

To Our Dealers:

Thank you for your interest in the Natural-Fit Handrim. It is a great product. I am always amazed at the reactions when people grip the Natural-Fit for the first time.

Enclosed are the following items that will assist with your sales of the Natural-Fit:

- Frequently Asked Questions
- Insurance Justification and Reimbursement Information
  - Sample Letter of Medical Necessity
  - Research Evidence of the Benefits of the Natural-Fit Handrim
- Testimonials
- Part Number and Retail Price List
- Authorized Dealer Application

The sample letter of medical necessity and summary of research evidence of the benefits of using the Natural-Fit is intended to assist you with the insurance justification and reimbursement process.

As a company, we strive to be very user-friendly and we would like to insure that each person at the dealers we authorize is knowledgeable about the Natural-Fit Handrim. To assist us in this, we have included an Authorized Dealer Application in the dealer package. The Authorized Dealer Application simply asks you to return the signed form saying that you have shared the following information about the Natural-Fit with your staff:

- FAQs
- Research Evidence of the Benefits of the Natural-Fit Handrim

Upon receipt of the completed Authorized Dealer Application, we will add your company to our list of Authorized Dealers which will be posted on our website shortly.

Please let us know if you would like us to send you our half-page product flyers (based on our Natural-Fit magazine ad) for you to give to your clients.

Also, we want your comments and feedback on the materials we have provided and on our approach. We realize dealers are an integral part of how we will best serve our customers so we always want to hear from you. Please e-mail us at [support@3rivers.com](mailto:support@3rivers.com) or call us at 480-833-1834 and ask for Matt. We are looking forward to working with you in the future!

Sincerely,

Three Rivers Holdings, LLC

## The Natural-Fit Handrim - Frequently Asked Questions

### **\* Is the Natural-Fit designed for people with paraplegia or with good hand function?**

Yes. The Natural-Fit Handrim is designed for a person with paraplegia or with good hand function because its design incorporates a grip that uses the thumb.

### **\* Is the Natural-Fit all one piece or does it have component parts?**

The Natural-Fit comes in two pieces: The contoured thumb area and the oval rim. This is what allows us to apply a friction coating on the propulsion surface (the thumb area) and a smooth coating on the braking surface (the oval).

### **\* How is the Natural-Fit Handrim coated?**

The oval component of the Natural-Fit is hard anodized in black (to provide a smooth braking surface). For the contoured thumb area of the Natural-Fit, we offer two coating options: A Standard Grip coating and a SuperGrip coating. The Standard Grip coating is a thin, light-weight powder coating on the thumb area intended to serve as a propulsion surface that is slightly higher friction than the smooth surface of a standard anodized aluminum handrim. The SuperGrip is a higher friction coating for the thumb area that is an advanced copolymer which is similar to a PVC coating but provides a surface that is far more durable than PVC.

### **\* Should I get the Standard Grip or the SuperGrip?**

The answer to this question depends on your personal preference regarding how much friction or how grippy you want the propulsion surface (the thumb area) to be on the Natural-Fit. The standard grip is a powder coat that provides a lower friction surface on the thumb area to go along with the smooth braking surface on the anodized oval component. For those users particularly interested in the ergonomic features of the Natural-Fit but who do not like high friction surfaces, then the standard grip will be your best choice. In contrast, because the SuperGrip thumb area is coated with a higher friction polymer coating (it provides a PVC-like grip, but is more durable) to go along with the smooth braking surface on the anodized oval component, it will be the best choice for users who want both the ergonomic benefits of the Natural-Fit along with a grippier propulsion surface. The grippier surface of the SuperGrip may be particularly helpful when going up ramps, hills, or when traversing difficult surfaces (e.g., like deep-pile carpeting). Keep in mind that these coating options are for the thumb area only. The oval component of the Natural-Fit is always hard anodized in black to provide a smooth braking surface.

### **\* Can the Natural-Fit Handrim help me with Carpal Tunnel Syndrome or pain in my wrists and shoulders?**

Yes and we have had Natural-Fit users consistently confirm this both in testimonials that they send us and in a formal survey of over 40 Natural-Fit users. On our web site ([www.thenaturalfit.com](http://www.thenaturalfit.com)), you will find a Testimonials page and a Research Evidence page that documents how the Natural-Fit benefits people who use it. We encourage you to evaluate the evidence for yourself and to consult with a clinician.

### **\* Will the Natural-Fit mount to any size wheel?**

The Natural-Fit fits 22", 24", and 25" wheels (including Spinergy Wheels) with either a 6-position tab mount (e.g., flat tabs project from the handrim) or a 6-position rivet nut mount (e.g., 6-position mag wheel). The Natural-Fit is also available for X-Core Wheels.

### **\* Does the Natural-Fit add to the width of my chair?**

The Natural-Fit handrim will not add any width to your chair if you have a tab mount and you typically mount your handrim with the tab in the outside position (this means that the screw connecting the handrim to the wheel goes through the hole at the end of the tab). If you typically have your tab set in the inside position (the screw goes through the inside hole), then you will have to move it to the outside position in order to install the Natural-Fit. This will add 3/8 of an inch to the width of each wheel. If you have a rivet-nut mount, the Natural-Fit will add 1/8 of an inch to the width of each wheel.

### **\* Is the Natural-Fit made of lightweight materials?**

Yes. The Natural-Fit is made of lightweight aluminum (6061 aluminum alloy). The Natural-Fit weighs 1.6 lbs, which is just 12 ounces more than a standard uncoated, aluminum handrim. If your handrim is coated or made of steel, this small weight difference is further reduced.

### **\* Does the Natural-Fit come with a new wheel?**

No, the Natural-Fit only replaces the handrim on the wheel. It does not replace the wheel itself.

(Two sample letters appear below, one for pain in the hands and wrists and one for pain in the arms and shoulders.)

**Sample Letter of Medical Necessity for the Natural-Fit Handrim  
for Pain in the Hands and Wrists (Carpal Tunnel Syndrome)**

Date \_\_\_\_\_

To the Medical Insurance Company of \_\_\_\_\_

**RE:** SS# 999 99 9999

We had the pleasure of seeing \_\_\_\_\_ for a wheeled mobility evaluation. He / she is a \_\_\_\_\_ year old male/female with \_\_\_\_\_. These conditions result in him being dependent on the use of a manual wheelchair for all mobility needs both in the home and community. For the past \_\_\_\_\_ months, he has been experiencing chronic pain and fatigue in his hands and wrists associated with Carpal Tunnel Syndrome (CTS).

To address this condition, I recommend the Natural-Fit™ Handrim as an ergonomic intervention to treat the pain associated with CTS. By reducing the pain, the Natural-Fit will enable my client to remain in a manual wheelchair and will improve his quality of life. Alternatively, if the pain associated with CTS is not treated, the symptoms will become more severe and will eventually force surgery and/or the transition to a power wheelchair. Thus, without this device, \_\_\_\_\_ will not have a safe and efficient handrim for mobility or function either within his home or in the community.

The CTS that \_\_\_\_\_ is experiencing is a result of the repetitive stress of daily wheelchair propulsion. The design of his standard wheelchair handrim contributes to this repetitive stress because the small round tube has to be gripped in a pinching fashion that causes excessive activation of the finger flexors and increased pressure in the carpal tunnel. Also, because of the poor ergonomic grip of the handrim, \_\_\_\_\_ is often forced to grip his tire and handrim at the same time. This, too, causes excessive activation of the finger flexors *and* awkward wrist postures. Thus, rather than treating CTS, his standard handrim is making it worse.

The Natural-Fit Handrim provides an ergonomic design and separate surfaces for propulsion and braking that reduce stress on the hands and wrists when propelling a manual wheelchair. In particular, the combined surface area of the Natural-Fit provides an ergonomic grip that reduces excessive activation of the finger flexors and relieves pressure in the carpal tunnel, both of which will alleviate CTS and its associated symptoms. Put simply, the Natural-Fit treats CTS by enhancing the efficiency and ergonomics of both propulsion *and* braking. This type of ergonomic intervention for the treatment of CTS is in line with research on the management and treatment of CTS, and is in line with research on the biomechanics and efficiency of wheelchair propulsion and handrim design.

Direct tests of the Natural-Fit Handrim also demonstrate its benefits. One study funded by the National Institutes of Health (Grant #R43 HD39962-01) documents the improved propulsion biomechanics afforded by the Natural-Fit. Another study documents that use of the Natural-Fit reduces self-reported pain and fatigue among wheelchair users. In this study (n=46), when users of the Natural-Fit (average use time was 25 weeks) were asked to compare propelling with the Natural-Fit to propelling with their prior handrims, 85% reported less pain in their hands and 80% reported less pain in their wrists. To access these research references, you may visit [www.3rivers.com/nfhresearchreferences.php](http://www.3rivers.com/nfhresearchreferences.php).

Please refer to the attached report of \_\_\_\_\_'s visit to our clinic for details as needed. Also attached is a prescription and a copy of a price quote for the Natural-Fit Handrim. Please give careful consideration in reviewing these recommendations and do not hesitate to contact us should you need clarification of his needs or have any further questions.

Sincerely,

**Sample Letter of Medical Necessity for the Natural-Fit Handrim  
for Pain in the Arms and Shoulders**

Date \_\_\_\_\_

To the Medical Insurance Company of \_\_\_\_\_

**RE:** SS# 999 99 9999

We had the pleasure of seeing \_\_\_\_\_ for a wheeled mobility evaluation. He / she is a \_\_\_\_\_ year old male/female with \_\_\_\_\_. These conditions result in him being dependent on the use of a manual wheelchair for all mobility needs both in the home and community. For the past \_\_\_\_\_ months, he has been experiencing chronic pain and fatigue in his arms and shoulders when propelling his wheelchair.

To address this condition, I recommend the Natural-Fit™ Handrim as an ergonomic intervention to treat the pain in his arms and shoulders. By reducing the pain, the Natural-Fit will enable my client to remain in a manual wheelchair and will improve his quality of life. Alternatively, if this pain is not treated, the symptoms will become more severe and will eventually require drug interventions for the pain and/or the transition to a power wheelchair. Thus, without this device, \_\_\_\_\_ will not have a safe and efficient handrim for mobility or function either within his home or in the community.

The pain and fatigue that \_\_\_\_\_ is experiencing is a result of the repetitive stress of daily wheelchair propulsion. The design of his standard wheelchair handrim contributes to this repetitive stress because the small round tube requires extra force to stabilize the hand on the rim and does not facilitate efficient propulsion strokes because it is difficult to grip. Also, because of the poor ergonomic grip of the handrim, \_\_\_\_\_ is often forced to grip his tire and handrim at the same time. This, too, causes additional stress on the arms and leaves hands callused and dirty. Thus, rather than relieving pain and fatigue in the arms and shoulders, his standard handrim is making it worse and is creating new problems of hygiene.

The Natural-Fit Handrim provides an ergonomic design and separate surfaces for propulsion and braking that reduce stress on the arms and shoulders when propelling a manual wheelchair. In particular, the combined surface area of the Natural-Fit provides an ergonomic grip that reduces the forces necessary to stabilize the hand on the rim and facilitates more efficient propulsion (more forward motion force) than his standard handrim. This will help to relieve stress on the arms and shoulders. Put simply, the Natural-Fit relieves pain by enhancing the efficiency and ergonomics of both propulsion *and* braking. This type of ergonomic intervention is in line with research on the biomechanics and efficiency of wheelchair propulsion and handrim design.

Direct tests of the Natural-Fit Handrim also demonstrate its benefits. One study funded by the National Institutes of Health (Grant #R43 HD39962-01) documents the improved propulsion biomechanics afforded by the Natural-Fit. Another study documents that use of the Natural-Fit reduces self-reported pain and fatigue among wheelchair users. In this study (n=46), when users of the Natural-Fit (average use time was 25 weeks) were asked to compare propelling with the Natural-Fit to propelling with their prior handrims, 85% reported less fatigue overall, and 65% reported less pain specifically in their shoulders. To access these research references, you may visit [www.3rivers.com/nfhresearchreferences.php](http://www.3rivers.com/nfhresearchreferences.php).

Please refer to the attached report of \_\_\_\_\_'s visit to our clinic for details as needed. Also attached is a prescription and a copy of a price quote for the Natural-Fit Handrim. Please give careful consideration in reviewing these recommendations and do not hesitate to contact us should you need clarification of his needs or have any further questions.

Sincerely,

## 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.

### NIH-Funded Research: The Effect on Wheelchair Propulsion Biomechanics

- The National Institutes of Health (NIH) funded research comparing wheelchair propulsion 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 forward force with a lower hand gripping moment (less stress on the hand and wrist) with the Natural-Fit than with a standard handrim.
  - With the Natural-Fit, hand gripping moments were reduced without any reduction in overall power output toward propelling the wheelchair.
  - This is the best indication of a healthier propulsion stroke with the Natural-Fit Handrim.

If you would like a more detailed summary of this report, please go to the following page on our web site: [http://www.3rivers.com/PDF/Natural-Fit Phase I Final Report Abstract.pdf](http://www.3rivers.com/PDF/Natural-Fit%20Phase%20I%20Final%20Report%20Abstract.pdf)

### 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)

### What Users of the Natural-Fit Handrim Have to Say

"I have a set of Natural-Fit Handrims and I wish I had them many years ago. I've been in a chair for 40 years and the Natural-Fit rims are the best accessory that I've bought. I get better grip that is much easier on my hands and this also means better braking. Thank you for a great product."

*James McNeely  
Ridgecrest, California*

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"Just wanted to tell you I have had the Natural-Fits installed on my X-core wheels for 10 days now on two chairs – a rigid frame Colours Boing and a Quickie Microlite – and they are FABULOUS. Thank you for reinventing the wheel!"

*Paul A. Spiers, Ph.D.  
Danvers, Massachusetts*

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"Natural Fit handrims are great! Pushing my chair with these handrims allows my body to be more ergonomically correct. The larger grip of the rim places the hand in a more open position to relieve stress on the wrist by distributing over the whole wrist area. My elbows are closer to my body where there is greater strength and less effort for the push. My shoulder pain is much less also. I have stopped taking 25 mg. Vioxx and now take 1, and some days 2 Aleve tablets daily = savings \$50.00 a month for Vioxx to \$2 or \$3 a month for Aleve."

*Gary W. Venjohn  
Phoenix, Arizona*

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"It's a great product. I've been telling everybody about the handrims and giving them the web address."

*Allison McDaniel  
Melbourne, Florida*

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"The Natural-Fit Handrim that Three Rivers has developed has improved my quality of life and mobility on a daily basis, but also through a long-term benefit of overall health in my shoulders and wrists."

*Darol Kubacz  
Phoenix, Arizona*

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"With the new handrims, there are no control concerns at all on a downslope. Also, going upslope, there is enough grip on the new handrims to keep the chair from slipping backwards after making a forward push. Overall, I think the new handrims are a great improvement over the original handrims, especially since I lack the hand strength to get a tight grip on them. They work much better for me in virtually all ways I've tried them."

*John Phillips  
Saratoga, California*

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"Like handrims very much – wider surface to grip. Can't think of any improvements. Yes, comfort and mobility are enhanced – and I like the look."

*Bette Stephens  
Santa Clara, California*

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"Excellent product, I wished I knew about it 20 years earlier because I wouldn't have had to have surgery on my hands."

*Tomas Rodovsky  
Fountain Hills, Arizona*

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The Natural-Fit was also recognized as one of the "Highlights of Medtrade" in an article by Bob Vogel in *New Mobility Magazine* (February, 2004).

## Natural-Fit™ Handrim

### Part Numbers and Price List

<u>Natural-Fit Handrim Description</u>	<u>Natural-Fit</u>	
	<u>Part Number</u>	<u>Price (pair)</u>
22" Anodized Oval Rivnut - Powder Coat Thumb Piece	2261-2201	\$295.00
22" Anodized Oval Tab - Powder Coat Thumb Piece	22T1-2201	\$295.00
24" Anodized Oval Rivnut - Powder Coat Thumb Piece	2461-2401	\$295.00
24" Anodize Oval Tab - Powder Coat Thumb Piece	24T1-2401	\$295.00
25" Anodized Oval Rivnut - Powder Coat Thumb Piece	2561-2501	\$295.00
25" Anodize Oval Tab - Powder Coat Thumb Piece	25T1-2501	\$295.00
22" Anodized Oval Rivnut - SuperGrip Thumb Piece	2261-2203	\$340.00
22" Anodize Oval Tab - SuperGrip Thumb Piece	22T1-2203	\$340.00
24" Anodized Oval Rivnut - SuperGrip Thumb Piece	2461-2403	\$340.00
24" Anodize Oval Tab - SuperGrip Thumb Piece	24T1-2403	\$340.00
25" Anodized Oval Rivnut - SuperGrip Thumb Piece	2561-2503	\$340.00
25" Anodize Oval Tab - SuperGrip Thumb Piece	25T1-2503	\$340.00

<u>Individual Component Description</u>	<u>Component</u>	
	<u>Part Number</u>	<u>Price (ea)</u>
22" Anodized Oval Rivnut	2261	\$84.50
24" Anodized Oval Rivnut	2461	\$84.50
25" Anodized Oval Rivnut	2561	\$84.50
22" Anodized Oval Tab	22T1	\$84.50
24" Anodized Oval Tab	24T1	\$84.50
25" Anodized Oval Tab	25T1	\$84.50
22" Powder Coat Thumb Piece	2201	\$79.50
24" Powder Coat Thumb Piece	2401	\$79.50
25" Powder Coat Thumb Piece	2501	\$79.50
22" SuperGrip Thumb Piece	2203	\$102.00
24" SuperGrip Thumb Piece	2403	\$102.00
25" SuperGrip Thumb Piece	2503	\$102.00

**The Natural-Fit Handrim**  
**Authorized Dealer Application**

Business Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ Website \_\_\_\_\_

The staff of \_\_\_\_\_ has reviewed the following information about the Natural-Fit Handrim:

- Product Brochure
- FAQs
- Research Evidence of the Benefits of the Natural-Fit Handrim

Upon receipt of this signed form, we will add your company to our list of Authorized Dealers which will be posted on our website shortly on the Authorized Dealer section of the website ([www.thenaturalfit.com](http://www.thenaturalfit.com)).

Signature **X** \_\_\_\_\_

Print Name \_\_\_\_\_

Title \_\_\_\_\_