

Endocrinology and Metabolism



Listed from left to right. Front: Sasigarn A. Bowden, Monika Chaudhari, Jenifer Dyer Back: Juan F. Sotos, Robert P. Hoffman, Yelena Nicholson, Maria J. Henwood Not pictured: Dana S. Hardin.

Staff Physicians and Faculty



Juan F. Sotos, MD, Division Chief

Sasigarn A. Bowden, MD

Monika Chaudhari, MD

Jennifer S. Dyer, MD

Dana S. Hardin, MD

Maria J. Henwood, DO

Robert P. Hoffman, MD

Yelena Nicholson, DO

The Division of Endocrinology and Metabolism provides comprehensive services for the diagnosis and treatment of pediatric endocrinologic and metabolic conditions. These include Type 1 and Type 2 diabetes, hypoglycemia, growth hormone deficiency and other pituitary abnormalities, genetic and acquired growth disorders, thyroid abnormalities, disorders of puberty, adrenal disorders (e.g., Addison and Cushing diseases and congenital adrenal hyperplasia), calcium and bone disorders, intersex and ambiguous genital disorders, as well as other hormonal abnormalities. The division is a major referral center for more than 1 million children and adolescents in and beyond central Ohio and is a consultative resource for the State of Ohio Newborn Screening Program for congenital hypothyroidism and congenital adrenal hyperplasia.

There currently are eight pediatric endocrinologists within the division. All are faculty members in the Department of Pediatrics at The Ohio State University College of Medicine. Annually, 180 patients from infancy through adolescence are diagnosed with Type 1 diabetes at Nationwide Children's Hospital. Approximately 1,400 are followed on a regular basis, 90 percent of which have Type 1 diabetes. Comprehensive services include a multidisciplinary team

approach that utilizes the expertise of nurse practitioners, diabetes nurse educators, nurses, pediatric dietitians, social workers and behavioral scientists. Furthermore, all new patients receive outpatient education classes in addition to inpatient education. For selected patients, the diabetes program offers a comprehensive insulin pump program designed to enable patients to succeed with pump therapy. The division offers continuous blood glucose monitoring as augmenting therapy, and a special education program for Type 2 diabetic patients. Using these approaches, the program has seen an overall improvement in metabolic control in patients with diabetes and a decrease in the number of hospitalizations for established patients.

Endocrinology faculty members are active in a number of areas of clinical medicine including: growth disorders, pubertal delay and early puberty, thyroid disease, adrenal disease, pituitary problems and other hormone replacement therapies. The division collaborates with the Section of Nephrology in a jointly operated clinic for bone disorders and with Hematology/Oncology on a long-term follow-up program for cancer survivors. They also participate in a cystic fibrosis clinic and collaborate with the Center for Healthy Weight and Nutrition for patients with overweight. There is an approved fellowship program in pediatric endocrinology. Members of the division are actively involved in research for diabetes, growth and osteoporosis.

Clinical, Teaching and Research Interests

Juan F. Sotos, MD, is the Chief of the Division of Endocrinology and Metabolism at Nationwide Children's Hospital and a Professor of Pediatrics and Director of the Division of Endocrinology and Metabolism in the Department of Pediatrics at The Ohio State University College of Medicine. Dr. Sotos received his medical degree from the Medical School Valencia, Spain, in 1950. He completed his pediatrics residency at St. Christopher's Hospital for Children/Temple University (1953-55) and at Nationwide Children's Hospital (1955-57). Prior to his faculty appointment in Columbus, Dr. Sotos was Clinical and Research Fellow in the Children's Service at Massachusetts General Hospital (1957-1960) and then Instructor of Pediatrics at Harvard Medical School (1960-63). He is board certified by the American Board of Pediatrics, the American Board of Pediatric Nephrology and the American Board of Pediatric Endocrinology. His research interests include disorders of growth and diabetes, and overgrowth disorders. He is responsible for all of the administrative aspects of the division, which includes patient care, teaching and research. He has been listed multiple times as one of the Best Doctors in America since the list's inception in 1992.

Sasigarn A. Bowden, MD, is a member of the Division of Endocrinology and Metabolism at Nationwide Children's Hospital and a Clinical Assistant Professor of Pediatrics at The Ohio State University College of Medicine. Dr. Bowden received a medical degree from Chiang Mai University, Chiang Mai, Thailand, in 1990. This was followed by a pediatric internship and residency at Prince of Songkla University, Songkla, Thailand, and a pediatric residency at the University of Tennessee Graduate School of Medicine in Knoxville, Tennessee, and a pediatric endocrinology fellowship at Children's Hospital Medical Center, Cincinnati, Ohio. Dr. Bowden is board certified by the American Board of Pediatrics (ABP) and ABP Sub-Board of Pediatric Endocrinology. Dr. Bowden's clinical and research interests include diabetes mellitus, obesity, puberty and adrenal gland disorders, calcium/metabolic bone disorders and pediatric osteoporosis. Administratively, she is the coordinator for the division for medical student lectures.

Monika Chaudhari, MD, is a member of the Division of Endocrinology and Metabolism at Nationwide Children's Hospital and a Clinical Assistant Professor of Pediatrics at The Ohio State University College of Medicine. Dr. Chaudhari received her medical degree from Northeastern Ohio University College of Medicine, Rootstown, Ohio, in 1995 and went on to pediatric internship/residency and then a pediatric endocrinology fellowship at the University of Florida in Gainesville. Dr. Chaudhari is board certified by the American Board of Pediatrics and board certified in Pediatric Endocrinology. Dr. Chaudhari's clinical interests include Type 1 diabetes, Turners syndrome, puberty adrenal disorders and growth. Her teaching activities include education on diabetes, Turners syndrome and growth disorders, locally and regionally. Administratively, she is in charge of the quality indicators for the division.

Jennifer S. Dyer, MD, is a member of the Division of Endocrinology and Metabolism at Nationwide Children's Hospital and an Assistant Professor of Pediatrics at The Ohio State University College of Medicine. Dr. Dyer is also an affiliate faculty member of The Research Institute at Nationwide Children's Hospital in the Center for Cardiovascular Medicine where she is a principle investigator. She received her medical degree from The University of Texas Health Science Center at San Antonio, in 2000, which was then followed by pediatric internship and residency training from 2000-2003 at The University of Texas Southwestern Medical Center, Dallas. Specialty

training in pediatric endocrinology was obtained at The University of Texas Southwestern Medical Center, Dallas, from 2003-2006. Dr. Dyer is board certified in both pediatrics and pediatric endocrinology by the American Board of Medical Specialties (American Board of Pediatrics). Her current clinical and research interests include the following: the developmental origins of insulin resistance, mechanisms of nutrition-induced oxidation, gestational diabetes, impaired glucose tolerance, childhood obesity prevention and health communication. She is currently working to coordinate a project with the Center for Clinical and Translational Research at The Research Institute at Nationwide Children's Hospital, pediatric endocrinology, adult endocrinology and obstetrics/gynecology maternal fetal medicine at The Ohio State University in an effort to better understand variances of peri-natal and early post-natal nutrition that may prevent the later onset of Type 2 diabetes. She currently participates as a staff physician expert and consumer medical writer for www.Netwellness.org since March 2007. She also served as a category chairperson in the academy of judges for the 2007 International Health & Medical Media Awards, The FREDDIES, a competition now in its 34th year, which endeavors to encourage and celebrate excellence in health-related media productions.

Dana S. Hardin, MD, is a member of the Division of Endocrinology and Metabolism at Nationwide Children's Hospital and an Associate Professor of Pediatrics in The Ohio State University College of Medicine. She is a principal investigator at the Center for Clinical and Translational Research at The Research Institute at Nationwide Children's Hospital. Dr. Hardin is board certified by the American Academy of Pediatrics, the American Board of Pediatric Endocrinology and the American Board of Physician Nutrition Specialists. Dr. Hardin obtained her medical degree from Indiana University in 1986, where she then went on to complete her fellowship and residency finishing in 1993. Dr. Hardin has become well known for her research and teaching interests and is a frequently invited speaker nationally and internationally. Clinical and research interests include growth disorders, the chronically ill and diabetes. She has multiple grants for studies on chronic illness including the National Institute of Health (NIH), the National Cystic Fibrosis Foundation, Elizabeth Glaser Pediatric AIDS Foundation and other organizations. She has more than 50 peer-reviewed publications and multiple book chapters. She is also an international consultant for growth disorders and

a national consultant for the Pediatric AIDS Clinical Trial Group. She was recently appointed Chair of the NIH, SBIR/STTR Study Division for Endocrinology and Metabolism. She is a board member and consultant for a number of professional societies and pharmaceutical companies. She is a reviewer of many medical journals.

Maria J. Henwood, DO, is a member of the Division of Endocrinology and Metabolism at Nationwide Children's Hospital and an Assistant Professor of Clinical Pediatrics at The Ohio State University College of Medicine. Dr. Henwood received her medical degree from the Philadelphia College of Osteopathic Medicine in 1997. She did a one-year internship at the University of Medicine and Dentistry of New Jersey, followed by a residency in pediatrics at Cooper Hospital/University Medical Center in Camden, New Jersey. She then completed a fellowship in pediatric endocrinology at Children's Hospital of Philadelphia in Philadelphia, Pennsylvania, from 2001 to 2004. She is board certified in pediatrics by the American Board of Pediatrics (ABP) and board certified in pediatric endocrinology. Dr. Henwood is actively involved in medical student and resident education and active in lecturing locally and regionally. Her clinical and research interests include disorders of the adrenal gland and pediatric osteoporosis. Administratively, she is an associate director of the endocrinology fellowship program, coordinator of teaching within the division and actively involved in a number of Nationwide Children's Hospital committees – Continuing Medical Education Committee, Planning Committee for the 2008 Pediatric Pearls Conference, Planning Committee for Lounge and Learn, Physician Coordinator for Grand Rounds Planning Committee, and Member of the Resident Education Liaison Committee. She is also President of the Central Ohio Pediatric Society, 2007-2008.

Robert P. Hoffman, MD, is a member of the Division of Endocrinology and Metabolism at Nationwide Children's Hospital and an Associate Professor of Pediatrics at The Ohio State University College of Medicine. He received his medical degree from The Ohio State University in 1981, followed by pediatric internship and residency at Children's Hospital Medical Center of Akron, Ohio, and a pediatric endocrine fellowship at Children's Hospital of Pittsburgh in Pennsylvania. He is board certified by the American Board of Pediatrics (ABP) and ABP Sub-board of Pediatric Endocrinology. Dr. Hoffman's research interests include hypoglycemia in Type 1 diabetes, insulin resistance, endothelial function and

puberty. His teaching activities include education on Type 1 diabetes in children and adolescents, hypoglycemia in infants and children and growth disorders. Administratively, he is the director for the fellowship program and the coordinator for the attending, consultation and physician schedules for the division.

Yelena Nicholson, DO, is a member of the Division of Endocrinology and Metabolism at Nationwide Children's Hospital and a Clinical Assistant Professor of Pediatrics at The Ohio State University College of Medicine. Dr. Nicholson received her medical degree from the Kirksville College of Osteopathic Medicine in 2001. She completed a pediatric internship/residency at Good Samaritan Hospital, West Islip, New York. She then completed a fellowship in Pediatric Endocrinology at Winthrop University Hospital, Mineola, New York. Dr. Nicholson is board certified in pediatrics by the American Board of Pediatrics and eligible for board certification in Pediatric Endocrinology. Dr. Nicholson's clinical interests include Type 1 diabetes and using technology such as insulin pumps and continuous glucose sensors in the treatment of diabetes, growth disorders, disorders of puberty and sexual differentiation disorders. Administratively, she is active in bringing new technological developments to the diabetic program.

Research Funding (Over \$50,000)

Dana S. Hardin, MD

Increased Gluconeogenesis is One Cause of CFRD, National Institute of Diabetes and Digestive and Kidney Diseases

Multi-center study of IGF-1 in Cystic Fibrosis, Tercica

Growth Hormone Registry, Anonymous

Growth Hormone Treatment in Children with Juvenile Rheumatoid Arthritis, Anonymous

Robert P. Hoffman, MD

Oral Insulin, TrialNet – George Washington University

Major Affiliates to Support Research Activities (TrialNet), TrialNet – George Washington University/National Institutes of Health

Juan F. Sotos, MD

Growth hormone treatment for disorders with short stature, Pharmaceutical Companies

Publications

Binkovitz LA, **Henwood MJ**, Sparke P. Pediatric dual-energy X-ray absorptiometry: technique, interpretation, and clinical applications. *Seminars in Nuclear Medicine* 37(4): 303-13, 2007.

Binkovitz LA, **Henwood MJ**. Pediatric DXA: technique and interpretation. *Pediatric Radiology* 37(1): 21-31, 2007.

Binkovitz LA, Sparke P, **Henwood MJ**. Pediatric DXA: clinical applications. *Pediatric Radiology* 37(7): 625-35, 2007.

Bowden SA, Bowden BK. Clinical Tip: The Powers of a Smoothie. *Contemporary Pediatrics* 24(10): 116, 2007.

Bowden SA, **Sotos JF**, Stratakis CA, Weil RJ. Successful treatment of an invasive growth hormone-secreting pituitary macroadenoma in an 8-year-old boy. *Journal of Pediatric Endocrinology & Metabolism* 20(5): 643-7, 2007.

Duck MM, Hoffman RP. Impaired endothelial function in healthy African-American adolescents compared with Caucasians. *Journal of Pediatrics* 150(4): 400-6, 2007.

Dyer JS, Rosenfeld C, Rice J, Rice M, Hardin DS. Insulin Resistance in Hispanic Large-for-Gestational-Age Neonates at Birth. *The Journal of Clinical Endocrinology & Metabolism* 92(10): 3836-3843, 2007.

Hardin DS, Kemp SE, Allen DB. Twenty years of recombinant human growth hormone in children: relevance to pediatric care providers. *Clinical Pediatrics* 46(4): 279-86, 2007.

Hardin DS. A Review of the Management of Two Common Clinical Problems Found in Patients with Cystic Fibrosis: Cystic Fibrosis-Related Diabetes and Poor Growth. *Hormone Research* 68(S5): 113-116, 2007.

Hardin DS. Controversial debate: growth hormone and glucose metabolism. *Hormone Research* 67 (supplement) 1:32, 2007.

Hardin DS, Woo J, Butsch R, Huett B. Current prescribing practices and opinions about growth hormone therapy: results of a nationwide survey of pediatric endocrinologists. *Clinical Endocrinology* 66(1): 85-94, 2007.

Hoffman RP. Sympathetic mechanisms of hypoglycemic counter-regulation. *Current Diabetes Reviews* 3(3): 185-93, 2007.

Shi Z, Henwood MJ, Bannerman P, Batista D, Horvath A, Guttenberg M, Stratakis CA, Grimberg A. Primary pigmented nodular adrenocortical disease reveals insulin-like growth factor binding protein-2 regulation by protein kinase A. *Growth Hormone & IGF Research* 17(2): 113-21, 2007.

Tsao CY, Lo WD, Rusin JA, Henwood MJ, Boue DR. Isolated neurosarcooidosis presenting as headache and multiple brain and spinal cord lesions mimicking central nervous system metastases. *Brain & Development* 29(8): 514-8, 2007.

Presentations and Teaching Activities

Dana S. Hardin, MD

Improving Compliance in Diabetes Care, American Association of Diabetes Educators, Louisville, Kentucky, September 2007

Use of Growth Hormone in Adolescents, University of Alabama, Mobile, Alabama, September 2007

Use of Growth Hormone in Adolescents, University of West Florida, Pensacola, Florida, September 2007

Diabetes in Cystic Fibrosis, Pediatric Grand Rounds, University of West Virginia, Morgantown, West Virginia, October 2007

Growth Hormone Use in Cystic Fibrosis, North American Cystic Fibrosis Conference, Anaheim, California, October 2007

Improving Compliance in Diabetes Care, Neo-American Association of Diabetes Educators (AADE), Cleveland, Ohio, October 2007

Nutrition in Cystic Fibrosis, Annual North American Cystic Fibrosis Meeting, Anaheim, California, October 2007

Use of Recombinant IGF-1 in Non-Growth Hormone Deficient Patients, International Committee on IGF-1 Use, San Diego, California, November 2007

Psycho-Social Issues in Diabetes, 2nd International Global Diabetes Summit, Columbus, Ohio, November 29-30, 2007

Maria J. Henwood, DO

Promoting Bone Health in Children, CME Conference, Philadelphia College of Osteopathic Medicine Alumni Weekend, June 2, 2007

Robert P. Hoffman, MD

Childhood Obesity, Republican Hospital Chisinau, Moldova, Medical Education International Christian Medical and Dental Association, October 2007

Diabetes: What's New? What's Next?, Republican Hospital Chisinau, Moldova, Sponsored by Medical Education International Christian Medical and Dental Association, October 2007

Growth Disorders in Childhood, District Hospital Southern, Moldova, Medical Education International Christian Medical and Dental Association, October 2007

Intensive Diabetes Therapy, Children's Hospital Chisinau, Moldova, Medical Education International Christian Medical and Dental Association, October 2007

Immune Modulation of Type 1 Diabetes, Global Diabetes Summit, Columbus, Ohio, November 2007

Psychological Insulin Resistance, Children's Diabetes Foundation, Montreal, Canada, November 2007

Awards and Honors

Monika Chaudhari, MD

Listed, Best Doctors in America

Dana S. Hardin, MD

Appointed Chair, NIH, SBIR/STTR Study Division for Endocrinology and Metabolism, 2007-2010

Listed, Best Doctors in America

Listed as one of the Top Pediatricians by the Consumers' Research Council of America, 2004-2007

Maria J. Henwood, DO

President, Central Ohio Pediatric Society, 2007-2008

Robert P. Hoffman, MD

Listed, Best Doctors in America

Fast Facts

Inpatient Discharges: 455

Observation Discharges: 155

Total Discharges: 610

Average Length of Stay*: 2.4

Average Daily Census*: 3

Patient Days*: 1,083

Inpatient Consults: 283

Endocrinology Clinic Visits: 6,569

Dublin Endocrinology: 469

Northeast Endocrinology: 473

Dr. Sotos' Endocrinology Clinic: 1,406

Total Endocrinology Clinic Visits: 8,917

*Excludes observation patients