

S. HRG. 119–509

A FUTURE WITHOUT TYPE 1 DIABETES: ACCELERATING BREAKTHROUGHS AND CREATING HOPE FOR FISCAL YEAR 2026

HEARING BEFORE THE COMMITTEE ON APPROPRIATIONS UNITED STATES SENATE ONE HUNDRED NINETEENTH CONGRESS FIRST SESSION

SPECIAL HEARING
JULY 9, 2025—WASHINGTON, DC

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A FUTURE WITHOUT TYPE 1 DIABETES: ACCELERATING BREAKTHROUGHS AND CREATING HOPE FOR FISCAL YEAR 2026

WEDNESDAY, JULY 9, 2025

U.S. SENATE,
COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The Committee met at 10:00 a.m. in room SD-106, Dirksen Senate Office Building, Hon. Susan Collins, chair, presiding.

Present: Senators Collins, Murkowski, Moran, Hoeven, Boozman, Capito, Hyde-Smith, Britt, Murray, Durbin, Shaheen, Baldwin, Van Hollen, and Ossoff.

BREAKTHROUGH T1D 2025 CHILDREN'S CONGRESS

OPENING STATEMENT OF CHAIR SUSAN M. COLLINS

Chair COLLINS. What an obedient crowd we have here today.

This hearing will come to order. Good morning, everyone and welcome to our Nation's Capitol. I am so pleased to convene this biennial hearing in conjunction with the Breakthrough T1D 2025 Children's Congress. It is wonderful to host you and your families at the Senate Appropriations Committee.

As the founding co-chair of the Senate Diabetes Caucus, I have long promoted diabetes research as one of my top priorities. Your advocacy for life-changing research to prevent, treat, and ultimately cure type 1 diabetes (T1D) inspires me. Looking out at this field of blue inspires me, but looking at your faces inspires me even more.

Over the years, I have met so many wonderful children living with type 1. Individuals such as my summertime neighbor, Ruby Whitmore, who is going to be testifying today; Caroline Cardoza from Brunswick, Maine, who is 6, and joins us as a delegate; Aidan Sweeney, whom I first met when he was only age 4, and now he is age 23. There is so many more, including our New Hampshire Delegate, Rachel White, who is also testifying today.

There are adults who are living with type 1 as well, including Nicole Wiesendanger, a teacher of who has lived with diabetes for more than 37 years and happens to be married to my nephew. I told Nicole I would work her in.

[Laughter.]

Chair COLLINS. More than 170 delegates have traveled to Washington from across the United States and five other countries to share with Members of Congress their personal stories of what it

is like to live with type 1 diabetes. And I want to tell you how much your personal stories really matter. They motivate and educate Senators and House Members to get involved and to support funding for the research that is necessary to deliver new treatments, more effective technologies, and one day, a cure.

Let me tell you about my very first meeting with a family who had a son with type 1 diabetes. I was a brand new Senator, it was back in 1997. They came to my Portland, Maine office. And this little boy looked up at me and he said, "I wish I could just take one day off from having diabetes, my birthday, or Christmas, just one day." But of course he could not. And type 1 diabetes today is a disease that one can never outgrow. But I am confident that that is going to change.

Just this morning, 6-year-old Caroline Cardoza, from Brunswick, Maine, told me that she is a warrior for the cause of finding a cure for diabetes.

So these personal stories are why I started the bipartisan Senate Diabetes Caucus in 1997. Since we started the caucus, and it has been bipartisan from the beginning, because diabetes does not care if you are a Republican, or a Democrat, or an Independent, or a Green, or what.

We have made some real progress. It has been exciting, Federal funding for diabetes research has increased from \$319 million in 1997 to more than \$2.3 billion. That is due to your advocacy, and that includes a \$10 million increase enacted just last year. These investments are yielding results.

One program in particular has led to technologies that will allow better control of diabetes. That is the Special Diabetes Program (SDP) at the National Institutes of Health (NIH), and how lucky we are to have Dr. Rodgers joining us again this year. This critical program provides \$160 million a year for type 1 diabetes research, supplementing the regular appropriations for diabetes. In 2017, the Special Diabetes Program led to the development of the first ever FDA (U.S. Food and Drug Administration) approved artificial pancreas that can control blood glucose levels automatically.

And I am curious, how many of you here today are using the continuous glucose monitor? All right, that is wonderful.

[Applause.]

Chair COLLINS. That shows the difference that the research can make. More recently, clinical trial data resulting from an SDB-supported Clinical Islet Transplantation Consortium, have contributed to the development of the first ever stem cell-based research, and treatment for type 1 diabetes. This was developed through research by Dr. Doug Melton at Harvard University who has two children with type 1, and was determined to find a cure.

So here is the exciting news which Dr. Rodgers will talk about further today: Of the 12 individuals enrolled in the clinical trial, 10 of them no longer need insulin after 1 year. Imagine that. So today, we can be ever more hopeful that one day we will live in a world where type 1 diabetes can be cured.

Another important component of the program, which I know is of particular interest to the Senator from Alaska, supports prevention and treatment services for American Indians and Alaskan Natives who experience type 2 diabetes at nearly three times the Na-

tional average. The Special Diabetes Program must be extended again this year; otherwise, it expires in September. We work together to secure the first funding increase for the SDP in 20 years, but we have got to extend the program all together.

I have introduced legislation with the co-chair of the Caucus, Senator Jeanne Shaheen, to reauthorize this program through the end of 2027. So as you make your visits today, please ask Members to co-sponsor that bill so that the Special Diabetes Program does not expire in September.

Let me close by saying how truly inspiring it is to look out and see all of the children who are here today, their parents and loved ones who have come to DC to share your personal stories, and to continue advocating for increased research funding so that we expedite, we speed up the search for a cure. Your passion and hope for a cure gives us the confidence that it will happen.

Thank you so much for being here today.

I will now turn to my friend and colleague, the Vice Chair of the Senate Appropriations Committee, Senator Murray, for her opening statement. Thank you, Senator.

[Applause.]

Vice Chair MURRAY. Thank you.

Chair COLLINS. Thank you. Thank you.

STATEMENT OF VICE CHAIR PATTY MURRAY

Vice Chair MURRAY. Thank you very much, Madam Chairman. And just a point of personal privilege before I speak about this topic, I do want to acknowledge the tragedy in Texas, and our thoughts are with the families who lost loved ones, and we thank all of our first responders who rushed into danger. I know that all of us here are ready to help Texas recover and rebuild. And I say that on behalf of all of us here in this Committee.

With that, thank you again, Chair Collins, for again convening this really important, impressive hearing to talk about the NIH Special Diabetes Program's critical work that supports life-changing research for millions of people who are living with type 1 diabetes. And in particular to hear from all the kids and young adults who are living with type 1 diabetes who came all the way here today to talk about why this program matters. I know all of you have traveled from all over the country. I do not think anybody made it here from Washington State, it is a long trip but—oh, in the back, awesome, great to see you.

I want you to know that your voices make a huge difference in making sure that Congress takes action to treat and eventually cure type 1 diabetes. It is important that all of us understand your experiences with diabetes, which is, of course, what this hearing is all about. And of course, it is important that we improve our understanding of this disease itself, which is what the NIH Special Diabetes Program is all about. This program has a great history of accomplishment. Getting new artificial pancreas—pancreatic devices to market, bringing us new medication to delay type 1 diagnosis, and improving care for patients with serious complications, and more breakthroughs that we all know are just around the corner.

This work is life-changing which is why I do want to really express my concern today about the fact that the Trump administra-

tion is terminating or freezing more than 260 grants from the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The care and research that people are counting on is really in jeopardy and your voices are important today. Four of those canceled NIDDK grants are in my home State of Washington, including a clinical trial looking at blood pressure in 200 hemodialysis patients and a grant to train the next generation of researchers.

I know that at Columbia University, President Trump terminated funding for research on how type 1 diabetes affects bone strength in kids. I do not think anyone here needs us to explain why that is so important. We need to strengthen bones and avoid fractures, so everyone can run, and play, and compete in sport, and live life to its fullest.

So, I want to be clear here today: Trump does not get to decide funding for diabetes; Congress does. And I know Members on both sides of the aisle are committed to making sure we maintain strong investments in this work. But we need more than just talk right now. We need to stand up and reject what is happening right now to biomedical research at NIH. And I know that my colleagues understand that as well.

So again, I really want to thank all of you for being here today, because when it comes to defending this research, when it comes to pushing back against these kinds of cuts and funding freezes that we are seeing, the most effective tool we have is our voices, like the advocates in this room. The strongest way all of you can push back is by speaking out, just like you are doing today, sharing your stories, which are so important, and make sure everyone knows what is at stake. And I know that with the incredible advocates like all of you, we are going to keep making progress, and we are going to keep investing in life-changing research and eventually cure type 1 diabetes.

Thank you very much, Madam Chair.

Chair COLLINS. Thank you.

[Applause.]

Chair COLLINS. I mentioned that Senator Shaheen from New Hampshire has been my longtime co-chair of the Senate Diabetes Caucus. We worked together as a team with many of our colleagues who you see here today. She is delayed because of a session in the Senate Armed Services Committee. She will be joining us later, but she asked that I quickly read a brief opening statement before we turn to our witnesses.

STATEMENT OF SENATOR JEANNE SHAHEEN, READ BY CHAIR COLLINS

Chair COLLINS. This is from Senator Shaheen:

"I want to extend a warm welcome to all of the witnesses and the more than 170 advocates who have traveled to Congress today to participate in this year's Children's Congress. Your tireless advocacy for yourself, your families, your friends, and everyone living with type 1 diabetes, including my own granddaughter, is truly inspiring.

"While I regret that I cannot be with you in person, I do want to take a moment to recognize Rachel White from North-

ampton, New Hampshire”—not far from Maine—she did not write that part, I added that part—

[Laughter.]

Chair COLLINS [continuing].

“Who you will be hearing from shortly. Rachel’s story is one that has deeply moved me. As a teenager, she balances a demanding academic schedule, collegic level athletics, and dedicated advocacy work, all the while managing the daily challenges of type 1. She will share what that means in her own words, but let me say from my family’s experience, it requires extraordinary—extraordinary discipline, strength, and resilience.

“To my colleagues, I urge you to listen closely to these advocates. Their stories are powerful reminders of the urgency of our work. We must do more to support people living with diabetes, starting with increased Federal investment in research through the NIH and the Special Diabetes Program. Thanks to these programs, we stand on the brink of a cure.

“This is the moment to deepen our commitment to these advocates, not to abandon it. We must also finally pass comprehensive legislation to make insulin affordable for every American, namely, our Bipartisan Insulin Act I have co-authored in previous Congresses with Senator Collins.

“Thank you again for sharing your stories and for being here today. I wish you all a meaningful and memorable Children’s Congress.”

[Applause.]

Chair COLLINS. Thank you, Senator Shaheen. Thank you.

We will now turn to our witnesses. Our first witness I am proud to welcome from the Great State of Maine is Ruby Whitmore. Ruby is 16 years old and was diagnosed with type 1 diabetes at age 5. I have known Ruby, literally, her entire life. She is a rising junior and plans to major in biochemistry in college with the goal of working in the emergency medical field of trauma surgery. Ruby, thank you so much for making the journey down from Maine to be with us today.

Our next witness, as I mentioned, is going to be Rachel White from Northampton, New Hampshire. Rachel is also 16 years old and was diagnosed with type 1 at age 11. She is a nationally ranked tennis player who aspires to play tennis at the collegiate level. Rachel, thank you for being here today to share your story.

After Rachel’s testimony, we will hear from Katie Bone. Katie was diagnosed with type 1 at age 11. Today, she is a professional rock climber and her passion for climbing led her to local Ninja Warrior competitions. She made her debut on American Ninja Warrior TV Show, becoming the youngest champion in the American Ninja Warrior Women’s Championship history. She is now working hard to qualify for the Olympics. Katie, thank you for being here today.

Finally, we are delighted to welcome Dr. Griff Rodgers. Dr. Rodgers is the Director—this is a mouthful—of the National Institute of Diabetes and Digestive and Kidney Diseases, or NIDDK, at the National Institutes of Health. Dr. Rodgers has led this institute since 2007, and he is here today to talk about the research ad-

vances made, thanks to Federal funding for diabetes research and the Special Diabetes Program. Dr. Rodgers, I want to thank you most sincerely for coming back. Every single one of the Children's Congresses that I have chaired since you have been head of the institute, you have been here to update us on the developments. I thank you for your dedication to this cause.

Thank you all for joining us.

With that, we are now going to start with Ruby's testimony. Thank you, Ruby.

STATEMENT OF MS. RUBY WHITMORE, BREAKTHROUGH T1D 2025, CHILDREN'S CONGRESS DELEGATE, OLD TOWN, MAINE

Ms. WHITMORE. Good morning, Chairwoman Collins, Senator Shaheen, Ranking Member Murray, and Members of the Committee.

My name is Ruby Whitmore, and I am a 16-year-old student from Old Town, Maine. I am honored to speak with you today, not just as someone living with type 1 diabetes, but as a student, an athlete, a volunteer, and someone who dreams of becoming a surgeon. Diabetes runs in my family, so it was not a total surprise when one summer my parents noticed the signs and took me straight to the doctor. I was just 5 years old. Now, more than 10 years later, I can say I have learned how to manage the disease, but it has also changed my life in ways that most people never see.

Managing type 1 diabetes is not something I ever get a break from. Even when everything is going well, it is always there, like an extra layer I have to think about that others do not. Playing sports makes it even more complicated. I have had to learn through experience how to balance my blood sugar before a game or during a race. And there have been times when I have had to sit out and treat a low in the middle of practice or a game.

It is frustrating sometimes because I do not want to worry about numbers, carbs, or whether my sensor is still reading correctly. But being open about those challenges has helped me take control of them. It has made me stronger and more confident in who I am. Despite the challenges, I have never let diabetes define what I can or cannot do. I play soccer on both school and travel teams. I run track. I serve as my school's Best Buddies Chapter President. I even had the opportunity to volunteer at Northern Light Eastern Maine Medical Center working with patients in both general care and neurosurgery.

My goal is to become a doctor, a trauma surgeon, because I want to help people the way my care team, especially my endocrinologist, Corey Webb, helped me. He has made a lasting impact on my life and I hope one day I can do the same for someone else. I volunteer, in part, because T1D has given me perspective and empathy for those in need, who also face extraordinary challenges, often without the support and resources that my family and friends have provided.

I want to take a moment to talk about my family. My dad also has type 1 diabetes, so I have grown up knowing what it looks like. This has put a great deal of stress on my mom, who is always there for us. She is the one not-so-quietly making sure I am okay, reminding me to bring sugar tablets, staying up when I sleep

through my pump alarms, and just being there every day. Even though I think of myself as independent, I know I would not be the person I am without her support. She is the reason I felt safe enough to be confident in living with this disease.

The burden placed on families dealing with type 1 is often invisible and often overlooked. I have been lucky to have access to the latest diabetes technology, like continuous glucose monitors and advanced insulin pumps which have made it possible for me to live a full active life. Advancements like these have been made possible by the Special Diabetes Program. I want to thank you for the recent extension of the SDP because it supports groundbreaking research and brings us closer to better treatments, and one day a cure.

I never want a young girl to think she cannot play sports because of her insulin pump. I never want a family to skip doses or ration supplies because of cost. Everyone living with type 1 diabetes deserves the chance to thrive. Your support makes that possible.

Thank you for your time, and thank you for investing in a healthier, better future for people like me.

[Applause.]

[The statement follows:]

PREPARED STATEMENT OF RUBY WHITMORE

Good morning, Chairwoman Collins, Senator Shaheen, Ranking Member Murray, and Members of the Committee.

My name is Ruby Whitmore, and I'm a 16-year-old student from Old Town, Maine. I'm honored to speak with you today not just as someone living with type 1 diabetes, but as a student, an athlete, a volunteer, and someone who dreams of becoming a trauma surgeon.

Diabetes runs in my family, so it wasn't a total surprise when one summer, my parents noticed the signs and took me straight to the doctor. I was just 5 years old. Now, more than 10 years later, I can say I've learned how to manage the disease—but it's also changed my life in ways that most people never see.

Managing type 1 diabetes isn't something I ever get to take a break from. Even when everything is going well, it's always there—like an extra layer I have to think about that others don't.

Playing sports makes it even more complicated. I've had to learn through experience how to balance my blood sugar before a game or during a race, and there have been times when I've had to sit out or treat a low in the middle of practice.

It's frustrating sometimes, because I don't want to worry about numbers, carbs, or whether my sensor is still reading correctly. But being open about those challenges has helped me take control of them. It's made me stronger, and more confident in who I am.

Despite the challenges, I've never let diabetes define what I can or can't do. I play soccer on both my school and travel teams. I run track. I serve as my school's Best Buddies chapter president. I even had the opportunity to volunteer at Northern Light Eastern Maine Medical Center, working with patients in both general care and neurosurgery.

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She's the one quietly making sure I'm okay—reminding me to bring sugar tablets, staying up when I sleep through my pump alarms, and just being there, every day. Even though I think of myself as independent, I know I wouldn't be the person I

am without her support. She's the reason I've felt safe enough to be confident in living with this disease.

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Your support makes that possible.

Thank you for your time—and for investing in a healthier, better future for people like me.

Chair COLLINS. Great job, Ruby. Thank you.

Rachel, would you please deliver your testimony?

STATEMENT OF MS. RACHEL WHITE, CHILDREN'S CONGRESS DELEGATE, NORTH HAMPTON, NEW HAMPSHIRE

Ms. WHITE. Good morning, Chairwoman Collins, Senator Shaheen, Ranking Member Murray, and Members of the Committee. Thank you so much for giving me the opportunity to be here today.

My name is Rachel White and I am a high school student, a nationally ranked junior tennis player, and I live with type 1 diabetes. My diagnosis came just before I turned 12. My mom noticed something was not right. I was eating and drinking water non-stop, but I was losing weight. I had just grown an inch, but I had also lost 5 pounds. I started waking up in the middle of the night to use the bathroom, which had never happened before. At the doctor's office, no one was immediately alarmed, but my mom insisted on blood work, and that is when everything changed.

My blood sugar was over 600. My A1C was over 14. I had type 1 diabetes. And my life, as I knew it, was suddenly and completely different. At 11 years old, I had to learn how to manage a disease that has no cure and never takes a day off. That was the scary part. A typical day for me now starts at 6:30 a.m. I eat the same breakfast almost every day because it helps keep my blood sugar stable. I do the same for lunch and snacks even though it gets boring because steady blood sugars help me get through my intense school and tennis schedule.

I train for tennis anywhere from 1 to 3 hours a day. It is a true passion of mine. My goal is to eventually play tennis at an elite college, but tennis with T1D is a real challenge. I carry juice with me at all times because I tend to have low blood sugars when playing. I check my blood sugars on changeovers, not to get an advantage over my opponent, but to make sure I am safe.

Having low blood sugar can make me feel dizzy, unfocused, and there is a risk of passing out. While most players think about winning the next point, I have to think: Am I crashing? Do I need juice? Did I take too much insulin? Adding this extra challenge to an already mentally demanding sport is difficult, at times very frustrating. However, I choose to move forward. Every single day, I am making complex, high stakes decisions while trying to live the life of a normal teen.

That is why I am here today to ask you to please keep supporting the work that makes life with T1D a little more livable, and one day curable. Thank you for extending the Special Diabetes Program through September. The research the SDP funds is the reason we have better devices, smarter insulin pumps, and more hope than ever. I hope you will extend the program for years to come so it can continue to deliver treatments and cures that will improve the lives of millions of Americans like my own.

My family and I truly believe that with your support and improvements and technology, a cure for this disease in the near future is very much a possibility. I am grateful for the tools I have now. I recognize I am very fortunate that my family has been able to support me in this journey, but I dream of a future where I do not have to carry juice in my tennis bag, explain to a chair umpire that I have T1D, check my blood sugar in the middle of a math test, or wonder what will happen if my insulin does not arrive on time.

Thank you, Senators, for taking the time to listen to my story and for supporting all of us living with type 1 diabetes. Speaking in front of you today has been an honor, and something I will remember for the rest of my life.

[Applause.]

[The statement follows:]

PREPARED STATEMENT OF RACHEL WHITE

Good morning, Chairwoman Collins, Senator Shaheen, Ranking Member Murray, and Members of the Committee.

Thank you so much for giving me the opportunity to be here today. My name is Rachel White, and I'm a high school student, a nationally ranked junior tennis player, and I live with type 1 diabetes.

My diagnosis came just before I turned 12. My mom noticed something wasn't right—I was eating and drinking water nonstop, but I was losing weight. I had just grown an inch, but I had also lost five pounds. I started waking up in the middle of the night to use the bathroom, which had never happened before.

At the doctor's office, no one was immediately alarmed, but my mom insisted on bloodwork and that's when everything changed.

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At 11 years old, I had to learn how to manage a disease that has no cure and never takes a day off. That was the scary part!

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While most players think about winning the next point, I have to think: *Am I crashing? Do I need juice? Did I take too much insulin?*

Adding this extra challenge to an already mentally demanding sport is difficult at times, very frustrating. However I chose to move forward.

Every single day, I am making complex, high-stakes decisions—while trying to live the life of a normal teen. That's why I'm here today—to ask you to please keep supporting the work that makes life with T1D a little more livable, and one day, curable.

Thank you for extending the Special Diabetes Program through September. The research the SDP funds is the reason we have better devices, smarter insulin

pumps, and more hope than ever. I hope you will extend the program for years to come so it can continue to deliver treatments and cures that will improve the lives of millions of Americans, like my own. My family and I truly believe that with your support and improvements in technology, a cure for this disease in the near future, is very much a possibility.

I'm grateful for the tools I have now, I recognize that I am very fortunate that my family has been able to support me in this journey, but I dream of a future where I don't have to carry juice in my tennis bag, explain to a chair umpire that I have T1D, check my blood sugar in the middle of a math test, or wonder what will happen if my insulin doesn't arrive on time.

Thank you Senators for taking the time to listen to my story, and for supporting all of us living with type 1 diabetes. Speaking in front of you today has been an honor, and something that I will remember for the rest of my life.

Chair COLLINS. Thank you very much. Great job.
Katie.

STATEMENT OF MS. KATIE BONE, USA CLIMBING SPEED NATIONAL CHAMPION, BERNALILLO, NEW MEXICO

Ms. BONE. Good morning, Chairwoman Collins, Senator Shaheen, Ranking Member Murray, and Members of the Committee. Thank you for the opportunity to share my story.

When I was diagnosed with T1D at age 11, my very first question to the doctor was not, "Why me?"; it was, "Can I still climb?" Climbing has always been my passion and I decided right away that T1D was not going to stop me from achieving my goals. That mindset has helped shaped everything I have done then—since then, from earning a spot on the youth and elite U.S. climbing teams, to becoming the youngest champion in American Ninja Warrior Women's Championship.

I have learned how to compete at the highest level while managing my diabetes around the clock. But T1D is relentless and carries an enormous toll on my body and my mental health. It is not something I can pause or ignore; it is often the simplest things that are not visible to the outside world that are the most difficult.

Sleep is a constant struggle. I consistently wake up to alarms, or unexpected highs and lows. And when you are not sleeping well, you are not recovering well, and that directly affects my ability to train, perform, and stay healthy.

I compete in China, Europe, and all over the world, and every time I go, I have to figure out how to manage my blood sugars, with unfamiliar food, different time zones, and new schedules, I have had to carry my own food across continents. And as a female athlete hormone cycles throw in another unpredictable layer. There are weeks when I figured out no longer works, and I have to readjust all over again.

People see me win a national title, or run up the wall on TV, but they do not see the 100-plus decisions I make every day. They do not see me stopping in the middle of training to treat a low, or the days I feel completely wiped out from a night of bad blood sugars. They do not see the toll it takes, because a lot of us with T1D carry it well, we have to. These challenges are very real, but I am still inspired by the progress that has been made, and hopeful about the potential cures to come.

Today, I wear a continuous glucose monitoring on my own—on my arm. It gives me a blood sugar reading every 5 minutes, and lets me see trends in real time on my phone. That technology means I do not have to stop climbing or competing just to poke my

finger. I also use an insulin pump to stay in range during training, competitions, and even during overnight filming for American Ninja Warrior.

The development of this technology did not happen by accident. It is a direct result of policymakers like you, who have funded the Special Diabetes Program. In fact a new study finds that that the SDP has led to at least \$50 billion in Federal health care savings. That is more than 10-fold return on your investment.

That is why I am here to strongly urge Congress to renew the SDP. The program funds the science that makes T1D more manageable, and it brings us closer to cures.

For millions of Americans with type 1 diabetes, the SDP means hope. It means the development of cell therapies that can replace insulin-producing beta cells. It means disease-modifying therapies aimed at preventing, slowing, halting, or even reversing T1D progression.

This week at Breakthrough T1D's Children's Congress, I have had the opportunity to meet so many young people, like Rachel and Ruby, who are also leading amazing lives because of research breakthroughs. We all imagine what our lives will be like when we have cures. I know we will get there, thanks to you.

Thank you again for hearing my story and for being our champions. Thank you.

[Applause.]

[The statement follows:]

PREPARED STATEMENT OF KATIE BONE

Good morning, Chairwoman Collins, Senator Shaheen, Ranking Member Murray, and Members of the Committee. Thank you for the opportunity to share my story.

When I was diagnosed with T1D at age 11, my very first question to my doctor wasn't "Why me?"—it was, "Can I still climb?"

Climbing has always been my passion. And I decided right away that T1D was not going to stop me from achieving my goals.

That mindset has helped shape everything I've done since then. From earning a spot on the youth and Elite U.S. climbing teams, to becoming the youngest champion in American Ninja Warrior's Women's Championship. I've learned how to compete at the highest level, while managing my diabetes around the clock.

But T1D is relentless and carries an enormous toll on my body and my mental health. It isn't something I can pause or ignore. It's often the simplest things, that aren't visible to the outside world, that are most difficult.

Sleep is a constant struggle. I consistently wake up to alarms or unexpected highs and lows. And when you're not sleeping well, you're not recovering well, and that directly affects my ability to train, perform, and stay healthy.

I've competed in China, Europe, and all over the world, and every time I go, I have to figure out how to manage my blood sugars with unfamiliar food, different time zones, and new schedules. I've had to carry my own food across continents.

And as a female athlete, hormone cycles throw in another unpredictable layer. There are weeks when everything I've figured out no longer works, and I have to readjust all over again.

People see me win a national title or run up the wall on TV, but they don't see the 100+ decisions I make every day. They don't see me stopping in the middle of training to treat a low, or the days I feel completely wiped out from a night of bad blood sugars. They don't see the toll it takes, because a lot of us with T1D carry it well. We have to.

These challenges are very real, but I am still inspired by the progress that has been made and hopeful about the potential cures to come.

Today, I wear a continuous glucose monitor on my arm. It gives me a blood sugar reading every five minutes and lets me see trends in real time on my phone. That technology means I don't have to stop climbing or competing just to poke my finger.

I also use an insulin pump to stay in range during training, competitions, and even during overnight filming for American Ninja Warrior.

The development of this technology did not happen by accident. It is a direct result of policymakers like you, who have funded the Special Diabetes Program. In fact, a new study finds that the SDP has led to at least \$50 billion in Federal healthcare savings—that's more than a 10-fold return on your Investment. That's why I'm here to strongly urge Congress to renew the SDP. The program funds the science that makes T1D more manageable, and it brings us closer to cures.

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This week at Breakthrough T1D's Children's Congress, I've had the opportunity to meet so many young people, like Rachel and Ruby, who are also leading amazing lives because of research breakthroughs. We all imagine what our lives will be like when we have cures. I know we'll get there thanks to you. Thank you again for hearing my story, and for being our champions.

Chair COLLINS. Thank you so much, Katie, for your testimony.
Dr. Rodgers, thank you for being here.

**STATEMENT OF DR. GRIFFIN P. RODGERS, M.D., M.A.C.P., DIRECTOR,
NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KID-
NEY DISEASES, BETHESDA, MARYLAND**

Dr. RODGERS. Thank you so much. Chair Collins, Vice Chair Murray, Senator Shaheen, and Members of the Committee, thank you for the invitation today to testify and for your long-standing support for type 1 diabetes research.

Research supported by the Special Diabetes Program, or SDP, has dramatically improved the health and quality of life of people with type 1 diabetes. This progress would not be possible without the support of my fellow witnesses as well as the people here today, those you represent across the country. All of you are true champions in advancing diabetes research. Thank you.

The long-standing Federal investment in diabetes research through the SDP has enabled us to take on challenges, drive innovation, and address research gaps beyond what we could do with support, with NIH's regular appropriations. We have been able to enroll more patients in longer trials to maximize our research investments. This approach has yielded incredible progress.

For example, SDP supported research has culminated in the first ever FDA approved preventive therapy for type 1 diabetes, the first ever FDA approved cellular therapy for type 1 diabetes, and multiple new FDA authorized artificial pancreas devices that have become the standard of care for many people living with type 1 diabetes, and including the children who you pulled in the room today.

These therapies were just far off goals when I first testified about SDP supported research in 2007. Today, they are realities that directly benefit people with or at risk for type 1 diabetes. These advances were made possible, thanks to your long-term investment in research, our close partnership with organizations like Breakthrough T1D, and the dedication of our clinical study volunteers and their families.

While we celebrate this progress, we are also vigorously building on it. A major current research goal and a high priority for people affected by the disease is to find a biological cure for type 1 diabetes. This involves understanding how insulin producing beta cells are lost and how they can be replaced and protected, including through transplantation. Additionally, scientists must work to de-

velop novel ways to protect transplanted cells from the attack by the body's immune system.

NIDDK's ongoing research complements industry's clinical trials, testing cell replacement strategy in people. Some of these trials use techniques that have their roots in SDP-supported research, including cell products and so-called encapsulation technologies that protect transplanted cells from ejection. We are confident that these complementary efforts will one day culminate in approaches to replace lost beta cells, cure type 1 diabetes, and eliminate the burden that comes with the disease management.

I am also pleased to report that SDP-supported research provides benefit beyond type 1 diabetes, for example, the artificial pancreas device developed with SDP support for the management of type 1 diabetes was recently approved for adults with type 2 diabetes, recent SDP extension enabled the launch of our expansion of ambitious studies related to diabetes complications, such as heart disease, and diabetic foot ulcers.

Understanding these complications is not only important for people living with type 1 diabetes, but additionally benefits those with type 2 diabetes. Conversely, we are using our knowledge from treating type 2 diabetes and applying it to type 1 diabetes. For example, SGLT2 inhibitor medications are improved to manage blood glucose levels in type 2 diabetes and have heart and kidney protective effects. Determining if these medications are safe and effective for people with type 1 diabetes could provide much needed tool for preventing multiple complications.

While we celebrate these and other incredible successes made possible by SDP, we will continue to pursue cutting-edge research such as applying artificial intelligence and machine learning technologies to type 1 diabetes research in new and exciting ways. With continued research, we know we can achieve our ultimate goal, preventing and curing type 1 diabetes.

Thank you. And I am happy to answer questions when the time is appropriate. Thank you very much.

[Applause.]

[The statement follows:]

PREPARED STATEMENT OF GRIFFIN P. RODGERS, M.D., M.A.C.P.

Chair Collins, Vice Chair Murray, and Members of the Committee, as Director of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), I thank you for your invitation to testify at this hearing on type 1 diabetes. On behalf of NIDDK and the other Institutes and Centers of the National Institutes of Health (NIH) within the U.S. Department of Health and Human Services (HHS), I am honored to be here today to update you on recent scientific advances and future research opportunities in type 1 diabetes and its complications, including research supported by the *Special Statutory Funding Program for Type 1 Diabetes Research (Special Diabetes Program)*.

Diabetes takes an enormous personal and economic toll on our country, but we are making great strides in reducing that burden through biomedical research. NIDDK supports the majority of diabetes research at NIH, which includes studies on both prevention and treatment of type 1 diabetes, type 2 diabetes, gestational diabetes, and diabetes complications. Funding from the *Special Diabetes Program* is part of the NIH investment in diabetes research, and it enables the agency to expand type 1 diabetes research beyond what is possible with our regular appropriations and to conduct clinical trials that follow more patients for longer periods of time than would otherwise be feasible. NIH's efforts have been complemented by our research partners—the U.S. Food and Drug Administration (FDA); the Centers for Disease Control and Prevention (CDC); academic institutions; and charitable, pro-

fessional, and patient advocacy groups such as Breakthrough T1D (formerly JDRF), the Endocrine Society, the American Diabetes Association (ADA), and the Leona M. and Harry B. Helmsley Charitable Trust.

Through the invaluable support of Congress, the tireless work of our researchers, and the dedication of our clinical research volunteers, we have made significant progress toward our goals of understanding, preventing, treating, and ultimately curing type 1 diabetes—with more progress on the horizon.

IMPROVING THE LIVES OF PEOPLE WITH TYPE 1 DIABETES

Type 1 diabetes is an autoimmune disease, where the immune system attacks and destroys the insulin-producing beta cells in the pancreas. People with type 1 diabetes (or their caregivers) must monitor their blood glucose (sugar) levels, administering insulin as needed depending on their food intake, physical activity levels, and other factors. This is an enormous burden, and despite constant vigilance, keeping blood glucose levels consistently in a healthy range can be a challenge. For over 25 years, NIDDK has deployed *Special Diabetes Program* funds toward research with high potential to improve the health of people with and at risk for type 1 diabetes, both in the short and long term.

One important way that we gauge our success is to determine whether our research findings are directly reaching and benefiting people with type 1 diabetes. I am pleased to report that NIH-supported research advances have dramatically improved the health and quality of life of people with and at risk of the disease, as well as their families. For example, *Special Diabetes Program*-supported research has culminated in the first ever FDA-approved preventive therapy for type 1 diabetes; the first ever FDA-approved cellular therapy for type 1 diabetes; and multiple new FDA-authorized artificial pancreas devices for children and adults that have become the standard of care for many people with type 1 diabetes.

While we are heartened by this progress, we also recognize there is more to achieve. The SEARCH for Diabetes in Youth study, supported by CDC and NIDDK, has reported that type 1 diabetes incidence is increasing in youth under age 20 in the United States.¹ It is imperative that we combat this increase by identifying the factors driving it and developing new prevention approaches for this younger population. Additionally, while the artificial pancreas has reduced the burden of managing disease, people with type 1 diabetes and their families want that burden reduced further—they want a cure. NIDDK remains committed to supporting critical research areas to achieve our longer-term goals, which include helping to identify potential cures.

IMPROVING GLUCOSE MANAGEMENT AND QUALITY OF LIFE

For people with type 1 diabetes, keeping blood glucose levels within a healthy range is a key step to maintaining good health and preventing or delaying the development of long-term complications of the eyes, kidneys, nerves, heart, and other organs. NIDDK, with *Special Diabetes Program* funds, has prioritized the development of new tools and technologies to help people control their blood glucose levels with less burden.

The *Special Diabetes Program* has contributed to this area by supporting the development of glucose management technologies, including artificial pancreas systems that automate insulin delivery in response to blood glucose levels. I am pleased to report that NIDDK and *Special Diabetes Program*-supported research contributed to the development or testing of most of the currently available commercial artificial pancreas devices. One of these devices was also recently FDA cleared for adults with type 2 diabetes who are taking insulin,² demonstrating the far-reaching benefit that *Special Diabetes Program*-supported research is having on daily management of disease for all individuals with diabetes.

We are extremely pleased that the research investment supported by the *Special Diabetes Program* has made such a significant and positive impact on the lives of people with the disease and their families. While we celebrate this progress, we are also looking ahead to developing the next generation of artificial pancreas systems. New technologies can enable the development of devices that are less invasive and burdensome, while improving durability, adaptability, reliability, and accuracy. We also have opportunities to augment these devices with artificial intelligence (AI)/machine learning (ML) tools, to optimize their function for individual users.

¹ <https://pubmed.ncbi.nlm.nih.gov/36868256>

² www.fda.gov/news-events/press-announcements/fda-roundup-february-28-2025

RESTORING BETA CELL FUNCTION

Technologies for managing type 1 diabetes are important tools for alleviating the burden of this disease, but they are not a cure. Finding a biological cure for type 1 diabetes that restores the body's ability to produce insulin and regulate blood glucose levels is another major, long-term goal of NIDDK- and *Special Diabetes Program*-funded research. I am pleased to report that decades of NIH- and *Special Diabetes Program*-supported research, including research conducted by the Clinical Islet Transplantation Consortium, an effort co-led by NIDDK and the National Institute of Allergy and Infectious Diseases (NIAID), paved the way for the June 2023 FDA approval of a cellular therapy—islet transplantation—for adults with type 1 diabetes whose disease cannot be managed using current therapies. This landmark achievement represents the first ever FDA-approved cell therapy for treating type 1 diabetes.³

While this therapy represents a major step forward in providing a cure for those with type 1 diabetes, islet transplant recipients must take long-term immunosuppressive medicines to prevent the body from attacking the transplanted islets. These medicines may cause serious side effects. Additionally, there is a shortage of cadaveric islets available for transplantation. These limitations underscore the need for additional research to develop more broadly available cell replacement therapies. Researchers are currently looking for ways to prevent islet transplant rejection without the need for long-term immunosuppression, such as by encapsulating islets with a material that protects them from immune system attack.⁴ Scientists are also using knowledge from the study of other diseases and applying it to type 1 diabetes. Based on the success of CAR-T therapy for cancer treatment, scientists in the *Special Diabetes Program*-supported Human Islet Research Network (HIRN) engineered immune cells that protect transplanted islets from immune system rejection without tamping down the protective parts of the immune system in a mouse model.⁵ This finding represents an exciting approach to advance islet transplantation, and it could prove useful for other organ transplantations, expanding the impact of the *Special Diabetes Program*.

In parallel with research to protect transplanted cells from immune attack, scientists are also vigorously studying ways to generate and preserve sufficient numbers of islets for transplantation. This research has already yielded success-cell products and encapsulation technologies developed in part with *Special Diabetes Program* support are now being tested in industry clinical trials. HIRN researchers are investigating how beta cells develop and mature with the goal of one day allowing for the production of new beta cells. HIRN researchers reported a groundbreaking discovery that pancreatic alpha cell dysfunction precedes beta cell loss in people who have a single type 1 diabetes autoantibody (a protein made by the immune system that signals an early stage of type 1 diabetes). This finding is paradigm changing and defines a new, distinct, early stage of type 1 diabetes. Additional studies of this early stage could pave the way for developing clinical interventions to protect or replenish beta cells.⁶

Additionally, HIRN has developed new models of type 1 diabetes, including sophisticated mouse models that mimic key features of human disease and three-dimensional laboratory models of human pancreatic islets, that will enable novel studies of pathophysiology and serve as platforms for pre-clinical testing of new therapies. Continued research through HIRN and other efforts holds promise to yield knowledge necessary to further develop cell replacement therapy as a type 1 diabetes cure.

PREVENTING TYPE 1 DIABETES INITIATION AND PROGRESSION

Preventing type 1 diabetes has been a long-standing goal of NIH-supported research. Toward this goal, research supported by the *Special Diabetes Program* culminated in the 2022 FDA approval of teplizumab as the first therapy that can delay the onset of stage 3 type 1 diabetes in people ages 8 and older with stage 2 T1D. Key research underlying this approval stemmed from a clinical trial conducted by the NIDDK- and *Special Diabetes Program*-supported Type 1 Diabetes TrialNet, which is a large, collaborative, international consortium designed to perform clinical trials of therapies to delay or prevent type 1 diabetes progression. TrialNet con-

³ www.fda.gov/news-events/press-announcements/fda-approves-first-cellular-therapy-treat-patients-type-1-diabetes

⁴ <https://pubmed.ncbi.nlm.nih.gov/37106151/>; <https://pubmed.ncbi.nlm.nih.gov/37543091/>; <https://pubmed.ncbi.nlm.nih.gov/35559682/>

⁵ <https://pubmed.ncbi.nlm.nih.gov/39636990/>

⁶ <https://pubmed.ncbi.nlm.nih.gov/35642629/>

tinues to be a unique and critical network for testing novel type 1 diabetes preventive therapies.

While we are excited about teplizumab's success, we also recognize that more research is needed to make type 1 diabetes prevention a reality for more people at risk of developing the disease. As such, TrialNet research continues to shed important light on possible prevention therapies, such as findings from clinical trials that the drug abatacept has beneficial effects on insulin-producing beta cell function but did not delay type 1 diabetes diagnosis, and that the drug hydroxychloroquine did not slow type 1 diabetes progression.⁷ TrialNet has one ongoing prevention trial testing a low dose of the immunotherapy drug anti-thymocyte globulin which showed promise in new onset diseases. The Network is also considering testing combinations of drugs with complementary mechanisms of action toward a longer-term goal of permanent prevention.

UNDERSTANDING THE CAUSES OF TYPE 1 DIABETES

Understanding the causes of type 1 diabetes could also help identify and advance new prevention strategies. We know that a person's risk for developing type 1 diabetes is dependent on both genetic and environmental factors. While research efforts have helped to uncover a large part of the genetic contribution to disease, less is known about environmental contributors to disease.

To identify these environmental components, NIDDK, through the *Special Diabetes Program*, supports an ambitious, long-term clinical research study called TEDDY (The Environmental Determinants of Diabetes in the Young). TEDDY has screened over 425,000 newborns, enrolling 8,000 who were at high genetic risk of type 1 diabetes. These children are followed until the age of 15 years old, and they and their families have donated over 6 million biological study samples to date.

We have reached a milestone in this study: the youngest TEDDY participant turns 15 this year, marking the end of the participant follow-up phase of the study. I am pleased to report that with this major accomplishment—made possible by decades of dedication by TEDDY researchers and families—final data analyses can begin. In the meantime, TEDDY researchers have already been analyzing vast amounts of data and generating a wealth of knowledge. They are looking at genes, proteins, and metabolites and are also studying the children's microbiomes, viromes, and environmental exposures to understand how these evolve during childhood and how they might influence disease. From this wealth of information, new insights are emerging. For example, analyses of thousands of blood samples from TEDDY children have identified proteins that can predict early stages of the disease, which could lead to improved methods to detect islet autoimmunity before clinical disease onset toward determining who is likely to progress to type 1 diabetes.⁸ Continued analyses of TEDDY data and samples—by both TEDDY researchers and the broad scientific community—are expected to continue to yield critical insights that can help us develop new strategies to prevent type 1 diabetes.

Other *Special Diabetes Program*-supported efforts are complementing TEDDY's research to understand factors associated with type 1 diabetes onset. For example, the Type 1 Diabetes in Acute Pancreatitis Consortium is studying type 1 diabetes and other forms of diabetes that occur during or after one or more episodes of acute pancreatitis (sudden inflammation of the pancreas) toward developing new prevention and treatment approaches.

PREVENTING AND TREATING DIABETIC COMPLICATIONS

People with type 1 diabetes are living longer than ever thanks to new therapies, devices, and other improvements in treatment. Therefore, it is imperative to find ways to prevent and treat the diabetes complications that can arise throughout the lifespan. *Special Diabetes Program*-supported research has already led to tremendous progress, such as research by the National Eye Institute's DRCR Retina Network that have transformed the treatment of diabetic retinopathy and diabetic macular edema worldwide, changing clinical practice guidelines for diabetic eye care.

Through *Special Diabetes Program* support, NIDDK recently began innovative consortia focused on combating type 1 diabetes complications to improve health outcomes, such as research to understand the neurocognitive impact of type 1 diabetes in children to mitigate the risk of developing neurocognitive complications in later life; identify mechanisms that promote the development of cardiovascular disease (CVD) in people with type 1 diabetes to develop CVD prevention and treatment

⁷ <https://pubmed.ncbi.nlm.nih.gov/36920087/>; <https://pubmed.ncbi.nlm.nih.gov/37708415/>

⁸ <https://pubmed.ncbi.nlm.nih.gov/37390828>

strategies; identify factors that restore awareness of hypoglycemia in adults with type 1 diabetes and impaired awareness of hypoglycemia; and address diabetic foot ulcer healing to prevent amputations. Research is also investigating expanding treatments for people with type 1 diabetes. For example, sodium-glucose cotransporter-2 (SGLT2) inhibitor medications, which are approved to help manage blood glucose levels in type 2 diabetes, have heart-protective effects and may also protect against kidney disease. Determining if these treatments are safe and effective for people with type 1 diabetes could provide a much-needed tool for preventing multiple important complications.

EMERGING OPPORTUNITIES IN TYPE 1 DIABETES RESEARCH

The scientific achievements that I described today are just a few examples of recent progress in understanding and combatting type 1 diabetes and its complications. Our efforts were significantly strengthened by the renewal of the *Special Diabetes Program* through the end of Fiscal Year 2025, which enables NIH to continue many of these successful, long-running programs. Sustained, long-term funding of the Program has allowed NIH to launch new clinical trials and support novel research areas. Maximizing the value of the *Special Diabetes Program* and responsibly administering its funds is one of NIDDK's highest priorities.

Throughout the years of SDP support, NIDDK has solicited input from scientific experts, patients, and other interested parties about future research directions in type 1 diabetes and its complications. The most recent workshop for gathering input was held in November 2024 under the auspices of the statutorily required Diabetes Mellitus Interagency Coordinating Committee. Numerous opportunities were identified to build upon the significant progress to date that could lead to new prevention and treatment strategies for people with and at-risk for type 1 diabetes, such as understanding heterogeneity of type 1 diabetes toward developing more precision medicine approaches; applying AI/ML to type 1 diabetes research, including better prediction models to inform prevention and management; developing cell replacement therapies toward curing the disease; and combating debilitating diabetes complications. NIDDK's support of type 1 diabetes research will continue to be guided by strategic planning efforts and input from scientific conferences and workshops. This input will continue to ensure that NIDDK-supported type 1 diabetes research benefits all Americans who are living with or at risk of developing type 1 diabetes.

CONCLUDING REMARKS

I appreciate this chance to share these exciting scientific advances, ongoing efforts, and emerging opportunities in type 1 diabetes research. We are extremely grateful for the continued support of Congress, which provided the recent historic increase in Special Diabetes Program funds, that has allowed NIH to vigorously support research to combat type 1 diabetes and its complications. We look forward to continuing our strong partnerships with patient advocacy groups, professional organizations, research institutions, and our sister Federal agencies to advance our research objectives. We also thank our dedicated clinical study participants, without whom the clinical research I described today would not be possible. The *Special Diabetes Program* has catalyzed remarkable progress in type 1 diabetes research and has ushered in a new era where individuals with type 1 diabetes have significantly improved health, longevity, and quality of life.

Thank you, Chair Collins, Vice Chair Murray, and Members of the Committee. I will be pleased to answer any questions you have.

Chair COLLINS. Thank you, Doctor. Thank you.

Ruby, I want to direct my first question to you. First of all, I was truly moved by your tribute to your mother, and I know what an important role that she has played in helping to keep you healthy. Your family, unlike some others, has had a lot of experience with type 1 diabetes, including your dad, but a lot of your friends, your coaches, your teachers have had no experience with it. Could you talk to us a bit about how you educate your coaches, your teachers, your friends about your special needs?

Ms. WHITMORE. That is a really good question. Well, the first thing I think of, my soccer coach for school is actually type 1 diabetic.

Chair COLLINS. Really?

Ms. WHITMORE. So he always has stuff. But my other coaches, they are all very understanding, and I just tell them, I say, "I am diabetic, and I need—sometimes I need to take a break." And they just tell me, they are like, that is fine, just tell us. And I have a couple of my other coaches keep stuff in their bags now just because I have told them.

I think really you just have to tell people about it because they are not going to know if you do not—if you do not tell them. That is not something somebody ever, like, ever thinks of. You do not see somebody sitting on the sideline and think: Oh, they are diabetic, that must be why they are out—you just need to—I think you just need to inform people. And yeah, my friends are really good about it, too, just telling people. Yeah.

Chair COLLINS. Dr. Rodgers, I was thinking of Ruby's family and others where there are maybe more than one member of the family with type 1 diabetes, you mentioned that one of the breakthroughs that we have had is the medication that can delay the onset for someone who is at risk. Could you explain that a bit more to us?

Dr. RODGERS. With the support that we have received from SDP actually we have developed a reclassification, if you would, of type 1 diabetes realizing that it exists in people who are at genetic high risk some triggering event leads to their immune system, to attack the beta cells, ultimately with the production of antibodies, but still at a level with normal blood sugars. But then that is ultimately followed by a period of the blood sugar being abnormal and then ultimately to clinical type 1 diabetes.

What the funds have been able—allow us to do is actually to look for therapies that could prevent the onset of clinical type 1 diabetes by treating them in earlier stages. Initially, when the blood sugar is not completely abnormal, but still high, and then an earlier stage when only there is a presence of these antibodies.

And in fact a number of years ago, following the work that was done in a consortium that we developed called TrialNet, a drug, teplizumab, was actually developed with this intended purpose. And it has shown for the first time that one can delay the onset of type 1 diabetes for at least 3 years in individuals who receive this therapy. Three years may not seem like a lot, but imagine not having to inject insulin and manage the disease and the other issues.

And we have on the drawing board a number—in a pipeline, in this TrialNet, other medicines that we hope that might have that same effect either alone or in combination, but teplizumab is the first FDA-approved therapy for that treatment.

Chair COLLINS. We have a lot of Members here today. So rather than going on to the next question, I am going to yield to Senator Murray.

Vice Chair MURRAY. Thank you very much. And thank you, really impressive to hear all of your stories.

Doctor, let me just follow up quickly on that because I heard Rachel say that as most people who are diagnosed—are feeling severe symptoms before they are diagnosed, you are talking about early diagnosis. How are we educating doctors to look for that early? How are we making sure families get that information that they

need to be tested? And how are we making sure that people can afford that?

Dr. RODGERS. Well, in terms of the education of individuals with type 1 diabetes or those at risk, a number of groups including the NIH, NIDDK, Breakthrough T1D has done a yeoman's job of public education in this field of professional societies, the American Diabetes Association, the Endocrine Society, and many others understand the work that we are doing and make sure that their physicians, who are specialists in this area, are well aware of it. Both once it gets FDA approval, but even to enter patients into clinical trials to make sure that other advances become available.

And you know, patients typically present—they may present with something called diabetic ketoacidosis which is really a very troubling condition. So if you know that you are at high risk and you enter in one of these particular trials, and you are able to get an early indication that this may be the path, entering someone in such a preventive trial could very likely prevent them from developing rather very serious.

Vice Chair MURRAY. Yeah. I think one of the things is to make sure all parents, and doctors, and physicians, and people who see young kids are giving them the information they need to get in early. So I appreciate that.

Dr. RODGERS. Yes, ma'am.

Vice Chair MURRAY. Rachel—I mean, all of you are really impressive and I really am impressed that you are athletes. I do have a niece who is type 1 diabetic and she was told by a coach in high school that she could not play because she was diabetic. I am certain other young people have heard the same thing. What do you—what is your advice to young people today to get past anybody who says you cannot participate because of that? You seem to have accomplished that so well.

Ms. WHITE. Yeah, I mean it is definitely way harder. There is many more factors you have to think about when you are being an athlete. And for me, I tend to go low because I am always running around on the court. Tennis is very physical, and it is only you. So I would give advice to younger people that you can do anything you want, and not to let diabetes stop you from going to play soccer, or going to play tennis, or doing really anything you want, because it is—diabetes definitely makes things more challenging, but there is nothing you cannot do.

Vice Chair MURRAY. Yeah. And you talk about invisible challenges, I think Ruby. What are those invisible challenges, so we all know?

Ms. WHITMORE. I think that—I mean the invisible challenges, especially with such a busy schedule, like I know Rachel has too, your free time is just taken up by wondering if you have to change your site, or running out of insulin and changing your site the 5 minutes you are home between school and practice. And just thinking about—just thinking about everything all the time, especially now. I mean, a lot of you guys are probably driving now, too, just thinking about your blood sugar before you get on the road and thinking about what—how much time you are going to have before your practice, or school, if you are low and cannot drive. So I just think that is a really big, big thing.

Vice Chair MURRAY. Things other people do not see, I appreciate that.

Ms. WHITMORE. Yeah or things other people do not have to think about. Yeah.

Vice Chair MURRAY. Yeah. Katie, impressive, the youngest American Ninja Warrior, all of you guys can be Ninja Warriors. You are looking at one right now. It is great to hear your story and to see the challenges that you have overcome as well. How would you describe the advances in science and medicine that made the most difference for you to be able to accomplish that?

Ms. BONE. I wear an insulin pump, and a CGM, and it has been—

Vice Chair MURRAY. CGM. Explain to us what—

Ms. BONE. I am sorry. A continuous glucose monitor, and it has been life-changing for me. I am able to go to the gym and I do not have to poke every 10 minutes when I feel a little bit weird. In climbing competitions, we have to be in isolation because we cannot see the climbs beforehand, and we are not allowed to have phones. So I have to lock my phone, and go get somebody if I want to look at it, which is hard.

But it has made it so much easier that I do not have to spend the 10 minutes poking my finger to check my blood sugar, and I can focus on warming up and competing because as it is, that takes a lot of mental energy and so does diabetes. So it is kind of eased that for me and made it so I can go out there with knowing my glucose and having a little bit ease of mind with that as well.

Vice Chair MURRAY. Okay, very good. And thank you to all of you for—all of you as well to be here today to talk about this, and make the public more aware of all the things you can accomplish, and all the work we still have to do to make sure we continue the research. So thank you very much.

Chair COLLINS. Senator Hyde-Smith.

Senator HYDE-SMITH. Thank you, Madam Chairman and Ranking Member Murray. And I tell you, Ruby, Rachel, Katie, you all have been so impressive today, and you have really made an impact on me. All of you sitting here, these faces and the challenges that you live with. You are really, really incredible human beings and I know you will continue to be incredible human beings.

I wanted to recognize my Breakthrough T1 delegates from Mississippi, T1D delegates. Where is Linley and KJ from Mississippi? Are they in here? Okay. And we have a meeting later with them. Maybe I am not seeing them, but we do have a meeting later with them.

But I just so, so appreciate your attitude and your courage. And moms and dads, buddy hats are off. You are superstars, no doubt, in what you do every day.

I wanted to address this to Rachel and Ruby. As we move closer to finding a cure to type 1 diabetes, which is the goal, you know, April the 15th, President Trump signed an executive order addressing insulin and making it more affordable, and just so significant on all the research that he is supporting there. But what do you each look forward to the most when that day finally arrives? When we are looking at these TV screens, and it says we have a cure for type 1 diabetes. What do you look forward to the most?

Ms. WHITE. Personally for me it is—for me tennis is a huge part of my life. So that would be the best part for me because it is always hard having to check your blood sugar and making sure you are having enough juice in your tennis bag, or if you are going up from excitement before a match, or if you are nervous or anything. And just being able to not have that anymore, it would be just such a relief for—and also not just for me, for people who cannot afford insulin who—some people who pass away from not being able to afford insulin, and that is very sad.

And I think that once there is a cure, it will save so many people's lives, and just make the lives of millions of people way more easy.

Senator HYDE-SMITH. And Ruby, when you see that broadcast, that news flash, what do you think would be your celebratory moment?

Ms. WHITMORE. Oh. That is a good question. I think it would just be not having to worry about it anymore, just being free of it. I feel like it would feel like—I do not know—just taking off a burden that has been—that is in my life, and so many other people's lives. And I recognize that I am very lucky to be able to be here, but also be here as a healthy diabetic who can afford insulin, and who can—who has supplies, and who has resources, and has a support system, but as Rachel said, many people do not. And I just hope that they would be able to get the cure as well.

Senator HYDE-SMITH. Great answers from both of you. Dr. Rodgers, I am going to turn to you now. How can we improve the early detection of the disease to ensure those who are eligible for the drug can receive treatment to delay its onset? How are we addressing that and identifying those folks?

Dr. RODGERS. Thank you, Senator. We are involved in a number of studies, of course, people who have a first-degree relative with type 1 diabetes, of course, as you have heard some of the panelists are themselves at risk. But there is a large number of individuals, for example, who do not have any family members who develop these symptoms that you heard and unfortunately sometimes end up in the emergency room with diabetic ketoacidosis, and that is their first sign.

So just continuing to educate the professional staff, or people in the allied health fields about these critical complications or signs and symptoms early on. We have developed with the SDP support a fairly large network called TrialNet in which we are able to screen, not only individuals who are at high risk, but other patients who may have related autoimmune conditions who may also come in contact. And having them in these studies sometimes gives us a very early indication that they are at risk.

But we really do have to continue our efforts, and I have to say our partner in Breakthrough T1D have really made this awareness campaign one of their vital challenges, and I think they have been equal to the challenge. They have been letting people be quite aware, because there are things to do in terms of prevention today.

Senator HYDE-SMITH. Wow. What a great breakthrough. And I just want to thank you for all you have done.

Dr. RODGERS. Thank you.

Senator HYDE-SMITH. And my time is out, but I tell you, I want to be your cheerleader. I want to be your supporter, and everybody in this room that is dealing with this. You have Members of Congress that are in it with you. We do not know the anxiety that comes with this every day like you do, but we know what our job is, and our job is to find a cure, and we are not going to forget that. Thank you.

Dr. RODGERS. Thank you.

[Applause.]

Chair COLLINS. I am now delighted to welcome the co-chair for many, many years, of the diabetes caucus in the Senate, Senator Shaheen.

Senator SHAHEEN. Thank you, Chair Collins. And I appreciate your letting me sneak in since I am in the middle of a Defense bill markup, but I really wanted to be here to thank all of you who are members of the Children's Congress for being here today, for your advocacy every day, and for your willingness to speak up about the need, as Senator Hyde-Smith said, to find a cure. And none of us forget that at any time.

I have very much appreciated all of the work that the Diabetes Caucus has done over the years and the leadership from Senator Collins to provide additional funding and to improve treatments, and clearly, we have more work to do.

Thank you to Dr. Rodgers and to all of the panelists for being here, and for your testimony this morning.

I would like to begin with Rachel since she is from New Hampshire, and ask: What advice you would give to someone who has just been diagnosed with type 1?

Ms. WHITE. Yeah. I still remember the day I was diagnosed. I was 11, and I got taken out of school, and luckily I was not hospitalized, which was honestly kind of surprising because my blood sugar was very high. And I would just tell people who are diagnosed that I know it is very scary when you are first getting all this information about—there is so many different factors, pricking your finger and giving yourself insulin, and counting carbs. It can be very scary, but it definitely gets better the longer you go.

And I remember the first week was—I can barely remember because it was just—I ate so much food, and yeah, but it definitely—I have been a diabetic for 4 years now, so I would say I am definitely more educated. And I am here today, so it is proof you can really do anything, even with this disease.

Senator SHAHEEN. Would either of the other witnesses like to comment on that question? Ruby?

Ms. WHITMORE. No, I think Rachel covered it. I think that is, yeah.

Senator SHAHEEN. Great.

Ms. WHITMORE. That is pretty much what I was going to say. Yeah.

Senator SHAHEEN. Katie, anything to add?

Ms. BONE. She did a great job explaining it. But it is terrifying at first, and it is incredibly scary. And even for me, 8-and-a-half years later, it is still hard, but I had to figure out how to make it work, because I wanted so much with my life, and I still do. And

I would not necessarily change what happened to me because it has given me so many incredible opportunities, one of them being here.

And a newly diagnosed person also has so many incredible opportunities and a bright future if they want that. So yeah, it is just not giving up, and figuring out how to do it, because it is hard, but you are still here and you can make an incredible life out of it.

Senator SHAHEEN. Thank you. Thank you to each of you.

Excuse me. Dr. Rodgers, I am concerned that this administration has terminated or frozen more than 260 NIDDK grants in 29 States that total more than \$120 million. In addition to these cuts, the proposed NIH budget would slash NIH funding and potentially gut NIDDK by combining it with other institutes. So can you speak to how important it is that we continue to fund diabetes research, including ongoing trials and prevention initiatives, and why that should be prioritized and protected from reductions?

Dr. RODGERS. Well, Senator, we really—at some of the major accomplishments that we have discussed today, is one very good example why your continued support for ongoing research in diabetes, particular type 1 diabetes, is so important. We are really on the cusp of some major breakthroughs, especially related to cellular therapies and finding a biological cure. We have studies that that I have told this Committee about before, a TEDDY study, The Environmental or Determinants of Diabetes of Youth: What is it that triggers the autoimmune disease? We required studying some 425,000 at-risk kids to enroll 6,000 from the age of birth to 15 years. And I am happy to report that the very last patient turns 15 this year.

And so we are already on the cusp of understanding what some of these triggers are. And that is the kind of work that we have to roll up our sleeves and really continue, because that is where the cures will manifest themselves. And so I could not give you a better explanation of why this support has been so important and ongoing support will be especially important.

Senator SHAHEEN. Well, that is an excellent explanation. Thank you very much for the great work that NIDDK continues to do. And thank you to all of the delegates from the Children's Congress for being here.

Dr. RODGERS. Thank you, Senator.

Chair COLLINS. Thank you, Senator Shaheen.

[Applause.]

Chair COLLINS. Senator Murkowski.

Senator MURKOWSKI. Thank you, Senator Collins, and thank you, Senator Shaheen, for your leadership on this very important issue.

And to the delegates that are here at Children's Caucus, thank you. Thank you for not only being here, but your advocacy on behalf of so many, and to the witnesses that have shared your stories with us here in the Senate, know how important it is to have your voices, your fears and your determination shared here. It encourages us, it motivates us to do more for you and with you. So thank you. Thank you for that.

Dr. Rodgers, I wanted to ask you, you just mentioned the environmental contributors to type 1 diabetes. We know that American Indians, Alaskan Natives are more likely to be diagnosed with diabetes, one and a half times more. Senator Collins has mentioned

the Special Diabetes programs for Indians. It is really quite remarkable the gains that we have seen with that focus. And it is so hard because when you come from an area where, in your tribal communities, that the prevalence of diabetes may exceed 50 percent. I mean, that is really alarming. And these disparities have existed and persisted for generations.

But what we have been able to see with the Special Diabetes Program is really helping to reverse these trends, it has not only helped reduce diabetes-related complications, but led to a remarkable 54 percent reduction in new diabetes diagnoses among American Indian and Alaskan Native youth, which is extraordinary. It has also contributed to a 50 percent reduction in end-stage renal disease among Native people with diabetes.

So can you—you mentioned the TEDDY study and the fact that it is almost completed after 15 years. That is significant. Are there other strategies or other efforts that are underway to include diversity of races and ethnicities where we know that there is greater prevalence of diabetes?

Dr. RODGERS. Sure. Thanks for that question, Senator, and you are absolutely right, the Special Diabetes Program aimed at American Indians, or SDPI, has been a sort of a program that is run in conjunction and in parallel with this SDP program. There the aim is the implementation of the provision of care for individuals with diabetes.

Now, what we have learned, and in large part due to the SDP, in conjunction with the Centers for Disease Control, NIDDK has a program called the SEARCH program in which we are looking for diabetes in youth and adolescents including type 1 diabetes. But something very remarkable you mentioned the high prevalence of diabetes among American Indians and Alaskan Natives, but there has been an increasing incidence of type 2 diabetes in youth and adolescents that has been uncovered by that SDP-supported SEARCH Study.

And I have to say that type 2 diabetes is even more aggressive, I have to say, than type 1 diabetes in youth. Therapies that we have for adults with type 2 do not work particularly well in youth and adolescents with type 2 diabetes, and the aggressiveness of the disease in terms of the time of diagnosis to the time of complication is much more accelerated. And so these, what we are learning now from the SDP program we think we can potentially apply to type 2 diabetes in youth as well.

One final thing I will say. I do not want to dominate all of your time, but we really are very pleased with the success and the implementation of these artificial pancreas technologies. But there are certain areas that industry is a little bit reluctant to do trials to determine the success of that. And that is where we come in with SDP support.

So for example, women who are pregnant, there have not been that many studies to determine the efficacy of artificial pancreas technology. Individuals who come from low-income or low-educational attainment, this is somewhere that we are stepping in. And it turns out that in the preliminary study, just minor modifications to this technology allows it to be utilized for a greater percentage of the population, including individuals, and Alaskan Na-

tives, and American Indians. So that is just one example, or two examples of where we are moving in this area.

Senator MURKOWSKI. Promising. We need to do more. There is too many that are counting on all of us to, again, find this cure.

Dr. RODGERS. Thank you.

Senator MURKOWSKI. Thank you very much. And thank you to our witnesses.

Chair COLLINS. Thank you, Senator Murkowski.

Senator Durbin, you have been very patient. Thank you.

Senator DURBIN. As the designated male Senator, I noticed at one point it was 7 to 1, 8 to 1, and I saw Senator Collins smiling, it is exactly the way you like it.

[Laughter.]

Senator DURBIN. It is an honor to be here and to participate in this. And I would like to mention a few things. About 10 years ago, I went out to NIH and I met with Dr. Francis Collins, who I consider to be an American hero for all his leadership at that agency. And I said: What can I do to help? And he said: What we can do is make sure that every year we have a steady increase in research funds for so many different diseases. If you can give me 5 percent real growth every single year, we will light up the scoreboard with all sorts of things that are going to make life better for young people who are here and for other people.

So I came back here to the Senate Appropriations Committee, which I have served on for a few years, and I enlisted the help of a number of people—my friend Patty Murray who was here earlier, as well as Roy Blunt who was a Republican Senator from Missouri who chaired the Committee, Senator Collins who was part of it, Lamar Alexander, Republican from Tennessee—and we managed to, over the span of 10 years, increase NIH funding from \$30 billion to \$48 billion, just steady increases, \$18 billion over 10 years, and good things started being reported. Now, that is the good news.

Now, the bad news: President Trump's budget for this next year eliminates all of the increase that we put in. It goes back to \$30 billion where we were 10 years ago. And that means we are walking away from research opportunities that can lead to cures and can lead to an improvement in lives across the United States and around the world.

And here is the good news. You are looking at the first line of defense to make sure that does not happen. People who are gathered here, the Senators, have the ultimate decision as to how much money is going into medical research for diabetes and for other purposes. So we need you to help us by encouraging our colleagues to join us in this struggle to stop the President's budget and to put in place a real investment that will make a difference.

The second point that I want to make is one that is somewhat personal. The chief—one of the justices on the Supreme Court is Sonia Sotomayor, some of you have heard of her, T1D, type 1 diabetes since age 7. She is a fan of baseball, Yankees fan. She said to me, I would like to go to a game in Wrigley Field and watch the Cubs play the Yankees. So I took her and a couple friends to the game several years ago, and she was testing herself during the whole game, but it did not stop her one second.

The point I want to make is the highest level in the U.S. of courts and justice is the Supreme Court, and there is a woman in that position, who since age 7, has been dealing with type 1 diabetes. She is a great asset to our country as you will all be.

The last point I want to make, that I think is very important, is that we have had an impact already, decisions been made in terms of funding agencies. And Dr. Rodgers, can you tell me how many NIDDK employees have left because they were fired, placed on administrative leave, or accepted a buyout, since the beginning of this year?

Dr. RODGERS. Thank you, Senator, for the question, and thanks for what you said, prior to that direct question about the role of the Senate in terms of the budget. We appreciate those increases. And as my boss, Dr. Bhattacharya, mentioned at this hearing, the President's budget does recognize a cut, but this is really the beginning, as he said, of a close negotiation and discussion with the members on the final budget.

With respect to the number of workforce the reductions were—some of the reductions were intended to centralize some of NIH's administrative function. I cannot give you a precise number because you know retirements continue. But we are doing the best with the numbers that we have to try to make sure we are as efficient as possible getting funding out to our investigators, and making sure that the success that we have made so far, do not take a back step.

Senator DURBIN. Can you tell me how many NIDDK grants have been suspended or terminated this year?

Dr. RODGERS. Well, in terms of overall terminations, I really again cannot comment on the specifics of that, because as you are aware, some of these terminations are currently involved in appeals and litigation. I would have to get back with you on that. But I think, you know, the—and in fact some of these efforts are government-wide. So they are well beyond what NIH can control.

Senator DURBIN. Doctor, I do not want to put you on the spot. You are a friend, and an ally, and we work together over many years, so I am going to stop this line of questioning, but to the audience I want to make it clear. There have been dramatic cuts made in grants, some related to type 1 diabetes, and there have been termination of people working in this agency who have critical expertise for the future.

If we are going to stop this, we have got to stand together, both political parties, and say that is the end of it. Research is part of making America great. Thank you very much.

[Applause.]

Chair COLLINS. Thank you. Senator Britt.

Senator BRITT. Thank you, Chair Collins, for hosting and holding this important hearing. And thank you to all of you for being here, being a part of it, lifting your voice, telling your story, and working to make a change.

Ruby, Rachel, Katie, incredible, absolutely incredible. And to all of you, I know each of you have a story that in telling it will inspire others, will change lives, and will push research and development forward. I think we have two Alabamians here, do we potentially? Matthew? Awesome. Okay. Look, when I was reading about you,

your quote, “Live fully, and never let diabetes define you. You are so much stronger than it is.” Thank you. Thank you. Thank you.

[Applause.]

Senator BRITT. Thank you. And is Meg here by chance? Oh. I heard you just got your back handspring; amazing. How old are you? Nine? That is incredible. I am not sure that I could do one at 9. I mean, amazing. Thank you so much for being here, for lifting your voice, for making sure that all of those with T1D in Alabama are heard, and seen, and across the Nation. You, too, inspire me, and all others, and I really appreciate you being here.

I want to thank the researchers. Dr. Rodgers, you have done an incredible job. When you were in front of this Committee back in 2023, we had a really good exchange. You shared with me that Alabama has one of the highest rates of gestational diabetes in the country. We also went on to discuss the fact that when a woman does have gestational diabetes that it increases the likelihood that she will ultimately have diabetes and that the infant will as well.

My question to you is, you know, what are we doing? How is NIDDK supporting research on how best to manage diabetes during pregnancy and to ensure that the health of mothers and children are at the forefront of this research?

Dr. RODGERS. Thank you, Senator Britt. As you or some may be aware, current practice in obstetrics and gynecology is to do a oral glucose tolerance test, usually in the third trimester of pregnancy, to determine whether a woman has diabetes, gestational diabetes. And we know as you have just indicated that having diabetes and gestational diabetes puts that mother, as well as the child that she is carrying, at risk of subsequently developing diabetes in the future. Treatment at that level may be too late because the period of time of which dysglycemia or high levels of glucose have occurred may be present a month, 2 months, 3 months earlier. We started a study called, GO MOMs (Glycemic Observation and Metabolic Outcomes in Mothers and Offspring). Of course, everything in Government has to have an acronym, and that is an acronym that stands for determining the glucose levels and gestational diabetes. And we are putting on these continuous glucose monitors in the first trimester—

Senator BRITT. Okay.

Dr. RODGERS [continuing]. To determine exactly when that dysglycemia. I am pleased to report that the very last patient since I spoke with before you in 2023 has just completed—just delivered this month that child and very similar to the TEDDY Study we hope to have the results of that analysis, looking at these complex pictures that occur on the CGM within the next 6 months to a year. That will inform us when one potentially should be intervening, and then one can then to determine whether that earlier intervention has a positive benefit both in terms of the mother and with longer follow-up of the infant.

Senator BRITT. Thank you so much. In my remaining minute, I was heartened to read the new potential cures for type 1 diabetes that were published in the New England Journal of Medicine a few weeks ago. And I am sure everyone in here shares that enthusiasm. You know, as a policymaker, I want to make sure that potential cures for T1D do not take us down the same road as insulin.

So if you look back at insulin when it came to the market in 1923, but over 100 years later, it is still unaffordable for so many. And so how do we make sure that we balance creating an innovation—an innovative place in research and development where people were rewarded for that, but not at the expense of being able to get these incredibly important drugs or treatment to people nationwide?

Dr. RODGERS. Sure. Well, you know, NIH, obviously, does not have a particular role to play in pricing of insulin or other drugs for that matter, but our role is ultimately in developing cures. Of course, people with type 1 diabetes, and a substantial number of people even with type 2 require insulin to live. And our goal is really to focus on developing a cure so that insulin—their own cells are producing the insulin as the example. And we have developed a series of other drugs early on that have gone to industry that can stimulate the insulin production even in the remaining cells. That is where we stand.

Senator BRITT. Okay.

Dr. RODGERS. Our goal is to better understand and to develop treatments, preventions, and curative strategies.

Senator BRITT. Thank you. And Chair Collins, just one last thing. I want you all to hear this from all of us. This is an issue. There are many issues that you see in the news that, unfortunately, divide us along party lines, but this is not one of them. And Democrat, Republican, we all stand united in making sure that we have the research and the treatment and the availability of these things for each and every one of you.

And if you will, as a parent myself, I have a 15- and a 16-year-old. I have a dear friend who has more than one child with T1D, and watching what all she does to make sure that her child is successful, and that they have what they need, and that they are ready, it is a constant process. And so will all of you, incredible delegates, join me in giving a huge round of applause to your parents who work day and night and making sure.

[Applause.]

Chair COLLINS. Thank you. Senator Baldwin.

Senator BALDWIN. Thank you, Madame Chair. And I want to thank you and Senator Shaheen for your long-term advocacy with the Diabetes Caucus.

To our witnesses, thank you so much for being here to share your stories. And it is not often that the Appropriation Committee has a standing room-only audience. I will say hi to the people in the overflow area. Also, I know that we have so many here, and I just really appreciate the way you advocate for the Special Diabetes Program, and the critical research on type 1 diabetes supported by the NIDDK.

We have made tremendous progress on a new—on new and better treatments for type 1 diabetes and every day we are closer to a cure. And that is because advocates like all of you here today who have pushed the Congress to increase funding for this research. And I was glad that Senator Durbin was here earlier to talk about the history of our efforts in Congress to increase funding for the NIH, but also to outline the threats that are faced right now.

And I want to be very serious about those threats. Every month of this year, NIH is spending less on biomedical research than it did last year. And at the end of March, NIH had spent \$1.7 billion less than through the same period last year. In mid-May, it was \$3 billion less than the same period last year. And now, by the end of June, NIH has awarded nearly \$6 billion less in grant funding.

NIH has said that its plan is to award 40 percent fewer grants this year than last year, which lines up with less and less funding going out the door each month. Our witnesses here today have taken on tremendous challenges in their lives. So I have no doubt that you can handle a tough question.

So I am going to start, just ask you, Katie. Thank you again for being here. What would you like Congress to know as NIH plans to reduce the number of research—new research grants it awards this year by 40 percent? What do you think cutting research would mean for children with type 1 diabetes?

Ms. BONE. That it will be longer until we have a cure and easier ways to manage this. The technology we have now has made it where I can sleep through the night, but it is still hard. And if there—when there is a cure, one day that means I will get to sleep through the night and not have to worry about it. That means I can go to training and not feel really terrible because of this. And I can go to competitions and not work harder than I have ever worked in my life for years to not perform because of this, because that has happened many times.

And to get to show up and be fully me, and get to show everybody all of the hard work that I have done. So it means getting to live an even fuller life than I am now, and getting to achieve the goals that I have. And that is my every day being a little less hard.

Senator BALDWIN. Thank you. Dr. Rodgers, at a hearing last month with Dr. Bhattacharya, I pointed out a major change the administration has made to the way NIH is now proposing to fund grants by forward funding half of them in the first year. This scheme would dramatically reduce the number of grants NIH is able to fund by the thousands across the Institute. NIH can do this unilaterally, effectively making billions more in cuts to research unless Congress steps in.

It is why I have been raising the alarm now for months about delayed NIH funding, as I just described, because NIH is either going to not spend funds that Congress has appropriated, or rush funding out the door through this new and haphazard scheme of forward funding that will result in devastating cuts to research funding this year and next year.

So Dr. Rodgers, how will diabetes research be affected if NIDDK awards 40 percent fewer grants this year than last year? And what will that mean for patients with type 1 diabetes who are anxiously waiting for a cure?

Dr. RODGERS. Well, Senator, thank you for your question. We are doing our best to spend all of the money that Congress has provided to us. And I would note that the budget for the Special Diabetes Program is extended in the President's budget.

Dr. Bhattacharya, I have to say, is committed to ensuring that the U.S. remains the global leader in research. And as he pointed out when he testified to this Committee really the efforts that are

underway in terms of the discussions that are ongoing with Congress to try to make adjustments and come up with final decisions is something that is going to take, you know, ongoing effort. And I really applaud him for what he is doing.

Obviously, you know, more funds allows for us to do more, which is why the Special Diabetes Program has been so effective, as apart from our normal appropriations. But we, you know, are committed to do with what we have, in as most efficient way as possible moving forward.

Senator BALDWIN. Thank you, Madam Chair.

Chair COLLINS. Thank you. Senator Moran.

Senator MORAN. Chairman Collins, thank you very much for this hearing. Generally in the Senate, I feel like I am at least the same age as my colleagues, I do not feel old. In today's hearing I feel significantly older than the audience. But I am delighted that you are all here. And your presence makes a difference. It highlights—it highlights for us, on a regular basis, the importance of medical research and it is always useful for us to see the individual lives that are impacted.

Things can be about numbers, and they can be about dollars, but in order to get our attention and get the necessary action on our part, it is useful to see that humans; our friends, our neighbors, our constituents, our family members are impacted. So I appreciate all of you being here today and making the case for—in sufficient resources necessary.

And while Senator Collins has not yet introduced her bill, she has announced her—the intended introduction. And Senator Collins, I will not say that I am going to co-sponsor the bill until I meet with my juvenile diabetes kids from Kansas, so I can tell them first, but trusting your judgment, and your capabilities, and your expertise, and knowledge that you and Senator Shaheen, your dedication, there is a likely supporter from Kansas for the passage of this legislation, And so again, delighted to have you, and thank you.

[Applause.]

Senator MORAN. There are many things about working in the United States Senate, being a member of Congress that bring challenges to them, this is one of them. But this is the circumstance in which most of us, if not all of us, get significant reward when we see the opportunities we have to make a difference in people's lives. And I have said numerous times when we have debated and discussed funding and support for NIH, the business that we are in, and this is the same business we are in this morning, is to provide hope.

Hope that there is a brighter future. Hope that there is fewer people affected by diabetes, hopeful that the cures and treatments are more effective, and that we can rid ourselves, our families, and our children from juvenile diabetes. So I am really pleased to be here and lend my support to this effort.

Dr. Rodgers, you have been an expert, provided your expertise. I thank you for your public service and commitment to finding cures, and treatments. And tell me, if you would, you have been here since 2007, what is the most impactful advances in under-

standing and treating type 1 diabetes that you have had in your tenure? But more importantly, tell me what the future looks like.

Dr. RODGERS. Well, thank you Senator Moran for that question. I think I would just highlight a few, some of which I mentioned in my opening statement. The idea now in this period of time that we actually have a drug available that is FDA approved that can prevent by at least 3 years and a substantial number of individuals the development of clinical type 1 diabetes, I think is a very important advance. One that we hope to replicate because we have, you know, on the drawing board or in the pipeline a series of other drugs that be used either alone or in combination that might yield equivalent or perhaps even better results.

Having cellular therapies now to be a biological cure is something that I am very excited about and that that possibility to report to you perhaps in the 2 years from now, or maybe 4 years from now, of that success is very important to me.

This TEDDY Study that you know involve following these 8,000 kids, we have five million samples that the kids and their parents have generously provided to us. It has already giving us you know ideas. We know, for example, even before we do the final analysis, we have been able to detect proteins in the serum of kids who are at high risk that may determine or predict several months in advance the likelihood that a kid will develop clinical. So to get these kids into preventive studies is very important.

And sort of moving forward, thinking about using your stem—pluripotent stem cells to get them encapsulated, we are working with chemical engineers to develop a way to expand and to get these cells so that the antibodies do not get in to attack it as it did in the first place, but to get the insulin out. That is really extremely exciting.

We are taking a page from the oncology and the immunologist field. They are using something that you may have heard of, CAR T-cells and applying that technology as a way to prevent the ongoing autoimmune disease, potentially, in individuals with type 1 diabetes from attacking either their existing cells, or potentially transplanted cells.

That is something that I really hope—look forward to reporting to you in the upcoming meetings. But I am very excited about these results. And I have to say, again, with a lot of thanks and appreciation for the Special Diabetes Program because this would not be possible at all without your ongoing support.

Senator MORAN. Thank you. I usually hear CAR T-cells in regard to cancer research, and cures, and it is nice to know that the potential opportunity that exists here because we have seen such significant outcomes, improvement in outcomes in cancer.

Dr. RODGERS. Thank you.

Senator MORAN. Doctor, thank you.

Chair COLLINS. Thank you very much, Senator Moran.

Senator VAN HOLLEN.

Senator VAN HOLLEN. Thank you, Chair Collins, and it is great to see all of you. Thank you for convening this hearing. Great to see the Children's Congress delegates filling this room. Dr. Rodgers, thank you also for your leadership.

And I received letters from two Marylanders who are part of the Children's Congress. One is from Garrett Cohn, who I look forward to meeting later today, who said, and I am quoting, "I was diagnosed with T1D when I was two. I rely on an insulin pump and continuous glucose monitor to keep my blood sugar in range. I must monitor them all the time."

Then I also received a letter from Andrew Manatos who said, "The day after my seventh birthday I found out I had type 1 diabetes. Having type 1 diabetes is not easy. I have many sleepless nights. I have to miss class, sports and even have to go to the hospital if my blood sugar goes too low or high. But even with type 1 diabetes, I do not slow down."

That was the overall message, that as long as we make sure that all of you have what you need, you do not have to slow down either. And I want to thank Ruby, and Rachel, and Katie, for your testimony. I have just one question. And I do not know which one of you is in the best position to answer it. But based on what Andrew Manatos said, you know, the challenges he faces with, whether it is sports activities, or other school-related activities, and having to balance that with dealing with type 1 diabetes. How do you go about juggling that? And would you be able to do what you do without the advances that we have made so far?

Ms. BONE. I mean, it is incredibly hard every single day to get up and deal with it. And without the advances that we have had, it would be significantly harder. It would be doable. And everyone here could still be successful, but it would be a lot harder, and it would be a lot more mentally taxing. As it is diabetes is mentally very, very hard every single day. And personally for me, I have had a lot of anxiety and depression due to it. But being able to see my blood sugar in real time and just easily give myself a little bit of insulin has made that a lot easier for me.

Senator VAN HOLLEN. Thank you. And I think the personal stories all of you bring to this are really essential to giving us an understanding of why all this is so important.

Dr. Rodgers, I heard your earlier testimony about how you believe that we have made a lot of progress, but we are also on the cusp, as you were just saying, of additional progress. And of course, we all hope to find a cure. But I assume that if you saw a significant cut in your resources, it would make it harder to achieve these new breakthroughs; is that not the case?

Dr. RODGERS. Well, Senator, of course, the more you have—I frequently tell my staff, every other year we have an initiative, or every year we have an initiative meeting for 2 years from now. And I tell them that no matter what our budget is, it is better to have good ideas and no money than to have money without any good ideas. And so we are always in a position in which we have to prioritize what we do to ensure that we continue to be successful.

We may have to cut back, we may have to slow down, or maybe not start something new, but we have to make sure that the progress that has achieved does not fall behind. And I remain committed, I think it is when you have—you enroll people in clinical studies, that you have to see it through completion particularly if they look very promising, and so that is obviously a priority that I have.

Senator MORAN. Understood. And look, obviously you need good ideas but you need the resources to match the good ideas, or good ideas just sit on the table, right?

Dr. RODGERS. That is correct.

Senator VAN HOLLEN. And I want to make sure that they are not good ideas out there that could lead to a cure that we are not providing the resources to pursue. So I want to thank you for the work you do. I want to thank all the delegates here.

And I will say, Senator Collins, I was proud to co-sponsor your earlier reauthorization and look forward to co-sponsoring the next reauthorization. Thank you all very much.

Chair COLLINS. Thank you. Thank you. Appreciate that.

[Applause.]

Chair COLLINS. Thank you, Senator.

Senator OSSOFF.

Senator OSSOFF. Thank you, Madam Chair. Thank you for uh, convening this hearing. It is powerful to be in the presence of so many young people. Thank you for being here with us, and for holding elected officials accountable through your presence and your example. And thank you to our witnesses as well.

Dr. Rodgers, NIH collaborates with CDC on the Special Diabetes Program, correct?

Dr. RODGERS. That is correct, Senator.

Senator OSSOFF. And have you had positive working relationships with many of your colleagues at the CDC?

Dr. RODGERS. Very positive relationship. I mentioned one earlier on, the search for diabetes in the youth which has been funded through this Special Diabetes Program, and it is not only detecting that there has been, over time, an increase in the incidence of type 1 diabetes but also in type 2 diabetes. What I was taught when I was in medical school, we called it Adult Onset, but we are seeing this now in kids 10, 12, 14, and that would not be possible without the collaboration that is longstanding now with the Centers for Disease Control.

Senator OSSOFF. And appreciate your work at NIH. And the CDC does vital work for the nation, yeah?

Dr. RODGERS. Correct.

Senator OSSOFF. And I know, Dr. Rodgers, you do not produce the budget request, so this is not directed at you personally. But I want to raise, once again, for the Committee and the public my bitter opposition to the Trump administration's proposal to cut the CDC budget by more than half in fiscal year '26, which will have a devastating impact on epidemiological defense and health research to defend the American public from deadly diseases.

And I would note, Madame Chair, that the administration's budget request proposes to eliminate entirely the CDC's Diabetes Division responsible for data collection and research, and to eliminate entirely the CDC's Division of Nutrition, Physical Activity, and Obesity. And I will fight this effort to destroy the CDC with everything I have as a member of the United States Senate. And if we, on a bipartisan basis in the Senate, do not defeat this effort to gut the CDC, the American people will pay for it in lives, in suffering for decades to come.

And I want to thank you again, Dr. Rodgers, for your work at the NIH, and respectfully request your assurance that any information that the Committee may need in order to better understand your activities, and also your collaboration with the CDC, and the vital role that the CDC plays in defending the Nation, you will provide to the best of your ability to this Committee. Do I have that assurance?

Dr. RODGERS. You have it, Senator.

Senator OSSOFF. Thank you, Dr. Rodgers. I want to ask you also about ensuring that diverse communities across the United States have access to information and treatment. I note with concern that the—of course diabetes impacts every community in the United States. And in Georgia the Hispanic community, Hispanics in Georgia are about one and a half times more likely to be diagnosed with diabetes.

There was a project at the University of Georgia, an NIH grant had been awarded to help develop new tools, with language access, bilingual and multilingual tools to help improve the Hispanic community's access to information about diabetes, about staying on top of insulin, and blood sugar levels, and treatment as well as to be able to diagnose diabetes earlier.

Can you speak broadly, please, Dr. Rodgers, to the importance of ensuring that diagnostic tools and treatment information are widely accessible to diverse communities across the United States?

Dr. RODGERS. Well, I would say that it goes without saying that the current Director has mentioned that at his hearing, that we want to make sure that advances and medical treatments serve all communities.

Senator OSSOFF. Thank you, Dr. Rodgers. And I will be following up with the Director's office about this canceled grant to the University of Georgia. Again, I know that is not your decision and your prerogative, but appreciate your work on behalf of the American people and your presence here at the hearing today.

Dr. RODGERS. Thank you.

Senator OSSOFF. Thank you. Thank you, Madam Chair.

Chair COLLINS. Thank you.

[Applause.]

Chair COLLINS. I am delighted to call on my friend and colleague, Senator Hoeven.

I would note that there is a roll call vote on, so I believe that Senator Hoeven will be our last questioner, and then we will wrap up this great hearing. Thank you.

Senator HOEVEN. Thank you, Madam Chair. And I noticed that you are perfectly color-coordinated with our Children's Congress.

Chair COLLINS. That is on purpose.

Senator HOEVEN. I knew it. I knew it.

[Laughter.]

[Applause.]

Senator HOEVEN. It is not only why you are a good Chairman, but it truly reflects the empathy that you have, and for—I know how much you care.

Chair COLLINS. Thank you.

Senator HOEVEN. And how hard you work to be a strong advocate for all of these young people and many others. I do want to

acknowledge right off the bat that Nina Kritzberger from Hillsboro, North Dakota, I think is here somewhere. Nina, are you here? I know I am going to meet with you later.

But I think she is here, with all of you and I want to thank you all for coming, and let you know there is somebody here from my state, and I look forward to meeting with her later on today. But it is truly inspirational to see all of you, and you make a difference. You make a difference. Good for you.

Ruby, I would like to start with you speaking out. Just tell me, what are some of the biggest challenges that you face that you wish more people, and particularly we as lawmakers, understood when it comes to type 1 diabetes?

Ms. WHITMORE. I think just how hard it is to have to think about it all the time. I know this has been said a couple times, but you do not get a break from it, ever. And as Katie said, even when you are sleeping, you do not get a break from it. It might go away for a couple hours when you are asleep, but then as soon as you—as soon as it beeps, it wakes you back up and you are—it starts all over again. I just want people to know that it affects so many people, not just the people here, but their families, and the millions of other people who also have type 1 diabetes.

Senator HOEVEN. I understand. Rachel, your story helps, you know, you have got demanding academic schedule, participating in athletics, all those kind of things. So tell us what—tell us about your support systems, both at home and in school, and I think that is something that is informative not only for us as policymakers but for others in the room. What are the—what are the support systems both home and school that have really help you accomplish all the things that you are doing?

Ms. WHITE. Yeah, I am very grateful to have my mom and dad right back here, and they are very helpful. Especially with changing my pods, and my continuous glucose monitors. I have it right here on my arm, and they are very helpful with helping me managing it, and reminding me if I am going low or going high. And especially I am a high-level tennis player, and especially during a tennis match when I cannot always be looking at my number when I am in the middle of a match, and my mom especially she helps me by making sure I know when to have juice if I am going low, or giving me insulin. And I am very grateful to have them. And they are awesome parents.

Senator HOEVEN. My daughter played tennis, and she did not have diabetes, but she played tennis and her mom was her biggest supporter and advocate and she always—when in those tough matches she would always say, “Bear down. Bear down.” And I do not know that my daughter liked it, but I think it worked. Does your mom have a certain saying or anything to encourage you?

Ms. WHITE. I do not know if she have a certain saying, but she is definitely always in my corner cheering.

Senator HOEVEN. Right.

Ms. WHITE. Even in the not so great moments, or when I am not playing my best, she is always in my corner, always cheering me on, and always supporting me.

Senator HOEVEN. Yeah. Yeah. That is awesome. That is awesome. And then, you know, speaking of the athletics, obviously

Katie, I mean, amazing, you know, what you can do. I always kind of wanted to be a Ninja Warrior, but fell woefully short. So I really admire you. You know, what would you say to—obviously you show that—you have shown and are showing that anybody can accomplish whatever they truly set their mind to do. What would you—how would you advise people to be successful? To have the kind of determination and grit it takes to accomplish whatever they want? I mean what would be the advice that you would give them?

Ms. BONE. Never give up. If it is something that you really want to do, like it is not necessarily going to be easy, but it is going to be worth it. My sports as it is, like outside of diabetes, getting to the point that I have gotten is—has been very hard. You know, I would be up at 5:00 a.m., and I would go to strength and conditioning. I would go to school, and then I would be at the gym for six hours, and get home, and still have to do school, and try and recover and go to bed. And then on top of that, I still have diabetes.

So it has taken so much work in years to get to the point that I am at. And for diabetes everybody here—and I have gotten a lot of comments about this, that I make it look easy, and it is not. So it is okay to struggle, and it is okay to feel the emotions, and to feel not okay. But that it is worth it. And getting to your goals and what you have always dreamed of doing is worth it.

And for me, I have wanted to go to the Olympics since I was 3 years old. And that is something that I have never stopped reaching for, even though there has been more bumps in the road than anybody will ever know.

Senator HOEVEN. So I think you summed it up so well. And I think for anyone listening, the work ethic, and what goes into achieving what goes into winning. I love football and the Chicago Bears were a long time ago really good. And they had a coach by the name of Mike Ditka, and he said, "There is a lot more to winning than just wanting to." You have summed up perfectly all the hard work. The hard work it takes.

Ms. BONE. For sure. People see the trophies, and the goals, and the records, but they do not see the amount of tears—

Senator HOEVEN. Bingo.

Ms. BONE [continuing]. And hard work that it takes to get to that point, and what I have had to do to get to that point, so yeah, to never give up, because if it is what you want, it is it is very worth it.

Senator HOEVEN. Right on. I do not think anybody could have said it better, or demonstrate it better. Thanks so much. Thanks to all of you. Thanks for being here.

[Applause.]

Chair COLLINS. Thank you. Thank you, Senator.

I want to end this hearing on a very hopeful note. And really, Katie summed it up best when she said, "Never give up." I want to assure you that we are your champions, and we will never give up until there us a cure.

[Applause.]

Chair COLLINS. And in the decades that I have personally worked on this issue, from when I first founded the Senate Diabetes Caucus way back in 1997, I cannot tell you the progress that has been made. I think of those old heavy pumps that used to be

lugged around, and now we have the continuous glucose monitor. That was because of the Federal investments in research.

We have heard Dr. Rodgers talk about the exciting new medication that can delay the onset, for as much as 3 years, of type 1 diabetes for those who are prone to it. We know that there is research underway, even as we meet here, that is the pathway, one of the pathways to ultimately discovering a cure.

And I want to thank all of you for being here today, particularly our witnesses who did such a fabulous job; Ruby, Rachel, Katie, Dr. Rodgers, thank you so much for being here, and for doing a wonderful job.

[Applause.]

Chair COLLINS. So our hearing record will remain open until July 16th for any additional questions or materials that may be submitted.

Let me just have my final statement be a thank you to all the delegates who are here. See the difference you made? I have already got more co-sponsors for a bill that I just put in with Senator Shaheen yesterday. So keep up the good work.

[Applause.]

CONCLUSION OF THE HEARING

Chair COLLINS. Thank you so much. This hearing is now adjourned.

[Whereupon, at 11:51 a.m., Wednesday, July 9, the hearing was concluded, and the committee was recessed, to reconvene subject to the call of the Chair.]