

Patient Centered Bladder Cancer Care **Partnering with Patients to Optimize Treatment Outcomes**

Meet our Presenter



Dr. Psutka is a urologic oncologist and an assistant professor of urology at the University of Washington. She received her BA in biology from Harvard College in 2003, and her MD from Harvard Medical School in 2007. She then completed an internship in general surgery and residency in urology at the Mass General Hospital in 2013. She earned her master's in clinical and translational science from the Mayo School of Graduate Medical Education in 2015. In 2018, she joined the faculty at the University of Washington where she now practices. Her clinical practice is focused on the treatment of bladder cancer, renal cell carcinoma, and testis cancer. From a research standpoint, her main area of research interest is in the study and development of personalized, comprehensive risk stratification measures in patients with urologic malignancies, particularly bladder cancer. She's focused on developing a risk stratification program that will help patients better choose the optimal therapy for them, the goal of not only improving personalized oncologic outcomes, but also patient reported outcomes, such as quality of life. She's committed to partnering with patients and helping them get through their treatment as successfully as possible, with an interest in the preparation for surgery, which is our topic for this evening.

Getting Ready for Chemotherapy and Surgery: Prehab and Nutrition

Dr. Psutka: We're going to talk a little bit about just starting off what the diagnosis of bladder cancer feels like. Then, we're going to take a step by step through how we can put control back in your hands. I think that generally when patients come into my clinic and they start asking me about their new diagnosis of bladder cancer, the first thing that everyone wants to know about it are statistics, but I have to say, statistics about surgery for bladder cancer and statistics about survival can be really intimidating, and especially in the setting of a brand new diagnosis of bladder cancer, this can be almost overwhelming.

I think that when patients first come in, it's not uncommon that we'll start talking, and the details quickly can become very overwhelming. I think that one of the hardest parts is then to have to work through some very complex decision making and understand very discreet details about surgical choices, chemotherapy choices, a lot of which is pretty foreign to most patients, and try to make those decisions in the context of a real emotional blow.

What I want to do here is take it step by step. Our goal, again, is to put control back in your hands. First, we're going to start with preparations. So, let's talk about getting ready for therapy. We're going to cover a couple of different topics here, and I actually want to spend a fair amount of time talking about nutrition and weight, and specifically an area of interest to me that actually has a lot of implications for how patients handle therapy for bladder cancer, which is thinking about muscle mass. We're going to talk about bad habits that this is a great time to kick, we're going to talk about exercise, and I know a lot of patients say, "Doc, you really, really want me to start working out right now?" And I say, "Yes, this is the moment to get yourself in the best shape of your life because we're about to go through a marathon together."



BCAN
Bladder Cancer Advocacy Network

Diagnosis with Bladder Cancer

- Statistics about surgery and survival can be intimidating
- How does it feel?
- One of the hardest parts: Treatment decisions
- We'll take it step-by-step
- Our goal: put control back in your hands
- Preparation...





Staying Healthy during Chemotherapy Getting Strong for Surgery

- Nutrition, Weight, Muscle Mass
- Habits to kick
- Exercise (really? YES!)
- Sleep & Self-Care
- Managing Anxiety, Worry, Emotions

We're going to talk about self-care, we're going to talk about sleep, and then I wanted to spend a little bit of time also thinking about how we can help patients manage their anxiety, their worries, and their emotions as they're going through things. We're going to take a step back and start out by talking a little bit about some science.

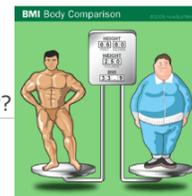
One thing that is a very hot topic in bladder cancer research right now is the concept of obesity and what that means for patients with bladder cancer. This literature, honestly, is incredibly complex to get through. The truth is, if you look at all the papers that have been

written about obesity and bladder cancer, patients who are found to be obese, you can find papers that basically support the fact that patients who are obese have the worst possible outcomes with bladder cancer. You can see papers where obesity is not found to associate at all, in any way, shape, or form, with outcomes from bladder cancer. Then you can find papers where it seems that obesity might actually be associated with better outcomes in bladder cancer patients. It's really hard to kind of make heads or tails out of all of this.

This was something I started studying back in 2013 when I was doing my fellowship in urologic oncology in my master's. I got into trying to get at what the really the underpinnings of body composition is, and moving away from the idea of body mass index, which doesn't tell us anything about what a person actually looks like on the side, and simply conveys weight.

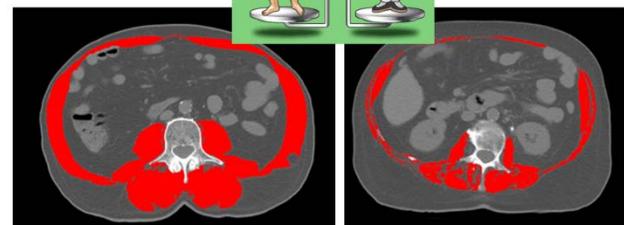
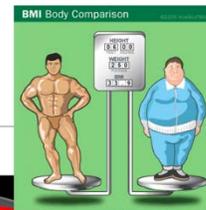
This is how I got interested in the concept of sarcopenia. Basically, muscle actually weighs more than fat, and so, a patient who is extremely muscular oftentimes will have a, what might seem like a, higher BMI than one would expect. What I have here are two CT scans side by side that are from patients who have identical BMIs, technically, actually in the obese range, if you look at the World Health Organization classifications for obesity. But what's really interesting is you can see the red, which is outlining the muscle, in the scan on the left, there's a lot more red than there is in

What is Obesity?



Body Mass Index does not specify body composition

Sarcopenia?



BMI = 31.7 kg/m²
Skeletal Muscle Index (SMI) = 76.5 cm²/m²

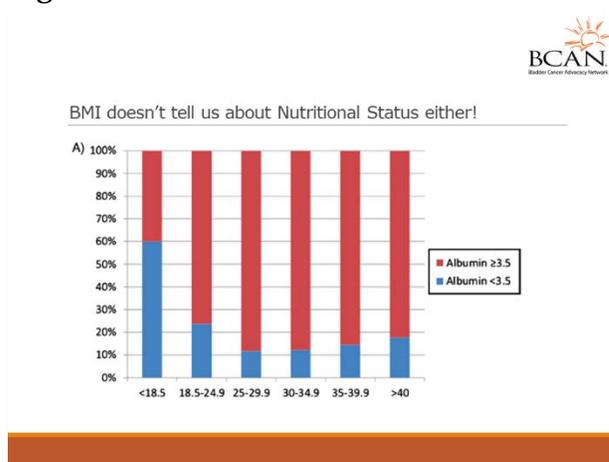
BMI = 31.3 kg/m²
SMI = 34.3 cm²/m²

the scan on the right. That's because these patients who have essentially identical BMIs have very different amounts of muscle mass. This is an image analysis program that we use in our research lab.

The concept of sarcopenia, we're going to spend a little bit more time talking about, but basically, what we're looking at here is a severe deficiency or opacity in muscle mass. This has been identified in the geriatric literature as being a really bad prognostic indicator. When I was in my fellowship, I started looking at whether or not this was something that associated with outcomes in bladder patients.

What's interesting is that we know that BMI, from what I just showed you, doesn't tell you much about what a person actually looks like, whether they have a lot of muscle or a lot of adipose tissue. It also doesn't tell us anything about the nutritional status.

This is some other research that I did, a paper that some students and I wrote while I was in my prior job in Chicago, which basically shows that as we go across the BMI categories on the bottom here, starting from what would be considered extremely underweight or BMI less than 18.5, to all the way up to morbidly obese, which is a BMI greater than 40, we can see that albumin, which is a surrogate for one's nutrition, actually varies significantly. You can be severely malnourished when you're underweight, you can also be severely malnourished when you're morbidly obese. This is important because when people are talking about, "Well, my doctor told me that my BMI is this, and therefore my outcomes are going to be such and such with all these treatments," unfortunately, BMI is a pretty poor prognostic indicator because it doesn't actually convey the information we really need to know.

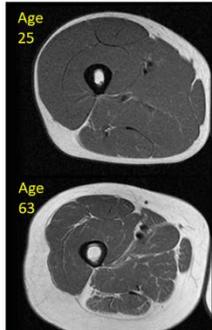


Let's get back to talking about muscle mass, because this becomes very helpful to start thinking about. Sarcopenia is the concept of severe deficiency in muscle mass, and this is something that happens, unfortunately, in everybody. As we all age, we lose some muscle mass. We also lose bone density, and we see that as we age, our basal metabolic rate, or just how much energy we burn, goes down, and most of us gain some fat.

What is Sarcopenia?

Severe deficiency in muscle mass

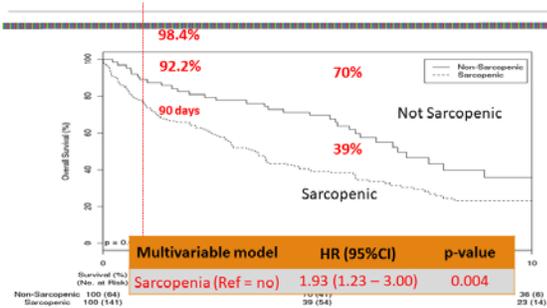
- Association with aging
- Loss of bone density
- Decline in basal metabolic rate
- Increased body fat content



This, for example, is two CT scans of the thigh of the same person at the age of 25 and then at the age of 63. What you can see is, the patient at the age of 25 has significantly more muscle than the patient at the age of 63, when you start seeing more fatty infiltration, this is the subcutaneous fat here, and then actually, the fat within the muscle becomes much more robust as well.

We looked at how patients who were sarcopenic, so patients who basically had the lowest levels of muscle mass, how they compared to patients who had normal amounts of muscle mass, and we looked at what their overall survival was like after radical cystectomy.

Overall Survival



The line on the bottom is the folks who were sarcopenic, and what was interesting was, this was two-thirds of the patients who underwent radical cystectomy, which represents the fact that lot of patients who are being diagnosed with bladder cancer actually have fairly low muscle mass to begin with. Whether that's related to the cancer or to their other co-morbidities, we

don't know. But we do know that it seems to be across all the studies, patients who have bladder cancer tend to have a higher risk of also being concurrently sarcopenic.

Then, these patients up here on the top line are not sarcopenic. This is a survival curve. It basically shows that as you go from zero to 10 years after cystectomy, the patients who are sarcopenic, unfortunately, had shorter survival. At five years, patients who were sarcopenic, 39% were surviving compared to 70% of patients who were not sarcopenic. We started to see these differences really early on, even as early as 90 days after surgery. This pointed out a potential major risk factor that had previously not been acknowledged within the bladder cancer literature.

Even when we started controlling for all kinds of other things, like how bad the actual tumor was, whether or not patients were smoking, and so on and so forth, sarcopenia was associated with almost two times or twofold increase in the risk of death after bladder cancer surgery.

This pointed out to us the importance of really making sure that we were helping do everything we possibly could to help patients stay strong as they're going through

chemotherapy, immunotherapy, and then surgery. A key component of that is nutrition. You really do need nutrition to stay strong and also to heal because protein and nutrients are the building blocks that your body's going to use to recover from these therapies.



Staying Strong through Chemotherapy/Immunotherapy?

You need nutrition to

- **Stay strong**
- **To heal**

Side effects of Chemotherapy

- Nausea, vomiting
- Fatigue
- Loss of Appetite
- Weight loss (not the kind that we normally think of)
- Muscle loss....



Now, we know, I want to talk a little bit about chemotherapy. It's very common these days that we use chemotherapy as a treatment to basically try to treat your entire body and rid your body of cancer cells before you go through radical cystectomy or removal of the bladder cancer.

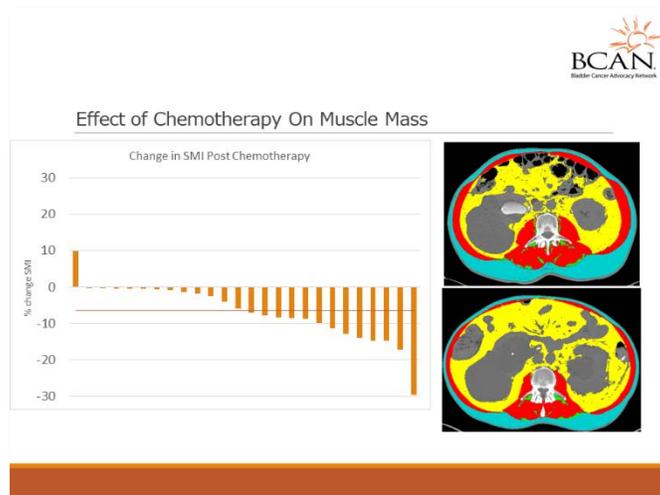
Now, unfortunately, there's a lot of side effects of chemotherapy. Chemotherapy is essentially a toxin, and we're preferentially trying to kill the cancer cells, but it's very hard on people's bodies. We know that side effects of chemotherapy include everything from nausea and vomiting to fatigue,

commonly loss of appetite, and oftentimes weight loss. However, we normally think of weight loss as being something that, when people start to eat a little bit less, they lose weight. A lot of times with chemotherapy, the body actually also starts to metabolize tissue faster. You can end up with a really profound weight loss, and a part of that, a big part of that, is muscle loss.

One of the concerns we had when I first got into this research was, well, are we making people potentially a little bit sicker with our chemotherapy, and then asking them to go through bladder cancer surgery? This was work that I did when I was at Northwestern. Basically, we looked at what happens to patients' bodies when we give them cisplatin-based chemotherapy prior to radical cystectomy.

In the approximately two to three months that patients got chemo, we looked at a total of just about 30 patients, and we saw that, well, one person gained some muscle mass, this is what happened to everybody else's muscle mass as they went through chemotherapy, and this was over a relatively short period of time. These are two representative scans. You can see here that basically the red component, the muscle mass, shrank in this patient, as they went through cisplatin based chemotherapy.

What this really tells us is, we know that the chemotherapy's important because we know that the chemotherapy actually improves survival, so it's important that we use it. But now we're starting to understand what it does to patients' bodies. What that allows us to do is to then think about, well, how can we mitigate or how can we prevent these losses in muscle mass so that patients don't come out of chemotherapy feeling sicker or being less strong than they were when they started especially since we're thinking about then asking them then to go through a radical cystectomy.



There's a couple of things that we know can make a big difference, and this is an active area of research right now. Certainly, we know that nutrition is critical, and there are a lot of benefits to really maintaining and focusing on good nutrition during chemotherapy. One of the first parts is, this is something that you can control. I think that patients talk to me a lot about the fact that when they get diagnosed with bladder cancer, they feel this profound sense of loss of control because all of a sudden, everything that was moving along in one direction is not going so well, it's almost like the world's kind of come to a stop. All of a sudden, your patients are being forced to make some really hard decisions, go through some really tough stuff, and you don't get a lot of choice.

No one really wants to make the decision between having one's bladder removed or potentially going through radiation therapy. No one wants to make the decision about having to accept chemotherapy or not. But unfortunately, those are choices that bladder cancer patients have to make.

While you may not get to choose whether or not you have bladder cancer, there are things that you can take care of and that you can control while you're going through a therapy that can really impact how you feel, the success of your therapy, and also how you feel emotionally going through it

Benefits of Good Nutrition during Chemotherapy

- Feel better.
- Keep up your strength and energy.
- Maintain your weight and your body's store of nutrients.
 - Maintain muscle mass
- Better tolerate treatment-associated side effects
- Lower your risk of infection.
- Heal and recover faster.



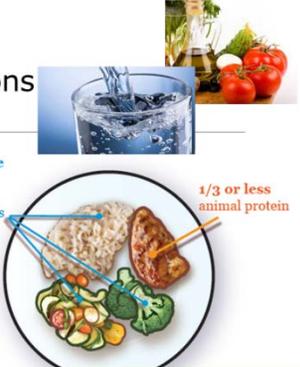
all.

In terms of nutrition, we know that good nutrition can help you feel better. It allows patients to maintain their strength and energy, and maintain their weight, as well as their nutritional stores. We think it actually can really help maintain muscle mass as well. Patients who are feeling better are going to be better able to tolerate the treatment associated side effects of chemotherapy. This is important for doing things like reducing the risk of infection, which chemotherapy can put you at high risk for, and also potentially allowing you to better withstand the stress of surgery after chemotherapy to heal and recover faster.

Nutritional Recommendations

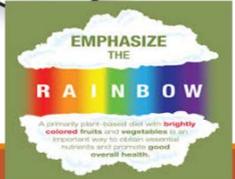
How do we avoid this???

- > Nothing fancy
- > You need:
 - o Protein (Lean)
 - o Fruits and Vegetables
 - o Carbohydrates
 - > "Whole Grain" & Fiber
 - o Hydration!
 - o "Good" Fats
 - > Monounsaturated, Polyunsaturated



2/3 or more
• vegetables
• fruits
• whole grains
• beans

1/3 or less
animal protein

I get it commonly, patients ask me, "Okay, so, what do I do? What's the best diet that I can take for my cancer?" The truth of the matter is, there's no one perfect magic bullet here. There's no recipe that's going to make everything easier. I also would really encourage people, I generally encourage people to really take a common sense approach because this is something that ideally should be sustainable. One thing this can be is a great opportunity is for patients to take charge of their lives, get control back, and, in doing so, make some changes that they can then maintain going through their therapy, but also afterwards, that will help them otherwise.

One of the first things I tell patients is, the best diet for your cancer is a heart healthy diet. There's nothing fancy here. There's no special supplements, there's no extremely restrictive diet. Moderation is critical, and you have to like what you eat because that makes people happy. But you do need protein, it should be about a third of all of the calories you consume or so. Ideally, this should be lean protein, so we're thinking about things like lean meats, chicken and lean red meats, if you're going to have those, or seafood products. But also thinking about vegetable based proteins, such as soy, that can be a great source of low-fat, specifically low saturated fat, protein.

Fruits and vegetables are a big part of it. Definitely, I think that the concept of sort of eating the rainbow is a great way to make sure you're getting enough fruits and vegetables. Then, in terms of carbohydrates, whole grain and high fiber carbohydrates are great. You want to be trying to avoid a lot of heavily processed foods and a lot of foods that have unnecessary additives that they may be good or they may be bad, but they're probably just empty calories and are oftentimes an unwelcome source of saturated fats and salt and other things that your body doesn't need as much of at this point in time.

Hydration is critical, and one of the most common reasons people come back in certainly during chemotherapy and absolutely after radical cystectomy is because they get dehydrated. Making sure that you're drinking enough fluid is really critical as well.

Then, good fats are okay, and, in fact, we really need them. Those are also building blocks that your body needs. But we want to focus on more vegetable based fats.



Rules of the Road

There aren't really any "rules"

- Avoid highly processed foods
- "Eat the Rainbow"
- Mediterranean Diet

Talk to your doctor about specific dietary plans, supplements, etc. before you start them.

Nutritional evaluations and referrals may help



Again, there aren't really any rules here. We just want to try to avoid highly processed foods. One of my favorite food authors is an author by the name of Michael Pollan, who wrote the Omnivore's Dilemma, that I'm sure some of you may have read. He has some fairly simple rules for thinking about well, that I think actually apply to bladder cancer patients. One of the things he said, he said, "Eat real food, not a lot, mostly fruits and vegetables." That's honestly the best advice I can give you. In terms of if you want to look up on the web what are great examples of

diets, when people say eat the rainbow, this sort of high fruits and vegetable, very colorful plates are good things to be looking for, or the Mediterranean diet, which is very high in all the things that I was just talking about. That's a great model to follow.

You should always talk to your doctor about specific dietary plans or supplements before you start them, just to make sure that you're not doing anything that could potentially be problematic, especially because some supplements may not have listed all the ingredients that are in them, and we want to make sure the supplements aren't going to interact with any medications or chemotherapy agents we're giving you.

We are more than happy to also refer you to a nutritionist, specifically a cancer nutritionist, to help you identify potential problems in your diet or things that could help you feel better.

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