

# Plus-Size: Transfers and safe patient handling

Staying mobile is one of the most crucial things, not only for plus-size people but for everyone. If the individual can move by themselves, it is beneficial to do so as much and as often as possible, even when it gets harder owing to the increased weight and decreased capability. When a body is immobile, it will deteriorate after a period. Frequent mobilisation is critical to maintain or regain health.



*Knowledge bank*



Yes, you can.®

## If an individual isn't mobile, there are advantages in supporting them to sit upright compared to laying down (Dean, 1999):

### Cardiopulmonary

- Bigger lung capacity and larger volume
- Better flow and lung expansion
- Increased mobilisation of secretions
- Less fatiguing due to thinness of breath

### Cardiovascular

- Increase in total blood volume
- The heart doesn't need to work as hard
- Less pressure on the veins
- Increased blood supply to the lower limbs
- Decrease of the pulmonary vascular congestion

### Musculoskeletal

- Decrease in muscle atrophy
- Less joint contractures
- Lowered risk for osteoporosis

### Skin

- Increased peripheral circulation
- Decreased risk for pressure ulcer formation for most anatomical locations

### Gastrointestinal

- Increased gut motility
- Better absorption of nutrients
- Decreased risk of malnutrition

### Urinary

- Less risk for stagnation of urine
- Decrease in risk of infection
- Better gravitational drainage of urine
- Decrease in risk of renal calculus formation

## Medical conditions to consider during transfers

Some of the most common conditions of plus-size people when transferring/handling them are as follows:

- **Severe pain and discomfort:** Pain and inability to assist with transfer, therefore increased dependency level. Moving the individual can increase pain and impede their ability to assist safely with the transfer.
- **Hip and knee replacements/joint instability/unstable spine/fractures/contractures/spasms:** Pain, fall risk, increased injury, extending injury to the already affected joint, ligaments or bone. Weight-bearing transfers for plus-size people with these medical conditions put them at a risk of a fall or could extend the injury to the already affected joint, ligaments or bone. If moving them in a lifting device, the sling position and posture required could put pressure on the affected body parts, increasing pain and strain. Choose the least stressful way to transfer the individual, taking into consideration the body part or area that is affected.
- **Wounds/diaphoresis/poor skin integrity:** Interference in healing granulation or increased skin breakdown through shearing, rubbing, abrading and pressure from equipment (i.e. slings) during transfers.
- **Postural hypotension/paralysis/paresis:** Fall risk, slip through sling, unsupported limb may be bumped, struck or caught. Individuals are at risk of falls and slips during transfers, so full support (supine) slings would be required to avoid falls and slippage.
- **Unstable spine/severe osteoporosis:** Pain and injury could occur if the individual is not correctly supported during transfers.
- **Splint traction/fractures:** If they are not properly supported, it could result in misalignment and extension of injury, impedence of healing and pain.
- **Respiratory/cardiac compromised:** Shoulder compression and respiratory distress. Transferring a person in a flat lying position or in a sling that compresses the shoulders and chest can cause respiratory distress. Angina or chest pain from coronary insufficiency can result if a person is required to move themselves more than they are physically capable of.

## Transfer equipment

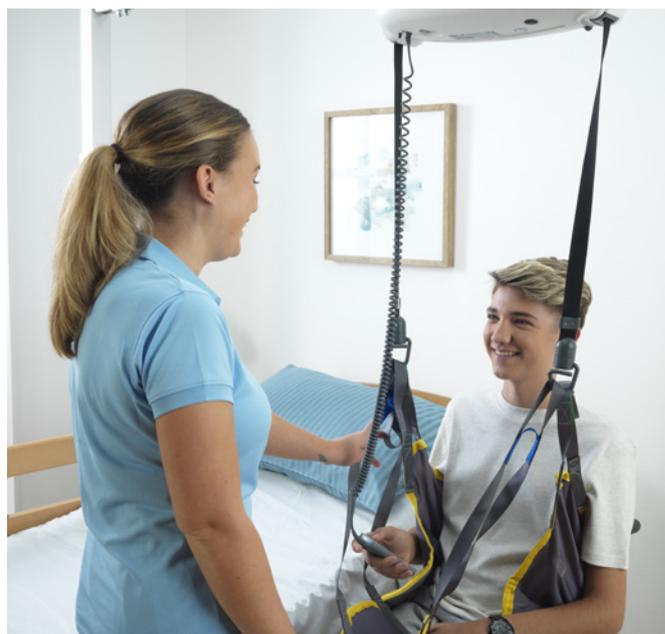
**When moving independently becomes difficult, medical aids can help, such as a walker, a hoist, an electric profiling bed or other aids.** The advantage of an aid is that it gives independency to the person for as long as possible or can help keep the number of caregivers to a minimum. When working with medical aids, it is very important to read the manual first and follow the instructions from the manufacturer.

There is a common misconception that plus-size people can be accommodated by simply asking for equipment designed for a “large size” with most of the attention focusing on a bed and lifter. There are, however, many aspects related to equipment that need to be considered. Choosing the right medical aid to help with transfers is not just a matter of having the correct measurement and weight capacity, for example, the different body shapes will require a different sling solution. The slings available for plus-size people are designed to accommodate the different needs (universal, bathing, toileting) and physical capabilities of the individual.

When the person needs to be transferred with the aid of a hoist, make sure the hoist and sling are suitable for the person’s body shape and weight. Look at the safe working load of the hoist and sling and think about a very wide leg opening for stability. A risk assessment must consider the functionality and compatibility of the sling and hoist, with other equipment being used as part of the active or passive transfer.

## Transferring with a hoist and sling

**When using a hoist and sling, it is important to do a risk assessment and make sure the equipment meets the functional and comfortable needs of the task in hand and the individual.** The choice should also look for compatibility with other equipment that is used. A key factor in the assessment is the physical and cognitive ability of the individual to follow instructions to assist in the transfer. The risk assessment will also determine the number of caregivers, the type of equipment and the techniques for each task. To transfer the individual, specific guidelines must be adhered to and training is a must. The training should include the use of the equipment, which is integrated into the policies and procedures of the individual facility and is also available for home environments.



## Tips when transferring a person

1. Check the weight capacity of all equipment
2. Clear the environment where the transfer needs to take place: remove chairs, tables or other equipment to create a safe environment
3. Adjust the equipment to the right height: generally, at waist height of the caregiver
4. The weight of the person will determine how many people need to assist the transfer
5. Depending on the choice of equipment, the individual can be transferred with a hoist from supine or in a seated position
6. Use the natural curvatures of the individual to insert the sling
7. Shear and friction should be kept to a minimum when applying a sling

## Other hoist options

**If there is the possibility to install/use an overhead tracking hoist, there are fewer environmental risks as there will be more space and fewer obstructions.**

Also, the health risks for the caregiver will be reduced as the ceiling hoist is easier to manoeuvre as it can be integrated in the structure of the building or free-standing with a pillar mounted system. The installation of the overhead hoist, however, has financial consequences. A mobile hoist is another option, however, it is not designed to move an individual from one point to another but rather to raise them up and down.

**Some of the safety precautions to consider when using a mobile hoist are:**

- The safe working load of the hoist
- The safe working load of the sling
- The type of sling needs to fulfill the needs determined in the assessment: seated position, supine, head support etc.
- The type of transfer, for example, bed to toilet
- The type of spreader bar needs to ensure that there is a safe distance from the bar itself and the individual's face during transfer
- The width of the spreader bar needs to fit the sling
- Is there enough space to move the hoist: height of the hoist and the turning circle, other obstructions or equipment in the room?
- Keep the transport distance as small as possible
- In a home environment when using a standard bed, the bed may need to be lifted to be able to allow clearance for the hoist legs
- Leave the brakes of the hoist off during transfer to allow the hoist to take the weight of the individual without it tipping over

## Independent sitting transfers

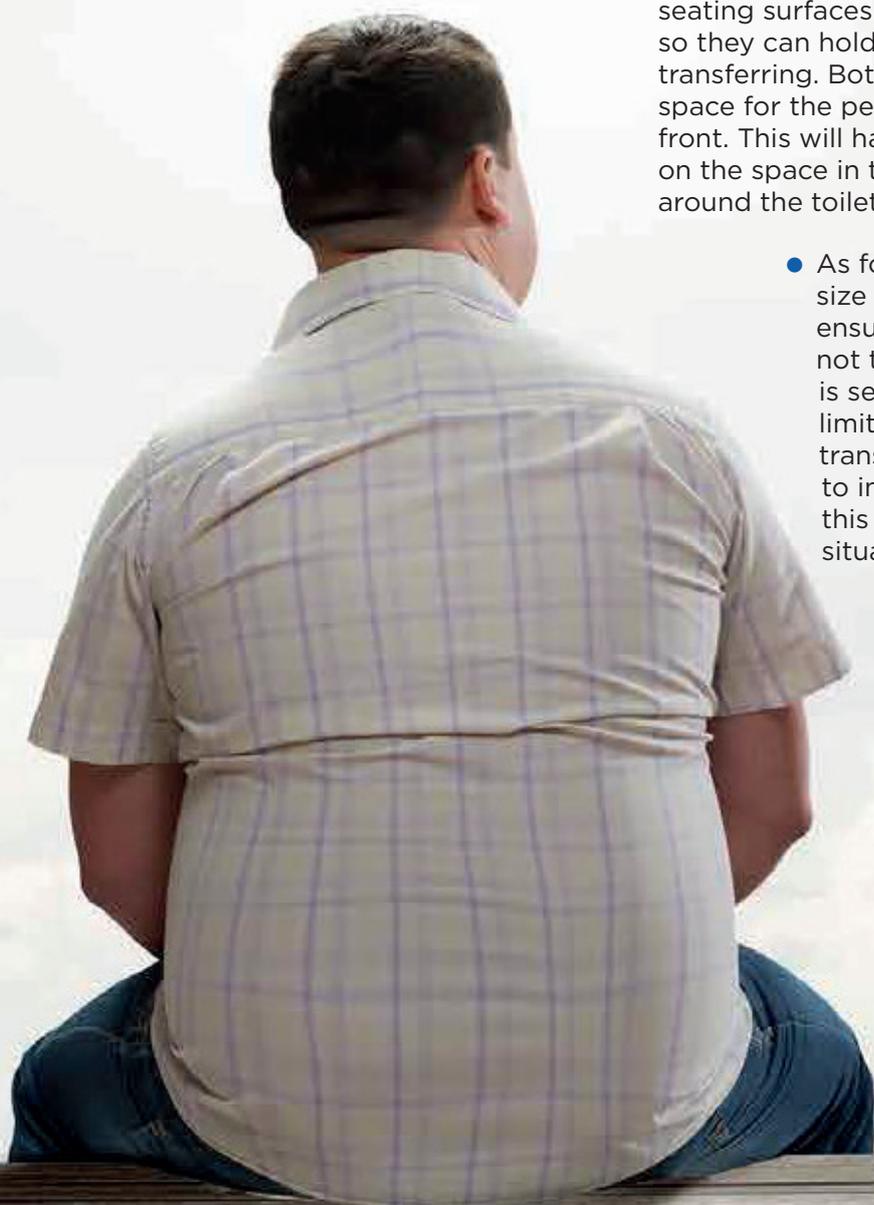
For somebody to move independently from one seated position to another (i.e. wheelchair to toilet seat) requires the following skills (Alexander, 2005; Nelson et al., 2009):

- **Postural balance to sit**
- **Hip and knee flexion beyond 90°**
- **Lean forward beyond the centre of gravity**
- **Extend the body against the gravitational forces**

These skills may be difficult for a plus-size person so their postural balance needs to be assessed before transferring to ensure they have sufficient balance. The use of a transfer board can help with this transfer; however, it is important that the person feels safe and the movement is comfortable.

### Other points to consider are:

- The position of the two seating surfaces. When positioned side by side, the wheelchair armrests, for example, will need to be removed to do the transfer and the weight will need to be shifted forward to lift and slide to the side. This can give an unsafe feeling as there is nothing to hold on to in the front, therefore, some people prefer both seating surfaces facing towards each other, so they can hold on to the other seat whilst transferring. Both positions require enough space for the person to shift their weight to the front. This will have implications, for example, on the space in the bathroom or the room around the toilet.
  - As for every transfer with a plus-size person, extra care is needed to ensure the pressure on the knees is not too high, the blood circulation is secure and damage to the skin is limited during transfer. This type of transfer may also require caregivers to intervene if needed, however, this depends on the individual situation.



## Independent sitting transfers

**The suitability of a bed with electrical functions will depend on the capabilities of the individual: sitting balance, upper body strength, head and neck control and the ability to flex the body when going from sit to lay.** Choosing the correct bed is important and the bed dimensions itself should also accommodate repositioning. The mattress used on the bed will influence the movement of the individual or their ability to move. The backrest can help in certain cases to lift or hold the weight of the individual during a transfer. The bed height, if the transfer is done independently, should be on a height that the persons feet are on the floor when seated. To stimulate the independence of the individual, a leg riser can be helpful. The ability to get in and out of the bed independently depends on the body shape, weight distribution and the capabilities of the individual. Some people use their lower body weight as a pendulum to swing to a seated position from a lying position. It is important to assess the individual situation and, above all, make sure the environment is safe. This means that the brakes of the bed must be working and the individual must be able to put their feet flat on the ground when sitting on the edge of the bed. Also, the distance to the chair should be minimal.



**Changes in blood pressure and respiratory function that should be considered are as follows (Checky, 2005):**

- **Plus-size people often have chronic back pain from increased load pressure and foot pain from flattening feet**
- **Potential transient paraesthesia (brief electric shocks - numb feeling) of the arms can result from impaired circulation in the axillae (area of the armpits)**
- **Stress fractures may be present, as well as degenerative joint disease, which potentially makes the transfer difficult and painful**
- **The gait is typically wide based for balance, with a rolling motion**
- **The arms are often held out from the body due to a wide shape, with the back arched to counterbalance the weight of the abdomen**
- **Stress incontinence is a potential problem due to increased intra-abdominal pressure**
  - **transferring in and out of bed can exacerbate this situation**
- **Respiratory systems may be compromised**

## References

- Beitz, J. M. Providing Quality Skin and Wound Care for the Bariatric Patient: An Overview of Clinical Challenges. *Ostomy Wound Management*, 2014.
- Blickenstorfer, C. H. Bariatric Ergonomics – Transfer and Mobility of the Obese Patient. NAAFA, 2002.
- Brizell, J., Stuart, J., McVeigh, J. & Irvine, F. Evaluation of the Bariatric Care Pathway: Prospective Patients. NHS Wirral, 2012.
- Burlis, T. L. Physical Therapy for the Client Pre/ Post-Bariatric Surgery. Washington University Program in Physical Therapy, 2010.
- Camden, S. G. What is Bariatrics? *Ostomy Wound Management*, 2008.
- Clark, F., Reingold, F. S. & Salles-Jordan, K. Obesity and Occupational Therapy (Position Paper). *The American Journal of Occupational Therapy*, 2017.
- Camden, G. Does skin care for the obese patient require a different approach? Roundtable discussion. *Bariatric Nurse Surgery Patient Care*, 2006.
- Cohen, M. H., et al. Patient handling and movement assessments: A white paper. *Facilities Guidelines Institute*, 2010.
- Costanho, R. & Oliveira, G. B. Major Dermatological Changes in Obese Patients. *ABCD Arq Bras Cir Dig*, 2011.
- Cowdell, F. & Radley, K. Skin hygiene for patients with bariatric needs. *Nursing Practice Review*, 2014.
- Cowley, S. & Leggett, S. Manual handling risks associated with the care, treatment and transport of bariatric (severely obese) patients and clients in Australia. *Australian Safety & Compensation Council*, 2009.
- Dionne, M. Evaluation of the Bariatric Patient (Key Considerations). *Bariatric Inservice*, 2010.
- Dyck, S., Rodrigue, A. & Lim, P. L. Special Considerations for Care of Obese Patients. *Victoria General Hospital*, 2008.
- Froehlich-Grobe, K. & Lollar, D. Obesity and Disability: Time to Act. *American Journal of Preventive Medicine*, 2011.
- Gallagher, S. Obesity and the Aging Adult: ideas for promoting patient safety and preventing caregiver injury. *Clinics in Geriatric Medicine*, 2005.
- Gallagher, S. Obesity: An Emerging Concern for Patients and Nurses. *The Online Journal of Issues in Nursing*, 2009.
- Gallagher, S. Panniculectomy: Implications for Care. *Perspectives*, 2008.
- Gallagher, S. The Challenges of Obesity and Skin Integrity. *Elsevier Saunders*, 2005.
- Hahler, B. Morbid Obesity: A nursing Care challenge. *MEDSURG Nursing*, 2002.
- Hignett, S., Chipchase, S., Tetley, A. & Griffiths, P. Risk Assessment and Process, 2007.
- Hillenbrand, A., Henne-Bruns, D. & Wolf, A. M. Panniculus, giant hernias and surgical problems in patients with morbid obesity. *GMS Interdisciplinary Plastic and Reconstructive Surgery*, 2012.
- Kramer-Jackman, K. & Kramer, D. Bariatric Hospital Bed Safety and Selection. *Bariatric Nursing and Surgical Patient Care*, 2010.
- Krasner, D.L., Kennedy-Evans K.L., Henn, T. et al. Bariatric Wound Care: Common Problems and Management Strategies. *Bariatric Times*, 2006.
- Krasner, D.L., Rodeheaver, G.T. & Sibbald, R.G. *Chronic Wound Care: A Clinical Source Book for Healthcare Professionals*. HMP Communications, 2007.
- Kroll, K. Evidence-based design in healthcare facilities. *Building Operating Management*, 2005.
- Lange, M. L. & Minkel, J. L. *Seating and Wheeled Mobility - A Clinical Resource Guide*. SLACK Incorporated, 2018.
- Lawson, B. Evidence based design in healthcare. *Business Briefing: Hospital Engineering & Facilities Management*, 2005.
- Levine, J. M. Considerations in Special Populations: Patients with Vulnerable Skin. *National Pressure Ulcer Advisory Panel*, 2015.
- Lowe, J. R. Skin Integrity in Critically Ill Obese Patients. *National Institute of Health*, 2009.
- Malone, E. & Dellinger, B. Furniture design features and healthcare outcomes. *The Center for Health Design*, 2011.
- Mastrogiovanni, D., Phillips, E.M. & Fine, C.K. The bariatric spinal cord – injured person: challenges in preventing and healing skin problems. *Top Spinal Cord Injury Rehabil*, 2003.
- Matsumoto, M., Ogai, K., Aoki, M., Yokogawa, M., Tawara, M., Sugama, J., Minematsu, T., Nakagami, G., Dai, M. & Sanada, H. Relationship between Dermal Structural Changes on Ultrasonographic Images and Skin Viscoelasticity in Overweight and Obese Japanese Males. *Scientific Research Publishing*, 2016.
- McClean, K. M., Kee, F., Young, I. S. & Elborn, J. S. Obesity and the lung: *Epidemiology. Thorax*, 2008.
- Morello, S. S. Considerations for Bariatric Patients in Pressure Injuries and Wound Care. *National Pressure Ulcer Advisory Panel*, 2017.
- Muir, M. & Archer-Heese, G. Essentials of a Bariatric Patient Handling Program. *American Nurses Association*, 2009.
- Muir, M. & Rush, A. Moving and handling of plus size people – an illustrated guide. *A National Back Exchange Publication*, 2013.
- Owens, K. Treatment/ Transport of Bariatric Patients. *Globe Manufacturing*, 2012.
- Palfreyman, S. The Impact of Obesity on the Development and Care of Acute and Chronic Wounds. *Wound Care Canada*, 2016.
- Parkyn, W. R., Chan, C. Y. & Rij, A. M. V. Skin Problems in the Lower Legs of Morbidly Obese Patients and the Possible Role of Bariatric Surgery. *Journal of Obesity & Weight Loss Therapy*, 2014.
- Pelczarski, K. Basic concerns in bariatrics. *Healthcare Design Magazine*, 2007.
- Pokorny, M.E. Lead in skin physiology and disease in the obese. *Bariatric Nursing Surgery Patient Care*, 2008.
- Pokorny, M. E., Scott, E., Rose, M. A., Baker, G., Seanson, M., Waters, W., Watkins, F. & Drake, D. Challenges in Caring for Morbidly Obese Patients. *Home Healthcare Nurse*, 2009.
- Reingold, F. S. Obesity and Occupational Therapy. *The American Journal of Occupational Therapy*, 2013.
- Rolin, S. The right to drive: Wheelchair prescription with transportation in mind. *HomeHealthCare®*.
- Rush, A. Bariatric Care: Pressure Ulcer Prevention. *Wound Essentials*, 2009.
- Shoemaker, S. & Stoessel, K. Pressure Ulcers in the Surgical Patient. *Kimberly-Clark Health Care Education*, 2007.
- Smith, A. Considerations in the care of the Bariatric Patient. *PT, DPT*, 2016.
- Strongwater, D. & Becker, F. The Inclusion of the Bariatric Population - Providing greater patient access at a community based hospital, 2009.
- Stapleton, P. A., James, M. E., Goodwill, A. G. & Frisbee, J. C. Obesity and Vascular Dysfunction. *Pathophysiology*, 2009.
- Taylor, S. J. Seating and Mobility Considerations for the Bariatric Client. *Directions Clinical Corner*, 2013.
- The Lancet. *China Medical Board: a century of Rockefeller health Philanthropy*, 2014.
- Tsigos, C., Hainerb, V., Basdevantc, A., Finerd, N., Friede, M., Mathus-Vliegenf, E., Micicg, D., Maislosh, M., Romani, G., Schutzj, Y., Toplakk, H. & Zahorska- Markiewiczl, B. Management of Obesity in Adults: *European Clinical Practice Guidelines*. For the Obesity Management Task Force of the European Association for the Study of Obesity, 2008.
- Traves, K. P., Studdiford, J. S., Pickle, S. & Tully, A. S. Edema: Diagnosis and Management. *America Academy of family Physicians*, 2013.
- Villela, N. R., Kramer- Aguiar, L. G., Bottino, D. A., Wiernsperger, N. & Bouskela, E. Metabolic disturbances linked to obesity: the role of impaired tissue perfusion. *Arq Bras Endocrinol Metab*, 2009.
- Vollmann, K., Garcia, R. & Miller, L. *Interventional Patient Hygiene: Proactive (Hygiene) Strategies to Improved Patients' Outcomes*. AACN, 2005.
- Watanade, L. The Anatomy of Bariatric Mobility. *Mobility Management*, 2010.
- Wignall, D. Design as a Critical Tool in Bariatric Patient Care. *Journal of Diabetes Science and Technology*, 2008.
- Williams, D. S. Design with dignity: The design and manufacture of appropriate furniture for the bariatric patient population. *Bariatric Nursing and Surgical Patient Care*, 2008.
- World Health Organization. Obesity: Preventing and Managing the Global Epidemic. *Report of the World Health Organisation Consultation on Obesity*, 2000.
- Yumuk, V., Tsigos, C., Fried, M., Schindler, K., Busetto, L., Micic, D. & Toplak, H. *European Guidelines for Obesity*. *The European Journal of Obesity*, 2015.