

## **Patient Lifts**

Patient lifts are often used to address patient needs for safe and efficient transfers in the home between surfaces. The lift may be combined with other equipment, such as bath chairs and hospital beds.

Lifts are a challenging area of rehabilitation and patient care. Patient lifts are generally used to mechanically transfer a patient from one surface to another, including wheelchair, bed, bathtub, toilet, bath or shower chair, adaptive toilet/commode seat and the floor. Lifts are used in lieu of a manual transfer, in which one or more people directly hold and lift the patient. Patient lifts are typically used when the patient cannot assist with a transfer and is too heavy or difficult to manage for a caregiver to manually transfer.

According to the US Bureau of Labor Statistics, 1 in 2 non-ambulatory patients are dropped during a transfer and 1 in 3 caregivers are injured during a transfer.

Reasons why a mechanical lift may be required include:

1. **Patient weight:** most home health agencies have a lift limit of 60 lbs for their paid caregivers. The agency assumes that the caregiver will be injured if they repeatedly lift over this weight. If the caregiver becomes incapacitated (i.e. from a back injury) then they may be unable to provide patient care. If the caregiver receives a sudden injury (i.e. herniated disk) or experiences muscle fatigue during a transfer, the patient could be dropped, leading to patient injury.
2. **Difficulty of transfer:** some patients are very difficult to transfer without mechanical assistance. This could be due to extreme muscle weakness, pain or excessive movement. In the case of extreme muscle weakness, such as in a patient with muscular dystrophy, a manual transfer is quite difficult as a caregiver cannot adequately grasp the patient under the arms without the shoulders giving way. In the case of pain, it may be impossible to manually move a patient without causing pain and yet that same patient may tolerate a mechanical lift which provides total contact with the sling. Finally, in a patient with excessive movement due to athetosis or similar conditions, manual transfers can actually be a risk to caregivers who are easily struck by moving limbs and the transfer itself is quite challenging as the body is in motion and harder to maintain a hold on.
3. **Logistics of transfer:** sometimes the logistics of a transfer limit manual transfers. The main limiting logistics are rotation, distance and height. Sometimes the space in which a transfer must occur requires the caregiver to rotate their spine during a transfer. For example, lifting a patient out of a wheelchair and into a bathchair in the tub. If the wheelchair cannot be parked parallel to the tub, the transfer generally requires rotation. The toilet often prevents this position. Rotation during a transfer places the caregiver at much higher risk for injury. Distance is another limiting logistic. Many caregivers much transfer a patient out of the wheelchair and then carry that patient a distance to the other end of the transfer (i.e. bathroom

because the wheelchair may not fit through the bathroom door). It is far easier to transfer a patient from one surface to another than carrying the patient a distance. Finally, height is often a limiting logistic. It is far more efficient to transfer someone from one height to an equal, or slightly lower, height. For example, it is far safer for the patient and caregiver to transfer from a wheelchair to similar height tub transfer bench than to the bottom of the tub. Transfers from a floor level are particularly challenging and place the caregiver at high risk for injury.

4. Caregiver limitations: if the caregiver has temporary or permanent limitations which prevent manual transfers, then mechanical transfer may be required. This could include injury, illness or stature. If the caregiver is quite small and the patient is much larger, the caregiver simply may have inadequate strength and body mechanics to perform a transfer.

Mechanical lifts fall into 3 general categories: the EasyPivot style patient lift, Hoyer style patient lifts (including wall mounted and Apex styles) and overhead lifts.

1. EasyPivot style patient lift: this lift approaches the patient from the front. The patient is tipped forward onto a padded surface in front of their chest and legs. The feet generally bear weight on a platform.
  - a. Pros:
    - This lift provides relatively quick transfers from one surface to another.
    - It can be rolled from room to room.
    - No sling is required, so the patient does not have to sit on a sling.
  - b. Cons:
    - The front wheels must go around the sides of the wheelchair.
    - It must fit under a bed or bathtub for these transfers.
    - It is bulky and will not fit through narrow doors or around tight corners.
    - Not all patients will tolerate the pressure against the chest, thighs and feet.
    - The patient must have adequate range of motion to match the angles of movement of the lift.
    - Patients with high muscle tone may have difficulty using this lift.
    - This lift requires the patient to start in a seated position and will not work from supine or from the floor.
2. Hoyer style patient lifts: these lifts come in mechanical and electrical versions. The patient is placed in a sling and the sling is lifted upward off the transfer surface.
  - a. Pros:
    - This is the most common patient lift.
    - It is very reliable.

- One of the sling styles allows the sling to be placed while a patient is in the wheelchair so that they do not have to remain seated on the sling.
- A very few styles allow transfers from the floor.
- As the height of the sling can be changed, this lift accommodates most transfers between various height surfaces.
- Depending on the sling used, a patient can be transferred from a supine position.
- The powered version is easier for caregivers to manage.

b. Cons:

- This is also the most commonly abandoned piece of durable medical equipment.
- The front wheels must go around the sides of the wheelchair.
- It must fit under a bed or bathtub for these transfers.
- It is bulky and will not fit through narrow doors or around tight corners. The bulkiness makes this difficult to keep in a room that already contains furniture and a wheelchair.
- Not all patients will tolerate the sling, although various kinds are available.
- Most versions of this patient lift will not go to floor level.
- The lift is tippy if moved with the patient in it or if the patient has a lot of extraneous movement or strong extension. The manufacturer warns that this lift not be used to move a patient between rooms due to the tipsiness.
- This lift does not move easily over carpet.
- The mechanical version can be difficult to raise for some caregivers, as the hydraulics require moderate force.

2a. Wall mount: This lift is designed to attach to the wall, usually next to the bed for transfer between a wheelchair and bed or in the bathroom for transfer between a wheelchair and the bathtub.

a. Pros:

- The wall mount eliminates the rolling “feet” which typically need to fit under the bed or bathtub.
- As this does not roll, the floor surface is not an issue.
- This style lift does not require as much floor space to use.
- Some models allow the lift to be used in another room if a bracket is installed there.
- Some models provide transfer from the floor or the bottom of the bathtub.
- This style takes up very little floor space.

b. Cons:

- As this lift is fixed, it is not very flexible and can only transfer a person between fixed points in space.
- This style lift cannot move a patient from room to room.
- The “boom” takes up room.
- The bracket requires secure mounting for safety. The stud must be in the correct position for the bracket to allow accurate transfers or additional construction must be done to the wall.
- Depending on the model, the vertical movement may be limited and the horizontal movement may not be adequate to lower a patient in the appropriate location on the bed, in the bathtub, in the wheelchair, etc.
- The wheelchair has to fit in a specific location for transfer into the sling. The toilet is often in the way of this position.

2b. Apex Alton bathtub lift and ApexLift Briana bedside lift: This lift is designed to be placed next to the bed or bathtub and transfers the client without the “feet” of the lift having to fit under the bed or bathtub.

a. Pros:

- The lift does not require clearance under the bed or bathtub for use.
- As this is not designed to be rolled with the patient in the sling, the floor surface is not an issue.
- It can be folded and used in another location.
- These lifts are powered and so easier for the caregiver to use.

b. Cons:

- As this lift is fixed, it is not very flexible and can only transfer a person between fixed points in space.
- This style lift cannot move a patient from room to room.
- The “boom” takes up space and may be in the way of the caregiver for bathing.
- One of the fixed “feet” is designed to fit along the wall in a bathroom. Some bathrooms have insufficient wall space for this length bar.
- The other fixed “foot” is designed to fit against the side of the bathtub or next to the bed. This may get in the way of the caregiver for bathing or cares in the bed.
- The wheelchair has to fit in a specific location for transfer into the sling. The toilet is often in the way of this position.
- Due to the design of the boom arm, this lift often cannot provide transfers to and from the toilet and the bathtub unless the toilet is right next to the tub.
- The boom often lowers the patient in the wrong position in the bathtub to line up with a bath chair and/or to avoid faucets.
- These lifts are more costly than Hoyer style lifts.

### 3. Overhead lifts:

a. Portable (i.e. Voyager): This lift is composed of two or more vertical poles with connecting horizontal track which holds a sling. The sling can be moved horizontally and vertically in line with the track.

- Pros:

- One of the sling styles allows the sling to be placed while a patient is in the wheelchair so that they do not have to remain seated on the sling.
- This will allow transfers from the floor.
- As the height of the sling can be changed, this lift accommodates most transfers between various height surfaces.
- The patient can be transferred from a supine position.
- The lift itself does not have to fit under a bed or bathtub.
- The lift can be disassembled and reassembled in about an hour, making it possible to take to a new residence or even on vacation.
- The poles take up little floor space.
- 3 and 4 pole configurations are available to provide horizontal movement in more than one direction.
- The type of flooring (i.e. carpet) does not effect performance.
- A patient can be moved through small areas or tight corners where a Hoyer style lift cannot maneuver.
- The controls are powered, which takes less physical work for the caregiver.
- When placed in the bathroom, this lift can often provide transfers to and from the toilet and the bathtub.

- Cons:

- This is more costly than a Hoyer style lift.
- It can only be used within one room without being disassembled.
- The track is straight and cannot accommodate certain floor plans.

b. Permanent (i.e. Surehands): these lifts use a track that is permanently mounted to the ceiling. The lift connects to this track. The lift holds a sling or a unique set of “arms” which literally clamp the patient’s chest under the arms for support.

- Pros:

- One of the sling styles allows the sling to be placed while a patient is in the wheelchair so that they do not have to remain seated on the sling.
- The clamping arms eliminate the need for a sling, if used.

- This will allow transfers from the floor.
  - As the height of the sling or clamping mechanism can be changed, this lift accommodates most transfers between various height surfaces.
  - The patient can be transferred from a supine position, if the sling is used.
  - The lift itself does not have to fit under a bed or bathtub.
  - No floor space is used.
  - The track can be placed in any configuration, including curves, to accommodate a floor plan.
  - The type of flooring (i.e. carpet) does not effect performance.
  - A patient can be moved through small areas or tight corners where a Hoyer style lift cannot maneuver.
  - The controls are powered, which takes less physical work for the caregiver.
  - This can accommodate raised ceilings, using special hardware.
- Cons:
    - This is the most expensive option, though depends on the amount of track used and the labor to install.
    - This will not work with extremely high ceilings.
    - The tops of doorways and the door must be modified to allow the track to travel through, if this is used between rooms.

### Bathroom transfers

A specific area of concern are transfers in and out of the bathroom itself, the bathtub, the shower and the toilet. Bathrooms are generally the smallest room in the house and often have a narrower doorway than other rooms. Often a wheelchair or Hoyer style patient lift will not fit through the doorway and/or cannot maneuver within the bathroom. This may require a caregiver to carry the patient into the bathroom from the bed or wheelchair.

Once in the bathroom, the patient must be transferred in and out of a bathtub or shower, often while wet and undressed.

Even though not a specifically a lift system, an important piece of our discussion may be the sliding bath transfer systems (i.e. Duraglide). These can eliminate the need for a lift, at least for the bathroom. The client can be placed into the rolling chair in another room, rolled into the bathroom (these chairs are designed to clear those narrow bathroom doors), rolled over the toilet or attached to the bath transfer portion to move over the bathtub.

### Conclusion

In conclusion, although Hoyer style patient lifts are the most commonly recommended patient lift, these are also the most commonly abandoned piece of durable

medical equipment. This indicates that it is not meeting people's needs. The EasyPivot lift is not appropriate for all patients. The portable ceiling lifts eliminate some of the limitations of the Hoyer style lift, but funding is often limited. The permanent mount ceiling lifts eliminate even the limitations of the portable ceiling lifts, but are typically not a covered benefit.

Patients and their caregivers often require mechanical assistance with transfers. The solution is often a combination of an appropriate lift and other durable medical equipment.