

Gillette

Partners in Care

JOURNAL

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Gillette
Children's

125
YEARS

Innovate Advocate Celebrate

Gillette

Partners in Care

JOURNAL

Medical Staff Leadership

Gillette Children's is globally recognized for medical innovation, patient-centered care teams, and a commitment to evidence-based medicine. Gillette Children's physician leaders are known for setting direction, innovating, inspiring trust, and challenging the status quo. Our areas of pediatric focus include cerebral palsy, gait and motion analysis, orthopedics, neurology and neurosurgery, and rehabilitation medicine.

Micah Niermann, MD
Medical Director & Executive Vice President,
Clinical Affairs

Associate Medical Directors

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Anesthesiology: Michael Angel, MD

Greater Minnesota Clinics: Andrea Paulson, MD

Integrated Care Services: Tom Novacheck, MD

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Pediatric Physical Medicine and

Rehabilitation: Mark Gormley, Jr, MD

Pediatrics: Tori Bahr, MD

Radiology: Anne Weisensee, MD

Research: Jennifer Laine, MD

Surgical Services: Peter Kim, MD

About Our Journal

Partners in Care is produced by the Marketing and Communications team in collaboration with our Provider Relations team. Issues are published quarterly. To subscribe to our monthly newsletter, visit gillette.mn/pic

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Dear colleagues: *Welcome to the expanded Partners in Care Journal.*



Micah Niermann, MD
Executive Vice President,
Clinical Affairs

As Gillette Children's enters its 125th year, we'll be sharing more about how we unite primary care and specialty care toward a single goal: supporting the full potential of every child.

We value our partnership with you at every stage of diagnosis and treatment for complex, rare and traumatic conditions. From day-to-day management to long-term follow up, Gillette works with our referral partners to create a cohesive treatment plan for every child.

Throughout this journal, you'll get a glimpse of our innovative research and care approaches. You'll see how year after year, Gillette discovers and develops therapies and technologies that open the world for children with disabilities.

We appreciate your trust and partnership in the care of your patients.

Meet Our Provider Outreach Team

A trio of provider relations liaisons started in September 2021. They focus on sharing the Gillette story with physicians, providers and many others who make referrals to Gillette Children's specialty services.

Who they are



Vicki Kopplin: A nonprofit leader with a career focused on epilepsy, including executive roles at the state and national level, Vicki had Gillette in her sights as a career move for many years. She's excited to use her background and learn about Gillette's specialties, so she can help providers understand when to connect their patients to our experts.

Vicki earned a Master of Arts degree at Hamline University with a concentration in nonprofit management. She has a bachelor's degree in business from the University of North Dakota.



Reyna Staats: With a deep understanding of business development in the financial marketplace, Reyna is on the path to learning more about pediatrics and the health care environment. She enjoys making connections and helping people navigate their decision-making process.

Reyna graduated with a double major in Business Administration and Spanish Communications from the University of Wisconsin River Falls. She is fluent in written and spoken Spanish.



Tara Swedberg: Transitioning from another role at Gillette focused on community engagement, Tara is a natural fit for a liaison role. For many years, she worked in the pharmaceutical and medical device field. She is also the mother of a Gillette patient.

Tara graduated with a bachelor's degree in Biology and a Business minor from Gustavus Adolphus College.

The role of liaisons

These relationship-oriented professionals focus on multiple objectives. Their work includes:

- Cultivating new referral relationships.
- Partnering with existing referring providers to understand any needs, discuss new programs, and thank them for their referrals.
- Introducing our experts to referring providers and bridging communications.
- Representing Gillette and building awareness by attending programs and events.

To reach the team, email ProviderRelations@gillettechildrens.com.



Innovate Advocate Celebrate

Gillette Children's Offers Comprehensive Pediatric Hip Preservation Care

Problems arising in the adolescent and young adult hip and pelvis can present real problems for those who experience them, and can present diagnosis and treatment challenges for the orthopedic team they come to for help. Successfully managing these problems takes a spectrum of expertise that focuses on the patient's individual history, goals and lifestyle. Relying on decades of orthopedic experience with this patient population, the pediatric hip preservation program at Gillette Children's takes a comprehensive approach to care.

An Expert Team

The pediatric orthopedic team at Gillette is the largest in the region and has added a new hip preservation specialist to the roster. **Alison Dittmer, MD**, recently joined Gillette after completing fellowship training in Pediatric Orthopedics and Hip Preservation. She joins long-time Gillette orthopedic surgeons **Mike Healy, MD**, **Gregory Hildebrand, MD**, **Tom Novacheck, MD**, and **Amy Jo Beebe, CNP**, in formalizing the decades-long expertise in pediatric hip preservation care at Gillette. We look forward to welcoming **Natalie Stork, MD**, when she joins the team in April.



Alison Dittmer, MD

Diagnosis Starts the Journey

The Gillette team diagnoses hip issues after obtaining a detailed history and physical examination, in conjunction with diagnostic tests, which can include radiographs, EOS low-dose imaging, instrumented gait analysis, CT, MRI, and in-office diagnostic/therapeutic ultrasound-guided hip injections.

"Diagnosing and treating hip and pelvic conditions in pediatric patients means navigating various diagnostic techniques and both surgical and nonsurgical management," Dittmer says. "We're able to provide all of these options at Gillette, which is extremely exciting. By relying on the expertise of our highly trained team, families can be certain their children are receiving the right care for their hip issues."

Mike Healy, MD, adds, "It's very satisfying to know we have assembled a team with the expertise to treat a wide range of structural hip abnormalities. In one day, we can help patients with anomalies ranging from the more common, such as developmental dysplasia of the hip or femoroacetabular impingement to the complex sequelae, from pediatric hip conditions such as slipped capital femoral epiphysis, avascular necrosis, Legg-Calvé-Perthes disease and hip fractures."

The Ins and Outs of Treatment

After diagnosis, the hip preservation team relies on discussion with the patient to align their treatment recommendations with the patient's personal goals and expectations. "When I first meet a patient in the hip preservation clinic, my primary intent is to get a sense of who they are as a person, and what

their personal goals are in regard to their hip and desired activities," Dittmer says. "This can range anywhere from being able to compete in athletics at a collegiate level to simply not thinking about their hip daily."

The Gillette hip preservation team has the breadth of surgical experience to provide arthroscopic surgery for impingement and labral tears, as well as new and complex open surgical techniques such as periacetabular osteotomies, surgical hip dislocations, femoral subcapital realignment, and various femoral osteotomies including femoral head reduction, reshaping and cartilage grafts.

Gillette also offers a unique pre-operative psychology screening to young hip patients. This evaluation takes place before any surgical treatment and helps patients surmount the mental and emotional hurdles that come with anticipating a surgical procedure. Hip preservation literature and the experienced team of hip preservation specialists at Gillette report optimized surgical outcomes for patients who participate in this perioperative screening.

As for nonsurgical treatment, Gillette is a one-stop shop, offering a renowned pediatric physical medicine and rehabilitation program as well as comprehensive physical therapy options tailored to a patient's individual needs and timeline for treatment.

The Gillette Difference

A highly collaborative team and comprehensive approach to pediatric care sets the Gillette hip preservation program apart from others. Many adolescent and young adult hip conditions are complex and multifactorial: these are the cases that truly benefit from the collaborative review of hip preservation specialists with different training and experience.

Dittmer recounts a recent case illustrating the collaborative culture that makes the Gillette team stand out. "I recently began treating a top-level gymnast with anterior groin pain. She had exam features and imaging consistent with a mixed picture of both dysplasia and femoroacetabular impingement. I was able to discuss the complex presentation with my partners on the hip preservation team at Gillette. After advanced imaging and case discussion, I met with the gymnast and her mother to discuss her treatment options. Keeping in mind her current level of function and personal goals for her sports career, we recommended a combined open and arthroscopic approach to address her complex hip pathology."

To refer a patient to the hip preservation program at Gillette, call **651-325-2200** or use our online referral form at gillettechildrens.org/refer

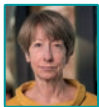
Our Clinical Scientists



Liz Boyer, PhD
Gait and Motion Analysis



Chantel Burkitt, PhD
Pain and Comfort



Rhonda Cady, PhD
Health Services



Mo Chen, PhD
Neuroscience



Sara Morgan, PhD
Spine



Susan Novotny, PhD
Orthopedics



Andy Reis, PhD
Gait and Motion Analysis



Michael Schwartz, PhD
Gait and Motion Analysis

A Quick Look

Under the direction of Dr. Joyce Trost, PhD, PT, and Dr. Jennifer Laine, MD, the Research department leads interventional and observational research studies across seven distinct research programs: health services, pain and comfort, rehabilitation, neuroscience, orthopedics, spine and motion analysis.

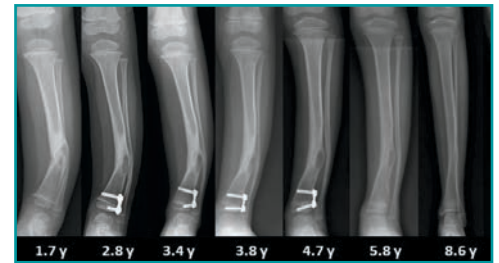
Advancing Orthopedic Care: Congenital Pseudoarthrosis of the Tibia

Congenital pediatric pseudoarthrosis of the tibia is one of the rarest and most challenging conditions seen in pediatric orthopedics.

The condition results from congenital tibial dysplasia that progresses to the point where the risk of tibial fracture becomes high. Once a fracture occurs and congenital pseudoarthrosis develops, treatment options are limited and any union of the tibia going forward may be complicated by refracture, deformity, leg-length discrepancy, stiffness, pain and dysfunction.

In the hopes of addressing the above concerns, Gillette's pediatric orthopedics team designed a novel course of treatment intending to prevent tibial dysplasia from progressing to the point of fracture in the first place.

"Unfortunately, once a pseudoarthrosis develops, getting the tibia and fibula to heal may take years, with each case presenting unique challenges," says Gillette pediatric orthopedic surgeon **Mark Dahl, MD**. "The method we designed involves using a minor outpatient surgery to "guide growth" of a deformed tibia, gradually straightening the tibia, allowing it to develop more normally, and preventing early fractures that inevitably lead to pseudoarthrosis. If we prevent or at least delay early fractures, we alleviate some of the biggest concerns in terms of lifelong development and functionality for the patient."



Dr. Dahl, **Jennifer Laine, MD**, **Andrew Georgiadis, MD**, and **Elizabeth Weber, MD**, began incorporating this treatment of tibial growth modulation with eligible patients in 2011. This resulted in a study that followed 10 patients treated at Gillette between 2011 and 2017, and was published in the *Journal of Bone and Joint Surgery* in December 2020.

Of the 10 patients involved in the study who received distal tibial growth modulation at Gillette, none developed tibial fracture or pseudoarthrosis after they received treatment. The patients treated also showed improved tibial alignment, improved radiographic appearance of bone quality, and preserved leg length.

"This new approach in preventing fracture for these patients is life-changing," says Dr. Laine. "The preventative treatment decreases surgical interventions, increases the function of the leg and preserves leg length, and is a straightforward technique to addressing a rare condition. Since publication, we've had surgeons from around the world reaching out to us for advice. Our hope is that this study will lead to fewer fractures and an improved quality of life for these patients worldwide."

RECENT PUBLICATIONS

Explore a selection of published manuscripts from **Gillette investigators and collaborators**. Reach out to our provider liaisons for a comprehensive list of our peer-reviewed publications.

McCreary DL, Sandberg BC, **Bohn DC**, Parikh HR, Cunningham BP. *Interpreting Patient-Reported Outcome Results: Is One Minimum Clinically Important Difference Really Enough?*

Marrache M, Suresh KV, **Miller DJ**, Hwang S, Schorry EK, Rios JJ, Sponseller PD. *Early-Onset Spinal Deformity in Neurofibromatosis Type 1: Natural History, Treatment, and Imaging Surveillance.*

Vova JA, Green MM, Brandenburg JE, Davidson, L, **Paulson A, Deshpande S**, Oleszek JL, Inanoglu D, McLaughlin MJ. *A Consensus Statement of the Use of Botulinum Toxin in Pediatric Patients.*

Schmitz NS, **Krach LE**, Coles LD, Schrogie J, Cloyd JC, Kriel RL. *Characterizing Baclofen Withdrawal: A National Survey of Physician Experience.*

Reis AJ, Schwartz MH, Novacheck TF, Walt K, Klein J. *Alternative Methods for Measuring Ankle-Foot Orthosis Alignment in Clinical Care.*

Peters, SU, Fu C, Marsh ED, Benke TA, Suter B, Skinner SA, Lieberman DN, Standridge S, Jones M, **Beisang A, Feyma T**, Heydeman P, Ryther R, Glaze DG, Percy AK, Neul JL. *Phenotypic Features in MECP2 Duplication Syndrome: Effects of Age.*

Novacheck TF. *Will Individuals With Cerebral Palsy Have Better Musculoskeletal Care in 30 Years?*

Morrison SG, **Georgiadis AG, Dahl MT**. *Oblique Opening Wedge Osteotomy for Distal Tibial Varus Secondary to Physeal Arrest.*

With Gillette Virtual Rehab, the Therapist Comes to Patients

Gillette Children's has increased and improved access to our virtual rehab therapy program. The same trusted team of physical, occupational, and speech and language therapists now see patients via smartphone, tablet or computer.

The virtual rehab therapy program was launched during COVID-19 to help keep our patients on track with their goals while keeping them safer, at home.

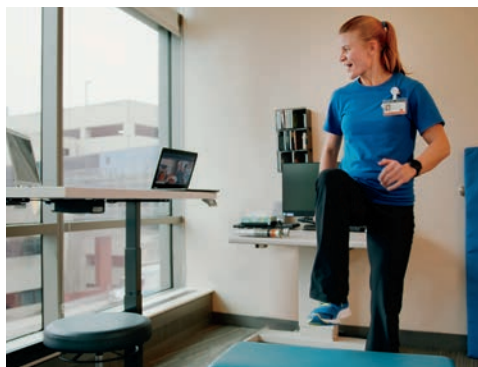
Leading Doctors Recognize Benefits of Virtual Therapy

Virtual therapy can reduce a child's stress level and can save time and money spent on transportation. **Angela Sinner, DO**, a pediatric rehabilitation specialist and co-director of Gillette's inpatient rehabilitation program says, "When the pandemic began, the virtual world exploded for providers and therapists. We quickly realized our patients still needed therapy and doing it online proved to be successful. So much so that we've expanded even further. With this option, we meet children closer to home."

Tori Bahr, MD, associate medical director of Pediatrics, hears from many families who are pleased with virtual rehab. "I've had families say they've really liked doing virtual therapy because they feel it's easier to implement the therapy into their day-to-day life in a way that it wasn't before."

It can be challenging to transport a child who has a disability or other physical needs. **Andrea Paulson, MD**, a physical medicine and rehabilitation (PM&R) specialist, is Gillette's associate medical director for Greater Minnesota. She says patients in rural areas really appreciate the virtual rehab option. "It's important to make sure kids can get the services they need without having to travel far and without putting an extra burden on a family," Paulson says.

Gillette's virtual rehab program, launched during the pandemic, was recognized by the World Health Organization (WHO) and the International Hospital Federation. The report showcased examples of how hospitals like ours continued to provide quality care to families during the challenges of COVID-19.



Why Gillette?

The Gillette rehab therapy team includes more than 100 therapists across physical, occupational and speech services. They have specialized and advanced training focused on pediatrics and complex conditions. Our team tailors the therapy to a child's needs and ensures the sessions work well for a family at home.

Gillette Children's is accredited by the Commission on the Accreditation of Rehabilitation Facilities (CARF) to meet the needs of young children and adolescents seeking acute inpatient rehabilitation. Gillette is one of fewer than 10 U.S. pediatric inpatient rehabilitation facilities to have CARF accreditation for both pediatric specialty and pediatric brain injury programs.

To refer a patient to the Gillette Children's rehabilitation program or virtual therapy, call **651-325-2200** or visit **gillettechildrens.org/refer**

More from Tori Bahr, MD

"Sometimes with in-person therapy, it's hard to extend those activities to the home environment. It's like patients go to therapy, do the therapy there, and then don't think about it until their next appointment. When therapy activities happen in their home using the equipment they have at hand, then they're more likely to be able to say, 'well, we can just do this for our play time,' which I think is just such an amazing way of approaching care. We're really maximizing the use and adherence to the therapy they're getting."



Tori Bahr, MD
Associate
Medical
Director of
Pediatrics

New Service Makes Referral Easier

Do you have a patient with multiple medical needs?

Do you have a patient who needs more than a 15-minute office visit?

Do you have a patient who might need a consultation with Gillette?

Help parents get connected to a Gillette expert through our new Pediatric Expert Consult service. After a 30-minute virtual consultation, our providers identify the best next steps for their child's care.

We'll reach out with a summary of their visit and the recommended next steps.

Learn more about the Pediatric Expert Consult at gillettechildrens.org/PEC

Meet Our Three New Orthopedic Specialists

Gillette Children's is home to nationally and internationally recognized leaders in pediatric orthopedics. The team is composed of experts who've chosen to specialize in the unique needs of children, teens and adults who have complex diagnoses or multiple medical needs. Our orthopedic group was proud to expand their expertise further by welcoming three new providers in 2021.

Alison Dittmer, MD, joined the Orthopedics team in October 2021. She comes to us from the Hospital for Special Surgery, where she completed a Hip Preservation Fellowship. She also completed a Pediatric Orthopedic Fellowship at the University of Colorado and Children's Colorado Orthopedic Institute.

Dr. Dittmer attended medical school at the University of Minnesota and residency at the University of Kentucky Department of Orthopedic Surgery and Sports Medicine.

Read more from Dr. Dittmer on page 3.

Emmalynn Sigrist, DO, joined the Orthopedics team in October 2021. She comes to us from Shriners Children's St. Louis, where she completed a Pediatric Orthopedic Surgery Fellowship.

Dr. Sigrist attended medical school and residency at the Philadelphia College of Osteopathic Medicine.

Katie Peltz, PA, joined the Orthopedics team in November 2021. She comes to us from Duke University School of Medicine, where she completed her Master of Health Science in Physician Assistant Studies and focused on scoliosis and spine deformities.



Alison Dittmer, MD



Emmalynn Sigrist, DO



Katie Peltz, PA

Steven Koop, MD, First Teacher Emeritus at Gillette

Gillette has a rich history of teaching students, residents and fellows. We are known for training others across our specialties on the care of patients who have complex conditions, rare diseases and trauma.

To ensure this strong tradition continues and students continue to learn from the extensive experience of Gillette's providers, Gillette has established a teaching emeritus distinction. **Steven Koop, MD**, will be the very first teacher emeritus at Gillette.

"We have the best instructors here, and we don't want to lose their knowledge and expertise when they retire," says **Micah Niermann, MD**, chief medical officer and executive vice president of clinical affairs.

"This program allows for continued relations between teachers and the institution to promote our longstanding tradition of training future medical professionals, especially those caring for children who have complex needs," says **Deborah Quanbeck, MD**, Gillette's director of graduate medical education.

Selecting Koop was a natural choice. Beneath his unassuming demeanor is a wealth of knowledge and medical expertise unmatched in pediatric specialty care. For 30 years, Koop has sat across from his patients and students at Gillette Children's and helped them see possibilities.

"Steve Koop is the ideal first teacher emeritus because he has been a deeply committed champion of medical education his entire career."

*Deborah Quanbeck, MD,
pediatric orthopedic surgeon*

"My first experience with Gillette was through residency and the instruction of Dr. Koop," says Niermann. "It was one of the best learning experiences I had through residency. He has taught so many of us so much, especially on the fundamental principle of keeping the patient at the center of your work. I couldn't be more pleased that Steve accepted our invitation to become our

inaugural teacher emeritus after his retirement in December 2021."

Quanbeck calculates that Koop has contributed to the development of more than 600 medical students, residents and fellows in orthopedic surgery alone. "Steve meets learners at their levels of understanding and adapts his teaching style to individual needs. He is an educational treasure, and I as well as others, cherish the ability to spend more time with him in this important mission."



Growing Our Pediatric Subspecialties

Over the fall, Gillette welcomed two new providers to our pediatrics team. They are involved in the ongoing care of patients who are being seen at Gillette for cerebral palsy and other complex conditions.

Lauren Yauch, DO, is an endocrinologist. "I provide subspecialty care in pediatric endocrinology from birth through the teenage years," she says. "I believe in a holistic approach to my medical practice as there are many social and economic factors that may impact the outcomes of my patients." Yauch completed a fellowship in pediatric endocrinology at the University of Minnesota. She also has a master's degree in Public Health.

Katie Lingbeck, APRN, is part of the urology team. Her specialty areas include neurogenic bladder, neurogenic bowel, spina bifida, and cerebral palsy. She earned a Doctorate of Nursing Practice from the University of Minnesota.



Lauren Yauch, DO



Katie Lingbeck, APRN

Linda Krach, MD, Receives Lifetime Achievement Award

Gillette Children's Rehabilitation Medicine physician, **Linda Krach, MD**, received a prestigious lifetime achievement award for her work as an educator, advocate and provider for patients diagnosed with spina bifida and cerebral palsy.

In her remarks when she accepted the Gabriella E. Molnar-Swoffort Pediatric PM&R Lifetime Achievement Award, Krach said she's thankful for the commitment and mission at Gillette because it helped encourage her in her long career. Krach also thanked the patients and families she had the privilege to work with. "They have taught me so much, not just about rehabilitation," Krach said, "but also about life and resilience."

Krach's colleague, **Nanette Aldahondo, MD**, wrote in support of Krach's nomination for the award. She noted that Krach "is one of the pioneers and unsung heroes of pediatric rehabilitation medicine. She epitomizes leadership in research, advancing clinical care, and education."



Linda Krach, MD

Gillette a Spina Bifida Association Partner Clinic

As a partner clinic for the Spina Bifida Association, Gillette is one of 36 clinics across the United States that achieved this designation by meeting 10 standards reflecting best practices. This distinction illustrates our dedicated team of health care professionals provides expert care to those living with spina bifida. Our goals—to optimize function and quality of life—necessitate genuine connection with our patients and their families.

Gillette Honored by Rett Syndrome Foundation

Gillette Children's is one of 15 institutions across the U.S. being honored with International Rett Syndrome Foundation (IRSF)'s Center of Excellence designation or redesignation. The award recognizes Gillette Children's continued dedication to providing best-in-class clinical care for Rett syndrome, a rare neurological and developmental disorder. It comes with funding support from IRSF and membership in IRSF's Center of Excellence Network formed by the appointed clinics.

"We are honored to be able to enroll our Center in IRSF's network," said **Tim Feyma, MD**, pediatric neurologist and co-director of the Gillette's Rett Syndrome Center of Excellence.

There is no cure for Rett syndroms, although there are some treatments for Rett syndrome symptoms. The network's clinical trial research will play an essential role in ensuring therapeutic development progresses as quickly as possible.



Tom Novacheck, MD, Named AACPDM President

During the 75th Annual Meeting of the American Academy for Cerebral Palsy and Developmental Medicine (AACPDM) in October 2021, **Tom Novacheck, MD**, an orthopedic surgeon and one of Gillette Children's leading cerebral palsy (CP) researchers and physicians, was named the incoming president of the AACPDM for 2022.

AACPDM is an organization of medical professionals devoted to the interdisciplinary education of clinicians interested in improving care for children who have cerebral palsy. Gillette Children's is a world leader in the diagnosis and treatment of children who have cerebral palsy, and in the decades that have passed since the first annual meeting of the AACPDM in 1948, numerous Gillette experts have served in key leadership roles within the organization.

"I've been a member of AACPDM since 1991, and it is the most important organization I belong to professionally," Novacheck said. "It is the only organization that provides a venue for having multidisciplinary, intellectual conversations between CP specialists from all around the United States about new techniques and treatments, difficult patient cases and ongoing research."

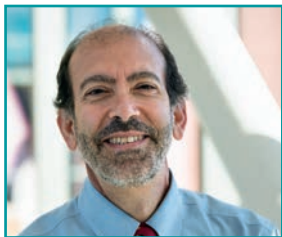
"I think what makes CP care at Gillette special is that we have all of the specialties and resources that individuals with cerebral palsy need under one roof. This allows us to work in concert as a multidisciplinary team that is able to comprehensively communicate with one another and provide the very best patient care possible," Novacheck said. "In terms of what we bring to the AACPDM, I really see the care at Gillette as being in lock-step with the collaborative nature of the AACPDM. If there is an organization that fits Gillette and CP care, it is the AACPDM."

Novacheck says the academy will be spending time updating its strategic plan this year. An important area of focus will be diversity, equity, and inclusion and addressing race-based health care disparity, he said.



Tom Novacheck, MD

Mark Gormley Jr., MD, Represents Gillette for United Cerebral Palsy



Mark Gormley Jr., MD

Mark E. Gormley, Jr., MD, is a pediatric rehabilitation medicine physician at Gillette and a trustee on the board for United Cerebral Palsy.

Dr. Gormley treats children and adolescents who have cerebral palsy, brain injuries, spinal cord injuries, neuromuscular disorders, and other conditions, with a special interest in spasticity management. He joined Gillette in 1993. Dr. Gormley is board certified in pediatric physical medicine and rehabilitation.

United Cerebral Palsy (UCP) is one of the largest health nonprofits in the U.S. UCP works closely with its affiliates on issues that open doors for people with disabilities. From homeownership to health care reform, inclusive education to competitive employment, UCP has established itself as a leader in the disability community and as a strong advocate for individuals with disabilities and their families.

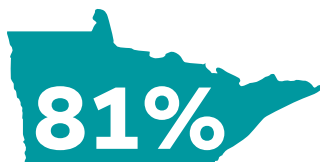


CEREBRAL PALSY BY THE NUMBERS



4,100

children who have CP treated each year at Gillette



81%

of CP-related orthopedic surgeries in Minnesota are performed at Gillette



1897

year that Gillette began treating children who have CP

Specialized Care for Cerebral Palsy and Beyond

Working as a collaborative team, Gillette specialists offer a wide range of evaluations and testing to support your patient's cerebral palsy treatment plan. Because cerebral palsy (CP) is a complex condition that can affect many parts of the body, your patient will likely see specialists in neurology, neurosurgery, orthopedics, rehabilitation medicine, rehabilitation therapies and orthotics, prosthetics and seating.

Aside from offering all these specialties at Gillette, we are proud to provide motion analysis for movement disorders such as CP.

James R. Gage Center for Gait and Motion Analysis

This year, the James R. Gage Center for Gait and Motion Analysis at Gillette celebrates 35 years of providing this specialized service to families. Our gait lab is the first ever to be accredited in the United States and is among the world's best and busiest. Using innovative computer technology, motion analysis captures movements, muscle activity and forces that the eye cannot see.

An engineer or technician processes the data gathered in the gait analysis and creates a series of graphs showing movements, muscle activity, force production and energy use. A physical therapist collaborates with an orthopedic surgeon to interpret the information and create an individual recommendation for each patient.

Once a child has their gait and motion analyzed, a team of Gillette specialists meet to craft an individualized treatment plan tailored to each child.

Who is a Candidate for Gait Assessment?

Beyond a CP diagnosis, a pediatric patient might benefit from a gait assessment if they have:

- Amputations
- Complex injury
- Brain injury and related neurotrauma
- Complex movement disorders
- Conditions that cause toe-walking
- Hand and upper extremity movement problems

Although motion analysis is primarily used to understand walking problems, the technology at Gillette's gait lab can also document movement and muscle activity of the arms and hands.

- Limb-length discrepancy and limb differences
- Misaligned bones and foot abnormalities
- Spina bifida
- Other neurological or orthopedic conditions

Research Shows Gait Analysis Results in Better Patient Outcomes

Gillette clinical scientists reviewed outcomes for patients who were evaluated in the James R. Gage Center for Gait and Motion Analysis during a 39-month period. Our assessment produced the following insights:

- Gait analysis is a valuable tool for diagnosis and treatment planning.
- Data-guided diagnoses and treatment planning resulted in better outcomes for patients.
- Patients and their families reported that treatment was worth any challenges they encountered, and their expectations were met.

To read the full report, contact our **provider liaisons**.



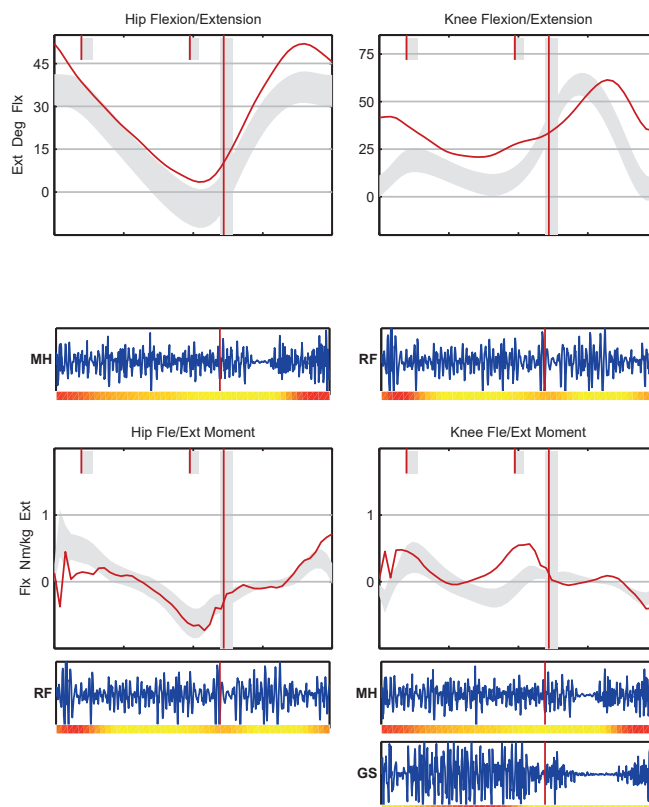
Gillette performed **468** gait and motion analyses in 2021.

46% of patients were from states beyond Minnesota, including other countries.

The Gillette gait lab is **one of the three busiest labs** in the world.



These graphs show examples of the motion analysis data the team uses to create their care plans.



Tools for the Early Detection of Cerebral Palsy

Angela Sinner, DO, has spent her career researching the relationship between motor delay and cerebral palsy. Not every child with motor delay has cerebral palsy. So how does Sinner come to a diagnosis? We asked her to share her expertise and explain the important diagnostic tools she uses when a new patient comes to her with motor delay.

In general, there are three tools used to determine whether a cerebral palsy diagnosis is accurate.

1 The first tool is usually a neonatal brain MRI. With the MRI, we can see evidence of brain damage in the form of hypoxic-ischemic lesions. However, MRIs show the structure of the brain only, not how well that brain functions.

2 Once we know the structure of the brain, we turn to functional assessments. The second evaluation is known as Precht's Qualitative Assessment of General Movements. From birth to 20 weeks, an infant is observed when they are awake, calm and not externally stimulated. This is one of the most cost-effective and sensitive tools available for prediction of long-term neurobehavioral impairments.

3 The third evaluation is known as the Hammersmith Infant Neurological Exam (HINE). It is used on infants between 3 and 24 months of age. Twenty-six different items are assessed, ranging from movement to reflexes and behavior. HINE scores can also be used to predict independent sitting and walking in children with motor delay.



An experienced team will use a combination of these three methods as well as clinical reasoning to determine if cerebral palsy is an accurate diagnosis for a child's motor issues. Once diagnosed, Gillette Children's offers comprehensive treatment options and resources for children from infancy through adulthood and their families.

Early Detection Is Crucial

The goal, over the last decade, has been to diagnose children as soon as possible. Early detection can lead to proper treatment and targeted intervention. Early intervention in cerebral palsy maximizes neuroplasticity and minimizes deleterious modifications to muscle and bone growth and development.

Overall, early intervention can help each child get the proper care they deserve. Dr. Angela Sinner is one of many who are making this possible.



**Learn more from
Dr. Sinner**

**Cerebral Palsy Early Interventions:
What's New in Care
and Research**

The Journey of Mateo Arcos: Hope, Love and Cerebral Palsy

When Mateo was born, he was diagnosed with a severe case of hypoxic-ischemic encephalopathy (HIE), a brain injury caused by deprivation of oxygen and blood flow to the brain. After undergoing extensive medical interventions to aid his condition, Mateo's family was informed that he would have severe cerebral palsy and may never walk, talk, or be able to learn normally.

At 6 months, Mateo began to show signs of abnormal muscle tone consistent with cerebral palsy, and some developmental delays began to emerge. Such developments are not uncommon for patients who experience a brain injury around the time of birth, which is why close monitoring during these key stages of development is so important. Mateo began working with therapists at Gillette to aid with his movement, feeding and speech.



At 9 months old, his parents noticed he began to exhibit a strange new behavior. Periodically, he would bob his head to the side, and his eyes would roll back and become distant. At first, they thought it was a new mannerism he had picked up somewhere; however, the events became more frequent.

When the events rose to more than 100 times within the span of 15 minutes, his family brought him to Gillette immediately. After evaluation, our experts explained that Mateo had infantile spasms (IS), a rare seizure disorder.

IS can be problematic for parents and medical professionals alike, as the symptoms can present in movements that seem harmless, but they are actually small seizures that can be subtle enough to miss. Early treatment of the condition is key, so Mateo's parents recognizing his symptoms early played a major role in ensuring he didn't regress and lose the developmental progress he had made.

Mateo was treated with adrenocorticotrophic hormone (ACTH), a steroid therapy that requires very careful monitoring for potentially serious side effects. He had multiple EEG tests to monitor his progress. Mateo responded well to the treatment, and the spasms disappeared. He stayed on track with his development—gaining new skills day after day.

While there are many days yet to come, and challenges still lie ahead for Mateo, he and his family—and his team at Gillette—will be there to meet them together.

Today, Mateo is a happy and healthy 8-year-old, able to walk, talk, laugh and learn new things. He's an excellent big brother for his two younger siblings and is still working hard in his therapy appointments. He has successfully beaten one of the worst seizure problems seen in early childhood and his future is brighter than ever. All is well.



Read More

Epilepsy: A Common Complication of Cerebral Palsy

The complicated nature of cerebral palsy stems from the fact that it isn't just one condition. Really, it's a group of conditions that are the result of brain injury or atypical brain development that happens around the time of birth or early in life. For this reason, seizures are common among children with cerebral palsy. In fact, the Cerebral Palsy Research Network estimates 40-45% of people who have cerebral palsy also have epilepsy.

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JOURNAL

Partners in Care Journal is a publication of Gillette Children's.

The team at Gillette Children's knows that expertise regarding complex conditions is almost as rare as the conditions themselves. We strive to share our knowledge with providers across the world to positively impact patient care for generations to come. That's why we partner with you at every stage of your referral journey.

We respond daily to comments and questions submitted via email at providerrelations@gillettechildrens.com

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WEBINAR



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Now!

Cerebral Palsy Early Interventions: What's New in Care and Research

with Angela Sinner, DO

COURSE OBJECTIVES:

At the completion of the course, participants should be able to:

- Define presentations of cerebral palsy
- Recognize early manifestations of cerebral palsy and how they relate to various screening tools and timelines for diagnosis
- Understand the current evidence regarding early intervention programs in cerebral palsy

