

# Growing Together

News for Families

Summer 2014



## Up and running

The scent of Icy Hot® hangs in the air like a warm blanket, greased on the runner's legs. They line up at the start line. You can smell the track; rubber laced with sweat. A few slap their thighs to get their muscles twitching and ready to run. When the gun goes off, one runner leaps forward with more spring in her step than the rest, her hot pink running spikes hit the ground, one laced up over a prosthetic leg, known as a cheetah foot.

Running is about practicing your strengths, fixing your weaknesses and making every race count. For 16-year-old Grace Norman, the biggest misconception about her running is that she's slow.

Grace is training with the hope to be part of the 2016 Paralympic Games in Rio de Janeiro. She was recently contacted by the USA Paralympic track and field committee about running the 400-meter event and the triathlon.

Michael Albert, MD, director of sports medicine and orthopaedics at Dayton Children's, along with the company that developed Grace's cheetah foot, have kept her up and running with the goal of making the 2016 Paralympic team.

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## “Water” you waiting for? Don’t get dehydrated

As summer starts to sizzle and summer sports are in full swing, it’s important to drink up to stay hydrated. Dehydration can zap strength, energy and coordination and lead to heat-related illness.

Even mild dehydration can affect athletic performance.

By the time your young athlete feels thirsty, he may already be dehydrated. That’s why athletes should start drinking before thirst starts and every 15 to 20 minutes during physical activity.

### Top signs of dehydration:

- Muscle cramps
- Nausea
- Weakness
- Dizziness
- Inability to concentrate
- Dry or sticky mouth

Plain water is usually enough to keep hydrated. Sports drinks may be a good choice for young athletes who participate in strenuous physical activity for more than one hour.

### Weighing water versus sports drinks:

Beverage	Amount	Calories	Carbs	Sodium	Potassium
Water	8 oz.	0	0	0	0
Powerade®	8 oz.	50	17g	53 mg	32 mg
Gatorade®	8 oz.	50	14g	110 mg	30 mg
G-2®	8 oz.	10	7g	110 mg	30 mg

## Dayton Children’s is awarded Magnet® designation for magnificent care

*Growing Together* is published quarterly for parents and families in the Miami Valley area by Dayton Children’s. The purpose of *Growing Together* is to show how Dayton Children’s and families are working together to keep all children healthy and safe. Additional copies of *Growing Together* are available by writing to Dayton Children’s, c/o Marketing Communications, One Children’s Plaza, Dayton, Ohio, 45404-1815 or by calling 937-641-3666. Your suggestions and comments are also appreciated.

For more information:  
937-641-3666  
childrensdayton.org



Dayton Children’s Hospital received Magnet® designation, nursing’s highest honor! Magnet is one of the most prestigious honors a hospital can achieve. Dayton Children’s is one of only 31

pediatric Magnet hospitals nationwide and one of 27 Magnet hospitals in Ohio. The 401 Magnet-designated organizations represent less than 7 percent of all U.S. health care organizations. Magnet hospitals have lower patient mortality, fewer medical complications, improved patient and employee safety, and higher patient and staff satisfaction.

“While Magnet designation is a prestigious honor, the real win is for the 285,000 children and their families we treat each year,” shares Renae Phillips, MSN, RN, NEA-BC, FACHE, vice president of patient care services and chief nurse executive. “Magnet designation demonstrates excellence in patient care by our nursing staff. This national recognition is a testament to the high-quality, family-centered care that is the foundation of Dayton Children’s.”



## Training tired? Diet could be the culprit

Sleep, eat, play, repeat. Young athletes need the right fuel and have higher energy, protein and fluid requirements.

Kids who are involved in all-day competitions, endurance sports lasting two hours or more at a time, such as running, rowing or competitive swimming, need to consume more calories to keep up with increased energy demands.

● **Crave calcium and pump iron.** Calcium and iron are two important minerals for athletes. Calcium helps build strong bones that can help prevent breaks and stress fractures.

**What to nosh on:** Calcium-rich foods include low-fat dairy like milk, yogurt or cheese, or other non-dairy alternatives like soy or almond milk, calcium-fortified

tofu and broccoli. Iron helps carry oxygen to all the different body parts that need it. Iron-rich foods include lean meat, poultry, fish, eggs, beans, dried fruits, leafy green vegetables and fortified whole grains.

● **Push the protein.** Protein is important to build and repair muscles, but most kids can get plenty of protein through a balanced diet.

**What to nosh on:** Protein-rich foods include fish, lean meat and poultry, eggs, dairy products, beans, nuts, whole grains and soy products.

● **Carbo load.** Some diet plans advocate to steer clear of carbs. For young athletes, carbs are key: They're a source of fuel. Athletes who avoid carbs will be running on empty, and their body will start breaking down muscle mass for energy.

**What to nosh on:** Whole-grain foods like whole-wheat pasta, brown rice, whole-grain bread and cereal, and fruits and vegetables.



### 3 reasons your child needs a sports physical

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care physician (even if their sport doesn't require one).

#### 1. Identify lingering injuries.

Kids and teens can easily injure themselves during the sports season. If it happens at the end of a season, they might not properly treat the injury. A sports physical can help identify and treat lingering injuries before the next sports season starts.

2. **Play your best game.** Being nearsighted will affect a baseball player, but not a runner. Outdoor or seasonal allergies will affect the

runner, but not a basketball player. Your young athlete's primary care physician has a record of your child's condition and can ensure it's managed so it doesn't impact performance.

#### 3. Discover rare conditions.

The stories are out there and they can be tragic: A child dies during a game or practice. While rare, it has happened.

"The best thing to do is get a pre-season sports physical with your child's primary care doctor, even if your child's sport doesn't

require it," explains Lora Scott, MD, co-director of sports medicine at Dayton Children's.

"This includes a thorough history and physical exam by someone who knows your child and knows your family history. Your child's doctor will look for red flags, which provide clues that further evaluation, possibly by a specialist, is necessary to keep your child safe."

The best time to schedule your child's sports physical is early to midsummer to avoid the busy sports physical season in the late summer and fall.

# Olympic hopeful ready to take on the world

**All in the family:** Grace's mother ran track in college and now coaches Grace's team at Xenia Christian. The Norman family has the goal to compete in a race in every state. To date, they have seven checked off of their list.



“Grace has a ‘take-on-the-world,’ competitive attitude,” explains Robin Norman, Grace’s mother and track coach at Xenia Christian where Grace is a sophomore. “With race times faster than many runners with two legs, people have stopped assuming that she’s slow.”

**B**orn into a family of runners, Grace was destined to run. Her mother Robin ran track in college and her father Tim is a runner and avid triathlete. Grace’s older sister Bethany runs track at Cedarville University and her younger sister Danielle runs junior high track.

At birth, Grace was diagnosed with congenital constriction band syndrome of the left leg, a fetal abnormality. As a child with this condition grows, the congenital constriction bands make creases in the tissue. Most bands only affect the soft tissue, but some can go as deep as the bone. Bands happen most often around the baby’s arm or leg. No two cases are exactly alike, and the condition affects just 0.1 percent of newborns.

Mild cases may result in a crease on the limb. More severe cases can compress blood vessels and limit growth to the limb, often resulting in amputation.

Grace had a more severe case and was fitted with her first prosthetic leg when she was 13 months old.

Like many kids, Grace started playing soccer when she was little. “I would always warn the soccer coach to have duct tape on hand; you never know when a prosthetic leg is going to break and has to be taped together mid-game,” explains Robin.

Grace started running track in seventh grade with a regular prosthetic, but she wasn’t getting the times she wanted. “A prosthetic limb changes your running gait,” explains Robin. “I knew if we could fix her gait and stride, her times would drop.”

Two years ago, the Norman family decided to stop by the U.S. Paralympic Trials in Indianapolis on the way home from a family reunion. That’s when the dream was born.

"A few of the runners encouraged us to look into a cheetah foot for Grace," shares Robin.

Robin contacted John Brandt from Optimus Prosthetics in Dayton and worked with Michael Albert, MD, pediatric medical director of orthopaedics at Dayton Children's, to help Grace receive her cheetah foot.

Dr. Albert has treated Grace since her family moved to Dayton when she was age 5.

"When I run, something indescribable takes over, an energetic power that wasn't there before. It's a gift from God that's too valuable to measure."

"The first time I tried on the cheetah foot, I flew forward with such speed and bounce that I scared myself," Grace shares. "For the first time in my life I could flex my foot. It was like running on air. I remember thinking to myself, 'I wonder how fast this thing can go?'"

Almost immediately after Grace was fitted for her cheetah foot, she was off and running.

"In less than 48 hours after receiving the cheetah foot, we had the OHSAA district cross country meet in Dayton," Robin says. "Her time dropped from 24:17 to 21:47 for 3.1 miles. It was incredible."

According to Dr. Albert, socket fit and alignment are vitally important when you have a prosthesis. "Socket fit is important because it connects

the body with the prosthetic limb. You want to have limited movement of your limb inside the socket to ensure it doesn't rub and irritate the stump. Alignment depends on the length of the limb, the level of amputation, body size and the ability to control the prosthesis.

Two years ago, Grace grew 5 inches in one year. At first, we thought she might have a stress fracture. However, the cause of her pain was rapid growth, which affects the fit and alignment of her prosthetic."

According to Grace, fit can make or break your race. "I can tell if the blade isn't aligned correctly, my knees start knocking and the bottom of my limb will get sore. The pads can also wear out."

Dr. Albert, along with Optimus, the company that made Grace's cheetah foot, have kept her up and running, often with race times faster than her peers. Grace's personal best in the 800-meter race is 2:26:87.

"The coordination of Grace's care team – Dayton Children's and Optimus – has been key to helping her achieve this level of running – she can compete the same as any other student," Robins shares.

Grace's favorite event is the 800 and 3,200-meter relay with her Xenia Christian teammates Sarah Kensinger, Ariana Nelson and Mallory Stemple.

The team of four competed in the Ohio Association of Track and Cross Country Coaches high school indoor track and field championships at the University of Akron in March. The event made history: Grace was the first amputee to qualify for a statewide event in Ohio.

Grace came in seventh place in the individual 3,200-meter run at the meet. This event caught the attention of the U.S. Olympic Committee.

Grace's athletic career expands past running. She's also joined her dad, competing in numerous triathlons in Ohio, Indiana, Wisconsin and Illinois.

Grace has big summer plans, including competing in her first international competition, ITU World Triathlon in Chicago. Grace was named to the para-athlete elite list and will represent the United States at this event. Based on Grace's sprint triathlon time in early June, she is number one in the nation for the para-triathlete category.

"Obviously I have goals and don't know God's plans for me, but I'm excited for my future," Grace says. "I do hope other people—both able-bodied and amputees—can look at me and say, 'You know what? Life is tough, but if this girl can make it, then I can make it.'"



#### GRACE'S PERSONAL RECORDS

- 400 meters 65.78
- 800 meters 2:26.87
- 1,600 meters 5.33.1
- 3,200 meters 12.04
- Cross country course (3.1 miles) 20:23

# Heads Up

Concussions are injuries to the brain and left untreated can have lasting effects including brain damage if not managed properly.

In the last five to 10 years, there has been a substantial increase in the number of reported cases of second-impact syndrome, which occurs when an athlete who sustains head trauma, often a concussion, sustains a second head injury before signs of the initial injury have cleared.

“Athletes don’t want to be pulled out of the game, regardless if they are injured, which presents an opportunity to suffer a second blow,” shares Lora Scott, MD, co-director of primary care sports medicine.

Also dangerous is post-concussion syndrome, when the athlete shows signs of a concussion, such as headaches, dizziness and thinking difficulties a few days after a concussion. Symptoms may continue for weeks to a few months after a concussion.

## Why are head injuries so difficult to recognize?

It is much more difficult to recognize head injuries where the athlete doesn’t lose consciousness, but instead a temporary loss of mental sharpness. There are so many myths around concussions, causing confusion among coaches, parents, schools and others.

“Just because they don’t have a headache doesn’t mean their brain is functioning normally,” explains Dr. Scott. “If a young athlete has a baseline concussion test before the injury, we can compare before and after results to determine the severity of the concussion and determine when they can return to play.”

## 4 concussion myths and facts:

**Myth 1: Only athletes in aggressive contact sports like football, hockey and lacrosse suffer concussions.**

**Fact:** While football has the highest number of concussions, they also occur frequently in soccer, basketball and cheerleading. Most high-impact hits occur during practice, not games.

**Myth 2: All concussions are the same.**

**Fact:** No two concussions are identical. The symptoms can be very different, depending on the degree of force and location of the impact. Common characteristics include:

- Headache
- Nausea
- Memory difficulties
- Slowed thinking
- Tiredness, changes in sleep
- Dizziness
- Ringing in the ears
- Sensitivity to light or sounds
- Mood changes
- Blurred vision

**Myth 3: A player who sustains a blow to the head resulting in a confused state that resolves within minutes hasn’t suffered a concussion.**

**Fact:** A stunned, confused state is considered a concussion even though the symptoms may only seem to last for a very short time. “Delayed onset of symptoms of a concussion are more common in athletes under age 18,” explains Dr. Scott.

“It’s vital that a player who has a blow to the head get evaluated immediately, especially during the first three hours, with a follow-up clinical evaluation 24 hours post-injury.”

**Myth 4: All team doctors and certified athletic trainers follow the same guidelines to determine when an athlete can safely return to play.**

**Fact:** Many programs do not follow any set of return-to-play guidelines.

“The length of days to return to play isn’t one-size-fits-all,” explains Dr. Scott. “Some studies indicate that the younger the child is, the longer the recovery period. This is why a baseline concussion test before a young athlete is hit is so critical.”



As of last September, 47 states have passed laws prohibiting same-day return to play. The return to play law passed in Ohio in April 2013.

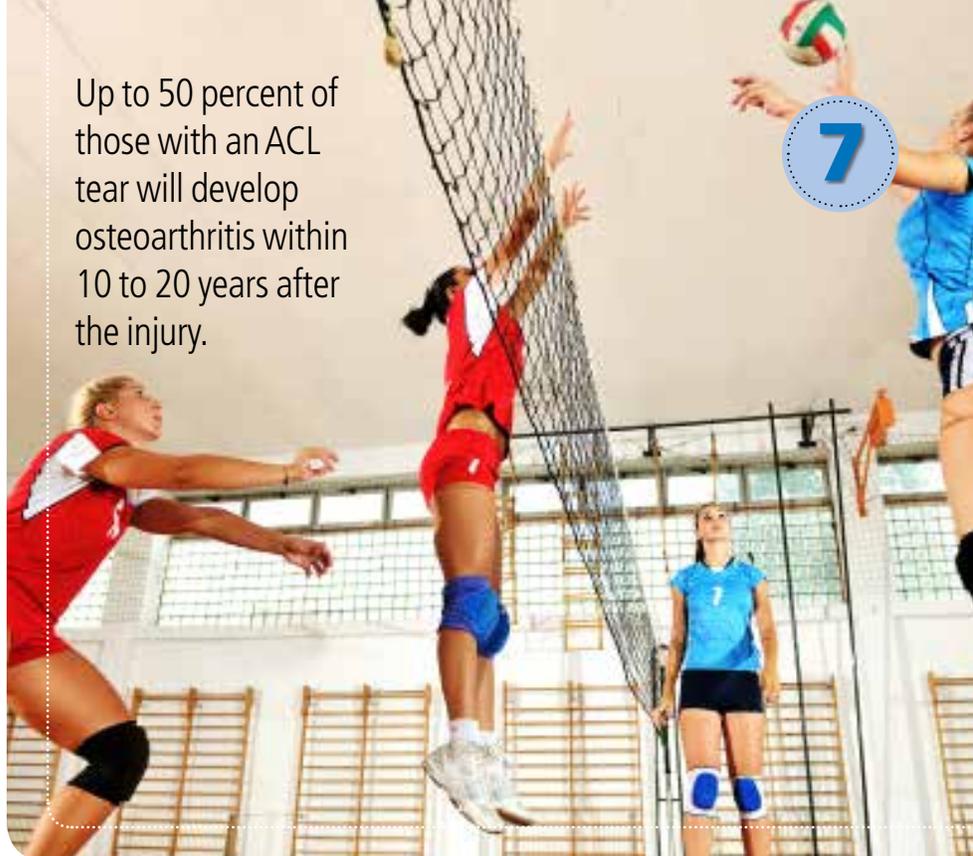
### What can parents do to protect their child or teen?

“First, we need to conduct better education for the younger population on the signs and symptoms of a concussion,” says Dr. Scott. “Second, we need to do a better job on educating players on the dangers of playing with a concussion, especially in this younger population.”

**Dayton Children’s offers free baseline concussion testing for athletes age 10 and older, simply call 937-641-3939.**



Up to 50 percent of those with an ACL tear will develop osteoarthritis within 10 to 20 years after the injury.



## ACL tears

# A real pain in the knee

**K**nee injuries are the second most common diagnosis at the Dayton Children’s sports medicine center, and ACL tears are popping up more than ever before.

The ACL is the ligament that connects the thigh bone and shin bone inside the knee joint. The ligament is prone to tearing if the knee shears sideways during hard, awkward landings or abrupt shifts in direction – the kind of movements that are common in sports like basketball, soccer, football, volleyball and skiing.

Commonly, those with an ACL tear feel a “pop” in the knee with sudden knee pain and swelling.

### Teens are at risk – so are girls

Studies by the American Academy of Pediatrics indicate girls suffer two to six times more ACL injuries than boys. The risk starts to increase significantly among girls at 12 to 13 years of age and among boys at 14 to 15 years. The largest number

of ACL injuries is among female athletes ages 15 to 20.

### Why are girls more at risk?

“Young female athletes have increased hamstring flexibility, increased foot pronation (flat-footed), and variations in the nerves and muscles which control the position of the knee,” explains Jeffrey Mikutis, DO, pediatric orthopaedic surgeon and surgical director of sports medicine. “Females also have a wider pelvis and knees that are less stiff than men, placing more forces on the ligaments.”

### How to ward off ACL tears?

“Our sports medicine program and athletic trainers can teach athletes how to land, cut, shift directions, plant their legs, and move during play so that they are less likely to injure themselves,” shares Dr. Mikutis. “Studies have found that training programs can reduce the number of ACL tears by 50 percent or more.”

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syndrome



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## Dayton Children's walk-in fracture clinic

Dayton Children's main campus, One Children's Plaza: Mondays, 12:30 pm – 5:00 pm

Miami Valley Hospital south campus, 2350 Miami Valley Drive, suite 300:  
Fridays, 1:00 pm – 4:00 pm

- The fracture clinic is a first-come, first-serve clinic for fractures only
- Wait times can range from a few minutes to a few hours
- Please bring all imaging related to the injury



# News for Families Growing Together



## 3 reasons your child needs a sports physical

It's easy to get lured into a "walk-in" clinic for a sports physical at a low price. Walk-in clinics for sports physicals have popped up everywhere, but they aren't the best option. Here's why: In some situations, this can be a life-altering decision rather than a convenient alternative. Here are three reasons why your young athlete needs a sports physical with their primary

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