

## Support Surface Terms and Definitions

**Active Support Surface:** A powered support surface, with the capability to change its pressure redistribution properties independent of applied load. Cells of surface inflate/deflate on a predetermined schedule which redistributes the person's weight. Pressure redistribution is achieved by frequently changing the points of contact between the surface and body, thus reducing the duration of the pressure applied to specific anatomical sites.

**Alternating Pressure:** A design feature of a support surface that utilizes cyclic changes in loading and unloading as characterized by frequency, duration, amplitude, and rate of change parameters. It provides active pressure redistribution. Not all alternating pressure systems are the same – differences can be seen in cell size, cell configuration (horizontal vs. vertical), and cycle frequency/duration/amplitude.

**Bariatric Patient Full Body Support Surface:** A head to foot device (i.e. mattress) or system (e.g. mattress and mattress overlay combination) that accommodates the weight and body habitus of the bariatric patient for clinical practice (i.e. turning and repositioning). It is designed for pressure redistribution and may or may not be designed for microclimate management, shear management, and/or other therapeutic functions.

**Bottoming Out:** The state of support surface deformation beyond critical immersion whereby effective pressure redistribution is lost. The client's body is so immersed into the support surface such that their bony prominence(s) rests against the bed frame or another surface that lacks sufficient cushioning.

**Bony prominence:** A bony elevation or projection on an anatomical structure. Examples include heels, ischial tuberosities, elbows and sacrum.

**Cell/Bladder:** A component of a support surface that is a means of encapsulating a support medium (e.g. air, gel, foam).

**Chair Position:** A feature of some bedframes where the frame can be moved into a chair position. The head of the bed rises to 90-degrees, the foot of the bed drops to 90-degrees, resulting in the client being in a position like sitting in a chair.

**Chair Egress:** The ability to get out of the bed from the foot of the bed when bed is in chair position.

**Client:** A recipient of care: in acute care – patient; in community care – client; and in long-term care – resident / person in care.

**Convertible / Adaptable:** Support surface that can be used with or without power. Power will alter the support surface properties and/or features.

**Entrapment:** An event in which a client is caught, trapped, or entangled in the space in or about the bed rail, mattress, or hospital bed frame which may result in death and serious injury. Clinical Note: Ensure that the therapeutic benefit of a support surface outweighs the risk of entrapment.



**Envelopment:** The ability of the support surface to conform (fit or mold) to the individual's shape.

**Foam:** A cellular matrix which may be used in the construction of a support surface. Different types of foam provide different performance characteristics.

**Full Body Support Surface:** A head to foot device (i.e. mattress) or system (e.g., mattress and mattress overlay combination) which is designed for pressure redistribution and may or may not be designed for microclimate management, shear management, and/or other therapeutic functions.

**Full Inflate:** A feature of powered, air, support surfaces that rapidly provides a firm surface for provision of care, transfers and repositioning by rapidly inflating the air cells. Also called instafloat, max inflation, and auto firm.

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

**Hybrid:** A support surface that combines two or more support mediums such as air, gel, foam, and others.

**Immersion:** The ability of the individual to penetrate or sink into the support surface.

**Insert:** A gel or air-filled component that can be added into specific mattresses or overlays to customize and provide pressure reduction to specific at-risk areas (e.g. heels or sacrum). Also called section, sectional or inlay.

**Integrated Bed System:** A bedframe and support surface that are combined into a single unit whereby the surface is unable to function without the bed frame.

**Lateral Rotation:** A feature of a powered support surface that provides rotation about a longitudinal axis as characterized by degree of patient turn, duration, and frequency. The bedframe or support surface turns the patient side to side to achieve lung-over-lung positioning to support improved respiratory function and drainage. Clinical note: does not usually adequately offload bony prominences therefore it is not a replacement for physical turning.

**Linen Protector Pad:** A multilayered, absorbent, pad used to protect the bed linen from incontinence episodes. They may or may not be air permeable. Clinical note: disposable or laundered versions available, minimize use as may affect microclimate of skin and reduce pressure redistribution of a support surface.

**Low Air Loss:** A feature of a powered support surface where air is circulated beneath a water vapor permeable cover to control the humidity (microclimate) at the interface between the individual and the support surface. Clinical note: does not provide pressure redistribution.

**Lower Leg Slope:** A mattress, full body support surface or off-loading device feature where the foot end slopes downward. May reduce risk of pressure injury to heels by redistributing pressure to the surface of the entire lower leg. Also called heel gradient, heel slope.



**Mattress:** A generic term for a full body support surface designed to be placed directly on an existing bed frame. May or may not be designed for clinical applications (e.g. pressure injury prevention, microclimate management).

**Medical Equipment Provision Program (MEPP):** A provincial (British Columbia) program that provides basic and advanced medical equipment on a short-term basis to clients living in the community. Those in long term care are not eligible.

**Microclimate:** The temperature and humidity/moisture in a specified location at the body interface.

**Microclimate Management:** A feature of a powered support surface or specially designed mattress coverlet that manages the microclimate of skin by cooling the surface of the skin, increasing air flow, and/or absorbing excess moisture. Clinical note: does not provide pressure redistribution.

**Multi-Zoned Surface:** A feature of a full body support surface in which different segments can have unique therapeutic capabilities.

**Non-powered:** A category of support surfaces not requiring or using sources of electrical energy for operation.

**NSWOC:** Nurse Specialized in Wound, Ostomy and Continence.

**Offload:** To remove pressure from any area.

**Overlay:** A supplementary support surface designed to be placed directly on, and used in conjunction with, a primary/base support system.

**Owned:** Equipment (e.g. surface, bedframe) that has been purchased for use.

**OT:** Occupational Therapist.

**Percussion Therapy:** A powered, support surface feature where repeated thumping / pounding on the thoracic area assists with breaking up lung secretions. Clinical note: not a replacement for physical turning as it does not provide pressure redistribution.

**Powered:** A category of support surfaces requiring or using sources of electrical energy for operation. May be active or reactive.

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

**Pressure Injury (PI):** Localized damage to the skin and/or underlying tissue, as a result of pressure or pressure in combination with shear. Pressure injuries usually occur over a bony prominence but may also be related to a medical device or other object.

**Pressure Redistribution:** The ability of a support surface to distribute load over the contact areas of the human body. Achieved through envelopment and immersion.

**Proning:** Positioning a patient on their abdomen (i.e. face down).



**PT:** Physiotherapist.

**Pulsation:** A feature of a powered support surface that provides repeating higher and lower pressure resulting in cyclic changes in stiffness in the surface typically with shorter duration inflation / deflation, higher frequency and lower amplitude than alternating pressure. Subtle and short duration inflation / deflation of the air cells to stimulate capillary blood flow. Clinical note: effective for edema management and does not provide pressure redistribution.

**Reactive Support Surface:** A powered or non-powered support surface with the capability to change its pressure redistribution properties only in response to applied load (e.g. an individual lying on the surface). Cells (air or gel) empty/fill in response to the client's weight or movement to provide pressure redistribution. The pressure is distributed over a greater area, thereby reducing the magnitude of the pressure at specific sites.

**Rental:** Equipment (e.g. support surface, bedframe) that is available for rent.

**Shear:** An umbrella term. See shear strain and shear stress. Mechanical force that moves bony structures in an opposite direction to overlying tissue; can lead to tissue ischemia and ulceration or tunnelling and deep sinus tracts beneath an ulcer. (PIP Prevention Guideline, 2018)

**Shear Strain:** Distortion or deformation of tissue as a result of shear stress.

**Shear Stress:** The force per unit area exerted parallel to the perpendicular plane of interest.

**Seat Deflate:** A feature of powered, air, full body support surfaces that allows the seat (sacral) area of the surface to be deflated to provide a safer ingress and egress.

**Stable at Edge:** The ability of support surface edge (perimeter) to support the client's weight and movement when sitting on the edge of the bed.

**Support Surface:** A device or system which is designed for pressure redistribution and may or may not be designed for microclimate management, shear management, and/or other therapeutic functions. Support surfaces include but are not limited to mattresses, integrated bed systems, overlays, and cushions. Specialized medical devices designed to relieve and/or redistribute pressure on the body in order to prevent and treat pressure injuries. Can include mattresses, cushions and overlays.

**Turn Assist:** A feature of powered, support surfaces that assists in lateral turning of the patient for routine care. Clinical note: not a replacement for physical turning as it does not provide pressure redistribution.

**Vibration Therapy:** A feature of powered support surfaces where vibration assists with the movement of lung of secretions. Clinical note: not a replacement for physical turning as it does not provide pressure redistribution.

**Weight Capacity:** The maximum load at which the features of a support surface can function according to their intended use. Includes the client's weight and any equipment on the support surface.

**Zone:** A defined area of a support surface that can have its own function or feature.



## References

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Note: References for support surface product information available on request.

## Document Management

Note: This list of terms & definitions is a copy of the terms & definitions listed in the BC Support Surfaces document.

<b>Created By</b>	British Columbia Provincial Interprofessional Skin & Wound Committee in collaboration with OTs, PTs, NSWOCs / WCs from across all Health Authorities.
<b>Publication Date</b>	2026 May
<b>Revision Date(s)</b>	
<b>Review Date(s)</b>	