

Morgan Stanley Children's Hospital of NewYork-Presbyterian

Focus on Pediatric Orthopaedics

Affiliated with Columbia University College of Physicians and Surgeons

Advancing pediatric orthopaedic care and research to improve every child's quality of life

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"Clara"

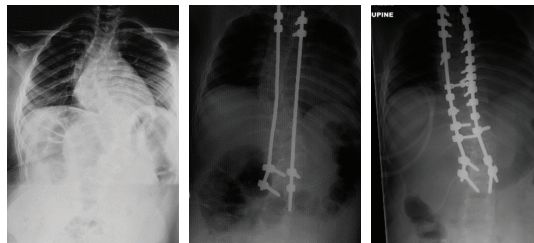
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Neuromuscular Scoliosis: Changing the Surgical Discussion

Scoliosis is a common occurrence for children with neuromuscular disorders such as cerebral palsy and muscular dystrophy. These curves can progress rapidly and not only cause difficulties with positioning the child and pressure sores, but can create or worsen cardiac and respiratory problems. Many of these children have multiple medical problems and a progressive scoliosis can lead to a rapid deterioration in their health. With recent advances in care, many children with neuromuscular diseases are living longer, making the decision to treat scoliosis even more critical. Factors used in making the decision to undergo

surgery include determining if it will improve the quality of life for the child, decrease the so called burden of care for the child's care providers, and prevent future problems. "We use a much lower threshold [in curve size] to consider surgery for neuromuscular scoliosis [as opposed to idiopathic scoliosis]," explains Benjamin Roye, MD. "In certain conditions even a 20 degree curve can be predicted progress to a life-threatening situation or a situation where a young adult is more compromised than he might have been if treated. We often see patients with very large curves who could have benefitted from an earlier treatment." *Continued on page 2*



Staged surgeries allow for more powerful correction of scoliosis. Pictured are pre-op and two views of surgeries performed 2 weeks apart.

Benjamin D. Roye, MD Joins Surgical Team

The first of July, 2008 was a homecoming of sorts for Dr. Benjamin D. Roye as he is a graduate of the Columbia University medical school and orthopaedic residency program. Dr. Roye completed his fellowship in pediatric orthopaedics at the Children's Hospital of Philadelphia, and from there spent time as an attending at Beth Israel Medical Center before becoming the director of pediatric orthopaedics at the Mount Sinai School of Medicine. In addition to his clinical duties at Mount Sinai, he was in charge of coordinating and developing the curriculum in pediatric orthopaedics for the medical students and residents.

Dr. Benjamin Roye has written on clubfoot and scoliosis surgery, presented research at national and international meetings and has authored and

*Benjamin D. Roye, MD, MPH,
Assistant Attending and
Assistant Professor
of Orthopaedic Surgery*



co-authored multiple chapters in textbooks on pediatric orthopaedics. In addition to his medical training, Dr. Roye completed his Masters in Public Health from the Columbia University Mailman School of Public Health.

While he has a special interest in scoliosis and neuromuscular spine disorders, Dr. Benjamin Roye cares for patients with all pediatric orthopaedic problems. He currently lives in Westchester with his wife, a pediatrician, and their three children.

 **COLUMBIA UNIVERSITY**
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“... performing two smaller surgeries staged a week or two apart are easier for the child...”

Neuromuscular Scoliosis: [Continued from the cover]

Some children with neuromuscular scoliosis may need to use their hands to balance instead of more important functions like driving a wheel chair or eating. Scoliosis surgery can help restore spinal balance and the ability to use their hands for more productive functions. “One thing that is true for all children with neuromuscular diseases,” describes Dr. Roye, “is even small curves need to be closely evaluated and monitored.”

While bracing is often a treatment for children with idiopathic scoliosis, it does not prevent the progression of neuromuscular scoliosis. These children are also often unable to tolerate the brace because of their restricted lung functions.

What the pediatric orthopaedic surgeons are finding at the Morgan Stanley Children’s Hospital of New York-Presbyterian, is that when surgery is indicated for very large curves, performing two smaller surgeries staged a week or two apart are easier for the child to tolerate and can lead to improved curve correction.

At the Children’s Hospital of New York-Presbyterian, helping a family prepare for surgery is a team effort with our surgeons, nurses, and child life specialists. Parents are also introduced to other parents to share helpful experiences.

Recently Published Research

Vitale MG, Matsumoto H, Bye MR, Gomez JA, Booker WA, Hyman JE, Roye DP Jr.

A retrospective cohort study of pulmonary function, radiographic measures, and quality of life in children with congenital scoliosis: an evaluation of patient outcomes after early spinal fusion. *Spine*. 2008 May 15;33(11):1242-9.

Vitale MG, Matsumoto H, Roye DP Jr, Gomez JA, Betz RR, Emans JB, Skaggs DL, Smith JT, Song KM, Campbell RM Jr.

Health-related quality of life in children with thoracic insufficiency syndrome. *J Pediatr Orthop*. 2008 Mar;28(2):239-43.

Case Study:

Emilio, an 11-year-old with cerebral palsy underwent a series of two surgeries to correct his scoliosis. His curve of 100 degrees was impacting his ability to breathe, already compromised by his condition. The surgeries were performed nearly 2 weeks apart, with the use of internal rods to distract and straighten the spine. Between the surgeries the ligaments loosen allowing for further correction at the second surgery. He is now able to sit upright in his wheel chair, breathe easier, and interact better with the world around him.

Research shows...Children treated at a children’s hospital for orthopaedic care have better outcomes. We have **the most** orthopaedic surgeons specially trained to take care of kids, out of all of the children’s hospitals in New York.

*12-year-old Clara chose
when to have her scoliosis surgery.*



Children help make their healthcare decisions

"I got the part of the Queen!" Clara was thrilled to announce that her audition for the school play landed her such a great part. Eleven years old and beginning middle school, Clara was happy to be so involved with her school activities. Just six months prior to the audition, Clara had spine surgery to correct her scoliosis.

Two years earlier Clara's pediatrician had discovered her scoliosis on an X-ray performed for a bad cough. This started Clara and her parents down a path of multiple treatment options to stem the tide of her increasing curvature. She tried two different types of bracing, and visits to a chiropractor but the curvature and pain were progressing as her young body grew. Clara's parents turned to the expertise of Dr. David P. Roye, Jr., at the Morgan Stanley Children's Hospital of NewYork-Presbyterian.

Clara's condition, known as Adolescent idiopathic scoliosis (AIS), is the most common type of scoliosis, as well as the type with the best prognosis. Generally occurring between the age of 10 and young adulthood, this condition, may begin to manifest itself at the initial onset of puberty or become apparent or worsen during an adolescent's growth spurt. Girls are at higher risk than boys.

Decisions regarding the appropriate treatment for AIS depend mostly on 2 factors: the severity of the spinal curvature and the physical maturity of the patient. Because different children grow at different rates and experience growth spurts at different ages, the age of the patient is not as important as the child's skeletal age.

When Clara and Dr. Roye met to discuss having surgery, Clara's curvature had reached 70 degrees. "Clara adores him," said her mother of Dr. Roye. "He included her in all of the conversations. She was part of the decision making process for surgery and when it was to be scheduled." Dr. Roye's compassionate approach with children ensures that their role as part of their own healthcare team is encouraged. Together they decided to schedule the surgery after the summer was over. Clara's school year started and her surgery was scheduled for October around the time of her birthday. Within days she was home and recovering beautifully. In addition to being ready for her school play, 12-year-old Clara sees a new role in her future as she wants to become an orthopaedic doctor and help screen kids for scoliosis



Meet the Staff: Nicole (Nikki) Ekstrom, CPNP, RN, ATC

Nikki Ekstrom, a Certified Pediatric Nurse Practitioner, brings a very focused interest in rehabilitation and fitness to our pediatric orthopaedic team. Ms. Ekstrom started her career in West Virginia as a Certified Athletic Trainer helping kids and adults with their rehabilitation from injuries and

illness. She chose pediatric orthopaedics as her specialty while receiving her advanced practice nursing degrees from Columbia University. Nurse practitioners provide comprehensive care for patients, including patient evaluations, physical exams, hospital rounds, post-operative care, and writing prescriptions. In peds ortho, Nikki will see her own patients, work alongside the team of surgeons and be instrumental in providing patient education both pre and post-operatively to achieve ideal recovery.

Serving the Tri-State area with 10 convenient locations –
For an appointment at any of our locations call: 212-305-4565.

The Division of Pediatrics Orthopaedics

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Benjamin D. Roye, MD, MPH

Amber E. Sentell, PA

Rachel Lyons, DrNP

Nicole Ekstrom, CPNP, RN, ATC

Special Honor: Humanitarian Award

David P. Roye, Jr., MD has been named the 2009 recipient of the American Academy of Orthopaedic Surgeons' Humanitarian Award. The Academy will present the award on February 26, 2009 at the 76th Annual Meeting in Las Vegas, Nevada. Dr. Roye has spent decades providing care to children around the world. His work has taken him to Africa, Eastern Europe and to China. As Medical Director of the Children of China Pediatrics Foundation, he has been leading a medical/surgical team to various locations in China to perform surgeries on disabled orphans for the past ten years. Dr. Joshua E. Hyman will join Dr. Roye in October for the next medical mission to Nanchang China. They will be including a one-day spine symposium to educate Chinese physicians on latest treatment options.



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