

preventative diet, which is available at AICR.org. American Institute for Cancer Research. Those guidelines would be the best answer for everyone.

[Lynn] Thank you.

[Lorren] Sherry, I know you had a question on diet.

[Sherry] I take a TKI, and I was just wondering if I should consume more protein due to it breaking down my muscles constantly? I know that taking too much protein could probably damage the kidneys, but I also have the problem with my muscles constantly breaking down.

[Rhone] I think that's a great question; so anytime you are in the healing process or under the effects of a medication that is, for example, breaking down muscle tissue, it is appropriate to consume more protein. A dietitian will do a calculation, which is about 1.2 grams per kilogram of your of your weight to kind of give you an estimate of how much protein you should be eating. But basically, what I recommend is protein at each meal. So, three times a day, consuming some kind of a protein food. If you are consuming any snacks, that's another opportunity to include protein in a snack. If you feel that your protein intake is not consistent, then using a protein supplement is a good idea. And so, everything from a protein bar to a protein drink, and of course homemade, are totally fine. I think it's a smart idea.

[Sherry] Thank you.

[Lorren] Tiffany, I know you had a question about vitamin supplements.

[Tiffany] Thank you, Rhone, when we're not eating as much as far as our intake, what do you think about taking extra supplements for that, supplementation, so we are still getting our proper nutrients?

[Rhone] I think that's a great question. The answer to that kind of depends on what part of treatment you're in. A nutritional supplement that is a multi-supplement like a multivitamin or mineral supplement that reaches the level of a hundred percent of the daily value. When you look on the label it will always tell you the percentage. Something that is in the mid-range, of about a hundred percent RDI is what one way to describe it, would be acceptable for most treatments. Sometimes certain treatments they may suggest pausing or holding additional supplementation; an example of this would be single-source nutrients,

for example, high-level antioxidant supplements like a vitamin C supplement. They may suggest pausing during radiation treatment because there's a potential that it could interfere with the radiation treatment. So, my recommendation would be try to work with your diet to consume a balanced diet; if that is not possible, then to discuss with your medical team the option of using like a standard multivitamin, with the understanding that there might be certain time periods where the doctor may ask you to pause.

[Tiffany] Thank you.

[Lorren] Marla, I think you had some questions on antioxidants.

[Marla] Yep, hi, thank you. I I've read that antioxidants are supposed to help because they decreased inflammation, which is a possible cause of cancer, and in the reading, it had mentioned something about taking high-dose antioxidants during some treatment; but then to avoid high-dose antioxidants. So, which is it, and what's a good dose of antioxidants?

[Rhone] Excellent, yeah, this is a kind of confusing area. Actually, we're kind of changing our understanding, it's not so much antioxidants, but it's more phyto nutrients; phyto meaning plant p-h-y-t-o phytonutrients that are the values. Some of those phytonutrients that have anti-cancer activity are also antioxidants, or work is an antioxidant. So long story short, the food level of antioxidants and phytonutrients is very beneficial for cancer prevention, as well as reducing inflammation. So, the food level of including, for example, let's just use blueberries as a source of antioxidants, is a great idea at any point either in cancer prevention, cancer survivorship, or cancer treatment.

The recommendation against using high-level antioxidants is during specific kinds of treatment and so, and just as an example, radiation treatment is an oxidizing treatment, so the there's a concern that using high-level single-source vitamin supplements, and I use the example of vitamin C because many people take or consume vitamin C supplements. So, at that point, there's a question mark, would it be reducing the effectiveness of the radiation treatment? And we have seen that in certain cancer types so, that's why the doctor may ask you to pause like individual nutritional supplements, especially if they have antioxidant activity. There maybe nutritional supplements that your doctor has recommended that are perfectly fine to use during treatment, so it's important to discuss this with your medical team. An example of a supplement you might be using throughout

your treatment is vitamin D supplement; if that's been recommended, perhaps a calcium supplement. So, it's important to talk with your medical team about what's going to work best for you.

[Marla] Thank you.

[Lorren] Sherry, I think you also had some questions about supplements.

[Sherry] Yeah, I wanted to know about selenium. I had read that a lot of people that are deficient in it feel better taking it, but then I had read that, it actually can make lung cancer progress, so it's kind of confusing; should we be tested, should we be followed for our selenium levels regularly to see are we deficient or not deficient you know because I had read you know the side effects are fatigue, muscle weakness, brain fog?

[Rhone] That's a great question. In a general context anytime you're thinking about taking a mineral, and so selenium is an example of a mineral, but also iron is a mineral. It is important to discuss with the medical team because you can actually collect too much of a mineral. Your body, may not have a good way of getting rid of a mineral, and so, in fact, it's not a great idea to use a supplement unless you are deficient. In that situation, especially regarding selenium, I would talk with your medical team if you thought there was a concern. It is rare to have a selenium deficiency, but it can happen. Before you would consider using a supplement, it would be important to talk with your doctor and to have that test. The same thing with iron, same thing with zinc. I find a lot of times, people will be taking zinc kind of randomly, and, in fact, it's not a great idea to use zinc over a long period of time as a single source supplement.

[Sherry] Thank you.

[Cindy] Rhone, I wanted to know how you feel about the dehydrated vegetables and fruit supplements that they have out there, like Balance of Nature.

[Rhone] There are a lot of different options available to get our fruits and vegetables in. Certainly, the original kind of best option would be to consume fruits and vegetables in whatever forms you feel most comfortable, and that might mean fresh fruits and vegetables, according to the American Institute for Cancer Research, they say fruits and vegetables, eat them, including even canned fruits and vegetables have tremendous value. So our understanding of these nutrients is changing over time, kind of, but what is what value we can get out of

them, if there is a time period where you don't feel that you are consuming an adequate amount of fruits and vegetables, there are options which include, for example, like a nutrient supplement. The powdered form of these fruits and vegetables I think is a nice idea. I don't have any data necessarily what's exactly in those particular products and I've actually contacted these companies to see if I can get a rundown of what they're actually providing. My recommendation if you want to use a product like that, is it's probably safe to use but I wouldn't necessarily have you use it every day, so you would use it kind of in a way to enhance your diet. Just like you would with different fruits and vegetables versus taking it a kind of like a sustained or high level, especially if you're in treatment. Just because I'm not sure you know what, or the percentage of the RDI, for example, is it providing for different nutrients. So I'd use it in like an occasional supplement; maybe a couple times a week versus using it on a daily basis.

[Cindy] Thank you.

[Lynn] I understand the philosophy, that when you're in treatment all calories are good calories; but what if this leads to a lack of protein or it increases your potassium, and you have a kidney issue, I mean is any calorie a good calorie?

[Rhone] That's a great question which I think is very individualized in terms of a person's background, their medical situation, and in that setting for example, in somebody who's had a kidney injury or has to be careful with potassium. We would definitely be selecting those foods that do not add extra potassium. And in that situation, I would share with a patient, an example, a list of foods that have high medium and low potassium content. So that people would have that kind of background of okay, out of this list of low potassium foods, these are the things that I feel like eating. I would also evaluate for a person their level of potassium, you know that that is registering in their blood, in other words, do they have to avoid all potassium foods or can they have one high potassium food a day; so that type of evaluation would be very helpful for that person.

Regarding the question about protein, protein is going to be important regardless of what other dietary restrictions you might have, and so we would look for protein foods that are tolerable for that person. And, just for example, some people may be vegetarian or some people may have food allergies. Things like that, so we would select from the proteins that are tolerable for them and then if it's in a situation again, where somebody has like a kidney injury, where they have a restricted protein intake, we would make sure that, between the food that

they're eating, as well as any supplements that they're using, like nutritional supplements, that we would be at an appropriate level of protein for that person.

[Lynn] Thank you!

So, a lot of our discussion has been focusing on our nutritional needs during chemo, after surgery, or radiation, but a lot of us are now on immunotherapy or targeted drugs; or we're just fine, But we may have repeat episodes and recurrences; so are there any nutritional concerns we should take about other than that preventative diet that you just talked about?

[Rhone] Well, I think that's an excellent discussion in terms of what are the best ways to move forward and even on an immunotherapy, your nutritional needs are still going to be slightly elevated above and beyond what you would normally need. The body is still functioning in a way that is kind of continuing that healing process. It's a lot lower level than the active treatment, but it's still present, so we do want to make sure that you are focused on adequacy in terms of calorie and protein during that time period. We would overlay that if you have weight goals. For example, sometimes people have lost weight during treatment or trying to regain weight. Sometimes people are going through physical therapy, trying to regain muscle, and sometimes people are doing just fine; and in that situation, we are really emphasizing those survivorship nutrition recommendations. Again I would refer people to look at the AICR.org which is American Institute for Cancer Research look at the survivorship recommendation. It's a lot about building up the exposure to those nutrients which reduce your risk for cancer. And they have demonstrated in the evidence that people following a prevention type lifestyle, which the portion of that is food, there's other recommendations in there as well. Including physical activity, including management or healthy weight, but following those guidelines does reduce people's chance reduce their risk for recurrence as well as reducing the risk for a secondary primary. There is no good reason not to eat healthy I guess is the answer to that one.

[Lynn] Thank you.

[Marla] Are there any foods that they're looking at that directly cause cancer or conversely could cure cancer? Are there any studies in that direction, just specific ones?

[Rhone] That's a very interesting topic. There is research in particular regarding those kinds of foods, and I think we've already talked about, that may increase the risk of many different kinds of cancers. The guidelines for prevention of lung cancer, there the suggestive evidence says that red meats and cured meats or processed meats may be linked with encouraging a development of lung cancer over the lifetime. So are there foods that we should probably be eating less of? It doesn't mean we necessarily have to completely avoid them, but we should probably be eating them less often. I always recommend that people look to other established health diets, including like a heart healthy diet that kind of limits red meat at about twice a week, as part of, you know, your day-to-day intake. So I think that's a smart thing to do that we can parallel our cancer preventative diet along the same lines. In terms of reducing risk for developing cancer, as well as lung cancer. This is also true, by the way, the same guidelines as far as preventing GI tract cancers, as well so gastric and colorectal cancers.

Regarding foods that may be curative, I don't think that we really have any evidence that food or diet, in and of itself, can cure cancer once it has developed. Although nutrition can help in the prevention, and it can help in terms of the supporting the process of healing. While you're undergoing the evidence-based cancer treatments, there isn't anything that we can point to that would really be like an answer, that we could use in place of other treatment. Thinking down the road in terms of strategies, there is, research that's going on about uh in different kinds of cancer types, a different timing of eating, this isn't necessarily while you're in treatment, but more like in the preventative lifestyle. There's also these anti-cancer nutrients, what would happen if we include more of the anti-cancer nutrients in our diet; you can look at for that information on the AICR.org website. They actually have a whole section called foods that prevent cancer. And you know, and of course, this is turns into the wide variety of fruits and vegetables that are a wealth of these plant nutrients, that have anti-cancer activity; that's probably the best advice that we have.

[Marla] Well, hopefully, preventative things will turn into curative things down the road as they study more things. And it'd be great to find it easier cure, too,
[Rhone}Absolutely

[Marla] You know, not just but prevent it with a more hardline than just these generalities of eat better and exercise more and stuff, and be nice. If they found something hard and fast, wishful thinking.

[Rhone] Well, if there is anything, the first people who would recommend it would be your doctors.

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