



Addressing Inflammation with Nutrition and Lifestyle

AN INTEGRATIVE MEDICINE CASE STUDY

WITH EXPERT PERSPECTIVES BY:

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CASE STUDY

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PATIENT INFORMATION



Name: Bonnie	Race/Ethnicity: Caucasian/Non-Hispanic
Date of Birth: November 11, 1975	
Marital Status: Partnered; No children	
Problems: Psoriasis patches on elbows Chronic hives Overweight Frequent headaches Anxiety & ruminating thoughts; on & off depression	
Allergies: Soy	

Social History:
Alcohol: Two or three times a week; 2+ drinks when consuming
Smoking: Regular cannabis user; smoked cigarettes briefly in college

Vital Signs:	
Height: 60 inches (5'1")	Weight: 199 pounds
BMI: 37.6	Total cholesterol: 207 mg/dL
Blood pressure systolic: 132 mm Hg	HDL cholesterol: 52 mg/dL
Blood pressure diastolic: 84 mm Hg	Non-fasting glucose: 90 mg/dL

Medications:
History of antidepressants and anti-anxiety medication, prednisone, cetirizine, and famotidine

Health Concerns:
Chronic hives Trouble sleeping Can't seem to lose weight Psoriasis patches Frequent indigestion Wheezing

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Meet Bonnie

Bonnie is a 47-year-old woman working as a marketing consultant in Seattle, Washington. She lives with her partner and dog and has been frustrated with her work for at least a couple of years. While she's busy working with clients and excels at what she does, the novel coronavirus (COVID-19) pandemic has caused her to lose clients and she feels pressure to find new work. In addition, she doesn't feel fulfilled or energized by her projects yet feels she can't make a big change with COVID-19 looming and many people out of work. She works from her home office and often feels low energy. Her partner, a transgender man, is a medical social worker who works in a local hospital. Though they are happy and financially comfortable, Bonnie struggles with depression and sees a psychiatrist and therapist for support.

According to Bonnie, she feels disillusioned by what she believes is her "lack of success." While she has a list of loyal clients who love her and she has a lot of flexibility in her schedule, which she values, she has felt like something is "off" or "missing" for several years. She said she tends to complain about what she does have and thinks it is never enough. Bonnie does her best to be engaged in her life. She writes fiction in her spare time and has published a few short stories in anthologies. She has a supportive network of friends and family, who she sees often. She is also active on a dragon boat team and enjoys paddling with her teammates three times a week on Lake Union in Seattle. Still, said she feels melancholy most of the time, disappointed in her perceived "failures," and it is beginning to put a strain on her relationship. Now, with the pandemic, there is additional stress, especially with her partner being an essential worker and experiencing his patients dying daily.

While she is active on the paddling team and takes her dog for walks daily, she knows she's not getting enough exercise. In her 30s, Bonnie moved to New York and saw a dietitian who put her on a food plan. At the time she was working a corporate job and her boss was a workout junkie who encouraged her to go to the gym at

lunch. As a result, she lost 40 pounds and felt amazing. Over the years, however, Bonnie said she slowly put the weight back on and, aside from feeling humiliated, she also feels like no matter what she does, it won't come off. Bonnie said she does enjoy exercise and has done various activities over the years including kickboxing and martial arts. She has done CrossFit, though quit because it was too extreme for her, and has tried yoga and trained to run a 10K at one point in her life. She loves a good workout and always feels better, both mentally and physically, once she exercises. She said she also benefits from the comradery a sports or fitness community provides.

When Bonnie was 12 years old, her mother took her to weight loss seminars and told her she would always have to work at keeping her weight down her entire life. Looking back at photos

of that time, Bonnie recognizes that she wasn't "fat" and didn't need to go. She said she considers herself anti-diet, especially since she is in community with many fat and health-at-any-size activists. That said, she does not want to get any bigger and feels better when she is fit and eating well. Bonnie has tried intermittent fasting and a weight management app and both didn't give her the results she wanted, which was



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to lose weight. She'd like to lose between 40 to 50 pounds and feel more confident in herself. While she does eat a lot of vegetables and fruits, she enjoys snacking and often spends her evenings eating from a box of snack crackers while watching online videos. Her partner does cook healthy meals that are mostly vegetables and lean protein, but they both enjoy desserts. They also have cocktails and wine, two or three times a week, that often leave her even more hungry and with a headache the next day. Aside from the evening snacks, she tries to stay away from processed foods but acknowledges she often turns to food when she is stressed or bored.

On the weekends Bonnie is usually busy doing activities with her partner, and seeing friends or family. They enjoy going out to dinner or brunch, which usually involves two to three drinks. Bonnie also partakes in cannabis, usually smoking up to three joints a day. She claims it helps with her anxiety and calms her racing thoughts. Sometimes she'll take edibles, but she prefers smoking. As a result, she has felt shortness of breath and her chest tighten on some occasions.

For the last five months, Bonnie has been dealing with chronic hives. They appeared out of nowhere it seemed, and they pop up all over her body. Her skin would start to have a burning sensation and then the hives appear. She went to her doctor who gave her a recommendation for a dermatologist. The dermatologist prescribed her prednisone and cetirizine and

while that worked at first, once the steroid wore off, they reappeared. They ran a full panel of blood work, and all her tests came back normal except her erythrocyte sedimentation rate was high at 35. She was then told to go see an allergist. The allergist told her the hives were from stress and to blast them out of her body with a cocktail of cetirizine and famotidine. While it did seem to calm them down, they often reappear if she eats a lot of sugar, fried food, or drinks alcohol. Sometimes she gets them for seemingly no reason. She said she knows she should stop consuming those foods but has resistance.

In general, Bonnie said she has trouble sleeping. Around 11 p.m., she brings her phone to bed to read or watch videos, which her partner dislikes, and she has a hard time falling asleep due to incessant ruminating thoughts. In addition, she is up two or three times a night to go to the bathroom, which is disruptive to her sleep and her partner. She is typically groggy the next day, though she gets up around 7:30 a.m. to walk her dog. Much of the time, she



wakes up with hives all over her body. A few times at night, her breathing became very labored, and she started to wheeze. Bonnie became scared by this and went to urgent care where the doctor prescribed her an inhaler. The wheezing has gotten better, and she is glad to know she has it, if she needs it. In addition, on a couple of occasions, her lips and eyelid swelled. She has only had hives once in her life before this and that was when she was working a very stressful job in New York City. She went to see an acupuncturist for a few visits, and saw improvement.

Bonnie said she realizes she needs to make some lifestyle changes. Most days she feels lethargic and uninspired. She knows she could be eating better and wants to lose the weight. Primarily, she wants to feel better, in her brain, body, and spirit. She feels disappointed by programs that haven't worked so she is a bit jaded, but she wants to be in shape and eating foods that are right for her body and provide nourishment. She does sometimes quit when things get tough, but she has agreed to meet with an integrative healthcare professional to discuss next steps. ○

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LILLIE'S PERSPECTIVE



Lillie Rosenthal, DO

As a physiatrist, a specialist in physical medicine and rehabilitation as well as being an osteopathic physician, most people come to see Lillie for a few different reasons: to address pain or lack of function, or they are just not feeling their most optimal. For Lillie, pain is a portal. She said she looks at her patients as a puzzle, to figure out the root cause or root causes and helps them optimize their health with a high efficacy, low side effect approach. Lillie said she believes it's her job to figure out what the barriers to healing are because the body does want to be healthy and it is typically the humans that get in the way.

► FIRST VISIT

During their first visit, Lillie would provide Bonnie with an intake form, which she would fill out prior to her appointment. Lillie would want to know about her prior medical history, health concerns, and most pressing problems ranked by priority, and discuss any medications and supplements Bonnie might be taking at the time. Lillie would also want to know about her food, exercise, sleep, stress, vices, and device use before Bonnie comes into the room, to get a better sense of her situation. Lillie said that she gains a lot of information just from having the patient write about themselves as it gives her a window as to what the patient prioritizes, and thinks is most important.

Up front, Lillie would spend a good amount of time gathering a detailed history of Bonnie's health and lifestyle. In addition, Lillie would conduct a visual inspection of Bonnie, and gauge her mood, posture, vitality, essence, senses, and postural habit. Aside from expounding on her history and visually inspecting Bonnie, Lillie would conduct a physical examination of Bonnie's muscular skeletal system. Lillie would start with Bonnie's headaches, acknowledging that though they may not be the most pressing concern, they could be caused by a muscular, mechanical, dehydration, or nutrition issue. Lillie would be examining Bonnie's tissue texture, temperature, and skin

pliability, which would give her a better idea of Bonnie's general health.

Bonnie's initial visit with Lillie would be an hour and during that time she would identify what's going on with her psoriasis, hives, the overweight issue, the frequent headaches, and ruminating thoughts. Lillie would talk with Bonnie about what is happening and let her know that the reason she's not functioning optimally is because she's out of balance. She would share that 80 percent of how patients feel, and function is how patients are behaving and the choices Bonnie is making with her food, sleep, stress, and exercise need rebalancing.

Lillie would then dive into her treatment plan, explain it would be a process, and that the real basis of feeling better is going to be educating her on the things Bonnie is doing or not doing that is either supporting or detracting from her health. She would also provide manual work during the session and



said the nature of doing hands-on osteopathic manipulation can help reset the nervous system, which could give Bonnie some initial relief. Lillie would be sure Bonnie understands that her concerns are going to be addressed at the root cause and she will be undergoing a lifestyle change. Bonnie's takeaways for this initial visit would be for her to have some

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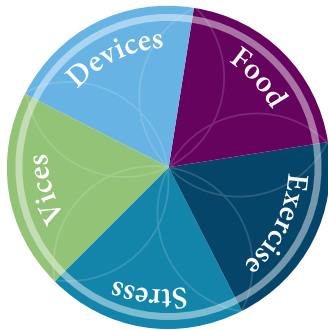
LILLIE'S PERSPECTIVE

practical strategies about what to eat, what foods to buy, what to keep in her refrigerator, and ideas on food prepping. If Lillie felt like Bonnie was ready, she might put her on a two-week vegan food plan to see how she does.

CARE PLAN

Lillie would give Bonnie homework in five areas:

- Food
- Exercise
- Stress
- Devices
- Vices



1. Food

Much of Bonnie's treatment plan would be focused on food. Keeping in mind that Bonnie is anti-diet, Lillie would talk about what she likes to eat, tuning into her favorite five vegetables. She'd talk about the concept of "food is medicine" and would get Bonnie started on a whole foods plant-based diet that decreases inflammation, is high in micronutrients, and more aligned with anti-pain.



Lillie would encourage more fruits, vegetables, beans, nuts, and whole grains. She'd point to beans as a substitute for meat because meat is inflammatory and can cause headaches. Bonnie seems to have a sweet tooth and Lillie would talk about how sugar causes inflammation, which could be causing her skin issues, excess weight, and headaches. Lillie would emphasize she's not the food or alcohol police and she would spend a lot of time talking about foods Bonnie enjoys and how she can lift the barriers towards eating better.

As a practical strategy, Lillie would recommend trying intermittent fasting, perhaps with her partner, based on an eight-hour eating window, which could help break some of the food addiction to alcohol and sweets

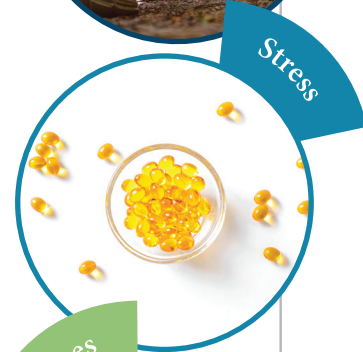
2. Exercise

Lillie would want to start simple and offer Bonnie ideas that are small, free, and match her personality. To get her moving, she'd recommend going for a walk with her partner or friend every day for one hour in nature.



3. Stress

Lillie would also address the stress Bonnie is experiencing. She'd explain that the stress is affecting her sleep and teach her a breathing technique of four counts in, eight counts out, three times a day and before bed that would help reset her nervous system. Lillie would recommend vitamin D3 at 2,000 units to help boost her mood.



4. Vices

Lillie would also address Bonnie's addictive habits and encourage her to reduce, if not stop, smoking cannabis altogether, as it negatively impacts her lungs and is dangerous during a respiratory pandemic. Lillie prescribes medical cannabis to her patients in New York and would work with Bonnie to find another form of cannabis to consume.



5. Devices

Lillie would recommend Bonnie shut down all screens and devices an hour before bed to help her brain turn off and get some rest. She would also suggest a valerian tea and a magnesium supplement to help calm her nerves.



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LILLIE'S PERSPECTIVE

CASE CONSIDERATIONS

Lillie would simplify information for Bonnie as she knows she's tried programs before and is coming to her frustrated. She would explain the science of what she knows keeps people healthy and demonstrate empathy toward Bonnie's experiences and challenges. She'd also let Bonnie know that accountability is important in making lifestyle changes and it takes a commitment to following what the body does best.

LONG-TERM

Depending on Bonnie's engagement and budget, Lillie would want to see her biweekly. She would have Bonnie come back the week after the initial visit to see what was working and not working and talk with her more about her metrics and how change can happen. Lillie's long-term goals for Bonnie

would include addressing her body mass index (BMI) and weight but to first focus on changing her mindset to make healthy choices that support her mental and physical functioning. Following a whole foods plant-based diet, committing to exercise, and shutting off her phone for better sleep hygiene, would be among priorities.

Lillie said she believes that once Bonnie sleeps better, she'll make better food choices, and it's likely she'll drop weight just from better sleep. Lillie also said that cleaning up Bonnie's diet might alleviate the hives. In addition, Lillie would spend a lot of time educating Bonnie on how all her issues are interrelated and let her know that she has agency over her health and can make a difference in how she feels. ○



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ROBERT'S PERSPECTIVE



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

Using a functional medicine model, Robert would take the symptoms to get to the systems to ultimately uncover the root cause resolution. He said he believes Bonnie has a gut permeability problem, autoimmunity, and a leaky gut. A lot of the symptomology she is experiencing such as difficulty losing weight, skin problems, and a changeable temperament shows there is at least a dysbiosis in her gut. Robert would focus on how to prove this hypothesis and what underlying reason is causing the problems, assessing

triggers and barriers by starting at the beginning, building rapport, and understanding her entire history. He said he believes the best doctor in the room is the patient, if they are focused on healing.

➤ FIRST VISIT

Prior to Bonnie's first hour appointment, Robert would have her fill out an intake form that would ask her about past and current history and include all healthcare visits, medications, lab reports, as well as a three-to-five-day sample diet. In addition, he'd ask Bonnie about her health goals and have her fill out a health appraisal questionnaire with 12 different symptoms that she ranks by priority. This is used as a tool for documenting progress during the treatment plan.

During her first visit, Robert would work to build trust and rapport with Bonnie and tell her though she's tried to address her issues before, this is a new beginning. He would start reviewing all the data presented and order a variety of tests to gather more. This would include a food sensitivity

test, omega-3 cell membrane test, a visceral fat test, an inflammatory panel, a complete blood count (CBC), a zonulin test, a lipopolysaccharides (LPS) IgG test, a leaky gut panel, and a heart rate variability test. He would explain to her his working diagnosis and why these tests are important for gauging any triggers and barriers.

CARE PLAN

In the interim, while waiting for the lab results, Robert would start Bonnie on a plan that would include intermittent fasting for 12 hours and recommend she eliminate processed gluten, dairy, sugar, and artificial sweeteners from her diet. He would first want her to reset her diet, start exercising 30 minutes a day, and support her in changing her mindset, reminding her the work she starts now is not just a new chapter, but a brand-new book in her life.

Once the test results come back, Robert would outline his short- and long-term goals for Bonnie. He would want to set her up for some early successes, so she doesn't get frustrated and drop-off. He'd talk about her history of weight issues and assure her they will be addressed and explain diet is not a pejorative word implicating a duration of time, while they will instead be more focused on sustainable lifestyle changes. He'd also address her high sed rate which implies she has inflammation and the medications she's currently taking, which he'd recommend that she stop.



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ROBERT'S PERSPECTIVE

Prednisone can increase bacteria translocation to the intestinal wall causing digestive problems, Silverman said. Cetirizine also has a negative effect on gut health, while famotidine reduces the acidity and the volume of the gastric digestive fluid and decreases stomach acid, allowing bugs to flourish in the gut. Given all her symptoms and (BMI), Robert describes Bonnie's situation as being on fire from the inside out. He's assessing whether she has an autoimmune disease, such as Lupus or rheumatoid arthritis.

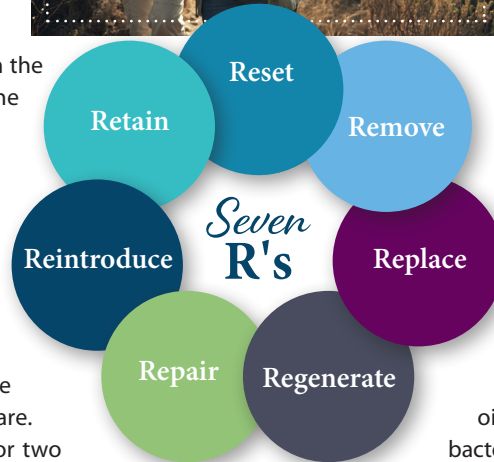
Robert would let Bonnie know that treatment isn't going to be a quick fix. He describes the process as a systematic marathon but he's going to give her sprint intervals, so she sees improvement. Otherwise, he would be concerned she wouldn't adhere to care. He would want to see her biweekly for two months and then monthly. Patients are typically seen between six to 12 months to work on restoration of gut lining functionality.

CASE CONSIDERATIONS

Robert would want Bonnie to know that he understands her situation and that he sees other patients who struggle with the same conditions. He would express excitement and gratitude to have the opportunity to help her and really make sure she felt heard in her frustrations and fear.

LONG-TERM

Short- and long-term goals for Bonnie would be the same, according to Robert, and would be measured by subjective and objective markers, which would be the health appraisal questionnaire and testing results, respectively. Robert said ultimately, the two markers will meet, though they may not be in sync for the entire process. The testing will give Robert an idea of how long treatment will take as she has multiple inflammatory markers. If the tests back up gut inflammation and autoimmunity, those conditions compiled with morbid obesity, depression, and anxiety, indicate a fault in the gut-to-brain axis.



Robert works with a system of 7 Rs:

1. **Reset**
2. **Remove**
3. **Replace**
4. **Regenerate**
5. **Repair**
6. **Reintroduce**
7. **Retain**

Much of the time spent would be removing triggers to detoxify the body's ecosystem. He would recommend Bonnie stops smoking cannabis. He would start addressing any food sensitivities by removing them while simultaneously adding a supplemental nutritional protocol. For instance, he would recommend oregano oils to take away the bad upper respiratory bacteria, add in barberry for dysbiosis, endorse garlic as the body's own natural antibiotic, and use serum bovine immunoglobulin, which cleans out pathogens that become antigens, he said.

The next step would be to replace digestive and pancreatic enzymes. Robert would want to add and improve bile slowly. He would then regenerate and repair the intestinal wall by healing and sealing the gut lining. The goal would be to create an anti-inflammatory environment so the gut can heal and add in specific nutrients to patch up the wall of the gut. Next, Robert would give Bonnie quality prebiotics, probiotics, and then a postbiotic that can serve as supplements to her diet and lifestyle. After those steps, Robert would reintroduce foods into Bonnie's diet and gauge the outcome. Lastly, he would help Bonnie retain her health and gastrointestinal integrity by providing her with a plan that includes a high-quality diet, regular exercise, and supplements such as a multivitamin, multimineral, omega-3 fish oil, vitamin D, and a probiotic.

Overall, Robert would be looking for improvements in body composition, visceral fat, mood, and symptomology. ○

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AYLA'S PERSPECTIVE



Ayla Barmmer, MS, RD, LDN

Ayla's priority with Bonnie would be to establish trust and rapport. She would want to get to the root causes of Bonnie's conditions without overwhelming her. Her goal would be to treat Bonnie in a strategic and manageable way, keeping in mind what Bonnie wants to see and accomplish. Ayla would want Bonnie to feel empowered and know that she has agency over her health.

FIRST VISIT

Prior to the session, Ayla would request lab work and data from the last six months as well as a list of medication and supplements. She would ask Bonnie to fill out a medical symptoms questionnaire (MSQ), which would be repeated throughout the course of working together to help measure progress and show clients any changes that otherwise might be subtle.

For Ayla, the first visit can make or break how the relationship starts and how effective it can be. She would want to collect as much assessment data as possible prior to the first visit so that her in person time with Bonnie is efficient and allows for them to get into the deeper work. Ayla's intake form includes questions that pinpoint a patient's priorities, main complaints, motivations, and what a successful outcome would look like. It also asks patients to describe their typical day. In addition, she would provide a food frequency questionnaire to gather that information prior to coming to the session.

In this first visit, Ayla said it's important that Bonnie feels heard and that she understands her needs and goals. In addition, Ayla would want Bonnie to understand that her approach will be tailored to her specific situation and she's not simply following a script, checking boxes, or funneling her into a generic approach. Ayla would set expectations that she's here to make recommendations and "shine a light" on the areas that



need attention. Ayla would explain her role is to help prioritize those areas for the biggest impact towards healing, but said it would be up to Bonnie to decide what's right for her.

Trust and rapport building would paramount, as well as clearly outlining Bonnie's goals, what she hopes to achieve through working together, and ensuring expectations are realistic.

The initial conversation would also include questions about Bonnie's experience with previous practitioners, especially the dietitian. This would help Ayla understand how Bonnie likes to work, what resonates with her, and what doesn't. As weight loss is one of Bonnie's struggles, Ayla would address Bonnie's frustration and emphasize that though she feels stuck, her body is doing what it is designed to do right now: prioritize other needs first before weight loss. She would explain to Bonnie

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AYLA'S PERSPECTIVE

that the path to weight loss is most often to help her body become more nourished and balanced so the weight can come off. Ayla would also spend some time drawing lines between inflammation, hormone balance, immune dysfunction, gut health, nutrient deficiencies, and weight to show her how addressing those imbalances can really help her with her weight loss goals.



Once Bonnie understands that Ayla's treatment comes from a comprehensive, integrative approach, Ayla would start diving deeper into her questions to get more information about symptoms and markers from different systems. She would want to know about Bonnie's menstrual cycle, including how long her cycle is and if she's noticed any changes, and she'd ask about digestion and bowel movements, including how frequent is she having them, does she feel she is fully eliminating, are they fully formed. Even though Bonnie didn't list digestion as one of her issues, because of the signs and symptoms she has listed, Ayla picked up on the need for potential liver health support, toxicity issues, as well as immune dysfunction.

Lastly, Ayla would run through Bonnie's typical day, including the foods she's eating, the timing of her meals, physical activity, sleep, work, and stress. Ayla would also want to know about Bonnie's food frequency throughout her week, so she can understand her intake, her preferences, and if there are any gaps in her diet. In addition, Ayla would want to know about her essential fatty acid intake as she is showing signs that may be an issue, specifically, the anxiety and depression. At this

point, she would recommend some initial tweaks to support Bonnie's digestion, blood sugar balance, and overall hormones and stress balance.

CARE PLAN

After the first visit, Ayla would want to collect more data to help dig deeper into the root cause of Bonnie's conditions, but there would be initial treatments she would recommend up front. If budget allows, she would order comprehensive vitamin and mineral testing to look for any patterns or absorption issues. She'd want to order a cardio metabolic panel, an ApoB lipoprotein marker and ApoE to see if she would benefit from reducing saturated fat in her diet. She would rather not take away foods that have a lot of nutrient density for no reason that may be enjoyable to Bonnie. Ayla would want to know about lipoprotein(a) to help put things into context regarding cardiovascular disease and would run a cholesterol balance test that would be helpful to make specific diet lifestyle recommendations for Bonnie. She'd want to run tests for liver function and possibly a complete thyroid panel. As a dietitian, Ayla would not be looking to diagnose and treat, but to see if she can make a system work better by giving it the right nutrients.

Though Bonnie doesn't have any reproductive hormone complaints, she is struggling with sleep, stress, cortisol imbalances, and metabolism issues.

Ayla wouldn't prioritize these tests, rather address other issues to see if any improvement is made in these areas on their own. But given her cycle, age, lifestyle, frequent drinking, and allergic reactions, she has a strong suspicion that Bonnie has some sort of estrogen metabolism issue that needs to be supported, which is low risk to treat.

Ayla would recommend Bonnie start including more cruciferous vegetables into her diet, which will help with liver health, estrogen metabolism, and hormone balance, while also providing nutrition, antioxidants, and fiber. As an herbalist, Ayla would start Bonnie on a nourishing infusion of cold water and nettle leaf that would sit overnight and be consumed the next day, which is nutritionally dense with antihistamine properties and rich in minerals like magnesium. She said this will help with Bonnie's immune dysfunction, allergy symptoms, anxiety, sleep issues, and blood pressure. If Bonnie was excited about the

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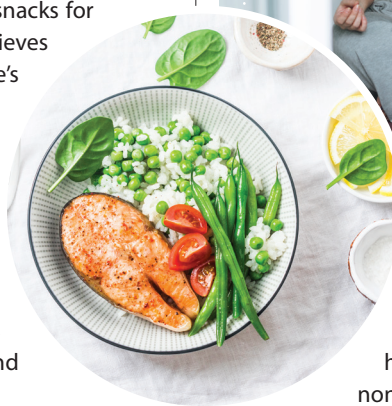
AYLA'S PERSPECTIVE

infusion and treatment, she would add some passionflower as a nerve, motherwort for heart health, and an herbal adaptogen of schisandra berry, which would help nourish and strengthen her body and lay the foundation for any deeper work that they would do together.

Aside from integrating more cruciferous vegetables, Ayla would talk with Bonnie about other foods and vegetables to incorporate into her diet. She'd spend a good amount of time talking about the timing of meals and snacks for blood sugar support, something that Ayla believes can be a root cause issue for a lot of Bonnie's conditions. She'd want to make sure Bonnie isn't on a blood sugar rollercoaster as it can have an impact on the immune system and digestive health, as well as overall hormone balance. She would want to ask Bonnie if she's satisfied with the food she's eating, how to incorporate more functional foods, and to start to work with her preferences to make tweaks that are manageable and impactful.

The last thing Ayla would want to initially address is finding an alternative to alcohol. According to Ayla, alcohol can be part of a diet and lifestyle but only when an individual's system feels healthy and balanced. If a person has a lot of health complaints, it can be an added stressor to their system. As a result, Ayla would provide Bonnie with a fun list of drink recipes and variations that she could buy or make with her partner, such as a tart cherry juice, a natural source of melatonin and antioxidants. She would want Bonnie to have something she would enjoy and look forward to while unwinding with her partner.

Ayla would also identify a new evening ritual that would help switch up Bonnie's routine so it's more supportive, avoids blue light stimulation, and promotes sleep. This could include salt baths with music, yoga nidra, and meditation apps. Ayla recognizes incorporating these strategies might not happen right away, but they could be a replacement for alcohol or watching videos. To help make the changes, Ayla would introduce the concept of behavior coupling, pairing something Bonnie loves to do with something a bit more challenging. For instance, if Bonnie's go-to is mindless scrolling social media,



Ayla would suggest doing that while she's stretching or moving her body.

CASE CONSIDERATIONS

Ayla would make sure to keep Bonnie's diet history in mind, as well as her preference for a non-diet approach. Typically, Ayla would present an elimination diet to minimize symptoms while working on underlying issues, however she would not go this route with Bonnie as she thinks it may be too emotionally triggering and distracting. Instead, she would add in foods and focus on balancing and timing of meals. In addition, Ayla would invite Bonnie to bring her partner to a session, so he could get a better understanding as to why Bonnie is making these lifestyle changes.

LONG-TERM

Ayla would set the expectation that she'd like to see Bonnie for a minimum of four months, depending on how everything goes. After that, she would plan for seeing Bonnie quarterly. Ayla recognizes that Bonnie is seeking more connection so she would invite her into her practice's community forum for additional support, which includes biweekly group calls. Long-term, Ayla would want Bonnie to receive highly personalized recommendations that help her achieve her current goals and mitigate future risk. She would want Bonnie to feel that her diet and lifestyle plan were specific to her, sustainable for the long term, and that she's in tune with her body's red flags so that she can respond to them before they become big health problems. ○

About the Experts



Lillie Rosenthal, DO

An expert in personalized lifestyle management with a focus on injury prevention, pain management, health optimization, and performance, Lillie Rosenthal, DO, is a physician with a private practice located in New York City. She is a specialist in Physical Medicine and Rehabilitation. Rosenthal sees a variety of patients including world-renowned musicians, dancers, choreographers, writers, and athletes, and treats such conditions as back pain, tendonitis, and repetitive stress disorders. She is also a consulting physician for the New York City Ballet, American Ballet Theatre, Metropolitan Opera, MTV Video Music Awards, and several Broadway productions. Rosenthal's media experience includes national television appearances on The Dr. Oz Show and she has been featured as an author and expert source in a number of publications, including *U.S. News & World Report*, *the New York Times*, *The Huffington Post*, and *Consumer Reports*. Rosenthal is an author, educator, and media spokesperson for the American Osteopathic Association. She is a member of the medical advisory boards of MedShadow and Plant-Powered Metro New York as well a Council of Directors member of True Health Initiative. Rosenthal is the host and co-founder of the podcast "Power to the Patient."



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

Robert Silverman is a chiropractic doctor, clinical nutritionist, national/international speaker, author of Amazon's #1 bestseller "Inside-Out Health," founder and chief executive of Westchester Integrative Health Ctr. He graduated magna cum laude from the University of Bridgeport College of Chiropractic and has a Masters of Science in human nutrition. The ACA Sports Council named Silverman "Sports Chiropractor of the Year" in 2015. 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 a Level 1 laser FDA study. Silverman's new book, *Superhighway to Health*, is expected to be published in June 2022.



Ayla Barmmer, MS, RDN, LDN

For over 15 years, Ayla Barmmer, MS, RDN, LDN, has been advancing the health and empowerment of thousands of clients, patients, peers, and mentees, at the intersection of nutritional science, functional medicine, and evidence-based holistic solutions. Barmmer owns and operates Boston Functional Nutrition, an integrative and functional nutrition multi-clinician practice, that specializes in women's health and infertility. She is also the founder of FullWell, a fertility wellness brand, widely endorsed by a diversity of health practitioners for its quality and education. Barmmer founded the Women's Health Nutrition Practice Group in 2017 where she serves as a mentor and educator and co-founded the Women's Health Nutrition Academy in 2018, a leader in its field. Barmmer also serves on several boards including the medical advisory board for Vital Proteins.