

Transfer Assist Devices for the Safer Handling of Patients



A Guide for Selection and Safe Use

About this guide

Health care professionals can use this guide as a resource for evaluating and selecting appropriate transfer assist devices for use in their care environment. Decisions to use transfer assist devices should be based on an assessment of the risks of MSI to

caregivers and an evaluation of the suitability of particular products for given patient handling activities.

The information in this guide was developed as part of a project promoting the use of transfer assist devices for the prevention of MSI to British Columbia caregivers. The project involved researching commercially available transfer assist devices and making product samples available to health care employers for pre-purchase evaluation in their facilities.

What are *transfer assist devices*?

Transfer assist devices are non-mechanical devices, such as slide sheets and transfer boards, that can reduce the forces or awkward postures associated with some patient handling activities. When properly selected and used, these devices may help reduce the risk of musculoskeletal injury (MSI) to caregivers.

Product suppliers generally provide videos, printed material, brochures, posters, and training courses for further guidance on the use of specific products. Be aware that some suppliers recommend the use of unsafe techniques (for example, using devices to lift patients). Caregiver risk must be assessed before adopting a new device or technique.

Disclaimer

The Workers' Compensation Board (WCB) of British Columbia does not endorse or prescribe the use of any specific products or suppliers. The WCB does, however, recognize the use of engineering controls that effectively minimize the risk of MSI to workers. Attempts have been made to include an assortment of products from a variety of suppliers and manufacturers. Many other products and suppliers exist, and the range of commercially available transfer assist devices continues to change and evolve. Employers are encouraged to evaluate transfer assist devices to ensure their suitability and effectiveness in reducing the risk of MSI to workers.

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Why use transfer assist devices?

Transfer assist devices are primarily used to:

- Facilitate independence
- Provide a safer means of moving or transferring a patient from one place to another
- Maintain the dignity of the patient being moved or transferred
- Eliminate or minimize risk factors that may lead to caregiver or patient injury

Where possible, patients should be encouraged to move themselves. Some patients, particularly those with good balance and upper body strength, may be able to maintain or regain independence by using certain transfer assist devices.

When caregiver assistance is required for moving partially or totally dependent patients, transfer assist devices may allow caregivers to reduce the amount of force (exertion) and improve their posture during the patient handling activity. The use of transfer assist devices may be an important part of minimizing the risk of MSI to workers.

Transfer assist devices do not reduce the weight of a patient and should not be used to lift, carry, or support the whole or a large part of a patient's body weight. A safer means of moving the patient may be required (for example, a mechanical lift).

What does the literature say about transfer assist devices?

Research literature says the following about transfer assist devices:

- The use of friction-reducing transfer assist devices **significantly reduces the forces** required for transferring patients between adjacent surfaces compared with using a draw sheet or soaker pad.
- The various commercially available **products vary in their effectiveness** at reducing forces and awkward postures.
- The use of transfer assist devices in **combination requires less force** than using only one device.
- Patients report a **greater feeling of comfort and security** before, during, and after transfers.
- Caregivers report **lower perceived exertion** to shoulders, upper back, low back, and body when using friction-reducing devices to handle patients.

Infection control

Health care facilities that already have an effective infection control program should have no difficulty cleaning and disinfecting properly designed products. Inventory sizes of such devices will vary with the type of health care facility and the way in which the devices are used.

The use of transfer assist devices must be considered as a possible source of infection or contamination of workers' hands; consequently, these devices should be suitably designed and made of appropriate materials for routine cleaning and disinfection. The infection control program at a health care facility will determine whether the design, material, and use of each device is suitable.

Transfer assist devices are classified as “non-critical items,” which are items that come into contact with clothing or intact skin only, not mucous membranes. Intact skin is an effective barrier to infection. Health care facility policy will determine the frequency of cleaning and disinfection of non-critical patient and resident care surfaces. The minimum disinfection frequency should be when the devices are visibly soiled and on a regular basis as determined by the infection control program, which may be after each use, daily, or weekly.

Risk assessment

Transfer assist devices need to be considered as just one of many options for controlling the risk of MSI to workers. The decision to use these devices should be based on an assessment of the risks to both patients and caregivers.

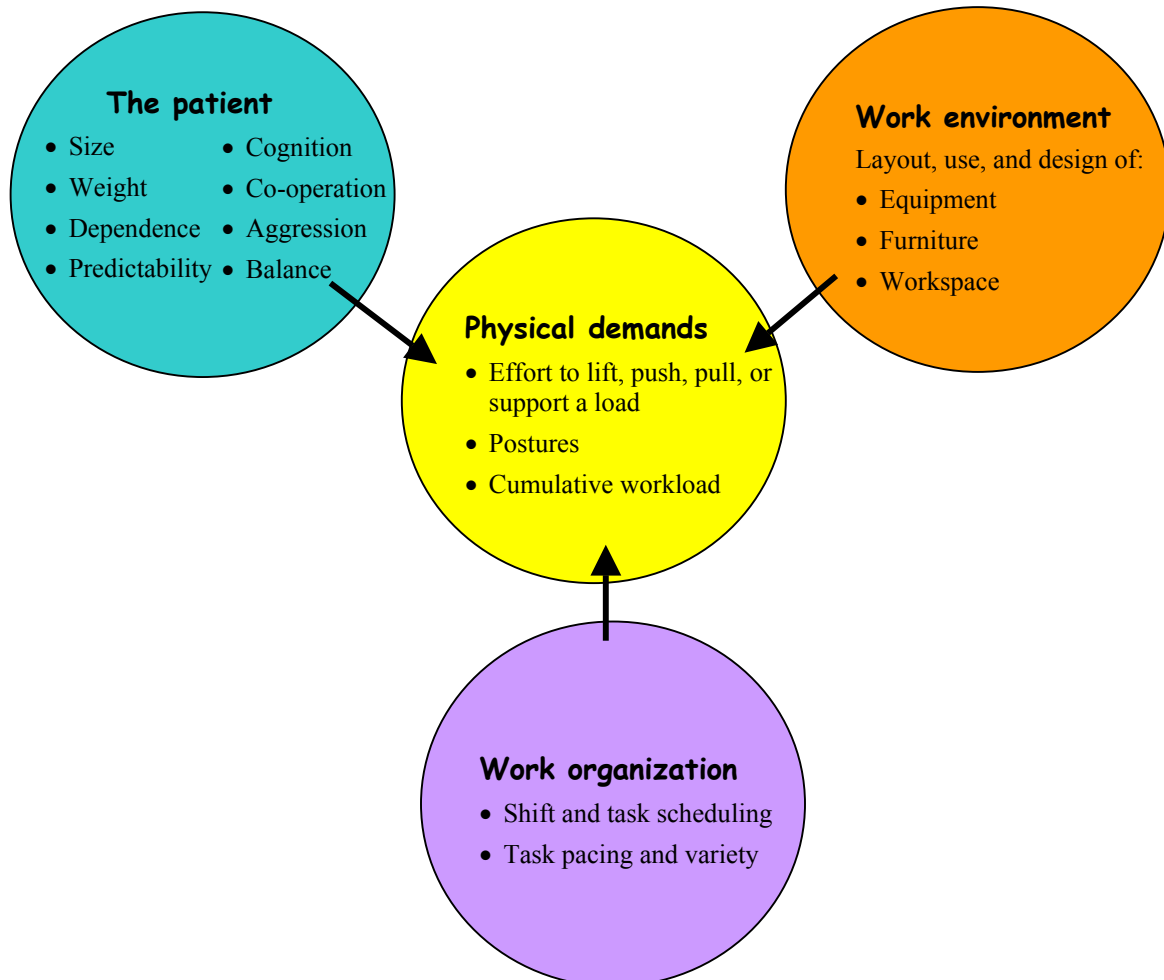
Most patient handling activities may pose at least some risk of MSI to workers. A reasonable approach is to anticipate or identify the tasks (for example, repositioning up in bed) and locations (for example, units or wards) within a facility that pose the greatest risk of MSI to workers. This can be achieved by reviewing and analyzing information such as injury statistics and first aid reports. Discomfort surveys, workplace inspections, staff meetings, and worker consultation may provide additional information. The desirable outcome is a prioritized list (a risk profile) of the patient handling and care tasks that will be assessed for risk control.

Assessing MSI risks involves examining the hazards (MSI risk factors) that workers are exposed to and the likelihood that these hazards will cause injury to workers.

The hallmark of an effective risk assessment is that it provides the information needed to determine effective risk control measures. A risk assessment of a patient, task, or work environment should clarify the answers to the following questions:

- Does the patient, task, or work environment place workers at risk?
- How often are workers exposed to the risk?
- How significant is the injury likely to be?
- Does the risk contribute to cumulative strain every time a task is carried out?
- How can the risk be reduced?

Factors to consider when assessing patient handling tasks



In general, decisions to control patient handling risks will result in these three types of action:

1. Clearly identify and communicate to staff any high-risk patient handling procedures that should **not** occur.
2. Select the lowest-risk procedures possible and train staff. This means selecting procedures for which the magnitude, duration, and frequency of identified risk factors are minimized.
3. Change the equipment, work organization, and, if necessary, work environment.

General points for best practices when using transfer assist devices

Consider the following points when developing safe work practices for the use of transfer assist devices:

- Encourage patients who can safely do so to move themselves.
- Tell the patient what you intend to do before you do it.
- Ensure that the brakes of the bed, stretcher, or wheelchair are on before beginning any movement.
- Inspect each device before use. Remove damaged equipment from service.
- Set the bed at an appropriate height, based on the height of individual caregivers and the height of the other surface. Where necessary for patient safety, lower the side rail.
- Minimize gaps between surfaces when performing lateral transfers (for example, bed to stretcher) and bridge gaps with transfer boards, where necessary.
- Avoid differences in height between two surfaces when performing a transfer. A gentle decline, however, may be preferable for some seated or supine transfers using a transfer board.
- When moving a patient up in bed, tilt the bed to a “head down” position (Trendelenberg) to allow gravity to assist, unless contraindicated.
- Use moving and handling equipment according to your organization’s policies and procedures.
- Ensure that friction-reducing devices are large enough to be placed under the main points of contact. For supine patients, this includes the pelvis, shoulders, and, if possible, the feet.
- Do not leave friction-reducing devices under the patient unless the manufacturer specifically recommends it. Leaving a friction-reducing device under an unsupervised patient may put the patient at risk of falling out of bed.

Slide sheets



Set of two slide sheets

Slide sheets are constructed of low-friction fabrics or gel-filled plastics that enable a patient to slide over a surface instead of being dragged or lifted. Slide sheets come in various widths and lengths and may be used in pairs, singly, or folded. They may also be placed under draw sheets or incontinence pads. Some models have hand loops sewn into the fabric for caregivers to grasp. Longer slide sheets cover more of the contact area between the bed and the patient's body, but they also tend to be more difficult to remove.

Uses

Slide sheets can be used to:

- Facilitate independent bed mobility
- Move patients up in bed
- Move patients from the side of their beds to the centre
- Turn patients onto their side in bed
- Laterally transfer patients from bed to a stretcher
- Move patients who have fallen into tight or awkward spaces to a place where a mechanical lift can be used



Gel-filled slide sheet

Advantages

Slide sheets have the following advantages:

- Slide sheets are simple and versatile.
- Sliding patients may avoid the need to manually lift them.
- Slide sheets may be tucked partway under seated patients or completely under lying patients who have been rolled onto their sides.
- Handles may provide the caregiver with a firm grip.
- Caregivers can use straps or transfer belts to reduce their need to reach the handles. This is especially effective for lateral transfers.
- Some models can be left under the patient.
- Slide sheets reduce the forces required to move patients.
- Slide sheets may reduce awkward postures if used correctly.
- Slide sheets are generally more comfortable than transfer boards.

Disadvantages

Slide sheets have the following disadvantages:

- Sliding patients who have pressure sores or other sources of sensitivity may cause them pain.
- Heavy patients may still require excessive force to move. A mechanical lift may be more appropriate.
- If the same slide sheet is used for more than one person, infection-control precautions must be taken.
- Slide sheets may not be suitable for some transfers because they do not bridge gaps. Where gaps need to be bridged, caregivers can use slide sheets in conjunction with transfer boards.
- A slide may actually turn into a lift if caregivers do not use proper techniques.
- The move or transfer may still require two caregivers.
- The use of slide sheets may involve additional effort and handling tasks to position and remove them.

Roller sheets

Roller sheets are tubular sliding sheets constructed of specialized fabrics with low-friction inner surfaces that glide over each other. They look somewhat like a cross-section of a sleeping bag that is open at both ends. Roller sheets may be flat or padded and can be placed under draw sheets or incontinence pads.



Flat roller sheets

Roller sheets come in several sizes and lengths. Short roller sheets are primarily used for pivoting and repositioning tasks such as sitting a patient up on the side of a bed or repositioning a patient up in bed. Long lateral roller sheets are intended for transferring supine patients from one surface to another such as from bed to stretcher.



Padded roller sheet

Some roller sheets incorporate handles into their design. Other roller sheets, referred to as “one-way slides,” slide in one direction only. This facilitates moving a patient up in bed or back in a wheelchair, while preventing the patient from sliding down the bed or forward in the wheelchair. One-way slides reduce the need to manually reposition a patient in a chair or seat.

Roller sheets can be used independently or with partial help. When used independently, a patient with good sitting balance and sufficient arm or leg strength may be able to slide from one surface to another or up and down in bed. The caregiver may need to place the roller sheet.

When providing partial help, it is important to apply forces horizontally only, resulting in a slide, not a lift. The chosen technique should, as much as possible, eliminate the need for the caregiver to twist, reach, or stoop.

Uses

Roller sheets can be used to:

- Move sitting or supine patients up in bed
- Move patients from the side of their beds to the centre
- Move patients who have fallen into tight or awkward spaces to a place where a mechanical lift can be used
- Reposition patients in bed
- Pivot patients in bed
- Facilitate independent positioning in bed
- Aid exercise
- Transfer patients from one surface to another such as from a stretcher to an OR table (when used in conjunction with other devices such as transfer boards)

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- Roller sheets can be tucked partway under seated patients or completely under lying patients who have been rolled onto their sides.
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Roller sheets have the following disadvantages:

- Sliding patients who have pressure sores or other sources of sensitivity may cause them pain.
- Heavy patients may still require excessive force to move. A mechanical lift may be more appropriate.
- If the same roller sheet is used for more than one person, infection-control precautions must be taken.
- Roller sheets may not be suitable for some transfers because they do not bridge gaps. Where gaps need to be bridged, caregivers can use roller sheets in conjunction with transfer boards.
- The use of roller sheets may involve additional effort and handling tasks to position and remove them.

Transfer belts

Transfer belts are worn by patients to provide caregivers with a safe, secure grip:

- During assisted walking
- During transfers
- While helping patients with sliding transfers



Padded transfer belt

Transfer belts come in a variety of sizes and shapes, fasten with a buckle, a clasp, or Velcro, and usually have handles to increase the caregiver's hand-placement options.

Note: Although Velcro fastening is quicker and easier than using buckles or clasps, the hooks may get caught on the patient's clothing and may deteriorate rapidly if not carefully laundered.

Handles may be positioned vertically, horizontally, diagonally, or in any combination of the three. Padded versions may be more comfortable for some patients, but may decrease the caregiver's feeling of control if not secured properly.

Caregivers often wear the belt around their own waist to ensure it is readily available. However, it is generally considered poor practice to use a belt to allow the patient to grip the caregiver. Many caregiver injuries have occurred when a falling, frightened, or suddenly combative patient has been allowed to grasp the caregiver's transfer belt. Wearing the belt inside out may prevent the handles from catching on objects such as doorknobs.

Uses

Transfer belts can be used:

- During assisted walking
- During pivot transfers
- To guide patients along transfer boards during seated transfers



Transfer belts may be used for assisted walking.

Until it is determined that a patient can independently ambulate safely, use other ambulation aids. Mechanical walking assist devices (for example, rolling floor types or harnesses with overhead-ceiling lift units) are especially useful for rehabilitation. Another alternative is to use a walker or cane with standby assistance and verbal cueing from the caregiver.

Transfer belts do not reduce the patient's weight in any way and must not be used for lifting patients. Transfer belts only allow the use of a better technique when guiding weight-bearing patients who require minimal assistance.



Do not use transfer belts to lift patients.

Advantages

Transfer belts have the following advantages:

- Transfer belts provide a secure grip.
- Caregivers do not need to grip the patient's clothing or limbs.
- Caregivers can guide falling patients to the floor.
- **Note:** Do not use transfer belts to catch or support a falling patient's weight.
- Transfer belts bring the patient (load) closer to the caregiver.
- Caregivers can work in a more upright posture.

Disadvantages

Transfer belts have the following disadvantages:

- Belts that are too wide may affect the patient's ability to lean forward.
- Narrow, unpadded belts may dig into the patient's waist.
- Using a belt to lift all or most of a patient's body weight is not an acceptable practice.

- Belts without handles encourage caregivers to grip the belt with a clenched fist. This generally causes the knuckles to press into the patient's side, resulting in discomfort.
- Caregivers should not place their arms through handles, as pictured at right. Caregivers would rarely have time to free their arms if the patient reacted or fell suddenly.
- Caregivers are placed at significant risk when patients are allowed to hold around the caregiver's neck. Caregivers can avoid this situation by placing their arms outside those of the patient when providing assistance.



Never place your arm through transfer belt handles.

Slide/transfer boards

Slide/transfer boards are used to reduce friction and bridge gaps when sliding patients between two horizontal surfaces such as from a stretcher to an OR table. Slide/transfer boards are made of wood or plastic and can be used in conjunction with roller sheets or slide sheets. Some boards have rollers while others have fabric or vinyl coverings designed to further reduce friction.

Caregivers either roll or slide patients onto the board. Some procedures involve pushing or pulling the board to accomplish the transfer. Others involve pushing the patient or pulling a draw sheet across the transfer board. Large patients and patients with sensitive skin may find them uncomfortable.



Rolling slide/transfer board



Smaller slide/transfer boards with moveable sliding sections

Smaller slide/transfer boards

Smaller slide/transfer boards are designed for seated lateral transfers. They are often tapered at each end and can be used to bridge gaps such as when transferring between a bed and a wheelchair or commode. Patients with good sitting balance should be encouraged to use their arms and legs to move themselves. Boards are often made of low-friction materials or with moveable sliding sections.

Advantages

Slide/transfer boards have the following advantages:

- Caregivers do not need to lift manually.
- Some patients may be able to transfer themselves, avoiding the need for caregivers to perform certain transfers.
- When used appropriately, slide/transfer boards allow for less horizontal forces during caregiver-assisted transfers.
- Boards are available in a range of widths, lengths, and curves.
- Curved transfer boards make it possible to transfer around fixed armrests.

Disadvantages

Slide/transfer boards have the following disadvantages:

- Inappropriate use (for example, with patients who cannot offer sufficient assistance) may put caregivers at a high risk of MSI.
- Some slide/transfer boards do not sufficiently reduce friction.
- Two equal-height surfaces are needed for easy transfer.
- For seated transfers, patients must have some degree of sitting balance.
- Many boards have no handles for positioning or carrying the board.
- Caregivers must be careful not to twist during the transfer.
- Caregivers may still apply horizontal forces in awkward postures.
- Fingers may be trapped under board edges.

Getting in and out of vehicles

Consider these general guidelines for transfers in and out of vehicles:

- Transfers involving two-door vehicles are usually easier because the doors tend to open further than similar four-door models.
- Ideally, the car seat and wheelchair seat will be the same height and the armrest and footrest nearest the car will be removed.
- Wheelchair brakes must be applied.
- Leaning forward will often help the patient to clear the door frame when sliding out of the vehicle.
- The steering wheel or open car door may be used for support.
- If a slide sheet is used on top of a transfer board, ensure that the patient does not slide forward in an uncontrolled manner.

Turning discs

Turning discs come in various sizes and may be flexible or solid. They consist of two circular discs that rotate against each other. The inner surfaces are made of low-friction material, while the outer surfaces are typically made of high-friction material. Turning discs are often used with transfer boards or transfer belts.



Flexible turning discs

Flexible turning discs conform to the contours of a surface and are most useful for pivoting seated patients, for example, when transferring patients into vehicles. The inner surfaces are typically low-friction plastic or another synthetic material. The top is often made of quilted or padded fabric for comfort.

Solid turning discs are more durable and are used for pivoting patients who are weight bearing and can stand. Solid turning discs are usually made of wood or moulded plastic and may contain bearings. Patients who are weight bearing and can balance standing may be guided to a standing position and swiveled around without having to adjust their feet. Patients must have the strength to stand or this procedure will require the caregiver to exert excessive force in an awkward posture.



Solid turning disc

Use transfer belts with handles to pivot patients standing on flexible or solid turning discs. Use turning discs only for patients who can rise to their feet independently. Patients who are unable to independently rise to a standing position require a sit-stand lift.

Advantages

Turning discs have the following advantages:

- The patient's feet do not need to be turned or adjusted after the transfer.
- Some discs have a small handle that makes positioning and storing easier.
- Turning discs reduce the forces required to rotate or pivot patients.

Disadvantages

Turning discs have the following disadvantages:

- The larger the disc, the greater the risk that the disc will be in the way of the caregiver's feet.
- Some solid discs have ball bearings in their swivel mechanism. Choose and use these discs with care — they can be difficult to control, especially with light patients.
- Do not use turning discs to transfer unpredictable patients or dependent, non-weight bearing patients.
- The greater the profile (thickness) of a solid disc, the greater the tripping hazard it presents to the patient and caregiver.
- A patient's support base is narrowed while standing on a turning disc.
- Some patients may become disoriented when they are turned on the disc.
- Heavy patients may still require excessive force to move them.

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