

Research Evidence of the Benefits of the Natural-Fit Handrim

The Natural-Fit is one of the most extensively researched wheelchair handrims. One of the studies that tested the Natural-Fit was funded by the National Institutes of Health (NIH) through their Small Business Innovation Research (SBIR) program (Grant #R43 HD39962-01). And, more recently, a survey of Natural-Fit Handrim users was conducted to examine self-reported outcomes of using the handrim. Both of these studies are summarized below.

End-User Survey

- Survey was done as part of an NIH grant proposal and was designed by an expert in survey research.
- 90 surveys were mailed out to users of the Natural-Fit Handrim; 46 completed surveys were returned; all responses were anonymous
- Respondents on average had used Natural-Fit Handrims on their wheelchairs for 25 weeks.
- When asked to compare propelling with the Natural-Fit to propelling with their prior handrims,
 - 85% reported less fatigue
 - 80% reported less pain in their wrists
 - 65% reported less pain in their shoulders
 - 93% said it was better than a standard rim

If you would like a more detailed summary of the End-User Survey, please go to the following page on our web site: [http://www.3rivers.com/PDF/Natural-Fit End-User Survey 7-2004.pdf](http://www.3rivers.com/PDF/Natural-Fit%20End-User%20Survey%207-2004.pdf)

NIH-Funded Research: The Effect on Wheelchair Propulsion Biomechanics

- The National Institutes of Health (NIH) funded research comparing wheelchair propulsion efficiency when using the Natural-Fit versus using a standard handrim.
- In the NIH study, a prototype Natural-Fit Handrim was used during a two-week trial period with before and after measurements of propulsion efficiency.
- After the two-week trial use period, wheelchair users generated significantly more (7%) forward force with the Natural-Fit than with a standard handrim.
 - The increased forward force created no significant difference in overall total forces between the two handrims.
 - This is the best indication of a more efficient, healthier propulsion stroke with the Natural-Fit Handrim.

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