



Treating Type 2 Diabetes with Lifestyle Medicine

WITH EXPERT PERSPECTIVES BY:

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TABLE OF CONTENTS

PATIENT INFORMATION 3

CASE STUDY 4

MONA’S PERSPECTIVE 6

ROBERT’S PERSPECTIVE 8

CHRISTINE’S PERSPECTIVE 10

RESOURCES 13

ABOUT THE EXPERTS 16





PATIENT INFORMATION



Name: Sonya	Race/Ethnicity: African American
Date of Birth: February 18, 1978	
Marital Status: Married	
Problems: Type 2 Diabetes	
Allergies: Seasonal	
Social History:	
Alcohol: Doesn't drink	
Smoking: No history	
Vital Signs:	
Height: 5'7"	Weight: 215 pounds
BMI: 33.7	Total cholesterol: 200
Blood pressure systolic: 129 mmHg	HDL cholesterol: 50
Blood pressure diastolic: 78 mmHg	Non-fasting glucose: 250 mg/dL
Medications:	
Metformin	
Health Concerns:	
Type 2 Diabetes, elevated blood pressure, anxiety	



CASE STUDY



Meet Sonya

Sonya is a 46-year-old woman who works as the head baker at a bakery she owns with her husband in Providence, Rhode Island. After their wedding in the spring of 2013, Sonya and her husband, Leo, moved to Providence to open a wedding cake shop, a lifelong dream of Sonya's.

Like any new business, the bakery did not immediately attract a lot of customers. During their first year, Sonya and Leo were losing money, and their dream was starting to become less sustainable. To make matters more difficult, Sonya found out she was pregnant on the one-year anniversary of the bakery's opening day. Suddenly the business's profits were an even bigger stressor for Sonya, who was determined to give her kids all the amenities she'd had as a child and more.

As a kid, all Sonya ever wanted to do was bake. In turn, she consumed a lot of sugar on top of her regular meals. She was always slightly overweight when she was young, but after puberty, she said she was noticeable heavier than her peers.

During her teen years, Sonya became more self-conscious. While her classmates didn't bully her for her weight outright, subtle comments about how much she ate or how big her clothes were served as constant reminders that she was different. This contributed to feelings of anxiety and depression.

When it came time to graduate high school, Sonya chose to go to the Cambridge School of Culinary Arts in Massachusetts. There, Sonya said she truly felt like she could be herself. For the first time, she was surrounded by people that viewed baking with the same importance as she did and recognized her talent.

As a result, her mental health improved. She started feeling happier and more confident.

When Sonya got back from cooking all day at school, the last thing she wanted to do was cook herself dinner, so she often got takeout or ate frozen pizzas. When Sonya did cook for herself, she tried to keep it healthy, usually making pasta with some vegetables and lean protein on the side. However, once she graduated and went to work under a well-known pastry chef in Boston, she barely had time to grocery shop, much less cook balanced meals.

After marrying Leo and opening the bakery, Sonya had even less time to take care of herself. She would snack on leftover pastries and cake during the day, often skipping breakfast.

Then, at dinner she usually stopped at the grocery store to get a frozen pizza and sometimes rotisserie chicken.

When Sonya became pregnant at age 36, she was diagnosed with gestational diabetes. Sonya had a history of type 2 diabetes in her family and several of her relatives had died from complications, so she took the diagnosis very seriously. She began walking every morning





CASE STUDY

before work for one hour and she cut down on sugar, eating balanced meals with vegetables, lean protein, and only complex carbs. As a result, Sonya ended up losing weight and getting her blood sugar under control, and eventually delivering a healthy baby girl.

Sonya tried to continue to eat healthily and exercise after she gave birth, but between raising her child and managing her own business, a healthy lifestyle fell to the wayside. And although the bakery was doing well, Sonya worked long hours and managing a team of bakers involved constant stress, which contributed to her anxiety.



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When her daughter turned eight, Sonya was diagnosed with type 2 diabetes. She also had high blood pressure and her BMI qualified as obese. Sonya's doctor prescribed her metformin and told her to limit her carb intake. While the medicine did help lower her blood sugar and lose about 10 pounds, after six months of taking it her A1C was still elevated at 8.2%. Sonya also experienced side effects, like frequent nausea and fatigue. In addition, she started to have gastrointestinal issues such as diarrhea and painful stomach aches.

Having lost relatives to type 2 diabetes complications, Sonya is determined to get her A1C under control and lower her blood pressure. After following her endocrinologist's instructions for one year and seeing few results, Sonya has decided to turn to an integrative medicine practitioner to help her get better control over her health. ○





MONA'S PERSPECTIVE



Mona Morstein, ND

Mona Morstein, ND, is a naturopathic doctor that specializes in diabetes care. To reduce blood sugar spikes, Mona said she believes Sonya would benefit from a low-carb diet. Physical activity is key to glucose regulation, but beginning exercise can be daunting for many patients. Mona said she would recommend that Sonya start with daily walks and later incorporate light strength training.

FIRST VISIT

The first visit with Sonya would be 90 minutes. Prior to the visit, Mona would send Sonya a comprehensive intake specifically tailored to patients with diabetes. At the beginning of the appointment, Mona would review the intake and address questions such as,

- What were the results from your latest lab tests?
- How controlled is your diabetes?
- Do you have a glucose meter?
- Have you had your eyes examined for signs of diabetic retinopathy?
- Have you had a microalbuminuria test?
- Do you have any numbness or tingling?

Mona would ask these questions to identify early signs of diabetes complications because they can start even in the pre-diabetes phase.

After addressing the basics, Mona would try to understand Sonya's lifestyle habits better. She would ask about exercise, stress levels, family history, and experiences with medications. Sufficient sleep is also important for glucose regulation, so Mona would discuss Sonya's sleep quality.

Then, Mona would order lab work, including tests for complete blood count (CBC), a comprehensive metabolic panel (CMP x 14), high-sensitivity C-reactive protein (hs-CRP),

lipids, gamma-glutamyl transferase (GGT), C-peptide, and ferritin. Mona always tests for ferritin because it's generally one of the first labs that detects signs of fatty liver disease, which is common in patients with diabetes. She'd also test Sonya's A1C, thyroid, and urine for any kidney problems. In addition, Mona would test Sonya's vitamin D3 levels if she expected a deficiency, as vitamin D helps maintain glucose control. Depending on Sonya's sleep quality, Mona may also consider testing her for obstructive sleep apnea.

At the end of their visit, Sonya would go home with a diet diary. In this diary, Mona would ask her to record the specifics of everything they eat and drink, including the brands of the products, for one week. She would also have her record her blood sugar several times a day. She would instruct Sonya





MONA'S PERSPECTIVE



to test her fasting glucose when she wakes up and again 1.5 hours after breakfast, lunch, and dinner.

CARE PLAN

One week later, Sonya would have her second treatment visit with Mona. During this appointment, Mona would recommend that Sonya eat a low-carb diet. When working on diet changes with her patients, Mona would focus on the foods she can eat as opposed to foods she can't. She would provide Sonya with a reference sheet that includes low-carb options, recipe books, and alternatives for bread, pancakes, pasta, and other carb-heavy foods. According to Mona, informing patients about how to make common meals with fewer carbohydrates allows for more fluidity in their diet so they can adhere to it in the long-term.

In addition to changing Sonya's diet, Mona would encourage her to exercise daily with a routine that includes both cardio and strength training. Mona would also encourage Sonya to get at least seven hours of quality sleep each night and discuss methods to reduce her stress levels.

As for supplements, Mona always suggests that her diabetic patients take a tablet that she specially formulated for people with diabetes, which includes ingredients like zinc, chromium, vanadium berberine HCL, alpha lipoic acid, N-acetyl cysteine (NAC), Gymnema sylvestre, curcumin, bilberry, and green tea. In addition, if Sonya were deficient in any nutrients, Mona would prescribe the corresponding supplements to help. Mona also puts all her patients with diabetes on a high-quality multivitamin mineral and high omega three fish oil product.

CASE CONSIDERATIONS

Exercise is one of the most important aspects of glucose control, but for many patients, it's difficult to schedule into their daily

lives. Because Sonya already had a relationship with walking from when she had gestational diabetes, Mona would encourage her to begin walking again. She would suggest Sonya walk two miles daily in around 40 minutes. According to Mona, walking would not put much strain on Sonya's body, and she could easily schedule it into her daily routine by walking to work or the store. Mona would later encourage Sonya to include strength training into her exercise routine, providing her with resources for online workouts, such as a ten-minute kettlebell session. Mona also would explain to Sonya that there are many other free workout videos online that help patients conveniently exercise at home.

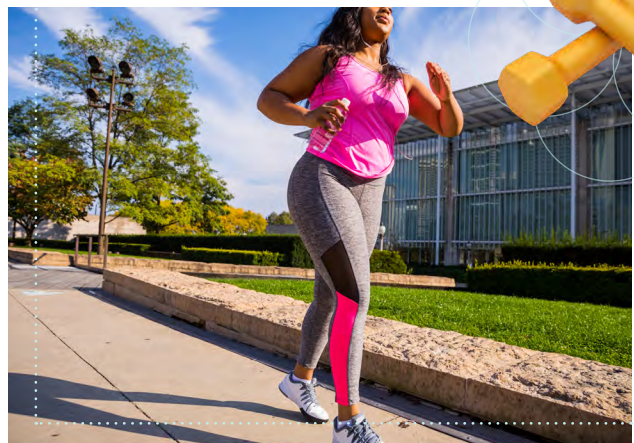
To reduce Sonya's snacking, Mona would tell Sonya to eat three large and filling meals each day. That way, she wouldn't be as hungry while baking and would be less tempted to snack on her leftovers.

If Sonya continued to have uncomfortable side effects from her metformin, Mona would suggest switching to a GLP-1 inhibitor, which Mona's patients seem to tolerate better.

LONG-TERM

In the long-term, Mona would like to see Sonya with an A1C of less than six, fasting glucose below 100 and a postprandial of no more than 125, and at a healthy weight.

To achieve this, Mona would come from a non-confrontational, non-judgmental point of view. She would focus on Sonya's positive behavioral changes to motivate Sonya to continue to improve her diabetes management. Instead of scaring Sonya with possible diabetes complications, Mona would work with her as a team and take it step by step. ○





ROBERT'S PERSPECTIVE



Robert Silverman, DC, DACBN, DCBCN, MS, CCN, CNS, CSCS, CIISN, CKTP, CES, HKC, FAKTR

Robert Silverman, DC, believes that gut health is central to overall health. Using a functional medicine model, Robert would help strengthen Sonya's gut barrier with nutrient-dense foods to promote better glucose regulation. Robert would eliminate ultra-processed foods from Sonya's diet and advise her to eat her food in a specific order to prevent blood sugar spikes.

FIRST VISIT

For her first appointment, Robert would get a complete medical history of Sonya. Robert would ask Sonya about her diet, lifestyle habits, and genetic health history.

While hemoglobin A1C is an excellent marker for prediabetes and diabetes, Robert said a holistic treatment plan would require more comprehensive blood labs. Robert would give Sonya a HOMA-IR test to determine her level of insulin resistance, a complete lipid panel, and a test for inflammatory markers, which would all be covered by insurance. If Sonya were willing to pay for additional testing, Robert would suggest a gut barrier panel to test for markers of adverse gut health or leaky gut and increased intestinal permeability. Other tests out of the insurance model Robert would consider for Sonya include blood panels on food sensitivities and a stool test.



Robert would recommend that Sonya eat specific foods like broccoli, wild seafood, pumpkin, walnuts, okra, flax seeds, and cooked beans. In addition, he would encourage Sonya to eat fermented foods, kale, blueberries, avocados, eggs, and apples.

According to Robert, blood sugar isn't impacted just by certain foods but also by the timing and order in which people eat them. Robert would instruct Sonya to start her meals with vegetables and fiber, then eat protein and fat, and end with sugar or starch.



CARE PLAN

For Sonya's initial care plan, Robert would focus first on changing her diet and implementing protocols to improve gut health. Strengthening Sonya's gut health would not only help her glucose control but may also decrease her symptoms of anxiety and depression, as they can be closely related to the gut.





ROBERT'S PERSPECTIVE

To improve sugar regulation, Robert would also recommend that Sonya drink water with one tablespoon of diluted apple cider vinegar at the beginning of each day and/or before each meal. In addition, Robert would suggest that Sonya go on a ten-minute walk after each meal. According to Robert, post-meal walks prevent blood sugar spikes and can also add up to meet daily step count goals.

Robert would also advise Sonya to start taking supplements to help control her diabetes, including American ginseng, pre and probiotics, berberine, omega-3 fatty acids, alpha lipoic acid, vitamin D, magnesium, and chromium. In addition, Robert would recommend that Sonya drink green tea. Robert would tell her to prepare it at a temperature below 140 degrees Fahrenheit for the best results.

For Sonya's exercise routine, Robert would stress the importance of resistance training for glucose regulation. Robert would also encourage Sonya to start walking again to improve her cardiovascular health.

Robert would work to remove anything from Sonya's diet or environment that could irritate inflammation, like food sensitivities and allergies. To remove harmful bacteria or viruses, Robert would suggest using oregano, berberine, garlic, and serum-derived bovine immunoglobins, which Robert refers to as the "mop of the gut", taken with a biofilm buster.



CASE CONSIDERATIONS

Because Sonya is a baker and, in theory, needs to try her baked goods, Robert would suggest she has some almond butter ready to help combat a glucose spike. However, he would encourage Sonya to limit her consumption of pastries and other high-carb foods as much as possible.

To help alleviate her stomach discomfort due to the metformin, Robert would suggest Sonya take ginger and Boswellia supplements as well as digestive enzymes.

Like many patients, Sonya has a busy life, and making all these changes at once may be unrealistic. Robert would encourage Sonya to start with one weekly lifestyle or diet change. In the beginning, Sonya could focus on limiting her consumption of processed foods and try eating healthy, gut-friendly foods in Robert's recommended order. According to Robert, that alone could lead to tremendous outcomes and motivate Sonya to continue to program.

LONG-TERM

Robert would continuously test Sonya to measure her progress and adjust his protocol if necessary. His long-term goals for Sonya would include getting her out of a diabetic/prediabetic state, getting her in a healthy mode, feeling better, and reducing or eliminating the need for any blood sugar-regulating medications. ☺





CHRISTINE'S PERSPECTIVE



Christine Arnholt, NBC-HWC, FMCHC

As a health coach, Christine Arnholt, NBC-HWC, FMCHC, motivates her clients by highlighting their accomplishments instead of the goals they didn't meet. Christine's job is to inspire health and vitality in her clients by working with them to set their own intentions. Using a functional medicine approach leveraging key modifiable personal lifestyle factors, Christine would help Sonya connect to her meaning and purpose, identify what's holding her back from adopting a healthier lifestyle, and channel her strengths to overcome those obstacles.

FIRST VISIT

Christine would schedule her first health coaching session with Sonya for 75 minutes. This is what she calls the foundation session, and in it, she would first and foremost get to know Sonya as a person. Christine would ask about Sonya's life story and what's most important to her and try to understand her long-term vision for her health and vitality. In this session, Christine would build rapport with Sonya and get to the root of what Sonya wants out of her life and why she chose to seek a health coach.

During the onboarding process, Christine would send Sonya some optional homework. The homework usually includes three activities that get patients thinking about their health goals and give Christine a better sense of their current state of life, health, and what they're looking for. The assessments Christine would ask Sonya to complete would include:

During their first session, Christine and Sonya would go over what Sonya learned from these activities. Then, Christine would ask Sonya about her health goals, prioritize those she'd like to focus on, and discuss potential obstacles that could



1. Wellness Wheel

This activity asks patients to plot on a scale of 0-10 (0 being in the center of the wheel and 10 being on the outside) how they would rank themselves in eight key life categories (e.g., health, love, money, etc.). After they are done, they can see how balanced, or unbalanced, the different aspects of their life are and offer an opportunity to think about what they'd like to—and are ready to—work on with the support of a coach.

2. Character Strength Survey:

This survey identifies a patient's strongest character strengths through a series of questions.

3. Medical Symptom Questionnaire:

For this activity, patients fill out a simple form that helps identify a range of medical symptoms. Christine likes to get a "before" and "after" to determine progress.



CHRISTINE'S PERSPECTIVE

prevent her from achieving them. To end the session, Christine would take Sonya's strengths into account, explore how she likes to be held accountable, and help her come up with action items and/or "SMART" (Specific, Measurable, Achievable, Relevant, and Time-Bound) goals that could realistically be implemented into her life.

CARE PLAN

To form a plan of action to help Sonya achieve her health goals, Christine would start by asking Sonya about the strengths and strategies she accessed in herself to overcome her gestational diabetes. From Sonya's health history alone, it's clear to Christine that Sonya loves her family and is motivated to stay healthy for them. She'd ask Sonya:

- **What strengths did you call upon to get through your pregnancy and control your gestational diabetes?**
- **Tell me how you got through those mornings when you had to get up an hour earlier to walk before work at the bakery.**

Based on Sonya's health and wellness goals related to her type 2 diabetes, Christine would encourage Sonya to channel the strength that allowed her to overcome her gestational diabetes. In doing this, Sonya could better crystalize what matters to her and create a path forward to achieve her vision of health. Then, tying together Sonya's personal story, her strengths, and intentions, Christine would work with Sonya to form a list of patient-directed goals.

If one of Sonya's goals were to reduce stress and refrain from stress eating, Christine would ask her to identify stressful moments in her day and envision what could offer her relief. Solutions for this may include incorporating deep breathing exercises into her morning routine or mini breathing breaks during the day when she starts feeling overwhelmed.

To motivate Sonya to get more exercise, Christine would help her identify optimal opportunities for movement. For instance, if Sonya could get to the bakery late on Fridays, Christine would help her

explore what form of exercise and movement she enjoys and encourage her to try to fit that in before work.

If Sonya wanted to start eating healthier, Christine may help her brainstorm a list of groceries that would provide her with easy meals and healthy snacks. To curb Sonya's consumption of leftover cake, Christine would ask questions that illuminate Sonya's current practices and help her see where she may have an opportunity to improve. An example could be that Sonya discovers she doesn't currently eat a proper lunch and therefore settles for easy snacks like cake. Instead, Christine could assist Sonya in coming up with a plan to eat a balanced meal for lunch and have healthy snacks readily available for when she starts to feel hungry.





CHRISTINE'S PERSPECTIVE

Because Sonya experiences stomach problems due to her metformin, Christine would ask her about her practitioner's recommendations to help alleviate specific symptoms. After identifying her side effects and how they impact her life, Christine would help Sonya devise an action plan to alleviate her discomfort with help from her doctor.

CASE CONSIDERATIONS

It's easy for patients aiming to dramatically change their lifestyles to get discouraged when they don't meet their goals. With her clients, Christine always comes back to their strengths, purpose, and accomplishments, no matter how small. What is most important to Christine is ensuring that she and her clients prioritize celebrating these accomplishments.

To Christine, Sonya finds meaning in being a mother and part of a family, as many of her goals are rooted in staying healthy for her daughter. Because of this, Christine would make sure to acknowledge Sonya's strengths as a mother and her victories,

both big and small. With this in mind, Christine would find ways to help Sonya move towards a healthier lifestyle without compromising family time, always with the guiding light of Sonya's vision for health and vitality in clear focus.

Sonya indicated that she has had relatives die early due to diabetes complications. In Christine's experience, when patients have disease in their family history, they can feel like their health is doomed and lose hope. To inspire hope in Sonya, Christine would stress that the state of her diabetes can be positively influenced through healthy lifestyle practices and that health outcomes are not determined by genetics alone.

LONG-TERM

For Christine, her success is her patients' success. In Sonya's case, Christine's long-term goals would be for Sonya to meet her goals and to have inspired Sonya to strive towards her vision of health and vitality to live her best life. ○



...strive towards her vision of health and vitality to live her best life.

SMART GOALS WORKSHEET

Client Name: _____ Date: _____

GOAL:

Specific, Measurable, Actionable, Realistic, and Time-Bound (SMART) Goals

1. **Specific:** What specifically are you trying to achieve?

2. **Measurable:** How will you measure your progress and success? How will you know when you have reached your goal?

3. **Actionable:** What steps or actions will you take to achieve your goal? List processes, including daily “to-do” items, that will help you reach your goal.

4. **Realistic:** Will you be able to accomplish your goal? Is it challenging, but not too difficult?

5. **Time-Bound:** When will you achieve your goal? Is this a short-term or long-term goal?

BEHAVIOR CHANGE CONTRACT

Client Name: _____ Date: _____

Select a health behavior that you would like to change.

What will you accomplish by making this change (i.e. what is the long-term goal)?

List 3-5 benefits to changing your behavior:

1. _____
2. _____
3. _____

What specific actions will you take to make this change?

What would make reaching your goal more attainable (reminder, cues, etc.)?

How can you hold yourself accountable for making this change?

Resources

What obstacles or challenges might you face in achieving this goal?

What strategies can you implement to overcome these obstacles?

What resources are available to you to help you change your behavior (i.e. friends, family, coaches, education, etc.)

How will you reward yourself for reaching your goal?

By signing this contract, you are committing to making this health behavior change. Please return the signed contract to your Health Coach.

I have reviewed this contract and agree to mee the health behavior change described.

Signed by: _____ Date: _____

Witness: _____ Date: _____



ABOUT THE EXPERTS



Mona Morstein, ND

Morstein has been a practicing naturopathic physician for more than three decades. She is recognized as an expert on prediabetes and diabetes and also treats conditions involving reproductive, thyroid, and adrenal hormones. She authored *Master Your Diabetes: A Comprehensive, Integrative Approach to Both Type 1 and Type 2 Diabetes*, an in-depth, evidence-based book for both patients and physicians. Morstein is the founder and executive director of the Low Carb Diabetes Association. In 2012, Morstein received the President's Award from the American Association of Naturopathic Physicians in honor of her comprehensive work for the naturopathic profession.



Robert Silverman, DC, DACBN, DCBCN, MS, CCN, CNS, CSCS, CIISN, CKTP, CES, HKC, FAKTR

Silverman is a chiropractic doctor, clinical nutritionist, national and international speaker, author of Amazon's #1 bestseller *Inside-Out Health*, and founder and CEO of Westchester Integrative Health Center.

He graduated magna cum laude from the University of Bridgeport College of Chiropractic and has a Master of Science in human nutrition. Silverman is on the advisory board for the Functional Medicine University and is a seasoned health and wellness expert on both the speaking circuits and the media. Silverman is a thought leader in his field and practice, a frequently published author in peer-reviewed journals and other mainstream publications.

Silverman was the principal investigator on two Level 1 laser FDA studies. His latest book, Amazon's best seller, *Immune Reboot*, was released in December 2022.



Christine Arnholt, NBC-HWC, FMCHC

Arnholt is uniquely skilled national board-certified health and wellness coach with a passion for inspiring health and vitality by supporting people in connecting to their innate power and strengths, empowering them to feel their best. After almost 30 years in corporate America in marketing, branding, product development and guest experience leadership roles, Arnholt shifted gears to engage in what she considers her most important work yet: supporting people in creating and living their healthiest, happiest, most vitality-infused lives.

After going back to school to learn the science behind the human body, and then going through a year-long functional medicine coaching curriculum, Arnholt launched her company, BrandCraftYOU to inspire health and vitality and empower people to feel their best.