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Digital Innovation in Diabetes Prevention for Older Adults

Dr. Jackson:
Welcome to *Diabetes Discourse* on ReachMD. I'm Dr. Steve Jackson, and today we're diving into findings from the Bringing the Diabetes Prevention Program to Geriatric Populations, or BRIDGE, study. Joining me in this conversation are Drs. Emily Johnston and Souptik Barua, both of whom presented this research at the 2026 American Diabetes Association Scientific Sessions.

Dr. Johnston is a Research Assistant Professor in the Department of Medicine at NYU Grossman School of Medicine. Dr. Johnston, thanks for being here.

Dr. Johnston:
Thanks for having me.

Dr. Jackson:
And Dr. Barua is an Assistant Professor in the Division of Precision Medicine at the NYU Grossman School of Medicine. Dr. Barua, it's great to have you with us as well.

Dr. Barua:
Pleasure to be here.

Dr. Jackson:
Starting with you, Dr. Johnston, what motivated your team to explore diabetes prevention strategies in adults with prediabetes?

Dr. Johnston:
Well, prediabetes is very common. The CDC estimates 52 percent of older adults specifically have prediabetes, and risk for type 2 diabetes in this high-risk population is modifiable. We have a lot of research from the Diabetes Prevention Program original trial published over 20 years ago that lifestyle interventions can prevent or delay the onset of type 2 diabetes. And we focus specifically on older adults because patients aged 65 and older actually had the greatest reduction in risk in the original Diabetes Prevention Program compared to participants as a whole, although all participants benefited from the program. So we were really excited to explore adaptations to the Diabetes Prevention Program to make the program more accessible to older adults.

Dr. Barua:
And I will jump in a little bit. One of the things that really got me interested in the BRIDGE study is the use of wearable activity monitoring that was given to the participants. Physical activity is a big component of diabetes prevention, and it's also therefore important to measure physical activity accurately. In particular wearable devices—many of the commercial devices—we actually don't know what algorithm is going into measuring, let's say, someone's steps. And there needs to be deeper research as to how you measure these parameters in an older population, particularly because a lot of the step-counting algorithms or algorithms that measure how intense your exercise was were based on data from younger, healthier adults. And while we don't know what algorithms were used, the device we used in the study is a research-grade device where we could specify what algorithms can be used to measure physical activity.

Dr. Jackson:
So can you both walk us through the BRIDGE study and explain how the program was tailored to meet the needs of older adults?

Dr. Johnston:
Absolutely. So BRIDGE is based on the CDC's Diabetes Prevention Program curriculum, and it's adapted for older adults, and we are comparing delivery methods of the tailored DPP. So, first, the DPP is a year-long lifestyle change program. It's led by a certified lifestyle

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coach who leads intervention sessions focused on topics from healthy eating to physical activity, sleep, and stress management, and this information is delivered over 22 sessions. Participants benefit from meeting with a coach, goal setting, self-monitoring, and motivational strategies, and from the social support of being in a group setting.

In our study, participants were randomized to receive the program in person or via telehealth with the same curriculum and the same lifestyle coach. There are many barriers to attending a year-long program, so we wanted to see if delivering the program to older adults via telehealth would be as effective as the in-person program.

The important modifications that we made before the program started to make it more appropriate and safe for older adults were modifying the weight loss goals to be a bit lower and slower. We recommended about 3 to 5 percent weight loss from starting weight instead of 5 to 7 percent in the original DPP. We made the font large and easy to read in all of our materials, and we made sure we only used videos with transcripts and closed captioning. We curated evidence-based videos aligning with each of the session topics that were designed for older adults, and we provided these in a website along with links to other resources to help participants engage in lifestyle change practices. We provided devices called Pocket Talkers to in-person participants; these are personal amplifiers that help people to hear better in a group setting. And we also provided considerable tech support to participants unfamiliar with Zoom. We also had iPads to loan to any participants who did not have consistent access to Wi-Fi in a private place.

Dr. Barua:
Just to briefly add to Dr. Johnston's point, we provided them with a research-grade device where we really wanted to have them experience as minimal a burden as possible. So unlike commercial wearable devices where you might have to log in potentially frequently to sync to the internet or have Bluetooth on and worry about charging, we avoided that by providing this research-grade device that has a long battery life, and we asked the participants to wear it for up to a week. And in this device, the battery lasts for up to two weeks. So that's one way in which we made it low burden for them. They could just ship their devices back, and we provided them with mailers to do that just to, again, reduce the burden of the wearable activity monitoring piece.

Dr. Jackson:
And Dr. Barua, what were your key findings on the use of telehealth and digital tools with older adults?

Dr. Barua:
One of the big things that we want to keep in mind is engagement and adherence, and that's sometimes challenging for older populations to engage with technologies like a wearable activity monitor. What was heartening for us is for the seven days we asked our participants to wear the watch and without needing to take it off, on average, we got five valid days of wear. So that's super exciting for us. Previous research has shown that around four days of data is a good benchmark to estimate how much physical activity is someone getting, so the fact that we are getting, on average, five days really lends towards robust findings from the physical activity side of things in our participants.

The key finding I want to share today—the focus of the American Diabetes Association presentation—is, how are we measuring this? Are we measuring physical activity accurately and rigorously? And we also had our participants self-record their physical activity, so we gave them a good old-fashioned exercise diary. This allowed us to actually validate the data that was being captured by the wearable device.

So we compared the self-reported physical activity with two algorithms. One of them is commonly used and has historically been used, but it was actually designed for a waist-based measure location in the older wearable activity monitors. And we also compared that with a wrist-based algorithm as the participants in our study wore the activity monitor on the wrist and found that, indeed, we should be using the wrist-based algorithm, which is known as the Montoye algorithm. That does sound obvious, but the other algorithm, called the Freedson algorithm, has been so well-established and in use for a long time that sometimes, if we are not mindful, we may end up using this because this appears as a custom setting almost. So our key finding was that it's very important which algorithm you're using to assess physical activity in participants undergoing the diabetes prevention program, and we showed that the Montoye wrist algorithm is the appropriate choice.

Dr. Johnston:
And I just want to add some anecdotal context to the telehealth and digital tools. Our participants largely embraced digital tools. I think there was some concern about the use of technology among older adults, both when we wrote the grant and even as we started recruiting participants. And some participants were worried about their own ability to participate if they were randomized to the virtual arm because they were unfamiliar with Zoom or telehealth; they maybe used a smartphone or didn't. But our participants largely used Zoom and cellphone apps to track physical activity, diet, and sleep without issue.

We did provide a lot of support, but we didn't exclude or have any dropouts due to inability to use technology. So we were really pleased

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to see that our participants really embraced technology in this program.

Dr. Jackson:
For those just tuning in, you're listening to *Diabetes Discourse* on ReachMD. I'm Dr. Steve Jackson, and I'm speaking with Dr. Emily Johnston and Dr. Souptik Barua about the BRIDGE study, which they presented at the 2026 American Diabetes Association Scientific Sessions.

If we continue, Dr. Johnston, how did the BRIDGE study approach behavior change in a way that felt realistic and sustainable for participants?

Dr. Johnston:
First, when we recruit participants, they often tell us that they don't know if they can commit to a year-long program. We tell them it's only one hour a week, then one hour every other week, and then one hour per month as the program progresses. So we tell them that while it's over the course of the year, the actual time commitment is less than they think.

We also ask participants what their "why" is at our first session. This is often long-term independence, improved ability to take the stairs to their New York City walk-up apartment, to feel better, to have more energy, to travel, or to play with grandkids. And we encourage them to return to this regularly. So we have them revisit their "why" at times of decreased motivation.

We also emphasize small, steady changes to improve overall long-term health. The DPP focuses on setting specific, measurable, attainable, reasonable, and time-bound, or SMART, goals. And each week, we encourage participants to set one goal. We also celebrate all the small wins—even an increase of ten minutes of physical activity per week, a reduction in portion size of dessert, or better sleep.

We're still collecting data, so we don't have our final outcomes yet. But it has been very encouraging to me to see participants who change their habits. We have participants who share their success stories with us—many who have tried new physical activities or tried cooking at home more often. Some are just more aware of what they're eating due to tracking activities, like tracking their diet and physical activity. Many people move more during the course of the program, and many start weighing themselves regularly as a form of self-monitoring.

Also, we see social connections among participants virtually and in person. Seeing them share resources and seeing success with these small changes throughout the program is really exciting. And hopefully, by the end of the year, we'll have formal measured outcomes to share.

Dr. Barua:
And I'll just briefly dig a little deeper into the wearable data that we have. In this abstract that we presented, we looked at a subset of participants and found that the choice of algorithm, like I said before, does matter. And to just give you some numbers, if we were just looking at people's self-reported physical activity, we found that roughly half at baseline were meeting some of the WHO guidelines of how much moderate to vigorous physical activity they should get. We found that if we used this classic algorithm that was actually developed for hip-based wearable activity tracking, then close to 90 percent of our participants would be called as getting sufficient physical activity. But when we used the more appropriate wrist-based algorithm, that number was closer to 60 percent, so more in agreement with what the participants self-reported.

And I think, again, as a digital health researcher, this is crucial because in order to really assess what difference the diabetes prevention program is making to a participant's physical activity patterns, it's really important to measure physical activity accurately.

Dr. Jackson:
Those last points are a great way to round out our conversation. And I want to thank my guests, Drs. Emily Johnston and Souptik Barua, for sharing these findings from the BRIDGE study and their implications for diabetes prevention programs.

Dr. Johnston, Dr. Barua, it was great having you both on the program.

Dr. Johnston:
Great to be here. Thank you.

Dr. Barua:
Thank you so much.

Dr. Jackson:
For ReachMD, I'm Dr. Steve Jackson. To access this and other episodes in our series, visit *Diabetes Discourse* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening.

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