

Providing Hope and Resources for Guardians of Pets With Disabilities

A Special Interview With Sarah MacKeigan

By Dr. Karen Shaw Becker

Dr. Karen Becker:

Hi, I'm Dr. Karen Becker, and I'm so excited that today we have animal physio[therapist] Sarah MacKeigan, who runs both Upward Dog Rehab and the [Living With] Dogs With Disabilities platform. I know Sarah well because we have rehabbed some well-loved dogs together, and I'm so thankful that she's joining me this week to talk about some really important things when it comes to keeping animals happy and healthy regardless of their ambulatory status or how in shape they are. So, Sarah, thank you so much for joining me.

Sarah MacKeigan:

Dr. Becker, thank you so much for having me. To be on your platform and to be able to talk about something that I'm passionate about, dog mobility and exercise, it really is an honor. So, I want to say thank you for having me here and talking about dogs and exercise and movement. I think it's wonderful. Thank you.

Dr. Karen Becker:

I appreciate the fact, and of course, I know who you are, we worked together for years, but for people that don't know how and why you took your human physio degree and then moved that to rehabilitation, which is what we have to call it in the animal space, how did that – I know you went to school with the intent of doing that, but, Sarah, what's the motivation behind you spending years and years and years in school for human physio and then immediately getting out and just adding an extra two legs to your client base?

Sarah MacKeigan:

My dog, Sammy, as you know, she actually had injured herself, a very common injury, cranial cruciate ligament (CCL), it's like our ACL (anterior cruciate ligament) in our knees for anyone that's had knee injuries. When I was rehabbing her, there was a physiotherapist mentoring the vet, and I was like, "Physios can work with dogs?" And when the second knee went, because the second knee usually does, at that point in time I was like, "I really want to do this." I always wanted to work with animals when I was younger and I just ended up down a different path, and she was that pivot point for me. The means to working with dogs was physiotherapy with humans. I treat my pet parents, but I prefer my furry friends.

Dr. Karen Becker:

Yeah.

Sarah MacKeigan:

Yeah, right? I literally quit my job. I flexed my hours, so I could take some courses to upgrade and left my job. I sold my house and I went back to school with folks that were a lot younger than me to do my Master's [degree] in Physiotherapy. So, in Canada we do a Master's [degree] in Physiotherapy. Became a licensed PT (physical therapist) and then went on immediately to begin to train with a diploma in canine rehab. So, in the States there's also the Canine Rehab Institute and other certifications. Mine is our diploma program in Canada. But it's been a very intentional path to dogs.

Dr. Karen Becker:

Yeah, yeah. I find it wonderful. I find it exceptionally refreshing. So, I am a veterinarian that took a canine rehabilitation course. And so, vets can become licensed in rehab. It's a very different thing than spending years and years and years with the detailed training that you have. It's very different, and I'm the first one to acknowledge that.

Sarah MacKeigan:

Thank you.

Dr. Karen Becker:

I find it wonderful that it's not just knee dogs and back dogs, as we call it in the profession you have a pretty special place in your heart for the really hard things-

Sarah MacKeigan:

I do.

Dr. Karen Becker:

-animals missing all their limbs, animals that are quadriplegic [or] paraplegic, animals that have had profound trauma to their bodies. That's a tough feel, girl. That's hard.

Sarah MacKeigan:

Sometimes you pick your path and sometimes your path picks you. And my path picked me. And I'm going to go there, but just to back up a tiny bit, I want to acknowledge the fact that you recognize that the way, as physiotherapists or physical therapists, we approach things a little bit different[ly]. It's really about something called client-centered care. And we do what's called a path of functional diagnosis. So, it's not often your vet will diagnose your dog with that CCL tear or intervertebral disc disease at T11/12 or something along those lines. As a physiotherapist, the way I look at it is not just the injury but what's happening in the rest of the body, what has contributed to it, how it's impacting mobility and other factors throughout the rest of the body. Maybe there's other injuries, other comorbidities. And then what do we, "we" as the key word here, begin to do to restore mobility?

Because it's very much a collaborative effort. I always tell people when I talk to them before they come in, "I'm not a drop-off [and] pickup service. You are part of the process. Your dog is the

center of the process. And you are an active, empowered pet parent to be part of your dog's mobility plan and part of the recovery because I spend a small percentage of time with your dog and you spend this much time with your dog. So, what you do actually makes a really big difference versus the little bit that I do."

I mean, as a physiotherapist, I have skills with my hands where I do manual therapy. A lot of people think of chiropractors, but physiotherapists also do a lot of manual therapy. Again, the caveat is they're certified and trained to do it, because some people use the word physiotherapy, but they don't necessarily have the training. So, it's always important for pet parents to make sure they have credentials. But yes, I use my hands, I use modalities like laser therapy, acupuncture, muscle stim[ulation] [and] exercise therapy, so certain exercises with the intent of getting certain results. Mobility aids, which I'm going to talk to a bit about when I have this special population that I work with.

And the other piece of it is the exercise and the education, the really teaching you how to work with your dog and what to look for and the progressions and the reassessment. I've met a lot of people who feel stuck with their dogs and part of it is that their dogs are never reassessed and it's never changed. And that reassessment, it's so important because you can't progress if you don't create something new, and you can't see if it's time to progress or if what you're doing is working if you don't reassess, right?

So, when I say my path chose me – Sammy was like a cat. This beautiful white Shepherd, but with every problem that seemed to be possible, yet incredibly happy. She taught me so much about life and perseverance and adaptability again. While I was finishing school, and I remember this because I don't know if you've heard me tell this story, but you were actually the person that told me what you thought was going on with Sam, and I remember you saying to me that you thought – Because we knew that Sam had little osteophytes on her lower lumbar area, and we thought that was the reason for her decline in mobility in her hind end. And it wasn't. It might have been contributing, but it wasn't. What you saw that my very green eyes didn't see yet was something called degenerative myelopathy (DM), which is very similar to ALS (amyotrophic lateral sclerosis) in people. It actually shares the same genetic mutation as about 20% of people with ALS.

I remember being on training for canine rehab when I saw my first dog with DM and – you didn't warn me I was going to be emotional at the beginning of your interview – but I saw my first dog that had this progressive condition and I couldn't even comprehend it. It was the winter. It was February, it was [in] Ottawa, it was snowing. It's like minus a thousand [degrees] outside. And I literally got up, walked across the arena, out the door and cried a lot. Sam taught me so much, and I've been blessed to have people like yourself that have taught and shared with me. And Sam lived for almost 5 years, which is basically unheard of. The average lifespan of a dog with DM is 6 to 12 months max.

And granted, she didn't have the use of her back legs, but I learned through other people and through her what other options were available to slow disease progression and to make sure she still had a good quality of life. Because, really, at the end of the day, they're not just here for us. They're here because we want them to be happy when they're here and have a good life and be mobile and be active. And that's what I mean when my path chose me. Because when I started

working – Sam passed away right before COVID, and then when I started [inaudible 00:09:55] in lockdown and couldn't go anywhere, I couldn't treat, and I see all these people struggling online, that's when I started the Facebook group Living With Dogs With Disabilities. It was therapy for me. I was able to share a lot of knowledge and bring people on that could help pet parents that were going through challenging times with their dogs and not having to weed through all of this misinformation online.

But over time, I also began to learn that there was a lot of other things going on and a lot of, I want to say system things, but I've met, especially in the last year, a lot of dogs, also a lot with DM, even though it's rare, and a lot with something called intervertebral disc disease or where a lot of people describe it as, "My dog seemed a little bit off. I woke up in the morning and my dog couldn't walk." And the emotion that goes along with that. And I've heard so many times of pet parents going to their vets or going to emergency and being told, "There's not really anything you can do. Your dog's too far gone," or "You have two options." Really, the surgery in Canada is – well, where I am – \$13,000, "Or your dog's not going to walk again, so you can euthanize."

And a lot of these dogs, Dr. Becker, they walk again. I've had them walk into my clinic. And I'm like, "This needs to change." It shouldn't be this way, because these dogs – and hopefully we can talk about [that] a little bit. Let's say they don't walk again, that doesn't mean they can't have a great life, if you know how to care for them and give them a great life, which is why I'm so passionate about that because I want to be able to raise that awareness of what you can do to help your dog when they have those significant mobility challenges. And if you can restore mobility, awesome. And if we can't, we still can, we're just going to do it in a different way. That's why I have this phrase in the group called, "It's not over. It's just different." Yeah. So, that's the story.

Dr. Karen Becker:

That is a beautiful background for helping people understand the passion behind why you do what you do. I do think Sam's exceptional life living with her disease – she's the longest DM dog in my personal career history. Five years living with DM and living fully, living happily until 24 hours before you decided to euthanize. And then even the last day was just not horrible, just not good. And rather than to allow her to walk down a path of being more miserable, you just knew that there was not a chance for recovery and you made wise decisions. Painful but wise.

Five years of an animal going through a chronic degenerative disease is something that most people would say, "It's too much. I am unwilling to do that because I don't have the tools." But I also think one of the reasons you're so highly motivated in providing people this wide tool belt of not just support but tips and tricks, and suggestions, and ideas, and resources, and mobility aids is, if we can create quality of life and maintain mental and physical resiliency, even in a body that may be breaking, that's precious time that allows your dog to still live quality of life and you still have time with your beloved. So, this is a win-win, but it does take concerted planning.

I am like you. I view my role as a veterinarian – The primary rehab people in our dog's life are their guardians. It's the owners. You and I are pop-in points of reference. We're the team manager, the strategic boss, the overseer, the team cheerleader, the coach, but they come to us for, "Okay, this is this week's plan or this month's plan. But here's the deal, the body's going to change and healing is dynamic, so these are the exercises for this period of time. These are the

supplements for this period of time. This is the protocol for the next three weeks." But whether you're dealing with a disc that's about to blow, a knee that's about to rupture, or a body that you can tell just isn't right, it's working with trained professionals to do everything we can to minimize risk right now, maximize wellbeing right now, which means we're managing pain, we're doing what we can to reduce the potential for further injury [and] any more degeneration while stabilizing the patient, but also creating a protocol to potentially, in many situations, come out of it.

Just because you have a bulging disc, or a pinched nerve, or a disc that went, doesn't mean your dog has to be euthanized. It means you have to quickly and succinctly put together a plan. I think part of the reason that we're having such success now finally in the physical rehab, PT (physical therapy) space with animals is that we're doing this combination multimodal approach of veterinarians working with physios or people that are giving clients specific instructions to do a protocol that puts into place a series of steps and actions that allow for healing to occur. But it's the swift action of a congealed multimodal approach that allows for that to occur. And that is what you are doing. Your goal is to work with veterinarians and other healthcare professionals to put into place actions that can swiftly mediate, resolve and/or maintain to the best of our ability quality of life, and what can we do right now at this moment to improve patient wellbeing.

So, when we think about this, Sarah, when it comes to – Before we walk down diseased and degenerated patients, I want to talk about the fact that most well-loved dogs, at least my patients, are not getting the physical exercise they need, in my opinion, to maintain their weight, maintain their muscle strength and resiliency. Tendons and ligaments are not as healthy as they should be, which sets them up for lax joint structure, early arthritic changes in the joints, lack of joint fluid, overall pain and inflammation, which begins the downward spiral I see of these midlife dogs, 4 to 6 [years old], starting to occasionally limp, decide to not go upstairs anymore, not get on the bed. These are dogs that I would consider midlife. And none of this has to be the case. But part of intervention, main intervention, is pet parents, owners and guardians recognizing, "Hey, things are shifting. No limping, no three-legged lameness, just that my animal is not as active as they were last year." So, let's start there, Sarah. Am I correct in assuming that you are also seeing many midlife healthy animals not be optimized when it comes to body, cart and health?

Sarah MacKeigan:

Absolutely. I love that you said “swiftly” when you were talking because that's one of the challenges, is a lot of people will wait until something is very wrong. The dog that seems a little bit off suddenly is on three legs before they do something. And I can say from the professional's point of view, when you see something that's off, that's when you want to act. That's when you want to do something because it's so much easier – I don't know if easier is the right word, but let's say, with the theme of cranial cruciate ligament injuries in the knee, because it's such a common one, and most people do not want to take the surgical approach when it comes to that.

And for us, as a profession to help pet parents, to help you when your dog has this injury, when it's mild, it's so much easier to intervene and put a plan in place and restore mobility. And if your goal is to avoid surgery as much as possible, you're much more likely to do it if your dog is a tiny bit off, slightly off wading, than when they're toe touching or [on] three legs. So, I think that the early intervention is critical. I think sometimes pet parents think they're seeing something,

but they're not really sure. The typical go-to strategy is a little bit of – I'm not sure if we talked about this yet – but it's that basically, "Here's an anti-inflammatory. Rest your dog for the next week or two, and we'll see how he does."

Dr. Karen Becker:

"And we'll see what happens." Exactly. And just so you know, [for] everyone listening and reading, that's veterinary advice. So just to be clear, this is people saying, "Hey, I just am noticing not a smooth gait, maybe offloading a little on that back foot." Or when they're standing eating, you'll see them pick the foot up just a hair, just because it's probably a little ouchie, but mild. As a concerned, astute pet parent, you call your vet. Your vet says, "Hey, come pick up a non-steroidal anti-inflammatory. Rest your dog for a few weeks. Everything should be fine." The problem is we, as veterinarians, we're not trained as physios in vet school, and that is not a good approach to managing an injured tendon or ligament. That is not wise. Sarah, help all of us understand why there are better options than an NSAID and rest for a week.

Sarah MacKeigan:

Okay. So, I want to back up for a second, but if we think of a ligament – I'm looking around my room because I usually have props, but I don't have props with me – but if we think of muscle tissues, tendons, ligaments [and] muscles, when there's a strain – so a strain is actually when you get a little bit of a muscle tear. So, when people talk about their hips or their dog pulled the hip flexor muscle, that would be a strain. Ligaments don't have the same blood flow as muscles do, so they don't really heal. The reason the dog's knee often will restabilize, depending on if it really was a cranial cruciate ligament injury, is that the dog will begin to get scar tissue. Sometimes they get this bony bump on the inside of their knee where extra bone is forming. So, the body wants stability, the body craves stability, and in the absence of it, it's going to create it.

There's actually – and this is kind of related to it – I'm making a triangle, but there are three things that stabilize, and one is the physical structure. So, joints want to be stable, they want to fit together properly, and that physical structure is something that holds that joint in place. The other part of that is neuromuscular. So, there's this whole feedback loop of brain-to-joint back and forth information that helps to create stimulus in that area to help stabilize that joint. And then there's the muscles, and the strength and the muscles around the joint that help stabilize it.

So, when you have this ligament injury, then that structure is now disturbed. The problem is it doesn't really heal. And over here we have our neuromuscular and our muscles, but these muscles don't want to fire because it hurts in this area, and we get this inhibition. And then we get this different information going to the brain about that area of space. Sometimes we refer to it as real estate, but basically different parts of the brain are associated with different parts of the body, and that information changes in that area. So suddenly, we don't have good body awareness of our knees anymore. Our dog doesn't have good body awareness of their knees. You'll notice their thigh muscles, their quadriceps, start to get a little smaller because they're getting this inhibition, this negative feedback loop, and then the physical structure doesn't work.

And what happens is because we haven't retrained the system, we haven't taught the dog to use the leg again, we haven't addressed everything and promoted healing versus just taking away

pain, the likelihood of the dog reinjuring the leg is pretty high and probably the other leg, sadly. Dogs are already 60-40 front end loaded. So now we're putting more weight on the front end and using that backend less, and it just becomes this spiral where – Because dogs left to their own means will just run on three legs, right?

Dr. Karen Becker:

Yeah.

Sarah MacKeigan:

But we want them to use that leg again, because, again, if we're looking at how long they're going to be with us and how awesome their life is going to be, we don't want them to have pain and problems with that limb that could be problematic later in life. So, we're trying to address it, but it's just a negative cycle where we're not introducing the right exercises and the right stressors. Stressors probably sounds like the wrong word, but when tissues heal, we want to increase the load through tissues.

What I mean by that is, if I fell and I hurt my wrist, and let's say, it's really sore, so if I go to move it like this, it's going to hurt a lot, and if I go and lean on it, it's going to really hurt. But maybe if I put some ice on it and then use my other hand to bend it back and forth, it doesn't hurt that much. And then it actually starts to feel good because it's getting some movement, some blood flow. Some of the swelling's going away. Movement is medicine. It's just getting that right movement. As this starts to feel better over a couple days, maybe I'm beginning to be able to move my wrist on my own. And then maybe I start picking up-

Dr. Karen Becker:

Light.

Sarah MacKeigan:

-light objects.

Dr. Karen Becker:

Yes, yeah.

Sarah MacKeigan:

Right? Eventually, I'll weight-bear through it, but I'm going through this gradual progression because the body responds and heals based off the amount of force that's put through the tissues. But that force has to be appropriate for the stage of healing. That's one of the reasons for that re-injury, is we don't go through these stages. Scar tissue forms, your dog finishes the anti-inflammatories, and you're like, "Yes, they can run again." And you go outside and you throw the Chuckit! and your dog runs back to you on three legs, and you're like-

And it continues to happen because we haven't given the body the right amount of force at that stage of healing to do what it can to stabilize and repair itself. And then it just keeps happening over and over and over again. I see so many pet parents going through that. And then if you want to add inactivity and body weight to that, probably the main recommendation for, I think, probably every musculoskeletal injury in dogs is weight management. It's something – I want to say – and I might be getting it wrong off the top of my head, but it's something four times – for every pound your dog is overweight, it's like 4 pounds of additional force through that cranial cruciate ligament.

So, the body weight is a big part of it, but the part that I find people often miss is that exercise. They're like, "I'm going to figure this out on my own." It's understanding that loading sequence and understanding ways to kind of trick and teach the body to use the leg again. I do little things – again, I'm looking around, but I don't have anything around me – like putting a hair elastic on the unaffected leg, so I encourage the dog to weight-bear more on the affected leg at some point. Little tricks and things like that that retrain one of those parts of that triangle for stability, right? That's a big part of it.

Dr. Karen Becker:

So, I'm going to regurgitate what I believe-

Sarah MacKeigan:

That makes sense.

Dr. Karen Becker:

-what you're summarizing. If you see your dog's physical anatomical structures – limp, a strange posture, a strange anything physical, it's enough to take note. And if you see it repeated enough, the body speaks to us through symptoms, and those are symptoms that are saying, "We're having a problem here." If it's a pain, if it's just a shoot – let's say, sciatica. Dogs can get sciatica. If it's a disc, it could just be all of a sudden, oh my gosh, just instant screaming from the dog, those are all symptoms saying, "Things are not okay."

Because some veterinarians are trained in rehabilitation therapies, many aren't, that it's A-OK to ask your veterinarian or to take it upon yourself to find a physio that will do telehealth. To ask your veterinarian, "Hey, I'm seeing that I've got a musculoskeletal issue. This may not be your forte. We may want to add a healthcare practitioner to our team now that is well-versed in musculoskeletal support rehabilitation and recovery," that's A-OK. And the sooner we intervene with a professional, the better we're going to be.

But then let's loop that back to what can we do other than weight to potentially help our companions' bodies? Maintaining their weight is good, but you could be very thin and not strong. So what else can we be doing, Sarah, to make our animals' bodies – other than maintaining weight, which I totally agree with you, that's key factor number one, make sure your dog is lean and not fat. Make sure you're providing the raw materials. Good, healthy food is really important. Micronutrients, minerals and key vitamins are cofactors for physiologic reactions that help manage inflammation in the body. So, there are pro-inflammatory diets and

anti-inflammatory diets. Choose food well, yes. But other than good anti-inflammatory variety and nutrition and maintaining weight, that's about as far as – Veterinarians didn't even learn the food piece in veterinary medicine. What we got in veterinary medicine is, "The very best way to extend your pet's life and reduce arthritis is maintain their weight." Okay, got it. What else? But that's as far as veterinary training goes.

So, from a physio perspective, there's a lot more we could be doing to minimize degeneration and potential injury in our dogs and cats. Can you speak a little bit about if you're putting – I hope you've had proactive wellness clients say, "Listen, I went through this before. I had three Dachshunds blow discs. Here's my 6-month-old Dachshund. I'm not doing this again, girl. I'm not doing it. So, what can we do? Because I cannot live through another blown disc in a Dachshund. I will have Dachshunds until the day I die, but I can't live through another blown back." So, there's a bunch of stuff we can do, but we just don't know about it.

Sarah MacKeigan:

Absolutely. There are two approaches, and it depends on what your resources are, because if you can get somebody to actually do a mobility assessment of your dog to see how they're moving, if they're shifting their weight too far forward, if they're leaning to one side. Are their sides actually symmetrical?

Dr. Karen Becker:

Symmetrical. Yep.

Sarah MacKeigan:

We often forget, as well, about those forefront legs that are doing so much work, especially if we look at our dogs that do have carts and things like that, or older dogs. So, we actually want – if you're able to have someone do an entire mobility assessment, a gait analysis. There's so much you can tell just by the way your dog moves without ever even touching them. How they stand, how they sit, it's a whole functional assessment. And then a little bit more hands-on. I do encourage pet parents to go that way. It's worth it because we can see things.

I said to somebody before, she's like – Basically, this mobility assessment is a lot less expensive than surgery, which could be down the road if we miss something that's going on because it's a predominant thing. And there are some breeds, sadly, that things like intervertebral disc disease is very predominant. So, the mobility assessment. But beyond that, even as a pet parent on your own, there's a few things that you want to do. One is [to] diversify. So, I was thinking about what are the common misconceptions or common challenges, and then what can pet parents do about it? And it kind of fits into the too much or too little category. And usually it's the too little.

But I just want to touch on the too much for a moment because I do see that, things like the weekend warrior syndrome, where your schedule is really crazy, your dog goes out in the backyard during the week, walks around, does his thing, and then on the weekend you feel really bad because he hasn't walked all week. So, you take him with the kids to the dog park and he runs like a maniac for two hours and then he hobbles like an old man the next day, and then that repeats over and over again. It's like me going to the gym once a week and doing something like

CrossFit and then leading a sedentary life for the remainder of the week. The likelihood of me hurting myself is actually pretty good. I'm probably not going to be a very nice person because I'm not going to be very happy and feel[ing] good. And I'm-

Dr. Karen Becker:

Or immobile the next day, right?

Sarah MacKeigan:

Yeah, right.

Dr. Karen Becker:

You have to call in sick for work because you can't get out of bed.

Sarah MacKeigan:

Because I can't get up. Because I can't get up.

Dr. Karen Becker:

Yes.

Sarah MacKeigan:

And one of the things I encourage people to do when their lifestyle – There are different factors that make it harder for us to be active and, not controversial but maybe a tiny bit, our dogs are also a reflection of us and our lifestyle that we are living as well. So, we want to take that into consideration. But beginning to do even a little bit – I think part of the misconception is, "Oh my gosh, I need to dedicate 30 minutes every day to exercising my dog and doing this," because that's what we do, right? We go to the gym for half an hour and do this program because we've kind of worked physical activity out over our lives or exercise out of [our] lives, so we put it back in in these blocks.

But you don't have to do that with your dogs. In fact, I encourage people to just attach an exercise, and we can talk about which ones might be appropriate, to an activity. Dogs are so much happier when they work for their food. Shooby, if she hasn't gone for her walk and done a couple of things, she's like, "No, I'm not interested." Working for food and then getting the reward of the food is – all of those neurotransmitters, the serotonin, the dopamine, all those things. Our dogs want to work for their food. So, taking for example, at breakfast time and doing a little bit of teaching your dog to stand.

People often ask me what is one exercise I wish everybody would teach their dog? It's not sit — it's stand. It's stand. Please teach your dog to stand because it's so much more functional. If you think about a dog as when they're puppies, they need to find their balance, their body awareness in that stance. They engage their core, and then through adulthood. And then we get into our

senior dogs and our geriatric dogs and they have to get that sway back, and they have difficulty standing up.

Standing is such a functional movement to teach your dog to stand. So, teaching your dog to stand at mealtime and maybe doing some rhythmic stabilization, where you have your hands on their hips and you're gently nudging them from side to side. The idea is the dog actually will stabilize against you. So, if I'm pushing on one hip – so it's the bony prominence on the side of the hip – I nudge, I should get resistance, and I nudge – do this on a nonslip surface, by the way, always – but those little nudges, so you're attaching an exercise and you can go through the body with that.

You can stimulate the spine a little bit because we want those muscles along the spine to fire to hold the dog there. So, you can do a little scratch along the spine. And then you do that for 30 seconds before they eat. [When] they go out for their wander around the yard, maybe you have a step that they walk into the house and they do front paws up on the step, [so] that they get some stretch through their hip flexors, they lighten their top line, they weight-bear through their hind limbs, and you get them to hold it as long as they tolerate it. So, the point is you begin to attach the exercise to something else they're already doing.

Dr. Karen Becker:

Yeah, to just day-to-day movements. Just day-to-day movements that your dogs are already doing. Yeah.

Sarah MacKeigan:

Exactly. I think attaching it to something that's already happening takes away the pressure of having to coordinate something. If you have a sporting dog, this is different. You should be doing a lot more and you should be doing conditioning. But doing something is still better than doing nothing. And you get used to knowing what your dog's normal is. So, if something is lurking, then you're more aware like, "Well, every time I nudge him that way, he seems to just keep going. I can't get them to weight-bear through that leg." Then you're beginning to learn about your dog's mobility, right? And then you're beginning to learn about what's normal and what's not. So that's one thing.

The other thing is, just to touch on quickly, when let's say, you manage to get to the dog park, but you only get 10 minutes. So your dog jumps out of the car and you take the Chuckit! and you throw and you throw and you throw and you throw, and you throw for 10 minutes through the park. I wouldn't or an athlete would never go to a track and sprint.

Dr. Karen Becker:

Yeah. And sprint. Yeah.

Sarah MacKeigan:

Right? So, the body needs a little bit of warm-up. It needs to get the blood flowing to raise the temperature, to get the tissues a little bit more mobile and just the awareness so it prepares itself.

So, a couple minutes of movement. And then on the other end, again, you wouldn't just sprint and sprint and sprint and then jump back in your car and sit there for the next hour and go home and sleep. To bring the body temperature back down, the heart rate back down, to stretch out a few things a little bit so that you're maintaining some of that tissue flexibility. So, having a little bit of a warm-up and cool down in there, even if it's only a couple minutes before you start to throw the ball, will also reduce the likelihood – I see that one a lot of times, right?

Dr. Karen Becker:

Yeah, it's good.

Sarah MacKeigan:

A lot.

Dr. Karen Becker:

Yeah, yeah.

Sarah MacKeigan:

And I once had a client, actually. That super active guy, mountain bik[ing], had this beautiful Border Collie, 6 years old. Border Collies, they're a little bit crazy, and he would run with him mountain biking every day for six years, up over rocks, down, all of this. And it's this repetitive same movement over and over and over again without allowing for the opportunity for recovery so the body can repair itself and adapt and to do other things as well, and cross-train in other ways. He came to me because his wrist, he had-

Dr. Karen Becker:

Wrists were shot. Yeah.

Sarah MacKeigan:

Yeah, [his] wrists were shot. And again, had I seen him before, it would have been so much easier than where he was then. And there are still things you can do if you're like, "Oh gosh, I'm doing that now. I've ruined my dog."

Dr. Karen Becker:

You bring up a really good point though, Sarah, that a lot of people say, "My dog wouldn't do it if it hurt them or they didn't want to." That is not true.

Sarah MacKeigan:

Yes, they would.

Dr. Karen Becker:

Dogs live their best life. And if they're going to die today on the trail with dad mountain biking, they don't give two hoots, nor are they thinking about that. "If dad's going to go mountain biking, I'm going too, and I'm going to give my best life until I physically can't touch my feet to the ground because that's how much pain I'm in." There's no thought about body respect. There's no thought about, "Hey, I'm going to protect and preserve my joints," or "I overdid it yesterday so I'm going to back off today," especially with a driven, intelligent breed like a Border Collie. They will abuse their bodies till they are immobilized. So for driven dogs, letting your dog set the pace is not wise. We have to advocate for them. So that's an important piece that you bring up.

Sarah MacKeigan:

Thank you. Absolutely. And it actually touches nicely as a leeway into the two little – I was going to start with older dogs, but I'd actually like to start with puppies as well, because sometimes I see people want, "I just want to exhaust my Lab puppy because he's insane or she's crazy," and we don't want to take any animal to exhaustion and especially puppies and things like that because they're growing and we can actually do damage if we-

Dr. Karen Becker:

A lot.

Sarah MacKeigan:

-do the wrong exercises. So obviously, I'm a big advocate of movement, and movement is medicine. It helps. The body is meant to move, but it has to be the right movement at the right stage of life and, if there's an injury, at the appropriate stage of healing. Puppies, they're still growing, and we don't want to put damage to their growth plates, to their long bones or anything like that. They don't have that good control and body awareness. They will keep going until they literally fall over. Well, not all breeds, but many of them. But that shouldn't be the goal. I did want to mention that.

On the flip side though, what I often see, especially with larger breed dogs, is that pet parents are told to not let them be active, that this is going to cause problems with their joints. There's a condition called hip dysplasia, which is very common in large breed dogs. And dysplasia, if you ever hear that, if pet parents ever hear that word, it basically just means something doesn't fit together congruently. A joint is meant to fit together nice and tight. Dysplasia just means it basically doesn't. It's a fancy word. Because it doesn't, down the road, it can lead to osteoarthritis, which is sometimes also called hip dysplasia, but it's a different one than one that is because the joint isn't symmetrical in a puppy.

But it's interesting, they are now recognizing the body learns so much, especially in those early, really early – like even before you get your dog, when the dog's still with the breeder, when the dog's still a puppy. There's so much going on from a neurodevelopmental point of view. And they actually did a study. There was a study, I believe it was out of Norway, and it looked at large breeds. I think it had over 600 dogs in it, there was over 100 litters, and it was around hip dysplasia and environmental factors that potentially contributed. And what they found, there was a couple of things that were really interesting related to this, is that dogs that were born in the

fall-winter versus dogs that were born in the spring-summer, the fall-winter dogs actually had a higher prevalence of hip dysplasia than the spring-summer dogs. And those spring-summer dogs, one of the differences as well was the ones that were born in the spring and the summer were outside a lot more-

Dr. Karen Becker:

Moving. Yeah.

Sarah MacKeigan:

Moving. And they had a little bit more free rein to move across different terrains, a little bit of grass, dirt, little ups and downs, and all of those things. So they're learning, their nervous system is developing. They're learning about balance. They're learning about proprioception, body awareness and core control, and they're also actually probably building a little bit of muscle. So, remember I said that anatomical neuromuscular, muscular strength. They're building that little bit of muscle that's helping to stabilize that area. Those dogs actually had lower incidences of hip dysplasia. And this isn't the first couple months of their life. This isn't three months down the road.

Dr. Karen Becker:

Adults. Yeah.

Sarah MacKeigan:

This is like-

Dr. Karen Becker:

Yeah. When they're still developing.

Sarah MacKeigan:

Yes. Yeah. And again, you're not going to go out and run a dog like that and do high impact activities, but the movement is actually advantageous. It's really important for a whole gamut of reasons. And that really trends through your dog's entire life. On the other end of the spectrum, when we talk about our senior dogs or geriatric dogs – And just as a side note on the geriatric dogs, I find it really interesting because with people, when we see geriatric, we use it as a means of explaining ability. Basically, geriatric folks, they're more frail. They have more decline in their independence and things like that, versus just the age, which I thought was interesting when we talk about dogs.

But nevertheless, our senior dogs, our geriatric dogs, the excuse of the decline in mobility is because they're old. This doesn't jive. Yes, age is the number one predictor of how long your dog's going to live, but that decline in mobility means there's something changing, there's something going on, especially if it's coupled with behavioral changes, changes in personality and things like that. I think that [in] a lot of these older dogs, or any dog really for that matter,

pain is sometimes missed because it's a behavior change. And we think the dog is just acting out, or cranky, or it doesn't want to do that anymore because they're old or whatnot, and we miss it. We don't put them-

Dr. Karen Becker:

Yeah, and just wants to sleep more, right?

Sarah MacKeigan:

Right.

Dr. Karen Becker:

"He's 10, so he just wants to sleep more." But there's a very good chance we've got some unaddressed inflammation and pain.

Sarah MacKeigan:

Exactly. Exactly. And that's a big issue with that, that I think that we shouldn't minimize. In addition to that, what happens when your dog doesn't want to jump into the car anymore? You start picking them up. But there's this functional thing you can do in between, where maybe there is some arthritis, maybe he's got some lumbosacral pain and there's some arthritis down there, and a little bit of hip stuff going on, and jumping just isn't appropriate at this time. You could pick him up or maybe you get him a harness and a dog ramp and he walks into the car. So, he is getting some range of motion walking in [and] out of the car. He's weight-bearing. He's keeping his core stability and balance, and he's building some strength in his backend, and he's doing it on his own with you supporting him. So, he is maintaining his function for his independence. Or you could just pick him up. Which one is going to contribute to-

Dr. Karen Becker:

Yeah, exactly.

Sarah MacKeigan:

-the longer life and the better life, right?

Dr. Karen Becker:

Yeah. So that's a really good, simple, I'm going to say, trick. But that's a really good tip that when you start to see these changes, I think sometimes it's human nature to say, "Okay, we should just expect that." And maybe we should, but that doesn't mean there's nothing we can do. If your dog hesitates before going upstairs or jumping into the car, totally acknowledge that, but rather than to say, "Okay. We'll just block off the stairs or not put them in the car or pick them up," there are great things we can do to help retrain the body in a new time-space reality that allows your dog to safely continue to do stairs or continue to get in and out of the car with a new plan. With a new plan.

Sarah MacKeigan:

Exactly. With a new plan. And the other piece of that is just like humans, because there's so many parallels between animals and ourselves, and the premise is all the same, it really is a use it or lose it scenario. There is some muscle wasting that is going to happen and things like that, so the sarcopenia, that type of stuff. So, anything that you can do that's going to create stimulus for the nervous system and promote maintaining some muscle mass in a way that doesn't cause your dog discomfort, then you're on the right path that way. And that's where sometimes it takes somebody else to work with to figure out some of those things. But I really think that when your dog's mobility changes, we want independence, we want function, but we need to acknowledge where our dog is at because they're trying to tell us something. We just need to listen and then we can-

Dr. Karen Becker:

And so, modifying the plan that worked maybe three or six months ago. We don't throw in the towel. Ideally, we modify the plan.

Sarah MacKeigan:

Absolutely. And things like nonslip surfaces, that was another thing that came out of the puppy hip dysplasia study as well – Now, I remember from my childhood, which feels like, I think it was a really long time ago, my mom used to get her dogs from a breeder and they would always have the puppies on newspaper.

Dr. Karen Becker:

Yeah, right.

Sarah MacKeigan:

And what they actually found was that dogs that were on newspaper or on slippery floors had, again, higher prevalence of hip dysplasia than the dogs that had good traction. Then if we look at our senior dogs and we want them to use their back legs, and we want them to have comfort in their front legs, and we're doing things with them instead of being Bambi on ice – I don't know if you've ever hurt your knee and then tried to stand on something slippery, you're like – Right?

Dr. Karen Becker:

Yes.

Sarah MacKeigan:

To be able to have the grip gives your dog more confidence to be able to use the limbs.

Dr. Karen Becker:

Yeah, yeah. I do think that just people who have smooth floors, we underestimate what that would feel like to an animal who's starting to lose muscle mass, which is strength. They end up becoming weaker. If you notice that your animal sees your gorgeous hardwood floor in front of them coming out of the bedroom and stops, and they used to just go right across and not think anything of it, but you see your dog stop and start to approach it like they're walking on an ice rink, that tells you something that we can acknowledge, address and first of all prevent injury from. But also, there are great things we can do to slow down the muscle atrophy, to reduce how quickly sarcopenia or muscle wasting is occurring. But now's the time. The second that you see hesitation, and if your dog has never hesitated, that's the time to address it.

Sarah MacKeigan:

A hundred percent. I know that you talk a lot about health span and lifespan. We know actually from the human side, and it applies on the animal side, that muscles – so not just age but actual muscle strain is an indicator of health span. How long is your dog going to maintain a good life, not just a long life? So, you want to do things, if that's your goal, which I hope everyone's is, is to give your dog a good life – you want to do things that are going to safely help promote muscle mass.

The other piece of it that we didn't really touch on but I think is really important is the mental health side of it and the cognitive side of it. With people, we actually use walking speed as an indicator of cognitive decline. And now they've actually published a study doing the same thing with dogs. On the flip side of that, the whole BDNF, the brain-derived neurotrophic factor – exercise, physical activity, actually stimulates this, and BDNF then helps to – It's your dog's cognition. They're learning all of these things. And then you're getting all of the ability to manage stress. I don't know about you, but if I'm having a moment, sometimes I'm like, "I just need to go walk." And then I come back and I'm like a different person. Fido's the same, right?

Dr. Karen Becker:

Yeah.

Sarah MacKeigan:

So that-

Dr. Karen Becker:

So, I have just a thought about this. We just interviewed environmental enrichment expert, Jo Woodward, who was talking about how getting your animals on different surfaces – sand and gravel and grass and just as many different surfaces – She's like, "You wouldn't think of that as enrichment," and yet it's sensory input. So, it's like subconscious enrichment. Your animal's brain still has to take it in, adapt, and it's like, "Hey, what is this?" That's still helping to keep those neurosynapses stimulated and new and refreshed. So just exposing your animal to a variety of different environments, including walking surfaces and temperatures and sounds and smells.

That's one of the things when we did "Forever Dog" that I totally underestimated was, I was certainly aware of the emotional [and] mental aspects, that dogs and cats both need a lot of

sensory input. They have evolved hearing, seeing, smelling, tasting [and] feeling their environment, and they need that to be cognitively well. I think we've underestimated that contribution to lifespan, that some of these – Movement is important, no doubt. But it's interesting that you brought up overexercise because that was Jo's first point was, "Listen, playing Chuckit!, we think that a tired dog is a good dog, and to some extent that's true, but that doesn't mean that their brain is tired or stimulated or fed or producing the neurotransmitters they need to be cognitively well for the next decade. That isn't done by just running your dog to death. There are other things involved."

But then this plays in nicely, Sarah, to a little transition to our last topic, which is, there are some dogs that can no longer walk well, and that's when this sensory input becomes front and center when it comes to maintaining not just cognition but emotional and mental wellbeing. Can you speak to that? Because I really do believe you creating intentional brain games for Sam is one of the reasons she was fired up to get up every morning as an immobile dog. "Okay. What crazy games are we going to play today? What treats are involved? Where's it going to be? Will it be outside? Will the wind be blowing? Is it going to be cold or warm? Where are we going to do it? Are we going to go to the park to do it? Are we going to do it in the backyard?" You provided endless opportunities for a paraplegic dog to experience sensorially her environment. And that, I believe, is generally underestimated as dogs age.

Sarah MacKeigan:

I think that's huge. I think that something that I've learned as well, and Shooby's even taught me this a bit, is that dogs all have their own things that they really – Sam was a Shepherd, so she was a nose girl. She was smart and she wanted to use her nose and find stuff, and that was part of what I was doing with her. Some dogs are diggers. Shooby likes to use her nose but in a different way than Sam did. She literally digs with her nose, right? And you have your dogs that want to find, and then you have your dogs that want to retrieve. And so, it's the qualities that are innate to your dog and incorporating those into the exercises and things you're doing, and giving them that opportunity, even though they might be using their body in a different way, and then being able to support their body in a different way. So, you mentioned Sam was in a wheelchair, and to be honest, there are some parts of the world where people think dog wheelchairs are cruel and they're unnatural.

Dr. Karen Becker:

Cruel. Yeah, yeah.

Sarah MacKeigan:

I can tell you, watching my dog run down the beach in the water after Reggie, side tucking them as I'm running behind her, while people are laughing, she was having a good time, right? But it's, again, understanding how do you use these tools and in what environment. I think one of the saddest things that happens when our dogs get old or older or they have these neurologic conditions and their body doesn't do what they want it to anymore is we start to isolate them and they don't get the socialization, and they don't get the sensory input, and they don't get all those things that are natural to them. And then people are like, "They seem to be whining a lot and

complaining a lot." And I was like, "I would too if I was sitting on the living room floor looking out the window."

Dr. Karen Becker:

They're bored stiff. Yes. Yes. They're bored stiff.

Sarah MacKeigan:

And there's a misconception that they can't do things, which isn't really accurate. It's just learning how to do them in a slightly different way. I saw – I'm not sure if you ever saw this video – it made me cry. I think it was a Corgi with DM. No, it was IVDD (intervertebral disc disease). He was in a wheelchair, and they set up an agility course for him, but no poles. And he ran the agility course. And I'm getting chills. It was the most beautiful thing I've ever seen because he was so happy-

Dr. Karen Becker:

So happy.

Sarah MacKeigan:

–and he was doing what he loved to do. And kudos to his pet parent-

Dr. Karen Becker:

Modified. Yeah.

Sarah MacKeigan:

–that was like, "Well, he's still my dog. He can still do these things. He's just going to do it in a different way because it's not about how high he can jump. It's about him having a good life and being happy, right?"

Dr. Karen Becker:

The experience. Yeah.

Sarah MacKeigan:

So, I think a lot of it has to do with learning what adaptations are available. Because I always say to people, "Things like DM, it's going to be hard." I'm not going to say it's not going to be hard. Nobody likes it when their dog gets older, let alone has a neurologic condition, but it can be a little bit less hard. You just haven't learned yet what to do, and that there's still a lot of good things and good times to be had within there if you have the right tools and resources available to you.

Dr. Karen Becker:

So that is a perfect point to pivot to tools and resources because I agree. Whether you have an older dog that has started in with a heinous degenerative disease diagnosis like DM or you have a thriving 3-year-old dog that just ran out into traffic and is now paralyzed, there is a smack you in the face fall down period where you have to get a grasp and then make a plan. But hopefully, this interview will inspire people who are dealing either with recognizing that their animal's slowing down or they've had a traumatic physical experience with their animal. It doesn't mean there's only one choice, euthanasia. It does mean that for you to help your animal have a functional quality of life, it is up to you to be empowered or inspired enough to make a plan.

And relatively quickly, to help preserve remaining quality of life. You want to help your animal get back in a brand-new game, with a brand-new plan, with a brand-new set of perpetually changing protocols that allows your animals to live life differently but still live life. And Sarah, I know that you have dedicated your professional career to helping people that have had this hit-by-a-truck experience. It's like, "My dog just went down and they're never going to walk again." You have set up resources and tools and a support group for humans who have animals whose bodies are not functioning at 100%.

And I think that just having a community of recognizing there are other people who love their animals more than anything [and] dealing with the same stuff is incredibly supportive, but also the sharing and the tips and, "Hey, this worked for my dog. Try it." I mean, just knowing that there's this incredible resource of thousands of pet parents dealing with the same stuff allows for a little bit of support to come in for us as guardians, but also opens up this wealth of information that can begin to empower people to make choices and plans that allow for their animals to regain happiness, and it's possible. So, can you walk us through what your website is or what platforms you have that allow people to have some of these tools?

Sarah MacKeigan:

I definitely can. In fact, I would be very happy to because it really is a passion point of mine because I really believe that, like you said, these things happen and you have to work through it. But every dog, I believe, deserves a second chance at leading an active and mobile and happy life despite injury or illness. And every pet parent deserves the opportunity to give their dog that. And it's through learning and having a supportive community. I think that's a big piece of it because a lot of people feel very isolated when this happens. "Why me? It hasn't happened to any dog. Oh, I've been told it's not very common."

Dr. Karen Becker:

Or, "My vet doesn't know. My vet said there's nothing-" That's a big one, Sarah, and I know you get this.

Sarah MacKeigan:

It makes me crazy.

Dr. Karen Becker:

Right. And I'm just going to say it because I'm the vet on this interview. I have oftentimes been told – People come to me because they're like, "Hey, my vet said there's no hope." And it's like, "What?" My brother's dog tore his second, his remaining ACL (anterior cruciate ligament). He's a 10-year-old dog, and the vet said, "You want to drop six grand on a dog that's going to be crippled up after we do the surgery?" And my brother said, "Well, what are you insinuating?" And the vet said, "You have a 10-year-old, 80-pound-" He's not fat, just a big, big, big Great Dane mixed dog who's blown his remaining knee. And then there was this long, uncomfortable silence, and John said, "I think he was insinuating to put him to sleep." I said, "I think so too."

Sarah MacKeigan:

That's horrible.

Dr. Karen Becker:

And this is not bashing my profession. I am not bashing my fellow colleagues. We were not taught in vet school about all the amazing options that are available. So, for people that, maybe, live in North Dakota and they're like, "Hey, this would be great. [But] I don't have an underwater treadmill in my neighborhood." There are still things you can do in the middle of nowhere that can be incredibly beneficial. So, sorry for interrupting, but-

Sarah MacKeigan:

No, it's okay.

Dr. Karen Becker:

–I need to just make sure that people know that your veterinarian could be the one saying there's no hope. But I couldn't agree with you more, Sarah, sometimes there is no hope and sometimes euthanasia is the most humane option. However, for you to put your head on your pillow at night and know that you've done all you can do-

Sarah MacKeigan:

Exactly.

Dr. Karen Becker:

–I do believe you have to give your animal the option for a second chance before you say, "I really did exhaust all the opportunities." Because, more times than not, when you give a dog or a kitty an opportunity to heal, they take it and literally run with it on wheels. Life is different, but they take the opportunity for healing. And it's not only an inspiration to everyone around them, they have a second chance at life. So at least providing them the opportunity to get a second chance is, I think – unless resources are so impossible that you cannot do a teleconference Zoom call with a rehab professional. If you are impossible of doing that, then there probably isn't hope. But at a minimum, doing a teleconference with someone who can provide you the basic beginning, step one, step two, step three, is a really good place to start.

Sarah MacKeigan:

Absolutely. And it's actually something – So I do online – I call it online mobility coaching, but exactly that. There's so much that you can see in a video. One of the reasons I started doing this was during COVID. And there was this study that came out on the human side that said basically, even if you know the outcome of what's going to happen, having a plan and actually implementing that plan can go a really long way for mitigating the stress, the anxiety, and letting you feel like you're doing something instead of just-

Dr. Karen Becker:

Sam.

Sarah MacKeigan:

–being a passive bystander.

Dr. Karen Becker:

Right? Sam, Sarah. Five years. You and I both knew that she was not going to be cured of a degenerative neurologic disease, that it was a dark closing tunnel that led to black, but that didn't prevent either one of us from doing everything we could. And she had five magnificent years, not degenerative, questionable years. She wasn't just surviving in a broken body. She had five excellent years. And we both knew it was a dead-end street, but that didn't prevent us from making a really good plan.

Sarah MacKeigan:

It also worked because we worked together.

Dr. Karen Becker:

Yes, yes.

Sarah MacKeigan:

I think that's a big takeaway. There are lots of people like myself out there that can help with these types of things. I mean, as a physical therapist, physiotherapist, we're mobility experts. Everybody has their niche, their thing. Not everybody is the way I am about dogs and wheelchairs and things like that, but my point being is that there are resources. A lot of people don't know they even exist until their dog has a problem. But if you look, and Dr. Becker, I can share directories with you as well, there are lots of resources out there. I myself have my Facebook group. I'm starting a podcast because I really just want to reach more people. I do one-to-one mobility coaching online, and I work with pet parents here, not right here but in my community. So, each one looks different and each one has its pros and cons, but you don't have to be a passive bystander to your dog aging or having an injury or a disease and feel like you can't do anything because there are people that can help you.

Dr. Karen Becker:

That is a perfect way to end this hopefully very empowering interview about the fact that for many of our animals, there can be trauma, unexpected accidents and trauma that disrupt their ability to move normally. And if it's not, God forbid, an accident or a trauma, life will cause the body, all of our bodies, to slow down. That is a natural part of aging. But that doesn't mean that we're powerless with no tools and no resources to keep the body comfortable, to do what we can to slow down the process, and most importantly, to make sure that we're tending to our animals' needs every step of the way, to assure that we are counting for quality of life [and] pain management, to do all we can to increase health span as our animals go along their lifespan.

Sarah, I appreciate you having this candid and honest and forthright and inspiring conversation because it's the conversation that, oftentimes, it's uncomfortable for people to think about their animals degenerating and/or having a physical crisis. It's oftentimes something like, "Hey, I'll cross that bridge when I get there." But sometimes you're left there, and just being aware that there are resources out there is the first step of being able to give your animals the second chance that they deserve. So, I appreciate your expertise in diving into this subject matter. Thank you for joining me today.

Sarah MacKeigan:

Thank you so much for having me. You're actually part of my inspiration for finding my voice and the work that you do and the courage you show up with every day to help pet parents step into the unknown a little bit. So, thank you again for the opportunity. I really do appreciate it. Hopefully, we can reach more pet parents. And thank you for inspiring me to help find my voice.