



THE BLOODLINE WITH LLS

A PODCAST FOR PATIENTS AND CAREGIVERS

Episode: 'Diagnosed with Myeloma: What Should I Eat?'

Description:

Eating a well-balanced diet is important, especially with a diagnosis of multiple myeloma. A proper diet during and after cancer treatment can help you feel better, maintain your strength, and positively impact recovery time. Listen in as Alicia and Lizette speak with Gina DeLuca. Gina is an Outpatient Oncology Dietitian for the Center for Cancer Care at NYU Winthrop Hospital. There, she provides individual nutrition counseling and group nutrition education presentations to patients during all phases of oncology care including prevention, treatment and survivorship. On this episode, Gina shares the types of foods that may benefit a myeloma patient and the types of food that they should avoid. Gina also explains why vitamin supplementation should be discussed thoroughly with a patient's healthcare team, the link between myeloma and obesity, the truth about sugar and its relation to cancer, what foods can potentially interfere with treatment and useful resources for patients and their families.

Transcript:

Alicia: Welcome to The Bloodline with LLS. I'm Alicia.

Lizette: And I am Lizette. Thank you so much for joining us on this episode. We will be speaking with Gina DeLuca. Gina is a registered dietitian. She is currently an Outpatient Oncology Dietitian for the Center for Cancer Care at NYU Winthrop Hospital. There, she provides individual nutrition counseling, as well as group nutrition education presentations to patients during all phases of oncology care including prevention, treatment and survivorship. As a member of the Oncology Support Services Team, she serves on the NYU Winthrop Cancer Committee, is a member of cancer diagnosis-specific work groups and participates in institution-wide cancer awareness events. Gina received her Bachelor of Science in nutrition and dietetics from New York University. She completed her dietetic internship at Massachusetts General Hospital. As a member of the Academy of Nutrition and Dietetics and the Oncology Nutrition Dietetic Practice Group, Gina is currently pursuing specialized certification in oncology nutrition. Thanks so much for chatting with us today, Gina.

Gina: Thank you so much for inviting me. This is such a wonderful opportunity and I am very grateful to be here with you today.

BEATING CANCER IS IN OUR BLOOD.



Alicia: Gina, you and I, we met while we were attending one of LLS's blood cancer conferences and, for those listening, LLS blood cancer conferences are free education events where blood cancer patients, survivors, caregivers, family members and health care professionals come together and learn more about treatment options, emergent therapies, management of survivorship issues and LLS resources. So, to see where the next BCC may take place in your own area, you can visit www.LLS.org/bcc. Now Gina, at that conference, you presented alongside hematologist and medical oncologist, Dr. Marc Braunstein, and when you were both finished speaking, so many people came up to you and asked you about, myeloma overall, and about their personal nutrition inquiries and both of you were just so patient and willing to take each and every question; and it was clear to me and to those around me that you were passionate about your field and about nutrition for cancer patients, specifically blood cancer patients. What brought you to the field of nutrition and dietetics?

Gina: Oh; thank you so much, Alicia, for recognizing that on that day and also for asking me, you know, to speak and for giving me this opportunity today, to be able to get, the message out to so many people. It's funny, thinking back about this looking over the questions and thinking that I've always had a love of science and a love of art and I feel like nutrition is just a perfect junction for the two. From the time I was young, my family always had a garden. Grandparents had gardens. We were always, you know, kind of picking vegetables and making meals with them and, just really, like, simple things. You know, what the simple things could do and how important food is and then creating art of it. So, to me, you know, taking that food and making a meal out of it is art. So, it's just this perfect, you know, combination of the two of them. So, I think it was just a natural course of things. When I got into middle school, we actually had a home economics class and we had to talk about what we wanted to be; what we grew up in. At that point, I said, "nutritionist, dietitian". I knew at that age and then, going into school, I actually went in as an education major and then I was given the opportunity to take nutrition for my science requirement and I loved it. So much so that I actually changed my major over into nutrition and haven't looked back since. It's been fantastic especially now, being in the oncology side of things and seeing how much we can really do to help people. I know I'm where I'm supposed to be, so thank you for that confirmation.

Alicia: And that is a wonderful feeling knowing exactly where you're supposed to be. Now Gina just switching gears over to nutrients and what our body needs. It can be a challenge when you have cancer, such as multiple myeloma, which is a type of cancer that forms in the plasma cells within your bone marrow but keeping up with good nutrition is important. So, on this episode, we will be chatting about nutrition for a myeloma patient. Gina, how important is nutrition for a myeloma patient?

Gina: Very important. It plays an integral role in really supporting the patient on a variety of levels. Primarily physically because what we eat literally becomes our body cells and through the breakdown of those nutrients feeds our body cells, but I can't



help but include the mental, emotional and spiritual levels, too. Food just plays such an important role in nourishing our bodies in so many ways and I think that is very important, especially when a patient does have cancer to focus on the fact that food is empowerment. So, in this setting of not having control over various things, this is one thing that people can really, kind of, take ownership and say, "this is what I can try to do for myself today" and to the best of their ability. And that's where support becomes so important, too, whether it's family, or it's community, or even, you know, healthcare providers; everyone just really rallying together as a team for the patient. But it is so important in the nutrients especially the calories for energy; the proteins for strength; all the vitamins and minerals that play all those little roles in all the functions that they perform is very important.

Lizette: So, what should a myeloma patient eat or what should they avoid?

Gina: Yeah so; these are, you know, great focuses because I think that's probably what patients come to me and ask mostly is, you know, what should I eat and what should I avoid? And so, what we find across the board for all cancer diagnoses is that it is individualized, but specifically, when it comes to myeloma patients because patients may need to hone in on certain foods, or omit certain foods for different reasons, depending on where their disease process is. So, you know, we find that sometimes patients may have anemia where they are lacking certain nutrients. Foods that are especially high in iron are important. And, again, I think things, sort of, have to be taken into account for what that person's preferences are and how we can best incorporate those foods into their diet, but foods that have heme iron, which is basically from animal products and so it is very readily absorbable by itself, you know, may include clams and red meat, as well as sardines. And then non-heme iron are plant-based sources of iron. So, they may need some combination with grain sources like rice, potatoes and things, but beans, chickpeas, lentils, nuts and spinach, and other leafy greens can be a great source of iron. And then we also recommend that they include a vitamin C-rich food source so something, for instance, like peppers, oranges, berries, citrus. And again, everything is individualized to that patient so if somebody can't have one food maybe we can find another food that has that nutrient. So, it is a lot of working together to combine things. And then, folate plays a big part in forming blood cells. So, foods that are high in folate include asparagus, black-eyed peas, lentils, broccoli, cooked beans and spinach as well. And then, there's always vitamin B12 that also comes in that works together with folate to form red blood cells. So, beef, again, clams, fish and poultry, eggs and dairy products, fortified cereals and fortified non-dairy milk such as soymilk, flax milk, or almond milk can also be a very helpful sources of vitamin B12.

Alicia: Gina, what are your thoughts on vitamin supplementations?

Gina: So, vitamin supplementation can get very tricky and can sometimes have adverse effects so where—let's say, for instance, someone is deficient, then they most



likely will need a vitamin supplement because food may just not be enough. So, that is where it is very important to work closely with your oncologist for them to check blood levels to see where things are added if it's in relation to, let's say, a given treatment versus the disease process itself. And then, decisions can be made on supplementation in amounts that are appropriate. I think where we get into trouble with supplements are where people start self-supplementing and buying things over the counter because of things that they are reading or seeing on the internet. It's always the, you know, care and concern of someone else who's been through it that gives them information about what they should do but might not be what they should do. So, we really have to encourage our patients to come to us and bring all their information to us and let us be the ones to filter it for them. So, I think, you know, of course, there are certain specific cases where they might be appropriate, but not necessarily flat across the board.

Alicia: The internet can certainly be your worse friend or your best friend; Gina, are you finding that a lot of patients are coming to see you with things they already printed out after they've done their own research or are you seeing that their coming to you more at a baseline and asking you to help them build from there?

Gina: I think, probably, at baseline more so and then, you know, of course, there are some select patients that will come with information that they either read or printed and then we, sort of, take on case-by-case to see, but I think a lot of our patients are coming at baseline, you know, sort of wondering where their starting point is; and that's why we have a practice to see all of our new patients in the infusion center, as well as patients that are referred to us by the doctors and nurses to make sure that we are capturing everybody that needs nutrition service at whatever given point. Vitamin D can also be very helpful, too. I just wanted to mention although it is very challenging sometimes to get enough Vitamin D so, oftentimes, Vitamin D does need to be supplemented more than anything else, but some sources do include egg yolks, fatty fish, fortified dairy products and non-dairy milks as well. So, at least this offers a little bit of help, but that I find tends to be the supplement that most often needs to be—rather the nutrient that needs to be given in supplemental form.

Lizette: Sure; and everybody is so different. I know that a lot people prior to their cancer diagnosis may be on certain types of diets or a certain type of lifestyle where they may not eat meat or dairy. Is that something that you just work through or work with a patient as to see, what other things that they can eat during treatment?

Gina: Absolutely; and, you know, a plant-based diet has really shown a lot of benefit across the board for many different conditions; cancer as well as diabetes, cardiovascular disease. So, it is such a helpful diet on so many levels; and if we can utilize a lot of the nutrients involved and the principals involved, that's helpful. Sometimes, too, we, find that so many of those nutrients and many of those foods have vital chemicals, plant-based compounds that are only found in fruits, vegetables,

and grains, and beans, and different plant-based products that really have a strong anti-cancer effect. But what's wonderful about the foods versus, let's say, a concentrated supplement is that it's in a form that the body can truly absorb, and will utilize, and will not have an excess where then there can be too much of a good thing.

Lizette: Sure.

Gina: It can actually, potentially interfere with the treatment that the patient is being given and inhibit the treatment from working as well as it possibly could. So, we work with that, too, depending on the patients that on certain types of active treatment, like for instance, Velcade or bortezomib; it's the other name for it. That can have interaction with green tea. Green tea can actually render the drug ineffective in that way so we want to make sure that people don't utilize it so they are able to get the best benefit from the drug working as well as it can.

Lizette: And do you usually tell people, or do physicians tell people up front because I know that I drink green tea every day and it might not be in the forefront of my mind to tell my doctor that I am drinking green tea. It's just part of my day.

Gina: Absolutely, yeah; yeah, no; that definitely can happen for people. It just becomes so much a part of one's routine that we can almost take it for granted so we actually do, at the onset. In fact, it's funny, I had a new patient today who was on it, in our infusion center, who I educated, and she was great. She was like, "oh, Dr. Braunstein already did mention this in our consult. So, it was great. So, you know, we are always, like, looking to, kind of, close the loop and make sure that the patient, at the different points that they come to us, are getting, you know, the same information and reinforcement of the information because a cancer diagnosis is just hugely overwhelming for someone to be able to take all of that and on top of, you know, the fact that they now have a major life change in front of them. So, we just really try to normalize things as much as we can and give them the support that they need. It's interesting, too, that some recent studies have shown specifically to have compounds that could be helpful exhibiting anti-myeloma properties, in fact, our cruciferous vegetable family. Some things like our broccoli, cauliflower, brussels sprouts, cabbages. And, you know, again, in appropriate amounts. We don't need to have overkill, but just enough and consistently throughout the diet, that can be very helpful.

Lizette: Are there some foods that interfere with medications?

Gina: Yes, so actually, it's funny because, there was a patient I was working with last week who was consuming black licorice pretty consistently. So, we actually had to have her stop doing that because that can interfere with various medications and actually cause different side effects, potentially elevated blood pressure, swelling,



irregular heartbeats. It actually, if I'm understanding it correctly—it actually works to deplete the potassium in the body so there can be adverse effects that occur.

Lizette: Wow.

Gina: So that's—one. Grapefruit is another. Grapefruit is just amazingly unique.

Lizette: Yeah.

Gina: It just interferes and interacts with so many different things and then the mechanisms of action, as far as I very roughly understand, are so varied that it really can cause an issue. So, yeah; those are definitely two on, sort of, the hit list, that I usually...

Lizette: Wow!

Gina: ...make sure to look out for. And there are just so many others now being identified, too, because we're really coming to learn more about these phytochemicals and how they work. You know, for a long time, it was really just our vitamins and minerals which are still, of course, very important, but these phytochemicals, you know, are just a whole other world. But again, a lot of it depends on the amounts and how they are being consumed. In food, they are much more easily absorbed—it's just a more natural form that the body recognizes so it's more benign, but I think we do have to be careful, too, like a lot of times with myeloma, there can be kidney involvement so we want to make sure that patients aren't consuming too much of protein, potassium, phosphorous, sodium. All depending on where their disease process is and where their blood levels of certain laboratory values are.

Lizette: Sure. I know I've heard of grapefruit. I don't know if I've ever heard of black licorice or how that conversation would come about actually. Do you ask people to write down what they are eating just to make sure?

Gina: Yeah, so we actually do a food recall when they come to meet with us or rather, we go to meet with them, especially initially in infusion, because we are meeting them at chairside.

Lizette: Yeah; I always can't pronounce the active ingredient in red wine. What is it?

Gina: Resveratrol. That took me a long time, too. Yeah.

Lizette: And that's supposed to be very good for people. I don't know. I don't drink wine.



Gina: Okay. Well, the interesting thing that's for anyone that doesn't consume alcohol, you can actually get a considerable amount from red grapes. That's the only...

Lizette: Oh.

Gina: ...thing I know offhand, but interestingly enough; so that's something that's similar to the green tea can potentially interfere with some of the myeloma drugs, but I think you have to have really high concentrations of it. We're always weighing risks and benefits...

Lizette: Right.

Gina: ...because there is a risk to everything depending on how much we are consuming. There's a health benefit there that if someone has a handful of red grapes, I don't think they have to stress over it. If they are having very large amounts every single day, repeatedly, that's where more of the concern comes in. And that sort of ties us in nicely to the topic of toxic exposures in a way where, you know, toxic exposures of certain herbicides, pesticides and different ingredients that are used on crops. For instance, Glyphosate is one of these that have been linked to a potentially increased risk for myeloma. So, I think that those, you know, pose a concern, too, in terms of certain foods because a lot of patients will ask us, "do we have to eat everything organic?"

Lizette: Right.

Gina: And the truth is, you don't. You know, there's a great governmental agency, The Environmental Working Group, and they work really hard to make sure that that list, the Clean 15 and the Dirty Dozen, are updated regularly so that those of the, let's say, dirty dozen, the top 12 fruits and vegetables, that if you consume them pretty often, you probably want to buy organic, but if you're consuming more on that Clean 15 side, you can buy conventional and not be concerned, because it does become a cost factor. So, that's a good thing I will often say to people if they say, you know, "should I eat this food organic?" Well, how—how often are you having it? How much are you having it? All these things factor in. You always want to make sure that people get the baseline nutrition from a food rather than to miss that opportunity. Having conventional once in a while is not going to be harmful. It's more the repeated exposure to certain foods and certain crops and what they are exposed to.

Lizette: With fruits and vegetables, in particular, are you supposed to clean them in a certain way just because they tend to have more bacteria on them? I know that before people used to talk about a neutropenic diet, now not so much.

Gina: Yes; right on and a great segue way into another very important topic so thank you. Because, yes; that's very important for everybody as well. You know, make sure



everything is well-washed, well-cleaned. What I'll often recommend to people is just really rinsing and cleaning well, adding maybe a couple of drops of fresh lemon juice or white vinegar. These are antimicrobial in their nature, so they are able to help remove bacteria well. Sometimes, people are coming in using all kinds of fruits and vegetable washes and soaps, and things and that can actually, you know, get into another issue of, you know, we shouldn't be ingesting certain types of chemicals like that. So, rather just using something natural can be really effective because that, too, the research has shown us that we want to make sure people are getting the nutrients that are in those foods. So, as long as they're not severely neutropenic where their white blood cell count is extremely low, if they have a fairly adequate count, they're able to consume these things without an issue and they are getting more benefit from the food itself. So, just that really good, you know, strong food safety practice while washing, while cleaning, using things fairly quickly, not letting things sit in the refrigerator for too long, making sure everything is up to speed is good.

Lizette: Sure; and I know that I've often asked and patients often asked about meats that in the deli counter; the ones that are fresh versus the ones that are sealed if it's better to have sealed meats just because of bacteria.

Gina: So, I think it all comes down to how it was packaged, when it was packaged. You know, we always have that concern. Was it cleanly packaged? I think the most important thing is especially if someone is on transplant guidelines, that they should be heating that meat to a certain temperature. The CDC has a great website foodsafety.gov. It's fantastic for giving those guidelines of what those temperatures should be, but heating things to that point of, like, steaming or, you know, making sure that things are cooked off is important even if it's singly packaged because we just don't know what the concern is, but these are some general tips. Again, if someone has a fairly adequate white blood cell count; if they are making sure that the meats and the cheeses are cut on separate slicers, that's helpful. I always say, too, wherever you are going to get a good turnover. If you go to a supermarket - where there's a really high turnover and things are moving faster. It's the places where it's sitting, we don't know how often they are changing things. And you can kind of get a sense when you see things but - I think if people are concerned, they should just heat it to steaming just to make sure that everything is cooked off.

Lizette: Okay; and you also mentioned cheese and I know that a lot of people ask about dairy products.

Gina: So, I think that dairy is best bought organic as possible only because then we know that it's a cleaner type of dairy as opposed to having hormones, antibiotics and all these things, sort of, added in the process. You know, always just, I think, looking holistically or humanely at how the animals are raised, how they are treated, how things are farmed, how things are sourced, I think it's really important. I think there's become a really strong, sort of, lash back against dairy and I don't think it's dairy,



itself, because dairy is really a good source of protein, calcium, other nutrients that are helpful. Vitamin D, Vitamin A, potassium, can be helpful, but I think it's all about, looking at, is its clean dairy in that sense? Or is it a potential carrier of hormones and antibiotics, and other preservatives, things that could cause a problem. But I think it is also about being moderate. I think if people are leaning toward more plant-based foods because they feel better from it, I think that's something definitely worth exploring.

Lizette: Sure. We have personalized nutrition consults here and our registered dietitian, does say that a lot of patients, once they are diagnosed, really talk about extreme diets with her. They tend to, once they are diagnosed be very cognizant about everything that they are putting into their mouth. And if it's not them, it's their loved one, that's caregiving for them and, to a point where a lot of people do lose a lot of weight, not just from the actual medications, but because, they are not eating as much. Do you find that?

Gina: I definitely see that and it always, sort of, breaks my heart because I think that the most important thing that we can do is really support the patient where the patient is at. I think that a lot of the information that's on the internet really has to be clarified, like I had said initially, filtered back through the person's healthcare team because those are general guidelines. When we really get down to individualizing care, it can be the complete inverse of what they say out there that that person ends up needing. So, I feel like it takes a village and we really have to put the patient at the center and see what is it that they need, and really explore their preferences; and are there ways to get certain nutrients. I always think that any diet, or any meal plan, or anything that cuts out a whole group of nutrients in food is not sound unless there is a clinical indication to do so where, in certain cases, there may be. The ketogenic diet, as we all hear about every single day, has...

Lizette: Yeah.

Gina: ...really taken flight and it is frightening. You know, in cases of seizure and certain neuro-oncology conditions, it can be extremely effective in optimizing quality of life and potentially prolonging life, but in other cases across the board, it has not shown to do that, and because it cuts out major foods that we need for energy, it can be very concerning. So, that's one thing that concerns me and we recently embarked on getting some education here to be able to really service our patients that need that, but to be able to distinguish for our patients that don't that it's not something that we may be at the point of using yet in society, we may need to just take a step back and really just get back to just balance in giving the patient balanced nutrition. So, I think it's all—it's important, too, to support the caregivers and see that--because, again, it's an area where people look to empower. You know, whether the patient themselves—how can they support the patient in maybe another way that's actually more supportive than to add more stress around mealtime and eating because a lot of times



we do see weight loss that is not helpful. It's actually harmful because then they are losing muscle tissue which can compromise their immune system. I think maybe we can help them take a step back and just see that there are ways to get to the same goal that might be better for everybody involved.

Lizette: Sure.

Gina: At the patient's taste because their taste can change so profoundly as they go through treatments so we really, sort of, honor where they are at and almost make a journey out of it. You know, I encourage people sometimes to keep a food journal for what is changing and why and what they are recognizing because a lot of things that they initially loved, they can't stand now, but they have a whole new host of preferences. So, just to try to put a positive spin on what's already a challenge.

Lizette: Sure; and I love that you are mentioning, also the caregiver because we find that the caregiver, as well as the patient, when they are given the cancer diagnosis, they really feel out of control. So, it's very empowering, we find, when patients and caregivers are saying to us, "well, this is something that we can do. This is something that we can actually participate in" whereas, you know, treatment is treatment, cancer is cancer. It's really different, when you can do something.

Gina: I feel very blessed to do what I can do because I almost look at the nutrition piece as, like, an artist's palette. So, you really have this blank canvas to help this person in a way that they need the help the most and the way that they are going to best respond, nutritionally, to what they're able to do; and to sort of give the basic foundation of a general, helpful diet and what that means, whereas, sort of, the nuances that we weave in for that particular person it may end of being, what works for one person is not going to work for someone else and it's just a way to individualize their care and help them come through this experience. And, first of all, I'll always tell people, "you never want to stress about what you eat" because the spike in your stress hormones, your cortisol, that's going to cause inflammation or help, you know, promote inflammation and that's the exact opposite of what we want to be doing. It's literally be shown to do that and so we do want to remove the stress from it. This is the piece that is just like the—like the garden or like the ground--to just, sort of, work through and it's, like, their—you know, their sandbox. They can play. They can do whatever they want with it, as long as they are getting those basic nutrients that their body really does need to sustain through treatment, there is a lot of room to play with, so it helps. And to just really try to help encourage balance because I think it's, as much as sometimes we have people, you know, that are struggling to maintain weight, we do have people that are struggling with obesity; and obesity is such a risk factor for cancer, in fact, for myeloma as well as for recurrence of cancers and so we really work to just try to help our patients to find the middle of the road so that they can just be optimized, not only for overcoming this diagnosis, but for preventing further diagnosis in the future.

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Lizette: Sure; and you did say that sometimes it does affect the treatment how you taste foods. So, does the taste of food actually change?

Gina: Yeah; so, it's wild. Sometimes, a complete lack of taste occurs, or a different taste, or a poor taste like a bad taste where people will almost say that the food tastes bad. It tastes as if it were spoiled and so they have a family member taste it to see if it really is spoiled and while it's not. Then, we work with them to try to find what it is that can help overcome that. So, a lot of times, potent substances like citrus, as long as they have no mouth sores or mouth irritations, citrus can be very effective for helping with metal tastes, bitter tastes. Sometimes we need a little bit of sweetness to overcome bitter, or salts, or sour so we are constantly, like you know, working with them to say, "what is it that you are experiencing and how can we try different things to help you overcome them?"

Sometimes really helpful is just making a baking soda rinse with certain proportions of water, baking soda and salt and then rinsing with that throughout the day; periodically throughout the day can really help people. It's almost, like, a neutralizer—a good neutralizer.

Lizette: Sure. I know that I've heard of a lot of patients that they said that they needed spicy foods—something that is a little bit more spicy than they typically would have had.

Gina: Yes; yes. Definitely spice has come up for me, too. A lot of people find that Capsicum, like cayenne pepper is helpful...

Lizette: Hmm, hmm.

Gina: ..as well as like turmeric, and ginger, and then vinegars and really even pickles, or pungent kind of tastes do stand out. Yeah, so those are great ways to really give flavor without adding a lot of salt because if they do have any issue with their fluids, that is the blood pressure where having to watch sodium, then that eliminates that issue. We can kind of work more with the flavors of fresh herbs and spices too.

Lizette: And I know that on one of the podcasts, a young adult, she had Hodgkin lymphoma and she said that because of that metallic taste that you mentioned, that even using plastic forks and spoons, utensils made it a little bit easier to tolerate the food.

Gina: Yes; yes; that's a key piece of information. Thank you for mentioning that because a lot of our patients will try that and they say it saves them; that they end up just using plasticware throughout or, if they are concerned about contributing to excess plastic waste, then they just get a set of, let's say, plastic fork, spoon and knife and they will just wash it well afterwards.



Lizette: Sure.

Gina: But that have something that is not metal constantly coming into that. Metal on metal can just be unbearable. Sometimes even, patients find that sipping through a straw helps because it just localizes that fluid to one spot, so they don't have this big influx of fluid coming into the full mouth and overpowering it. There are so many strategies. I really look at it as, like, these little, you know, tips and tools in a toolbox that we can use to really help people overcome going through this.

Alicia: There tends to be more and more research that is coming out or more articles coming out regarding the connection between myeloma and obesity. Now within your line of work Gina, are you seeing that there is a lot of research out there that shows a connection between the two?

Gina: Yes; so, I think that, very important to pay attention to, is the connection with inflammation that occurs with obesity. As well as the presence of other known inflammatory conditions can increase the risk for myeloma; so, in particular, diabetes, cardiovascular disease. So, what we find, unfortunately, is that there's a lot of interaction between all these conditions and now, unfortunately, cancer is becoming more of a chronic condition where inflammation really seems to be at the heart of these issues.

The American Cancer Society had studied the connection with obesity and a lot of it seems to be linked to the westernized diet and lifestyle that have come along with modernization. With the westernized diet, we are looking at less plant-based products, less of protection from these phytochemicals and fibers that have shown to be helpful, less good nutrition to give a strong microbiome or the gut bacteria, the good bacteria in our bodies, and unfortunately, with a lot of refined sugar, increasing insulin which that, you know, spike in insulin and then insulin resistance, that all, leads back to inflammation, but I think it comes together.

Lizette: I know that Gina mentioned foodsafety.gov. What are some of the nutritional resources that you provide to your patients?

Gina: I love you guys as a resource, to be honest. I think that that's a wonderful resource to start with. You know, especially in terms of I remember there being a great food safety, tip sheet for people that was really helpful that we had given out at one point. I do love our Academy of Nutrition and Dietetics, our national organization for registered dietitians. We have an oncology nutrition dietetic practice group and that really is my main go-to for information. So, there are a lot of resources there on the website. I believe it's oncologynutrition.org. The American Institute for Cancer Research is really good, too. They're really big on plant-based information as well as the National Cancer Institute is phenomenal for their pdf and their booklet on eating tips during treatment. So, I think it's Eating Hints for Patients During Treatment. And

then definitely the Environmental Working Group, too, for all that information about organics and different toxic—potential toxic exposures to avoid.

Alicia: Gina, thank you so much for that information. I know that our listeners will be very grateful for those resources, those are very helpful. Another topic that comes up that we didn't address in detail was malnutrition for cancer patients. Would you be able to speak more about that?

Gina: Sure; it, sort of, goes one of 2 ways; either the malnutrition or starvation comes when cancer is really working, you know, on the body catabolically; muscle tissue is breaking down, somewhere to a very low weight status. That's, let's say, our classic presentation of malnutrition and so that is absolutely concerning and needs to be addressed immediately once someone is diagnosed with cancer and is being worked up for a treatment plan, but I think that the other end of the spectrum, as I have been, you know, taught throughout my studies and my positions in my field, is to look at the obesity piece as well because there's malnutrition there that often gets overlooked, unfortunately, and a lot of that ties back to people being on that westernized diet, not getting the nutrients that their body really needs on, what we call, micronutrients; so, our vitamins, our minerals, also then the phytochemicals, the fibers, all these things that really help to optimize the body against cancer. So, there is malnutrition therein as well. Also, a lot of times lacking the omega 3 essential fatty acids because these are literally essential -our bodies can't make them. We need to take them into our diet, and they work to modulate inflammation. They really work to regulate inflammation in the body. And that's why we do the full workup. We do it to really get a sense of what people are eating and how those foods can optimize them. Or, if they are not getting foods to optimize them, how do we integrate those foods in so that we get the most balanced plan possible for someone.

Alicia: And Gina, is there anything that you think that we didn't cover or is something that you think that we should delve deeper into?

Gina: I think that I just want to mention the plate method. I love the plate method in terms of that 9-inch plate and half of your plate being vegetables and/or a salad, a quarter lean protein, a quarter a whole grain or a whole food starch, and then a serving of fruit and a serving of dairy, or a dairy alternative, on the side really helps to give you that complete balance that you need at a meal. So, I would definitely touch on that and I think that that probably is it. I think really when it comes down to any treatment-related symptoms, we take that, patient-by-patient to really see whether it is taste changes, nausea, diarrhea, anything else going on that we make sure that we optimize them. Even fatigue, you know, something like fatigue in diet. You know, people may think it's just part of, like, no; sometimes we can really make sure that they're nourished and hydrated and combat that fatigue as much as possible. In fact, we believe there is a study on ginseng that was shown to be—it doesn't necessarily have to be a strong supplement; maybe something like a tea. And, again, all of these



things we factor together to make sure that it is safe for the patient and given in appropriate doses or suggested in appropriate doses.

Alicia: Gina, another topic that I see a lot of information on is sugar and its relation to cancer. For those listening would you be able to explain sugar and its connection to a cancer diagnosis?

Gina: Sugar doesn't directly feed cancer. The bigger concern is that when people are eating too much sugar, it is taking the place of those nutrient-dense whole food calories so we want to make sure everyone is getting what they really do need and not the things that they don't, but I think, sometimes, that's where a lot of the patients and family members restrict because they think there is a direct connection and sometimes people just need to get those baseline calories in and they need to enjoy what they are eating. So, I would say 80 to 90% of the time, it's like the life factor. You know, enjoy what you are eating. You know, let's say, 80 to 90% of the time, you do as clean, good nutrition as you can. The other part of the time, you have to enjoy what you're eating. We have to factor in these exceptions; otherwise, it's just unbalanced.

Lizette: Sounds good.

Alicia: Thank you so much, Gina, for joining us today and for the difference that you are making in the lives of so many cancer patients. You mentioned earlier that nutrition requires some sort of creativity and I know that you are an artist for many patients and their families, so again thank you so much.

Gina: Thank you so much. I've really been honored to have this opportunity and I hope that, it has been helpful for someone.

Lizette: It was great, thank you.

Gina: Thank you.