Guidelines Clearinghouse Web site (www.guideline.gov). A planned repositioning schedule tailored to each individual patient is recommended in all pressure ulcer prevention guidelines. Recently, the National Pressure Ulcer Advisory Panel, in collaboration with the European Pressure Ulcer Advisory Panel, announced updated guidelines for prevention and treatment of pressure ulcers. Each guideline recommendation is supported by a rigorous review of the literature and a strength-of-evidence rating.¹

The goals in progressive mobility programs, specifically prevention of complications associated with immobility, are aligned with recommended interventions for pressure ulcer prevention. Techniques for progressive mobility can be combined with repositioning techniques recommended for prevention of pressure ulcers.

Mobilizing Bedridden Patients

Both progressive mobility programs and pressure ulcer prevention programs involve planned movements with various positioning techniques. With the progressive mobility program, changes in position for bedridden patients can include changes in head-of-bed elevation, continuous lateral rotation, and prone positioning. The patient is then progressed to chair sitting and ambulation. Recommended interventions for preventing pressure ulcers in bedridden patients taken from guidelines for prevention and treatment of pressure ulcers include maintaining the head of the bed at 30° or lower² to prevent shearing injuries, especially to the sacral area, and complete changes in position using supine positioning and tilted side-lying 30° positions, alternating right, back, and left to ensure that pressure over bony prominences is avoided. Friction and shearing can be avoided when positioning patients by using transfer aids such as slide sheets and slings or by using at least 2 staff members and draw sheets to lift patients. The frequency of positioning, however, should be tailored to individual patients. According to the guidelines from the National and European pressure ulcer advisory panels, patients who are not on pressure redistribution mattresses require more frequent repositioning. Other considerations when positioning patients include using padding between the knees when patients are lying on their side and elevating or “floating” heels off the mattress to avoid pressure on the heels.

Therapy Beds and Pressure Ulcer Prevention

The idea that all therapy beds prevent pressure ulcers is a common misconception. Actually, the therapy bed is an adjunct to repositioning patients and does not decrease the required frequency of repositioning. The selection of a therapy bed should be tailored to the specific needs of the patient. Goals for pressure ulcer prevention require the selection of a bed that has a pressure redistribution surface such as air bladders, high-density foam, or alternating pressure surfaces. In addition to pressure redistribution, some surfaces also provide low air loss for microclimate management. Bed manufacturers should be able to provide pressure mapping data to aid in appropriate selection of surfaces.

---

Tips for Protecting Critically Ill Patients From Pressure Ulcers

Irene M. Jankowski, RN, MSN, APRN-BC, CWOCN

An important focus in critical care units is maintaining circulatory, respiratory, and renal function. Care of critically ill patients also requires interventions that are designed to prevent pressure ulcers, an all-too-common complication of immobility, inadequate nutrition, and illnesses or medications that affect blood flow and perfusion. Pressure injuries may be avoidable when consistent attention is given to assessment, nutrition, and appropriate positioning within appropriate time frames.

At least 10 published guidelines for the prevention and treatment of pressure ulcers can be found on the National
Certain products may be designed to provide various turning features. Some beds offer only a “turn assist” that tilts the patient for a short period, thereby helping the caregiver to turn the patient during bathing or incontinence care. Other therapy bed products, usually limited to critical care units or pulmonary care units, may provide turning features that include a preset automatic turn designed to promote improved pulmonary outcomes. Various beds are available with a combination of features that can meet the needs of patients requiring both pulmonary support and pressure ulcer prevention.

DeLaat et al. described a prospective cohort study conducted in an intensive care unit that demonstrated a sustained reduction in intensive care unit–acquired pressure ulcers as a result of the introduction of a pressure ulcer prevention protocol that was supported by certain nurses who acted as “supporting innovators” of the project. The strongest significant intervention associated with the decrease in incidence of pressure ulcers was identified as the use of pressure redistribution mattresses.

Once an appropriate therapy bed is selected, nurses should avoid layering sheets, pads, diapers, and other items between the patient and the specialty bed surface. Such layering will interfere with the effectiveness of the pressure redistribution surface.

Continuous Lateral Rotation Therapy
Continuous lateral rotation therapy (CLRT) is designed to support pulmonary toileting; however, not all therapy beds with this feature provide pressure redistribution surfaces such as low air loss surfaces. Even when a CLRT bed provides a pressure redistribution surface, CLRT alone (the right and left rotation of 20° to 40°) may not provide protection from pressure ulcers unless specific interventions for pressure ulcer prevention also are instituted. Even if the CLRT is set for the maximum rotation, the patient never breaks contact with the surface. Nurses must be vigilant, assessing patients’ skin frequently, particularly over bony prominences, for early signs of pressure injuries. Heels must be protected from prolonged pressure whether by the specialty therapy surface or by the use of positioning devices, unless the CLRT bed surface is equipped with air-only bladders designed to prevent heel ulcers.

Frequent skin assessments while the patient is on CLRT may enable early detection of potential development of pressure ulcers. CLRT can be stopped for short periods to allow for skin assessments. Erythema can be an early sign of pressure ulcer potential and should trigger a change in the patient’s position whenever possible. Blanchable erythema, also known as reactive hyperemia, can be reversed simply by eliminating pressure for a short period. Such careful vigilance may save patients from months to years of wound care treatments and techniques can be used to offload pressure points and relieve pressure to injured areas. Bolsters and other positioning devices should be removed when CLRT is resumed. Keep in mind that CLRT may be most effective in facilitating optimal pulmonary outcomes when employed for at least 18 hours in a 24-hour period. It is appropriate to use pillows and other positioning devices during the 6 hours of non-CLRT therapy.

Progression to Chair and Ambulation
Even when the patient has progressed to the full upright chair position, important nursing interventions are still required for those patients at risk for pressure ulcers. Clinical guidelines from both the Wound, Ostomy and Continence Nurses Society and the national and European pressure ulcer advisory panels recommend encouraging the patient to shift weight frequently while in a chair. Some patients will require assistance with weight shifting. In addition, assisting a patient to a standing position will help prevent pressure ulcers and meet goals for progressive mobility. Pressure redistribution chair cushions can also be provided, and measures to protect skin from incontinence-associated skin breakdown such as moisture barrier ointments and other skin protective products still should be used. Once the patient is ambulatory, nurses should remain vigilant. Ambulation may begin with a few tentative steps, with the patient quickly returning to the bed or bedside chair, until he or she can tolerate an extended period of mobility.

Conclusion
Careful and frequent skin assessments, frequent repositioning, managing moisture, and maximizing nutritional support are common interventions for prevention of pressure ulcers. Progressive mobility techniques and repositioning techniques used to prevent pressure ulcers are designed to promote the best outcomes while preventing dangerous complications.
References
1. What is the major long-term complication resulting from the physical deconditioning that takes place during a patient’s stay in the intensive care unit (ICU)?
   a. Loss of orthostatic tolerance/disturbed equilibrium
   b. Onset of depressive mood disorders
   c. Diminished quality of life after discharge
   d. Increased susceptibility to autoimmune disorders

2. Which of the following is the result of a patient’s developing “gravitational equilibrium”?
   a. Increased orthostatic tolerance
   b. Difficulty adapting to a change in position
   c. Stabilization of the plasma volume reduction that occurs during the first few days of bed rest
   d. Improved function of the body’s autonomic feedback loop

3. Progressive mobility is defined as a series of planned movements in a sequential manner with what final goal?
   a. Returning to the patient’s baseline level of mobility
   b. Achieving 75% of the patient’s pre-ICU activity level
   c. Prevention of ventilator- and hospital-acquired pneumonia
   d. Patient’s ability to ambulate for a distance of at least 100 feet by the time of ICU discharge

4. What was the main cause of functional limitations occurring in patients within 1 year after discharge from the ICU?
   a. Heart muscle deconditioning
   b. Skin breakdown/delayed wound healing
   c. Joint contractures
   d. Muscle wasting

5. When do this article’s authors recommend assessing each ICU patient’s readiness for mobility?
   a. During the initial nursing assessment following admission
   b. Each time a patient’s condition changes significantly
   c. Daily
   d. At the time of initiation of a progressive mobility protocol

6. The decreased muscle mass that occurs in critically ill patients is most pronounced in what area of the body?
   a. Upper limbs
   b. Lower limbs
   c. Diaphragm
   d. Abdomen

7. Patients receiving continuous lateral rotation therapy (CLRT) should have the continuous rotation for how many hours per day?
   a. 12
   b. 14
   c. 16
   d. 18

8. Which of the following is a recommendation included in all pressure ulcer prevention guidelines?
   a. Repositioning of patients at least every 2 hours
   b. Use of a therapy bed with a low-density foam surface
   c. A planned repositioning schedule tailored to each individual patient
   d. Use of a sling transfer aid when turning and/or repositioning patients

9. Which of the following statements regarding the use of CLRT is true?
   a. CLRT alone—the right and left rotation of 20°–40°—is the only pressure ulcer prevention therapy necessary if the CLRT bed has a pressure distribution mattress.
   b. Bolsters, pillows, and other positioning devices may be used during times when CLRT is stopped, but they should be removed before use of active CLRT.
   c. CLRT is designed specifically for supporting pulmonary toilet, and should not be used for patients who are at high risk for developing pressure ulcers.
   d. Incontinent patients receiving CLRT should have diapers and specially designed pads placed between them and the surface of the CLRT bed.

10. Which of the following is the definition of the beach chair position?
    a. Elevation of the patient’s head of bed to 90° and the foot of bed at a -90° angle
    b. Elevation of the patient’s head of bed to 75° and the foot of bed at a -75° angle
    c. Elevation of the patient’s head of bed to 70° and the foot of bed at a -75° angle
    d. Elevation of the patient’s head of bed to 90° and the foot of bed at a -70° angle

11. Evidence-based practices to facilitate early delivery of ICU mobility include best practices in which of the following areas?
    a. Management of sedatives and analgesics; promotion of sleep for ICU patients
    b. Using physical therapists to initiate progressive mobility programs; prioritization of procedures by ICU nurses
    c. Use of beds that allow for patients to be positioned with backrest, hips, and knees angled at 90° without getting out of bed; protocols that include daily passive range of motion exercises
    d. Physician-ordered “out-of-bed” activity (early mobility); staff education regarding the complications associated with immobility and bed rest

12. The study designed to evaluate staff perceptions of patient readiness for mobility found that the most common facilitator identified by the nurses who planned out-of-bed activity for their patients was which of the following?
    a. “Adequate staffing today”
    b. “Physician order”
    c. “Patient is cooperative”
    d. “New beds make getting the patient out of bed easier”

Test answers: Mark only one box for your answer to each question. You may photocopy this form.

<table>
<thead>
<tr>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
<th>12.</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ a</td>
<td>☐ a</td>
<td>☐ a</td>
<td>☐ a</td>
<td>☐ a</td>
<td>☐ a</td>
<td>☐ a</td>
<td>☐ a</td>
<td>☐ a</td>
<td>☐ a</td>
<td>☐ a</td>
<td>☐ a</td>
</tr>
<tr>
<td>☐ b</td>
<td>☐ b</td>
<td>☐ b</td>
<td>☐ b</td>
<td>☐ b</td>
<td>☐ b</td>
<td>☐ b</td>
<td>☐ b</td>
<td>☐ b</td>
<td>☐ b</td>
<td>☐ b</td>
<td>☐ b</td>
</tr>
<tr>
<td>☐ c</td>
<td>☐ c</td>
<td>☐ c</td>
<td>☐ c</td>
<td>☐ c</td>
<td>☐ c</td>
<td>☐ c</td>
<td>☐ c</td>
<td>☐ c</td>
<td>☐ c</td>
<td>☐ c</td>
<td>☐ c</td>
</tr>
<tr>
<td>☐ d</td>
<td>☐ d</td>
<td>☐ d</td>
<td>☐ d</td>
<td>☐ d</td>
<td>☐ d</td>
<td>☐ d</td>
<td>☐ d</td>
<td>☐ d</td>
<td>☐ d</td>
<td>☐ d</td>
<td>☐ d</td>
</tr>
</tbody>
</table>

Program evaluation

<table>
<thead>
<tr>
<th>Objective 1 was met</th>
<th>Objective 2 was met</th>
<th>Objective 3 was met</th>
<th>Content was relevant to my nursing practice</th>
<th>My expectations were met</th>
<th>This method of CE is effective for this content</th>
<th>The level of difficulty of this test:</th>
<th>To complete this program, it took me ____ hours/minutes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes</td>
<td>☐ No</td>
<td>☐ No</td>
<td>☐ Yes</td>
<td>☐ Yes</td>
<td>☐ Yes</td>
<td>☐ easy</td>
<td>☐ hours/minutes.</td>
</tr>
</tbody>
</table>

Name __________________________________________ Member # __________________
Address ________________________________________
City __________________________ State ___ ZIP ______
Country __________________________ Phone __________
E-mail _________________________________________
RN Lic. 1/Str ________ RN Lic. 2/Str ____________
Payment by: ☐ Visa ☐ M/C ☐ AMEX ☐ Discover ☐ Check
Card # __________ Expiration Date ______
Signature ______________________________________

The American Association of Critical-Care Nurses is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center’s Commission on Accreditation. AACN has been approved as a provider of continuing education in nursing by the State Boards of Nursing of Alabama (#ABPN0062), California (#001306), and Louisiana (#ABN121). AACN programming meets the standards for most other states requiring mandatory continuing education credit for relicensure.

Downloaded from ccn.aacnjournals.org by Fred Ferron on April 8, 2010