Diabetes Management in Patients with Disabilities

Jameela Aladimi, PharmD, CDCES Clinical Pharmacy Specialist – UC Health



Objectives

- Understand challenges of managing diabetes in patients with disabilities
- Explore strategies for different disability types
- Learn how to educate staff on effective care, especially insulin administration
- Promote patient-centered, accessible care practices





Timothy Freeman Center for Developmental Disabilities

 Named in honor of Dr. Timothy Freeman and his service to individuals with intellectual and developmental disabilities

CINCINNATI

- Provides care for individuals 18 years and older
- Unique care model combines primary and behavioral healthcare in one setting
- Structural growth slated for 2025



Vision

Healthcare equity and access for adults with developmental disabilities

Mission

To advance healthcare for adults with developmental disabilities by providing personcentered, coordinated, and interdisciplinary care, educating health professionals and partnering with the community

Clinical Pharmacist Role

WHealth

- Disease state management via collaborative practice (diabetes)
- Medication review and reconciliation with care provider(s) or caregiver(s)
- Medication access needs
- Drug information consults





38.4 million

People with diabetes (2021, US)

70 million

Adults with disabilities (2022, US)

16.6%

Adults with disabilities have diabetes (2021-2022, US)



When injections aren't an option?

RB is a 27-year-old male with past medical history of autism spectrum disorder (non-verbal), developmental delay, intermittent explosive disorder, epilepsy, prediabetes, NASH, anxiety, OCD, sleep apnea and chronic constipation.

RB has been getting Rybelsus (off label) for management of NASH and prediabetes. His mom (primary caregiver) states he will attack her if she tries to give him any kind of injectable medication. RB has a "never ending" appetite and needs snacks through out the day to manage his behaviors.

Today, RB's labs show hypernatremia and an elevated glucose of **353**. His A1c is now **13.1%**, which is increased from 7.2% upon last check.

Current Medication List

- Metformin 1000 mg BID
- Motegrity 1 mg daily
- Rybelsus 14 mg daily
- Depakote 500 mg BID
- Bupropion XL 300 mg daily
- Olanzapine 10 mg daily
- Propranolol 10 mg BID
- Topiramate 200 mg BID
- Rezdiffra 100 mg daily

Height: 5'8" Weight: 303 lbs. BP: 123/63

HgbA1c: 13.1%

Common disability types



	Definition	Examples
Physical	Impariments affecting physical function or mobility	Amputations, spinal cord injuries, cerebral palsy
Sensory	Impairment related to vision, hearing or other senses	Blindness, deafness
Intellectual/Cognitive	Conditions affecting learning, memory or problem solving	Down syndrome
Developmental	Conditions present from birth or early childhood	Autism spectrum disorder (ASD). Attention deficit/hyperactivity disorder (ADHD)
Mental Health/Psychiatric	Conditions affecting emotional or psychological well- being	Bipolar, anxiety disorders, schizophrenia

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Challenges: Diabetes and disabilities

- Socioeconomic and systemic barriers
 - o Barriers to accessing specialized care
- Sensory sensitivities
 - o Difficulty with injections, tablets
 - Food intolerances
 - o Glucose testing refusal
- Physical limitations
 - Limited dexterity for injections & testing
 - Reduced exercise capacity
- Cognitive delays
 - Difficulty remembering instruction
 - Harder to recognize & respond to symptoms
 - Reduced executive functioning





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Challenges: Diabetes and disabilities

- Antagonistic behaviors
 - Oppositional behavior
 - o Often seen with psychiatric conditions
- Eating disorders
 - o Binge eating disorder
 - o Rumination disorder
 - Avoidant/Restrictive food intake disorder
- Communication barriers
 - Non-verbal
 - Multiple staff/care providers may be involved
- Caregiver dependency
 - Reduced autonomy
 - Caregiver burnout/loss/turnover



••• Where to start?

- Acknowledge diversity
 - Individualized approach
- Avoid stereotypes
- Emphasize support
 - Tailored education
 - Caregiver assistance
 - Simplified resources
- Use person-centered language
- Suggest collaboration









••• Physical disabilities and diabetes

- Mobility limitation
- Exercise barriers
- Access to care
- Wound care and complications
- Caregiver dependence
- Financial burden
- Mental health strain
- Social isolation





Physical disabilities - Strategies

Adaptive devices	Continuous glucose monitors, easier to use pen needles (retractable), Auto-injector vs. multiuse pen GLP1 agent, patch pumps	
Adaptive exercise programs	Work with physical therapist. Aquatic therapy, chair-based exercises, customized movement plan	
Telehealth services	Virtual appointments, leverage community programs or services for in person visits	
Simplify regimen	Limit insulin injections, testing frequency. Pill packaging service	
Pressure relieving devices and daily inspections	Teach patients/aids to perform daily foot checks. Use specialized cushions, mattresses and orthotic footwear	





Sensory disabilities



••• Sensory disabilities and diabetes

- Injection or self-testing limitation
- Exercise barriers
- Caregiver dependence
- Financial burden
- Mental health strain
- Social isolation





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Sensory disabilities - Strategies

Tactile and accessible tools	Talking glucose meters (prodigy voice), braille or tactile marking (rubber bands or textured stickers) for test strips or pens, CGMs (Dexcom with haptic or vibration feedback)
Insulin administration aids	Clicks on pen as tactile feedback. Caregiver preload needle or prefill syringe. Insulin pumps with tactile interfaces.
Communication and support systems	Tactile Sign Language or Finger Spelling, Braille or Large-Print Materials, Caregiver Training.
Diet and exercise planning	Create predictable meal plans, guided exercise
Leverage technology	Smartphone apps with accessibility features (mySugr) that can be used with screen readers or haptics. Wearable alerts. Be My Eyes app for daily education



Sensory disabilities - Strategies





Accessibility barriers Caregiver oversight/assistance







Intellectual disabilities



••• Intellectual disabilities and diabetes

- Cognitive and comprehension barriers
- Limited self-management skills
- Caregiver dependence
- Communication challenges
- Behavioral and emotional factors
- Physical and sensory comorbidities
- Access to tailored healthcare

Intellectual disabilities - Strategies

Provide simplified education	Use visual aids, easy to read material, hands on demonstration
Simplify regimen	Reduce administration burden of injections/meds where possible
Address diet challenges	Address any coexisting eating disorders, connect with RD to develop realistic plan with caregiver
Caregiver training and support	DSME tailored to the caregiver with ongoing support and reinforcement
Adaptive tools	Talking glucometers or CGMs
Counseling & support for coexisting behaviors	Connect with behaviorist/psychiatrist for counseling and on-going support





Developmental disabilites

Autism Spectrum Disorder (ASD)

Autism spectrum disorder and diabetes

- Sensory sensitivities
- Difficulty with routine changes
- Communication barriers
- Executive functioning challenges
- Caregiver dependence
- Behavioral and emotional challenges
- Access to tailored healthcare





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Autism Spectrum Disorder - Strategies

Sensory friendly tools	Use less invasive devices and explore what works best for the patient	
Visual and structured support	Provide visual schedules, social stories, or apps to reinforce diabetes management in a predictable ASD friendly way	
Provide simplified education and regimen	Reduce administration burden, provide clear and concise education	
Caregiver training and support	DSME tailored to the caregiver with ongoing support and reinforcement	
Behavioral interventions	Incorporate behavioral therapies to reinforce positive diabetes management habits	
Sensory-adapted environments	Creating calm, sensory-friendly medical settings to reduce anxiety during appointments	



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Caregiver/staff education



KEY!

- 1) Use clear, accessible and individualized training materials
 - Simplify information
 - o Tailor to disability needs
- 2) Provide hands-on, practical training
 - Demos and role playing
 - Supervised practice
- 3) Emphasize person centered care
 - o Understand the individual
 - Promote autonomy

Caregiver/staff education



KEY!

- 4) Address sensory and behavior needs
 - Recognize and accommodate
 - \circ Teach staff to use positive reinforcement

5) Provide ongoing education and support

- o Regular training updates
- Multidisciplinary collaboration
- 6) Focus on key diabetes management areas
- Blood glucose monitoring, medication administration, nutrition and exercise and emergency preparedness
 7) Evaluate and provide feedback

When injections aren't an option?

RB is a 27-year-old male with past medical history of autism spectrum disorder (non-verbal), developmental delay, intermittent explosive disorder, epilepsy, prediabetes, NASH, anxiety, OCD, sleep apnea and chronic constipation.

- Basal insulin teaching. Met with pts mom and patient.
 Pharmacist gave first injection. Mom able to practice on RB.
 Plan established to get RB receptive to receive shot on arm
- Stopped Rybelsus. Switched to Trulicity. Plan established for nurse at day program to give weekly Trulicity
 - Phone follow-ups with pharmacist on weekly basis to adjust insulin & Trulicity. Mom got creative with low-carb diet substitutes, finding snacks RB enjoys without spiking glucose
- Now Fasting glucose averaging 97, post-prandial 120s

Current Medication List

- Lantus 35 units daily
- Trulicity 3 mg weekly
- Metformin 1000 mg BID
- Motegrity 1 mg daily
- Depakote 500 mg BID
- Bupropion XL 300 mg daily
- Olanzapine 10 mg daily
- Propranolol 10 mg BID
- Topiramate 200 mg BID
- Rezdiffra 100 mg daily

Height: 5'8" Weight: 289 lbs BP: 128/60

HgbA1c: 7.7% (last month)

Written instructions for staff

Patient: Date of Birth:

To Whom It May Concern:

Please administer Trulicity on Wednesday when is at day program.

current dose of Trulicity will be increased to 3 mg once weekly starting 5/07/25. This injection may be given at any time of day. Please also administer Lantus injection. Starting 5/07/25, <u>current</u> dose of Lantus will be 35 units once daily to be given in the morning. The dose of Lantus is subject to change as we adjust his dose. Lantus and Trulicity are medically necessary.

If you have any questions or concerns, please don't hesitate to call.

Sincerely,





••• Written instructions for staff

Routine Orders:

This individual's **blood sugar** should be **checked** at the following **specific times/days**:

Frequency (i.e. twice a day, 3 times a week, etc.): Four times daily

When / time of day (i.e. before meals, at bedtime, etc.) Before breakfast, lunch, dinner and bedtime

Special directions: Please repeat the test in 25 minutes if blood sugar is less than 70. Please follow instructions for low blood sugar treatment if sugar <70.

Insulin Orders

LONG-acting insulin: Toujeo (insulin glargine u-300) (White pen)

Current dose: 42 units once daily, give in the morning

If blood sugar is less than 70, please first treat the low blood sugar as detailed below. Then once sugar is >70 give the dose of Toujeo.

RAPID-acting insulin: Novolog (insulin aspart) (Blue pen)

Current dose: Give three times daily prior to meals according to blood sugar:

	Breakfast	Lunch	Dinner
<70	0	0	0
80-199	4	4	4
200-225	5	5	5
226-250	6	6	6
251-275	7	7	7
276-300	8	8	8
301-325	9	9	9
326-350	10	10	10
>350	11	11	11

Please give Novolog dose prior to meals.

If blood sugar is less than 70, please first treat the low blood sugar. SKIP Novolog dose for that meal.

Parameters / Directives (required; must be updated at least yearly)

- If blood sugar falls below 70 give 8 ounces (1 cup) of juice or 1 package of fruit snacks. Recheck blood sugar in print blood sugar is not above 70 give another 8 ounces (1 cup) of juice or 1 package of fruit snacks.
- Once blood sugar is stabilized above 70, a meal should be eaten that includes carbohydrates, fat and protein.
- If blood sugar falls below 50, give 16 ounces of (2 cups) of juice OR 2 packages of fruit snacks. Recheck blood sugar in 15 minutes. If blood sugar is not above 70 give another 8 ounces (1 cup) of juice or 1 package of fruit snacks.
- If blood sugar falls below 50 and patient is NOT responsive, give glucagon injection and call 911



Patient centered plan - Success A1c 14.3 \rightarrow 7.2

Weekly GLP1

Trained staff member administers Ozempic, did not do well with auto-injector. Dose titrated

Diet

Mountain dew and sodas removed from home, GLP-1 helped to reduce compulsive eating

Staff education

Program manager made staff aware to keep junk food inaccesible

Day program

Engaged in enjoyable physical activities at day program

Regular follow-up

Pharmacist phone call every 2-3 weeks, meds adjusted accordingly

Strategic testing

Staff given clear instructions. Fasting and 2-3x per week at bedtime



Patient centered plan - Success A1c $10.8 \rightarrow 6.2$

Weekly GLP1

Switched to Mounjaro and dose up titrated

Diet

Worked to get budget friendly healthy foods, met with RD

CGM

Fought to get CGM covered, unable to test manually

Mental health support

Connected with therapist

Regular follow-up

Pharmacist phone calls every 2-3 weeks, meds adjusted accordingly

Community support

Connected with aquatic therapy



"The greatest gift we can give is not just care, but the opportunity for every individual to thrive with dignity and independence"

-Adapted from disability advocacy principles







Questions?



