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A new approach

Local therapists start to work with exercise program for scoliosis

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Rebecca Ruesch stood almost unnaturally straight and took a deep breath before grabbing the metal chin-up bar wedged in her bedroom doorway. With a pause, she lowered herself into a seated position, making sure to align her hips and shoulders.

Breathe in . . .

Breathe out . . .

After three respiratory cycles, the petite 14-year-old pulled herself up and swiftly moved through four exercises designed to prevent her curving spine from worsening.

"Now it feels natural," said Ruesch, of Milwaukee, who has been diagnosed with **scoliosis**. "It used to feel really weird when I first started."

Ruesch's 30-minute routine is part of a physical therapy program that uses postural training and breathing exercises to reprogram her body into better alignment. The technique, known as the Schroth method, works in conjunction with the specially designed brace she wears each day.

Though the Schroth approach is widely accepted in Europe, some health care providers say there is no scientific basis for the treatment. To date, there are not many physical therapists trained to provide the services in the U.S.

Still, Wisconsin physical therapists are at the forefront of the movement to introduce the technique around the country.

Last month, Scoliosis Rehab Inc., which is modeled after a program used in Spain, opened in Stevens Point, and Spinal Dynamics in Wauwatosa is renovating a wing for its Schroth program.

Beth Janssen, founder of Scoliosis Rehab Inc., became one of the first certified U.S. Schroth therapists in November 2003. Cindy Marti, owner and president of Spinal Dynamics of Wisconsin, was trained in September 2005.

"This is not a lot of bells and whistles, nor is it funny dust stuff," said Marti, who treats Ruesch. "We are here to teach you acceptance of your spine and how to learn to live optimally with your condition."

"The entire goal is to stop the progression of the curve," she said. "We are not curing scoliosis; we are not reducing your angle."

Scoliosis is an abnormal curvature of the spine that typically begins during childhood. Its cause is unknown, but it tends to run in families and affect mostly girls.

First clue

Ruesch was diagnosed in January 2004 after her parents noticed a slight difference in her hip while walking. Her mother, Laura, asked her to bend over and recognized the abnormal spinal curvature – Laura's sister had had a brace and ultimately surgery for scoliosis.

"We concluded, as a family, that avoiding surgery was a high priority," said father Gary Ruesch.

Ruesch wore a Boston brace from August 2004 until December 2005. The brace fits under the arm and around the rib cage, lower back and hips. It is not noticeable under clothing.

However, Ruesch said that it felt "like a big plastic shell" and that she could feel her spine collapse back into the curve. She also said she had trouble taking deep breaths because it fit tightly.

She was fitted for a Rigo-Cheneau brace, which also is an underarm brace and is recommended for patients using the Schroth method. Ruesch said it's more spacious and holds her spine in a more natural position.

The Ruesches say they were initially "skeptical" about Schroth training but have seen improvements in their daughter that can't be ignored. She walks stands and breathes better, her mother said.

"Physical therapy is something positive that she can do that can help her the rest of her life," her father said.

Straight line

Though all spines have natural curves, the spines of people with scoliosis curve from side to side. On an X-ray, spines with scoliosis resemble an "S" or "C." A normal spine tends to form a straight line.

As a result, the bones become rotated slightly, making the person's waist or shoulders appear uneven. Treatment for scoliosis varies depending on the severity and location of the curve, age, potential for further growth and general health of the patient.

For mild curvatures, defined as up to a 20-degree angle, doctors watch and wait, while a brace generally is recommended for children and adolescents with curves of 25 to 40 degrees. A 10-degree angle is considered the beginning sign of scoliosis.

Curves of at least 50 degrees require spinal fusion, a type of surgery that stabilizes the back by fusing certain vertebrae together with bone grafts, typically using pedicle screws or hooks.

"Surgery is always the last resort, and if bracing fails, you absolutely have to do it," said Channing Tassone, a pediatric orthopedic surgeon at Children's Hospital of Wisconsin and an assistant professor at the Medical College of Wisconsin.

Channing said he prefers pedicle screws because they increase stability and result in a quicker recovery.

Christina Theodoroff, 12, of Sheboygan was diagnosed with a 62-degree curve in December. Her mother, Mary, noticed that her daughter's swimsuit wasn't fitting well during a family vacation. Mary, a nurse, didn't remember seeing anything wrong with Christina's back that summer, so she immediately called a pediatrician.

Christina had spinal fusion surgery using screws on Feb. 20 at Children's Hospital that increased her height by 2 inches, to 5 feet 4 inches. She was walking within three days and was discharged on day five.

"It is scary, but you'll get through it," she said. "Just talk because that helps. I wish I had talked to more people, like my parents about it, because that will make it better."

Christina returned to school about a month later. And though she won't be able to ride on any roller coasters, she'll be traveling to Disney World with her family this week. She'll also join cheerleading again next year.

The National Scoliosis Foundation estimates that scoliosis affects about 6 million people. The condition results in bracing for an estimated 30,000 children, while 38,000 people undergo spinal fusion surgery each year, the organization says.

Making a match

"Scoliosis is complex, so the treatment needs to match that," Marti said. "For many years, we've had poor research with non-specific therapy solutions."

In the Schroth method, movements are performed initially in front of a mirror to help patients visualize their body during and after adjustments. In addition, pads are placed under the curves during floor exercises to help the body remain symmetrical.

The exercises are based on the method's principles: elongation, which improves posture; corrective breathing; and using coordination exercises to affect a person's daily movement patterns.

"You're not going to wear the brace the rest of your life," Janssen said. "This trains you how to respond once you get out of the brace."

Janssen, who learned the technique in Spain, said her interest was sparked after she was told to watch and wait after her son's scoliosis diagnosis. He had a mild, 15-degree curve in sixth grade that progressed to a 29-degree curve by eighth grade. He wore a brace for nearly two years.

She learned the technique from physician Manuel Rigo, who ultimately trained Marti.

The Schroth therapy takes time to learn. The Stevens Point program requires adolescent patients to commit to at least two weeks of training. The sessions are four hours daily Monday through Friday. Adult training can take longer because body tissue can be more rigid, movements have become ingrained and arthritis can be a problem.

At Spinal Dynamics, sessions are one hour and take about two months to learn, Marti said.

"Not every kid is going to buy into this because they have to be consistent," said Dan Kraeger, a family practitioner and director of Point Sports Medicine Center in Stevens Point.

Kraeger, who once worked alongside Janssen, is not trained in Schroth. However, as the father of a daughter with scoliosis, he says that the method is "a breath of fresh air" for parents who want more than the current treatment options.

"We all think, 'Wow, there's something that I can do.'" he said.

However, there are no studies to confirm Schroth benefits, Tassone said.

"I anxiously anticipate the day that someone develops another conservative method that works as well as bracing, but I haven't seen scientific studies – the gold standard – to show that it works," he said.

Tassone said he is monitoring a patient who is using the Schroth method and has seen no harm to that patient's curvature.

Mary Claire Lanser, 52, of New Berlin has curvature in her spine, though it's too small to be considered scoliosis. But she doesn't want it to get any worse. Since she enjoys weightlifting, yoga, golf and spinning, Lanser decided to begin the Schroth method.

Lanser says she incorporates the Schroth principles all day, "from morning exercises, to standing, walking, sitting, sleeping postures, to my evening workouts.

"The exercises are easy to learn, but some are hard to do," she said.

"I've noticed that I'm more symmetrical," she said. "In the past I would have knee issues, but now I don't. All of us could do this if we were only taught."

For more on scoliosis, visit www.nlm.nih.gov/medlineplus/**scoliosis**.html or www.chw.org. To learn more about the Schroth method, call Spinal Dynamics of Wisconsin at (414) 302-0770 or visit www.sdwpt.com; or call Scoliosis Rehab Inc. at (877) 734-2220 or visit www.scoliosisrehab.com.