With Thanksgiving just around the corner, I’ve been reflecting on all that I am thankful for this past year. Of course, I am most thankful for the health and happiness of my loving family, who I am lucky to have as my personal cheering squad. But I am also thankful to be part of something larger through the work of The diaTribe Foundation, a nonprofit we founded that just received its 501c3 nearly a year ago today! Our mission is basic, and, we hope, very clear - to improve the lives of people with diabetes, prediabetes, and obesity, and to advocate for action. Toward that end, our team spoke four times in 2014 at the FDA to advocate for better alternatives for patients – specifically, we spoke in favor of MannKind’s inhaled insulin Afrezza (now approved), Novo Nordisk’s Saxenda (liraglutide) for obesity, and cardiovascular outcome trials. Our work culminated in a November 3 public meeting with the FDA, an unprecedented patient dialogue on the unmet needs in diabetes. Not only did we recruit nine compelling patient panelists from across the country, we also enlisted nearly 10,000 patients to take a survey and tune in virtually for this event. Whew – a promising result in our ongoing conversation with the FDA!

I am also incredibly thankful to share innovations in the field with readers through diaTribe. From novel flash-glucose monitoring technology with the launch of Abbott’s Freestyle Libre system, major drug approvals like Xultophy, Trulicity, and Jardiance, to name a few! From remote monitoring to remarkable research updates in the artificial pancreas and stem cell fields and more, progress has been seen on many fronts this year. I am proud that we can help bring all the news and insights to patients, and that this year we’ve been able to improve diaTribe with more frequently updated content - now every two weeks instead of once a month, plus lots of real-time updates right at our homepage, diaTribe.org.

Last, I am so thankful for the members of the diaTribe patient and caregiver community who chose to get involved. The stories you shared with us inspire our team every day, and this year you came together in a huge way to make your voices heard. The surveys you’ve taken, videos you’ve made, posts you’ve shared – they’ve all been vital to making our work at The diaTribe Foundation possible. It is clear that the patient perspective is playing a larger role than ever. As a non-profit organization without any advertising, we’d also be so thankful for your support. Please visit diaTribe.org/invest for more details on investing in our work to help more people with diabetes and prediabetes. By working together to tackle the huge burden of diabetes, we hope to make the world a happier and healthier place.

yours,

[Signature]
quotable quotes

“We’re now talking about cars that can drive themselves, package delivery via drones, yet diabetes devices are still on years-old technology... People with diabetes deserve 21st century technology.”

–Steven Shaw (type 1 diabetes patient) at an FDA workshop on device inoperability.

“I believe that the greatest challenge to providing good quality medical care to everybody who needs it is that we have too much disease in our nation and it is occurring too early in life. So we need to make it fun to be active, not a chore.”

–Dr. Jim Marks (Robert Wood Johnson Foundation) in diaTribe’s interview with this illustrious leader at the Boston Obesity Week Conference last month.

“Insulin is like no other medication in that it is so dangerous, and yet we let patients go out and determine their own dose. No other medication is like that.”

– Dr. David Klonoff (Mills-Peninsula Health Services) at an FDA workshop on insulin bolus calculators.

fingersticks

Illustration by Joseph Shivers
new now next

### Top Seven Highlights from the Diabetes Mine D-Data Exchange and Innovation Summit

**Twitter summary:** #DBminesummit brings together top minds to discuss innovations in #diabetes – top 7 highlights below, full report coming soon!

This past week, our team was fortunate to attend the Diabetes Mine D-Data Exchange and Innovation Summit – two days that gather some of the brightest minds in diabetes technology to discuss ways to further innovations in diabetes. We will be writing an in-depth overview of the summary in a future conference pearls, but for now we wanted to share our top seven highlights from the two days:

1. **Amy Tenderich from Diabetes Mine** set the stage, noting the incredible momentum in the diabetes community that has helped lead to a “tipping point” of diabetes innovation. Ms. Tenderich also commented on the FDA’s progress in diabetes, saying that the FDA “has gone from zero to hero in this community.”

2. **Dr. Edward Damiano** gave an excellent presentation on the latest from the bionic pancreas, addressing some of the biggest criticisms of the bionic pancreas system. For example, in regards to infusion set failures, Dr. Damiano explained that infusion failures result in alarms when the CGM glucose readings rise or fall too quickly or go too high or low. Additionally, if a glucagon infusion failure is detected, the bionic pancreas automatically raises its target glucose level until the situation is fixed.

3. **Kelly Close (Founder, The diaTribe Foundation)** led an inspiring panel discussion on patient engagement, featuring diabetes all-stars like Manny Hernandez, Rebecca Killion, and Dr. Bill Polonsky, among others. Ms. Killion summed up the panel well in her comment, “The experts on diabetes are the people with diabetes. There is power there. We need to use it. We have so much power!”

4. **The Tidepool integration platform** has shown tremendous progress over the past year, now with Abbott and Tandem joining its efforts, adding on to the already impressive list of partners that include Dexcom, Insulet, and Asante.

5. **Dr. Stayce Beck, the FDA’s Branch Chief for Diagnostic Devices**, gave a very optimistic presentation on the FDA’s efforts in three specific areas of diabetes: safer test strips, device interoperability, and greater patient input. The tone of her presentation was patient-centered and hopeful, one we’ve been ecstatic to see again and again in the past month from the FDA. Dr. Beck called the November 3 #DocaskaFDA meeting “really really successful – so successful that it shut down the FDA system.” What a win for the DOC!

6. **Richard Wood of market research company dQ&A** gave a presentation on key findings from recent dQ&A patient surveys, including research on diabetes stigma. Mr. Wood’s presentation highlighted the reality of the patient experience with current diabetes technologies. For example, 54% of people on insulin pumps and 39% of people on CGMs do not download data, citing barriers such as time, complicated software, excess cables, and Apple incompatibility as major constraints.

7. **Nightscout’s #WeAreNotWaiting campaign** on increasing the ability of
different diabetes devices to “talk” to each other got a lot of emphasis at the meeting. The CGM in the Cloud Facebook group just passed the 8,500 member mark, and the group is continually committed to easing the burden of diabetes management.

Lilly Launches Trulicity in the US – First Ever Ready-to-Use Once-Weekly GLP-1 Receptor Agonist

Twitter Summary: @LillyDiabetes launches Trulicity in the US – first ready-to-use once-weekly GLP-1, available w/savings program for commercially insured

On November 10, Eli Lilly and company announced that Trulicity (dulaglutide) is now available in the US, making it the first ready-to-use once weekly GLP-1 receptor agonist to reach the market (no mixing required). Trulicity received FDA approval in September for adults with type 2 diabetes. Lilly is offering a cost-saving program with the Trulicity Savings Card, which will allow commercially insured patients to pay as little as $25 per month out of pocket for up to two years. For more information on Trulicity’s clinical trial results or safety information, please see our past new now next in diaTribe #69 or the drug label.

Trulicity is available in 0.75 and 1.5 mg doses, both administered via a single-dose “auto-injector” that hides the needle from sight. We had a chance to test out the pen at the recent EASD Conference in Vienna and found it super user-friendly. To take Trulicity, users take the cap off of the pen, twist one end to unlock, and then place the flat end of the pen to their skin. With the push of a single button, the pen inserts a previously hidden needle into the skin, administers the injection in a couple of seconds, and then withdraws the needle back into the device. Very fast and easy! The other currently available once-weekly GLP-1 agonists in the US – Astra Zeneca’s Bydureon (exenatide) and GSK’s Tanzeum (albiglutide) – require a “reconstitution” process that takes time to prepare before use. The Trulicity design improves convenience, particularly for anyone with “needle-phobia,” and raises the bar for effective GLP-1 agonist delivery – we think many will start taking GLP-1 as a result of the launch. – MV/AJW

JAMA study shows that metformin is safest first-line therapy for type 2 diabetes

Twitter summary: JAMA study shows that metformin is safest first-line therapy for type 2 diabetes – future GRADE study to show best second-line therapy

The journal JAMA Internal Medicine recently published results from a study comparing the effectiveness of four different classes of drugs for type 2 diabetes: metformin, sulfonylureas, TZDs, and DPP-4 inhibitors. The study was a “retroactive cohort study,” meaning that it looked back at a group of patients and analyzed their health outcomes. The results showed that metformin is the best drug to begin treatment of type 2 diabetes – patients starting drugs other than metformin had on average a significantly greater risk of needing additional medications down the road (another oral pill and/or insulin), without any additional health benefits (e.g., they did not have reduced hypoglycemia, ER visits, or heart problems).
Surprisingly, the research found that despite guidelines recommending metformin, only 58% of patients actually used metformin as their first diabetes medication. The study unfortunately did not include GLP-1 agonists – a common injectable drug class for treating type 2 diabetes that has been available since 2005. It was very depressing in our view that GLP-1 wasn’t assessed. In the future, we look forward to the results of the GRADE study, which aims to conclude which second-line drug for type 2 diabetes is most effective; unfortunately, however, this study will not include SGLT-2 inhibitors or any fixed dose combination drugs, which we believe will be a very limiting factor from understanding real life outcomes. While we understand that few risks are attractive for those designing the studies, we believe SGLT-2 research could have been included as a useful arm. For more resources on treatment recommendations for type 2 diabetes, please see the ADA/EASD guidelines, the AACE guidelines, or the IDF guidelines. ~AJW

mySugr Academy Teaches Patients How to “Tame their Diabetes Monster” in Ten-Part Video Series

Twitter Summary: mySugr Academy helps people w/ #T2D tame their #diabetes monster in this 10-part video series – first two videos free!

mySugr recently released the mySugr Academy Program – a program designed to help people with type 2 diabetes “tame their diabetes monsters.” Excellent! The campaign features a rather comical blue monster that represents one’s type 2 diabetes. For a clear sense of what this program looks like, check out mySugr’s teaser video. The program was created with input from doctors, dieticians, nurses, and people with diabetes themselves, and hopes to provide judgment-free education and training for people with type 2 diabetes. mySugr Academy consists of a ten-part video series, as well as interactive games and articles. The videos in the type 2 curriculum cover a variety of topics, including blood sugar, healthy food, daily exercise, metabolic syndrome, and more. The first two videos are free (check out the first lesson here!), and the full program costs $129 a year (it is a bundled package that includes other mySugr products and upcoming services). ac

From what we’ve seen, the videos in the series are fun, simple, and short (those we’ve watched are about five minutes long). We appreciate the use of engaging graphics and metaphors to teach complicated topics – for example, a comparison of a cell’s sugar use to an actual sugar factory. Particularly for anyone recently diagnosed with type 2 diabetes, mySugr Academy provides an amusing and educational overview of the basics of the disease and how to manage it.

We’re hopeful for a potential type 1 curriculum to be launched in the future. For now, type 1 users can still use the mySugr app, a valuable logging tool to keep track of blood sugars, food, insulin doses, and more. –AJW

Novo Nordisk Launches Diabetes Health Coach, a Free Online Diabetes Support Program with Personalized Action Plans

Twitter Summary: Novo Nordisk gives patients individualized care strategy w/ #Diabetes Health Coach

In early November, Novo Nordisk re-launched its Cornerstones4Care program.
It’s nice to see an integrative approach to diabetes management, as there are so many things that can influence someone’s blood sugar (22+ factors!).

with a new “Diabetes Health Coach” tool. The program is free to the public and aims to provide people with type 1 and type 2 diabetes with individualized, actionable steps towards improving their diabetes management. To sign up, users take a quick personal health assessment, and then the tool provides a 12-week education and management plan, including diabetes-friendly recipes, management tips, educational resources, trackers to help patients monitor their diabetes, and reminders to help patients stay on track. This tool is just one of multiple health outreach updates from Novo Nordisk; they also announced Houston as their choice for the potentially groundbreaking “Cities Changing Diabetes” program.

The Cornerstones4Care program revolves around healthy eating, being active, taking medications, and tracking blood sugar levels. This program also helped launch the YouTube series “Breaking Down Diabetes” by YouTube personality Michael Stevens. It’s nice to see an integrative approach to diabetes management, as there are so many things that can influence someone’s blood sugar (22+ factors!). For those in need of education, motivation, personalized tips, or just reminders, you may find this free resource helpful. –AJW

conference pearls

FDA Workshop Tackles Bolus Calculators and Device Interoperability

*by Alexander Wolf and Adam Brown*

**Twitter summary:** FDA holds public workshop to discuss bolus calculators + device interoperability – diverse group of speakers compel FDA to take charge!

On November 13, the FDA held a public workshop on bolus calculators (software built into pumps that calculates how much insulin to dose before meals) and interoperability (making it easier for diabetes devices to communicate with each other and with other software). The meeting sought public input on the risks and benefits of bolus calculators as well as FDA’s role in advancing device interoperability. The meeting drew about 60 attendees, including FDA leaders, patients/caregivers, healthcare providers, and members of industry. *diaTribe* Senior Editor Adam Brown also spoke on behalf of The diaTribe Foundation – more on that below, along with a summary of some of the key points raised in the workshop.

**How the FDA can better regulate bolus calculators – provider and patient perspectives**

For patients, it was encouraging to see that the FDA showed support and awareness for the benefits of bolus calculators. However, the agency is wrestling with the proper balance between safety and innovation. “Too much regulation can slow down innovation, but the risks of not regulating are patient harm,” said Dr. Alberto Gutierrez (Director of the FDA’s Office of In Vitro Diagnostic Device Evaluation and Safety). Very true! The FDA already regulates bolus calculators
in pumps and on meters, so a particular challenge concerns the safety of bolus calculators in “stand-alone” mobile apps or software programs that are not part of a regulated device.

Dr. David Klonoff (Mills-Peninsula Health Services) highlighted the risks of insulin and the importance of making sure apps can accurately dose insulin. We certainly need more reliable ways of calculating boluses, as educator Dr. Jane Seley (New York Presbyterian Hospital) pointed out, since the majority of patients have issues manually calculating the correct insulin dosages. Tidepool CEO Howard Look said that even an unapproved bolus calculator app may be better than no calculator at all, given all the math required in mealtime insulin doses.

Providing another perspective, Dr. Howard Wolpert (Joslin Diabetes Center) said that bolus calculators are “inherently inaccurate,” as they don’t take into account all of the factors that affect blood glucose. Dr. Wolpert argued for a middle ground, advocating for an “ecosystem” of bolus calculator apps (Tidepool, Glooko, Livongo, and Telcare) that can help fill the gap between FDA-approved insulin pumps and unregulated smartphone apps that are potentially dangerous.

The diaTribe Foundation’s Adam Brown provided a patient perspective on bolus calculators, saying that they dramatically simplify math that is a burden for most patients. Adam emphasized the complexity of diabetes, noting that more than 22 variables affect blood glucose, and consequently, “bolus calculators cannot be made 100% fool proof.” Adam said that the FDA should be careful not to overregulate bolus calculators, since few patients have access to them right now – only those who are using insulin pumps and those on the Accu-Chek Aviva Expert. He also argued for more innovation in bolus calculators to help patients overcome some of the complexity of mealtime insulin dosing. All in all, one thing was clear: bolus calculators are highly valuable, as they help simplify complex dose calculations.

Device Interoperability – Making Your Devices Talk Together

Device interoperability is the ability for multiple devices – a CGM, an insulin pump, a fitness tracker – to communicate with each other and/or share data in one co-existing platform. Tidepool’s Howard Look drew a comparison to digital cameras. In the early days, Canon, Olympus, and Kodak each had their own exclusive file format. Eventually, camera manufacturers settled on the .jpeg format. Fast-forward to today, and everyone can view and share pictures despite using a wide range of different cameras, software, computers, and smartphones. In contrast, diabetes devices force users to use a company’s own software to both access the data and to view the data. This reduced choice, Mr. Look pointed out, increases the burden of managing diabetes.

At the meeting, we were pleased to see the FDA’s enthusiasm for improving device interoperability. The FDA laid out three key areas where they see interop-
erability playing a big role: 1) remote monitoring, 2) device consolidation, and 3) the artificial pancreas. For the artificial pancreas, one proposal was for different companies to individually produce and sell specific parts of a single system. For example, a patient could buy the pump, CGM, and algorithm from three different companies – just as someone setting up a television set may buy the TV, the DVD player, and the cable box from different companies.

Dr. Alain Silk (FDA reviewer and type 1 patient) summed it up best in his closing argument: enhanced interoperability = better care = better outcomes. Continua, a non-profit group, has already developed standards for CGMs, blood glucose meters, and insulin pumps to communicate with each other. We hope that the FDA will eventually require such standards, which should result in more patient-friendly devices. In a public comment session, type 1 patient Steven Shaw brilliantly argued, “We’re now talking about cars that can drive themselves, package delivery via drones, yet diabetes devices are still on years-old technology... People with diabetes deserve 21st century technology.”

The FDA has posted a full video and slides of the day. The agency is also calling for public comments on the topics presented at the workshop – if you have an opinion on any of the above, please make your voice heard by submitting a comment. –AJW/AB
Combining DPP-4 inhibitors and the newer SGLT-2 inhibitors is an opportunity to further improve glucose control and increase convenience for patients.

How do DPP-4/SGLT-2 fixed-dose combinations work?

In combination, the individual DPP-4 inhibitor and SGLT-2 inhibitor components work as they would if they were in separate pills.

DPP-4 inhibitors increase the action of certain hormones (called incretins) to lower blood glucose by stimulating insulin production and reducing the output of glucagon (a hormone that releases sugar into the blood). DPP-4 inhibitors (pills) have only moderate effect in lowering A1c, although their side effects are usually minimal. They only stimulate insulin release when blood sugar levels are high, so the risk of hypoglycemia is low.

SGLT-2 inhibitors are novel in that they reduce blood glucose levels through an insulin-independent pathway – this is why they might one day be used to help type 1 patients. This drug class causes the kidneys to release glucose through urine, leading to a reduction in blood glucose only when glucose levels are high (the drug stops working when glucose levels come in to range). In an added benefit, the loss of glucose in the urine typically means 100-300 calories per day are not absorbed, explaining why SGLT-2 inhibitors are often associated with slight weight loss for some patients. There is some evidence of increased genital infections from SGLT-2 inhibitors, though these effects are modest and easily managed in most cases.

What do the clinical trials tell us?

What do the clinical trials for AstraZeneca and Lilly/Boehringer Ingelheim’s combination pills (DPP-4 + SGLT-2 inhibitors) tell us? In past trials, both combinations have led to impressive A1c reductions (greater than 1% A1c reduction), as well as improvements in fasting and after-meal glucose levels. While no head-to-head studies have been conducted that compare the two fixed-dose combinations currently in development, they have both shown fairly similar results in their separate clinical trials.
What are the advantages and disadvantages of DPP-4/SGLT-2 fixed-dose combination drugs?

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tr>
<td>• A1c reductions &gt;1%; at least as effective as SGLT-2 inhibitors or maybe even GLP-1 agonists</td>
<td>• Increased risk for urinary tract and genital infections (from SGLT-2 inhibitor)</td>
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<tr>
<td>• Oral drug (just a pill; no needles)</td>
<td>• Slight nausea for some patients (from DPP-4 inhibitor)</td>
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<tr>
<td>• Single pill combines two drugs</td>
<td>• Not recommended for patients with renal impairment</td>
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<tr>
<td>• Potential weight loss (from SGLT-2 inhibitor) and reduction in blood pressure</td>
<td>• Unknown how affordable they will be</td>
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<tr>
<td>• Mild side-effect profile</td>
<td>• Little to no hypoglycemia</td>
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<td>• Little to no hypoglycemia</td>
<td>• Single co-pay</td>
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Who might benefit from DPP-4/SGLT-2 fixed-dose combination drugs?

DPP-4/SGLT-2 inhibitor combinations are intended to be used primarily by people who ...

• Have type 2 diabetes
• Don’t like needles
• Are currently taking other oral medications but are not reaching A1c goal levels
• Are currently taking a DPP-4 inhibitor and SGLT-2 inhibitor as separate pills
• Do not have an elevated risk of pancreatitis
• Do not have renal impairment

What options are there for DPP-4/SGLT-2 fixed-dose combination drugs?

There are no DPP-4/SGLT-2 FDCs currently available, though some are expected to come to market in the near future. The Jardiance/Tradjenta combo is already undergoing review by the FDA, and the Onglyza/Farxiga combo could be submitted to the FDA later this year. Assuming that the FDA review process takes about one year, Jardiance/Tradjenta could be available by early to mid-2015, and Onglyza/Farxiga could be available by late 2015 to early 2016.
Why There is No Single Solution to the Obesity Epidemic – Dr. Jim Marks of the Robert Wood Johnson Foundation on Building a Culture of Health in America

by Melissa An, Emily Regier, Manu Venkat, and Kelly Close

Twitter summary: diaTribe sits down w/ the very highly regarded Robert Wood Johnson’s Dr. Jim Marks @ ObesityWeek, discuss the need for “culture of health” and social/policy changes

Short summary: The diaTribe team recently sat down with Dr. Jim Marks, the Senior Vice President of the Robert Wood Johnson Foundation. We discussed his views on the current state of diabetes and obesity and what he feels must be done to make real, impactful change. He explained the need to create a “culture of health” in America, and that both policy and societal changes are critical to improving this country’s health.

At the Obesity Week Conference in Boston, we had the opportunity to sit down with Keynote speaker Dr. Jim Marks (Senior Vice President, Robert Wood Johnson Foundation). In our discussion, we got to hear his perspective on the Robert Wood Johnson Foundation’s (RWJF) work in fighting childhood obesity and what he believes are the greatest challenges and opportunities in the field. As he did in his keynote address, he spoke eloquently about the importance of building a “culture of health”, which he stressed goes far beyond simply ensuring the absence of disease. Dr. Marks also cautioned against putting too much stock in technology as an agent of change, as he believes that the social and policy components of the healthcare system are far more powerful. He concluded on an optimistic note, saying that while American health and healthcare certainly has its flaws, “the underlying slope is improvement.”

Manu Venkat: Thank you so much for meeting with us, Dr. Marks! As the efforts to work against childhood obesity stand now, what’s the area that you think currently needs the most focus?

Dr. Jim Marks: When we think about the areas needing help, we’ve been encouraged by the signs of progress from places around the country that are reporting reductions in childhood obesity. But they’re early and they’re fragile. The early concern there is that the reductions tend to be more in white high-income populations. So the problems with disparities, especially in African Americans and Hispanics, are in essence, growing. This is clearly an area where we want to do more work in the future. The only place that we’ve seen slightly greater improvements in African Americans and Hispanics is in Philadelphia. Philadelphia also gives us hope that targeting efforts to those families whose children are at great risk can be successful in improving their health.
Kelly Close: We’ve been really lucky to see what Partnership for a Healthier America (PHA) has been doing and have been impressed with their work. We wonder if you could say a word about how the Robert Wood Johnson Foundation views this?

Dr. Jim Marks: The real point is that we need to move toward a culture that supports health. Really, every sector needs to be involved, whether it’s transportation, agriculture, or the private sector. All of these have a role to play. If we had to say one statement, it is that health begins, is nurtured, protected, and preserved, in our communities and our families. It’s not so much the doctor’s office. And we need to recognize that imbalance in our society.

To put this in more context, what we found in our obesity work is that it’s a proof of concept of what it takes to create a change in culture. Think about Earth Day and recycling – these are normal now but forty years ago, they were not. When I grew up, seatbelts and airbags – you couldn’t get them in cars and then they were extras you could purchase. Now they’re routine and everyone uses them. There are ways culture changes can occur. We can think of obesity and its causes as one of the most difficult areas to change. It’s related to an environment of food and physical activity. We’ve supported a lot of work on the issue and we’ve seen progress and that gives us hope that we can see a broad culture of health embraced and developed. It also gives us recognition that obesity work won’t be sustained unless it is embedded in a bigger vision of health and well-being.

Emily Regier: If you had to pick one problem in obesity that you think is most solvable, what would it be and what would you do to solve it?

Dr. Jim Marks: I can’t pick one and I won’t. The central thing about the obesity epidemic is that it’s an aggregate of lots of little changes that have occurred in our nation. The net effect is a gradual accumulation of inactivity and increased calorie consumption. I’ve spoken to medical students and have asked them if they have ever in their lives had to get up to change the TV station. No one raises his or her hand. That is a bit of a silly example, but it illustrates the larger point that activity has been engineered out of our lives. When you go into most buildings now, stairwells are hidden behind a fire door and elevators are front and center. When you go into old buildings, stairways are prominent and sweeping and grand. And the elevator’s around the corner – a single elevator that is really only there to help move equipment or to help those with disabilities. All of those things are examples of the changes.

Manu Venkat: Given your perspective on so many different diseases, can you provide any big takeaways from other disease areas’ efforts that have worked very well?

Dr. Jim Marks: I think that there are always differences between disease areas. The most common one that people make comparisons to is probably tobacco. But
“Tobacco is lethal when used as intended. Food is not that way. Food is part of every culture and part of celebration.”

“I believe that the greatest challenge to providing good quality medical care to everybody who needs it is that we have too much disease in our nation and it is occurring too early in life. So we need to make it fun to be active, not a chore. Healthy food is fun to eat and cool to eat – it’s not a deprivation. Those things will happen outside of healthcare. If I could think of a population measure to show what was happening and in more than just children, it would be age at diagnosis of diabetes. Because we know that it’s moving younger and younger, but as people are becoming more active and watching their weight more, we expect to see the age at diagnosis move up. That could become an early indicator that improvements in obesity are paying off with a decrease in disease.”

Dr. Jim Marks: I believe that the greatest challenge to providing good quality medical care to everybody who needs it is that we have too much disease in our nation and it is occurring too early in life. So we need to make it fun to be active, not a chore. Healthy food is fun to eat and cool to eat – it’s not a deprivation. Those things will happen outside of healthcare. If I could think of a population measure to show what was happening and in more than just children, it would be age at diagnosis of diabetes. Because we know that it’s moving younger and younger, but as people are becoming more active and watching their weight more, we expect to see the age at diagnosis move up. That could become an early indicator that improvements in obesity are paying off with a decrease in disease.

Kelly Close: On a related note, Dr. Marks, we’re increasingly troubled by the poor incentives for young medical students going into areas where they’ll be addressing a lot of obesity and diabetes. What can we do?

Dr. Jim Marks: I think that’s a challenge because that’s caught up in the cost of the healthcare system. Most medical students graduate with a lot of debt, and that makes it hard to go into primary care or low paying specialties. They’re counseled on their debt too; they’re told if you’ve got $100,000 in debt, how much it will cost to pay it off, and what that means you can afford in terms of a house, a car, and other expenses. Diabetes prevention will not be something that’s ever reimbursed well. I suspect we’ll be moving much more toward mid-level providers: nurses, counselors at the YMCA/YWCA doing the diabetes prevention work. Depending on the individual, some may need close medical advice, or close medical oversight, and others do not. I think we need to think more holistically as a society. Suppose you went to Walmart and you had prediabetes and the nurse said, “Let me go and look at your shopping list and show you how to make changes.” That could be a kind of training that could be easily available at a Walmart. You don’t have to have a physician or even a serious dietitian.
Melissa An: What RWJF project is getting started now that you are particularly excited about?

**Dr. Jim Marks:** If I were to say which one, I think it’s the coming together of sectors of society, and the recognition that health is different from absence of disease. What people want is not health in the way we in healthcare think they want it; they want a good life. I’ve got two grandkids and a third on the way. I want to get to know my grandkids; I want to play with them. I like the work I do; I want to keep working. I may have to take care of the grandkids if their parents work. My best shot to be able to do those things, and to travel, is to maintain my health. Don’t smoke, watch what I eat, exercise, get my flu shots. I talked with L’Oreal in the past, and how do they market a product? They put in the lifestyle that potential customers want. We have to think of health that way. It’s the framing of health as the World Health Organization definition: physical, social, and mental wellbeing. When you have health like that, then you have the best chance for a fulfilling life, warm relationships, a job that’s meaningful, a close family, and a close community. That’s the American dream: equality of opportunity. We’ve got to put health in the middle of that dream instead of framing it as the absence of suffering only.

The other part, which I’ll say as my closing, is that people are very concerned about our health and healthcare. The only scientifically defensible position is optimism. A hundred years ago, one in four infants died before their fifth birthday; almost every family had that happen. People used to live 40 to 45 years; they live 30 years longer now. The leading causes of death were diarrhea, respiratory disease, and things like that, which are now uncommon causes of death in this country. It’s sort of like the stock market with ups and downs, but the underlying slope is improvement.

**Kelly Close:** Dr. Marks, we can’t begin to thank you enough for sharing your time with us today. Your Foundation is a beacon to all working on public health and we’re so lucky that Obesity Week persuaded you to speak to the many thousands of doctors, nurses, researchers, policymakers, and advocates here and we thank you enormously for spending time with the small group of us as well.

**Dr. Jim Marks:** Of course – and thank you so much for all you are doing on the public health front as well.
Four Tips I Learned for Managing Diabetes in School

by Tia Geri

Twitter summary: High schooler w/ #T1D gives top 4 tips for managing #diabetes in schools: tell teachers + friends, have extra gear, + take breaks when low

Pop-quizzes, tennis practice, homework... then add diabetes into the mix. School is a lot to handle for any teenager, so we decided to go to the source and get some tips from a high school student herself. Meet Tia Geri - a 14-year-old freshman from the Bay Area who has been managing diabetes since she was eight years old. You heard from Tia, of course, with her renowned piece on what to tell patients of children with diabetes what’s what! This issue, we’ve got some of Tia’s tips about managing diabetes in school. Have your own tips you want to share? Send them to comments@diatribe.org!

1. **I Tell My Teachers About Diabetes.** When I stuff my mouth with marshmallows in the middle of class because of a low, diabetes is not naturally the first thing that comes to most peoples’ minds. This can lead to some pretty strange questions. For substitute teachers, I try to tell them right before class starts so I don’t get weird looks during class. Usually, I just say that I have type 1 diabetes and that sometimes I may have to eat in class, or that I may need to use my insulin pump to manage my blood sugar. I show them my pump and tell them that it might beep, so the teacher won’t get upset thinking I’m on my phone texting. The short explanation does wonders – I have never had someone object to my eating or using my pump in class. For regular teachers, I always set up a meeting before the school year starts – this meeting tends to be a bit longer than with the substitute teacher, as I’ll go over in more depth symptoms of hypoglycemia or hyperglycemia, what to do in case of an emergency, how my blood sugar may impact my performance at any given time (more on that later!), and more.

2. **I Tell My Friends About Diabetes:** I want my friends to understand my diabetes management, since they can often be the most helpful people when I have a low or high blood sugar. If they know what it means when I have a low blood sugar, they won’t hesitate to give me a snack and make sure I’m okay. And in class, if anyone ever wonders why I am eating or using my cell phone, it is great to have someone else able to explain, especially when I have a low blood sugar and don’t feel very well. I know people that don’t feel comfortable telling their friends, but through my personal experiences, I have found that my friends tend to be helpful and ask good questions. Sometimes, I just tell one friend, and they can relay the message to everyone else, which takes a lot of explanation.
3. I Always Keep Extra Supplies at School. There is a lot to keep track of in diabetes, which makes it easy to run out of test strips, a pump or meter battery, the hard candies I use to treat lows, etc. The worst of all is when I just flat out forget everything at home! I always keep backups in every classroom. And this year, since I have a locker, I keep spares of everything in there as well. My spare supplies consist of: one container of strips, one meter, one pricker (lancet device), several pricker refill cartridges, two AAA batteries (for my insulin pump), and assorted hard candies and glucose tablets.

4. I Never Take Tests or Quizzes When My Blood Sugar is Low. I've found it’s always better to wait a bit and take the test or quiz later. I used to just take the test anyway, because I thought I was doing well regardless of my lows. I decided to make a change when I took a math test and got 0% on the section that I did when I was low. In that case I was able to retake the test, but I learned my lesson! Now, I eat a snack and wait until I am back in range before starting. Even when I think I am fine, I can skip problems, make easy mistakes, and answer in the wrong answer blanks when I’m low. Other people with diabetes have told me that they feel the same way when they’re low – they think they’re doing well in the moment, but then they look over their work later and realize how many silly mistakes they’ve made.

trial watch

T2 Phase 3 Study to Evaluate Safety and Efficacy of Added Exenatide to Basal Insulin Glargine in Type 2 Diabetes
ClinicalTrials.gov Identifier: NCT02229383
http://clinicaltrials.gov/ct2/show/record/NCT02229383

This 28-week study will test the safety and efficacy of adding Bydureon (once-weekly exenatide injection) to basal insulin glargine compared to adding placebo. Bydureon is a once-weekly GLP-1 agonist, a medication that stimulates the body to produce insulin only when blood glucose levels become too high. The trial’s primary outcome is A1c reduction at 28 weeks. The trial aims to enroll 440 patients with type 2 diabetes. The trial is located in six countries, including 22 states in the US: AL, AZ, CA, FL, GA, IL, IN, KS, LS, MI, MS, NS, NC, OH, OR, SC, SD, TN, TX, UT, VA, WA. The trial was recently posted and only a few sites are currently recruiting – for more information about the trial or when a study location near you will begin recruitment, please contact Elise Hardy at elise.hardy@astra-zeneca.com or call 1-877-240-9479. –AJW