

Dennis Weiner, MD

SETTING THE PACE FOR PEDIATRIC ORTHOPEDICS AT AKRON CHILDREN'S

By Alex Strauss

AKRON HAS A long reputation for orthopedic excellence, having been home to several of the nation's first orthopedic surgeons in the early part of the 20th century. The region owes its reputation, in part, to physicians and surgeons who cared for injured workers from the rubber factories, children affected by the polio outbreak (which gave rise and momentum to Akron Children's Hospital), disabled World War II veterans returning home and, more recently, to pediatric orthopedic surgeon Dennis Weiner, MD.

Dr. Weiner is the long-time chair of Akron Children's Department of Orthopedic Surgery, director of Pediatric Orthopedic Research, founder and director of the Skeletal Dysplasia Center, and teacher and mentor to hundreds of medical students and residents (including his two sons — Scott Weiner, MD, and Brad Weiner, MD, who are orthopedic surgeons). Dr. Weiner has been helping children with musculoskeletal problems for more than 30 years, which is quite impressive, considering that fellowship training in pediatric orthopedics did not exist in the late 1960's when he finished his orthopedic residencies at Akron General Medical Center and Akron Children's.

"Because there were no formal fellowships at the time, I spent a year traveling to different centers, studying children's orthopedics," recalls Dr. Weiner, who now teaches what



Dennis Weiner, MD, is chair of the Department of Orthopedic Surgery, director of Pediatric Orthopedic Research, and founder and director of the Skeletal Dysplasia Center at Akron Children's Hospital.

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One of Dr. Weiner's chief areas of interest is skeletal dysplasia, bone and cartilage disorders that affect growth and development of the skeleton and result in short stature or dwarfism. He is shown here examining a patient with Bonnie Leighley, RN. At 45 years with Akron Children's, Leighley is the hospital's longest-serving nurse.

he's learned as chair of the Department of Orthopedic Surgery and professor at Northeast Ohio Medical University (NEOMED).

His travels led him from hospitals in Canada to Connecticut and California, then back to Canada for a spine fellowship at Wellesley Hospital of Toronto, before returning to Akron Children's as director of Pediatric Orthopedic Education in 1970. At the time, he was newly board-certified by a special project of the American Board of Orthopedic Surgery. His first action as director was to make research mandatory for residents.

"We had been training orthopedic residents at Akron Children's since the 1940s. But as training evolved, it became clear research needed to be a bigger part of it," says Dr. Weiner. "I believe research makes residents more complete. It broadens their exposure to clinical judgements such as assessing various treatment options, but also offers the opportunity to work in the laboratory to understand basic

pathologies. At the time, research was becoming more important in orthopedic training nationally."

Today, Akron Children's trains orthopedic residents from Summa Health System in Akron, Akron General Medical Center, Cleveland Clinic, Allegheny General Hospital in Pittsburgh and Affinity Medical Center in Massillon. Thanks to Dr. Weiner's efforts, Akron Children's orthopedic residents, along with five of the physicians he has recruited, are involved in a range of research projects. Some are supported by grants from the National Institutes of Health, but most are funded by individual donors.

Chair of the Department

In 1980, there were two significant events in Dr. Weiner's career — his appointment as chairman of the Department of Orthopedic Surgery and the addition of Bonnie Leighley, RN, nurse clinician, to his team. At 45 years with Akron Children's, Leighley is the hospital's longest-serving nurse

and "a pivotal part of what we do here," according to Dr. Weiner. Since 1980, she has worked with Dr. Weiner as department coordinator, research assistant and office manager.

Under Dr. Weiner's leadership, Akron Children's pediatric orthopedic surgical team includes Patrick Riley, MD, Bill Schrader, MD, Kerwyn Jones, MD (director of Orthopedic Education), Mark Adamczyk, MD, and Todd Ritzman, MD. Another surgeon is expected to join the Akron orthopedic surgical team in the fall. Sheryl Handler-Mataras, MD, sees patients in the Mahoning Valley. The department's steady growth has mirrored Akron Children's increased volume of orthopedic cases.

"We perform more than 2,000 orthopedic operations at Akron Children's every year and have a huge emergency room for orthopedic problems where we sometimes see 30 or more fractures a day," says Dr. Weiner, who points out that 65 to 70 percent of the patients he personally sees are outside of Summit

County in satellite clinics.

“We primarily serve an area in northeast Ohio with a population of roughly 4 million people, and we have patients coming not only from all across Ohio but also Pennsylvania. I expect we will be up to 10 orthopedic surgeons within the next two or three years.”

Board-certified and fellowship trained in pediatric orthopedic surgery, Akron Children’s team of orthopedic surgeons has expertise in a range of subspecialty areas including sports medicine; spine; hand; disorders of the hip, foot and ankle; skeletal dysplasia; trauma; neurological disorders; and more. As a clinician and researcher, Dr. Weiner’s special interests include skeletal dysplasia, slipped capital femoral epiphysis, clubfoot and the biology of the growth plate.

Champion of Research

As a long-time advocate for research, Dr. Weiner has written more than 80 journal articles and 12 abstracts and

given more than 160 presentations around the country. He has been honored with 28 visiting professorships and published two books on pediatric orthopedics, one of which is in its second edition. The active research program at Akron Children’s, which Dr. Weiner oversees, consists of about 90 percent clinical research on orthopedic disorders and 10 percent basic scientific research. Currently, 21 studies are underway.

“Basic science research is important because you are examining structures at the cellular-molecular level and the genes that reflect how a cell functions,” says Dr. Weiner. “Ultimately, the goal is to improve the treatment of patients through a better understanding of the pathology of diseases. It is beyond new devices. It is about understanding the disease better.”

When asked about his most significant past or current research projects, Dr. Weiner cites studies that led to the development of a new operation

for foot deformities. (The results of these studies have been published twice.) His research also brought about the development of a novel brace for patients with club feet. Most recently, he has produced several studies on rare causes of dwarfism.

Research projects at Akron Children’s have garnered the attention of numerous national organizations. One study was featured on the cover of the June 2010 issue of the *Journal of Pediatric Orthopaedics*, and many others have won awards from the American Academy of Pediatrics (AAP). Dr. Weiner won the 2008 distinguished service award from the AAP. In 2008, he was inducted into the prestigious American Orthopedic Association and the International Pediatric Orthopedic Think Tank.

His dedication to research prompted him to become a key player in the formation of the Austen BioInnovation Institute in Akron (ABIA). ABIA is focused on patient-centered innova-

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Pre- and post-op images are of a patient with Ellis-Van Creveld syndrome, a genetic disorder primarily affecting The Old Order Amish of Lancaster, Pennsylvania. Surgery was performed by Dr. Bill Schrader and Dr. Dennis Weiner to release and realign soft tissues combined with an osteotomy to straighten the severe knee deformity.

tion and commercialization through ongoing development of medical- and healthcare-related biomaterials. It is an Ohio Center of Excellence for Biomedicine and Healthcare and, along with one of its founding members, The University of Akron, winner of the prestigious U.S. Department of Commerce's i6 National Innovation Challenge. In addition to Akron Children's and The University of Akron, other founding institutions include Summa, Akron General, and NEOMED. Dr. Weiner expects the ABIA to do more than advance medical knowledge.

"It is designed to be an innovative engine that ignites research in the Akron region and hopefully results in many new jobs, companies and products that will enhance Akron and Northeastern Ohio."

Founder of the Skeletal Dysplasia Center

One of Dr. Weiner's chief areas of interest is skeletal dysplasia, the bone and cartilage disorders that affect growth and development of the skeleton and result in short stature or dwarfism. For more than 30 years, he has treated the region's Amish patients with these disorders. Because of their genetic background, the Old Order

Amish in Millersburg, Ohio, and Lancaster, Pennsylvania, are more prone to skeletal dysplasia than the general population.

"There are nearly 100,000 people who are Old Order Amish or Mennonite in the Lancaster region," says Dr. Weiner, who has traveled there to care for this population. The Pennsylvania Amish are particularly susceptible to serious knee deformities caused by Ellis-van Creveld (EVC) syndrome, for which Dr. Weiner and his team have developed an advanced corrective procedure. A condition seen more often in the Ohio Amish is Cartilage-Hair Hypoplasia, an autosomal recessive disorder that causes short-limb dwarfism.

To address the prevalence of these diseases and offer hope for those who have them, in 2000, Dr. Weiner founded and now directs the Akron Children's Regional Skeletal Dysplasia Center, one of only a handful of such clinics across the nation.

"It is often difficult to diagnose these conditions," says Dr. Weiner, who sees both children and adults at monthly skeletal dysplasia clinics. Dr. Weiner runs the clinics in association with Richard Pauli, MD, PhD, a renowned medical geneticist from the University of Wisconsin. "We have people who come from 12 states to our clinic. People

with dwarfing conditions may have multiple medical problems in addition to orthopedic problems. Our clinic is designed to not only establish a diagnosis but implement the various treatments these patients require."

As evidence of Akron Children's growing recognition as an authority on these disorders, the hospital hosted the Little People of America's Regional Medical Symposium in April. Several hundred people attended. Ultimately, Dr. Weiner says it is an ongoing commitment to research, as well as top quality patient care, that will continue to advance the profession and keep Akron Children's on the cutting edge of orthopedic innovation.

"In the end, I believe research benefits society by continually improving our understanding of disease, changing the kinds of treatments we employ, and giving us the tools to assess which ones are the most effective," says Dr. Weiner. "If you do not continue to search and reach and explore, then medicine becomes stagnant. It has to keep moving forward."

For more information visit the Akron Children's Hospital Orthopedics Department at www.akronchildrens.org. To refer a patient, call 330-543-3500 or call Dr. Dennis Weiner at 330-543-6633. ■