Wheelchair Fitting and Measurement Guide - Part 2

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Fact Sheet

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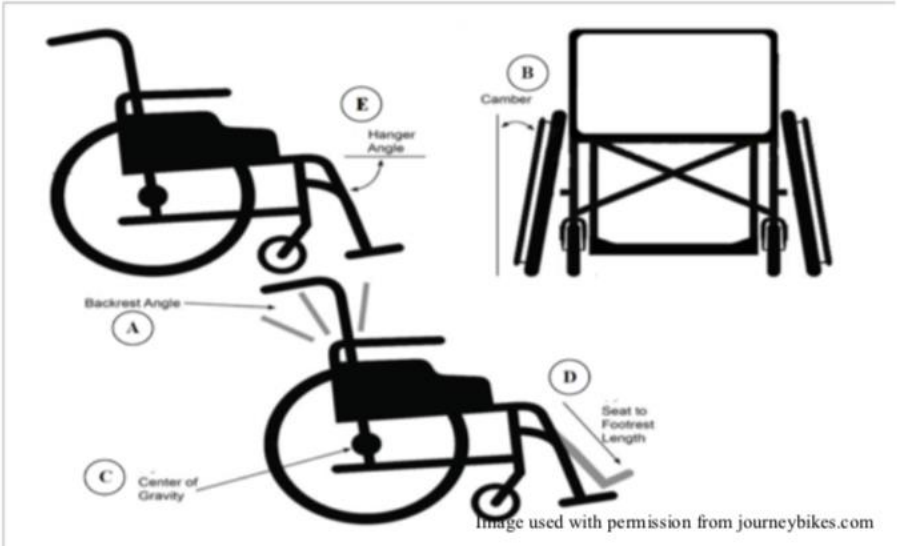
Additional Wheelchair Measurements

Part 2 of the Wheelchair Fitting and Measurements Guide provides information on five supplemental wheelchair properties to take into consideration when fitting an individual for a manual wheelchair. *These recommendations will vary based on individual comfort, needs, and activities of daily living.*



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A. Backrest angle (A) - The angle between the seat and back of the wheelchair.[1]
Considerations:

- The preferred angle will vary depending on an individual's comfort, posture, and needs such as the range of motion available at the hip.[1]
- A more vertical backrest angle will provide lumbar and midtrunk support while also allowing the shoulders to be in a better position to push the wheels.[1]
- A reclined backrest will increase pressure on the sacrum while a more upright backrest will increase pressure on the buttocks.[2]
- A reclined backrest may be needed for individuals that need more postural correction.

B. Camber (B) - This is the angle of the wheels in relation to being straight up and down.
Considerations:

- Camber will give the wheelchair more upright stability and improve turning maneuverability.[2]
- Camber will also protect the hands as they propel the wheelchair through narrow doorways.[2]
- Too large of a camber will be difficult to maneuver through tight spaces.[2,3]

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C. Center of gravity (C) - This is the position of the axle (center) of the rear wheels in relation to the seat of the wheelchair.

Considerations:

- Center of gravity affects the stability and manual propulsion of the wheelchair.[2]
- If the axle is more posterior, it will increase the stability of the wheelchair; however, it may be more difficult for the user to reach the hand rims of the wheels to propel the chair.[2]
- When the axle is positioned more anteriorly, it will decrease the stability of the wheelchair; however, it will be easier for the user to propel the wheels and to pop a wheelie.[2]
- In general, the wheels should be placed in the most forward position that allows the user to easily propel the chair while not compromising the stability.[2]

D. Footrest length (D) - The distance from the edge of the seat to the top rear of the footplate**.** The footrests should be *1-2 inches* above the ground to allow for adequate clearance.[4]

Considerations:

- If the footrest length is too short, it will not fully support the thighs and will increase pressure on the buttocks.[2,4]
- If the footrest length is too long, the feet will not be fully supported and will thereby increase forward instability.[2,4] Footrests may also hit the ground or get caught on rocks, sidewalk cracks, etc.

E. Hanger angle (E) - The angle where the footrest bars meet the seat of the wheelchair.

Considerations:

- A smaller hanger angle will require more knee flexion, but it will be significantly easier to turn, especially in tight places.[1,5]
- A larger hanger angle will require less knee flexion but may create a forward instability with the feet being further in front of the wheelchair.[1]
- A larger hanger angle will also require more space to turn the wheelchair.

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