



Rigid vs Folding Wheelchairs

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A description of the differences between folding and rigid wheelchairs.

PR9.NET January 13, 2006 - Zurich, Switzerland -- Did you ever notice that you never see a disabled athlete competing in a folding wheelchair? The reason is increased performance of rigid wheelchairs. All athletes seek to optimize performance. But performance is not only important for sports wheelchairs, it is important for active everyday users as well. A well designed rigid wheelchair becomes part of the body of a disabled user allowing easier access and freedom of movement. What are the features of a rigid wheelchair that give superior performance?

- **Reduced Maintenance and Weight:** Folding chairs have lots of movable parts that undergo strain. These parts must often be regularly adjusted or replaced to keep the chair in alignment. Because of this strain, thicker walled aluminium is required and therefore the wheelchairs are usually heavy. Rigid wheelchairs have fewer movable parts and fewer things to go wrong. Rigid wheelchairs are generally more durable and age better than folding wheelchairs.
- Much of the energy from the push on the wheels is lost in the flexing parts of the folding wheelchair. Since the rigid wheelchair has fewer movable parts, most of the energy from the push on the wheels is translated into forward motion. In short, the rigid wheelchair may be easier to push than a folding wheelchair.
- Due to the need to fold, the folding wheelchair design might not be optimized for performance. For example, the casters of the folding wheelchair are usually placed well behind the foot-rest, in order to allow the wheelchair to close properly. This design puts a lot of weight on the casters. With the rigid wheelchair, the distance between the footrest and casters is usually much shorter; placing more of the weight on the rear wheels. Less weight on the casters makes the rigid wheelchair easier to turn.
- Because rigid wheelchairs are lighter and more maneuverable than folding wheelchairs they, perform better, that is, they are easier for the user to move in. But this is not an advantage only for athletes. Imagine a wheelchair user going up a wheelchair ramp without assistance. This can be more difficult in a heavy folding chair, than in a maneuverable, ultra-light, which can be lighter by 10kg or more.
- In summary, due to weight, design, and fewer moving parts, the performance of a rigid wheelchair is usually better than a folding wheelchair. This difference may become even more noticeable as the wheelchairs age.

Performance is only one of the advantages of a rigid wheelchair over folding wheelchairs. Below is a partial list of advantages of rigid wheelchairs over folding chairs. Can you think of others?

Better Body Fit (Design): The primary design of a rigid wheelchair is to fit the body of the user. The primary design of a folding wheelchair is to fold. Folding wheelchairs are generally boxy, while rigid wheelchairs conform to the shape of the body. For example, with a rigid chair, one can taper the design to conform to the body shape (large at the hips, narrow at the knees) which can hold the users' body in place. Also the aluminium between the knees and footrest can be tapered (wider at the knees, narrow at the feet) holding the feet in place. With a folding chair, you can not taper it or it would not close completely.

After Market Adjustments: Rigid wheelchairs generally have more configurations and adjustments than folding chairs. Most folding wheelchairs have limits in their configurations and adjustments. For example, many folding wheelchairs do not allow for adjusting the angle between the backrest and the seat.

Esthetics: Some rigid wheelchairs are designed to be attractive. Folding wheelchairs are rarely considered attractive, only functional

What is the advantage of a folding wheelchair? Mainly there is one advantage: a folding chair can be stored in a trunk of an automobile without removing the wheels. Rigid wheelchairs are not for everyone, but many people who are now using folding wheelchairs are better off in a rigid wheelchair.

REMEMBER: A rigid wheelchair is made for the users' convenience. Folding wheelchairs are made for companions' convenience. Which would you prefer?

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About the Author: Dr. Gene Emmer is President of Med Services Europe (<http://www.NewDisability.com>). We are European Representatives of Colours Wheelchairs and RehaDesign Wheelchair Gloves (the Wheelchair Gloves designed for Active Wheelchair users). We are seeking distributors for our products, please contact us for more information.

Phone: +41764249963
Website: <http://www.NewDisability.com>
E-Mail: americannj@aol.com

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