

# Scoliosis Bracing Services at Spinal Dynamics of Wisconsin

An overview of Rigo-System Cheneau (RSC) scoliosis bracing

RSC bracing is offered alone  
or in conjunction with the Schroth method,  
a physical therapy approach used successfully  
across Europe for thousands of patients each year



**Spinal Dynamics**  
of Wisconsin sc

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**For additional information about our scoliosis physical therapy and bracing services, call Heather at Spinal Dynamics of Wisconsin at (414)302-0770 or email her at [herdman@sdwpt.com](mailto:herdman@sdwpt.com).**

## **Introduction**

The mission of staff at Spinal Dynamics of Wisconsin is to help adults and children live optimally with scoliosis by serving as a source of motivation and education for patients and families. Our services include both scoliosis-specific physical therapy and bracing.

We offer a conservative therapy approach called the **Schroth method**, which has been used successfully in Europe for decades. Schroth teaches curve-specific exercises designed to minimize the imbalances on the spine.

Our bracing approach is based upon **Rigo-System Cheneau (RSC)** principles. RSC braces differ from most scoliosis braces because they use more 3-D correction principles and offer more room for breathing.

We are one of few clinics in the US to offer both Schroth physical therapy and RSC bracing under one roof.

Spinal Dynamics offers the services of three Schroth-certified physical therapists and two RSC-trained certified orthotists. All have been trained by a world leader in conservative scoliosis management, Dr. Manuel Rigo of Barcelona, Spain.

Dr. Rigo's list of accomplishments includes:

- Multiple research publications on scoliosis therapy and bracing
- Co-founder and President of SOSORT (Society on Scoliosis Orthopedic and Rehabilitation Treatment)
- Over 20 years of experience in scoliosis therapy and bracing
- Director of E. Salva' Spinal Deformities Rehabilitation Institute

We are pleased to be one of the only US clinics offering both Schroth therapy and RSC bracing together under one roof. We have treated more than 200 patients from Southeastern Wisconsin and across the nation and are encouraged by our early outcomes. We are devoted to continuing the mission of Schroth and RSC bracing in the US.

## **About the Rigo-System Cheneau (RSC) Brace**

The Rigo-System Cheneau (RSC) brace is a thermoplastic brace with built-in curve-specific, three-dimensional corrective mechanisms. Many other scoliosis braces are "full contact" braces. This can make it difficult for optimal breathing mechanics necessary to push out sunken areas of the trunk and sunken areas of the spine. In many full-contact braces, padding is added. But the simple addition of padding does not overcome breathing imitations because the brace itself does not allow for necessary expansion room opposite of the pads.

The RSC brace has unique built-in corrective forces that push on the prominent (convex) areas of the deformed trunk while leaving openings over the collapsed (concave) areas of the trunk. This design allows for hypercorrection of the curve. The hypercorrection and open spaces allow the patient to move and to breathe, facilitating growth into the collapsed areas.

A French physician, Dr. Cheneau, initially established the rules of correction and created the Cheneau brace for scoliosis. Dr. Manuel Rigo of Spain worked in collaboration with Cheneau to further develop a correction model using more biomechanical principles, ultimately developing the Rigo-System Cheneau brace.

## **Scoliosis Bracing Resources at Spinal Dynamics**

Bracing consultations and fittings are provided at Spinal Dynamics by

**Patrick Flanagan, CO, FAAOP** of O&P Innovations. His qualifications include:

- More than 15 years of experience, working with Schroth since 2004

- American Board for Certification (ABC) Certified
- Fellow, Academy of Orthotists and Prosthetists
- State licensed in Illinois and Wisconsin
- Graduate, Northwestern Medical School of Orthotics and Prosthetics
- RSC trained in Spain and Germany under Dr. Manuel Rigo

Spinal Dynamics also has a working relationship with **Luke Stikeleather, CO** of Orthotic Solutions.

Luke Stikeleather has practiced orthotics for 20 years with an emphasis in scoliosis management. He was inducted into the prestigious Scoliosis Research Society in 2006 joining only a few orthotists among many physicians and surgeons. Within the last few years, he has studied with Dr. Manuel Rigo from Barcelona, Spain and follows the principles of Rigo-System Cheneau brace design. A 1987 graduate of the Orthotics program at Northwestern University, he is the first orthotist trained by Dr. Rigo in the United States. Learn more at <http://www.orthoticsolutions.com>

**Initial brace consultations are free.** Physician prescriptions for consultation are recommended but not required. We welcome

- first-time brace patients,
- patients currently wearing braces seeking a second opinion
- patients unsure of bracing needs and eligibility
- adults and children of all ages

#### **First-time brace patients**

A patient in need of a new first-time brace, or one who has outgrown a brace and is ready for a new one, may choose to have our orthotist provide brace fitting services. Patients who are not sure if they need a brace may schedule a consultation to evaluate appropriateness of a brace for their individual needs.

#### **Patients with existing braces**

Many of our patients are already wearing braces when they contact us. We encourage each patient to work closely with the orthotist who has made his or her brace. We understand that some patients have ongoing bracing concerns, are dissatisfied with their existing braces, or would like another brace opinion. We will be happy to assist you in problem-solving your brace concerns.

#### **Patients unsure about bracing**

The options for scoliosis treatment can be challenging and confusing for patients and families. We are happy to consult with you at no cost to help you understand if bracing may be beneficial to you.

#### **Bracing With or Without Therapy**

It is our opinion that bracing and therapy together offer the best approach to minimizing curve progression in adolescents. Despite our strong belief, we understand some adolescents may not be interested in doing physical therapy and home exercises. In these cases, we are certainly willing to provide bracing services alone. Bracing alone may also be indicated in children who are too young to learn exercises, such as children with infantile or juvenile scoliosis (under the age of 10).

Adults, with or without a back brace, can almost always benefit from some level of therapy specifically tailored to his or her individual needs.

### **Bracing Indications in Adolescents**

The goal of bracing in adolescents is to help stop curves from progressing during skeletal growth. We follow the general guidelines of bracing as indicated by SOSORT (Society on Scoliosis Orthopedic Rehabilitation and Treatment). Indications for bracing are based upon the calculation of the risk of curve progression. This calculation considers the patients age, skeletal maturity, and curve severity.

Skeletal maturity is measured via x-ray using a 0-5 Risser scale:

Risser 0 = skeletally immature

Risser 5 = full skeletal maturity.

Braces are usually prescribed for children Risser 0-3 with curves greater than 25 degrees for scoliosis and curves greater than 50 degrees for Scheuermann's kyphosis. Braces are less likely to be prescribed for children at Risser 4 or 5, as the risk of curve progression is less when less spinal growth remains.

### **Bracing Indications in Adults**

Adults with idiopathic, degenerative, or neurologically-induced scoliosis may benefit from the use of bracing for the purposes of pain control and posture support. Adult braces differ greatly from those used in adolescents in that they are made of softer material and do not aim to aggressively correct the curvature. Adult braces range from simple off-the shelf models to custom-fit models, depending on many patient variables.

### **Bracing in Infants and Juveniles**

Infantile scoliosis (age 0-4) and juvenile scoliosis (age 4-10) must be considered very differently than adolescent idiopathic scoliosis due to the highly-progressive nature of these curves. Bracing is often indicated, and we consider cases on a highly individualized basis. If your child is between 0-10 and has scoliosis, please schedule and in person appointment to discuss your case with our orthotist. ,

### **Success with Bracing**

Success of bracing depends primarily on the primary correction achieved by the brace and on the compliance of the patient in wearing the brace. Primary correction is measured with an in-brace x-ray and is affected by the characteristics of a given curve, the bracing principles used, and the technical quality of the brace. Full compliance for adolescents in "full time" braces is typically 20-23 hours per day.

Many articles describe the benefits of RSC bracing. Please contact our clinic to request copies of these articles. Call us at (414)302-0770 or email us at [herdman@sdwpt.com](mailto:herdman@sdwpt.com).

### **Referrals and Insurance Coverage**

We are happy to assist you by obtaining physician referrals and information about insurance coverage for RSC braces. Insurances vary widely. Our orthotist will work with you during your first visit to initiate the proper process to get your brace covered by insurance. For patients who are not planning to bill insurance for bracing, a physician referral is not required.

### Principles of Correction with RSC

Because scoliosis is a three-dimensional deformity, we believe effective bracing must use three-dimensional biomechanical principles to create an improved alignment of the spinal column.

Three dimensions must be considered for optimal forces in bracing are:

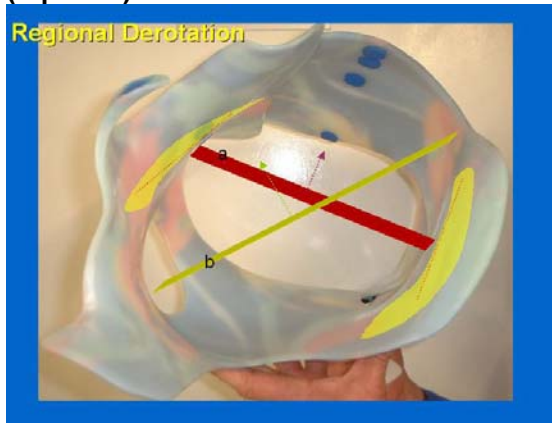
- Deflection (side to side)
- Derotation
- Normalizing the sagittal profile (the side view)

RSC principles effectively use both passive and dynamic forces to achieve the necessary 3-D effect on the spinal column. 3-D passive forces are produced from the built-in pads and from an additional three-point pressure system that together produce corrections in all three planes. Dynamic forces are created using breathing mechanics that essentially facilitate opening of the collapsed areas from within. In reality, it is the exact placement of passive forces that enables dynamic corrective breathing forces to be at work. Rigo hypothesizes that dynamic breathing forces are the only effective mechanism to reverse structural, growth-induced torsion in scoliosis.

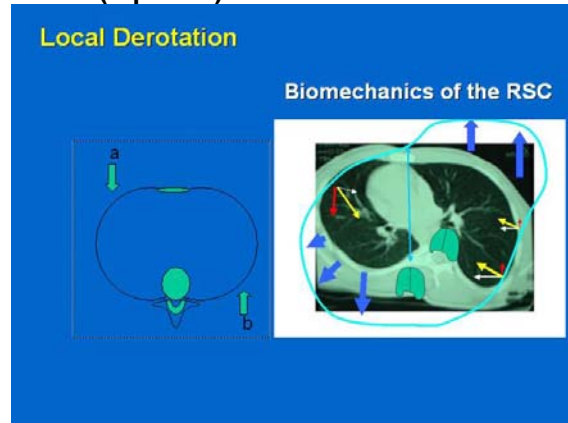
### Diagrams

The following diagrams, courtesy of Dr. Manuel Rigo, help depict correctional forces in an RSC. A book by Dr. Rigo is currently awaiting publication in the US.

#### **Built-in passive corrective forces (top view)**



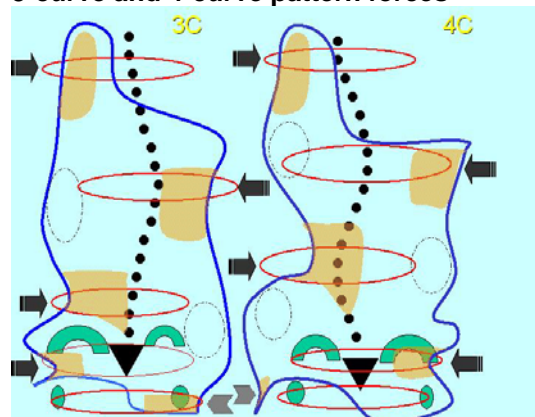
#### **Breathing-mechanics dynamic corrective forces (top view)**



#### **Bracing example**



#### **3-curve and 4-curve pattern forces**



### Example of RSC in-brace correction by Dr. Manuel Rigo



### Patient References

We encourage you to contact families and patients who have had Schroth treatment and bracing services here at Spinal Dynamics. Names and phone numbers are available from Heather. Call her at (414)302-0770 or email her at [herdman@sdwpt.com](mailto:herdman@sdwpt.com). You may also read testimonials from several of our scoliosis patients at <http://sdwpt.com/successes.php>.

### Radiology Resources

If you need x-rays, we are happy to work with you and your physician to help facilitate necessary x-rays to begin physical therapy. One of our preferred local radiology imaging providers is Pediatric Diagnostic Imaging. See [www.pdi-imaging.com](http://www.pdi-imaging.com)

### Physician Resources

We have earned the respect of many physicians in the community: pediatricians, pediatric orthopedic surgeons, spine surgeons, and pain management specialists. If you need a physician for consultation, diagnosis, or treatment, we are happy to help direct you.

### Links

You may want to review additional information at:

Ortholutions, a German-based developer of RSC braces  
<http://p25348.typo3server.info/RSC-R-Brace.8.0.html?&L=1>

SOSORT, Society on Scoliosis Orthopaedic And Rehabilitation Treatment  
[www.sosort.org](http://www.sosort.org)

National Scoliosis Foundation  
[www.scoliosis.org](http://www.scoliosis.org)

An Overview of Scoliosis Services at Spinal Dynamics of Wisconsin  
<http://www.sdwpt.com/services/scoliosis.php>

In-Depth Informational Booklet about services at Spinal Dynamics  
[http://www.sdwpt.com/media/docs/SpinalID\\_Scoliosis\\_Clinic\\_Overview-11-07.pdf](http://www.sdwpt.com/media/docs/SpinalID_Scoliosis_Clinic_Overview-11-07.pdf)

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