



Using a Mechanical Lift at Home

Preparing family caregivers to use lifts for transfers.

This article is part of a series, *Supporting Family Caregivers: No Longer Home Alone*, published in collaboration with the AARP Public Policy Institute. Results of focus groups, conducted as part of the AARP Public Policy Institute's No Longer Home Alone video project, supported evidence that family caregivers aren't given the information they need to manage the complex care regimens of family members. This series of articles and accompanying videos aims to help nurses provide caregivers with the tools they need to manage their family member's health care at home. Nurses should read the articles first, so they understand how best to help family caregivers. Then they can refer caregivers to the informational tear sheet—*Information for Family Caregivers*—and instructional videos, encouraging them to ask questions. For additional information, see *Resources for Nurses*.

Approximately half of all family caregivers report that they perform medical and nursing tasks at home, such as managing medications, preparing specialized diets, and operating medical devices and equipment for their loved ones.¹ Family caregivers who assist with such tasks are at high risk for experiencing adverse physical, financial, and emotional effects, particularly when they have not been adequately prepared to provide this care.²⁻⁴ Unfortunately, many family caregivers receive inadequate preparation and support to perform medical and nursing tasks, with most reporting they learned to do so on their own and would have found the tasks easier if they'd had more or better instruction and help from others.¹ Nurses can play an important role in addressing these unmet needs by identifying, assessing, preparing, and supporting family caregivers who perform complex tasks.¹

One of the most complex tasks facing caregivers at home is the transfer of a care recipient. When researchers asked caregivers to name the most physically demanding task they perform, caregivers identified transfers more often than any other activity, including bathing and assisting a care recipient with toileting or navigating stairs.⁵ Transfers also may raise a person's risk of falling. Many falls occur when transferring in or out of bed, on or off the toilet, and to or from a chair or wheelchair.⁶⁻⁸ Every year, more than one in four older adults experiences a fall; it's the leading cause of accidental injury or death in those age 65 or older.⁹ Falls and fall-associated injuries are not only a danger to older adults, they are also potentially harmful to caregivers.⁵

Family caregivers are vulnerable to the physical and emotional stress of caregiving, with almost one in five reporting that their caregiving duties are associated with "high physical strain."¹⁰ Mechanical lifts, frequently used in hospitals and nursing homes for patient transfers, are available for home use by prescription and can help to alleviate the physical strain associated with transfers. Evidence indicates they also increase the safety of patients and health care workers during transfers.¹¹

MECHANICAL LIFT CONSIDERATIONS

Interpersonal, situational, and environmental barriers should be addressed before recommending a mechanical lift for use in the home setting.¹² A recommendation to use a mechanical lift at home should be based on a thorough assessment of the care recipient's needs, the caregiver's capacity, and the home environment. The algorithm for safe patient transfers developed by Douglas and colleagues may be a useful tool to inform nurse decision-making, addressing both patient and caregiver capacity.¹²

Assessment of the care recipient. The care recipient's functional and cognitive capacity are important considerations. If the person can bear weight on her or his legs, a mechanical lift may not be needed and alternative transfer devices, such as transfer boards or sit-to-stand aids, may be sufficient.¹² A person who cannot stand but has excellent upper body strength, or a person who can partially bear weight and has some upper body strength, may be able to assist with transfers sufficiently to enable the use of a transfer board by a



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A technician shows a family caregiver how to use a mechanical lift. Photo courtesy of the AARP Public Policy Institute.

caregiver.¹² The care recipient's cognitive function also needs to be considered. Using a mechanical lift may not be safe if the person is resistant or combative.¹³ Cognitive impairment can also limit a care recipient's capacity to comply with caregiver instructions, creating additional safety concerns.⁵

Assessment of the caregiver. The caregiver needs to be willing and able—physically and cognitively—to safely use the mechanical lift and take on this additional responsibility.¹² The physical size and weight of the care recipient influences the effort required by the caregiver to position the patient in the lift sling and maneuver the lift after the person is secured. Based on guidelines from the National Institute for Occupational Safety and Health (NIOSH), it's recommended that a care provider lift no more than 35 lbs. during patient-handling tasks.¹⁴ Nurses should assess the caregiver's strength and flexibility, keeping in mind the NIOSH recommendation. Using a lift may require two caregivers for safe operation, particularly if the care recipient is very heavy or if the caregiver has physical limitations. More than a quarter of caregivers of older adults are their spouses, and they

may have health conditions that preclude them from lifting even 35 lbs.⁴

Assessment of the home environment. Not all homes are appropriate for a mechanical lift. Sufficient space is needed for the lift to be maneuvered around furniture or between rooms.¹⁵ Doorways and corridors may be too small for the lift to traverse, and a lifting system may not fit in smaller spaces, like bathrooms.¹⁶ Floor surfaces must allow the lift device to be moved safely. A lift being moved across a thickly carpeted surface, for instance, can get stuck and tip over, or the carpeting may make moving the lift too difficult for the caregiver.¹⁵

GUIDANCE FOR CAREGIVERS AND CARE RECIPIENTS

Nurses should work with care recipients and caregivers to address barriers to using mechanical lifts and to assist them in making choices about equipment and ensuring safety.

Addressing potential barriers. Should the care recipient, the caregiver, or the home environment not initially meet the requirements for using a mechanical lift, the nurse can work with the family to address these barriers. If two people are needed to operate



Information for Family Caregivers

Tips for Managing Equipment

- Practice using the lift equipment to become confident with the necessary steps for safely transferring the care recipient. Get advice from the health care provider or the lift supply company.
- Be sure you have the right sling for the transfer task. Different slings should be used based on the activity, such as bathing and toileting, and the care recipient's size.
- Wipe or wash the sling based on the manufacturer's instructions, usually weekly or when soiled. Allow it to air dry, and never bleach or iron the sling.
- Wipe the lift down regularly, using a disinfecting spray, and keep it away from pets and children to reduce potential damage or injury.
- If you use a power lift, keep the battery fully charged by plugging it into a wall outlet when not in use.
- Let the power company know that a power lift is used in the home, so it can prioritize restoring service if there is a problem in your area.

Safety Tips

- Before using the lift, ensure the care recipient is ready. Never use the lift if the person is agitated or combative, as this can increase the risk of falls and injuries.
- If two people are needed to safely transfer the care recipient, ensure both caregivers are available and have been trained in the use of the lift equipment.
- While you are being trained to use the lift, have the health care provider or supplier show you how to protect yourself from injury. Good body mechanics can help you avoid back strain. Never lift, push, or pull when you are off-balance or twisted.
- Check the sling, including the straps and loops, for wear every time it's used—a replacement should be ordered from the supplier if the sling is worn or damaged.
- Prepare the home environment before starting the transfer. Clear a path, so you can safely move the lift from one place to the next. For greater stability, the lift base legs should be fully spread apart when moving the person. They can be narrowed to maneuver the lift around furniture.




- At each stage of the transfer, check that the sling is properly positioned under the care recipient and is attached correctly to the sling bar. Before lifting the person, check that she or he is comfortable.
- Lock the wheels on the bed or chair and on the lift before raising the care recipient, then unlock the wheels to move the lift. Lock the wheels again before lowering the care recipient.
- Only raise the care recipient high enough to complete the transfer. A lower position is more stable.
- All power lifts have an emergency release. If the battery fails while the care recipient is in the lift, move the person to a safe location and use the emergency release to lower the person safely.
- Regularly check the care recipient's skin for irritation or injury due to the sling. Avoid skin injury by carefully positioning the straps and sling when using the lift.

When to Contact the Health Care Provider


- If there is a change in the cognitive or physical condition of either you or the care recipient that is interfering with safe lift transfers, check with the health care provider.
- If the care recipient falls during a transfer and is injured or cannot be safely moved, call 911.

A family caregiver instructional video about mechanical lifts can be found on AARP's website:

 Operating Specialized Medical Equipment: Using a Mechanical Lift for Transfers
<http://links.lww.com/AJN/A201>

Related videos

 What to Do When Someone Falls
<http://links.lww.com/AJN/A95>

 Preparing Your Home for Safe Mobility
<http://links.lww.com/AJN/A94>

For additional information, visit AARP's Home Alone Alliance web page:
www.aarp.org/nolongeralone.

the lift, for instance, other family members or friends may be willing and available to assist the primary caregiver during lift transfers. If the care recipient is age 65 or older and has Medicaid, she or he may qualify for in-home assistance paid for by the state or county. Programs vary by state but are designed to help older adults to continue living safely in their homes. A useful resource to explore state programs can be found here: www.seniorlink.com/blog/how-to-become-a-paid-caregiver-for-a-family-member-6-steps-to-uncovering-financial-assistance-options-for-family-caregivers.

Sometimes, home modifications can help the care recipient to remain safely at home. After completing a home assessment, the nurse can advise the family on what would improve the function of the home and allow for the safer use of a mechanical lift. Some families may resist home modifications, either because they're concerned about home resale value or are seeking to maintain a "normal" appearance in the home.¹⁶ Others may lack the financial resources to complete home modifications. Powell-Cope and colleagues describe guidelines and online resources nurses can utilize when talking to care recipients and caregivers about fall prevention and financial assistance for home modifications.¹⁷

Choosing equipment. The cost of mechanical lifts—like other durable medical equipment, such as wheelchairs and commode chairs—is generally covered by Medicare, although recipients may have a copayment.¹⁸ As of January 1, people who live in an area designated by the Centers for Medicare and Medicaid Services as a "competitive bidding area" and want Medicare to help cover the cost of durable medical equipment, prosthetics, orthotics, and supplies must obtain these from "contract suppliers." Per their contract with Medicare, these suppliers are required to provide beneficiaries with the necessary item and bill Medicare before asking the patient for copayment.¹⁸ The nurse should ensure that patients covered by Medicare are directed to participating contracted suppliers to reduce out-of-pocket costs. A search tool using the patient's zip code is available here: www.medicare.gov/supplier-directory/search.html. Lifts are generally rented, rather than purchased. The supplier is responsible for repairs or replacement parts for rented equipment and will deliver the lift, set it up in the home, and take it away when no longer needed.

The choice of a manual or electric lift should be based on the needs of the care recipient and caregiver, as well as the home situation. An electric lift does not require the caregiver to use her or his strength to raise or lower the person, although the

Resources for Nurses

- ▶ Operating Specialized Medical Equipment: Using a Mechanical Lift for Transfers^a
<http://links.lww.com/AJN/A202>
- ▶ What to Do When Someone Falls^a
<http://links.lww.com/AJN/A97>
- ▶ Preparing Your Home for Safe Mobility^a
<http://links.lww.com/AJN/A96>

^a Family caregivers can access these videos, as well as additional information and resources, on AARP's Home Alone Alliance web page: www.aarp.org/nolongeralone.

caregiver will still need to maneuver the lift and position the patient over the bed or chair. An electric lift has a built-in battery that can be charged via a wall outlet when not in use. If frequent power outages are a characteristic of the home environment, a power lift may not be a good choice. Caregivers use their own strength to operate a manual lift, pumping a lever to raise up the care recipient. The lift's hydraulic system minimizes the strength required to do so.

Only raise the care recipient high enough to complete the transfer.

All mechanical lifts require a sling to support the care recipient during transfers. C- or U-shaped slings are open under the buttocks, whereas a full-body sling supports the person from head to thigh. A U-shaped sling will allow the person to use the toilet or commode while still seated in the sling and enables the caregiver to easily remove the sling while the care recipient is seated in a chair or wheelchair. This style sling works best if the care recipient can control the movement of her or his head and shoulders. Choosing the right size sling based on the patient's weight, height, and hip measurements and the manufacturer's recommendation is important to avoid the risk of the patient slipping or falling from the sling during transfers.¹³



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Ensuring safety. Caregivers need to understand the importance of maintaining and operating the lift safely to avoid injuring themselves or the care recipient. The caregiver should check that the lift is working correctly and examine the sling and straps for damage or wear before each use. If a power lift is being used, the battery should be fully charged. Caregivers should talk with care recipients about the planned transfer and check that they are ready to be moved and able to follow instructions. When raising the care recipient using the lift, the caregiver should pause when the person's weight is first transferred to the lift, checking that she or he is comfortable, safe, and correctly positioned. Then the caregiver can move the person away from the bed or chair to the new location and lower the person.¹³

Even with the use of a lift, there is a risk of caregiver injury or musculoskeletal strain.¹⁹ Caregivers need to be educated on proper ergonomics during transfers before using the lift. They should never lift, push, or pull the person or lift equipment while twisted or off-balance. Before the caregiver is given independent responsibility for transfers, all steps need to be mastered, including positioning the care recipient in the sling, connecting the sling to the lift, raising the person, moving the person while she or he is suspended in the lift, lowering the person to the new position, and removing and reapplying the sling.

The Food and Drug Administration's family-friendly safety guide about lifts can be used when educating caregivers and care recipients. See www.fda.gov/media/88149/download.

When to seek help. Caregivers must understand the potential problems associated with lift use. Correct positioning of the care recipient in the sling and proper attachment of the sling to the lift will reduce the risk of falls. If a fall occurs and an injury is apparent, or if there is no additional help available to move the person to safety, the caregiver should call 911. Some care recipients may be vulnerable to skin damage due to the rubbing of the sling against their skin. The caregiver should be taught how to avoid this and inspect skin regularly for any signs of irritation or injury. Any change in the physical or cognitive condition of the care recipient or the caregiver should trigger a discussion with the health care provider to reassess the suitability of using a lift at home. ▼

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REFERENCES

1. Reinhard SC, et al. *Home alone revisited: family caregivers providing complex care*. Washington, DC: Home Alone Alliance; AARP Public Policy Institute; John A. Hartford Foundation; 2019 Apr. <https://www.aarp.org/content/dam/aarp/ppi/2019/04/home-alone-revisited-family-caregivers-providing-complex-care.pdf>.
2. Mollica MA, et al. The role of medical/nursing skills training in caregiver confidence and burden: a CanCORS study. *Cancer* 2017;123(22):4481-7.
3. Riffin C, et al. Multifactorial examination of caregiver burden in a national sample of family and unpaid caregivers. *J Am Geriatr Soc* 2019;67(2):277-83.
4. Wolff JL, et al. A national profile of family and unpaid caregivers who assist older adults with health care activities. *JAMA Intern Med* 2016;176(3):372-9.
5. Darragh AR, et al. Musculoskeletal discomfort, physical demand, and caregiving activities in informal caregivers. *J Appl Gerontol* 2015;34(6):734-60.
6. Rapp K, et al. Epidemiology of falls in residential aged care: analysis of more than 70,000 falls from residents of Bavarian nursing homes. *J Am Med Dir Assoc* 2012;13(2):187.e1-e6.
7. Rice LA, et al. A systematic review of risk factors associated with accidental falls, outcome measures and interventions to manage fall risk in non-ambulatory adults. *Disabil Rehabil* 2015;37(19):1697-705.
8. Tsai S, et al. The brief window of time comprising a wheelchair transfer confers a significant fracture risk on elderly Americans. *Public Health* 2020;182:1-6.
9. Moreland B, et al. Trends in nonfatal falls and fall-related injuries among adults aged ≥65 Years—United States, 2012–2018. *MMWR Morb Mortal Wkly Rep* 2020;69(27):875-81.
10. AARP and the National Alliance for Caregiving (NAC). *Caregiving in the U.S. 2020*. Washington, DC; 2020 May. <https://www.aarp.org/content/dam/aarp/ppi/2020/05/full-report-caregiving-in-the-united-states.doi.10.26419-2Fppi.00103.001.pdf>.
11. Occupational Safety and Health Administration (OSHA). *Safe patient handling: busting the myths*. Washington, DC; 2011. Health and safety survey report; https://www.osha.gov/dsg/hospitals/documents/3.1_Mythbusters_508.pdf.
12. Douglas B, et al. Should my patient use a mechanical lift? Part 2: algorithm and case application. *Home Healthc Nurse* 2014;32(3):172-80.
13. U.S. Food and Drug Administration. *Patient lifts*. Silver Spring, MD; 2018 Aug 22. General hospital devices and supplies; <https://www.fda.gov/medical-devices/general-hospital-devices-and-supplies/patient-lifts>.
14. Waters TR. When is it safe to manually lift a patient? *Am J Nurs* 2007;107(8):53-8.
15. Capewell RA. Safe patient handling in home health care: a review of the literature. *International Journal of Safe Patient Handling and Mobility* 2011;1(2):25-34.
16. King EC, et al. Care challenges in the bathroom: the views of professional care providers working in clients' homes. *J Appl Gerontol* 2018;37(4):493-515.
17. Powell-Cope G, et al. Preventing falls and fall-related injuries at home. *Am J Nurs* 2018;118(1):58-61.
18. Centers for Medicare and Medicaid Services. *Medicare coverage of durable medical equipment and other devices*. Baltimore, MD; 2020 Aug. CMS Product No. 11045; <https://www.medicare.gov/Pubs/pdf/11045-medicare-coverage-of-dme.pdf>.
19. Piccenna L, et al. Guidance for community-based caregivers in assisting people with moderate to severe traumatic brain injury with transfers and manual handling: evidence and key stakeholder perspectives. *Health Soc Care Community* 2017;25(2):458-65.