

# HOME MODIFICATION

The need-to-know for an accessible home

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## WHEN AND WHY WE MODIFY

Home modifications are any changes we make to a home to make it more suitable for a person with disabilities. These changes enhance the experience of all people living there, and make it safer for parents and children alike.

## REASONS TO MODIFY:

- > Improved usability and accessibility (4)
- > Reduced falls and injury (3)
- > Enables family members to retain valued occupations (1) and roles within the home.

Planning for modifications should begin as soon as possible. Essential areas should be prioritized:

1. External Access
2. Internal Access
3. Bathrooms
4. Bedroom
5. Kitchen
6. Laundry, backyard, and other areas.



## 01 EXTERNAL ACCESS

This refers to the ability of all members of the family to access the property and the home. External access includes:

- > Path to door
- > Entrance
- > Backyard or decking, and more

There are a few different options for to make an inaccessible home wheelchair accessible:

**Ramps** – can be placed fully external to the home or inside a garage. Prices vary based on size and materials; for example, a ramp of the same size will cost:

- > \$740 if made with wood,
- > \$3 500 if made with metal, and
- > \$4000 if made with aluminum.

**Porch lifts** – can also be external or covered, but take up a less space than a ramp.

- > Price range: \$9000 - \$12 000 (with installation).

## 02 INTERNAL ACCESS

Once there is an accessible way to get into your home, moving around inside of the home is the next thing that needs to be considered.

Internal access includes room-to-room and floor-to-floor movement. Some things to consider include:

- > Doors and door handles
- > Thresholds
- > Hallways and landings

There are many ways to improve internal accessibility:

**Main floor with all the essentials:** re-purposing rooms to put the necessities (kitchen, bath, and bedroom) on the same level is often an easier option for families.

**Stair lifts:** eliminate the need to carry your child up and down the stairs, though they require transfers at the top and bottom and the wheelchair would still need to be carried. These can be multi-level, and/or curved.

- > \$3000 - \$8000 including installation

**Platform lifts:**

Though these can sometimes be bulky, they are an option for single or multiple flights of stairs and can even be curved. There would be no need to transfer the child.

- > \$9000 - 12 000 with installation

**Residential Elevators:**

These allow the caregiver and child to move from level to level in their chair, with no transfers required.

- > \$10 000 - \$50 000 with installation

**Other considerations:**

- > Threshold ramps – needed if rooms are not flush with one another. These cost about \$100 - \$500.
- > Barn doors – eliminate door swing to open up space, and are easier to repair than pocket doors.



TURNING TIP:

Most wheelchairs require a 5' x 5' space to accommodate their turning radius.

## 03 BATHROOMS



Bathrooms are one of the first rooms that need to be made accessible, for the safety of both the child and parent.

Many transfers happen here, often with limited space resulting in compromising positions. These transfers are physically demanding and made all the more dangerous by unforgiving surfaces and hazards like wet floors.

There are many options available to make your bathroom experience safer:



**Roll-in showers:** can be paired with a shower commode or bath chair & used with handheld showerheads.

- > Price: around \$15 000



**Walk-in tubs:** limits the need to lean, make the transfer less difficult.

- > Price: \$1000 - \$3000



**Ceiling track lifts:** can connect to other rooms; facilitating transfers & creating more space.

- > Price: around \$5000



**Bath lifts:** assist with lowering a child and raising them up in the tub.

- > Price: \$1500 - 1800



**Sinks + Storage:** will need to have adequate room for a wheelchair to maneuver up to the sink and around storage spaces.

## 04 BEDROOMS

Bedrooms are another area to consider when thinking about home accessibility. It's very important for a kid to feel like their room is their own space, over which they have control (5). Ergonomic adaptations can increase the accessibility and usability of their personal space.

Some ways to increase accessibility and usability of a kid's room include:



**Ceiling track lifts:**

As mentioned above, these lifts are able to connect rooms. This limits the need for multiple transfers and takes a significant amount of strain off of the caregiver.

They can also be pressure fitted from floor to ceiling so that no structural changes have to be made.

- > Price: around \$5000



**Bed Rails:**

Can allow your child to access their bed more easily by giving a surface they can push off of or grab onto.

- > Price: around \$100



**Positioning:**

Adjustable beds and hospital beds are available for rent and purchase. These may allow your child to stay in a safer position while they sleep, and decrease the risk of pressure sores.

- > Price: \$1000 - \$5000

## 05 KITCHEN

Kitchen accessibility is important to consider so that the whole family can be involved in food preparation and meal time, as this can promote independence and inclusion in family matters.

When renovating or looking for an accessible kitchen, the shape is very important, especially for wheelchair users. L or U-shaped kitchens tend to provide the most maneuverability (2).

Another thing to consider is the accessibility of storage and surfaces, so that all family members can be involved in the cleaning, preparation, and eating of meals. Consider some of these options:



**Adjustable height counter tops:**

- > Prices range from \$150 - \$500



**Storage:** within arms reach, elevated for foot clearance. Pull out racks are one way to make good use of space.



**Controls and doors:** side mounted instead of on top, and opening horizontally.

Another option is an adjustable height table that can be moved and used for other purposes.

- > Price: \$500

## 07 VANS & TRANSPORTATION

While the first priority is for your child to be able to get around in the home, there is also community mobility to consider.

A vehicle conversion or accessible van is one way that all members of a family can get around the community together.

- > Prices can range from: \$55 000 - 65 000

Options for vans:

- > Rear entry ramp
- > Rear entry lift
- > Side entry with slide-out ramp
- > Side entry with fold down ramp
- > Extending seats

There are also public transportation options, like taking the bus or hiring an accessible taxi. When using these options, it's important to ensure that the mobility device has transit tie-down loops.



## 08 FUNDING AND OTHER CONSIDERATIONS

**Buying Used:**

Previously owned adaptive equipment is frequently available, as past users grow out of certain sizes, or their needs change.

Keeping an eye on online marketplaces (like Kijiji, craigslist, or vendor sites) is a good way to save some money, keeping in mind that any repairs will not be covered by insurance or government funding.

**Movable Equipment:**

Many adaptive devices are able to be transferred from home to home if needed. Some examples include stair lifts, grab bars, track lifts not mounted in the ceiling.

**Relocation:**

Another option that is available for some families is to look into moving into an accessible home or apartment. If many major modifications are needed, this option can end up saving money and time in the long run.

Other areas to consider altering (depending on the child, family, funding, and timing) include:

- > Laundry room: keeping storage, maneuvering, labeling, and appliance openings in mind.
- > Backyard: having a paved area or ramp to facilitate access to this part of the property.
- > Pool: if present, can have a ramp added to allow the child to get in the water.



**YOU'RE NOT ON YOUR OWN!**

**Most families are eligible for funding from one of a variety of charities and services. These include:**

**President's Choice Children's Charity**

**March of Dimes**

**Easter Seals**

**...and more!**

**KEEP IN MIND...**

The price ranges outlined in this document are estimates only, and actual prices will vary depending on a number of variables.



## 09 HELPFUL RESOURCES

There are many, many options available when modifying a home to increase accessibility. Don't hesitate to approach your occupational therapist with any questions, and if you need more information check out these helpful resources:

- > SmartChair infographic: <http://kdsmartchair.com/blogs/news/26622275-making-your-home-wheelchair-accessible-infographic>
- > Accessible Home Improvement of America - Home Layout [http://www.accesshomeamerica.com/consumers\\_modification-equipment.asp](http://www.accesshomeamerica.com/consumers_modification-equipment.asp)
- > Assistive Technology Partners: Low Cost Solutions for Making Your Home Accessible (available online as a .pdf)
- > And check out your local vendor sites!



## SOURCES

Aplin, T., de Jonge, D., and Gustafsson, L. (2013). Understanding the dimensions of home that impact on home modification decision making. *Australian occupational therapy journal*, 60(2), 101-109.

DeMerchant, E. A., and Beamish, J. O. (1995). Universal design in residential spaces. *Housing and Society*, 22(1-2), 77-91.

Fänge, A., and Iwarsson, S. (2005). Changes in ADL dependence and aspects of usability following housing adaptation—a longitudinal perspective. *American Journal of Occupational Therapy*, 59(3), 296-304.

Plautz, B., Beck, D. E., Selmar, C., and Radetsky, M. (1995). Modifying the environment: a community-based injury-reduction program for elderly residents. *American journal of preventive medicine*, 12(4), 33-38.

Prelwitz, M., & Skär, L. (2006). How children with restricted mobility perceive the accessibility and usability of their home environment. *Occupational Therapy International*, 13(4), 193-206.

## IMAGES

Many images were taken in the George Jeffrey Children's Centre ADL Suite, which clients are welcomed to tour. Other photos were provided by GJCC clients or accessed from the web:

Bcm924 (2016). Stairlift. Accessed from: [https://commons.wikimedia.org/wiki/File:Centerspan\\_Medical\\_Stairlift.jpg](https://commons.wikimedia.org/wiki/File:Centerspan_Medical_Stairlift.jpg)

Brisbane City Council (2015). Wynnum Hall - vertical platform lift (main hall). Accessed from: <https://www.flickr.com/photos/brisbanecitycouncil/16209590203>

Gemteck1. (2007). Walk-in tub. Accessed from: [https://commons.wikimedia.org/wiki/File:Walk-in\\_tub.jpg](https://commons.wikimedia.org/wiki/File:Walk-in_tub.jpg)

IHA Holiday Ads (Date unknown). Bathroom, Charming Residence in Titisee Neustadt - Advert 4802. Accessed from: [https://www.ihad.com/charming-vacation-rental-charming-residence-titisee-neustadt\\_4802#photo](https://www.ihad.com/charming-vacation-rental-charming-residence-titisee-neustadt_4802#photo)

Judith E. Bell. (2014). Neptune upright bath lift. Modified, original accessed from: <https://www.flickr.com/photos/jhandbell/13895629339>

Junglectat. (2007). Wheelchair elevator located outdoors. Accessed from: [https://commons.wikimedia.org/wiki/File:Wheelchair\\_Elevator\\_Outdoors.jpg](https://commons.wikimedia.org/wiki/File:Wheelchair_Elevator_Outdoors.jpg)

Na0905. (2012). Taxi wheelchair. [https://commons.wikimedia.org/wiki/File:Taxi\\_wheelchair.jpg](https://commons.wikimedia.org/wiki/File:Taxi_wheelchair.jpg)

Nancy Hugo, CKD. (2007). Accessible shower. Accessed from: <https://www.flickr.com/photos/nancyhugo/2526284965>

Rosenfeld Media. (2007). WFE015. Accessed from: <https://www.flickr.com/photos/rosenfeldmedia/11496581454>

University of Exeter. (2011). Rowe House en suite bathroom (accessible). Accessed from: <https://www.flickr.com/photos/26126239@N02/6829561254>

