

NEWSNOTES

CHILDREN'S DIABETES FOUNDATION — WINTER 2016

THE 30TH CAROUSEL OF HOPE

PAGE 2

THE ARTIFICIAL PANCREAS

The Barbara Davis Center:
Biggest Research Contributor

PAGE 8



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SUPPORTERS GATHER FOR THE CAROUSEL OF HOPE BALL in Los Angeles, CA

The 30th Carousel of Hope Ball was truly a night to remember! The star-studded gala returned to The Beverly Hilton in Beverly Hills, California on Saturday, October 8 to a crowd dressed to the nines with plenty of gowns, jewels, tuxedos, and Hollywood royalty. The 2016 ball was a “Celebration of Hollywood” representing its strength, talent, and power. The event brought together Hollywood’s elite to raise awareness and ultimately, to find a cure for diabetes. The evening’s well-deserving honorees included 4 remarkable individuals – Sir Sidney Poitier was awarded the Inspirational Lifetime Achievement Award and Jane Fonda, David Foster, and Sherry Lansing were honored with Brass Ring Awards.

Lights were flashing non-stop as celebrities and long-time supporters of the Children’s Diabetes Foundation walked the red carpet before making their way to the extensive silent auction, which encompassed several ballrooms to feature luxury, travel, childrens’, entertainment, sports, and hot ticket items. The auction also featured a live painter, Olivia Bennett, who finished her creation as the auction progressed, eventually selling the piece for \$8,000.

The talented **Jay Leno**, who reprised his role of Master of Ceremonies, had the crowd bursting in laughter the moment he started the program. Leno introduced the incomparable **Barbara Davis**, inviting her to the stage for opening remarks. Mrs. Davis, along with her late husband Marvin Davis, founded the Children’s Diabetes Foundation and the Barbara Davis Center in 1978 and she continually brings support for the organizations as the Chairman of The Carousel of Hope Ball. Ultimately, her vision to get world-class care for people with type 1 diabetes led to the creation of the Barbara Davis Center, which provides world-class clinical care and cutting-edge research. Mrs. Davis thanked everyone for their never-ending support for Barbara Davis Center patients and for people affected by diabetes around the world.

Before attendees started dinner, Margot Rea, a 7 year old patient of the Barbara Davis Center, proudly shared that she has type 1 diabetes and gave a precious prayer for the evening. See page 6 to read her prayer.

The evening’s program was produced by another longtime friend of the organization, **George Schlatter**. Legendary producer **David Foster** returned as Music Director, while music icons **Clive Davis** and **Quincy Jones** once again served as Music Chairmen.

The talented **Sharon Stone** joined Jay Leno onstage as auctioneer for an exciting live auction experience that had guests bidding on items ranging from the ultimate mountain getaway at The Little Nell in Aspen to a luxurious trip to St. Regis Dubai and the recently-opened St. Regis Maldives Vommuli Resort.

Denzel Washington, a longtime supporter of the Children’s Diabetes Foundation, presented the Inspirational Lifetime Achievement Award to Sir Sidney Poitier. Washington lovingly introduced Poitier as “My hero, my mentor, my friend.” In accepting the award, the Hollywood icon and Academy Award winner shared pride for the wonderful life that he has lived and acknowledged the incredible accomplishments of Barbara Davis.

Jane Fonda, David Foster, and Sherry Lansing received Brass Ring Awards, presented by **Quincy Jones, Carole Bayer Sager, and Anjelica Huston**, respectively. Jokes were flying around the room as Quincy Jones revealed that he and Jane Fonda are distant cousins and Carole Bayer Sager sent some quips about David Foster’s marital status before noting his admirable accomplishments. Anjelica Huston and Sherry Lansing bonded over their July birthdays, spurring a social group that has lasted for decades.

After accepting his award, David surprised the crowd with emerging artist, **Brenna Whitaker**, who sang a bold rendition of “It’s a man’s man’s man’s world” along with opera singer, **Ben Gulley**, and rap-artist **Rogelio Davis, Jr.**

Quinton Aaron, known as Big Mike from the movie “The Blind Side” also took the stage to sing a soulful classic, “Let’s Get It On,” with David accompanying him on the piano.

LEFT SIDE OF PHOTOS:

1. Margot Rea, Carmen Electra and Madeline van Orman
2. Clive Davis with Kenny "Babyface" Edmonds
3. Denzel Washington
4. Anjelica Huston with Barbara Davis
5. Regina King with Vivica A. Fox
6. Melanie Griffith with Berry Gordy
7. The van Orman Family with the Rea Family

RIGHT SIDE OF PHOTOS:

8. Ken Rickel, Nancy Davis Rickel, Isabella Rickel, Mariella Rickel
9. Sherry Lansing with Samuel L. Jackson
10. Carole Bayer Sager
11. Sharon Stone with Jay Leno
12. Silent Auction
13. Jane Fonda
14. Alana Stewart with George Hamilton
15. Idina Menzel
16. Alan Thicke with Tanya Callau



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2 Photo: © ABImages



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8 Photo: © ABImages



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The Carousel of Hope



Award-winning artists **Jamie Foxx** and **Idina Menzel** treated guests to musical performances, with Menzel performing *Wicked's* hit song "Defying Gravity," and a song from her new album titled "Small World." Jamie Foxx brought the crowd to its feet with his rendition of "I Feel Good," and had everyone dancing to "What'd I Say." The final song of the night was a joint effort by stage-talent and guests alike, who came together to sing "Happy Birthday" to Barbara Davis, whose birthday was the following day.

Celebrity attendees included Kathy Griffin, Regina King, Carmen Electra, Garcelle Beauvais, Jane Seymour, Yara Shahidi, Francesca Capaldi, Kristin Cavallari, Jillian Rose Reed, Kenny "Babyface" Edmonds, Samuel L. Jackson, Linda and Jerry Bruckheimer, Alan Thicke, former Laker and Clipper Brian Cook, and many more.

The 2016 Carousel of Hope Ball would not have been possible without our generous sponsors, including Activision Blizzard, American Airlines, Tina & Rick Caruso, Robert Day, Dexcom, St. Regis Hotels & Resorts, Vista Equity Partners, The Coca-Cola Company, and The Walt Disney Company.

Additional sponsors included the Kroenke Family & Los Angeles Rams Foundation, Mr. & Mrs. Bob Daly, GUESS Foundation, Parx Casino, CBS, Viacom & Paramount Pictures, 20th Century Fox, 21st Century Fox, HBO and The Beverly Hilton.

The 2016 Carousel of Hope Ball **raised over \$2 million** to benefit the Children's Diabetes Foundation and the Barbara Davis Center. **The event has raised more than \$100 million to date** for the patients of the Barbara Davis Center and will continue to raise awareness for those living with the disease. With this much star power, it's no wonder **the Carousel of Hope has held the title of Southern California's #1 benefit by BizBash for multiple years and continues to thrive after 30 years.**



1

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2

Photo: © www.JensenSutta.com

PHOTOS LEFT:

1. David Foster **2.** Jay Leno **3.** Quinton Aaron **4.** Sharon Stone **5.** Paul Wadwa, MD, Romita Wadwa, Tania Stewart, Greg Forlenza, MD **6.** Robert Herjavec with Kym Johnson **7.** Denzel Washington, Sir Sidney Poitier, Barbara Davis **8.** Margot Rea and Madeline van Orman showing off their CGMs

PHOTOS RIGHT:

1. Ben Gulley, Brenna Whitaker, Rogelio Davis, Jr. **2.** Samuel L. Jackson, LaTanya Richardson Jackson, Judge Judy Sheindlin, Judge Jerry Sheindlin **3.** Jamie Foxx **4.** David Foster with Quincy Jones



3

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4

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Margot Rea's Prayer



Barbara Davis, Margot Rea Photo: © www.JensenSutta.com



Dana Davis, Margot Rea

Photo: © www.JensenSutta.com

Good evening Ladies and Gentlemen,

My name is Margot Rea and I am 7 years old. I live in Denver, Colorado and I am a patient at the Barbara Davis Center. I was diagnosed with type 1 diabetes at the age of 2.

I am honored to be here to lead us in a prayer for this evening. Can we all bow our heads in prayer?

Heavenly Father,

Tonight I have a special prayer for all of the children living with type 1 diabetes. I pray that you continue to keep us safe and healthy, as we manage our diabetes 24 hours a day.

Please bless our parents and family members who help care for us. Please bless the doctors and researchers who work to find a cure.

I want to thank Barbara Davis and all of you for sharing in this wonderful evening of hope and generosity. With your continued help and support, we will someday get to celebrate the end of type 1 diabetes.

In your name we pray.

Emerging Diabetes Technologies and Beta Cell Biology

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One Step Ahead



The Carousel of Hope

The 2016 Carousel of Hope Symposium focused on the incidence and/or prevalence of diabetes and overweight/obesity which continue to increase, especially in the developing world. Currently, it's estimated that 415 million people have diabetes, which is likely to increase to more than one-half billion people in the next decade (as reported by the International Diabetes Federation 2015). Similarly, the prevalence of diabetes has also significantly increased in the U.S., now accounting for about 14% of the U.S. population (about 40 million people). Part of this increase may be related to using newer diagnostic cutoffs for diabetes (A1c above 6.5% and fasting blood glucose of >126 mg).

Hypoglycemia continues to be a major hurdle in achieving target glucose control in patients with diabetes. The first part of the Symposium focused on emerging technologies that help to improve glucose control while reducing hypoglycemia. There are several new oral anti-diabetic agents which are now available for the management of diabetes. Satish Garg, MD, discussed the ways to optimize and reduce higher rates of discontinuations of Continuous Glucose Monitors (CGMs) by patients as compared to pump therapy. Robert Slover, MD, reviewed data from the recent clinical trials on closed loop/artificial pancreas studies especially in the very young. Jake Leach reviewed upcoming sensor technologies with accurate sensors and stand-alone

factory calibrated CGMs. Fran Kaufman, MD, gave a peek into future availability of a hybrid artificial pancreas in the U.S.

The second session focused on ways to beta cell biology. Matthias Hebrok, MD, discussed generating human stem cells derived from beta cells. Klaus Kaestner, Ph. D., reviewed single cell transcriptome analysis of human islet cells and lastly, Richard Benninger Ph. D., highlighted issues with intra-islet regulation of insulin secretion. In the panel discussion that followed, all participants discussed the future of a possible cure for patients with T1D.

Fran Kaufman was awarded "The Carousel of Hope Award" for all her work in the field of the artificial pancreas.

Satish K. Garg, MD
Professor of Medicine and Pediatrics
University of Colorado
Director, Adult Diabetes Program
Barbara Davis Center



Photo: © ABImages

Paul Wadwa, Peter Chase, Jake Leach, Robert Slover, Satish Garg, Marian Rewers, Lori Sussel, Klaus Kaestner, Matthias Hebrok, Richard Benninger

BARBARA DAVIS CENTER STUDIES PAVED WAY **FOR ARTIFICIAL PANCREAS APPROVAL**

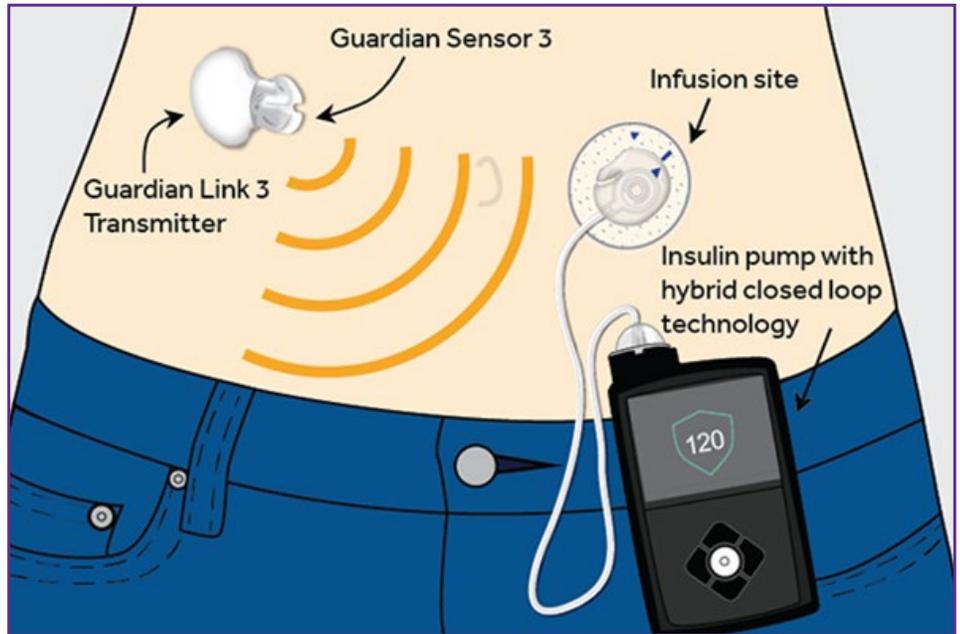
By Todd Neff, first seen in UCHealth Insider

The world’s first artificial pancreas is coming to market much sooner than anyone expected – including the Barbara Davis Center (BDC) researchers whose work has been so central to the device’s development and approval.

The U.S. Food and Drug Administration on Sept. 28 approved the Medtronic MiniMed 670G system for patients 14 years and older with type 1 diabetes. The approval cites a clinical trial for which the Barbara Davis Center for Childhood Diabetes was the largest proving ground.

“It’s a game-changer for people with diabetes,” said **Satish Garg, MD**, chief of the Barbara Davis Center’s adult clinic, who led the local study cohort.

Garg’s colleague **Robert Slover, MD**, who directs the Barbara Davis Center’s pediatric clinic, led the study’s largest pediatric site. The approval is “historic,” he said. “We’ve been working on this for the last 15 or 20 years one way or another – all the way from pump development and sensor development to algorithm development,” Slover said. “I think it will have enormous impact.”



Medtronic’s new system combines a glucose sensor, a transmitter, and an insulin pump to keep blood sugar levels more stable than existing systems typically can. (Courtesy: Medtronic)



Satish Garg, MD



Robert Slover, MD

Three in one

The artificial pancreas is in fact a merging of three devices: a continuous glucose monitor (CGM) and an insulin pump, plus a glucose meter to calibrate the CGM. If blood glucose rises past a certain point, the CGM tells the pump to deliver more insulin to bring it back down; if blood sugar drops – or if algorithms in the CGM (developed with the help of Barbara Davis Center researchers) predict that it's about to drop – the CGM tells the pump to stop infusing insulin to give the patient's blood glucose a better chance to recover (technically, it's called "predicted low-glucose suspend"). A smartphone-based app serves as a monitoring station for patients, parents, or caregivers.

The speed of approval – Garg said the FDA took just three months to make a decision that typically waits a year – took even Medtronic by surprise. As a result, the device is first expected to be available in spring 2017.

The closed-loop pancreas has been a long time coming, with the Barbara Davis Center playing a big role throughout. The center's expertise in diabetes care, its large patient base and its skills and infrastructure in supporting clinical trials has made it a favored partner of technologists in academia and industry who are developing artificial pancreas hardware and software.

Peter Chase, MD, emeritus executive director of the Barbara Davis Center's pediatric clinic and artificial pancreas pioneer, said the Medtronic device is a big step forward. "This is going to make diabetes care so much easier," Chase said. "It's exciting for our kids. It's exciting for our families."



H. Peter Chase, MD

Self-Driving Pumps

The artificial pancreas does not cure type 1 diabetes, an autoimmune disease that about a million U.S. adults and 200,000 kids have. With type 1 diabetes, one's own immune system kills the pancreatic islet cells that produce insulin, a protein that helps move glucose – a key metabolic fuel – from the bloodstream to the cells. The Medtronic device and others expected to follow in the coming years take a big step toward automating the difficult and error-prone process of controlling blood sugar levels, thereby minimizing the long-term eye, kidney, nerve, and cardiovascular damage diabetes can cause.



The data show Medtronic's artificial pancreas to work better than insulin pumps whose delivery depends solely on human intervention. The key statistic, Chase says, is that **the Medtronic device kept the trial's participants within the desired blood glucose range about 75 percent of the time.**

"With current methods, we aim for 50 percent, and it's rare that we get that," Chase said. "It's going to bring [blood glucose levels] into almost the normal range, and it's going to greatly reduce the likelihood of microvascular complications. **In five years, I would predict that eye, kidney, and nerve damage will be reduced by at least half.**"

Slover added that the device's guardrail against hypoglycemia – crashing blood sugar – will let providers be more aggressive with insulin dosing and improve average blood glucose levels, something doctors have "wanted to do for years."

The device's greatest strength is its ability to control glucose levels when patients can't. Nighttime control has been a huge problem: Among adults, more than half of diabetic seizures from plunging blood sugar levels happen during sleep. Among children, it's higher yet – 75 percent. Maintaining nighttime control was a major artificial pancreas goal from the beginning, Chase said. CGMs fitted with low-glucose alarms can help, but his group, with an assist from a military night-vision camera, found that 71 percent of teenagers sleep right through them.

Continued on next page

Big Interest

Slover's pediatric trial showed the Medtronic device to be safe and effective for kids as young as eight years old, and larger trials with this age group should soon lead to FDA approval. The system has yet to be tested in children under the age of eight, but those studies are also planned. Meanwhile, **use in children under the age of 14 constitutes "off-label" use, and use by children under the age of eight is untested.** "But that research will get done and then the age range will get extended," Slover predicted.

If Garg's study participants were any measure, the artificial pancreas should fly off the shelves – assuming there is insurance coverage for a device estimated to cost several thousand dollars. **Eighty-five percent of the Garg's adult-study participants asked if they could keep the device after the three-month study ended,** which Medtronic and the FDA let them do. Slover said the Barbara Davis Center expects to run 25 education and training sessions a week once the device is on the market. He says he and colleagues are getting emails from patients all over the world. "A family in Saudi Arabia wanted to know when they could come and get their pump," Slover said.

Michael McDermott, MD, medical director of University of Colorado Hospital's (UCH) Endocrinology, Metabolism and Diabetes Clinic, said he would strongly recommend the device. "I think this is the direction that type 1 diabetes management needs to go, and I hope someday that people with type 2 diabetes will have the same coverage," McDermott said.

McDermott said about half of UCH's roughly 1,500 type 1 diabetes patients are already using an insulin pump and/or CGM, which would make for a straightforward transition. But he added that some patients who still prefer to do manual finger-pricks and injections may also make the switch.

"They've been waiting for a big quantum leap as opposed to the incremental advances," McDermott said.

He cautioned that the Medtronic artificial pancreas is still a long way from being as sophisticated as the actual bodily organ. The data show the device to work well between meals, but the wearer still must estimate carbohydrates and enter them into the pump before meals so the device can deliver a pre-meal insulin booster, which takes about 20 minutes to take effect (the pancreas does the same thing with no delay because it delivers insulin directly into the digestive tract). Patients must also calibrate the CGM a couple of times a day with a drop of finger-prick blood.



Looking Ahead

Future devices will probably enter meals into the equation, McDermott said. Chase said he also anticipates later versions to be attuned to individual traits and behaviors, so as to adapt quickly to a young child who's insulin-sensitive or a senior who's insulin-resistant. Other improvements might include recognizing regular exercise patterns, say for a football player who practices at a certain time every day – or even illness, which affects metabolism. Also, **future devices might deliver not only insulin, but also glucagon,** which the pancreas secretes to counteract low blood sugar, and perhaps also incretins that help regulate the gut's sugar absorption. "Later generations will have a much finer ability to make adjustments for individual sensibilities," Chase said.

Garg's team is already testing Medtronic's next-generation device, he says. Other device makers are at least a year behind, Chase estimates, but he expects the first competitors' offerings to hit the market in late 2017 or 2018.

Chase wonders if the surprisingly rapid success of the artificial pancreas will refocus the attention of major funders on curing type 1 diabetes. "We're making inroads with immunosuppression and islet transplantation," Chase said. "We've got a long ways to go yet, but there's the possibility for a cure in the future."

For now, Slover is enjoying the moment. He, Garg, and Chase have been around long enough to remember the days before reliable blood glucose testing or fast-acting insulin, he said. Then came the first insulin pumps, which were "big like bricks," he recalled.

"And to think that we've moved from there to a technology that really will protect kids from hypo- and hyperglycemia most of the time," Slover said. "It's just amazing and wonderful."

Q&A



H. Peter Chase, MD

Q: How often does our child with type 1 diabetes need to see an eye doctor?

A: Wow, interesting question. By chance, the International Diabetes Federation (IDF) made “Eyes on Diabetes” and eye care for people with diabetes the theme of the November 2016 World Diabetes Day.

The current recommendations from the American Diabetes Association (ADA) are for:

“Annual screening for people who have had type 1 diabetes for five or more years, starting at age 10 years or at puberty, whichever is first. How long someone has had type 2 diabetes before diagnosis is often not known. For this reason, people with type 2 diabetes should see the eye doctor soon after diagnosis (if ≥ 10 years old).” (Ref. Understanding Diabetes, 13th edition, pg. 260.)



By coincidence, the Type 1 Diabetes Exchange Registry has just completed a large survey of families having a youth with type 1 diabetes, and found that no one required intervention for eye problems during the child-adolescent years. They thus questioned the need for annual eye screening during this period of life.

One factor is that with insulin pumps, CGMs, etc., youth are now in much better glycemic control than they were in the past. It is well-known that diabetic retinopathy is strongly related to longitudinal hemoglobin A1c (HbA1c) levels (higher HbA1c values being associated with a greater likelihood of eye disease [“retinopathy”]). Perhaps people with consistent HbA1c levels below 8.0% should have an initial “baseline” eye exam sometime in the 10-13 year old age range and then eye exams every two years. In contrast, those with frequent HbA1c values above 9.0% should follow the current ADA guidelines with annual eye exams.

So, I guess my answer to your question is that I think the frequency of eye exams for youth with type 1 diabetes should **now be individualized**, based in large part on glycemic (sugar) control. I hope this answers your question.

Q: Our teenager is not using a continuous glucose monitor (CGM). She tried using it three or four years ago and it was so inaccurate that she stopped using it. Does everyone now have to use a CGM?

A: Unfortunately, we hear this story quite frequently. I would start by sharing with you that CGM values have improved greatly in accuracy. Also, there are now a number of studies that show if the CGM is consistently used, HbA1c values will improve. Recently, the American Endocrine Society recommended continuous glucose monitoring as the new standard for tracking blood sugar in adults with type 1 diabetes. I think this could also be a recommendation for youth with type 1 diabetes.

They noted:

“Studies have found that people with type 1 diabetes who use CGMs (continuous glucose monitors) are able to maintain better control of their blood sugar without increasing episodes of hypoglycemia when blood sugar drops to dangerous levels, compared to those who self-monitor blood glucose with periodic finger sticks.”

The artificial (bionic) pancreas will be the treatment of choice for people with type 1 diabetes in the future. The artificial pancreas will require the use of a CGM (and an insulin pump). It should be obvious that knowing sugar levels every five minutes throughout the day and night is superior to having a limited number of finger stick blood sugars each day.

So, in answer to your question, **“everyone” does not have to use CGM, but most people with type 1 diabetes will eventually want to use CGM.**

Do you have questions you would like to submit to the Q & A?

Contact Mattie Peck at
Mattie@ChildrensDiabetesFoundation.org

DR. CHASE BECOMES PROFESSOR EMERITUS

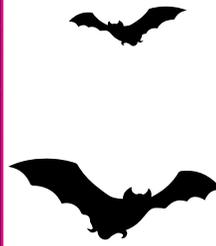
Dr. H. Peter Chase will finally retire in December, 2016 after 49.5 years on the University of Colorado faculty. Dr. Chase was appointed the first Director of the University of Colorado Pediatric Diabetes Clinic in 1976, four years prior to the opening of the Barbara Davis Center. He was the only full time physician in the BDC from 1980-1983. He has been the Executive-, Clinical-, and Pediatric-Clinic Directors of the BDC. His research interests have included prevention of type 1 diabetes and the development of the Closed Loop (Bionic) pancreas. His work has resulted in over 300 peer-reviewed publications and 76 book chapters and he is the author of five diabetes educational books for families with type 1 diabetes, which have reached over two million families over the past 38 years (with the first book being available in English, Spanish, Arabic and Chinese). The books have been a major fundraiser for the Children's Diabetes Foundation. He received the American Diabetes award for Outstanding Physician Achievement award, the Ross Award for Pediatric Research, among others. He was listed in Best Doctors in America. He will continue his research on the artificial pancreas until December 2016 and will then fully retire, becoming Professor Emeritus.



BOO BASH A SPOOKY CELEBRATION

There was no shortage of impressive costumes at this year's Boo Bash on October 23 in Golden, CO. Kids ages 2-12 and their families were playing games, decorating pumpkins, dancing, taking photos, and enjoying a Halloween party focused on fun instead of sugar!

The Boo Bash is a spooky party for young Barbara Davis Center patients. Many thanks to event chair, Meredith Wolf, co-chair Judy McNeil, and our wonderful volunteers! Don't miss this annual event next year!



CHANGING THE DIABETES DIALOGUE

By Jennifer Griffin

A simple word search on Google will bring up literally dozens of articles covering the “fight” against diabetes. Celebrities give interviews about their lifelong “battles” against this disease and how courageous they are in their daily “struggle” against it.

Now, my daughter has had T1D for more than 10 years and she’s only 13. I know the hard days, I know the long nights (last night was one of them), and I know it isn’t always easy. In fact, as I was writing this, I had to stop for an hour and go change her pump because of a malfunction at school. Just as you think you’ve got this thing figured out, everything changes and you’re back on the roller coaster.

However, just as our tone and language affect our child’s well-being, so can how we deal with their diabetes and the words we use to describe it. So here are some words that I propose should be taken out of the diabetes vocabulary.



You could say:

GOOD NUMBERS/BAD NUMBERS

Someone told me once that there are no good numbers or bad numbers, just numbers that we use to make our kids feel better. I can’t completely agree with this because I’ve seen what a high/low number does to my kiddo and it’s bad. But saying a number is good or bad insinuates the child is good or bad because of something that is pretty much out of their control. A number is just a number – 250 or 25; it means nothing until it’s dealt with.



Try instead:

IN RANGE/OUT OF RANGE

All kids have an ideal range, this range shrinks as they get older just as they start taking things on themselves. If a child is out of range, we do what is needed to get back in range. Teaching your child that there is a goal and encouraging them to take action to stay in that goal gives them tools to maintain when they are older without shaming them for being out of range. Addressing how they got out of range also helps prevent future instances. Did they forget to dose for breakfast? Did they not finish their lunch? Did they play a new game with their friends that meant more running or did they take a test that was super stressful? Identifying why they are out of range instead of focusing on the number itself is another tool they can use as an adult.

You could say:

SUGAR

To say sugar is to think sweets. There's so much more to sugar than cookies, cupcakes, and donuts. To deny a food because it's a sugary snack can backfire and lead to rebellious sneaking snacks. It also leads to the well-meaning aunties who insist she can't eat cake because it has sugar and offers a huge chunk of bread instead because "it's healthier". We all know eating sugar didn't cause type 1 diabetes (T1D). When we got our diagnosis I had such mom guilt because I ate bags of jelly beans when I was pregnant and for a little while the only thing that stayed down was Lucky Charms. I was sure all that sugar was the cause. Of course, while it wasn't ideal for my own health, it didn't cause my toddler's T1D.

Try instead:

CARBS

When you first start out, a carb is a carb is a carb. As you get more sophisticated in your care you begin to learn that different carbs act differently. A slice of pizza, a cookie and an apple may have the same 35 carbs, but they act much differently in the system. By covering carbs, a child can learn it's not just about the sweet stuff and develop healthier habits. They can also learn the benefits of balance. When I showed my daughter the difference in the amounts of food she could get with the same amount of carbs, she began to see that maybe the 30 carbs of juice weren't as great as 30 carbs of peanut butter crackers.



You could say:

SHE'S JUST HIGH/LOW

I've heard this said many times to excuse a child's behavior. I remember testing my toddler's blood sugar to see if it was a diabetes tantrum or a time-out tantrum. Now as a teenager there are so many reasons for her behavior it's hard to figure out what to do. But giving your child an "out" for bad behavior will not help them become productive members of society. No judge is going to accept "I'm sorry I ran my ex-boyfriend over, but my sugar was high so it's not my fault." This goes for school work too. There are days when her focus just isn't there for math homework, but it doesn't mean it doesn't get done. We adjust numbers and she does it later, or the next day. A delay is justified but a dismissal isn't.

Try instead:

YOU CONTROL THE DIABETES, IT DOES NOT CONTROL YOU

For a long time my non-T1D son was on heavy doses of steroids. The steroids turned my typically sweet angel boy into a roid rage little demon. To calm him down I had to get down to eye level and explain "This is not you, this is your medicine. You control you, the medicine does not control you." It's the same with my T1D girl. There are days that her sugar is high and she just does not want to deal with any of us, but that's not an excuse to treat us poorly, hit, scream or throw things. The words I use to address this situation can make it worse or diffuse it. Giving them the chance to get away to a safe place until they are under control can give them another tool to use as an adult. However, it's important that they understand at any age: I understand you feel sick right now, but that's not an excuse to act this way. You will always have highs and lows, and you will have to learn to live with them.

Continued on next page

You could say:

FIGHT, BATTLE, STRUGGLE

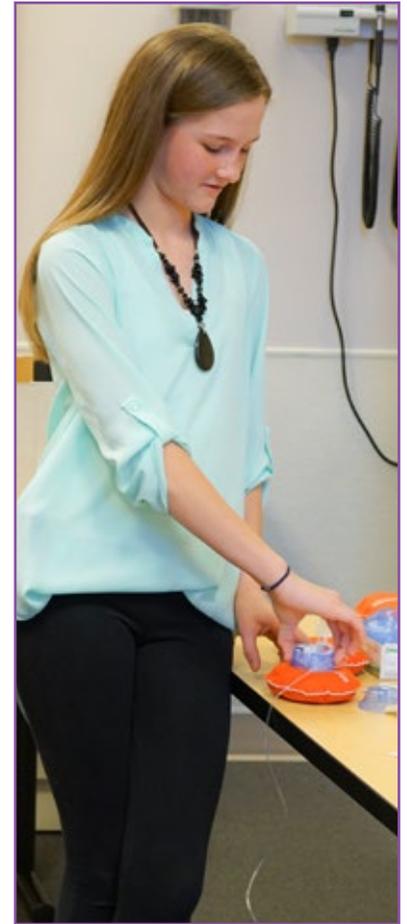
This one is my biggest one. As I said, I know there are good days and bad days. I know it sometimes feels like it's impossible to get things right. I know there are doctors who shame patients for a high A1c. But teaching a child that they have to fight their own body for their entire life will lead them to resent the condition they are in and rebel against it, causing so much more damage than a few high numbers. A fight can be lost. A battle can be devastating. A struggle can be given up. This would be the worst outcome for any child or adult.



Try instead:

ADVENTURE, OPPORTUNITY, LIFE

My daughter has diabetes – diabetes does not have her. There is not yet a cure and as good as the treatments are, there are no vacation days. Helping a child accept this (and accepting it ourselves) goes a long way in developing a healthy relationship with their own bodies. Understanding that they have to work with their own body to make themselves feel good, and everyone does this in some way will help them in the long run. I know if I exercise and watch what I eat I will feel much better in my body than if I sit on the couch and eat cookie dough all day. The same goes for our T1D kids. If they do their doses and count their carbs, they will feel much better than if they skip insulin and sneak cookies. We have gotten to do so many cool things because of T1D. My daughter has been a model for charity, she has met the entire Colorado Avalanche team, and she's gotten to go to several years of summer camp completely free of parental involvement. This is her life and diabetes is just one small part of it.



IT'S TIME TO REGISTER

PRACTICAL WAYS TO ACHIEVE TARGETS IN DIABETES CARE



July 13-16, 2017

Join us in beautiful Keystone, Colorado for this annual meeting designed for healthcare providers caring for adolescents and adults with diabetes.

This conference is for: certified diabetes educators, internists, pediatricians, family physicians, physician assistants, nurse practitioners, nurses, dietitians. Healthcare providers interested in learning the most up-to-date diabetes information from world-renowned diabetes experts.

REGISTRATION DETAILS:

View program details and registration information at:

www.regonline/atdc.com

Questions? Contact Marijane Engel at mj@childrensdiabetesfoundation.org or 303-628-5115



DIABETES & FATIGUE

High blood glucose slows blood circulation, so cells might not get the oxygen that they need. High blood glucose also causes inflammation, which leads to the infiltration of immune cells into the nervous system and results in fatigue as they signal the brain to sleep. Low blood glucose, on the other hand, does not allow cells to get the fuel they need to function well. Always talk to your physician about unusual tiredness, as many conditions and medications can lead to fatigue.

Things to consider if you are worried about feeling low-energy or unusually tired:

- 1. Are you sleeping well? Even if you feel that you are getting enough sleep, your sleep might be poor quality.** People who have diabetes are at risk for also having sleep apnea, a potentially dangerous condition in which you have paused in breathing or take shallow breaths while you sleep. Sleep apnea increases the risk of: high blood pressure, heart attack, stroke, obesity, heart failure, arrhythmias, and the chance of having an accident. Besides fatigue, other signs and symptoms include morning headaches, memory problems, inability to concentrate, mood changes and irritability or depression, dry mouth or sore throat upon awakening, and waking up frequently throughout the night to urinate. Treatment may include mouthpieces, breathing treatments, or surgery.
- 2. Are you depressed?** Fatigue is a common symptom of depression, which also causes: feelings of helplessness and hopelessness, loss of interest in things you used to enjoy, appetite or weight changes, sleep changes, anger or irritability, reckless behavior, trouble concentrating, strong feelings of worthlessness or guilt, and unexplained aches and pains. If you feel that you may be depressed, seek professional help as soon as possible.
- 3. Are you pushing yourself too hard?** It is easy to do too much these days. We are on constant alert because of our plugged-in lifestyles, and many people feel anxious and inadequate for not doing enough. **Stress increases the risk of high blood sugar**, which is a difficult thing for many people with diabetes to accept. Both stress and high blood sugar cause tiredness, both separately and in tandem. Stress increases insulin resistance, heart rate, and blood pressure, as well as causing the muscles to tense up, which wastes even more energy. Stress even interferes with breathing, which decreases oxygen delivery to your body's cells.
- 4. Are you consuming too much caffeine?** It is a cruel trick; the substance that gets us going can also be our downfall. The rebound effect of caffeine causes fatigue for many people, but caffeine can be especially dangerous for individuals with diabetes. Some research suggests that **caffeine disrupts glucose metabolism and may contribute to the development and poor control of diabetes**. Contradicting research has shown benefits to consuming caffeine when you have diabetes, but it is worth trying to cut back gradually to see if your energy level improves.
- 5. Are you drinking enough water? People with diabetes are at a greater risk for developing dehydration because having high blood sugar depletes fluids.** The kidneys try to rid the body of excess glucose by excreting it in the urine, a process that uses water.



Continued on next page



6. Are you moving enough? Getting enough physical activity has benefits for energy and lifestyle, and **people who are sedentary have higher levels of fatigue**. You should never sit for more than 30 minutes without getting up to move, even if it is just to go for a little stroll or do some light stretches. Ideally, after getting your doctor's approval, you will be able to work up to doing 30-60 minutes of moderate intensity exercise on most days.

7. **Could you have an infection?** Infections are a common cause of both morbidity and mortality in people with diabetes. Infections can cause poor blood glucose control, and poor blood glucose control can lead to the development of infection. Skin infections and urinary tract infections are especially likely to occur in people with diabetes.

If you feel fatigued and other medical causes have been ruled out by your physician, try the following:

- Take 20-40 minute naps
- Eat a good breakfast and consume something containing both carbohydrate and protein every four hours. Be sure to get enough fiber (at least 14 grams for every 1,000 calories that you consume).
- Eat a generally balanced diet that provides adequate amounts of vitamins D and B, calcium, and magnesium
- Gentle exercise
- Reach out to your friends and family; social support is important to maintaining a healthy mental outlook

RUINING RIVALRIES

It's always funny when you meet someone else with type 1 diabetes unexpectedly. People with type 1 (T1Ds) often feel like they are on their own island where no one can help or understand what they're going through, but then you meet another T1D and you quickly understand so much about each other.

This was certainly the case when high school football teams faced each other for an intense playoff game. Carl Frerichs, Head Coach for the Basalt High School Football Team, was diagnosed with type 1 diabetes at the age of 7. He has been a patient at the Barbara Davis Center, much like Basalt High School's star linebacker, Ian Lumsden, a senior with type 1 diabetes.

From the moment he put on his #4 jersey, Ian was a team player, always cheering on his team and striving to be the best. His senior year season was cut short when he became injured, putting an end to his football and basketball seasons. But that never stopped Ian from attending all practices and games to cheer on his team and boost their spirits. Ian stays positive about his injury because it is temporary, unlike his type 1 diabetes.

During the Basalt High School vs. D'Evelyn High School game, Ian and Carl ran into another T1D... who happened to be the opponent's coach. Jay Leeuwenburg is D'Evelyn's Line Coach. Jay's impressive career includes college football for the University of Colorado and professional football for the Chicago Bears and Denver Broncos, before becoming a coach.

Despite the rivalry, the men got together for a picture, uniting as Barbara Davis Center patients and as diabetes heroes who won't be held back by this disease.



Carl Frerichs, Jay Leeuwenburg, Ian Lumsden

SOCIAL MEDIA

ANSWERS

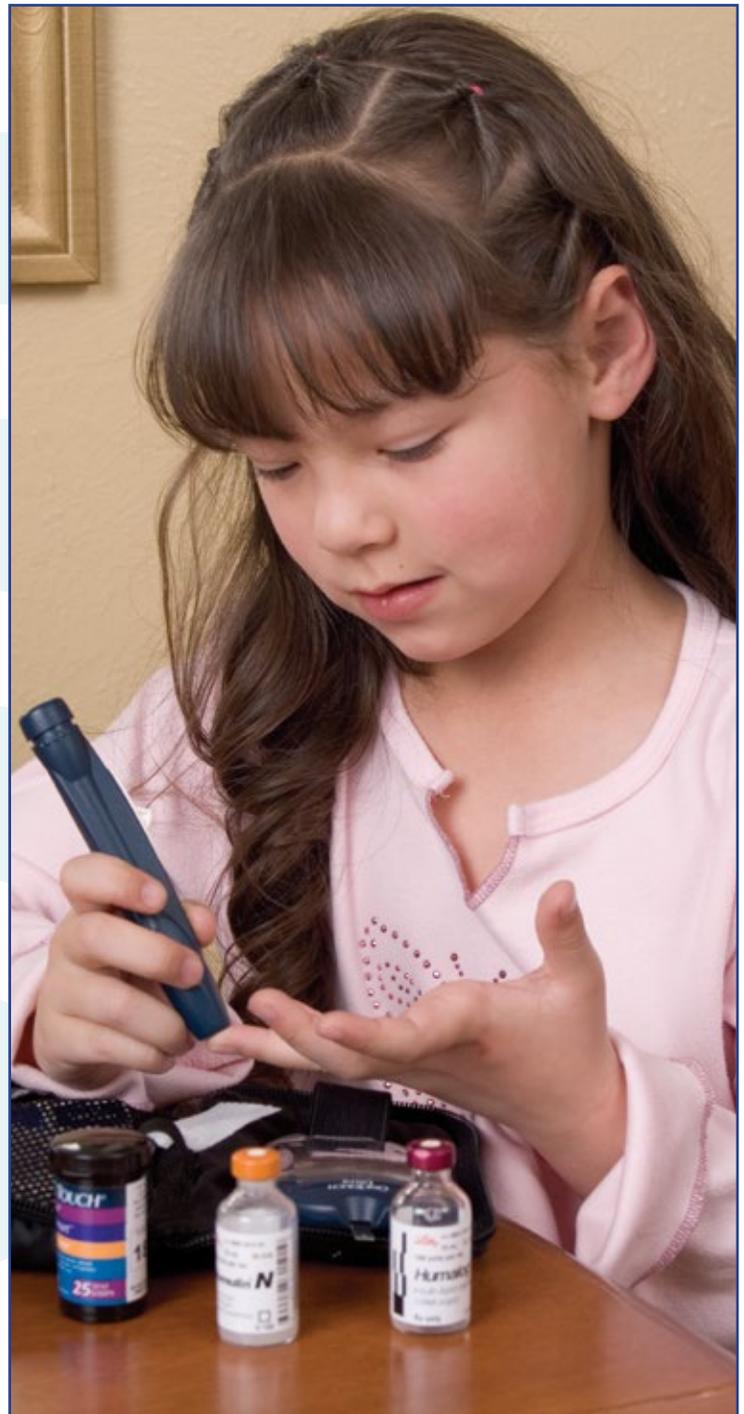


On our social media pages, we asked people:

Do high or low blood sugars cause you to have bad dreams or night terrors?

Check out the variety of answers we got:

- 📶 I dream of being low when I'm low (like when you dream of needing to go to the restroom when you do in reality). Finally my body will figure out the dream is just a dream. I'll wake up and realize I was only dreaming of getting juice and that I still need to go get it. *-Shelby*
- 📶 My friends tell me that I toss and turn and talk about all kinds of crazy things when I am low. *-Andrew*
- 📶 I never have bad dreams. I start to hit that in between sleep and awake state and my heart starts to pound, which is what usually wakes me up, that, and suddenly being incredibly hot. *-Lindsey*
- 📶 My most vivid and realistic dreams happen when my blood sugar goes low through the night. *-Daniel*
- 📶 My son always has night terrors when his BG is high. Diagnosed at 4, he is almost 6 now... It was one of the signs that pointed out something was wrong before he was diagnosed. *-Lindsay*
- 📶 When my 4 year old T1s sugar is high, she has night terrors and also sleep walks! She had night terrors when she was younger, but the sleep walking didn't start until [her diabetes diagnosis]! *-Kallie*
- 📶 I have nightmares with low blood sugars. I always end up dying somehow in my dreams, and that's how my mind figures out I need carbs. *-Izabella*
- 📶 Low blood sugar gives me the worst nightmares and they are always really bizarre! *-Katie*
- 📶 Never had a bad dream or anything that caused a night terrors, but have woken up in a pool of sweat. *-Brandyn*
- 📶 Yes.. My 8 year old has night terrors and screams and cries when her sugar is high. She usually doesn't remember it though. *-Mallorie*
- 📶 Bad dreams? No. Insanely realistic dreams? Yes. *-Mindy*
- 📶 My son talks in his sleep when his sugar is high. *-Marci*





Empowering Patients for Individualized Care

DIABETES CONFERENCE



March 4, 2017
7 a.m. - 2:30 p.m.
Denver Marriott City Center

The Barbara Davis Center and the Children's Diabetes Foundation will host the inaugural EPIC Diabetes Conference to bring together people with type 1 and type 2 diabetes and their family, friends, and caregivers. Attendees will go to engaging and interactive workshops to learn about taking care of diabetes emotionally and physically, while connecting with doctors and other people affected by this disease.



WORKSHOPS INCLUDE

- Hypoglycemia and Glucose Control
- Children Living with Diabetes
- The Future of Diabetes Technologies
- Managing Diabetes Burdens
- Newer Medications for Diabetes
- Navigating Diabetes in Different Cultures
- Associated Diseases with Diabetes
- Healthy Living with Diabetes

**JOIN US FOR FOOD, DOOR PRIZES, EDUCATIONAL WORKSHOPS,
VENDORS, AND MORE**

Registration is just \$5, but the value will be so much more!

Details & Registration:

www.EPICconferences.org

BRASS RING LUNCHEON IS CHANGING SEASONS!

THE GUILD



Join us for the Brass Ring Luncheon and Fashion Show where we will honor Susie Hummell for her 20 years of service to The Guild and the Children's Diabetes Foundation.

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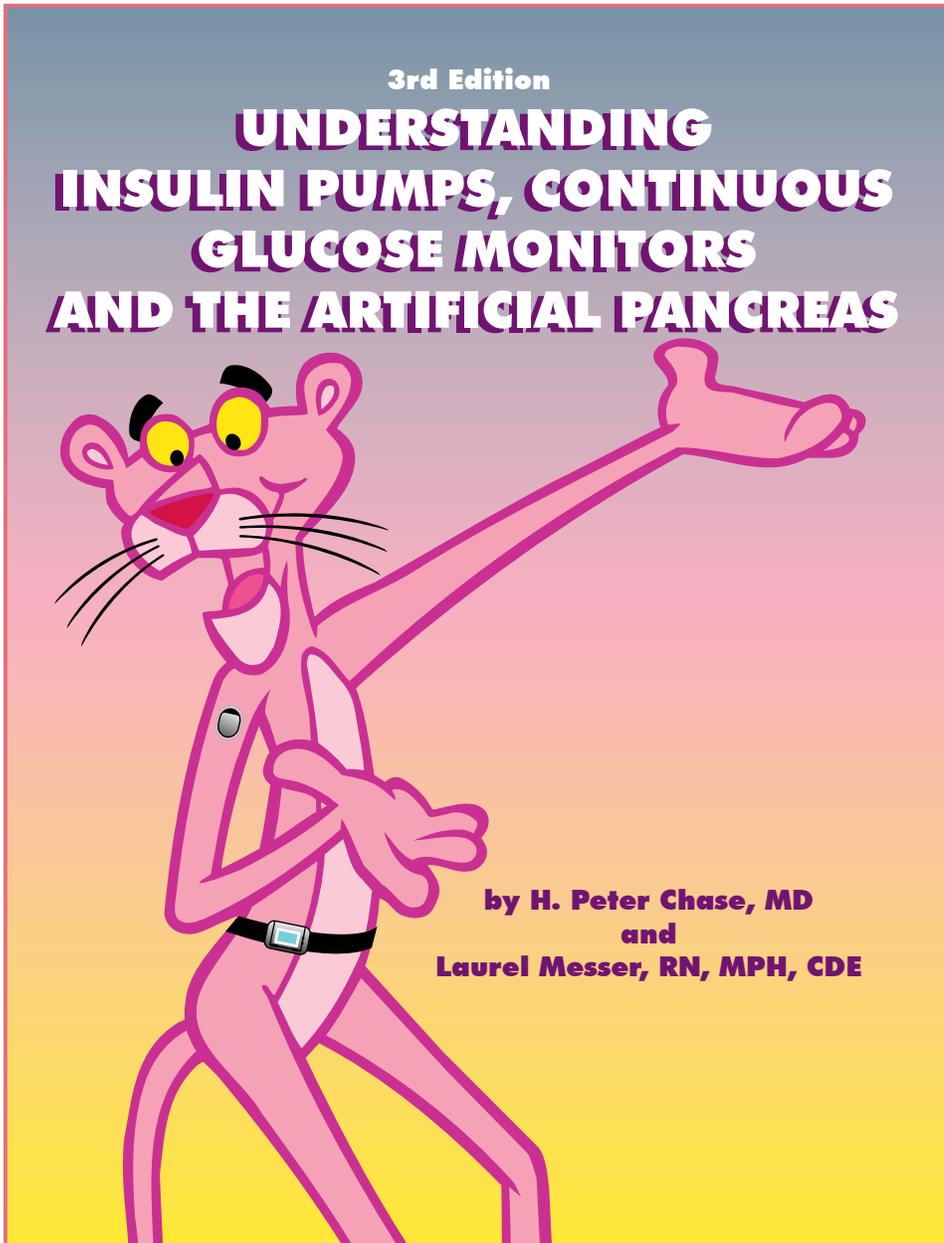


Olivia Bennett Teeuws is a nationally-renowned artist and philanthropist. At the 30th Carousel of Hope Ball, she created a custom oil painting specifically for the Children's Diabetes Foundation. This heart bouquet is the third painting in her "Love Thy" series highlighting global health and social issues and presenting them in a beautiful and optimistic light. The painting is meant to invoke joy and optimism for the viewer and hope for those battling diabetes. As a childhood cancer survivor, Olivia understands all too well the importance of health and giving back to those who are currently struggling.



ORDER AT: WWW.CHILDRENSDIABETESFOUNDATION.ORG/NOTECARDS/

Introducing A New Pink Panther Book



CHANGES IN THE 3RD EDITION INCLUDE:

- 🐾 New information on the prevention of prolonged hypoglycemia (particularly with new pump and CGM technology)
- 🐾 Information on continuous glucose monitors (CGMs) is updated as advances in this area have been enormous in recent years
- 🐾 A table is now included outlining topics to cover with pump training and includes boxes to check when the family is comfortable with each area
- 🐾 Methods for calculating Correction Factors (insulin sensitivity), Insulin to Carbohydrate ratios, and the Insulin on Board feature are given new emphasis
- 🐾 Information relating to the many new insulin pumps, such as the Tandem t:slim G4™ and the MiniMed 630G pumps, is provided
- 🐾 Special chapters on insulin adjustments using real-time CGM data and retrospective CGM data may help to improve overall glucose control
- 🐾 A new chapter is now included on the artificial (“Bionic”) pancreas and potential artificial pancreas systems are reviewed
- 🐾 A new chapter is available to help with skin care and CGM sensor/pump set insertions, tape and “sticking” problems
- 🐾 A general “Standard of Care” form is included for students with diabetes

As the Artificial Pancreas becomes closer to a reality (Spring 2017), all people who intend to use it will need to use both an insulin pump and a continuous glucose monitor (CGM).

Order Your Copy at:

www.ChildrensDiabetesFoundation.org/books



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NewsNotes will be published quarterly by the Children's Diabetes Foundation. We welcome your comments.

If you would like to submit an article or a letter to *NewsNotes* send information to: Mattie@childrensdiabetesfoundation.org

Zachary Reece
Graphic Designer

Mattie Peck
Dana Davis
Editors





Children's Diabetes Foundation
4380 South Syracuse Street
Suite 430
Denver, CO 80237

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Want to Meet Others with Type 1 Diabetes?



Then come to a CDF Support Group!

Friends, family, and caregivers of type ones are welcome!

Timings and location vary, but are focused in
Denver & surrounding areas.

www.childrensdiabetesfoundation.org/support-groups

GET INVOLVED IN THE DIABETES ONLINE COMMUNITY!



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KNOW THE SYMPTOMS OF TYPE 1 DIABETES

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