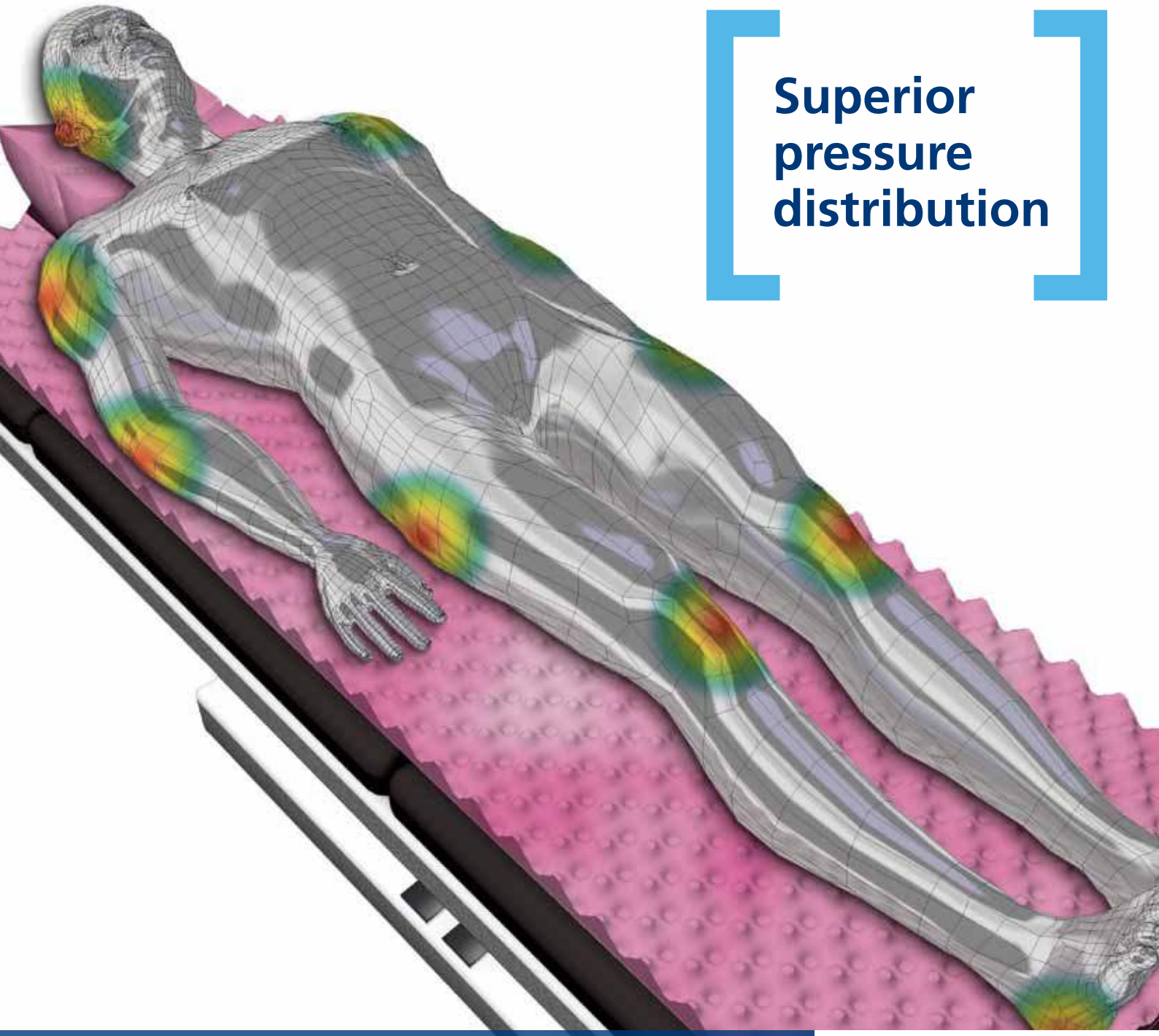


Superior pressure distribution

Devon™ Positioning Products

COVIDIEN
positive results for life™

Focusing on patient safety

Introduction

Pressure

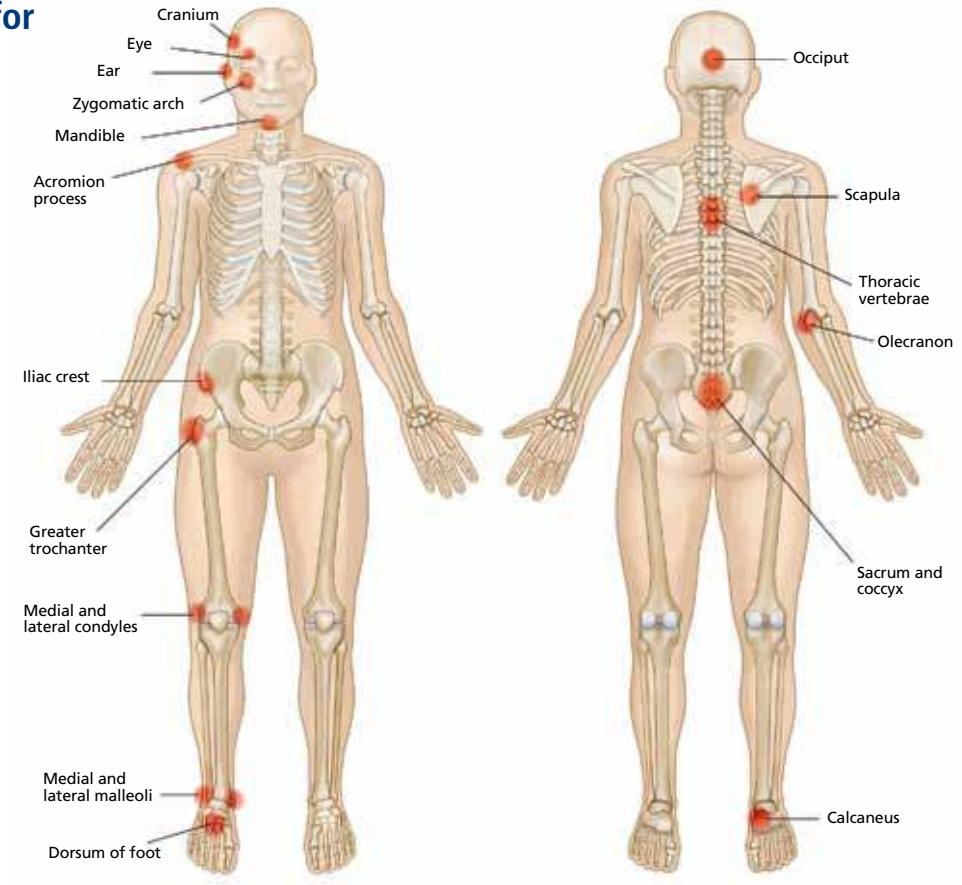
Surgical patients may have compromised mobility and sensory deficits attributed to the use of specific types of anesthesia care that include general, regional, monitored anesthesia care, and moderate sedation/analgesia. The administration of sedative medications results in levels of sedation that range from consciousness to unconsciousness (Odom & Watson, 2005[1]).

As a surgical patient advances on the sedation continuum toward the level of general anesthesia, there are a loss of protective mechanisms that include decreased pain sensation, loss of mobility and consciousness. Positioning injuries may occur if there is a failure to implement risk reduction strategies to avoid direct pressure, friction, and/or shear forces to a dependent body part.

The understanding of pressure is essential for the prevention of a patient positioning injury during surgery. Pressure occurs when the skin is compressed between a bony prominence and a hard surface such as the procedure bed. When external pressure exceeds normal capillary pressure of 32mm Hg, the patient is placed at an increase risk for impaired tissue perfusion. (Walton-Geer, 2009[2]; AORN, 2010[3]). It is the effect of direct pressure exceeding capillary pressure of 32mm Hg that may cause restriction of adequate circulation, resulting in ischemia of the underlying tissue.

Pressure combined with friction and shear that occurs on body areas with bony prominences create an opportunity for tissue damage. It is this type of tissue damage that may progress to a pressure ulcer attributed to improper patient positioning during surgical procedures. An understanding and knowledge of common pressure sites allow perioperative team members to select appropriate positioning devices and apply positioning techniques that will limit exposure to capillary pressure greater than 32mm Hg on tissue where possible.

Common sites for pressure points



Devon™ foam positioners have been proven to reduce pressure distribution by 48% at levels above 32mm Hg

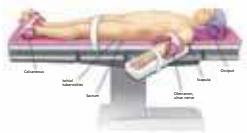
INDEPENDENT STUDY[4]

- [1] Odom-Forren J, Watson DS. History of moderate sedation. In: Odom-Forren J, Watson DS, eds. *Practical Guide to Moderate Sedation/Analgesia.* 2nd ed. St. Louis, MO: Mosby Elevier; 2005.
- [2] Walton-Geer PS. Prevention of pressure uscers in the surgical patient. *AORN* Journal. 2009.
- [3] Association of Perioperative Register Nurses. Recommended practices for positioning the patient in the perioperative practice setting. In: Blanchard J, Burlingame B, Chard R, Denholm B, Giarrizzo-Wilson S, Maxwell-Downing D, Mitchell S, Ogg M, Petersen M, eds. *Perioperative Standards and Recommended Practices.* 2010 Edition. Denver, CO: 2010.
- [4] Principal Investigator Morris V. Shelanski, M.D., C.M.

For ordering information go to the back cover

The Devon™ positioning products offer a reliable, efficient and economical solution for the safe alignment and support of surgical patients during surgery.
The non toxic, firm density foam reduces the pressure and provides the ideal combination of exceptional stability and cushioning to common pressure sites.

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Devon™ head positioners

- High density foam head positioners for maintaining normal head and body alignment
- Redistributes pressure to minimize the risk of postoperative occipital alopecia
- Designed to suit sensitive facial features
- Slotted head positioners designed to accommodate tubing
- Whole in one positioner can also be used for legs, heels, knees or other extremities



1. Slotted adult head positioner

Code 31143160
Designed to accommodate Endotracheal tubing
Case quantity 24





2. Frame head positioner

Code 31143020
Prone position
Case quantity 28





3. Soft touch head positioner

Code 31163184
Additional soft layer of foam for maximum patient comfort
Prone position
Case quantity 28







4. Adult head positioner

Code 31143129
Case quantity 24



5. Child head positioner

Code 31143194
Case quantity 24



6. Whole-in-one positioner, 8, 10, 15, 23cm ring

Code 31143152
Case quantity 36





7. Bagel positioner, 18cm ring

Code 31143145
Case quantity 72



8. Bagel positioner, 23cm ring

Code 31143137
Case quantity 36



For ordering information go to the back cover

Devon™ body positioners

- Cushioning and protection for arms, shoulders, elbows, ulnar nerves, bony prominences and other pressure points
- Maximum support of legs, knees, heels, ankles and feet
- Redistribute pressure while maintaining proper circulation
- Designed to provide optimum exposure to operative site
- Stabilizes patient torso comfortably and safely
- Provides protection, correct alignment, and comfort for a variety of procedures

9. Operating room table wedge



Code 31143103
Size - 46 x 20 x 20cm
Case quantity 8





10. Body alignment wedge



Code 31143392
Size - 55 x 30 x 22cm
Case quantity 8



11. Convoluted OR table pad



Code 31163457
Convoluted design provides superior pressure distribution
Size - 183 x 51 x 5cm
Case quantity 12





12. Convoluted utility pad





Code 31143384
Exceptionally light weight and versatile, designed to provide support and protection in a number of surgical procedures
Size - 51 x 30 x 30cm
Case quantity 12 pair



13. Chest roll





Code 31143418
Size - 43 x 13cm
Case quantity 12



14. Bolster small





Code 31143434
Size - 46 x 18cm
Case quantity 12



15. Bolster large





Code 31143442
Size - 76 x 18cm
Case quantity 10



Devon™ positioning straps

Soft yet remarkably strong straps ensure proper positioning with security and comfort.

- Reusable
- Completely washable materials
- Metal rings attach to OR table or gurney, quickly and easily
- Adjustable to fit most patients

16. Knee and body strap – reusable

Code 31142964
Size - 92 x 10cm
Case quantity 6



17. Arm board strap – reusable

Code 31142998
Size - 66 x 4cm
Case quantity 25



Devon™ upper extremity body positioners

Variety of positioners provide support, stability and protection for shoulders, elbows, ulnar nerve, and bony prominences.

- Designed to help maintain proper alignment
- Aids in pressure distribution of critical pressure points during the surgical procedure



Convoluted foam, designed for maintaining proper circulation.





18. Convoluted ulnar nerve protector



Code 31143095
Size - 41 x 15 x 5cm
Case quantity 36 pair





19. Convoluted arm board pad



Code 31143467
Size - 41 x 15 x 5cm
Case quantity 12 pair





20. Arm cradle



Code 31143491
Size - 61 x 13 x 8cm
Designed for use with extended arm boards to provide maximum stability and protection
Case quantity 12 pair

For ordering information go to the back cover

Devon™ lower body positioners

Variety of positioners to provide support stability and protection for legs, ankles heels and feet during surgical procedures.

- Reduce risk of pressure sores and nerve damage while maintaining proper circulation
- Designed to provide maximum exposure to operative site
- Reduce friction and shear



21. Small abduction pillow

Code 31143087
Size - 46 x 30 x 15cm
Case quantity 6

22. Medium abduction pillow

Code 31143061
Size - 56 x 38 x 15cm
Case quantity 6

23. Large abduction pillow

Code 31143053
Size - 63 x 46 x 15cm
Case quantity 6



Abduction pillow designed to support and align the legs to prevent hip dislocation after hip surgery or injury.





24. Frog leg positioner

Code 31143376
Case quantity 5 pair





25. Convoluted foot and heel protector

Code 31143178
Case quantity 36 pair





26. Well leg holder

Code 31143277
Case quantity 18



27. Arthroscopic knee holder

Code 31143046
Case quantity 10

Devon™ large patient positioners

- Safe, consistent positioning for larger patients
- Provides additional protection for patients vulnerable to skin integrity concerns
- Wider, thicker pieces designed to distribute weight and maintain circulation
- Fire retardant foam
- Raspberry Swirl foam is 1.35 pounds per cubic foot for optimal support
- Latex free, single patient use

28. Round head positioner



Code 777001
Size - height 3.5" diameter 9.0"
Visco surface 1" deep
Case quantity 36





29. Arm positioners



Code 777002
Size - length 20" width 8"
arm strap length 36"
Case quantity 6 pair





30. Leg positioners







Code 777003
Size - length 27"
width 8"
heel depth 2"
Case quantity 6 pair

31. Supine positioning kit



Code 777004
Kit includes 1 Visco round head positioned, 1 pair arm boards, 1 pair leg positioners.
Case quantity 4

For ordering information go to the back cover

Surgical Positioning Considerations and Techniques

Supine or Dorsal Recumbent Position

The supine position is one of the most frequently used positions during surgery. The supine position allows for the body to rest face up in a natural position. Modification of the supine position may include patient placement into positions such as Trendelenburg; reverse Trendelenburg, and a variety of sitting positions. Pressure point areas in the supine position include the occiput, scapula, olecranon, sacrum, ischial tuberosities and calcaneus (Figure 1).

In supine position, the patient's arms should be placed and secured on a padded arm board or tucked to the side. The circulator nurse should assess the patient to determine that the spine is in correct alignment with the chest, and lower extremities. All pressure points should be assessed and application of appropriate padding to high risk areas to redistribute pressure during surgery to minimize risk for potential patient injury.

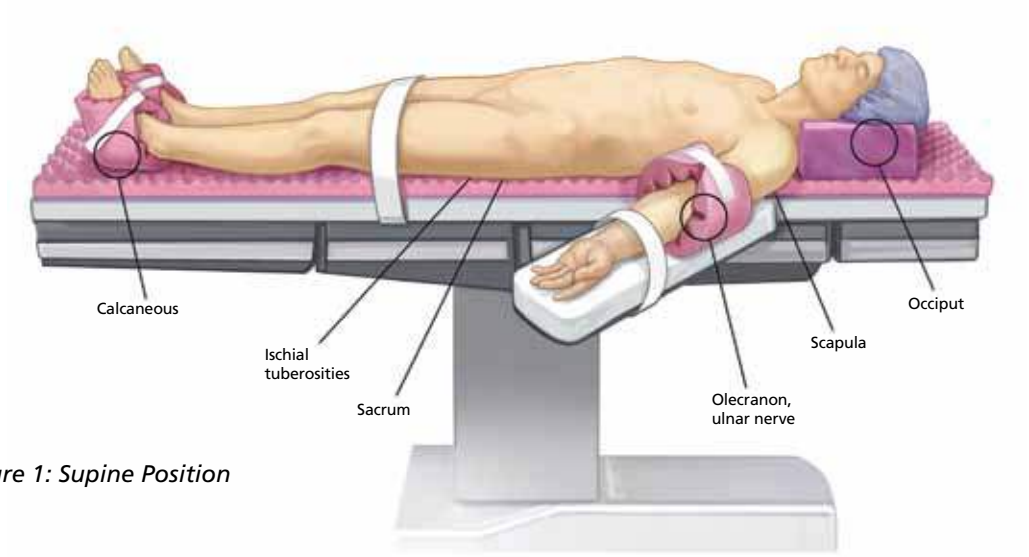


Figure 1: Supine Position

Trendelenburg and Reverse Trendelenburg Position

A modification of the supine position is the Trendelenburg and reverse Trendelenburg positions The Trendelenburg position involves a head-down tilt, feet up position. When positioned in Trendelenburg position, the abdominal viscera is tilted in a direction away from the pelvic area to provide the surgeon with optimal visualization. The reverse Trendelenburg position involves a head-up, feet down position. Pressure point areas in the Trendelenburg and reverse Trendelenburg position include the occiput, scapula, olecranon, sacrum, ischial tuberosities and calcaneus (Figure 2 and Figure 3).

The Trendelenburg position allows for improved visualization during a surgical procedure and decreased blood flow to the operative site secondary to the gravitational blood flow (AORN, 2010). The position may also decrease lower extremity venous stasis due to the redistribution of blood. The patient is at an increased risk for a brachial plexus injury due to the increased pressure placed on the clavicle (AORN, 2010). The patient should be positioned slowly to avoid sudden changes in circulatory response such as hypotension. When positioned into the Trendelenburg or reverse Trendelenburg position there are increased risks for shear injuries.

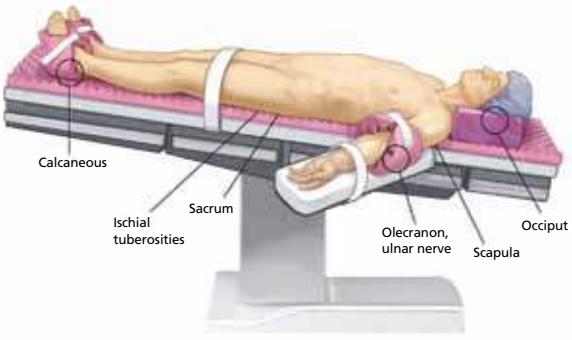


Figure 2: Trendelenburg Position

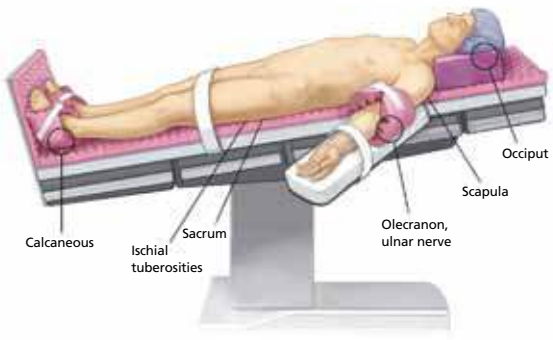


Figure 3: Reverse Trendelenburg Position

Prone Position

The prone position may include a variety of modifications such as the knee-chest, kneeling, jackknife, or Kraske. In the prone position, the patient is positioned face down. Pressure point areas include the eyes, ears, cheeks, acromion process, iliac crest, breast, genitalia, patella, and toes (Figure 4).

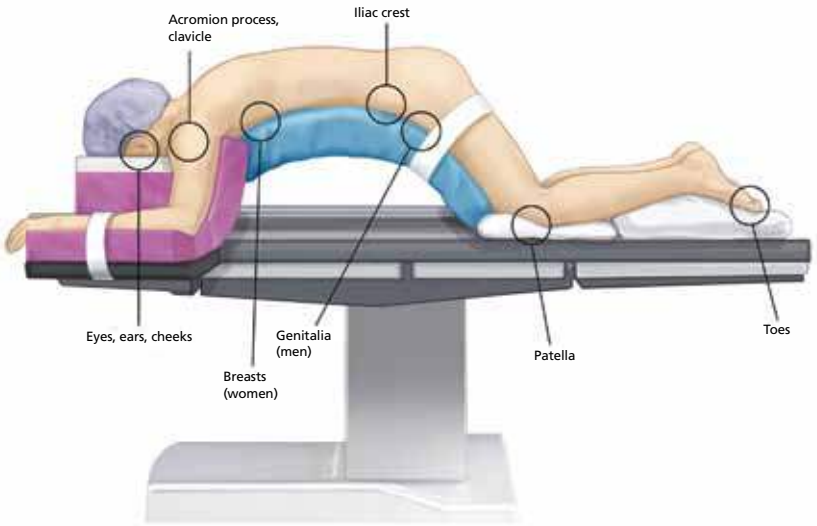


Figure 4: Prone Position

There are a variety of positioning devices used to position the patient prone in a flexed position at the hip. If possible the arms should be positioned and tucked to the patient's side (AORN, 2010). If placed over head, the arms are positioned on padded arm boards along the side of the patient's head, extended in an outward position with a less than 90- degree angle. The palms should be placed in a pronated position on the padded arm board with the elbows flexed (AORN, 2010). If positioned incorrectly in the prone position, the diaphragm movement may be severely restricted resulting in a limitation of expansion and air exchange. Unnecessary pressure of the anterior chest wall and the abdomen will result in increased respiratory effort with decreased respiratory effort and function (AORN, 2010).

Sitting Position

A Fowler's (sitting), modified Fowler's, and beach chair position involves placing the patient in a sitting position on the operating room table. Pressure point areas in the sitting position include the occiput, scapula, olecranon, sacrum, ischial tuberosities and calcaneus with special emphasis to the arms and shoulders (Figure 5).

In the sitting position, stabilization of the head, neck, shoulders and trunk must be safely maintained throughout the procedure to avoid extension or hyperflexion of the spinal column. Depending on the procedure the patient may be placed in special head holding device (e.g., neurosurgical three-point headrest device). Assess for pressure points with the use of any head holding device.

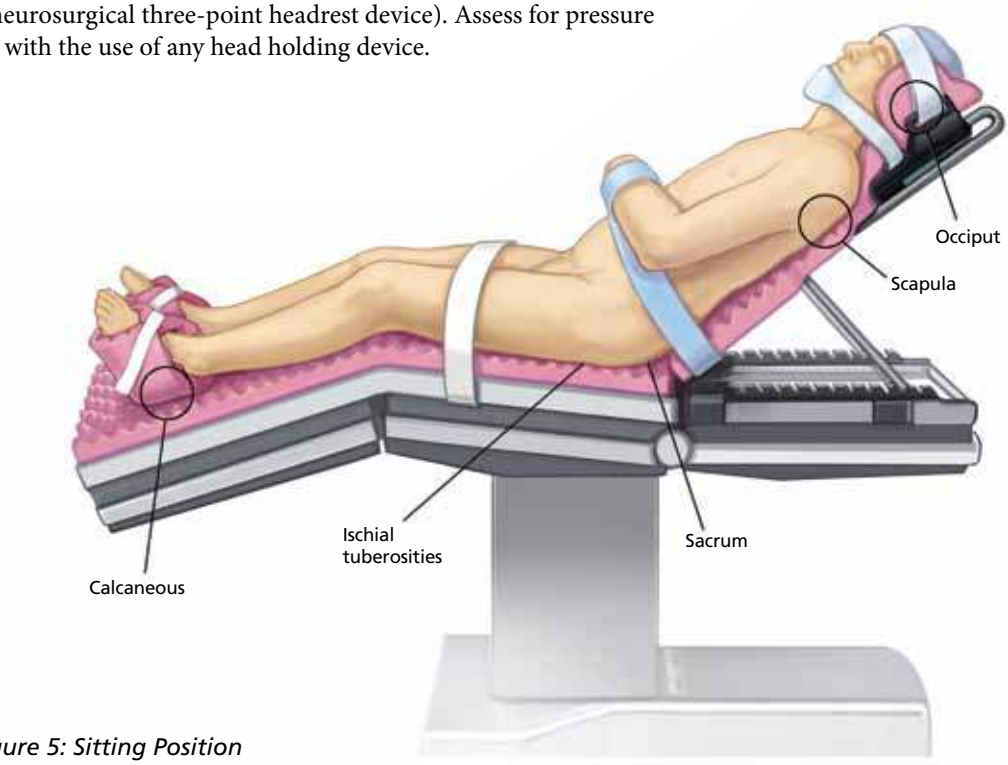


Figure 5: Sitting Position

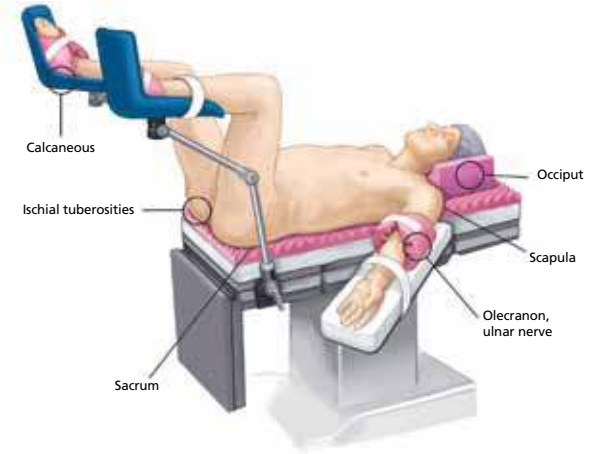


Figure 6: Lithotomy Position

Lithotomy Position

The lithotomy position involves a modification of the supine position. The patient's lower extremities are elevated, abducted, and placed into leg holders or stirrups. The position devices may be modified depending on the procedure to accommodate a low, standard, high or exaggerated position. Pressure point areas in the lithotomy position include the occiput, scapula, olecranon, sacrum, ischial tuberosities and calcaneus (Figure 6).

Lateral or Lateral Decubitus Position

The lateral position involves positioning the patient on the unaffected surgery side to provide access to the chest, kidney, or hip area. Pressure points in the lateral position include the ear, acromion process, iliac crest, greater trochanter, lateral knee and malleolus (Figure 7).

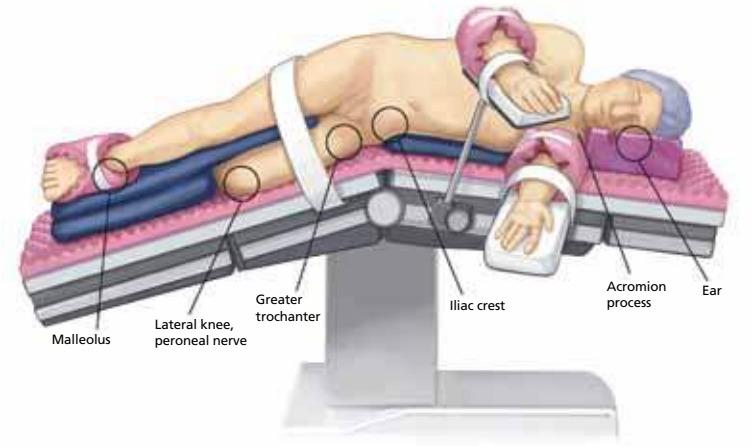


Figure 7: Lateral Position

There are a variety of positioning devices used to stabilize the patient in the lateral position (e.g., beanbag). Following induction while in the supine position, the patient is moved and safety positioned. Arms are placed on padded armboards positioned on one side of the patient. Padding is applied to the elbows to minimize ulnar nerve injury.

Positioning Challenges

Obese Patient

It is important the perioperative team recognize that an obese patient is different from being just a large patient and special precautions will need to be taken (Association of Anaesthetists of Great Britain and Ireland, 2007). It is estimated that nearly two-thirds of adult Americans are overweight with a body mass index [BMI = weight (kg)/height(m^2)] > 25 kg/m^2 (Brodskyn & Margarson, 2010). Obesity is defined as a BMI > 30 kg/m^2 and morbid obesity is defined as a BMI > 40 kg/m^2 (Brodsky & Margarson, 2010). The patient with morbid obesity usually has several comorbidities that may include hypertension, diabetes mellitus, osteoarthritis and obstructive sleep apnea (Brodsky & Margarson, 2010). Transfer and positioning present unique challenges for the obese patient due to the patient size, extra weight and the increased risk for the untoward patient complications of pressure ulcers and neural injuries (Brodsky, 2002).

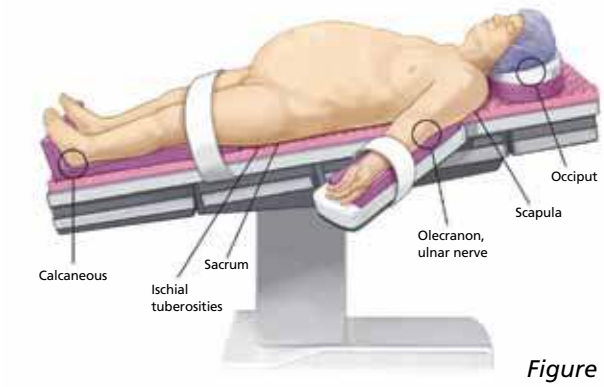


Figure 8: Obese Patient

For further details request our:
Intraoperative Positioning: Risk Reduction Strategies *guide*

Ordering information

Devon™ head positioners

	Code	Description	Case quantity
1.	31143160	Slotted adult head positioner	24
2.	31143020	Frame head positioner	28
3.	31163184	Soft touch head positioner	28
4.	31143129	Adult head positioner	24
5.	31143194	Child head positioner	24
6.	31143152	Whole-in-one positioner, 8, 10, 15, 23cm ring	36
7.	31143145	Bagel positioner, 18cm ring	72
8.	31143137	Bagel positioner, 23cm ring	36

Devon™ body positioners

	Code	Description	Size	Case quantity
9.	31143103	Operating room table wedge	46 x 20 x 20cm	8
10.	31143392	Body alignment wedge	55 x 30 x 22cm	8
11.	31163457	Convoluted OR table pad	183 x 51 x 5cm	12
12.	31143384	Convoluted utility pad	51 x 30 x 30cm	12 pair
13.	31143418	Chest roll	43 x 13cm	12
14.	31143434	Bolster small	46 x 18cm	12
15.	31143442	Bolster large	76 x 18cm	10

Devon™ positioning straps

	Code	Description	Size	Case quantity
16.	31142964	Knee and body strap – reusable	92 x 10cm	6
17.	31142998	Arm board strap – reusable	66 x 4cm	25

Devon™ upper extremity body positioners

	Code	Description	Size	Case quantity
18.	31143095	Convoluted ulnar nerve protector	41 x 15 x 5cm	36 pair
19.	31143467	Convoluted arm board pad	51 x 20 x 5cm	12 pair
20.	31143491	Arm cradle	61 x 13 x 8cm	12 pair

Devon™ lower extremity body positioners

	Code	Description	Size	Case quantity
21.	31143087	Small abduction pillow	46 x 30 x 15cm	6
22.	31143061	Medium abduction pillow	56 x 38 x 15cm	6
23.	31143053	Large abduction pillow	63 x 46 x 15cm	6
24.	31143376	Frog leg positioner		5 pair
25.	31143178	Convoluted foot and heel protector		36 pair
26.	31143277	Well leg holder		18
27.	31143046	Arthroscopic knee holder		10

Devon™ large patient positioners

	Code	Description	Size	Case quantity
28.	777001	Round head positioner	Height 3.5" dia. 9.0" visco surface 1" deep	36
29.	777002	Arm positioners	Length 20" width 8" arm strap length 36"	6 pair
30.	777003	Leg positioners	Length 27" width 8" heel depth 2"	6 pair
31.	777004	Supine positioning kit		4

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Covidien (UK) Commercial Ltd
4500 Parkway, Whiteley
Fareham, Hampshire PO15 7NY
United Kingdom

+ 44 (0) 132 922 4000 [T]
+ 44 (0) 132 922 0213 [F]

Covidien
379 Roan Crescent
Corporate Park North
Randjespark, Midrand
Johannesburg 1685
South Africa

27115429500 [T]

www.covidien.com