

Manual Wheelchair Skills: Performing a Wheelchair Wheelie

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Introduction

There are many skills required to be learned by a wheelchair user, but one of the most important and difficult, is the ability to perform a wheelie.² Wheelies are considered to be when the front wheels or caster wheels rise from the surface and the rear wheels stay in contact with the support surface.^{2,3}

Why Wheelies Are Important

Wheelies have multiple benefits:

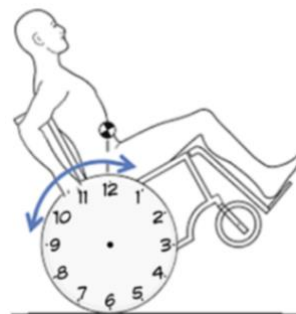
1. Being able to control the pitch of a wheelchair without falling is key for navigating the environment and maintaining independence.^{2,4} Performing a wheelie allows individuals to navigate obstacles such as uneven terrain, potholes, curbs, and inclines.^{2,4,5}
2. Wheelies also help keep the individual safe and healthy. Going into a wheelie position allows for a change in pressure which can help reduce the risk of developing pressure wounds or injuries.⁴
3. Performing a wheelie allows the individual to look up without extending their neck for a prolonged period.⁶

Despite these benefits, studies show that only 4% of wheelchair users are trained in properly performing a wheelie.⁴

How to Perform a Wheelie

Achieving Wheelie Position While Chair Is Stationary:

1. The steps listed below describe how to perform a stationary wheelie³
Start with your hands at the 10 o'clock position on the wheel.
2. Push the rear wheel forward quickly by moving your hands to the 2 o'clock position.
3. This quick movement will lift the front wheel or caster wheels off of the ground.



Achieving Wheelie Position While Chair Is Moving:

Performing wheelies during movement will help with going over obstacles and curbs.² The technique for doing a wheelie while moving is very similar to the stationary technique.² The main difference is the amount of force required to propel the caster wheels off of the surface.³ Since the individual is already moving forward, less force is required to pop up into a wheelie. The hands still work from a 10 o'clock

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position to a 2 o'clock position. Finding one's balance while moving is also like the stationary wheelie.² Whether you are doing a wheelie to get up a curb or holding a wheelie to get across difficult terrain, the process of achieving it will be the same. The difference will come with the balance to maintain the position.

Balancing in the Wheelie Position:

Maintaining a wheelie position is all about balance.² This can be achieved by leaning the body forward or backward to stay over the center of gravity.² Another way to stay balanced is by moving the rear wheel.^{2,3} If the individual feels they are falling forwards, push the rear wheel backward, towards the 10 o'clock position, to move the chair back over the center of gravity.^{2,3} If the individual feels that the chair is tipping too far back, the person can push the wheels forward, towards the 2 o'clock position, to get back into a well-balanced position.^{2,3} Maintaining your balance using these movements may require a lot of practice.

Achieving these skills allows for greater independence for the wheelchair user, especially when maneuvering over uneven terrain.^{1,2}

Initial Instructing and Training Wheelies:

Trained physical and occupational therapists can help individuals learn how to properly perform a wheelie.⁶ The following tips will be helpful when teaching an individual how to perform this skill:

1. Begin with a spotter placing the individual into a wheelie position with the wheelchair breaks on to allow the individual to get used to the feel of the balanced position.⁶
 - Spotter can spot the patient via handle bars or a gait belt looped through the bottom of the wheel chair.⁶ (See video links below for more information on how to spot a wheelie)
2. Then with the brakes off, have the individual practice finding their balance point in this position by moving the rear wheel back and forth.⁶
3. Explain to the individual that the balance point should be found by use of the hands (see above information) rather than lean from the trunk or shoulders since using the trunk may result in moving into a poor posture position.⁶

Using a spotter when first learning how to perform a wheelie will make learning this skill safer and allow for the individual to receive feedback on their performance.

Patient Resources

For further information about wheelchair wheelies, visit the following resources:

- <http://sci.washington.edu/empowerment/videos.asp#wc>
- <https://msktc.org/sci/factsheets/wheelchairs/The-Manual-Wheelchair>

References:

1. Wang YT, Limroongreungrat W, Chang L, et al. Immediate video feedback on ramp, wheelie, and curb wheelchair skill training for persons with spinal cord injury. *J Rehabil Res Dev*. 2015;52:421-430.
2. Kirby RL, Smith C, Seaman R, Macleod DA, Parker K. The manual wheelchair wheelie: A review of our current understanding of an important motor skill. *Disabil Rehabil: Assist Technol*. 2006;1:119-127.
3. Keys to Manual Wheelchair Configuration. Aci.health.nsw.gov.au. <https://www.aci.health.nsw.gov.au/networks/spinal-cord-injury/spinal-seating/module-9/keys-to-manual-wheelchair-configuration>. Accessed October 3, 2018.
4. Kelly C, Smith C. Life is balance: The importance and training of the wheelchair wheelie. Can Seat & Mob Conf. 2012.
5. Oyster ML, Smith IJ, Kirby RL, et al. Wheelchair skill performance of manual wheelchair users with spinal cord injury. *Top Spinal Cord Inj Rehabil*. 2012;18(2):138-139.
6. The Manual Wheelchair: What the Spinal Cord Injury Consumer Needs to Know. Msktc.org. <https://msktc.org/sci/factsheets/wheelchairs/The-Manual-Wheelchair>. Accessed November 23, 2018.