

Morgan Stanley Children's Hospital of New York-Presbyterian/Columbia University Medical Center

## Spinal Fusion NOT Recommended Treatment for Early-Onset Scoliosis

### INSIDE THIS ISSUE

No Fusion For Early-Onset Scoliosis	1
Wearing a Brace at School	2
Recent Research	3
Around the World in 2007	3
Grants for our Doctors	3
Pediatric Orthopaedic Continuing Medical Education	3
Carnival Fund-raiser	3
Kid's Clownshop	3
First in New York	4

While spinal fusion has been shown to improve quality of life and life expectancy in adolescents who have achieved normal pulmonary capacity before the onset of scoliosis, this treatment has quite a different result in skeletally immature children. In these patients, spinal fusion prevents growth of the spine and thorax during a critical developmental time – worsening lung function, and the quality of life and mortality issues associated with this syndrome. Surgeons at MSCHONY and other specialized centers, therefore, attempt to avoid spinal fusion in young children with early-onset scoliosis.



Doctors Michael G. Vitale and David P. Roye Jr. prepare to operate on a child suffering from Early-Onset Scoliosis

### Growing Rods and VEPTR provide Better Outcomes

Treating early-onset scoliosis with growing rods and/or VEPTR permits continued growth of the spine, maximizes space available for lungs and enhances pulmonary function. By increasing pulmonary capacity as well as straightening the spine, these treatments provide significant quality of life improvements in the child's ability to breathe, to talk, to live. Spinal fusion, by contrast, irreversibly limits growth of the patient's spine, thorax and lungs. The resulting respiratory insufficiency has a progressive negative impact, starting with low vitality (the child tires easily, has trouble talking and eating). If the respiratory status deteriorates further, respiratory support may be required, and the risk of recurrent pneumonia increases along with mortality. The complex care required by children diagnosed with early-onset scoliosis has tended to limit their treatment to children's hospitals offering a convergence of strong orthopaedic, pulmonary and ICU facilities. Morgan Stanley Children's Hospital of New York-Presbyterian' orthopaedic teams have significant experience in applying these techniques and are continuing to develop and test techniques, and share in research, with the expectation of even better outcomes in the future.

### WEBCAST Highlights Early-Onset Scoliosis

Scheduled for broadcast on the internet on Wednesday, December 5, from 7pm to 8pm, viewers will find David P. Roye, Jr. MD and Michael Vitale, MD MPH, discussing the results of their research. Log on to [www.OR-Live.com/NYP/1778](http://www.OR-Live.com/NYP/1778). Dedicated to improving the quality of life in children, these doctors, along with their research team, have recently published results of a Quality of Life study on children with early-onset scoliosis. Their recommendations on treatment techniques will help practitioners seeking appropriate care for their patients. An archived presentation of the Webcast will be available at [www.childrensorthopaedics.com](http://www.childrensorthopaedics.com)

## Wearing a Back Brace in a High School

Katie, age 16, was diagnosed with scoliosis at age 12. Her treatment choice was to wear a brace instead of surgery. After four years, she recalls her experience.

### Katie's choice

“My own spine was in the shape of an S. My curves came out to be 35° on the top, and 23° on the bottom. As Dr. Vitale was explaining everything about when I would stop growing and when I would go through growth spurts, he might as well have been speaking in French – then he started talking about treatment options. The first one was surgery, and I did not like the sound of it, at all. Thankfully, it wasn't mandatory until the curve becomes 50° or greater. The second option was to wear a brace 18 hours a day, meaning I would have to wear it to sleep, and to school. When he showed me the brace, I was speechless. How was I supposed to wear all my clothes? How was I supposed to still play basketball? He told me I could still do all of my physical activities, because I could simply remove the brace at my leisure, although he doesn't recommend doing it often.

### The brace at school

The brace was very uncomfortable, and I couldn't scratch when my back or stomach was itching. None of my friends or teachers noticed, but I knew it was there. I constantly thought I was “Katie, the ugly girl with braces, bad style, and wearing that stupid brace.” As eighth grade came around, all my friends were wearing nice clothes, looking pretty everyday, and there I was, still wearing big tee shirts and sweats. When I finally got my braces off my teeth, I just felt I only looked like a girl from the neck up.



When I got to high school, I was standing taller than Dr. Vitale. I stopped wearing the brace to school, and was living your average teenager life, hanging out every weekend. The only thing I did differently was before I went to bed I would put on my back brace. To be honest, even some of my closest friends have never seen me in my brace.

### The end of the brace

After my “critical stage” of growth, my curves had progressed to 46° on the top and 33° on the bottom – below my doctor's cut off line for surgery. And Dr. Vitale told me that there is only a slim chance the curve can get worse. When he told me I no longer had to wear my brace, I was simply ecstatic, but held it in until I got in my car. It was, and still is a mix of emotions, a sense of relief, and a sense of accomplishment because I overcame this obstacle by myself. Now I can continue to swim, and it just so happens that it is good for my back, and I love doing it.”

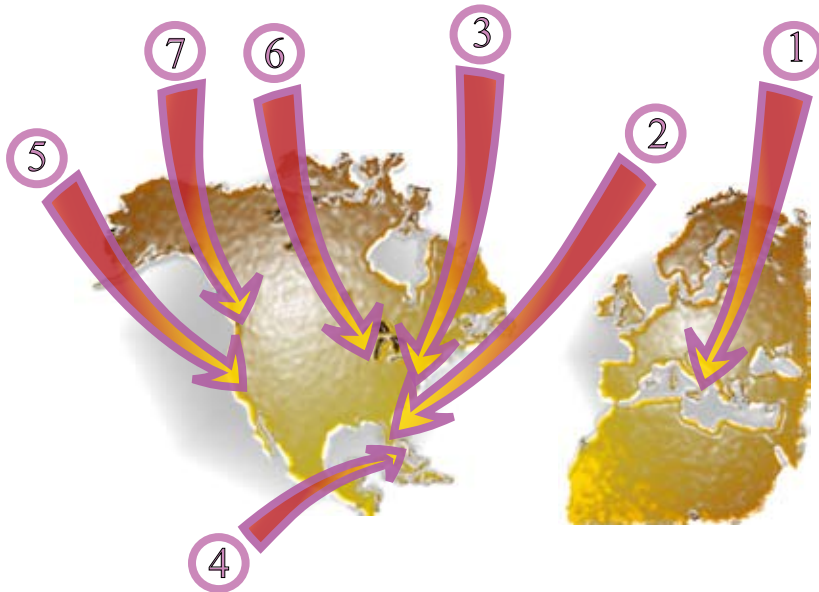
*No brace for Katie's Sweet 16 Party dress*

## Recent Research

*Health Related Quality of Life in Children with Thoracic Insufficiency Syndrome*

Michael G. Vitale, MD, MPH, David P. Roye, Jr., MD, Hiroko Matsumoto, MA, Randal R. Betz, MD, John B Emans, MD, David L. Skaggs, MD, John T. Smith, MD, Kit M Song, MD, Robert M Campbell, Jr., MD

While the technical goal of surgery for children with TIS is to allow the growth of the thoracic cavity and control spine deformity, the ultimate goal of the treatment is to improve the quality of life of those children and to decrease the burden of their caregivers. The primary purpose of this study was to compare quality of life (QOL) of children with TIS and the impact on their parents prior to implantation of the VEPTR and to those same parameters after the implantation. We also compared the QOL of children with TIS and the parental impact prior to implantation of the VEPTR with previously published QOL of healthy children. Abstracts are available on-line at [www.childrensorthopaedics.com](http://www.childrensorthopaedics.com)



## Abstracts Presented Around the World in 2007

- 1 European Pediatric Orthopaedic Society (EPOS), Sorrento, Italy, April
- 2 Pediatric Orthopedic Society of North America (POSNA), Hollywood, FL, May
- 3 American Orthopaedic Association (AOA), Asheville, NC, June
- 4 International Meeting on Advanced Spine Techniques (IMAST), Bahamas, July
- 5 American Academy of Pediatrics (AAP), San Francisco, CA, October
- 6 Limb Lengthening & Reconstruction Society (LLRS), Chicago, IL, July
- 7 American Academy for Cerebral Palsy and Developmental Medicine (AAPDM), Vancouver, Canada, October

1. A Retrospective Cohort Study of Pulmonary Function, Radiographic Measures, and Quality of Life in Children with Scoliosis: An Evaluation of Patient Outcomes After Traditional Spine Surgery - Presented at 1 & 2
2. Comparison of Patient-Based Outcomes in Clubfoot Treatment: A Long Term Follow-up Study - Presented at 1
3. The Efficacy of Preoperative Erythropoietin Administration in Pediatric Neurogenic Scoliosis Patients - Presented at 1 & 2
4. Comparison of Patient-Based Outcomes in Clubfoot Treatment: A Long Term Follow-up Study - Presented at 2 & 3
5. Health Related Quality of Life in Children with Thoracic Insufficiency Syndrome - Presented at 1 & 3
6. Assessment of Construct Variability Among Experienced VEPTR Users - Presented at 4 & 5
7. Articulated Hip Distraction Arthroplasty: A Treatment Option for Avascular Necrosis of the Femoral Head in Adolescents - Presented at 5 & 6
8. Femoral deformity Correction with the use of the Taylor Spatial Frame - Presented at 5 & 6
9. Epidemiology of Hospitalization among Patients with Cerebral Palsy in the United States from 1979 through 2003 - Presented at 5 & 7

## New Research Grants Awarded for 2008

POSNA Angela Kuo Award: One-year grant to study: Quality of life, Burden of Care and Parental Impact in Children and Families Undergoing Repetitive Surgery for Early Onset Scoliosis.

Chest Wall And Spine Deformity Foundation Research Grant: Two-year grant to study: Quality of Life of Children with Thoracic Insufficient Syndrome.

Chest Wall And Spine Deformity Foundation Research Grant: One-year grant to study: An Evaluation of Pulmonary Function, Radiographic Measures and Quality of Life: A Comparison Between Expansion Thoracoplasty Using the Vertical Expandable Prosthetic Titanium Rib Versus Early Fusion.

## News and Announcements

**Pediatric Orthopaedic CME:** Around 40 pediatricians attended the October CME in Brooklyn to hear updates on musculoskeletal treatment options for children. Watch for the next CME in Saddlebrook, NJ.

**Carnival Fundraiser:** Kerry and Michael Tepedino hosted a Back-Yard Carnival in October to raise funds for Pediatric Orthopaedic Research. Over 100 kids and families enjoyed jumping castles, cotton candy, sharing the magic of laughter – and raising over \$18,500.

**Kids Clown Workshop:** Join the Big Apple Circus Clowns for a benefit program to help children with orthopaedic issues gain confidence and feel extra special. Three-hour workshops teach kids to juggle, do tricks and learn the magic of laughter. Tickets and sponsorships are \$150 per child.

# Live Webcast Highlights Early-Onset Scoliosis December 5th at 7pm

## THE DIVISION OF PEDIATRIC ORTHOPAEDICS

David P. Roye, Jr., MD  
Chief

Francis Y. Lee, MD, PhD

Joshua E. Hyman, MD

Christopher S. Ahmad, MD

Michael G. Vitale, MD, MPH  
Editor-in-Chief

Amber E. Sentell, PA

Rachel Lyons, DrNP

Morgan Stanley Children's Hospital  
of New York-Presbyterian  
Division of Pediatric Orthopaedics  
3959 Broadway, 8th Floor  
New York, NY 10032  
1-212-305-5475

## The Children's Hospital ranks first in New York

New York - Presbyterian Hospital ranks first in New York and eighth in the nation for pediatric care, according to the U.S. News & World Report "America's Best Children's Hospitals" issue, which features a detailed listing of the nation's top 30 children's hospitals. The ranking accounts for New York-Presbyterian's two major centers for children's health care: Morgan Stanley Children's Hospital of New York-Presbyterian and the Komansky Center for Children's Health at New York-Presbyterian Hospital/Weill Cornell Medical Center.

## Serving the Tri-State area with 10 convenient locations

Including expanded hours in Eastside Manhattan and Greenwich, CT.  
For an appointment at any of our locations call:

**Appointment Scheduling: 212-305-4565**

**Visit our website [www.childrensorthopaedics.com](http://www.childrensorthopaedics.com)**

Morgan Stanley Children's Hospital of New York-Presbyterian  
Division of Pediatric Orthopaedics  
3959 Broadway, 8th Floor  
New York, NY 10032

(Printer please insert here your initials)