

Assistive Technology, Seating and Mobility

# Wheelchair skills training

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# WHO

Table 1. Key steps of wheelchair service delivery:

Step 1	Referral and appointment
Step 2	Assessment
Step 3	Prescription (selection)
Step 4	Funding and ordering
Step 5	Product (wheelchair) preparation
Step 6	Fitting
Step 7	User training
Step 8	Maintenance, repairs and follow up



# Wheelchair Skills Training

## Training wheelchair skills

- Reduces accidents
- Increases self-efficacy
- Increases participation!



Smith et al., ; Sakakibara et al., 2014; Best, Routhier & Miller, 2015)



# Training

- Article reviewing models of wheelchair adaptations:

- All 10 models include training
- 7/10 models include follow up

(Greer, Brasure & Wilt, 2012)



theguardian.com

- Study n=95 people who use wheelchairs

- Professional assessment including wheelchair skills training and maintenance reduces accidents significantly :

(Chen et al., 2011)

- Peer training

- Increases self-efficacy verses control group

(Smith, Sakakibara & Miller, 2014; Best, Routhier & Miller,2015; Best, Routhier & Miller,2016 )







# User training

## Wheelchair Mobility Skills:

### Wheelchair Skills Training Package (WHO)

<https://www.who.int/disabilities/technology/wheelchairpackage/en/>

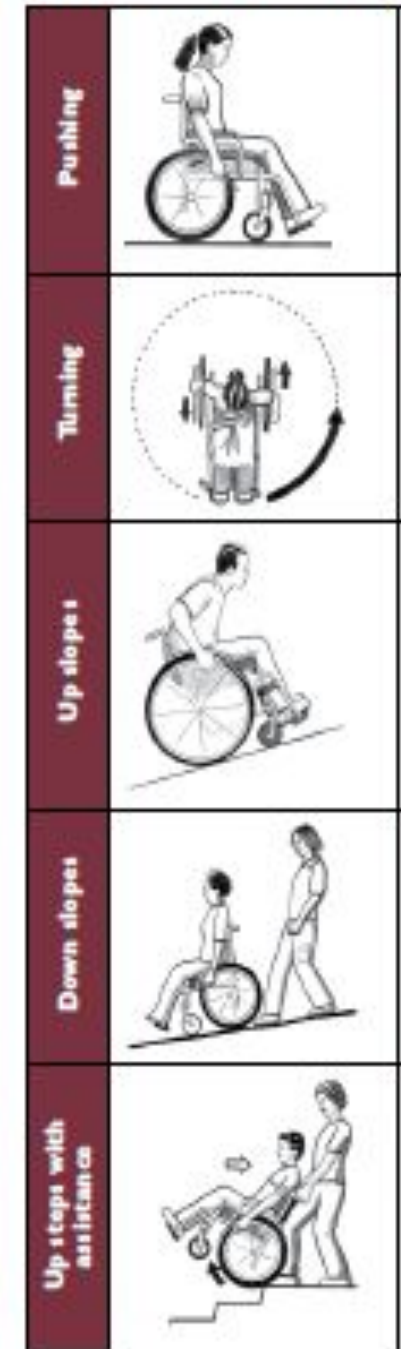
Pushing		<ul style="list-style-type: none"><li>• Pushing correctly requires less effort.</li><li>• Push from 10 o'clock to 2 o'clock position.</li><li>• Use long smooth action to push.</li></ul>
Turning		<ul style="list-style-type: none"><li>• Hold one push rim towards the front and the other towards the back.</li><li>• Pull the forwards hand backwards and push the backward hand forwards at the same time.</li></ul>
Up slopes		<ul style="list-style-type: none"><li>• Lean forward – this helps to stop the wheelchair tipping.</li><li>• When practising, have an assistant stand behind for safety.</li><li>• To stop or rest – park the wheelchair sideways on.</li></ul>
Down slopes		<ul style="list-style-type: none"><li>• Lean backwards.</li><li>• Let the push rim slide slowly through the hands.</li><li>• Experienced wheelchair users who are able to do a "wheelie" (i.e. balance the wheelchair on the rear wheels only) may roll down a slope on their back wheels. This is very efficient.</li></ul>



# User training

- Pushing
- Turning
- Up / down hill
- Stairs
- Partial / full Wheelie

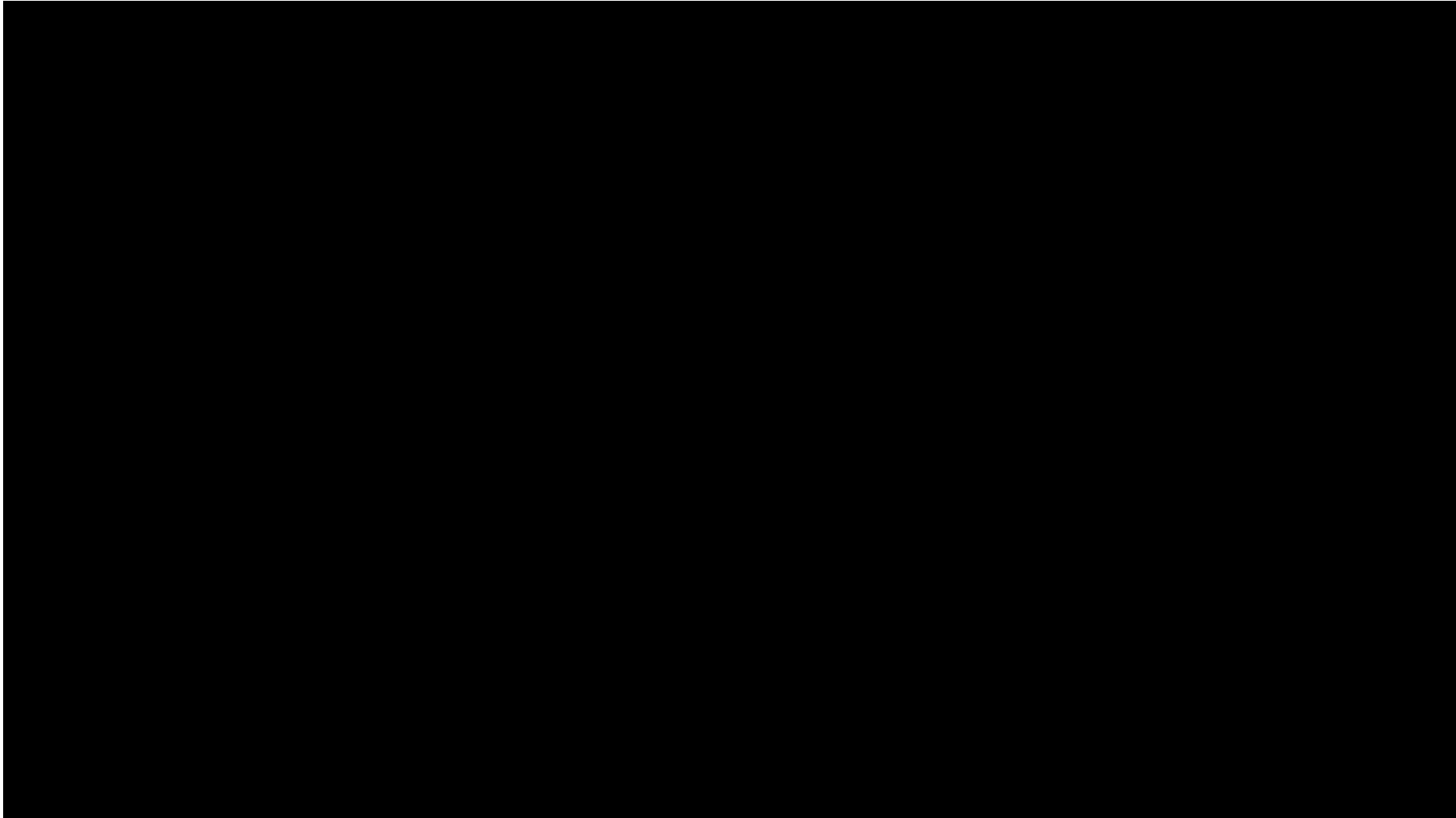
[https://www.youtube.com/watch?list=PLq7Jn97EpZFbYFQ2GA2-YlwT-V1b2-Bc&time\\_continue=7&v=juLFv9kmpPs](https://www.youtube.com/watch?list=PLq7Jn97EpZFbYFQ2GA2-YlwT-V1b2-Bc&time_continue=7&v=juLFv9kmpPs)



# WSTP

## 8 minute video

[https://www.youtube.com/watch?v=juLFv9kmpPs&ab\\_channel=AssistiveTechnologyforAll](https://www.youtube.com/watch?v=juLFv9kmpPs&ab_channel=AssistiveTechnologyforAll)



# Dalhousie University

<https://wheelchairskillsprogram.ca/en/manual-wheelchair-skills/>



*Faculty of Medicine*  
Wheelchair Skills Program

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## Manual Wheelchair Individual Skills

Use the links in the table below to find videos related to the wheelchair skill

Show  entries

Search:

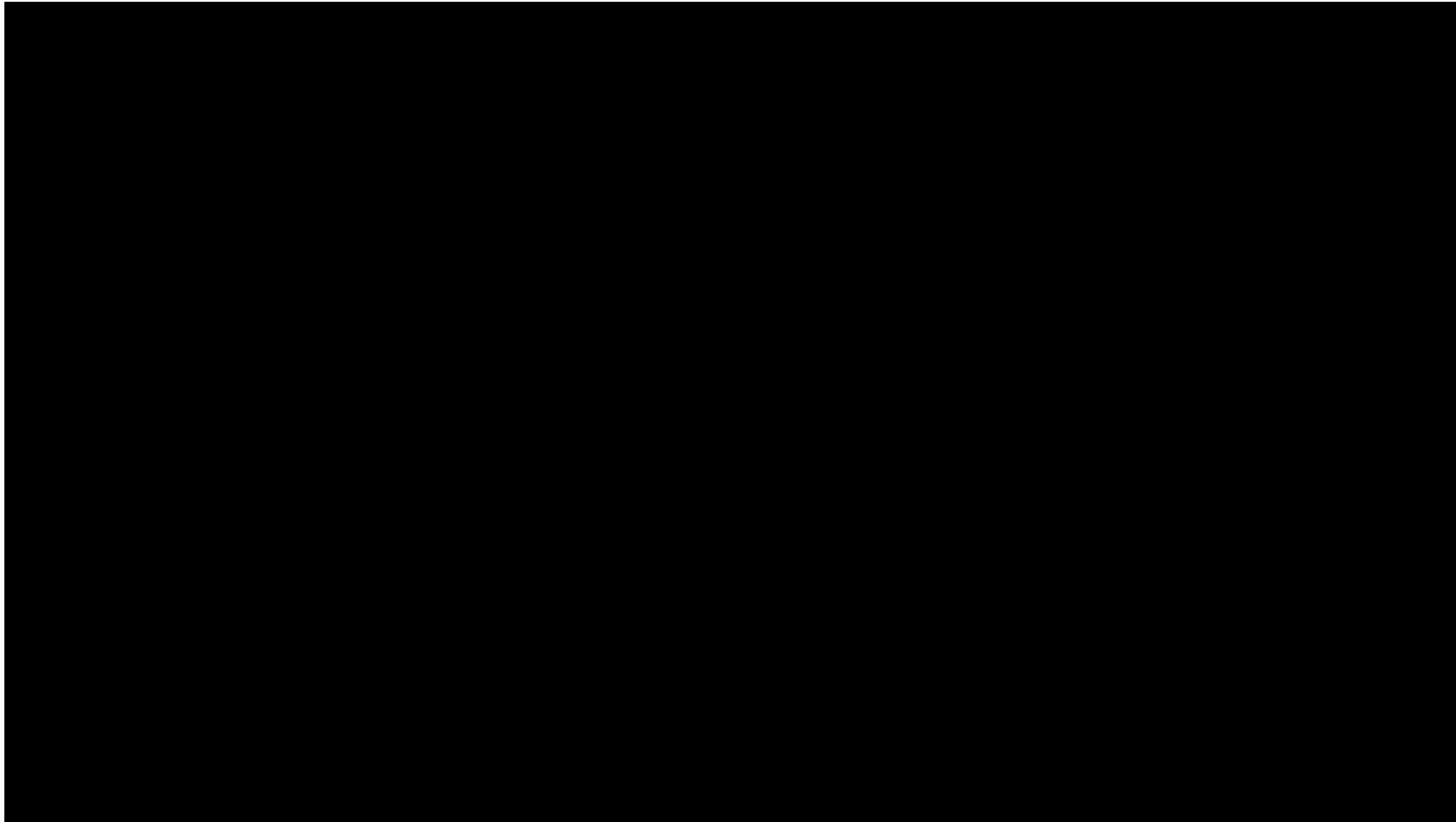
Skill #	↕ Skill Names ↕
1	<a href="#">Rolls forward short distance</a>
2	<a href="#">Rolls backward short distance</a>
3	<a href="#">Stops on command</a>





# Dalhousie University

[https://www.youtube.com/watch?v=Dt72zzeTsMk&ab\\_channel=WheelchairSkillsProgram](https://www.youtube.com/watch?v=Dt72zzeTsMk&ab_channel=WheelchairSkillsProgram)



# Wheelchair Skills Program forms

[/https://wheelchairskillsprogram.ca/en/skills-manual-forms](https://wheelchairskillsprogram.ca/en/skills-manual-forms)



The screenshot shows the top navigation bar of the website. On the left is the Dalhousie University logo and name. To its right is the text 'Faculty of Medicine' in a gold serif font and 'Wheelchair Skills Program' in a white sans-serif font. Below the navigation bar is a vertical sidebar menu on the left with links: Home, Meet the Team, Conditions of Use, Skills Manual and Forms, Other Tests, Equipment, Upcoming Courses, Publications & Impact, Testimonials, Web Statistics, and Videos. The main content area on the right features a large gold L-shaped graphic. The text 'Wheelchair Skills Program (WSP) Manual and Forms' is centered in the main area. Below this, there are two sections: 'Manual' with two bullet points for 'Wheelchair Skills Program Manual' and 'Wheelchair Skills Program Caregiver Manual', and 'Forms' with one bullet point for 'Wheelchair Skills Test (WST) 5.0 Form – Manual Chair – July 2019'.

**DALHOUSIE UNIVERSITY** *Faculty of Medicine*  
**Wheelchair Skills Program**

Home  
Meet the Team  
Conditions of Use  
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Upcoming Courses  
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Videos

## Wheelchair Skills Program (WSP) Manual and Forms

### Manual

- [Wheelchair Skills Program Manual](#)
- [Wheelchair Skills Program Caregiver Manual](#)

### Forms

- [Wheelchair Skills Test \(WST\) 5.0 Form – Manual Chair – July 2019](#)



# Wheelchair Skills Test (WST) Version 5.1 Form

## Manual Wheelchairs

#	Individual Skill	Capacity (0-3)*	Comments
1	Rolls forward short distance		
2	Rolls backward short distance		
3	Stops on command		
4	Turns in place		
5	Turns while moving forward		
6	Turns while moving backward		
7	Maneuvers sideways		
8	Picks objects from floor		
9	Relieves weight from buttocks		
10	Performs level transfers		
11	Folds and unfolds wheelchair		
12	Gets through hinged door		
13	Rolls longer distance		
14	Ascends slight incline		
15	Descends slight incline		
16	Ascends steep incline		
17	Descends steep incline		
18	Rolls across side-slope		
19	Rolls on soft surface		
20	Gets over obstacle		
21	Gets over gap		
22	Ascends low curb		
23	Descends low curb		
24	Ascends high curb		
25	Descends high curb		
26	Performs wheelchair-ground transfers		
27	Performs stationary wheelie		
28	Turns in place in wheelie position		
29	Rolls forward and backward in wheelie position		
30	Descends high curb in wheelie position		
31	Descends steep incline in wheelie position		
32	Ascends stairs		
33	Descends stairs		
Total score:**		%	Total testing time (minutes):

\* See criteria on next page.

\*\* See formula on next page.



# Functional Mobility Scale (FMS)

- Time and method a child goes:
  - 5 meters
  - 50 meters
  - 500 meters
- Score according to type of mobility:
  1. Manual wheelchair
  2. Walker or frame
  3. Crutches
  4. Sticks (1 or 2)
  5. Independent on level surface
  6. Independent on all surfaces

<https://www.sralab.org/rehabilitation-measures/functional-mobility-scale>



# Safety

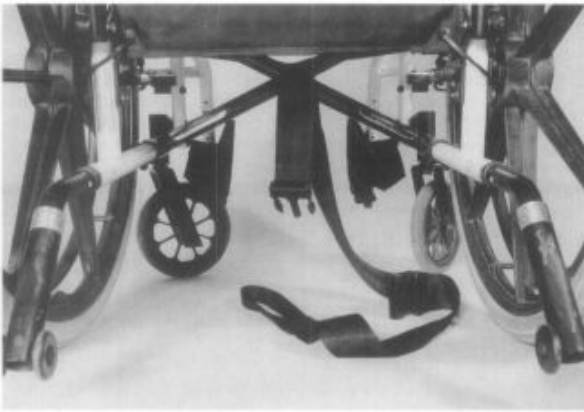


Fig 1. A wheelchair, from the rear perspective, with the spotter strap looped over the cross-brace prior to snapping the buckle shut. The hand-hold at the other end of the strap is lying on the floor.



Fig 2. Subject in a wheelchair, practicing a wheelie. The spotter, in the "ready" position, stands out of the way, holding the hand-hold of the spotter strap snugly, but without significant tension.



[https://wheelchairskillsprogram.ca/wp-content/uploads/2018/04/Wheelchair\\_Spotter\\_Strap\\_Instructions\\_July\\_7\\_2017.pdf](https://wheelchairskillsprogram.ca/wp-content/uploads/2018/04/Wheelchair_Spotter_Strap_Instructions_July_7_2017.pdf)



[https://www.archive-s-pmr.org/article/S0003-9993\(99\)90044-8/pdf](https://www.archive-s-pmr.org/article/S0003-9993(99)90044-8/pdf)

....If you can, practice at school



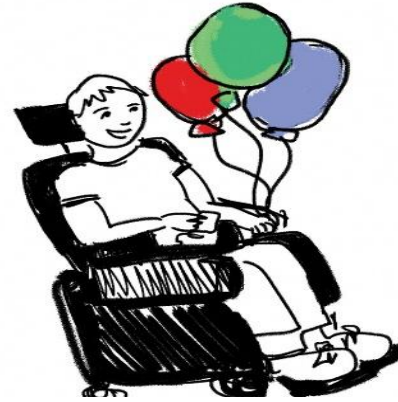
# A short test of your knowledge

- <https://forms.gle/ZvhVFJg5vdQ4rfyz9>



# Thank you

I hope you had a good learning experience



If you have questions feel free to contact me

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Or 0544906738

Or in our final class

