

**AT****6**

# Assistive technology for trauma needs during an emergency

---

A handbook for rapid selection, fitting, user training,  
and care of six essential assistive products





©UNICEF/UNI275343/AI-Issa

# Table of Contents

Introduction.....	4
Assistive products included in this handbook.....	5
Providing walking aids in an emergency .....	6
Providing wheelchairs in an emergency.....	11
Providing a toilet chair during an emergency .....	16
Annex A: Walking aids user information leaflet .....	18
Annex B: Emergency wheelchair user information leaflet.....	19

## Acknowledgements

**This handbook has been compiled by the WHO Access to Assistive Technology Team.**

**Authors:** Sarah Frost, Kylie Shae and Emma Tebbutt.

**Reviewers:** Volodymyr Golyk, Satish Mishra, Susanne Neilsen, Andrea Pupulin and Peter Skelton.

**Source materials:** WHO's Training in Assistive Products (TAP) online resource; Motivation Charitable Trust's Emergency Response Wheelchair Course.



# Introduction

## Why are assistive products important in an emergency?

Assistive products maintain or improve a person's functioning and independence and can prevent secondary health complications. Assistive products such as wheelchairs, artificial limbs, walking aids, and toilet chairs are essential health products and need to be available alongside medicines and other medical supplies to ensure comprehensive health care for people during humanitarian crisis. This includes:

- People who are injured and need assistive products temporarily or permanently
- People who have had to leave their homes quickly and have lost their assistive products and/or need assistive products to enable them to move and access essential services.

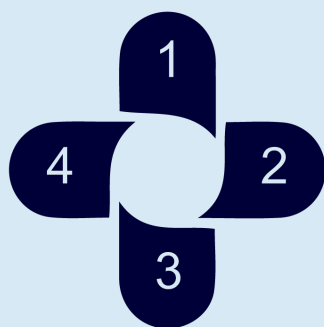
## Who is this handbook for?

This handbook is for medical and surgical providers responding to emergencies. It provides guidance to meet the immediate needs of people who have been injured and need walking aids, wheelchairs and/or toilet chairs.

A second handbook is available for emergency response teams working with people who have had to leave their homes quickly. It provides guidance for the rapid provision of walking aids, wheelchairs, toilet and shower chairs and continence products to displaced populations and refugees.

## What is covered?

For a person to be able to use an assistive product safely and effectively, four service provision steps are needed. The content is organized around these four steps:



- 1. Select:** The most appropriate product for the person
- 2. Fit:** Adjust and fit the product to suit the person
- 3. Use:** Teach the person how to use and take care of their product
- 4. Follow-up:** Review the person's needs, maintain and repair

In an emergency, health personnel need to identify and communicate to AT users a plan for follow-up.

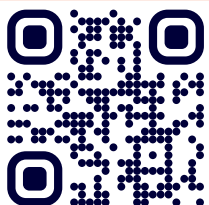


### Important note

**This handbook is to guide temporary provision of assistive products in the context of an emergency. For provision of assistive products outside of the context of an emergency, a more comprehensive approach is required.**

The following WHO training materials provide more information:

**For walking aids, toilet chairs and other simple assistive products**  
– *Training in Assistive Products (TAP)*



**For wheelchairs –**  
*Wheelchair Service Training Packages (basic and intermediate)*





# Assistive products included in this handbook

This handbook covers 6 priority assistive products for mobility and self-care, targeting people who have been injured and are being cared for in a health facility.

Mobility assistive products		
Walking stick	Walking frame	Axilla crutches
		
Elbow crutches	Transport wheelchair	Comfort cushion for wheelchair
		
Self-care assistive products		
Toilet chair		

# Providing walking aids in an emergency

## Who needs a walking aid?



A person might need the support of a walking aid if they:

- Have weak leg muscles
- Have poor balance
- Can't put all their weight on one leg
- Have pain when they stand or walk.



**Do not provide a walking aid if the person's weight is greater than the weight rating of the walking aid.**


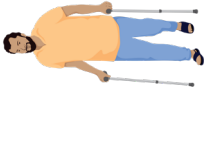
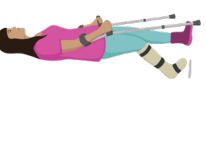
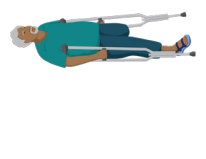
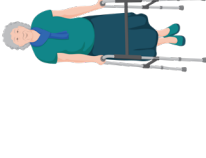


© UNICEF/UNI310492/AI-Droubi



## Step 1: Selecting a walking aid

Use this table to help you to select the best walking aid for a person's needs.

Step 1: Select		Walking stick	Two walking sticks	Elbow crutch	Axilla crutches	Walking frame
Always select a walking aid with the person, taking into account their health, ability, environment and preference.						
Weight bearing	Can only walk with one leg	✗	✗	✓	✓	✓ With caution
	Can walk with two legs	✓	✓	Suitable for long term use	Only if no other aids available	✓
Hand function	Can only use one hand	✓	✗	✗	✗	✗
	Can grip and carry things easily with both hands	✓	✓	✓	✓	✓
If a person has difficulties gripping and holding things, you may need to try the different walking aid options available to see which one the person finds easiest to manage.						
Balance and falls risk	Feels worried about falling over or falls often	✗	✓ With caution	✗	✗	✓
Environment	Will use the walking aid on stairs	✓	✓	✓	✓	✗
	Will use the walking aid on sandy or uneven ground	✓	✓	✓	✓	✗
Crutches		Walking frame - weight bearing on one leg				
More balance is needed to use elbow crutches than axilla crutches. Elbow crutches are better than axilla crutches for long term use and also if the person is able to walk on both legs.		If the person has a diabetes or risk of foot wounds, hopping with a walking frame should be avoided. Hopping on a foot at risk can cause damage.				

## Step 2: Fitting a walking aid

General principles for fitting any walking aid



To fit a walking aid, ask the person to hold onto a rail or chair for support.

Check:

- ☐ Shoulders relaxed
- ☐ Arms at their side, slight bend in the elbow
- ☐ Shoes on

When the person is standing with shoulders relaxed, arms at side, slight bend in the elbow and shoes on:

- The height of the hand grip (for all walking aids) should be level with the person's wrist.



To fit the different types of walking aids, follow these guidance notes.

Watch the videos for a quick overview for each.



### WALKING STICK:

The walking stick should be used on the person's strongest side.



Watch this video to fit a walking stick:



### FOREARM CRUTCHES:

The forearm cuff should be two finger widths below the elbow.



Watch this video to fit elbow crutches:





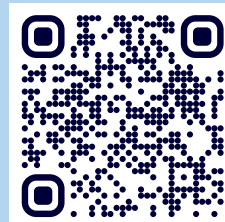


### AXILLA CRUTCHES:

The top of underarm pad of axilla crutches should be three finger widths below the person's armpit.



Watch this video to fit axilla crutches:



### WALKING FRAME:

The person's arms should be a comfortable distance apart when they are holding the walking frame grips.



## Step 3: Using a walking aid

Use the information in the *Walking Aids User Information Leaflet* (Annex A) to teach the person how to use their walking aid. Give the person a printed copy of the leaflet.

Use the checklist below to make sure you have covered everything.

#### Walking aid user training checklist

1	Standing up	<input type="checkbox"/>
2	Sitting down	<input type="checkbox"/>
3	Walking	<input type="checkbox"/>
4	Up stairs (crutches and sticks)	<input type="checkbox"/>
5	Down stairs (crutches and sticks)	<input type="checkbox"/>



**Do not use walking frames on stairs (can use walking frame to go up and down one step).**

## If the person needs assistance



### ASSISTING SOMEONE USING A WALKING STICK

- Stand at the person's side and slightly behind
- Hold the person's free arm.

### ASSISTING A PERSON DOWN STAIRS

- Stand in front of the person
- Put your hands on their hips.



### ASSISTING A PERSON UP STAIRS

- Stand slightly behind the person
- Put your hands on their hips.



### ASSISTING A PERSON TO STAND UP

- Stand close to the person's side
- Bend your knees and help the person up by placing one hand behind their shoulders one below their armpit.



## Step 4: Follow-up

If the person is going to need a walking aid long-term, they will need to be followed up to check their walking aid is still meeting their needs, and to check the condition of the walking aid (and replace if needed).







**Check rubber tips regularly and replace them when they are worn.**



# Providing wheelchairs in an emergency

## Who needs a wheelchair?

A person may need a wheelchair if they are unable to walk, or only able to walk short distances. They may:

		<b>Propel themselves</b>
<b>Be assisted to propel by an assistant</b>		
	<b>Require extra support added to their well fitting wheelchair or a dedicated supportive seat to sit comfortably and upright</b>	

## Type of wheelchair use

People may need a wheelchair for temporary or permanent use:

- **Temporary wheelchair users:** include people who will be mobile again after recovering from injury or surgery – or have limited mobility and only need to use a wheelchair for a short time each day
- **Permanent wheelchair users:** include people who are unable to walk - as a result of injury or due to an existing health condition



**A wheelchair should always be provided with a wheelchair cushion.**

## Step 1: Selecting a wheelchair

Use this table to help you to choose the best wheelchair options for the person's needs.

Step 1: Select wheelchair options	Amputation	Older person	Neurological condition		Burns	Temporary injury
			Spinal cord injury / Spina bifida	Stroke / traumatic brain injury / cerebral palsy		
Comfort cushion	✓	✓	✗	If able to stand to transfer	✓	✓
Pressure relief cushion	✗	✓ If difficulty moving / changing position	✓	✓ If difficulty moving / changing position	✓ If difficulty moving / changing position	✓ If difficulty moving / changing position
Spare pressure relief cushion	✗	✗	✓ If difficulty controlling bladder / bowel, consider second cushion	✗	✗	✗
Leg raiser	✓ If below knee amputation	✗	✗	✗	If needed to help healing	If needed to help healing
Extra support to sit upright	✗	If difficulty sitting upright	If difficulty sitting upright	✓	✗	✗



## Wheelchair safe and ready checklist

Use this checklist to make sure the wheelchair is safe and ready for the person to use.

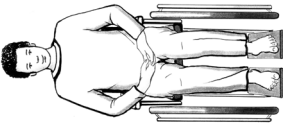
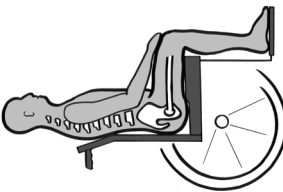


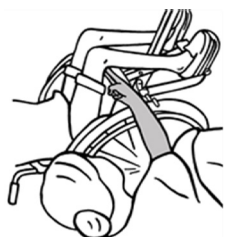

Whole wheelchair	
There are no sharp edges	<input type="checkbox"/>
No parts are damaged or scratched	<input type="checkbox"/>
The wheelchair travels in a straight line	<input type="checkbox"/>
Front castor wheels	
Spin freely	<input type="checkbox"/>
Spin without touching the fork	<input type="checkbox"/>
Bolts are tight	<input type="checkbox"/>
Front castor barrels	
Castor fork spins freely	<input type="checkbox"/>
Rear wheels	
Spin freely	<input type="checkbox"/>
Axle bolts are tight	<input type="checkbox"/>
Tyres inflated correctly (with thumb pressure, wheel can be depressed less than 5 mm)	<input type="checkbox"/>
Push rims are secure	<input type="checkbox"/>
Tyres inflated correctly (with thumb pressure, wheel can be depressed less than 5 mm)	<input type="checkbox"/>
Push rims are secure	<input type="checkbox"/>
Brakes	
Function properly	<input type="checkbox"/>
Footrests	
Footrests are securely attached	<input type="checkbox"/>
Frame	
For a folding wheelchair – the wheelchair folds and unfolds easily	<input type="checkbox"/>
For a wheelchair with fold down backrest – the backrest folds and unfolds easily	<input type="checkbox"/>
Cushions	
The cushion is in the cover correctly	<input type="checkbox"/>
The cushion is sitting on the wheelchair correctly	<input type="checkbox"/>
The cushion cover fabric is tight but not too tight	<input type="checkbox"/>
If the wheelchair has a solid seat: the cushion fully covers the solid seat	<input type="checkbox"/>



Wheelchair safe and ready checklist demonstration video

## Step 2: Fitting a wheelchair

Follow the instructions in the table to fit the wheelchair for the person.

<b>Step 2: Fit</b> Ask person to lift their hips to back of seat Assist if necessary		Sitting upright – check from front
		Sitting upright – check from side
		Footrest height – thigh rests flat on cushion
		Footrest height – foot rests flat on footplate
		Seat length – 2 fingers between chair and back of knees. Check no pressure on calf
<b>Backrest adjustment (if available)</b>		Seat width – hands slide smoothly between person and wheelchair
		Consider high backrest if person: → Is very tall → Is likely to get tired quickly → Prefers extra support
<b>Rear wheel adjustment (if available)</b>		Consider low backrest if person: → Is very short → Is fit and active → Can sit well without extra support
		Consider active rear wheel position if person: → Is fit and active → Already able to do a wheelie (back wheel balance) → Is short



Video fitting  
demonstration



**Do not provide a wheelchair if the person's weight is greater than the weight rating of the wheelchair.**



## Step 3: Using a wheelchair

Use the information in the *Emergency Wheelchair User Information Leaflet* (Annex B) to teach the person how to use and take care of their wheelchair. Give the person a printed copy of the Leaflet.

Use the checklist below to make sure you have covered everything.

- If a person has used a wheelchair before, discuss their abilities and knowledge of the topics below and together select any training needs.
- Not all wheelchair users are at risk of pressure wounds. If a person needs a pressure relief cushion (see selection table), they should be taught how to avoid pressure wounds and relieve pressure.

Emergency wheelchair user training checklist		
1	How to handle your wheelchair	<input type="checkbox"/>
2	How to check your cushion	<input type="checkbox"/>
3	How to avoid pressure wounds	<input type="checkbox"/>
4	How to relieve pressure	<input type="checkbox"/>
5	How to propel your wheelchair	<input type="checkbox"/>
6	How to turn your wheelchair	<input type="checkbox"/>
7	How to go up and down slopes	<input type="checkbox"/>
8	How to move on rough ground and stairs with assistance	<input type="checkbox"/>
9	How to transfer to and from your wheelchair	<input type="checkbox"/>
10	How to care for your wheelchair and cushion	<input type="checkbox"/>

## Step 4: Emergency wheelchair follow-up

If the person is going to need a wheelchair long-term, they will need to be followed up to check their wheelchair is still meeting their needs, and to check the condition of the wheelchair (and replace or repair if needed).

People who are priority for urgent follow up are those who:

- Are at risk of pressure wounds or
- Have difficulty sitting in comfort and upright and require extra support



# Providing a toilet chair during an emergency

## Who needs a toilet chair?

Children and adults may benefit from a toilet chair if they have difficulty:



Getting to the toilet

Using a standard toilet



## Step 1: Select toilet chair



AT6 includes a mobile toilet chair with a back rest, arm rests, castor wheels and a removable bucket.

## Step 2: Fit toilet chair

A toilet chair can be adjusted and placed over most types of toilet to help people use the toilet more easily.





On a ward, a toilet chair may be used in a private location other than over the toilet, for example a screened area next to the person's bed.

### Step 3: Use

<input type="checkbox"/>	All four legs of the chair are in even contact with the floor and brakes are on (if there are brakes).
<input type="checkbox"/>	There is a place to wash hands.
<input type="checkbox"/>	There is good lighting, particularly for use at night to reduce the risk of falls.
<input type="checkbox"/>	There is space to move the toilet chair out of the way when others use the toilet.
<input type="checkbox"/>	If more than one person is using the chair, it is wiped down after each use.



**The removable bucket of a toilet chair should be emptied into the toilet and cleaned with soap after each use.**

### Step 4: Follow up

If the person is going to need a toilet chair long-term, they will need to be followed up where they live to see if it is meeting their needs, and to check the condition of the toilet chair (and replace spare parts if needed).

# WALKING AIDS USER INFORMATION LEAFLET

## STANDING UP



Place feet under knees.

Move to the edge of the chair/bed and lean forward.

If using two crutches/sticks, hold them on the weaker side.

Push up on the chair/bed with the free hand to stand up.

## SITTING DOWN

Stand in front of the chair/bed, with back of legs touching it.

If using two crutches/sticks, hold them on the weaker side.

Reach back with the free hand to hold onto the chair/bed and slowly sit down.



VIDEO DEMONSTRATION



VIDEO DEMONSTRATION

## WALKING



Place the walking aid in front of the body.

Step forward with the weaker (or only) leg.

Step forward with the stronger leg.

If using a walking stick, hold it on the stronger side.

## UP STAIRS - CRUTCHES AND WALKING STICKS

Step up first with the strong (or only) leg.

Next, step up with the walking aid and the weaker leg together.



VIDEO DEMONSTRATION

## DOWN STAIRS - CRUTCHES AND WALKING STICKS

Place the walking aid on to the step and step down with the weak (or only) leg.

Next, step down with the strong leg.



Do not use walking frames on stairs (can use walking frame to go up and down one step); Check rubber tips regularly and replace them when they are worn.

# EMERGENCY WHEELCHAIR USER INFORMATION LEAFLET

Wheelchair user name:

Emergency wheelchair provider name  
and contact details:

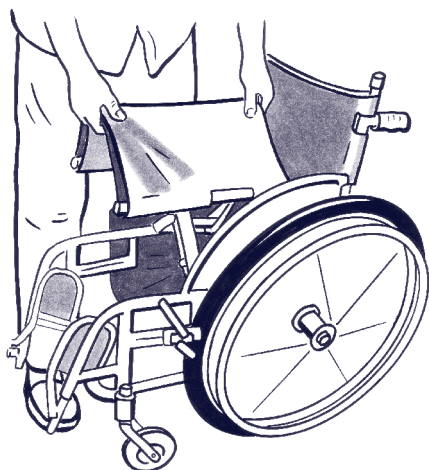
## Important information

This booklet contains important information for your health and mobility. Your new wheelchair is a temporary wheelchair. You may need to be assessed for a permanent wheelchair within 6-9 months.

You may need referral if you are:

- *At risk of a pressure wound;*
- *Finding it difficult to sit in comfort and upright (for a more supportive wheelchair);*
- *Moving to a different place after receiving your wheelchair (for follow-up, including maintenance and repairs).*

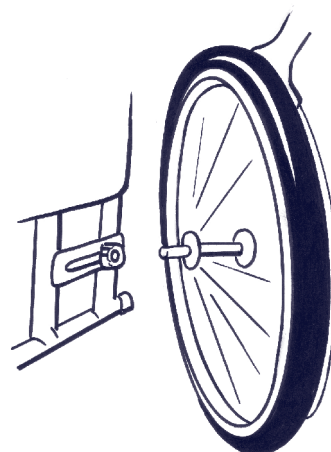
## How to handle your wheelchair



### PREPARING FOR TRANSPORT

- Remove armrests (if removable)
- Remove footrests (if removable)
- Fold – some backrests fold forwards
- Remove rear wheels (if removable)

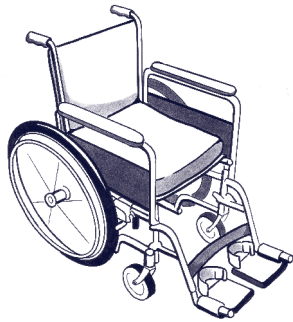
### FOLDING AND UNFOLDING THE WHEELCHAIR



When replacing rear wheels, always check they have clicked or locked back in position.  
A loose rear wheel is very dangerous!



## How to check your cushion



### PUTTING THE CUSHION ON THE SEAT

Make sure the cushion is placed correctly on the seat.

- Check front / back
- Check top / bottom

## How to avoid pressure wounds

### Remember

Any part of your body that comes into contact with the wheelchair can be an area where a pressure wound could develop.

You are at most risk of developing a pressure wound if you:

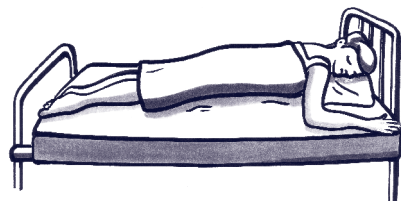
- Have reduced feeling (sensation) in any area in contact with the wheelchair e.g. buttocks, back
- Have had a previous pressure wound in the past
- Are very thin or frail
- Cannot easily shift your weight

It is easier to prevent pressure wounds than to treat them.

Pressure wounds can usually be prevented by:

- Using pressure relief techniques
- Using a pressure relief cushion
- Sitting upright
- Regularly changing position while lying or sitting
- Checking your skin regularly

Lying on front to relieve pressure from sitting in a wheelchair



Checking skin using a mirror

### HOW TO CHECK FOR PRESSURE WOUNDS

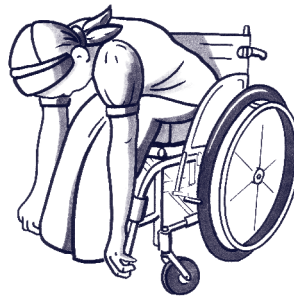
Check daily

- Before getting out of bed in the morning
- Before going to bed at night
- Ask for assistance if you are unable to do this for yourself

## HOW TO RELIEVE PRESSURE: BENDING FORWARD

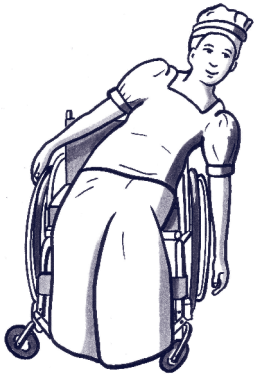
There are different ways to relieve pressure when in your wheelchair.

- Independent: if you have good balance and strength
- Bending forward with assistance if you have difficulty with balance and less strength



## HOW TO RELIEVE PRESSURE: SIDE TO SIDE LEANING

- This method is suitable if you have difficulty leaning forward. Repeat on both sides.
- Hook your arm over the push handle for support.



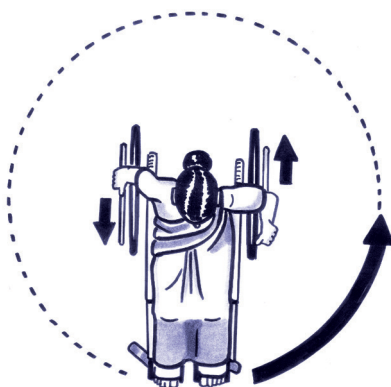
## How to propel your wheelchair

### PUSHING POSITION: LEAN FORWARDS SLIGHTLY

- To use less effort while pushing, push from a 10 o'clock to 2 o'clock position with long smooth action
- Let your arms swing back before starting the push again



## How to turn your wheelchair



### TURNING THE WHEELCHAIR

- To turn, push forwards with one hand
- At the same time, the other hand pulls backwards

## How to go up and down slopes

### PROPELLING UP A SLOPE

- Lean forward – this stops the wheelchair tipping
- To stop or rest – park the wheelchair sideways



### PROPELLING DOWN A SLOPE

- Lean backwards
- Let the push rim slide slowly through the hands



If you prefer assistance, ask your assistant to hold the push handles as you move up or down a slope.

## How to move on rough ground and stairs with assistance

### ASSISTANCE OVER ROUGH GROUND

- Ask your assistant to tilt the wheelchair on its back wheels until it feels balanced
- Your assistant should keep good control of the tilt by holding the push handles firmly
- Keep your head forward while you push the wheels



## To go up and down stairs



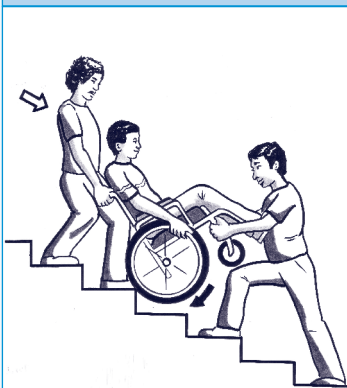
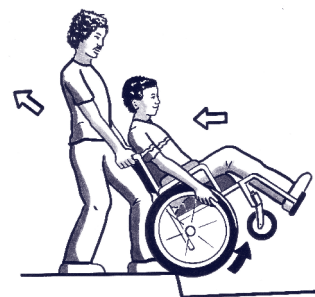
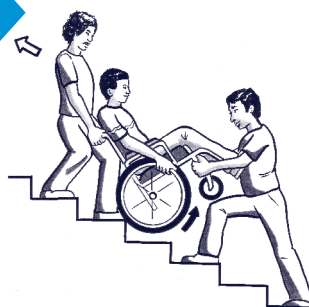
It is possible to go up and down stairs with one or two people. If in doubt, ask two people to help, one person behind holding push handles; one person in front holding frame.

Advise your assistant to keep their back straight and bend their knees.

Co-ordinate lift counting 1,2,3.

## UP STAIRS

- Go up **backwards**
- Position wheelchair against first step
- Ask assistant to tilt wheelchair onto back wheels
- To go up the step pull up and back against each step
- Assist by pulling the push rims backwards for each step



## DOWN STAIRS

- Go down **forwards**
- Ask assistant to tilt the wheelchair onto the back wheels
- Ask assistant to slowly roll the rear wheels down one step at a time.
- Assist by controlling the push rims as the wheels roll down the step
- Pull back against each step

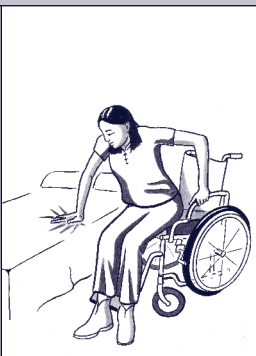


Watch this video for a demonstration of some of the mobility skills described above:

## How to transfer to and from your wheelchair

### PREPARING THE WHEELCHAIR

Some armrests and footrests are swing away or removable. Move these before transferring.



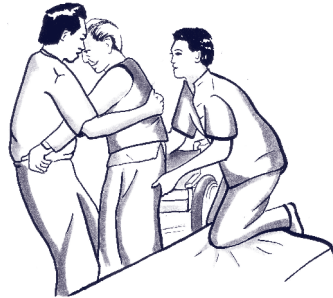
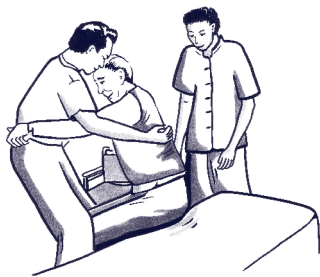
### TRANSFERRING INDEPENDENTLY

- Position your wheelchair close and apply brakes
- Move to front of cushion
- Position your hands and feet
- Push shoulders down to lift
- Keep head down to help balance



## TRANSFERRING SITTING WITH A TRANSFER BOARD

- Position your wheelchair close and apply brakes
- Remove armrest and swing away footrests
- Move to front of cushion
- Lean to side and ask assistant to position transfer board under buttock and on bed
- Push shoulders down to lift. Ask assistant to help by moving buttocks
- Keep head down to help balance



## TRANSFERRING STANDING WITH ASSISTANCE

- Position your wheelchair close and apply brakes
- Remove armrest and swing away footrests
- Move to front of cushion
- Ask assistant to support around your shoulder blades to help you to lean forward and stand up. They may also gently support your knees from the side
- A second assistant may help by supporting you around the hips
- Gently turn to the side and sit down

## TRANSFERRING TO AND FROM A CAR

Transferring into a car:


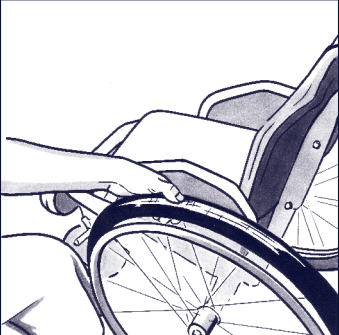
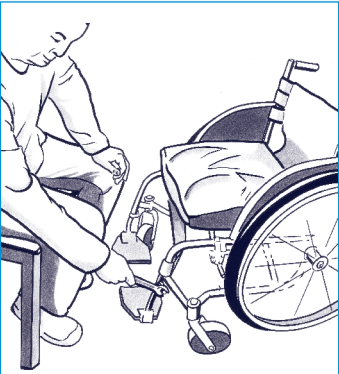
- Position your wheelchair close and apply brakes
- Move to front of cushion
- **Place feet inside vehicle first**
- Position your hands and feet
- Push shoulders down to lift
- Keep head down to help balance

Transferring out of a car – follow the same steps as above but in reverse order. **Move feet out of vehicle last.**



Watch this video for a demonstration of some of the transfers described above:

## How to care for your wheelchair and cushion

Check	Why this is important	How to do it
 <p><i>Check cushion</i></p>	<p>Cushions should be clean and dry to protect skin</p>	<p>Remove cushion from cover and wash separately</p>
 <p><i>Check tyres are pumped up.</i></p>	<p>It is easier to propel the wheelchair, taking less energy Brakes will work correctly</p>	<p>Press thumb across the tyre. It should be possible to depress the tyre very slightly (about 5mm) Pump up using a bicycle pump or similar</p>
 <p><i>Tighten nuts and bolts (if loose)</i></p>	<p>Loose bolts cause unwanted movement in parts</p>	<p>Check wheelchair for loose bolts or nuts. Tighten loose bolts or nuts with a wrench. Do not overtighten.</p>

AT6: Assistive technology for trauma needs during an emergency

© World Health Organization 2022

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization (<http://www.wipo.int/amc/en/mediation/rules/>).

**Suggested citation.** AT6: Assistive technology for trauma needs during an emergency. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.

**Cataloguing-in-Publication (CIP) data.** CIP data are available at <http://apps.who.int/iris>.

**Sales, rights and licensing.** To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

**Third-party materials.** If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

**General disclaimers.** The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.





©UNICEF/Syria/2022



© World Health Organization (WHO) 2022.  
All rights reserved.

---

For more information see:  
<https://www.gate-tap.org>  
[assistivetechology@who.int](mailto:assistivetechology@who.int)