under ordinary conditions, it retains its size and shape

Viscoelastic foam: A type of porous polymer material that conforms in proportion to the applied weight. The air enters the foam cells slowly, which allows the material to respond more slowly than a standard elastic (memory) foam

Viscous fluid: A fluid with a relatively high resistance to flow of the fluid

Water: A moderate density fluid with moderate resistance to flow of the fluid

Feature of support surfaces:

A feature is a functional component of a support surface that can be used alone or in combination with other features.

Air fluidized: A feature that provides pressure redistribution via a fluid-like medium created by forcing air through beads, as characterized by immersion and envelopment

Alternating pressure: A feature that provides pressure redistribution via cyclic changes in loading and unloading, as characterized by frequency, duration, amplitude, and rate of change parameters

Lateral rotation: A feature that provides a flow of air to assist in managing the heat and humidity (microclimate) of the skin

Low air loss: A feature that provides rotation about a longitudinal axis, as characterized by degree of patient turn, duration, and frequency

Multi-zoned surface: A surface in which different segments can have different pressure-redistribution capabilities

Zone: A segment with a single pressure-redistribution capability

Categories of support surfaces:

Active support surface: A powered support surface with the capability to change its load distribution properties, with or without applied load

Integrated bed system: A bed frame and support surface that are combined into a single unit, whereby the surface is unable to function separately

Mattress: A support surface designed to be placed directly on the existing bed frame

Non-powered: Any support surface that does not use external sources of energy, either electric or battery, for operation

Overlay: An additional support surface designed to be placed directly on the existing bed frame

Powered: Any support surface requiring or using external sources of energy to operate, either electric or battery

Reactive support system: A powered or non-powered support surface with the capability to change its load distribution properties only in response to applied load

Surfactant

A surface-active agent that reduces the surface tension of fluids to allow greater penetration

Suspected deep-tissue injury

Purple or maroon localized area of discolored, intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, mushy, boggy, or warmer or cooler than adjacent tissue. Deep tissue injury may be difficult to detect in individuals with dark skin tones. Evolution may include a thin blister over a dark wound bed. The wound may further evolve and become covered by thin eschar. Evolution may be rapid exposing additional layers of tissue even with treatment

Tensile strength

The maximum force or pressure that can be applied to a wound without causing it to break apart

Tissue Ischemia

The reduction of oxygen levels below normal

Toe pressure

A test to measure the blood pressure of the toe. A more reliable evaluation of individuals with arterial calcification (common in persons with diabetes) to indicate blood flow

Topical antibiotic

A drug that can be applied locally to a tissue surface to inhibit or kill microorganisms

Transfer Aid

Any agent that aids in transferring an individual, e.g., sheet, mechanical lift, etc.

Tunneling

A narrow channel or passageway under or beyond wound margin

Ultrasound

A mechanical vibration (acoustic energy) transmitted in a wave formation at frequencies beyond the upper limit of human hearing. Its vibratory property affects the cells of biologic tissues, and can be used to assess and treat soft tissues.

Ultraviolet light therapy

A form of therapy that uses an invisible light that is part of the electromagnetic spectrum and can be used as a phototherapeutic agent

Undermining

An area of tissue destruction extending under intact skin along the periphery of a wound, commonly seen in shear injuries. It can be distinguished from a sinus tract in that it involves a significant portion of wound edge

Unstageable pressure ulcer

Full thickness tissue loss in which actual depth of the ulcer is completely obscured by slough (yellow, tan, gray, green, or brown) and/or eschar (tan, brown, or black) in the wound bed. Until enough slough and/or eschar is removed to expose the base of the wound, the true depth cannot be determined, but it will be wither at Category III or IV. Stable (dry, adherent, intact, without erythma or fluctance) eschar on the heels serves as “the body’s natural (biological) cover” and should not be removed.

Varicose veins

Veins that have become large and tortuous. When veins become varicose, the leaflets of the vales in the legs no longer meet properly and therefore the valves do not work. This allows blood to flow backwards and enlarge the veins. Ultimately, they can predispose an individual to venous hypertension, venous insufficiency and lower leg ulcers.

Vascular insufficiency

Indicates poor blood supply, which may prevent appropriate wound healing

Vasculitis

Is a general term for a group of diseases that feature inflammation of the blood vessels. Each of these diseases is defined by characteristic distributions of blood vessel involvement, patterns of organ involvement, and laboratory test abnormalities. The causes of these vasculitis diseases are usually not known but immune system abnormality is a common feature

Venous Hypertension

Abnormally increased pressure in the lower extremities (venous system)

Venous Stasis Eczema or Dermatitis

Stagnation of blood caused by venous congestion. High pressure prevents oxygenation at the tissue level resulting in a localized ischemia and fibrosis

Whirlpool

A hydration approach using water with or without additives or saline to stimulate wound healing and to cleanse and debride chronic wounds.



REFERENCES

National Pressure Ulcer Advisory Panel (NPUAP) and European Pressure Ulcer Advisory Panel (EPUAP). *Pressure ulcer prevention and treatment: Clinical Practice guideline*. Washington DC: National Pressure Ulcer Advisory Panel: 2009.