HANDPRINTS

A PUBLICATION OF UCSF BENIOFF CHILDREN’S HOSPITALS

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Does your child get enough time outdoors?
Maybe it’s time for a nature prescription.

FOOD POISONING
Pediatric gastroenterologist
Mala Setty, MD, explains how to
best care for a child suffering
from food poisoning.

PEDIATRIC PULMONARY HYPERTENSION
Pediatric pulmonary hypertension is usually misdiagnosed as asthma.
Lucky for us, the only accredited California care center is at UCSF
Benioff Children’s Hospital San Francisco.
Dear Friend and Neighbor,

The cancer care at UCSF Benioff Children’s Hospitals has been ranked by *U.S. News & World Report* Best Children’s Hospitals list as the best in the Bay Area. We are one of the leading cancer treatment and research centers in the United States, developing and evaluating therapies that offer the best opportunities for survival and higher quality of life. Thanks to our participation in clinical trials and hematology studies, we’re able to provide a comprehensive list of services in neuro-oncology, thrombophilia, and stem cell or bone marrow transplantation. At the same time, care for our patients is offered in a warm and supportive environment where we can not only help children thrive, but also help them grow.

This year, San Francisco Giants catcher Buster Posey and his wife, Kristen, announced plans on April 20, 2016, to raise money for pediatric cancer research and awareness. Mr. Posey pointed out that the U.S. government funds 4 percent of the money needed for research—which he feels is unacceptable.

Buster and Kristen have generously spent time at UCSF Benioff Children’s Hospitals in Oakland and San Francisco to meet with our hematologist-oncologist clinicians and researchers, as well as our patient families. We are proud to have the Poseys and the San Francisco Giants as our partners working to end pediatric cancer.

Bertram Lubin, MD
Associate Dean of Children’s Health, University of California, San Francisco
President & Chief Executive Officer, UCSF Benioff Children’s Hospital Oakland

SPORTS MEDICINE CENTER FOR YOUNG ATHLETES
Free Lecture & Hands-on Workshops
Attend in person or watch live online at bitly.com/sportslectures2016

Basketball
**Tuesday, Nov. 15, 7-8 p.m.**
744 52nd St., Oakland
RSVP: 510-428-3558

Wrestling
**Tuesday, Dec. 13, 7-8 p.m.**
2401 Shadelands Dr., Walnut Creek
RSVP: 925-979-3420

Dance Medicine
**Wednesday, Nov. 2, 2016, 7-8 p.m.**
2401 Shadelands Dr., Walnut Creek
RSVP: 925-979-3420
Table of Contents

4  I LOVE MY JOB
Athletic Trainer Featuring Ryan Sargent, MBA, MS, ATC.

5  KIDS CORNER
Puzzle #17.

6  PERSPECTIVE
A Nature Prescription Written by Nooshin Razani, MD.

10  ORAL HEALTH
Make Sure Your Game Face Includes a Mouthguard Written by Terri Hunter-Davis.

10  SPORTS CORNER
Patellofemoral Stress Syndrome Written by Sports Medicine Center for Young Athletes.
When Your Kid’s Knee Pops Written by Nirav Pandya, MD.

12  SPORTS NUTRITION
Nutrition for the Injured Athlete Written by Mary N.R. Lesser, PhD, RD.

13  ASK AN EXPERT
Addressing Pediatric Bladder Problems Written by Angelique Champeau, CPNP.

14  PATIENT FEATURE: SLEEP
Health Children Can Struggle with Sleep Apnea, Too Written by Susie Caragol.

15  SLEEP HEALTH
When a child may need a sleep evaluation
Pediatric sleep disorders

16  RESEARCH: VIRTUAL REALITY
UCSF Benioff Oakland Introduces Virtual Reality Therapy Written by Susie Caragol.

17  RESEARCH UPDATE
Study Shows Sweets, Not Calories, Are Culprits in Cardiovascular Pre-conditions Written by Suzanne Leigh.

20  PATIENT FEATURE: PEDIATRIC PULMONARY HYPERTENSION
Teen Suspects She Has Heart Condition, Gets Diagnosis of Pulmonary Hypertension Written by Susie Caragol.

21  100% HEALTHY
What to Do When Your Child Gets Food Poisoning Written by Mala Setty, MD.

22  GIVING BACK
Give PECE a Chance
Calling All Gamers: Be A Hero for Kids!
Bringing the Halloween Spirit to Hospitalized Kids
FINDing Hope Written by Jackie Kersh.

8  Happy Ears
Gabrielle Esquer overcomes hearing loss. Written by Susie Caragol.

18  Harper’s Journey
Harper receives specialized care at the only accredited Pediatric Pulmonary Hypertension Care Center in California. Written by Susie Caragol.

To contact the departments and access services featured in this issue:

I Love My Job: Athletic Trainer, page 4
Sports Medicine Center for Young Athletes:
510-428-3558; 415-885-3819

Happy Ears, page 8
Pediatric Audiology: 510-428-3344; 415-353-2101; 925-979-3440

Make Sure Your Game Face Includes a Mouthguard, page 10
Dental Clinics: 510-428-3316; 415-502-5800

When Your Kid’s Knee Pops, page 11
Sports Medicine Center for Young Athletes:
510-428-3558; 925-979-3420; 415-353-2808

Nutrition for the Injured Athlete, page 12
Sports Nutrition: 510-428-3772

Addressing Pediatric Bladder Problems, page 13
Pediatric Urology, 510-428-3402; 415-353-2200

Children Can Struggle with Sleep Apnea, Too, page 14
Sleep Disorder Center: 510-428-3305; 415-353-7337

Harper’s Journey, page 18
Pediatric Pulmonary Hypertension: 415-353-2008
What does an athletic trainer do?
What an athletic trainer does is evolving. Previously, they would cover a sports team or organization’s team program and their injury needs—including before and after practice. There are athletes that try to fight through an injury, and you are the one that has to tell that coach to take that player out so you can take a look at them. We not only take care of injuries at the time of an incident, but we take care of preventive measures—making sure the athletes are equipped physically and mentally for the sport they are playing. We help them get stronger and have better body mechanics, which will help decrease the number of injuries that we see.

Athletic trainers can now also be found in the military, taking care of soldiers during boot camp. I spent a little bit of time in the Navy doing that before I came to UCSF. Athletic trainers can fit anywhere, working with the doctors: on the field working with young kids, high school kids, college kids, and working professionals.

What education do you need?
Since August 2015, you are now required to have a bachelor’s of science degree and a master’s in athletic training, which takes another three years. All athletic trainers need to take a test to be board-certified in athletic training.

Why did you choose to work at a children’s hospital versus being an independent contractor?
Working at UCSF Benioff Children’s Hospitals is a great advantage because of the speediness in getting high quality medical attention. Patients will be seen by a pediatric doctor that specializes in sports medicine who can then determine if an MRI or surgery is needed; then patients can go straight into our physical therapy program. I am always confident that an athlete is ready to go back onto the field because I have all the care notes from the doctor and the physical therapist. It is a huge advantage for our athletes that the UCSF athletic trainers work side-by-side with the sports medicine physicians and physical therapists.

Have you ever had to save a life?
No, thank goodness, but I am prepared for it. All of our athletic trainers know first aid, carry AEDs with them to every game, and are certified in CPR and advanced life care.

What is the worst injury you have ever seen?
A kid playing soccer landed wrong. We all thought it was a clavicle injury, but when we went over, the athlete said he couldn’t feel anything from the neck down. Luckily, he got his feeling back, but he never played soccer again, because he never got his confidence back. But athletic trainers can help the athlete get back to a healthy mental state. Just recently, a football player coming back after an ankle injury was given the “okay” by his UCSF physical therapist, but he lacked the confidence to play again. We worked one-on-one with him for two weeks with drills. He came to understand that he can make moves on his ankle and be strong. He is slowly gaining the confidence that he doesn’t have to worry about the ankle, but about the game.

What are the rewards of the job?
You see kids get better because you work with them every day. And when they go to the next level, you had a hand in that. We don’t do it for the glory because you’re not going to get some award for being the best athletic trainer in the world. You do it because you helped get that athlete where they wanted to be. It’s stressful, and you work sometimes seven days a week, but you’re watching sports! One year at a high school graduation, the parents of one of the athletes said to me, “You took care of my kid for four years, and we knew that if he ever had an issue, you were there for him. We knew that if he stepped out on the field, you were there to take care of him. We had peace of mind up in the stands knowing you were there.” It takes that small little moment to make everything worthwhile.
**PUZZLE #16 Answer**

**PROBLEM:** Which letters are in:

1. Two or more circles? Answer: B, C, D, F, G, H, K
2. A triangle and only one circle? Answer: J, L
3. A rectangle, but not a triangle? Answer: M
4. Only one circle, but not a triangle or a rectangle? Answer: A, E, I
5. At least one circle, one triangle, and one rectangle? Answer: K

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**PUZZLE #17**

What is the number of the parking spot that has been covered up by the car?

Answer:__________

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**Consent to Publish Information**

I hereby give my consent to UCSF Benioff Children’s Hospital Oakland and its organizations, including its fundraising foundation (“Children’s”), to do any or all of the following with respect to me/my child:

- Child’s name: ________________________________

I agree that pictures of and information about me/my child may be used in and/or shared with Children’s publication HandPrints.

I understand:
- I may cancel this consent up until a reasonable time before the picture/information is used, but I must do so in writing and submit to: UCSF Benioff Children’s Hospital Oakland, Marketing, 747 52nd Street, Oakland, CA 94609. My cancellation will be effective when received by Children’s, except where use or sharing has already occurred in accordance with this consent.
- I will not receive any financial compensation for agreeing to this consent. I have a right to receive a copy of this consent.

Please make a copy of this form for your records.

Date ________________

Parent/Guardian signature ____________________________

Parent/Guardian printed name ____________________________

Relationship to child ____________________________

Phone ____________________________

Email ____________________________

Address ____________________________

City ____________________________ State________________ Zip ____________________________
My three children are the ones that transformed the way that I view and practice medicine. They grew up in an urban center. It was a very exciting place for me to be, with lots of ideas—but extremely restrictive for a child. There were very defined lines where a child could be, and within those lines there were often signs: “Don’t run. Don’t climb. Don’t jump. No horseplay.” I found that I had started internalizing these rules and acting as an agent to restrict my own children, saying things like, “Where are your shoes? You can’t be barefoot. Sit down. Don’t touch that. Don’t taste that. Stop crying. Stop talking.”

And I didn’t feel happy. I felt like I was killing every instinct they had on how to be. Something else was happening inside of me. I was extremely lonely. No amount of training in pediatrics and expertise on how to take care of children prepared me for the immense loneliness of motherhood. I was born in the United States, and I was comfortable with my hyphenated identity of me. And I felt so uprooted, and it was a crisis because I had children, and they were taking root. And I was uprooted. I was so confused.

When it got to a breaking point, I surrendered. I stopped talking so much. I took my kids to places I didn’t think people would judge us: a little yard, a little place they could do whatever they wanted. In the beginning, they ran, jumped, climbed, yelled, hit each other, whined, asked me where the iPad was, said “This is boring.” And I didn’t say anything; I ignored it. And after a few times, I started to notice some cool things. My oldest son is an amphibian whisperer. My middle child speaks to trees, and I can usually find her at the top of one. My little one will work things out with dirt for long periods of time and seems to dance to a rhythm that none of us can hear, but we think it is coming from the ocean.

I was amazed. My kids are not lonely or stressed. They are connected. They speak nature’s language. Is this because we are a special family? Or is it because all children speak with nature? Do all children speak this language? It turns out, there are scientists and researchers that have chronicled the lives of children, and throughout human history, until about 20 years ago, all children used to walk long distances and had a personal, special place to recuperate, to hope, and to get away from us. They build a fort: fort-building is in all cultures, and it peaks at age 11. It has something to do with preparing emotionally and physically for adolescence. They play cooperatively and creatively because, unlike a playground, nature has no instructions, and it has no rules. And when I say nature, I don’t mean big or magnificent. When scientists follow children, they find that the spaces they go to are the ones that adults do not dominate—through rules, landscaping, grooming, and other signals that let a child know this is not their space. They also learned that when children were outside, they learned how to socialize and how to coexist not only with other humans but with other species—with other life. And all of these experiences lead to attachment.

The developmental phase we go through in nature is called “placed attachment.” And when people think back to their secret spaces, they do it with love. They grow up wanting to preserve and take care of those spaces.

All of this fort-making and playing stops at age 12. After age 12, kids are figuring out their place in their adolescence. It really shocked me that we are missing this stage that is fundamental to who we are as people. The average American spends 7 percent of their life outdoors. And less and less of what we do outside has to do with nature. Children are spending about half as much time outside than they did 20 years ago.

I went on a campaign to get outside. We went anywhere—to empty lots—and we did notice that there was something specific to nature. The average American spends 7 percent of their life outdoors. And less and less of what we do outside has to do with nature. Children are spending about half as much time outside than they did 20 years ago.

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So what is it?

Let’s say you go into a forest. Within minutes, your heart rate goes down, you breathe slower, you sweat less, and the stress hormone cortisol starts decreasing. You may have a feeling of awe. Awe is a combination of fear and happiness and pleasure all at once. After people feel fear, they focus turns from internal to external. Anxiety and depression go down. And people feel more empathy—just from feeling that split second of awe.

After about an hour outside, you may find that half of that has been physically active. When you are out in nature, your mind is restored. After 15 to 20 minutes walking through trees, you will have a bigger attention span. You can figure out more complicated cognitive tests and
puzzles. After three days, the prefrontal cortex, the part of your brain that is in charge, relaxes; it is reset. That is when you have your most creative and productive time. If you can clear your head by taking a “tree bath” for three days, you will be at your most productive.

I thought, “I have to get this to my clinic!” But we had to pause a minute because our patient population is very poor. It didn’t feel appropriate to tell people who don’t have food to eat or a place to sleep that they should go to the park. But then we realized, “Yes! That is exactly who needs this.” We met up with our local park district and came together in a real collaboration. We started by putting up huge banners of nature in our clinic; every photo in our clinic is of a natural space that our patient families can get to; our exam rooms have maps of how to get there. We taught doctors how to screen for nature and how to talk about stress and social isolation.

Doctors don’t want to talk about these things if we have nothing to give. But if we have something to give, it’s easier to bring up. So our doctors started prescribing nature outings for stress and social isolation. Once a month, a bus leaves from our clinic with the doctor and a park ranger on board with our patients. We tell them to invite anybody and everybody, and we go to a local park and picnic and try to create a community. We do our best to create an experience that is full of awe. We are measuring these experiments because I view nature as an evidence-based health promotion intervention. We just completed our first-ever randomized control trial of park prescriptions for stress and social isolation in a low-income clinic.

This is not about prescribing to parents what to do. This is about us coming together to reclaim childhood and health. How am I going to keep children healthy if there is no childhood? This is an “everybody” issue. Nature already exists, and we already belong to it. I am about to give you a nature prescription: Get outside. Look for something alive: a tree or bush, an ant. Move out of your child’s way. Don’t take a picture; don’t comment; just move and listen. Reclaim your health. After you do this once or twice for a few years, please help take care of nature. It is our home.

I hope we join together to enjoy the beautiful world we have together.

Hiking with Kids
This abbreviated list contains a few parks and preserves you may find appropriate for children. Call ahead; nature centers and children-specific facilities are usually open only a few days a week or may be closed in the winter. Be sure to pick a hike appropriate to your child’s skill and endurance level. You can find longer list at http://bahiker.com/kids.html.

SOUTH BAY
Fitzgerald Marine Reserve: Easy beach access, picnic tables, restrooms, and extensive tidepools. A great educational destination.
Skyline Ridge Open Space Preserve: The preserve offers a nature center and easy hiking around Alpine Pond, where children can look for crayfish, ducks, dragonflies, and birds. The level 0.4-mile semi-loop hike takes place on an all-access trail appropriate for strollers.
San Bruno Mountain State and County Park: A large picnic area, as well as restrooms and gentle trails. Saddle Loop and Bog Loop, on the park’s north side, are the best trail choices. You may also want to explore the Native Plant Garden on the south side of Guadalupe Canyon Parkway.

NORTH BAY
Mount Tamalpais/East Peak: Verna Dunshee Trail makes a flat 0.6-mile loop around East Peak and is paved. Easy parking and restrooms.
Shiloh Ranch Regional Park: This small park has a picnic area, restrooms, and a few miles of trails. A good spot for a picnic and family hike; very close to Highway 101.
GGNRA/Muir Beach: Beach access, and a level trail that leads through Green Gulch Farm. A great place to show kids how food is grown.
Point Reyes/Abbott’s Lagoon: A mostly level trail leads to the beach. Restrooms on site.

EAST BAY
Tilden Regional Park: Steam trains, Little Farm, a carousel and a swimming beach are offered. Restrooms and picnic facilities available. Some easy, short hiking trails surround the kids’ areas.
Joaquin Miller Park: Features lots of picnic areas, restrooms, and some flat trails. This is a good place to teach kids about trail etiquette, as there are usually lots of hikers, joggers, cyclists and equestrians on the park’s trails.
Point Pinole Regional Shoreline: Picnic areas, children’s play area, shuttle bus to fishing pier, restrooms and flat trails.
Point Isabel Regional Shoreline: Picnic tables, restrooms; flat, paved trails; dogs permitted off leash.
Sibley Volcanic Regional Preserve: Mostly flat trails, restrooms, interpretive geologic exhibits and labyrinths.
Source: http://bahiker.com/kids.html
Gabrielle “Elle” Esquer was born in 2002, but her birthday was before the hospital where she was born had implemented its newborn hearing screenings. Her moderately severe hearing loss was not diagnosed until age 4, when she began having trouble at preschool. “Elle had acquired speech, with a minor lisp that we didn’t think was bad or too unusual for her age,” says her mother Lynn Rankin-Esquer. “She was our first child, so I didn’t have a basis for comparison. I always had her in my lap when I was reading to her, and I realized in retrospect that I probably spoke a little louder when she didn’t seem to be paying attention. I didn’t realize she had a problem until she came home from preschool one day and was upset because the teacher scolded her when she hadn’t done something she was asked to do. My husband Dave said, ‘I’m not sure she’s always hearing us.’ So we took her for a hearing test, and she was diagnosed with moderately severe hearing loss. It turns out she had been lip reading.”

A friend of Lynn’s suggested they see Robert Wesman, MD, an otolaryngologist at UCSF Benioff Children’s Hospital Oakland, for further evaluation. Dr. Wesman (who is now retired) referred her to audiologist Alison Nachman, AuD, in Children’s Audiology department. Dr. Nachman confirmed Elle’s diagnosis.

“It’s entirely possible that Elle’s hearing loss was present at birth because it hasn’t gotten any worse since she was diagnosed at age 4,” Dr. Nachman notes. “Technically, she has moderate to severe sensorineural hearing loss, so she is what we often refer to as ‘hard of hearing.’ She had too much hearing to be a suitable candidate for cochlear implants, but she was an ideal candidate for hearing aids.”

Three weeks after her appointment with Dr. Nachman, Elle was fitted with her first set of hearing aids. The difference was immediately apparent.

“We were driving home to Moraga from Children’s, and Elle was in the back seat,” Lynn recalls. “All of a sudden, Elle said, ‘Mommy, my ears are so happy!’ She was hearing sounds she had never heard before. When we got home, I took her outside and watched the joy on her face as she heard a bird singing for the first time.”

Throughout her schooling, from preschool through middle school, Elle has been in “mainstream” classes, with special assistance as needed. This fall, she started her freshman year at Campolindo High School. “The school systems and Contra Costa County have been great,” Lynn says. “While she was still in preschool, Elle started an early intervention program with speech therapy at Park Mead Elementary in Walnut Creek. Her speech therapy continued when she went to elementary school at Los Perales in Moraga. The speech therapy helped her a lot, especially with articulating the ‘F’ and ‘S’ sounds. She also had a wonderful experience in middle school at Joaquin Moraga, where she was in a leadership program and won the 8th Grade Service Award at graduation.”

During her last year of preschool, Contra Costa County provided Elle with an “FM” system (also called a “DM,” or digitally modulated system) that includes a receiver on her hearing aid and a microphone for the teacher, so the sound goes directly to her ear. The system cuts out ambient noise that interferes with hearing what the teacher is saying.

Elle gets the ear molds for her hearing aids replaced at Children’s every six months or so as she grows. Then she gets her hearing aids replaced every three to five years, as new technology becomes available. She just got new hearing aids at Children’s before she started high school. Most hospitals do not combine patient care with the convenience of providing hearing aids directly to patients. Lynn notes that being able to purchase Elle’s
Most hospitals do not combine patient care with the convenience of providing hearing aids directly to patients. Mom Lynn notes that being able to purchase Elle’s hearing aids directly from Children’s streamlines the process for their family and saves them from having to go to a separate provider.
Even if you’re not a basketball fan, chances are you’ve seen Golden State Warrior Stephen Curry absentely gnawing on a U-shaped bit of plastic.

Curry’s mouthguard is perhaps the best known in all of sports, but his is hardly the only one. From the major leagues to youth soccer to the Olympic Games, you’ll find both professional and amateur athletes taking this simple step to protect their teeth. But it’s a measure casual participants should take, too.

“I recommend using a mouthguard in any sport where there’s risk of impact—basketball, football, martial arts,” to name a few, says Dr. Sara Hahn, a prosthodontist who teaches in the UCSF School of Dentistry’s predoctoral clinic. They can help prevent such mouth injuries as broken teeth, cuts on the lips or tongue, and jaw injuries.

But other common sports also are risky.

“I advise cyclists to wear protection as well,” Dr. Hahn says. “In cycling accidents, you’re likely to fly headfirst over the handlebars,” and the face—including the mouth—may take the brunt of the damage.

Weightlifting also can pose a hazard—but not just from contact with a barbell.

“When you’re really bearing down, you can put an excessive amount of force [on the teeth] by clenching really hard,” she explains. A weakened tooth—such as one with a large filling—could crack under that pressure.

An inexpensive mouthguard from a sporting goods or drug store can provide the proverbial ounce of prevention. Firm, preformed guards are available, as are softer “boil-and-bite” options that conform to one’s mouth. Dr. Hahn cautions users to take care in fitting the latter.

“If you don’t cover all the teeth properly, you can change your bite—permanently,” she warns.

Dr. Kjeld Aamodt, a UCSF orthodontist, concurs but says it’s more of a risk when worn for bruxism, or grinding. He agrees that mouth protection is a must, including if one wears braces.

“It’s advisable to wear a soft mouthguard over braces while engaged in sports that have the potential for impact to the face and teeth,” Dr. Aamodt says. He notes that there are mouthguards designed specifically for use with traditional braces. Clear aligners, such as Invisalign, also can act as a functional mouthguard.

Facial trauma can be made both better and worse by traditional braces. “Braces actually may stabilize the teeth and reduce the likelihood that they’re knocked out by trauma,” Dr. Aamodt explains. On the other hand, “one’s lips experience more of the injury than without braces.”

Finally, Dr. Aamodt advises, when the braces or aligners have been removed, don’t forget to continue using a mouthguard to protect your smile.

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**Patellofemoral Stress**

**What is PFSS?**

Patellofemoral stress syndrome, or PFSS, is generalized pain around the kneecap that is activity-related. This is a very common injury that occurs from overuse of the knee during sports activities.

**How does it occur?**

The definitive cause of PFSS is not always identifiable. This condition can occur from repeated bending and straightening of the knee, which can irritate the kneecap and surrounding structures. PFSS can also result from alignment problems in the hips, knees, and feet.

**STRETCHES:**

**HOLD FOR 30 SECS, 3-5 REPS**

- **Calf** (Knee straight)
- **Hamstrings**
- **Quadriceps**

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**Make Sure Your Game Face Includes a Mouthguard**

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Syndrome (PFSS)

Treatment
Initial treatment of PFSS is aimed at reducing pain and inflammation by applying P.R.I.C.E. (protect, rest, ice, compression, elevation). Physical therapy is usually the treatment of choice for PFSS. The physical therapy will give you specific exercises to help with stretching of the muscles around the knee as well as strengthen the core, hip, and foot.

Prevention
1. Have shoes that are in good shape, fit properly, and provide adequate support.
2. Be aware of your alignment as you run; don’t let the knees roll inward.
3. Perform daily stretching and strengthening.

STRENGTHENING: 2–3 SETS OF 10–12 REPS

Heel raises
Keep knee straight and push up onto your toes while driving the opposite knee up.

Single leg bridge
With one knee bent and the foot on the ground, push through the heel while keeping the hips level as they go up/down.

These tips are for general educational and informational purposes only. They are not medical advice and are not intended to replace consultation with qualified medical professional(s) regarding your specific circumstances.

When Your Kid’s Knee Pops

With an increasing number of youth athletes engaged in year-round sports, there has been a drastic increase in the number of traumatic knee injuries. The immature knee cannot withstand the force from repetitive, high-level sporting activity.

“As a result,” says UCSF Benioff Children’s Hospitals Director of Pediatric Sports Medicine Nirav K. Pandya, MD, “Monday morning phone calls to our office from patients who have suffered a painful knee injury from weekend sporting events are commonplace.”

Many athletes describe hearing or feeling a “pop” in their knee before they fall to the ground. What could possibly be going on inside the knee?

A “pop” in the knee can vary from conditions that are dreaded (kneecap dislocation, torn ligament, meniscus tear, bones impacting one another) to those that are seemingly innocuous (a snapping tendon or sporting equipment hitting the ground). The two most important factors that determine the severity of the injury after a “pop” in the initial time frame are the ability of the athlete to return to play immediately after the injury, and the degree of swelling in the knee. For a patient whose knee swells up after the injury, this indicates a more serious injury, as blood may be entering the joint due to trauma.

Immediately after the injury, medical personnel should examine the knee and determine the severity of the injury. The young athlete may be instructed to go to the emergency room or to their pediatrician within a day or two. In the interim, it is important to elevate the leg, place ice on the affected area, limit walking, and take pain medication as needed.

Once your child visits their doctor or pediatric orthopedist, a thorough history of what happened should be taken, and a physical examination should be performed. Even though you might be concerned that the “pop” was a ligament tear, an X-ray will likely be taken to make sure your child did not break a bone. Since an X-ray cannot visualize the cartilage and ligaments, many athletes will then obtain an MRI to take a closer look at these structures.

It is important to note that the vast majority of knee injuries with a “pop” are not emergencies. While waiting for the results of the MRI, your child may be instructed to continue limiting activity and perhaps participate in basic physical therapy to regain range of motion and strength.

The most common diagnoses in adolescent athletes who present with the dreaded “pop” and fall to the ground are kneecap dislocations, anterior cruciate ligament injuries, and meniscus tears. The ability to return to play will be determined based on the degree of injury, the specific sport your child plays, and where in the season your child currently is. Regardless, the treatment team will put together a plan that will get your child back on the field in the safest, most efficient manner.

Just remember, when your child or one of their teammates experiences the dreaded “pop” and falls to the ground, there could be multiple injuries that may have occurred. The ability to return to play and the degree of swelling after the injury aid in determining the severity of the injury. Help them to keep their spirits up and hope for the best if this occurs.
Nutrition for the Injured Athlete

When an athlete suffers from a major injury (e.g.: muscle/ligament tear, broken bone), the healing process occurs in three phases:

1. **Inflammation: takes place immediately after and up to five days post-injury**
   The injury may result in a disruption of nutrient- and oxygen-rich blood flow, which leads to cell death. The body responds by trying to clear out the dead cells and then starts creating new ones. This process is called inflammation and is often marked by pain, swelling, bruising, redness, or heat.

2. **Proliferation: takes place five days through three weeks post-injury**
   Inflammation subsides, and the injury begins to rebuild and repair itself. Athletes can often start very light activity in this phase, but they should stop if inflammation returns.

3. **Maturation: takes place three weeks to two years post-injury (depending on severity of injury)**
   Remodeling occurs to build a stronger tissue structure of the injured site. During this time, the athlete can resume activities to help the tissue become more functional.

During the period of healing, there should be a decrease in activity and a focus on eating foods, not supplements, to aid in healing. Nutrition goals for the injured athlete are as follows:

1. Promote healing by consuming nutrient-rich food items and maintain an energy intake to match reduced physical activity level.
2. Increase intake of food items with nutrients that have a role in tissue repair, bone health, and immune function.

### INCLUDE THESE KEY NUTRIENTS INTO YOUR EVERYDAY EATING FOR RECOVERY AND REPAIR

You do not need to eat as much if you are not working out. It is important to balance calorie consumption with physical activity level.

<table>
<thead>
<tr>
<th>PROTEIN</th>
<th>OMEGA-3 FATTY ACIDS</th>
<th>VITAMIN C</th>
<th>VITAMIN A</th>
<th>ZINC</th>
<th>VITAMIN D</th>
<th>CALCIUM</th>
</tr>
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<tbody>
<tr>
<td>Meat</td>
<td>Walnuts</td>
<td>Citrus fruits</td>
<td>Sweet potatoes</td>
<td>Oysters</td>
<td>Mushrooms exposed to sunlight</td>
<td>Dairy</td>
</tr>
<tr>
<td>Fish</td>
<td>Soy products</td>
<td>Strawberries, kiwi, melons</td>
<td>Carrots</td>
<td>Shellfish</td>
<td>Canned sardines, salmon with bones</td>
<td>Canned sardines, salmon with bones</td>
</tr>
<tr>
<td>Poultry</td>
<td>Ground flax seeds, flaxseed oil</td>
<td>Tomatoes</td>
<td>Bell peppers</td>
<td>Meat, poultry</td>
<td>Dark, leafy greens</td>
<td>Dark, leafy greens</td>
</tr>
<tr>
<td>Nuts</td>
<td>Fatty fish (salmon, mackerel, sardines, tuna, trout)</td>
<td>Bell peppers</td>
<td>Liver</td>
<td>Legumes</td>
<td>Fortified dairy</td>
<td>Fortified dairy</td>
</tr>
<tr>
<td>Dairy</td>
<td>Legumes</td>
<td>Broccoli</td>
<td>Spinach</td>
<td>Vegetables</td>
<td>Nuts, seeds</td>
<td>Cod liver oil</td>
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<tr>
<td>Beans</td>
<td>Baked potatoes</td>
<td>Brussels sprouts</td>
<td>Cantaloupe, mango, papaya</td>
<td>Whole grains</td>
<td>Fortified cereals</td>
<td>Tofu</td>
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<tr>
<td>Legumes</td>
<td>Spinach</td>
<td>Broccoli</td>
<td>Broccoli</td>
<td>Fortified cereal</td>
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<tr>
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<td>Fortified cereals</td>
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<td>Fortified orange juice</td>
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<tr>
<td>Tofu</td>
<td></td>
<td>Fortified cereals</td>
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Adapted from the Academy of Nutrition & Dietetics SCAN DPG and Sanford Sports Science Institute.
My child is almost 6 and is still wetting the bed at night. Is this a common problem at this age?

Nighttime bedwetting is the most common issue of bladder control in childhood. Nighttime bedwetting, also known as “nocturnal enuresis,” is the involuntary loss of urine during sleep for a child that is 5 years old or older. Fifteen percent of 5-year-olds and 10 percent of 6-year-olds experience bedwetting. As children get older, that number reduces by about 15 percent per year. Bedwetting does tend to run in families, but this is not always the case. If one or both parents have had trouble with bedwetting, their children have an increased chance of having similar problems.

What causes nighttime wetting?
The most common causes include constipation, bladder dysfunction—when children are not urinating enough during the day—or a genetic predisposition. Psychological problems were once thought to be the cause of nighttime bedwetting, but this is no longer believed to be the case. Most urologists feel that the difficulty lies with a developmental delay in the bladder’s urination cycle. These children simply need more time for their nighttime control to fully develop. Just as some children walk and talk before others their same age, bladder control also varies for each child.

Does my child wet at night because he/she is a deep sleeper?
Children who wet at night do not necessarily have abnormal sleep patterns. Children often wet the bed during deep sleep, which causes parents to think that their child is a deep sleeper. Many children who visit the doctor for bedwetting issues also have daytime urologic symptoms, like regularly needing to urinate urgently or frequently or having accidents.

What should parents do if their child is experiencing nighttime wetting?
Since bedwetting is very common until children reach 7 years old, it is difficult to justify treatment for nighttime wetting in this age group unless the cause is bowel or bladder dysfunction. At any age, decisions regarding treatment should take into account the extent that the problem affects the child and the child’s level of motivation. Quite often, the child has no physical abnormality and does not need long-term, expensive therapy. Parents should make sure that their child urinates before bedtime, and they should also reduce the amount of fluid that a child drinks close to bedtime.

When should parents seek treatment?
All children who need treatment for bedwetting benefit from treatment of constipation first. When children hold their bowel movements, the amount of stool increases and stretches the rectum, putting pressure on the bladder and can cause it to leak. An X-ray of your child’s abdomen may be recommended to determine if this is the case. If a child with nighttime wetting has a normal history and physical examination, further testing beyond an X-ray is not usually necessary. Treatment will always consist of first treating constipation and bladder dysfunction. Once these conditions are treated, if the bedwetting persists, a pediatric urologist can prescribe medication or conditioning or suggest trying a combination of approaches.
Children Can Struggle with Sleep Apnea, Too

Sleep medicine is a relatively new specialty in pediatrics. Our Sleep Laboratory is one of few sleep centers in the area that performs overnight diagnostic sleep studies designed with children in mind. Because sleep problems can affect your child’s health and contribute to learning, mood, and social behavior troubles, we’re committed to providing treatment and consultation for sleep disorders that affect babies, children, and young people up to age 18.

When Kijah Stewart was about 5 years old, her mother began to notice that her little girl had developed a behavior that didn’t seem typical for someone her age. “I could hear her snoring,” says Kemora Stewart. “The snoring was so heavy, it concerned me to hear a 5-year-old breathing in a manner that equated to that of an adult. I didn’t think that was normal for a little kid. Then around the same time that I noticed her snoring, Kijah got pneumonia and ended up in the hospital.”

The hospital was UCSF Benioff Children’s Hospital Oakland. And Kijah’s “pneumonia” was actually a complicated condition known as “acute chest syndrome,” which can become life-threatening.

“Kijah’s lungs almost collapsed,” Kemora recalls. “When antibiotics and other treatments failed to help her, they performed procedures to drain the fluid accumulations from her lungs as well as a blood exchange. She was a very sick little girl.”

Kemora credits Kijah’s recovery from that episode to her “wonderful doctor” at Children’s, Keith Quirolo, MD (who is now retired from Children’s); nurse Alea Kelleher, RN (formerly in the Outpatient Infusion Center and now in the Emergency Department); and nurse practitioner Erica Tringale, PNP (who is now a nurse manager in the Hematology-Oncology department).

Kemora also is grateful for the care Kijah received from nurse practitioner Bridget Canty, RN, PNP, MSN (who is now a nurse manager for the Pediatric Intensive Care Unit).

“Dr. Quirolo actually had been planning to retire earlier, but he stayed on at the hospital until Kijah was able to go home,” Kemora notes.

While Kijah was in the hospital, her medical care team also noticed that she had enlarged tonsils, which could have been one reason why she had been snoring. Surgery to remove her tonsils did not seem necessary at the time, however.

For the next year and a half, Kemora continued to notice Kijah’s snoring. The child had other symptoms that troubled her mother, too. Kemora noticed that Kijah was fatigued during the course of the day and that she sometimes had foamy spittle around her mouth during sleep. Concerned, Kemora made an appointment for Kijah to have a sleep study done in November 2015 at the Children’s Sleep Disorder Center’s Walnut Creek location.

“The sleep study showed that Kijah would stop breathing approximately 7 to 10 times a night while she was asleep,” Kemora says. “She was diagnosed with moderate obstructive sleep apnea, so we met with the sleep medicine doctor to talk about treatment options.”

“People usually think of obstructive sleep apnea as a condition that only affects adults, but up to 5.8 percent of children have sleep apnea, too,” says Medical Director of UCSF Benioff Children’s Sleep Disorder Center in Oakland Lourdes DelRosso, MD. “In toddlers and young children, large tonsils are the most common risk factor, and snoring is the most common symptom. In older children, large tonsils are a risk, but other factors also may contribute, including having allergies and being overweight. Children with Down syndrome, children with syndromes that affect the craniofacial structures, and children with low muscle tone are at higher risk for breathing disorders. It is very important for these children to be evaluated by a sleep specialist regularly.”

Dr. DelRosso notes that when sleep apnea is suspected, a sleep study—also called a polysomnogram—is ordered. The study is performed at the sleep center, where the parent and child stay overnight. A certified sleep technologist monitors the child’s sleep and breathing, and the sleep physician reviews and interprets the study in the morning. When obstructive sleep apnea is diagnosed, the sleep physician will discuss the best treatment options for each child.

“Treatment of obstructive sleep apnea in children varies, depending on the cause,” says Dr. DelRosso. “Some of the most common options include surgery to remove the tonsils, treating allergies with allergy medication and nasal steroids, weight loss when obesity or overweight are contributing factors, or the CPAP mask. CPAP stands for ‘continuous positive airway pressure,’ and this device delivers a constant stream of air through a nasal mask to keep the airway open. ‘Watchful waiting’ is always an option for mild cases.”
“Dr. DelRosso and I discussed whether or not Kijah might need surgery to remove her tonsils, and she helped me make the decision to try other options before considering surgery,” Kemora explains. “At first, we tried using CPAP at the doctor’s office. Then Kijah began using the CPAP equipment at home in April.”

Dr. DelRosso explains, “It is very important for children to get used to the CPAP machine slowly. We first recommend using it for a few hours at a time during waking hours until they get used to it.”

“For the first week or so, Kijah struggled a bit with the CPAP, and she still snored a little bit,” Kemora says. “By summertime, she was doing a lot better, and the snoring stopped.”

Kijah was doing so well at consistently using her CPAP device that Dr. DelRosso awarded her a “Certificate of Achievement” for using her CPAP every night.

“The people at Children’s have been like family to us,” Kemora says. “I can’t thank them enough for the care Kijah received when she was hospitalized. And Dr. DelRosso is so very nice, sweet and helpful. All of the people at the hospital and the Sleep Disorder Center have been wonderful.”

When a child may need a sleep evaluation

There are a number of reasons a child should be evaluated, including:

- Abnormal nighttime behaviors
- Attention deficit and hyperactivity disorder (ADHD)
- Excessive daytime sleepiness
- Excessive leg-kicking during sleep
- Insomnia
- Mouth-breathing
- Night terrors
- Sleep deficit interfering with patient and/or family functioning
- Sleepwalking
- Snoring

Pediatric sleep disorders

More than 500,000 American children suffer from sleep disorders—which are any condition that causes inadequate levels of restful sleep that can affect a person’s daytime functioning.

Insomnia is difficulty falling asleep and/or staying asleep and can be a common behavioral problem in infants and toddlers. Insomnia is often seen in children with depression and anxiety, and its treatment is critical to the successful treatment of these disorders.

Narcolepsy causes excessive and uncontrollable sleepiness that severely limits daytime functioning. It often begins in childhood and is underdiagnosed. Medical and behavioral therapy are very effective for this disorder.

Obstructive sleep apnea affects up to five percent of children. Symptoms include snoring, mouth-breathing, daytime sleepiness and hyperactivity. Untreated sleep apnea in children is associated with behavioral and cognitive deficits, cardiovascular strain and inflammation.

Periodic limb movements in sleep are kicking movements of the legs that occur rhythmically during the night and can be associated with daytime sleepiness and attention disorders in children.

Restless leg syndrome (RLS) is limb discomfort often described as an aching or a crawling sensation that leads to restlessness and insomnia.

Circadian rhythm disorders are commonly seen in adolescents due to the natural circadian shift that occurs during this period.
UCSF Benioff Oakland Introduces Virtual Reality Therapy

“It’s like a medicine that you don’t have to swallow.”

That’s how 13-year-old Briana Nathaniel describes her experience in a clinical trial of virtual reality (VR) therapy for pediatric patients with sickle cell disease at UCSF Benioff Children’s Hospital Oakland. The sickle cell trial uses VR equipment and software that was designed and donated to Children’s by kindVR LLC, a company founded in April 2014 by Oakland entrepreneur Simon Robertson. Anne Marsh, MD, who specializes in pediatric hematology-oncology at Children’s, served as the primary investigator on the study.

“The objective of this pilot program, which began in December 2015, is to reduce pain and stress for patients experiencing a sickle cell disease crisis,” Robertson says. “So far, the results of the study have been very encouraging.”

While conducting the sickle cell disease trial, Robertson and his team at kindVR also are working with Children’s physicians and researchers to develop additional VR therapy trials. The four trials in development include:

• **Sickle cell disease** to lower pain and stress levels among adult patients experiencing an acute sickle cell disease crisis.

• **Cancer treatment** to lower pain and stress among cancer patients undergoing a chemotherapy port access procedure.

• **MRI training** to help patients practice staying still in order to decrease the level of sedation required and to reduce the amount of time in the MRI tube.

• **Management of chronic pain and biofeedback** to reduce pain and teach pain-coping strategies to pediatric patients with chronic pain by combining heart-rate biofeedback and virtual reality “guided meditation” therapy.

“**It’s helping me... It’s like a medicine that you don’t have to swallow. It’s so out-of-this-world fun!”**

—Briana

After helping sickle cell patient Briana put on her virtual reality goggles, Simon Robertson, founder and lead virtual reality developer at kindVR, watches as she experiences an underwater world he designed. For the last two years, Robertson has worked with pediatric hospitals to provide VR therapy to help patients mitigate pain and stress.

started working as a volunteer at Children’s, developing the VR programs and donating all the necessary equipment to the hospital.

“On a personal level, I feel honored and proud to work with Children’s Hospital and have their support in developing these VR therapy programs,” he says. “When we are done with the initial research, the VR therapy programs will continue. The hardware and software I’m creating will stay with the hospital, and I also will help train people on staff at Children’s to use VR therapy with patients to help improve their lives.”

The kindVR software application used by patients in the sickle cell disease trial is called “Aqua,” and it allows patients to explore a comfortable underwater world filled with colorful sea creatures while listening to soothing music. The interactive experience offers both active and passive gameplay, allowing patients to either challenge themselves to find all of the fish or to simply relax. The experience also is designed to

Screenshots from Robertson’s virtual reality program.
accommodate patients' specific needs, including limited mobility or range of motion with the ability to navigate with head movement only rather than with hand and arm movement.

Briana is one of many patients in the sickle cell disease VR therapy trial whose life has improved.

“Most days, I’m in pain because I’m living with sickle cell, and that is not an easy disease,” Briana says. “But I thank God that this hospital is a main hospital that researches sickle cell. I can tell you that the virtual reality therapy is fun. It is soothing, and it can relax you. It’s not like your typical video game, where you have a controller and you’re killing zombies. You get to use your head to look at the fish and animals in there and change them to different colors, listen to soothing music, and that calms you down.

“I think that the virtual reality Simon has made is going to help relieve pain and stress for sickle cell patients, and maybe even for other patients that come in to the hospital,” Briana adds. “I just know that it’s going to relax people and help, because I’ve tried it, and it’s helping me right now. It calms your body down. It’s like a medicine that you don’t have to swallow. It’s also amazingly fun—so out-of-this-world fun!”

Reducing sugar consumption in obese children, rather than cutting calories or starch or losing weight, leads to a sharp decline in triglycerides and a key protein called ApoC-III—two features that are associated with heart disease in adulthood.

In a study published online July 19, 2016, and in the current issue of the journal *Atherosclerosis*, researchers from Touro University California and UCSF reported that triglycerides dropped 33 percent and ApoC-III fell by 49 percent in just 10 days of sugar restriction. The work expands on previous research published last year in the journal *Obesity* that found restricting sugar—without restricting calories or total carbs—reversed a cluster of metabolic diseases in children, including high cholesterol and blood pressure.

In both studies, 43 children aged between 9 and 18 were recruited from the Weight Assessment for Teen and Child Health (WATCH) clinic at UCSF Benioff Children’s Hospital San Francisco. The participants were obese and had at least one chronic metabolic disorder, such as high blood pressure, high triglycerides, or a marker for fatty liver.

Eligibility was limited to Latino and African-American youth, who are at higher risk for metabolic diseases.

Over the course of nine days, the children were provided food and beverages that mirrored the same fat, protein, carbohydrate and caloric levels as their home diets. The difference was that sugary foods like pastries, sweetened yogurts and cake were substituted with starchy ones, such as bagels, pizza and hot dogs. Total dietary sugar was cut from 28 percent to 10 percent, and fructose from 12 percent to 4 percent of total calories.

In the current study, researchers compared baseline blood levels with those taken after 10 days and found not only the significant changes in triglycerides and ApoC-III, but also the disappearance of small dense LDL, a type of cholesterol increasingly considered a risk factor for heart disease.

“LDL is known as the ‘bad’ cholesterol, but it is more complex that that,” said first author Alejandro Gugliucci, MD, PhD, of the department of research at Touro University California College of Osteopathic Medicine in Vallejo. “Many researchers now believe that high LDL is bad only when it is packaged in small containers—so-called small dense LDL. In our study, we found that small dense LDL, which is not normally seen in children, disappeared. We also discovered that the HDL particle got bigger—which is consistent with cardiovascular protection.”

“While statins are effective in lowering LDL, they only reduce heart disease risk by 50 percent,” Dr. Gugliucci noted. “The other villain is blood lipid triglycerides and the associated protein ApoC-III. Drug companies are looking for medicines to specifically block ApoC-III. We found in our study that just reducing sugar consumption did a wonderful job in lowering these two key risk factors by 30 to 50 percent.”

“In order to get this degree of lipid and protein reduction by just eating less, a patient would need to lose more than 20 percent of their BMI, one-fifth of their body weight,” said second author Robert Lustig, MD, MSL, a pediatric endocrinologist at UCSF Benioff Children’s Hospital San Francisco.

“The blood lipid responses of these children is nothing short of astounding, and unrelated to calories or weight change,” he said. “Combined with data from the previous study demonstrating improvement in metabolic health with sugar restriction alone, we have conclusively shown that sugar calories are not like other calories. Sugar is uniquely metabolized to fat in the liver, which leads to fat accumulation in the bloodstream, driving heart disease. As long as we focus on total calories rather than on what those calories are and how they are metabolized, the obesity, diabetes and heart disease epidemics will continue.”

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Born with a serious birth defect, Harper receives specialized care at the only accredited Pediatric Pulmonary Hypertension Care Center in California

Harper’s Journey

When Amee Swearingen was 18 weeks pregnant with her second child, she went to her local medical facility in Visalia for a regular prenatal sonogram. The ultrasound showed the baby’s heart was pushed off to one side. Concerned about a potential birth defect, Amee’s physician sent her to a larger hospital in Fresno for a higher-resolution ultrasound.

“The second ultrasound clearly showed that my baby had a serious defect called congenital diaphragmatic hernia, which is a hole in the muscle between the chest and the abdomen,” Amee says. “The hernia allowed organs from the abdomen to move up into the chest, taking up space there so the heart and lungs were crowded and not growing properly. Prenatal surgery to correct the defect was not possible, so the hospital in Fresno referred us to UCSF.”

Babies with congenital diaphragmatic hernia (CDH) should be delivered in a pediatric medical facility that has experience with treating CDH and has extracorporeal membrane oxygenation (ECMO) capability. UCSF Benioff Children’s Hospital San Francisco is one such facility.

ECMO is a machine that uses a pump to circulate the baby’s blood through an artificial lung. In the machine, blood circulates outside the body. Oxygen is put into the blood, and carbon dioxide is removed before returning the blood to the baby’s body.

“We had made all the plans to deliver the baby at UCSF, inducing labor at 38 weeks into the pregnancy,” Amee notes. “A couple of days before the planned induction, however, I went into labor. So I was flown to San Francisco by helicopter to deliver her there. Harper was born on Saturday morning, October 24, 2015. As soon as she was born, they had to take Harper away from me to be intubated so medications could be delivered. Three days later, she went on ECMO treatment.”

“Because the baby’s hernia was diagnosed prenatally with severe features, we expected her to be quite ill and to require ECMO treatment,” says Roberta Keller, MD, a neonatologist and director of the Neonatal ECMO Program at UCSF Benioff Children’s Hospital San Francisco.

“We also knew that pulmonary hypertension was a potential complication of her congenital diaphragmatic hernia, and we noticed it at birth, too,” Dr. Keller adds. “The third day after Harper was placed on ECMO treatment, she had surgery to repair the hernia while on the ECMO machine. After that, she still required time on a ventilator because of the pulmonary hypertension.”

Pulmonary hypertension (PH) is high blood pressure in the arteries that supply blood to the lungs. It is not the same as the blood pressure measured by a cuff on your arm.

“Blood pressure in the arteries that carry blood to the lungs is independent of ‘regular’ blood pressure,” explains Jeffrey Fineman,
MD, a pediatric cardiac critical care specialist at UCSF Benioff Children’s Hospital San Francisco. “In a fetus, the blood pressure in the lungs is quite high. In general, the blood pressure in the lungs decreases when the baby starts breathing. One form of persistent PH in a newborn is when the blood pressure doesn’t come down normally. Another form of PH is due to a congenital heart deformity. A third form is due to chronic lung disease that usually is associated with prematurity. There are a host of other types of less-common PH, and then there is ‘idiopathic’ pulmonary hypertension, with no known cause.”

Dr. Fineman and his colleagues at UCSF Benioff Children’s Hospital San Francisco have been in the forefront of research in treating pediatric pulmonary hypertension. Their research has led to new therapies for PH, including a drug called “inhaled nitric oxide,” which has been approved by the U.S. Food and Drug Administration. With their experience and expertise in treating pediatric pulmonary hypertension, UCSF Benioff Children’s Hospital San Francisco is the only pediatric facility in California that is accredited as a Pediatric Pulmonary Hypertension Care Center by the Pulmonary Hypertension Association. Only four other pediatric facilities in the U.S. are similarly accredited.

“Pulmonary hypertension is frequently underdiagnosed and underappreciated,” Dr. Fineman notes. “It is often misdiagnosed as asthma. Unfortunately, pulmonary hypertension can cause the heart to pump too hard, which eventually leads to heart failure. It is fairly easy to screen for pulmonary hypertension using an echocardiogram and an EKG. Then we ultimately have to perform a cardiac catheterization to confirm the diagnosis.”

When Harper was a little over 2 months of age, the UCSF team performed a cardiac catheterization to confirm the diagnosis of pulmonary hypertension and to evaluate options for her long-term care, including what medications could be used on an outpatient basis.

“In the late 1990s, there was really only one treatment for pulmonary hypertension in adults,” says Dr. Fineman. “We now have 15 medications to treat pulmonary hypertension in adults, and the five-year survival rate has improved from 45 percent to 85 percent. We are now using many of these treatments for infants and children, too, resulting in dramatically improved outcomes in the pediatric population.”

“For Harper, we used the blood vessel dilator Remodulin, delivered subcutaneously with a small needle under the skin that acts like an insulin pump,” Dr. Keller says. “Having the ability to deliver the medication subcutaneously meant it would be easier for the parents to manage her medication at home, and it enabled us to transition Harper off the inhaled nitric oxide and intravenous medications. The Remodulin acts on the blood vessels in the lungs to relax them and reduce pulmonary hypertension. It can have side effects on the rest of the body, particularly on the gastrointestinal system. The good news is that the body seems to get used to the medication and the GI symptoms resolve, but the medication still works in the lungs.”

Harper’s treatment at UCSF Benioff Children’s Hospital San Francisco required a lengthy stay of more than nine months. Amee and her husband Ryan were finally able to take Harper home to Visalia on August 8. Harper’s 4-year-old brother Hudson was really excited to have her come home.

“One positive thing about having Harper here for a while is that there was plenty of time for us to train the parents in how to deal with her treatments,” says pediatric nurse practitioner Elizabeth Colglazier, PNP, who supervised the pulmonary hypertension medication administration for the nurses involved with Harper’s care. “We hope that she will outgrow the need for the infusion as her lungs grow.

“Harper is adorable,” Elizabeth adds. “She has a lot of personality, is very curious and bright, and she loves to babble. All of her bedside nurses will miss her, but we are happy she was able to go home where she belongs. Our hope is that by the time she goes to kindergarten, no one would guess that she spent most of her first year of life in a hospital.”

Harper’s mom Amee was so relieved to finally take the baby home, and she expressed heartfelt gratitude for all the people on Harper’s health care team.

“The nurses and doctors have been amazing, always willing to answer all my questions,” Amee says. “They have taught me how to manage her care, including how to use the machines and the subcutaneous pump. Harper has been through more than any baby should have to go through, but she’s amazing; she’s a happy, loving child.

“I’m just afraid,” Amee jokes, “she might get bored being at home without all of her wonderful hospital friends.”

Pediatric pulmonary hypertension affects children of all ages. Read 18-year-old Allison’s story on the next page.
“Looking back on things now, I think my symptoms first surfaced in about eighth grade,” Allison Dsouza muses. “I had times when I was breathless, and my heart would race. I didn’t always pay that much attention to it, but I wasn’t as physically active as I had been as a younger child. Then one day in my senior year of high school, our biology teacher started talking about heart murmurs and how they made it hard for people to walk. I decided to tell my parents about my symptoms, and they scheduled an appointment with my pediatrician in Sacramento.”

Allison’s pediatrician noted that her blood tests showed a high level of red blood cells and suspected it could be a condition affecting her kidneys.

“They decided to do a CT scan, and it showed my heart was enlarged—that radiologist saved my life,” she says. “I went to a cardiologist in Sacramento the next day, and he performed an echocardiogram. He gave me a choice: either take an ambulance ride to San Francisco, or go with my parents. So I went with my parents and spent the next nine days at UCSF.”

That night at UCSF Benioff Children’s Hospital San Francisco, Allison met with Jeffrey Fineman, MD, a pediatric cardiac critical care specialist who directs the Pediatric Pulmonary Hypertension Program. The next day, Allison underwent a cardiac catheterization procedure, which confirmed a diagnosis of pulmonary hypertension (PH).

“Allison’s pulmonary blood pressure has dropped to almost normal, and her heart functions extremely well,” he says.

One of the advantages of being treated for pulmonary hypertension at UCSF Benioff Children’s Hospital San Francisco is the comprehensive care provided by an interdisciplinary team of specialists, including neonatology, cardiology, cardiac critical care, pulmonology, nurse practitioners, a social worker, a pharmacist and a nutritionist.

“We also can call in physicians from other specialties when needed,” says Dr. Fineman. “We have treated more than 200 pulmonary hypertension patients this year from the Bay Area and from all over the country—Minnesota, Utah, Arizona and Hawaii, for example.”

Allison says she first really noticed the difference in her condition about a month and a half after she began treatment. 

“Allison currently is majoring in biology at Cal Poly, but she hopes to transfer to a nursing degree program. She still sees her physicians at UCSF Benioff Children’s Hospital San Francisco, even though she now manages her own medications. She also spent the summer between her freshman and sophomore years volunteering with the Pediatric Pulmonary Hypertension Program.

“I shadowed the nurse practitioner and helped compile a database of pulmonary hypertension patients,” she explains. “The purpose of the database is to help them spot information on trends and patterns with these patients, in cooperation with other, similar programs.

“I volunteered because I wanted to help make a difference,” she adds. “I will likely be on some form of medication—either through the subcutaneous pump or maybe in the form of a pill—for the rest of my life. There is no cure for pulmonary hypertension yet, but we’re making a lot of progress now.”
What To Do When Your Child Gets Food Poisoning

Food poisoning happens when even tiny amounts of bacteria, viruses, parasites or other chemical toxins get into the food you eat. Within hours of exposure, this can lead to symptoms such as abdominal cramping, nausea, vomiting, diarrhea, fever and body aches. Usually recovery is within a few days and only requires supportive care like adequate hydration and control of fevers. In a few cases, a visit to your doctor or urgent care is necessary—often due to symptoms of dehydration.

| Possible causes | Animal-based foods like meat, poultry, eggs, dairy products, and seafood are often linked to food poisoning, as are unwashed fruits, vegetables, and other raw foods, which can get contaminated by causative organisms or toxins. |
| High-risk foods | • Meat, especially undercooked ground meats and rolled, formed or tenderized meats. |
| | • Raw or undercooked poultry such as chicken, duck and turkey. |
| | • Raw or lightly cooked eggs, including foods made from raw egg, such as unpasteurized mayonnaise. |
| | • Cured meats such as salami and hams. |
| | • Seafood. |
| | • Cooked rice not kept at correct temperatures. |
| | • Cooked pasta not kept at correct temperatures. |
| | • Prepared salads such as coleslaw, pasta salads and rice salads. |
| | • Prepared fruit salads. |
| | • Unpasteurized dairy products. |

Seek medical attention if your child experiences:

• Frequent episodes of vomiting and inability to keep liquids down. |
• Bloody vomit or stools. |
• Diarrhea for more than three days. |
• Extreme pain or severe abdominal cramping. |
• An oral temperature higher than 101.5° F (38.6° C). |
• Signs or symptoms of dehydration—excessive thirst; dry mouth; little or no urination; severe weakness, dizziness, or lightheadedness; |
• or increasingly fussy or sleepy behavior. |
• Neurological symptoms such as blurry vision, muscle weakness or cramping, and tingling in the arms. |

Rehydration

BEST REHYDRATION LIQUIDS: To replace fluids lost, give oral rehydration (e.g., Pedialyte, DripDrop, generic electrolyte solutions).

WORST REHYDRATION LIQUIDS: Liquids to avoid when attempting to replace fluids lost from vomiting and diarrhea: soda, ginger ale, fruit juice, chicken broth, teas or sports drinks. These don’t have the right mix of sugar and salts like the oral rehydration solutions. Sugary beverages may make diarrhea worse.

Treatment for different age groups

• The mainstay of treatment is to provide rest and adequate fluids. This is more critical in infants, toddlers and younger children, as fluid loss can be relatively rapid. |
• In nursing infants, breastfeeding should be continued, even during the initial rehydration process, unless the baby is vomiting repeatedly. Oral rehydration solution can be given in between breastfeedings. |
• For babies who are formula-fed, formula may need to be stopped during rehydration and restarted as soon as the child is able to keep fluids down and is no longer showing signs of dehydration. Once your child is rehydrated, you can resume a normal, unrestricted diet—including breast milk, formula, or milk. |
• Resuming an age-appropriate diet early on is essential in supplying your child with necessary calories and nutrients and can even reduce the duration of vomiting and diarrhea. |

Vomiting versus diarrhea

• In vomiting children, water and mineral loss (sodium, potassium and chloride) can be significant. Oral rehydration fluid is necessary. In case of significant vomiting, fluids can be provided slowly—a few sips every few minutes. |
• In cases with significant diarrhea, avoid sugary beverages, which can worsen symptoms. |

Useful link: www.cdc.gov/foodsafety/foodborne-germs.html
Give PECE a Chance

Jen and Vic Parker were just starting to adjust to life with four children when Lew, their youngest, had his first seizure. He was 8 months old and sick with a fever. “It was, I thought, the scariest day of my life,” remembers Jen.

The Parkers went to see neurologist Joseph Sullivan, MD, at UCSF Benioff Children’s Hospital San Francisco. Over the next year, Joe became a big part of the Parkers’ life. He not only treated Lew for his condition, but also held the entire family in his care.

“We have all been directly impacted by epilepsy, because it really is about getting through each day,” says Jen. “This is not just one isolated problem. It has arms and legs and tentacles.”

In the United States, epilepsy affects more than 300,000 children under the age of 14. Existing on a spectrum with widely ranging severity, epilepsy is a complex condition that has biological, cognitive, psychological, and social consequences. In roughly 70 percent of epilepsy cases, the cause is unknown.

The Parkers’ experience at UCSF has inspired them to help establish the UCSF Pediatric Epilepsy Center of Excellence (PECE). Led by Dr. Sullivan, PECE builds upon the existing program on the San Francisco campus to fully support patients and their families in new ways. From help navigating complicated appointment days to specialized marriage and family counseling to assistance finding a developmentally appropriate educational placement, PECE will expand our exceptional treatment to surround families with a compassionate care community.

“If we are able to fully support our young patients and their families through this unpredictable diagnosis,” says Dr. Sullivan, “we can empower them to truly live the lives they are capable of.”

Over the last year, Jen and Vic have given critical support for the Center through personal philanthropy and fundraising efforts.

“We’ve been so lucky to get to know Dr. Sullivan and have benefitted from such comprehensive care,” said Jen. “He is the exact sort of person and doctor you want at the helm of an effort like this.”

If you’d like to help PECE provide innovative care for children and families dealing with epilepsy, please contact Chris Anderson at chris.anderson@ucsf.edu.

Bringing the Halloween Spirit to Hospitalized Kids

It’s the season of trick-or-treat, and our patients got a well-deserved treat in October thanks to the Spirit Halloween specialty retail stores.

Company volunteers donned spooktacular costumes and hosted a special celebration to bring the Halloween spirit to hospitalized kids on our Oakland campus. Pumpkin painting, costumes, games, crafts and goodies offered them a welcome break from their hospital routine.

In addition to hosting Halloween celebrations, the Spirit of Children Program raises funds to support child life programs across the country—including those at UCSF Benioff Children’s Hospital Oakland. This support goes a long way toward helping patients and families cope with the stressors of hospitalization.

“Every year, our partnership with Spirit of Children grows and they allow us to make hospitals less scary for our patients,” said Sara Devaney, Manager of Child Life Services at UCSF Benioff Oakland. “Patients are given the opportunity to explore creatively through art or to learn how to develop coping strategies to overcome challenging events while hospitalized.”

Over the past nine years, Bay Area Spirit Halloween stores have donated over $600,000 to UCSF Benioff Oakland’s Child Life department. Funding has supported a child life specialist position in the Emergency Department and the hospital’s Artist-in-Residence Program.

Since 2011, hundreds of Bay Area gamers have pledged to play games to help kids at UCSF Benioff Children’s Hospital Oakland. Friends and family support gamers’ efforts via online donations. Gamers choose when and how they play, but the hospital wins every time!

1. Sign up online at www.extra-life.org
2. Select UCSF Benioff Children’s Hospitals as the partner hospital you would like to support. One hundred percent of the funds you raise stays local.
3. Ask friends and family to sponsor your efforts with a donation to your online fundraising page.
4. Pledge to play games in honor of local kids! The official 24-hour gaming marathon begins on Nov. 5, 2016, but you can play whenever you want, for as long as you want (but take lots of breaks!).

Questions? Contact Jackie Curran at jcurran@mail.cho.org, or go to www.extra-life.org.
What does high-performance memory have to do with food stamps? Just ask John Beekley. Cofounder of Corsair, a world leader in PC products for gaming enthusiasts who build their own computers, John has spent the last year investing his tech talents and philanthropic dollars into a pioneering program at UCSF Benioff Children’s Hospital Oakland that brings these two worlds together.

Founded in 2012, the Family Information and Navigation Desk (FIND) at UCSF Benioff Oakland goes beyond the usual scope of clinical care to encourage health care providers to diagnose and manage the broader socioeconomic problems that underlie many chronic illnesses. Through the FIND program, the hospital’s primary care team assists families in identifying and resolving unmet basic needs such as food insecurity, housing instability, and access to the outdoors. Program staff partner with homeless shelters, food banks, the East Bay Regional Park District, school districts, community-based organizations, and a myriad other local and regional community groups.

“Doctors can only work so much magic when patients lack stable housing, food, health care and opportunities to exercise,” says Dr. Dayna Long, a pediatrician at Children’s and co-director of FIND. “The proof is in the thousands of people who check into hospitals multiple times a year without ever getting healthier.”

John and his wife Karen have been generous supporters of Children’s for more than a decade. When they were introduced to FIND, they were immediately drawn to the program’s mission and eager to get involved. Parents to two sons, the Beekleys have always gravitated toward child-oriented charities. “Karen and I feel a strong kinship with other parents. We could only imagine how difficult it must be to have a sick or injured child,” says John.

Beyond their generous donation to FIND, John set his sights on taking the program to new high-tech heights. “As a technologist, it was incredibly apparent to me that readily available tech tools could be used to help build the program on a more scalable and predictable basis.”

Over the next several months, John partnered with Dr. Dayna Long to develop a Web-based application called FINDconnect. This innovative mobile platform provides hospital staff with the tools to screen families for lack of access to food or stable housing, to match families with resources, and to follow up with families to ensure that their needs are resolved.

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“John and Karen’s support has been instrumental in helping us connect under-resourced families with valuable community resources,” said Dr. Long. “Their involvement has led to the creation of an innovative tool that allows for real system change in health care. For me, this is a dream come true!”
UCSF Benioff Children’s Hospitals are teaming up with Cal Bears Basketball this season to recognize six of our patients as the “Redefining Possible Star of the Game” at six different Cal basketball home games.

If your child was a patient at UCSF Benioff Children’s Hospital Oakland or San Francisco, you can submit your entry at www.bitly.com/starofgame.

If your child is one of the six chosen:
• Your child’s inspiring story will be told during the game’s timeout.
• Your child will be recognized on the court and get to meet the Cal spirit team, including the mascot and cheerleaders.

Six patients of UCSF Benioff Children’s Hospitals will receive a special trophy!

Your child could be our Redefining Possible Star of the Game

Enter for a chance to be our UCSF Benioff Children’s Hospitals

If your child was a patient at UCSF Benioff Children’s Hospital Oakland or San Francisco, your child could win a chance to be our Redefining Possible Star of the Game. Submit your entry by Dec. 2, 2016; go to www.bitly.com/starofgame.