An individualized wheelchair assessment and proper seating can prevent nursing home residents from sliding out of their chairs, increase their comfort level and eliminate restraint use.

By Debbie Jones, P.T.
Here’s a look at some of those commonly used solutions—and why they don’t work—as well as the steps necessary for a real solution: an individualized wheelchair assessment and properly prescribed seating.

Wedge Cushions
If the wedge cushion is preventing the resident from accomplishing an attainable goal such as standing or walking, it is considered a restraint. Therefore, it is important to assess the resident’s available hip range of motion with a mat evaluation before issuing a cushion.

The wedge cushion is designed to wedge or hold the resident’s pelvis to the back of the wheelchair by decreasing the hip-to-back angle. Many residents sitting on wedge cushions do not have the available hip range of motion to comfortably sit in a wedged position. In order to compensate for this, they may assume a poor posture of increased posterior pelvic tilt, a flat unsupported lumbar spine and increased thoracic kyphosis. This position can cause back pain, poor circulation, respiratory difficulty and increased pressure resulting in gastrointestinal insufficiency.

In addition, this position makes it more difficult for residents to self-mobilize and to transfer out of their wheelchairs. Also, residents may continue to migrate out of their chairs, leading to chronic repositioning by the caregiver.

Lap Trays
Lap trays are often misused as a way to prevent nursing home residents from sliding or leaning out of the side of their wheelchairs. Lap trays were designed for upper extremity support and for activities such as writing, not for chronic trunk support or slide prevention.

If a lap tray can’t be easily removed by the user, it is also considered a restraint. A half-lap tray may be a better option to achieve optimal arm positioning or activity use and is not considered a restraint. If the tray is being used for chronic trunk support or to prevent sliding, a mat evaluation should be considered to determine the reason for the problem, and a plan implemented to solve the problem.

A simple solution to begin with would be to try positioning the person’s hips properly on a solid contoured seat. If the resident requires more support, consider a slight recline of the trunk by utilizing gravity to hold his or her trunk upright; for more severe cases, lateral trunk supports may be necessary.

Leg Rests
Elevating leg rests are sometimes used to “hold” the resident’s hips to the back of the wheelchair by raising the leg rest and using the resident’s feet to prevent sliding. This is not an appropriate use for leg rests; most older people are not capable of sitting in this position due to tight hamstring muscles. If a resident’s...
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legs are elevated when he or she does not have the hamstring length, the hamstrings will literally pull the person’s pelvis out of the chair.

Many nursing home residents have such poor hamstring length that they can’t even reach standard foot rests. As a result, it’s important to evaluate the hamstring length as it relates to sitting, before positioning the resident with front riggings.

If the foot rests are not needed for support, remove them and position the resident’s feet flat on the floor. In an institutionalized setting, removing foot rests can allow residents to use their feet to self-propel or to reposition their feet during the day. Removing foot rests can also reduce lower-extremity skin tears and reduce the risk of falls from tripping over the front riggings.

Improper Seat Height

Pelvic migration can also be caused by improper seat-to-floor height. Some residents scoot out to the edge of the wheelchair seat in order to reach the floor for foot propulsion. To improve this situation, the wheelchair can be modified by lowering the seat closer to the floor. This enables residents to maintain better posture and be more efficient with their heel strikes for foot propulsion.

A Five-Step Assessment Process

Many nursing home residents’ sliding problems and restraint use could be eliminated with an individualized mat assessment followed by a prescribed wheelchair and seating system. Here’s a look at what the process entails:

1 Information Gathering The assessment process begins with gathering information regarding the person’s history, diagnosis and current problems with his or her wheelchair. This can be a lengthy process due to the multiple medical complications common among nursing home residents, such as dementia, hearing loss and blindness. Interviewing the resident is integral to determining his or her personal wheelchair goals. Very often the resident mentions comfort as the first priority, followed by functional needs such as mobility and self-care, and finally better seated posture.

In addition, other team members can provide information about the client’s daily routine, environmental obstacles, self-care issues, outdoor excursions or other medical problems.

2 Observation In many cases, observation is an excellent resource; it is especially important when the resident is a poor historian. Observing the resident’s current body position and wheelchair equipment is helpful in determining if any corrections can be made or if the equipment must be modified or repaired. If the resident can mobilize, examine the method he or she uses to see if the equipment is hindering movement. Also observe the resident transferring from the wheelchair to a mat to see if this method can be improved with equipment.

3 Mat Evaluation During the orthopedic assessment, have the resident transfer to a mat table to assess the available joint range of motion in both supine and seated positions.

It is important to assess the pelvis, trunk, hip and knee, and ankle range of motion as they relate to wheelchair sitting posture. This evaluation can be done by one therapist, although it is helpful to have an assistant for transfers, change of mat position and for stabilizing the pelvis during the hip and knee assessment.

Also problematic is when a resident migrates to the edge of the wheelchair, pressing his or her trunk into the back upholstery, to foot propel.

This method not only promotes poor sitting posture, it also translates into poor upright standing posture. When the resident stands or walks, he or she continues to lean backwards, making transfers and other upright activities difficult. Consequently, when teaching foot propulsion to the wheelchair user, it is important to have the resident lean forward, if possible, to achieve heel strike and forward momentum.

FOOTNOTE

1 Omnibus Budget Reconciliation Act of 1987, PL 100-203; Title IV: Medicare, Medicaid and Other Health-Related Matters; Subtitle C: Nursing Home Reform; 101 Stat., Codified in Scattered Sections of 42 U.S.C.

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Fixed deformities are common among geriatric clients. These include fixed posterior pelvic tilt, thoracic kyphosis, hip joints limited to 90 degrees of flexion or less, and knee joints that are limited due to tight hamstring muscles. When a fixed deformity is found, the seating needs to accommodate, support and protect the fixed posture.

If a flexible joint is found, the seating must support and maintain the most optimal position within the resident’s tolerance.

During the orthopedic assessment, also examine the neurologic influences as they relate to the seated posture. A flaccid extremity or trunk will require support and protection. A resident who presents with trunk or lower extremity spasticity may require special positioning to reduce the spasticity in order to maximize upper extremity and head function.

Check Skin Condition Assess the resident’s skin condition for redness where there is excessive pressure on a bony prominence; for blanching where circulation is limited from excessive pressure; and for previous skin tears or flaps. Any of these conditions puts the resident at high risk for skin breakdown. Older skin is more susceptible to tearing because it is thinner and fragile.

Equipment Simulation Once the assessment is complete and the problems are identified, demonstration or borrowed equipment can be used to simulate the wheelchair seating objectives. The equipment should accommodate for the fixed deformities, support and maintain the flexible findings, and protect the resident’s skin.

Once the simulated equipment is in place, the resident should be reassessed. This is done to ensure the physical goals have been met and to see if the functional goals such as transfers, mobility and self-care have been maintained or improved with the equipment.

For example, if a resident was previously transferring independently from her or his wheelchair but now requires assistance because the seat is lower then a compromise will need to be made to maintain the previous level of function. -D.J.