

## THE BLOODLINE WITH LLS

A PODCAST FOR PATIENTS AND CAREGIVERS

### ***Episode: 'Exercise and Cancer: Celebration That You Can'***

#### **Description:**

Exercise, or simply moving the body, can be an important part of cancer recovery, both physically and emotionally. In this episode, Dr. Shernan Holtan of Roswell Park Comprehensive Cancer Center and blood cancer survivors, Paul Rothweiler and Joe Grey, share about a clinical trial they developed to introduce a personalized strength training program to patients and caregivers.

Dr. Holtan highlights the benefits of strength training for all patients, while Paul and Joe share how exercise has aided their physical and emotional recovery during and after their treatments. For patients and survivors who may be fearful or nervous about starting an exercise program, this episode is for you!

#### **Transcript:**

**Elissa:** Welcome to *The Bloodline with LLS*. I'm Elissa.

**Lizette:** And I'm Lizette. Thank you so much for joining us on this episode.

**Elissa:** Today, we will be speaking with Dr. Shernan Holtan and blood cancer survivors Paul Rothweiler and Joe Grey about exercise and cancer. Dr. Holtan is a Professor of Medicine and Chief of the Bone Marrow & Transplant Service at Roswell Park Comprehensive Cancer Center in Buffalo, New York. Her work is focused on improving patient outcomes after stem cell transplantation as well as boosting mental and physical resilience.

In her personal life, she is an avid gym-goer and set a national record in the sport of powerlifting in 2019. You may remember Dr. Holtan from a previous *Bloodline with*



*LLS* episode titled, "Let's Talk About Stem Cell Transplantation: Benefits and Side Effects" in July of 2022.

Paul Rothweiler was diagnosed with multiple myeloma in 2019. Since his diagnosis, Paul has undergone several treatments, including chemotherapy, an autologous stem cell transplantation, and most recently CAR T-cell therapy in June of 2023. He found value in exercise during and after the CAR T-cell procedure and joined Dr. Holtan as a research collaborator on the development of a resistance training program for cancer patients.

Joe Grey was diagnosed with diffuse large B-cell lymphoma in August of 2018. His treatment has consisted of chemotherapy, immunotherapy, and CAR T-cell therapy. He has been in complete remission since 2022. Prior to cancer, Joe lived a very active lifestyle and was a distance runner. He struggled with the inability to be as active during his treatment and also joined Dr. Holtan to lead this pioneering effort to implement weight training for cancer survivors.

Welcome Paul and Joe, and welcome back, Dr. Holtan.

**Joe Grey:** Thank you.

**Paul Rothweiler:** Thank you.

**Shernan Holtan, MD:** Thank you. It's great to be here.

**Elissa:** So, our podcast today is on exercise and cancer and a very interesting program that was developed. Dr. Holtan, let's start with you. Why is exercise important for cancer patients and survivors?

**Dr. Holtan:** It is important for a number of reasons. Of course, there's the physical health aspect. The stronger somebody is physically, the more they're able to withstand some of the rigors of treatment. Chemotherapy, immunotherapy, radiation

all come with side effects; and the more physically sturdy someone is, the easier it is to weather some of the bumps in the road, which will inevitably happen.

So, certainly physical strength and stamina really help someone be able to overcome the potential toxicities of therapy. There's also the mental health benefit, right? It feels normal. If you can exercise and maybe even engage with friends or community, you're doing something that feels a bit more normal and maybe you feel like less the patient. So, of course, it's extremely important from the physical health standpoint; but I would say the mental health piece is just as important.

**Elissa:** One of the things that we've heard exercise could be a benefit for is cancer-related fatigue. And that seems, of course, counterproductive that you're very tired, yet exercise is good for you. Are there any other benefits like that physically for the patients or survivors?

**Dr. Holtan:** This is absolutely true, Elissa, and I can't state how counterintuitive it seems at first. I've been healthy my whole life. I haven't had to go through cancer, chemotherapy. But I have been fatigued, for sure, during medical training. We work very long hours, 80 hours a week plus sometimes. I had two children during my medical training; and they're fatiguing, let's be honest. Being a parent is exhausting.

I certainly have had my share of struggles with fatigue; and I can understand, from a patient standpoint, you're exhausted and you're telling me to exercise to help my fatigue? That feels ridiculous. There's no way that can help. I can only say that it's been through my experience with a coach and starting to have my own exercise journey that I can understand this is absolutely true, that the more you are able to give to your body in terms of exercise, you'll get that much back and then some with energy afterwards. So, it does seem crazy to ask a fatigued person to exercise, but there are ways to do it, and it will help.

**Lizette:** Yeah. And doctor, the exercise program that you developed was primarily strength training. Now, can you explain to our listeners, who may not know what strength training is, what it is and why it's important?

**Dr. Holtan:** Strength training really focuses on your muscles, on muscle strength. It focuses on how much weight you can move with your muscles for a certain number of sets and reps. And briefly, just to state, we did open a clinical trial design to increase the volume of weight that patients could move. These patients had been through chemotherapy and sometimes [stem cell] transplant as well. And we found that following a strength program that was personalized to them, each individual essentially doubled their volume of weight that they could move after ten weeks. So, it was just really amazing to see that even despite some of the toxicities and the hardships of chemotherapy, radiation, and other cancer treatments, the patients certainly benefitted substantially in terms of what they could do with resistance training.

**Elissa:** That's really great, and we're excited to talk a little bit more about that.

Before we do though, I'd like to get to know the blood cancer survivors that we have with us today. Paul and Joe, could you tell us a little bit about your physical activity levels prior to cancer and how that may have changed following your diagnosis or throughout treatment?

**Joe:** Yeah. I've always had a very active lifestyle. In fact, my wife accuses me of never being able to sit still for ten minutes, and that's just kind of my nature.

So, I just found out early in life that I have a metabolism that allows me to ski 30 to 50 kilometers. So, I entered a lot of cross-country ski races. I did a lot of marathon running, triathlons, and the like because it was something I found I excelled at compared to other sports. But also, it just brought me inner peace and joy that I really haven't found in too many other activities.



Those were things that I felt I was good at; but more importantly, they were what I considered a big part of my rich life. It's what made me happy.

**Elissa:** How did that change following your diagnosis?

**Joe:** Well, I didn't anticipate the change, first of all.

**Elissa:** Yeah.

**Joe:** I know I've talked to Dr. Holtan about this. I was really pretty much at peace after my diagnosis and my treatment, and I felt like I was getting world-class care. And I, I really didn't focus so much on the road ahead. I knew there were things I had to do to be a cancer survivor, and I did them. But what I didn't realize was just the impact it was going to have on me both physically and emotionally when I tried to get back to what I would call a normal life. We already heard that word "fatigue." I'm a guy, again, that could run marathons; and yet when I lived on campus during the treatment, I would walk over to the football stadium, which was four blocks away, and it was just complete irony to me that I could barely get there without taking a break at the bench. And here's world-class athletes inside there that are running and jumping and doing all the things I wanted to do. And that's when I first realized, you know, the saying you don't know what you have until it's gone. And that's the feeling that I had. And for the first time, I really did start to struggle with my recovery.

**Elissa:** Yeah.

**Joe:** It had less to do with all those days in an infusion chair and chemo, and it had more to do with a sense of loss that I had that I could no longer do the things I wanted to do.

**Elissa:** So, Paul, could you tell us a little bit about your physical activity levels prior to cancer and how that may have changed following your diagnosis or throughout treatment?

**Paul:** Prior to cancer, I was reasonably active. I played four sports in high school and after college continued to run about a 5K every day. And as Shernan mentioned, continued that through children, career, and so on.

When I reached the point where I was diagnosed with cancer, that's when I noticed that something was wrong. I could no longer run a 5K. So, I contacted my clinician. Of course, I had the frame of mind that I'm running fast 5Ks every single day. I'm healthy. Why even do an annual physical, right? It's a waste of their and my time.

Well, I was about dead wrong with that assumption. My advice to everybody is get an annual physical and try to get them to do bloodwork if at all possible because they weren't sure right away what was going on because the kidneys failed first.

**Elissa:** Oh.

**Paul:** And it was the kidney symptoms that caused them to dive deeper into bloodwork and analysis.

So, as Shernan mentioned, going through the autologous stem cell transplant, they wipe you out. And it is intentional, right? They're trying to eliminate anything that's fast moving in your body; and, unfortunately, there's other things than the cancer that are affected.

And there was a point where I pretty much lost part of my identity, and it was my wife who made me go for walks. So, when Shernan's talking about the degree of intensity in exercise, yeah, it varied. But the great news is I didn't give up.

So, as soon as I was able to restart running again, I did. And about that time, I ran into Dr. Holtan, and we started working on a research project together in this area. And she challenged me. She said, resistance training is important. You need to do it. And even though she's technically not my care provider, I took her very seriously and started to slowly incorporate resistance training into my morning routine before I went to work.

Now, getting back to when you're under some of these treatments. You know, if I take a look at a 7-day cycle, I purposely scheduled the treatments on a Thursday, knowing that Saturday and Sunday I wasn't going to feel that great. Right, so, I coordinated my chemo schedule with my workout schedule; and I would intentionally put the resistance training on certain days based on the chemo and how I believed I would feel going forward.

Fortunately, it doesn't take long, usually one or two cycles of a treatment; and you've got that seven-day schedule figured out.

**Elissa:** Right.

**Paul:** So, it was actually at Shernan's encouragement to reintroduce that into my program. I'd gotten a little lazy just relying on running. And mentally, looking back, I think Shernan also mentioned, the importance of not feeling like a patient. When I was exercising, I wasn't thinking about IVs. I wasn't thinking about how ill I felt. I was focused on exercise, and that allowed me mentally to tie back to who I normally see myself as, a healthy individual who can do these things.

There was a trainer that I was listening to, and they described it as exercise is celebration that you can.

**Elissa:** Oh!

**Paul:** And that because you can, you should, right? After being a patient, I got that message because there were days I couldn't. And so, I celebrated the days I could.

**Elissa:** Yeah. Each of you mentioned the emotional toll that it took. How really was it for each of you to get back into exercising after your treatment had started or during treatment? I can say that during and after my treatment for acute myeloid leukemia, it was very hard for me to get back to exercise, even though I was quite active prior to my diagnosis. Did you have similar struggles physically or even emotionally getting back to the prior levels of activity?

**Paul:** I think we need to talk about baseline prior in that I had decades of a schedule where I would get up at five, work out, and then go into work. It was just part of my everyday routine.

So, it was the absence of working out that felt weird. Not doing it was weird, and I needed to get back to that. Now, when you say get back, I can't run as fast as I did. I look at my times, and I would have smoked me easily.

**Elissa:** It's hard to look at that.

**Paul:** Yeah, it is, that's another mental challenge that you have to work through. Of course, I always joke that it's because I'm older.

**Joe:** I'll use the older card right off the bat. So, I've learned to temper some of my expectations. Again, I'm not a person that can sit still; and so there was an emotional toll.

Dr. Holtan's talked about some of the implications of having cancer. I felt the university did a great job of preparing me for treatment options and medications, what I should and shouldn't be doing. But nobody ever talked to me about recovering physically.

And I feel like I was given good guidance, but it's just strange to me that during those first few weeks after my CAR T transfusion, the only thing they did was put me on a stationary bike for 15 or 20 minutes. Then I'd go back to my room.

I think if I were more mentally prepared for the road ahead, it would have been a different story. But, setting that baseline and going from there felt like it was really a challenge that I alone had to figure out and take on. And that's part of why I wanted to be on this podcast because I just feel like that's a way understated part of cancer treatment and recovery. And so, my personal experience was that because I can't sit still, I was just going to set the most ambitious goals I could. And if I fell short, I fell short. Neither Paul or I would challenge Dr. Holtan to a lifting contest.



**Paul:** No.

**Joe:** Again, I was focused more on the cardio aspect, but I did quickly realize how important it is to be able to perform things physically and to be able to lift things. And so, to have a setback like I had was probably the most emotionally challenging part of my journey. And it did take a long time to recover.

And Dr. Holtan knows there were so many things because my system was so immunocompromised that I couldn't do, so things that we take for granted. I lived on a lake. I couldn't go swimming. I couldn't have a Christmas tree at Christmas time. There's just so many things that people take for granted in their lives; and when everything's taken away from you, especially those things you get the most joy from, it's like just rebuilding your whole process all over again. And that's kind of what I went through.

**Paul:** Yeah, I want to double down on something that Joe just said about care providers and blending in the medicine of exercise into the care plan for their patients.

I worked with a number of world-class clinicians; and it wasn't until I started working with Shernan and heard her message. And it wasn't until then I did the compare and contrast. And to me, I think this is really missing in today's healthcare plans, talking to the patients about maintaining your physical health through exercise.

And there's a part of me that wants to ban the word exercise. We should really be calling it play. When you're six and you're doing this, it's play. When did it become an evil thing that you must pursue and suffer through, right?

**Lizette:** Yeah, that would help me, Paul, because when I think of exercise, I'm not like you or Joe, or Dr. Holtan. I can stay still. So, to me, just hearing the word exercise or even a little bit more scary is strength training to me because I know what cardio is. But just knowing that there's something that's different, that can be so



taxing to your body, so I think it's a great thing not to call it exercise for people like me.

**Paul:** Yeah, it truly is play if you let it.

**Lizette:** Yeah.

**Paul:** I think that's the trick. For me and Joe, it was running, right? There's the freedom of running. The air in your lungs, the movement.

I will admit that, resistance training, although I had to do it when I played football, I gladly gave it up until Shernan came along and went, "There's something in there for you if you do it." And I went, "You're right. You're absolutely right." I was in denial.

**Dr. Holtan:** Well, it's a balance. We need both, right? We need cardiovascular training and resistance training. They both have benefits. But there is something special about resistance training.

I want to just echo something that my coach used to joke with me about. He asked me one day, do you know what the best exercise is? And Paul and Joe, you might have heard me say this joke that he says. What's the best exercise?

**Paul:** The one you'll enjoy?

**Dr. Holtan:** The one you'll do.

**Paul:** The one you'll do, yeah.

**Dr. Holtan:** Which is true. So, Joe and Paul are endurance athletes and fortunate that before their cancer diagnosis and treatment, they already had baseline fitness. They had a baseline routine, identity, community, kind of normalization of that process.

But so many of our patients don't. They don't have the experience; and they might fear exercise. We do need to normalize it more. We need to make it more accessible, less scary.

One of the ways that we had hoped to do this in the context of this clinical trial was give everyone an opportunity to meet with my coach. My coach was the person doing the training on the study; and he designed programs that were right for everyone. So, everyone had their own personal plan. I think that's key.

What we currently have in the medical system, our physical therapists are incredible. But often their role is to rehabilitate a problem, not serve as general fitness guidance. And so, when you're in the hospital and you get a handout, here are some exercises, it feels very generic. It doesn't feel personalized to you.

So, if you can have a coach evaluate you and give you something that is personal for you that you work on over time, it just feels a bit more motivating. This is for me. And the thing that was cool about the clinical trial that we did is that the caregivers were involved; and both Paul and Joe have hit on the importance of this.

We do as much as we can for our patients to help them through all the toxicities of therapy. We don't do enough to recognize the caregivers who are often the ones bringing them to every appointment, shopping, cooking, cleaning, doing everything that we ask, right? And they're worn down as well. They also would benefit from a tailored exercise program.

And so, we designed this clinical trial with the caregivers actually serving as controls. The caregivers had to not have a history of cancer themselves, and so we compared our controls, our caregivers to our patients who had gone through chemotherapy or cell therapy and transplant and found that the magnitude of benefit was the same in each group, that the patients who had gone through cancer treatments doubled their strength or their volume of work over ten weeks just the same as someone who had never been trained before.

And so, we should, take that information as a positive message that just because you've been through cancer treatment and maybe have been beaten down a bit, you can still substantially make progress and change your body and your life in a very positive way over just a few weeks when you are given a program that's personal for you.

**Paul:** Yeah, Dr. Holtan mentioned fear. And, I think all of us can relate to that, right? But I think, again, if we look at it as play, we can try to erase some of that fear. Take down the barriers that prevent us, mental and physical, that prevent us from doing it. Of course, everybody has their own individual barriers. There's no one prescription for everybody, but we all should.

There's probably a local gym nearby. And if you have healthcare, a lot of them might even have some sort of a reimbursement for participating in a program. What's stopping them from doing it?

**Dr. Holtan:** Paul, most of the time for our patients, it's their immune system, right? And that's just what Joe was mentioning. Yeah, the blood counts or the immune system, that's tough.

**Paul:** Right. For example, when we started doing the research project, we all gathered in your backyard. So, there are trainers out there that will come to you.

**Joe:** I want to pick up on this fear and community idea for a minute because there's an angle I just thought about that just struck me. I look back at the community I had. There were a lot of people that came alongside me, but there's a certain level of fear that they have that cancer people, you go to the clinic, and people are all sitting around with masks on; and we look like a bunch of China dolls that could easily be broken. And that's the way a lot of people treat you. So, rather than encouraging me to get out and push myself, people just felt the opposite. Like, you need to sit down. You need to rest.

I'm not one that cares to have people wait on me hand and foot. I'd rather be a doer, and I think that's, unfortunately, something that people have a hard time with around cancer patients. They're so concerned about their well-being, but some of it may be misguided concern in terms of the way that cancer people get treated.

**Dr. Holtan:** Joe, that is an incredible point, and I'm guilty of this as well. So, in this clinical trial, some participants may have had a transplant. They may have had a complication called graft-versus-host disease (GVHD), where they had tightening of their skin, their muscles, and their fascia. And I recall one such patient who had pretty substantial chronic graft-versus-host disease. I remember watching him on this clinical trial going up and down the gym doing body weight lunges, full depth, knees to the ground each time.

And I looked at my coach. I'm like, "What are you doing?" This is a dangerous exercise for him. My coach looks at me and he's like, "He, he can do it. He's fine." And I just realized I had my own bias there. I'm not a fitness professional. I should probably stay in my lane. The actual fitness professional was able to see what he could do and push him in ways I would have never known was safe for him. And he did great.

**Paul:** Yeah, I have to agree with that, in that I too experienced when I reported in what I was doing. The look on my care team's face was like, "You're doing what?" And it should have been, "Good for you."

**Lizette:** Well hopefully that good for you came after.

**Paul:** I will quote one of them as saying, "Well, we've learned we can't tell you what to do, so good luck."

**Dr. Holtan:** So, a little bit of forgiveness instead of permission, right?

**Paul:** Exactly, exactly. So, if your patient and your care team is telling you, you can't do it! I think they're used to the traditional too much rest. And we know now that

that is not good for the human body does not want to remain in a static state. It's detrimental.

**Dr. Holtan:** You're right, Paul. We're adverse to risk. We don't want to put our patients at risk; and so we talk about all these things that you should and shouldn't do. And we don't talk enough about exercise and incorporating that because of the potential risks that we worry about.

But really the risk is not moving. The risk is not exercising. The risk is losing your muscle mass, and that's important for weathering the toxicities of chemotherapy. But there's also data now that's suggesting that if you have lower muscle mass, for a number of malignancies, you have a higher chance of relapse. And so, if we can help patients preserve or even grow muscle mass, perhaps that's one of the best cancer fighters that we have.

Yes, it's about the toxicities and overcoming the side effects. But it's also about cancer relapse too. We should really be doing everything we can to prevent that, and I think that incorporating more strength training or some more focus on maintaining muscle mass is important for that.

**Paul:** Yeah, I think literature is supporting what you're saying in that I read a number of articles on lactic acid and interrupting the communication between cancer cells for growth. So, yes, I think we're starting to build that documentation that says, "Exercise is an anticancer treatment."

**Lizette:** So now, Dr. Holtan, can you just talk about the clinical trial design, how long people were in the trial, as well as some of the exercises that were in the trial.

**Dr. Holtan:** Happy to. This was a clinical trial where patients who had been through multi-agent chemotherapy or even transplants and cell therapy went in with a caregiver and received a personalized strength training program that lasted ten weeks. The strength training pieces were, again, individualized for every person, so it might



have been on weight machines. It might have been with free weights, dumbbells, barbells, even body weight stuff.

Everyone did their own program, but we wanted to have people come in as much as they could during the week. And so, we recorded how many sessions they had completed throughout that 10-week period. And then at the beginning and the end, we did body composition testing, and we're in the process of still doing some pretty detailed immune profiling.

With the body composition testing, we knew that we could put muscle mass on both patients and their caregivers. So, strength training worked. There was no nutritional intervention. We didn't mandate what they ate. Most people lost body fat and gained lean mass over just ten weeks. So, it did the intended effect on body composition.

The immune profiling, I can't give away too much, but it looks good. People should strength train. But one of the issues that we had with this clinical trial was that, unfortunately, COVID happened right when we were really ramping up. We were having such a good time with this study. As you probably know, most of my research has been focusing on graft-versus-host disease prevention and treatment. And so, this was just my fun study on the side.

But, it was going great; and then COVID hit, and we had to rethink everything. So many of these patients were pretty early in their recovery or they were on immunosuppression. I didn't feel comfortable with them in the commercial gym setting.

And so, Paul, Joe and I, we're rethinking how do we help people access resistance training in and this COVID era, where there are more concerns about the potential risks of respiratory viruses in our patients who are immunocompromised. And not only that, how we handle the situation where so many people are at a distance from a gym or even the cancer center and we want them to be home more, not in a clinical setting

as much. This should be something that's incorporated into life, not necessarily something that is done at the cancer center.

So, we're in the process of thinking through this right now and trying to decide what the next steps are. From a research standpoint, there's no question in my mind that strength training does many things that we want it to do for the body; and that's particularly important for cancer survivors. So, it works. The research question in my mind now is how to do it, and how to get access for our patients who don't have a background of training.

**Elissa:** Right. And thinking about COVID, since some patients still are very nervous about going inside places, going into gyms, and, there's a financial aspect to it too. So, hiring a personal trainer or getting gym equipment or things like that where they would be able to do something on their own.

**Dr. Holtan:** That speaks to that feasibility, and I'd like to hear from both Paul and Joe on this. So, the type of training, if it's with a dumbbell or body weight or barbell, it doesn't matter. You can strength train with literally no equipment. So that's not a barrier.

You know, some instruction. There are plenty of online videos. That's not a barrier. It may be more difficult to engage in activity that you don't feel in your heart is important because you don't have an identity with it, or an attachment to it, or a community built around it. So, the only reason that I really adhere to strength training is I have a group of friends who are going to come drag me to the gym no matter what. I have to show up or I'm going to get a lot of phone calls. But there's a community and it's fun and I enjoy it. But I get to go to a gym.

What about those who don't? What if there are financial barriers, physical barriers, distance barriers? How do we help those who have some of those issues, help them find community and help them find ways to make it fun so that there is long-term adherence?



**Paul:** Well, yeah. You're absolutely right on all fronts. There are barriers, and each one of us has a unique set of barriers.

I wish there was just a way that we could all get together and converse as a community, and we do through the support groups. If you're not part of a support group, that might be your first step because they do Zoom meetings. They're there for each other. Yeah, I wish we could just have one big community where we could help solve, brainstorm on each other's problems and help remove every single barrier.

As you pointed out, you've got YouTube videos. You've got articles. I do think this next generation, we're going to start seeing more gamified exercise, and that'll help them. But, yeah, for people like us, I won't say Joe's age or mine, but we're I'm not really the Nintendo generation per se. Yeah, I don't know what to do about us.

**Joe:** My two cents is if you want to get rid of the word exercise, I'm going to get rid of the word barrier. That's what I hope to bring to this project. My career was knocking down barriers, working with large nonprofits and corporations.

I've already talked about the lack of education; I'm going to work around barriers. Everybody talks about preventative medicine. Well, it's time to wake up in terms of the need for exercise and strength training. So, yes, there are barriers, but I refuse to believe any of those are insurmountable.

I was challenged again by the community thing. COVID wasn't hard for me to adjust to because I was already isolated from people and wearing a mask. So, I refuse to let that kind of thing stand in the way of progress. And that's why I jumped onto this project because I want to take my personal experience and tell people that you can get out there and you can start doing things right away.

**Paul:** So, Joe, you're basically saying we all need to get involved. And remove barriers for each other.

**Joe:** Yeah, or work around them. We talked about safety. There's things that we have to take into consideration, especially early on in our recovery. And so, these things have to be done in the right context.

But I think we have to be much more aggressive in terms of getting out and spreading the word and figuring out ways to work around those barriers because it's going to benefit everyone.

**Dr. Holtan:** You know, we struggle with all kinds of roadblocks and bottlenecks; and, in our world, unfortunately, the gold standard for getting anything changed in clinical medicine is a clinical trial.

But I think we have enough data now from our study and many others that strength training is good for people. Now it's figuring out how to make it happen.

How do we make everything more feasible? How do we implement what we already know? Many of my colleagues have now come to appreciate how important exercise is and I think are going to be partners in this. But now it's about implementation and motivation, sustainability, adherence, and transforming this effort into something that is a lifelong process and hopefully joy for all people.

**Lizette:** Sure. And what advice do you have for patients to start exercising or weight training? And, when can folks that have a cancer diagnosis actually start?

**Dr. Holtan:** It's a great question. Please note, disclaimer alert, I am a physician, not a physical therapist nor a personal trainer. But I've done a thing or two with strength training; and I know that it's important to start very small.

So, whenever we're beginning a process of strength training or learning a new exercise, learning something new, you know, you don't go all out on day one and then injure yourself and then hate the process and never go back to it. Hopefully you start very small with something that you like and then record what you did and then, each time you exercise, try to do a little more, and a little more, and a little more. It might

be a little more weight. It might be another repetition. It might be another set, but basically this concept is called progressive overload. So, you start small and then over time you adapt, and your body is able to do more and more and more; and you're able to put more effort into it safely because you've grown and you've adapted over time.

This is how I went from never lifting a weight to being able to squat over 300 pounds. You don't do that on day one. That's something that you do years later. There's no shortcut. There shouldn't be. This is a long-term process. So, find something you like, start small, and record and try to challenge yourself each time to do a little more. What do you think, Paul?

**Paul:** Absolutely, couldn't have said better because, you're right. If you try to go too fast, too quick, it may turn you off. Again, it gets back to having fun with that progression, enjoying it, feeling good about yourself, doing it. All the positive reaffirmations are an important part of that process to keep you going.

**Dr. Holtan:** Now both of you are endurance athletes, but how has it felt incorporating more resistance work into your day? Joe, what do you think?

**Joe:** I'm trying to use the word fun. I've incorporated it, and I can see the benefits without a doubt. It hasn't changed my first love, but just this education process has got me really looking at all aspects. We haven't talked about nutrition and the importance of that and some other things. I've just probably got a much more holistic approach to it and trying to make it fun. Let's just say I can see the results, and the results have spoke for themselves as I've kind of moved more into resistance and weight training.

**Elissa:** Yeah. It's so great to hear about how cancer survivors are really benefiting from this.

Our final question today for each of you. On our patient podcast home page, we have a quote that says, "After diagnosis comes hope." For those listening who may be

nervous or fearful about exercising after a cancer diagnosis, what would you say to them to give them hope?

**Paul:** There is hope in exercise, right? And, in fact, I think it's the one thing that returns hope to you because of the mental aspects, the feeling of I'm normal. I'm still here. I'm still capable.

I can't think of anything else in my life that has helped with that than exercise. It's not going to the movies. None of that is me, right? So, I would say their normalcy and hope come through exercise, through using the body the way you used to and the way it was intended to be used.

**Joe:** However you want to define getting your life back, I really think this is the critical part of that.

But all those things Dr. Holtan talking about that I never thought about just in terms of longevity. I don't go through the three-month scans anymore, some of the other things that are always those markers that you go in with a little bit of trepidation because as a cancer patient, you're always wondering when that situation can turn on you.

But, to know that exercise is a way to combat that, one of the things I liked about our clinical trial was visualizing that every time you get out and lift a weight, you're fighting against cancer cells. So, there's some ways that you can visualize in your head the battle that all cancer patients are going through, and who wants to sit on the sideline during the battle? If you can get a sense that I can make a difference in my life and the lives of others, that's the best definition of hope that I can possibly come up with.

**Dr. Holtan:** Both Paul and Joe have hit on a concept that was the primary endpoint of our study, which was self-efficacy. Fancy term, saying that a patient feels for themselves that they can do what needs to be done. That they have the confidence to

weather any storm, that they can take on challenges. They can take care of themselves, take care of their family. Self-efficacy.

I have no pill that can give anyone self-efficacy. That can only be earned. Some people are born with a fair amount of it, and maybe that comes through exercise or some personality trait. But I know how you can get it, and that's by starting a resistance training program.

There has been nothing in my life personally that has made me more confident than knowing I can pick up a heavy weight, and that is something that was earned over time. And so, if I could give everyone the gift of self-efficacy, I would want to. As a physician, if I had a pill for it, that would be great, but we don't. And so, I am very hopeful that many others will hear our messages today and decide to start the process and feel that sense of self-efficacy and feel the hope that comes with it.

**Elissa:** Well, thank you all so much for joining us today and telling us all about this really exciting trial that you did that was, unfortunately, stopped a little early with COVID. But we hope that you will be able to develop something in the future, and I'm so glad that you addressed barriers that patients face as they may think about doing an exercise program and what is right for them. And so, I hope that everybody listening today will talk to their treatment team, talk to a personal trainer, and try to get something set up that they can do that will hopefully be fun for them and be play rather than exercise.

So, listen to Paul and Joe, and have fun with it; and thank you, again, so very much all of you for being here with us.

**Paul:** Thank you.

**Joe:** We thank you.

**Dr. Holtan:** Thank you.



**Elissa:** And thank you to everyone listening today. *The Bloodline with LLS* is one part of the mission of The Leukemia & Lymphoma Society to improve the quality of lives of patients and their families.

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In addition to the Lounge, we could use your feedback to help us continue to provide engaging content for all people affected by cancer. We would like to ask you to complete a brief survey that can be found in the show notes or at [TheBloodline.org](https://TheBloodline.org). This is your opportunity to provide feedback and suggested topics that will help so many people.

We would also like to know about you and how we can serve you better. The survey is completely anonymous, and no identifying information will be taken. However, if you would like to contact LLS staff, please email [TheBloodline@LLS.org](mailto:TheBloodline@LLS.org).

We hope this podcast helped you today. Stay tuned for more information on the resources that LLS has for you or your loved ones who have been affected by cancer.

Have you or a loved one been affected by a blood cancer? LLS has many resources available to you – financial support, peer-to-peer connection, nutritional support, and more. We encourage patients and caregivers to contact our Information Specialists at 1-800-955-4572 or go to [LLS.org/PatientSupport](https://LLS.org/PatientSupport). This link and more will be found in the show notes or at [TheBloodline.org](https://TheBloodline.org).

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