INTRAOPERATIVE POSITIONING injuries are devastating to the patient and the surgical team. Injuries can be short-term, such as a neuropathy that resolves in 24 to 48 hours, or long-term, such as pressure ulcers that can lead to a stage IV ulcer.

There are preexisting risk factors for positioning injuries, and some are modifiable while others are not. Nonmodifiable risk factors are the length and type of procedure, the anesthesia requirements for the procedure, patient’s age and body weight, and the patient’s current medication regime.

Some patient risk factors that are more difficult to manage but can be minimized with appropriate preoperative care if possible are nutritional status, chronic illness, comorbidities, and preexisting pressure ulcers.

Patient positioning
A patient’s position on the operating table depends on the surgical procedure to be performed as well as on his or her physical condition. Factors to consider are:

- The patient should be in as comfortable a position as possible, whether asleep or awake before receiving anesthesia.
- The operative field must be adequately exposed.
- An awkward position, undue pressure on a body part, or use of stirrups or traction should not obstruct the vascular supply to any body part.
- Respirations should not be impeded by pressure of arms on the chest or by a patient gown that constricts the neck or chest.
- Nerves must be protected from undue pressure. Improper positioning of the arms, hands, shoulders, legs, or feet may cause serious injury or paralysis. Shoulder braces must be well padded to prevent irreparable nerve injury, especially when the Trendelenburg position is necessary.
- Precautions for patient safety must be observed, particularly with thin, elderly, or obese patients, or those with a physical deformity.

The circulating nurse involved in the positioning of patients prior to and during procedures must always:

- ask for assistance when transferring a patient to the OR table—four is the minimum number of people required to move a patient.
- check with anesthesia before moving an anesthetized patient.
- maintain body mechanics and employ ergonomic theory to prevent injury to yourself.
- move patients slowly and gently, watching all tubes, drains, lines, etc.

Common positions

Supine. Patient lies on the back, face toward the ceiling, legs not crossed, arms at sides or on arm boards. This position is most often used for abdominal surgery, some pelvic surgery, open-heart surgery, surgery to the face, neck, mouth, and most surgeries of the extremities.

Pillows or other padding materials can be used to secure the patient in a safe, comfortable position that places him in the normal anatomical position and will protect him from injury.

Some potential problems of this position if maintained for long periods of time are: skin breakdown, lumbar strain, nerve injury, circulatory compromise, and respiratory compromise if the patient is in the Trendelenburg position.

Prone position. Patients usually begin in the supine position, and then after anesthesia administration, they are log-rolled to the prone position by the entire OR team, which is face down with the breasts, genitalia, arms, and legs in as normal an anatomical alignment as possible. Supportive pillows or other positioning devices, especially for the head, may aide in keeping the patient safe and comfortable. The patient’s head may be turned to the left or right and is on a padded cushion with outlets for the ET tube. Eyes are lubricated and closed shut with tape. Patients receiving general anesthesia require chest rolls to allow for diaphragmatic excursion. Arms may be placed at the patient’s sides or flexed at the elbow and shoulder and placed on armboards alongside the patient’s head. Pads or rolled towels support areas of the arms suspended. A pillow is usually placed under the lower legs to alleviate pressure on the toes and feet.

The prone position may be used for surgeries to the
back and spine, or to the back of the legs.

Some potential problems associated with this position are: skin breakdown, reduced respiration, circulation, nerve damage, eye or ear damage, damage to the breasts in women, or genitals in men.

**Kraske/Jackknife position.** The patient begins in the supine position again, and is log-rolled after anesthesia to the prone position. The OR table is then flexed to a 90-degree angle; the patient’s arms are at the sides or on arm boards. This position is used almost exclusively for rectal surgery. The equipment used is the same for the prone position and the potential complications for the patient are also the same.

**Lithotomy.** The patient begins supine, and the legs are lifted into low padded stirrups. The arms are usually on arm boards. This position is used for gynecological surgery or genitourinary surgery.

The potential hazards to the patient in the lithotomy position are: skin breakdown, nerve damage, musculoskeletal injury (improper raising and lowering of the legs), and circulatory compromise. The patient may also experience hypotension if the legs are raised or lowered too quickly.

**Lateral position.** The patient begins in the supine position and is rolled onto the side (the operative side is up). The patient’s bottom leg should be flexed, and the top leg straight with a pillow in between the legs. Typically, the bottom arm is on an arm board and the top arm is supported by a pillow or other supporting devices parallel to the lower arm. The patient’s head is supported as well by special pillows or a regular pillow and in normal anatomical alignment with the rest of the body. The lateral position is used for surgery of the chest, lungs, kidney or hip. Devices that can be used for support include: bean bags, pillows, padding materials, axillary roll, or a headrest.

Potential injury to the patient in the lateral position includes: skin breakdown, nerve injury, and reduced respiration.

Finally, a general consideration for preventing positioning injuries is to remember there is a person under the drapes. At no time should the patient’s body be leaned on, pressed on, or impinged in any way by staff, equipment, or the devices used to secure safe positioning.

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This article was adapted from Graling P, Tea C. Intraoperative nursing management. In: Smeltzer SC, Bare B, eds. Brunner & Suddarth’s Textbook of Medical-Surgical Nursing. Philadelphia, Pa: Lippincott Williams & Wilkins; 2003:432-434.

**REFERENCES**

