

SIMPLE GUIDE FOR POWER / ELECTRIC WHEELCHAIR USERS
TO DRIVE AS PEDESTRIANS

Hong Kong Occupational Therapy Association (ed. Feb, 2023)

A. Role and Duties of Power / Electric Wheelchair Users:

As pedestrians, wheelchair users use pedestrian facilities, such as pavements and road crossings. They should follow the rules and guidelines applicable to pedestrians. They should also respect the rights of others in use of roads and pay attention to others' safety.

1. Power wheelchair should only be used if the users have competent skills and / or adequate assistance to use the power wheelchair safely
2. Power wheelchair should not be used if the users' conditions are not fit to drive, e.g. deterioration of medical conditions, under the influence of alcohol, prescribed medications and illicit drug use
3. Power wheelchair users are responsible to maintain and ensure their wheelchairs are safe to use and using properly.

B. Users' Basic Requirements:

Not everyone with ambulatory difficulty needs or fits to use power wheelchair. A comprehensive scope of considerations is necessary to determine suitability and readiness of potential users to use power wheelchair. Common considerations regarding body conditions are:

Physical Capacity	Cardiovascular & respiratory fitness, e.g. sitting tolerance Physical attributes, e.g. hand functions and trunk balance Physical and medical co-morbidities, e.g. tremor, spasm, epilepsy and syncope
Sensory Capacity	Visual acuity and visual field
Cognitive Capacity	Cognition functions, e.g. memory, attention and judgments

Compensatory techniques and adaptive equipment are available to accommodate potential users' problems and / or to ensure functional and safe power wheelchair using. To consult Occupational Therapist for fitness assessment, skills training and devices matching before wheelchair purchase and using is highly recommended.

3. Basic usage skills and operation in specific scenarios:

Skills training are necessary in order to facilitate safe and effective power wheelchair using. Advanced controlling skills may be needed for experienced users in negotiating special terrain.

Basic power wheelchair skills are listed as below:

1	Operating power on / off switch
2	Driving forward within confined space
3	Driving backward within confined space
4	Turning left & right within confined space
5	Bypassing obstacle within confined space
6	Parking front and side approach
7	Outdoor maneuver (pavement)
8	Threshold negotiation
9	Crossing road with / without traffic light
10	<p>Ramp negotiation (going up & down)</p> <ul style="list-style-type: none">♦ Position the power wheelchair facing the ramp♦ Drive slowly through the ramp and keep driving direction parallel to the inclination. <p>Precaution:</p> <ul style="list-style-type: none">♦ Read wheelchair manual for device safe negotiable ramp inclination♦ Aware the ramp dimensions, e.g. inclination gradient and width, and minimize turning on ramp to reduce risk of wheelchair tipping or skidding on the ramp.♦ Avoid negotiating ramp or slope gradient $>10^\circ$ (~1:6) if not trained, especially if wet floor.
11	<p>Kerb negotiation (going up & down kerb $<2.5\text{cm}$)</p> <ul style="list-style-type: none">♦ Position the power wheelchair facing the kerb♦ Drive forward and maintain slow and constant speed till the castors and driving wheels pass the kerb.♦ Castors and driving wheels of both sides should go up or down the kerb in pair <p>Precaution:</p> <ul style="list-style-type: none">♦ Read wheelchair manual for device safe negotiable kerb height♦ Using drop-kerb or ramp instead of negotiating higher kerb
12	<p>Using Elevator</p> <ul style="list-style-type: none">♦ Approach and press the call button of the elevator♦ Position the wheelchair facing the elevator and keep a suitable distance for the passengers to exit the elevator first♦ Enter the elevator slowly and position the wheelchair inside the elevator♦ Press or ask help to press the required floor button

	<ul style="list-style-type: none"> ♦ Drive slowly either forward or backward to exit the elevator <p>Precaution:</p> <ul style="list-style-type: none"> ♦ Switch off the power whenever parked inside the elevator ♦ Shoulder check if going out elevator by backward driving
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4. Recommended Technical Specifications:

Power wheelchair gives users the freedom to move around within their environment. Some general technical specifications of power wheelchair concerning device using safety, accessibility, and using public transportations are recommended.

- ♦ Maximum speed of wheelchair not more than 10km/hr
- ♦ The wheelchair should be equipped with seat belt
- ♦ Avoid using three wheels design and / or steering with a tiller or handle bar
- ♦ The width of the wheelchair not exceed 70cm
- ♦ The length of the wheelchair not exceed 120cm

To consult occupational therapist or others related professionals for special personal wheelchair features and specifications advices.

Reference:

1. Power Wheelchair Training Guide, First Edition, February 2015. Working Group on Assistive Technology Coordinating Committee in Occupational Therapy, Hospital Authority.
2. Kirby RL, Rushton PW, Smith C, Routhier F, Archambault PS, Axelson PW, Best KL, Betz K, Burrola-Mendez Y, Contepomi S, Cowan RE, Giesbrecht E, Kenyon LK, Koontz A, Lettre J, MacKenzie D, Mortenson B, Parker K, Smith EM, Sonenblum SE, Tawashy A, Toro M, Worobey, LA. Wheelchair Skills Program Manual Version 5.2 (2021). Published electronically at Dalhousie University, Halifax, Nova Scotia, Canada.
www.wheelchairskillsprogram.ca/eng/manual.php.
3. EnableNSW and Lifetime Care & Support Authority, *Guidelines for the prescription of a seated wheelchair or mobility scooter for people with a traumatic brain injury or spinal cord injury*. EnableNSW and LTCSA Editor, 2011, Sydney