Unlocking More Stroke Recovery: Dr. Ettie Ben-Shabat on the Power of Brain Imaging

Uncover groundbreaking insights into stroke rehabilitation. Learn how advanced brain imaging may improve your recovery journey.

BrainHehabilitation.org
Rehab Team
How To Get A Copy Of My Brain Scans
Brain Imaging Consultation
LinkedIn
Facebook
Neuro Rehab Team Guide PDF

Highlights:

Dr. Ettie Ben-Shabat 0:00
This episode of the podcast is brought to you by headbed.com.au. Hello everyone. Before we dive into today's episode, I wanted to share something special in Episode 305 I interviewed Catherine Randabel the inventor of HeadBed a product revolutionizing hair salons, especially for stroke survivors. The HeadBed provides excellent neck and head support during hair washes.

Bill Gasiamis 0:25
Reducing strain and promoting better blood flow. For stroke survivors. This

means lowering the risk of arterial damage and easing concerns about another stroke it ensures a safe and enjoyable salon experience. I'm thrilled to support such a product that aligns with my mission of stroke prevention and safety.

Bill Gasiamis 0:44
In our interview, Catherine explained how the HeadBed ergonomic design prevents neck hyperextension a common issue increasing stroke risk with the HeadBed you can feel confident and comfortable at the salon knowing your health is prioritized. If you are a stroke survivor or you know someone who is the HeadBed is a must-have for your next salon visit.

Bill Gasiamis 1:06
Check out episode 305 For my full interview with Catherine and learn how this product can make a difference for those in the United States. Visit headbedusa.com to get yours today and enjoy peace of mind at the salon. I'd also like to mention my book The Unexpected Way That A Stroke Became The Best Thing That Happened. 10 tools for recovery and personal transformation.

Introduction – Dr. Ettie Ben-Shabat

Bill Gasiamis 1:30
It features inspiring stories from 10 stroke survivors and offers hope for those on the road to recovery. For more information visit recoveryafterstroke.com/book or search for my name Bill Gasiamis. This is episode 308 and my guest today is Dr. Ettie Ben-Shabat PhD, a distinguished clinician, researcher and educator, specializing in neurological rehabilitation with a focus on brain imaging.

Bill Gasiamis 1:58
She has a robust academic background holding a Bachelor of Applied Science in physiotherapy, a master's in neurological physiotherapy, and a PhD in brain imaging and neuroscience. Dr. BenShabat is the founder of Brain Rehab Academy, an organization dedicated to educating clinicians on using brain imaging or personalized and optimized neurological rehabilitation.

Bill Gasiamis 2:25
She is also a senior clinician and a researcher at Caulfield hospital, part of Alfred health and an adjunct research fellow at Monash University. Additionally, she serves as a senior clinician at Renew Rehab. Her work involves teaching clinicians how to interpret brain images to enhance rehabilitation outcomes, and empowering patients by helping them understand neurological conditions better.

Bill Gasiamis 2:55
Dr. Ben-Shabat's contributions to the field are widely recognized and she continues to impact both clinical practice and research in neurological rehabilitation. And now it's on with the show Dr. Ettie Ben-Shabat, welcome to the podcast.

Dr. Ettie Ben-Shabat 3:10
Thank you for having me, Bill.

Bill Gasiamis 3:14
My pleasure. Thank you for being here. This is a really exciting opportunity for me, because when we met about a month ago, I learned something new. And what I learned was that there's physiotherapy, and then there's neurological physiotherapy, and they are two different things. And I didn't know that stroke survivors will benefit from physiotherapy, but then they'll also benefit from this other thing called neurological physiotherapy. But before we talk about those two things, can you tell me a little bit about your background? And how you came to be involved in this field?

Dr. Ettie Ben-Shabat 4:00
Yeah, sure. I actually started my career as a physiotherapist. And I did a Bachelor degree in physiotherapy, which I finished in 95, I think it was. And then after a few years, I discovered that I'm really really actually new since uni that I was really interested in neurological physiotherapy. So working with people that have

neurological injuries, which means injuries to the brain or spinal cord.

Dr. Ettie Ben-Shabat 4:26
And so I try different areas. So when you finish physio, they kind of gets you to try different areas to make sure A that you're competent with all the areas and B that you going down the path not because of that being your first option, but because he actually tried different things and you're certain that if you're going to specialize that's what you want to do, or that you do something that you actually like.

Dr. Ettie Ben-Shabat: Understanding The Individual's Specific Brain Damage

Dr. Ettie Ben-Shabat 4:48
Anyway, I went down that path of getting myself trained further in neurological physiotherapy. So I did a clinical Master's in neurological physiotherapy. Repeat. And I went there thinking that I'm gonna learn lots of neuroscience and lots of brain imaging. And I learned some neuroscience and very little brain imaging.

Dr. Ettie Ben-Shabat 4:48
And it was a little frustrating for me, because I wasn't getting the knowledge I really wanted because I had a had a sneaky suspicion that there's a lot of information in the brain images that can really help me as a physio. And then an opportunity came up to do a PhD in brain imaging. So that's what I did, I did a brand new, I did a PhD in brain imaging, it was a functional MRI.

Dr. Ettie Ben-Shabat 4:48
So it was about looking at how the brain works. And which areas are active when you do what sort of task, which is a bit different from diagnostic imaging, which is identifying which areas of the brain are affected by a lesion. And the difference between physiotherapy and your logic of physiotherapy, and I didn't know that

people don’t know that. But a physiotherapist is someone who’s responsible to help you get your movement back. So it might be because you had a back injury or a shoulder injury or a knee injury, etc.

Dr. Ettie Ben-Shabat 4:48
But then your logical physiotherapist specializes not just in giving you back the movement, but connecting the areas that order the movement, which is the brain to the areas that produce the movement, which is the different body parts. So not only do they need to make sure that the body parts work properly, they also need to facilitate that connection between the brain and the body part that got disconnected because of the injury.

Dr. Ettie Ben-Shabat 4:48
And sometimes this is really tricky, because you need to explore because different brains are different, and you need to kind of explore if I do this with that work, if I’ll try this with it with it. Will it work? And why did it work for one person and not another? There’s a lot of trial and error, which is why I was so fascinated by brain imaging because I thought that if I look at brain imaging, it will take some of the guesswork out of what I do.

Bill Gasiamis 4:48
Yeah, that is the key point, I think. So when I, when we chatted the other time over coffee. What happened to me was, I became aware that when I was doing physiotherapy and trying to get movement in my left side back and walk again, and coordination in my left arm, what I realized was that the amazing people helping me were pretty much working blind.

Bill Gasiamis 7:36
Because they had no idea what the inside of my head looked like they didn’t get access to the images, nobody said to them, this is what happened in a guy’s brain, this is where it happened. This is the damage. They didn’t do any of that. And, and I feel like the giving they’re given the client with half the tools. And that would make recovery, potentially hit and miss and take longer than necessary and then not be targeted. So you might have all that time and effort into the risks, putting those resources into that individual. And then you’re not getting the biggest return on your we’ll call it an investment into that person.

Intro 8:24

If you've had a stroke, and you're in recovery, you'll know what a scary and confusing time it can be, you're likely to have a lot of questions going through your mind. Like how long will it take to recover? Will I actually recover? What things should I avoid? In case I make matters worse, and doctors will explain things. But obviously, you've never had a stroke before, you probably don't know what questions to ask. If this is you, you may be missing out on doing things that could help speed up your recovery.

Intro 8:54
If you're finding yourself in that situation. Stop worrying, and head to recoveryafterstroke.com where you can download a guide that will help you it's called Seven Questions to ask your doctor about your stroke. These seven questions are the ones Bill wished he'd asked when he was recovering from a stroke. They'll not only help you better understand your condition. They'll help you take a more active role in your recovery. Head to the website now, recoveryafterstroke.com and download the guide. It's free.

Bill Gasiamis 9:24
A few quite a few episodes ago I interviewed Dr. Amir Hadanny a hyperbaric oxygen therapy clinic, and he he created the same amazement and awe in me because previously I'd heard about hyperbaric oxygen therapy. There's plenty of them here in Melbourne. Facilities that I could just turn up and pay for an hour session and then and get a, you know, sit in a tank and then get some therapy.

Brain Imaging For Stroke Patients

Bill Gasiamis 10:04
And although that seems like it's a good idea at the time, again, were providing our ourselves to this resource we're paying for this service. And then we don't know what it's doing or how it's doing it, or whether it's effective or whether we should keep doing it. And it's kind of working blindly hit and miss, and what the

difference between the conversation that I had with somebody else who had hyperbaric oxygen therapy, and Dr. Amir Hadanny was that they do really detailed imaging of the brain.

Bill Gasiamis 10:44
And they find penumbras in the brain areas of the brain, therefore there can be rehabilitated, that were missed earlier, because the imaging that they do is different, and it's looking for places to rehabilitate. So tell me about the imaging that you do to what extent does it to what extent does it? How does it work? Like, what does it look for?

Bill Gasiamis 11:09
What does it do differently to standard imaging, which is, the version that I got was a you went in, they found the bleed, they heal the blade, then they had another look to see if everything looks good, and then that was it, there was no further investigation into those images. I mean, they've got him and then they don't do anything with this resource, I find that amazing. But their role, it's not their role. So I kind of get it.

Dr. Ettie Ben-Shabat 11:42
But they are doing something this imaging. So for example, in your case, you had a bleed, and they did imaging. So first of all, they had to sort out whether you had a bleed, or whether you had a blockage that caused ischemia, and each one of them will require different treatment, they also had to find out where that bleed is, and whether they need to drain it or not to drain it.

Dr. Ettie Ben-Shabat 12:05
So there's various, the reason they doing these scans they call diagnostic imaging, is because they want to identify what the problem is, because they need to make a decision about how to treat. And when I say how to treat I mean medical treatment. So are they gonna have surgery or not which medication, etcetera, etcetera. There's a different type of imaging, called functional imaging.

Dr. Ettie Ben-Shabat 12:32
And that shows you which parts of the brain are work, King, when, and usually, an example of that is a functional MRI, there's some other scans such as spected, etc, in which you're injected with a radio active, say, oxygen or radioactive glucose most of the time, and then they trace it to see how it's distributed in the

brain. And then they know which areas are compromised or not compromised.

Dr. Ettie Ben-Shabat 12:59
And they can also do tasks and find out which areas are more active with a particular task. So in a hospital, usually, you will get diagnostic imaging, and sometimes you get just the initial scan. But sometimes you get further scans down the track down the track, the functional images are not done all that commonly. And when they're done, it's usually in the context of say they're about to do surgery, neurosurgery for someone with a tumor.

Dr. Ettie Ben-Shabat 13:32
And they want to find out because the area where the tumor is, is really close to say the motor area, and they want to find out exactly how much of the tumor is invading the motor area, are they gonna cause any damage motor damage when they do the surgery. So this is a clinical case in which they will use functional MRI as a standard clinical care. But for most people, this is not the case, the only scans that are taken, and diagnostic images.

Dr. Ettie Ben-Shabat 14:02
And my point is that those diagnostic images have a wealth of information, not just for the medical doctors with regards to what kind of medical treatment they need to give you, but also in terms of which specific area of the brain is affected. Because if you know exactly which area of the brain is affected, then you know what function will be affected. And if you know what function will be affected, then you know what you need to address in your treatment.

Dr. Ettie Ben-Shabat 14:31
And furthermore, when you look really carefully at the scans, you can tell whether a particular area is affected badly or maybe there's a lot of potential for recovery. So you you get a sense of how much recovery you expecting to regain as a result of these injury.

Dr. Ettie Ben-Shabat 14:52
So for me, it's really important because for example, the other day I saw someone and they had a lesion which was in a speech area but not a not an area that produces a speech in area that actually allows them to understand speech, which therefore meant that in the hospital, it was really important as a first port of call to find a way to communicate with this person, as opposed to assume that if

you're gonna go to him and speak to him, he's going to understand you.

Dr. Ettie Ben-Shabat 15:23
That was not the case, so if you look at the brand new images, and you see that from the beginning, you're already gonna be starting to communicate effectively this person, you're probably going to communicate with them, like you communicate with someone who speaks a language different to yours, and you don't have a common language. So even little things like that, that make a well a world of a difference to a patient. For this patient. That was a really big problem that no one could communicate with him.

Dr. Ettie Ben-Shabat 15:49
And all he could say was, yes, yes. So every, every time someone said something to hear me would say yes. And the clinician would assume that the yes meant, guess I understand or Yes, I'll do Ito? Yes, whatever. So the long answer to your question is that there's two types of images, diagnostic and functional images, I look at diagnostic images within the group of diagnostic images, specifically, in the context of stroke, there is what's called perfusion images, and they look at how much blood is taken by different areas of the brain.

Dr. Ettie Ben-Shabat 16:28
So your case, for example, was a bleed. But let's say they would have discovered that you had an ischemia than they would have used in another scan, or even within the same scan, would inject you with contrast, and then assess which areas of the brain have compromised blood flow. And by comparing the areas of compromised blood flow, and how compromised it is, they can determine whether it's a penumbra or whether it's actually the Impact call. So there's different type of image images, everybody gets diagnostic images.

Dr. Ettie Ben-Shabat 17:05
And if you had a stroke, particularly of ischemic type, you would have had infusion images. And that's the basis for decisions for treatment for the medical doctors. But if you have a brain imaging trained rehabilitation clinician, they can take a lot of information out of that can and then direct the whole team, including their own discipline. So for example, for that patient example that I gave before, I said, well, the highest priority is the speech language therapist, she needs to see him first before any of us and we need to prioritize her, so that she can help us communicate with this person. So it also changes how you structure rehab, as

well.

Bill Gasiamis 17:51
It does change everything. And that's the beauty of it is that I feel like even though I went through the process where there was a fair amount of communication, there was assessments, there was a whole bunch of people talking to each other, I still feel like that the image that they had the images that they had weren't under utilized.

Dr. Ettie Ben-Shabat 18:17
I share this view with you.

Bill Gasiamis 18:20
Okay. And that the the person who was helping me walk, didn't know about what you just said, they didn't know that they knew that they had somebody that couldn't walk properly. And then what they were going to do was go through the standard usual techniques, and that I might apply to every person to get me to walk. And and although I got a result, which I'm very happy about, they perhaps work I feel like they'll work in blind.

Bill Gasiamis 18:56
And then I think about other stroke survivors, right, I think about the stroke survivors, who perhaps have been told, you know, that crazy sentence, that's about all you can expect, or you know, you're never going to walk again or things like that. And then I start to get really annoyed that a that whatever be said to somebody and be that there's probably resources and images of that person's brain that have never been looked at further than the diagnostic part, which was you've had a stroke, it's in this area.

Bill Gasiamis 19:30
We need to support you to leave hospital and then you need to go to rehab, but then you're on your own. So I get really challenged about that. And I think there's a lack of understanding and awareness that there are specialties to the field of physiotherapy that are specifically aligned with neurological rehabilitation. But I don't know man, it feels Like to me that I went to a physiotherapist, not somebody that had any idea about neurological issues, although they may have understood the simple part of the task, right?

Dr. Ettie Ben-Shabat: Having The Expertise To Look At Brain A Imaging

Bill Gasiamis 20:10
This guy had a stroke, and he can't walk anymore. And then we need to help him walk, although they definitely nderstood that part of the picture. I imagine if I showed them an image, of my MRIs, that they would be looking at it thinking, well, this just doesn't look like anything just as much as I looked at it and couldn't read anything about it.

Dr. Ettie Ben-Shabat 20:36
Look, it's not a simple thing to do, which is why they don't teach it at university. And not many clinicians have that knowledge. I mean, I didn't have that knowledge, I had to go and do a PhD to be able to look at brain images, and then figure out a way of how to use it. So it's not something that is easily accessible to people. And we have to, I think, appreciate the time that it takes to acquire knowledge to acquire knowledge.

Dr. Ettie Ben-Shabat 21:04
And the time that it takes to train and priorities to train, I think, yeah, they are the limit limitations of the system is we working, I guess, but I think that the role of a patient to be their own advocate. So for me, it's really important that my patients or clients are really well educated, for several reasons. One reason is that the health system is changing. It's changing rapidly since COVID.

Dr. Ettie Ben-Shabat 21:37
And it's struggling, which means services are gonna cut down gonna be cut down. And it's not only in Australia, it's worldwide. And there's less people interested in working in healthcare. So we have this problem of larger population that we service and fewer clinicians that need to give the service. So for ever, the system is trying to figure out a solution.

Dr. Ettie Ben-Shabat 22:01
And often the solution involves less services, which therefore means that the patients or the clients must be more educated, because they're going to need to be their own advocate. So I think it's not healthy. Or let's say it's not a positive attitude, they think, Oh, I can initiate you know that, because that's not going to get you in. But I think if you educate yourself with the fact that this knowledge

can be obtained, can be accessed can direct my rehab, where can I find people that can help me with that kind of information that I need.

Dr. Ettie Ben-Shabat 22:40
And as 200 clinicians have already trained so there's a body of clinicians out there that are they're starting to be a body of clinicians out there that are knowing or let's say know more than others how to look at brain scans. And I want to take you up on one more point that you mentioned, actually, two points one about if my, if my physio, while they just did standard walking.

Dr. Ettie Ben-Shabat 23:07
Which is true that the common view out there in the physiotherapy world is that you treat the symptoms that you see. So you assess someone, you find out what the symptoms are, and then you treat them. So if they have a problem or working, you treat them by practicing walking with them. But my point is that walking can be a problem because there is the muscles are not working properly.

Dr. Ettie Ben-Shabat 23:32
Or it could be that there is spasticity. Or it could be that their sensation is affected. Or it could be that the coordination of the different muscles are affected? How do you know which one is which, without looking at the brain images? The answer that an ordinary physio would give you, oh, we can test for all those things. To test each one of those things is an extra hour if you do it properly.

Dr. Ettie Ben-Shabat 23:57
So for hours are gone for hours of therapy in a self help service in which the time in rehab is reduced. But if you look at the brain images, you straightaway know which one of those four are playing a part in the problem of walking, and therefore which one should I address first and which one I'm gonna instruct them what they need to do with etcetera, etcetera, depending on how much time I've got.

Dr. Ettie Ben-Shabat 24:22
The point is that when you look at the brain imaging, you can really make your rehab as efficient as efficient as possible. That's the way I look at it. And there was something else he said. I can't remember maybe answered it when I talked about brain imaging trained clinician, but I really do think that we can't be

frustrated with the clinicians. They work in a very difficult system under very difficult circumstances. I think we need to understand There's their perspective as well. It's not that they're not doing their best. It's just that they're limited.

Bill Gasiamis 25:08
Thank you for that little reminder. I know, I'm not really frustrated with my clinicians at all. I'm frustrated with the system. And I'm frustrated that I've been learning about neurological physiotherapy 14 years after the fact. That's what I'm frustrated with, not that anyone did anything wrong by me. Nobody did. I got amazing care, and most stroke survivors do.

Bill Gasiamis 25:36
It's that I wasn't educated enough to know that and how could I be, I was not a scientific person, especially not in, neurological side of science. And then I never had a stroke before, I never knew anyone who had a stroke, like, I'm completely ignorant. And that's the point is that we are ignorant, and we're desperate for information. And I love the work that you're doing. I love the fact that you're training people to be able to read images and have a different approach to physiotherapy.

Bill Gasiamis 26:11
And that's exactly it. I, my heart goes out to all the stroke survivors. So I come from that side of the fence. And it's like, I wish I could help them sooner, quicker. That's why we're doing this interview, to educate them, and to make them their own advocates. Because the people who do listen to this podcast are definitely their own advocates, they are looking for information and solutions to their problems.

Bill Gasiamis 26:36
And they're open to almost anything, most people, they're probably limited, limited by resources, and time and energy and all that stuff. So if we, you know, my aim is to sort of, to shorten the distance between the challenge and then the solution and to find the right one quicker. So I interviewed doctors and researchers all around the world world for these types of reasons.

Dr. Ettie Ben-Shabat 27:06
Which is why I love what you do. I think you're doing great work.

Bill Gasiamis 27:11

Thank you. And I suppose at the same time, I'm being a little bit of a devil's advocate, you know, I'm kind of saying, Okay, I'm gonna put the squeeze on you, I'm gonna make it your responsibility as well to be better trained, physiotherapist better educated, so that when you're got somebody in your office for an hour, you're giving them the best level of care that you can.

Bill Gasiamis 27:34
I don't expect somebody who came out of uni, after four years to know everything? Of course not. And I don't expect somebody after 10 years, to know everything. However, I'd love it if everybody was always looking for better ways to support their patients, their clients, etc. And I think that most people are like, let's be honest, I'm not saying that anyone out there is doing a terrible job at supporting stroke survivors with the resources and the Oh, my gosh, and the stuff that we've just been through in the last few years.

Dr. Ettie Ben-Shabat 28:11
And the likelihood is that you were given your rehab in a rehab setting, in a rehab setting. Even if the junior physio was not particularly trained in neurological physiotherapy, the one above them would have been their senior or the senior above the senior. So somewhere along the line, that would have been the right person keeping an eye on what the person who was treating you doing.

Dr. Ettie Ben-Shabat 28:39
So that's one thing. The second thing is that what I'm doing is not just good for physios, it's good for occupational therapists, speech and language therapists and neuropsychologist. They're the sort of people that are taking my courses, rehabilitation, rehabilitation physicians, who are doctors that specialize in rehabilitation, they come into my courses as well, because the idea of where the lesioning is relevant to each single one of those discipline, I'll give you the example of an OT because I remembered what I wanted to say before.

Dr. Ettie Ben-Shabat 29:17
You were talking about the fact that sometimes, if someone would have told you or you can't walk, you wouldn't have liked that at all right? There is an area of the brain, the primary motor cortex. It's the area, the main area for movement, and it's a quite small area of the brain and it goes from the middle part of the brain all the way to the outside, and it's a narrow strip kind of thing.

Dr. Ettie Ben-Shabat 29:43
And they've done all sorts of interesting studies more than a decade ago, where they use TMS transmagnetic stimulation to stimulate different parts of that strip to see how much movement can this person acquire it They did things like well, if nothing if we can't produce anything at all, any movement at all, by stimulating the motor cortex, we know that this person is unlikely to recover that particular movement.

Dr. Ettie Ben-Shabat 30:13
And then they tracked them for a while. And they so Oh, yes, they didn't recover. And they did that with upper limb. Cathy Stinear
is the researcher from New Zealand, who was the first person to work on that kind of algorithm, in which you use that kind of stimulation to determine who are the people that are going to recover what people that are not going to recover.

Dr. Ettie Ben-Shabat 30:38
So sometimes there are particular areas of the brain that are affected, that we know that it will be extremely difficult, if not impossible, to recover from. And I want to give the example of upper limb. So with strokes, particularly middle cerebral artery kind of strokes, MCA strokes, which are the most common strokes, unfortunately, the arm and hand area is smacked in the middle of the territory of that particular artery.

Dr. Ettie Ben-Shabat 31:11
Which means in a lot of people that have stroke, it might be that the arm is affected, and it might be affected quite badly. So my point with this kind of factor is that if you look at the brain images of this person, and you look at how much of the primary motor cortex is intact, and how much of it is destroyed, it will give you an idea of how much recovery the upper limb can have. So will the hand function, or will it be only the elbow that will function or the shoulder.

Dr. Ettie Ben-Shabat 31:45
So when you look at the primary motor cortex, you can look at which areas are gonna recover and which ones are not in then, for example, one of the most popular treatments at the moment is intensive upper limb rehabilitation, which is extremely effective if some of the primary motor cortex is intact. On the other hand, if the area of the upper limb in the primary motor cortex is not intact, it's all damaged by the stroke, then no matter how hard you're going to work with

this person, they won't be able to use their hand like they did before, or sometimes not even for any function at all.

Dr. Ettie Ben-Shabat 32:27
And I think this is really important. I know that a lot of stroke, people don't want to hear that. And that's okay. Maybe, if you don't want to hear that, then ask people not to tell you that. But would you want all the time to be invested on that function? Or should you be asking your clinician, let's create a treatment program that in the two or three or whatever four weeks that we've got, together, I achieve the most I can and let the clinician prioritize for you, or at least tell you what's more likely to recover? What will require more work.

Personalized Rehabilitation For Stroke Survivors

Bill Gasiamis 33:07
I completely agree with you. Do you know why I completely agree with you? Because the evidence of doctors saying that to patients comes from stroke survivors who have in the very early stages of diagnosis, after stroke, while in hospital recovering, not at physio, have had doctors come into family and say like, he's probably going to be a vegetable or he's probably never going to walk again, all that kind of stuff.

Bill Gasiamis 33:37
They're the ones that are the ones that cause unnecessary discouragement, before, there's been enough time to determine exactly where the challenges are. Most stroke survivors are pragmatists. They may not have initially accepted the fact that their arm doesn't work. But if it's not working, and it's not getting better, many stroke survivors will just understand that there is no medical professional going to allocate X amount of time to a hand that they're not likely to get a result from.

Bill Gasiamis 34:16
I interviewed many, many years ago. Dr. Michael Merzenich, the godfather of Neuroplasticity and before I interviewed him I met him in Melbourne he was at the Florida Institute and I went and asked him a question after his presentation and it was why will Neuroplasticity be good for some people and why won't it work for other people trying to understand my own kind of situation.

Bill Gasiamis 34:45
He said we'll it just depends on how much damage and brain cell death there has been and if it's catastrophic and wide and broad. Well, you don't have the ability to rehabilitate those things, but also you don't have a lot of time. What do you do first? Where do you put the resources? So you know, you have to be very careful that you're not allocating resources into the wrong space. So you get the outcome where you can you allocate the resources where you can get an outcome.

Bill Gasiamis 35:19
So I know what you're saying, and I completely agree with you. And I don't think that I've ever had a stroke survivors say to me, that it was in rehab, where they said, you're never going to do this, again, and you're never going to do that again, it was in those very early acute phases of the condition and the recovery, you know, so.

Bill Gasiamis 35:43
But anyway, but look, also, you can also stroke survivors in such a bad way, when that's happened to them, they don't have the capacity to even understand what people are saying to them sometimes. So it's very easily to misinformation, to read it the wrong way to misunderstand that. So I, I know, it's not as black and white as I painted.

Dr. Ettie Ben-Shabat 36:09
I also think, doctors go by statistics, and statistics, by definition, involve a large number of people within a large number of people, you don't know who the one who did better? And who's the one who are the ones who didn't do well. So you kind of that's the other point that I try to explain to people. When you look at the brain imaging, you get out of the realm of statistics, and you get into personalized rehab or personalized you or personal, personalized potential for recovery.

Dr. Ettie Ben-Shabat 36:47
You're not in a statistics anymore. It's like what does this means to me? Bill, with my images, not as part of a statistics of the statistics for people who have brain bleeds is that 40% of them never survived the first year or whatever. The statistic is something as hard as that. But how will they manage? What was their age? Do they bleed drain or not? There's a lot of factors that determine whether a person is going to survive or not. So it really, in my view, it needs to be a lot more personalized than relying on those large statistics or statistics of large

populations, I should say.

Bill Gasiamis 37:31
You're right. It's exactly what they're going by and the question that I encourage stroke survivors to ask in that situation, or even later, after they're out of the acute phase. And they're thinking about what the doctor said that time is. Am I one of those people? Am I that statistic? Or am I going to be in the other statistic?

Dr. Ettie Ben-Shabat 37:53
I going to be the 60% or the 40%?

Bill Gasiamis 37:56
And if you, if there is a possibility for rehabilitation, it's to it's to do the work to be that statistic, you want to be not the other one, if it's possible. That's what I encourage them to do. As we continue our conversation I want to talk about and tell me which order you want to do this in, I want to talk about the course that you run, and basically how it goes like, where you know that like the modules I don't know what and also I want to talk about that PDF that you sent me, which is going to be available for people to download from the website from the show notes of this particular interview.

Bill Gasiamis 38:39
Which is about teaching people a little bit about neurophysiotherapy, and when it's appropriate for somebody like us, like stroke survivors to get some feedback from a neurophysiotherapist. So which order do you want to take that? Do we want to talk about the PDF that I'm going to make available? Or should we talk about your course.

Dr. Ettie Ben-Shabat: Access To Rehabilitation Professionals And Their Roles

Dr. Ettie Ben-Shabat 39:14
I'm happy with whichever order but maybe we will start by talking about that PDF, that PDF will be available in your show notes. And also it will be available on my website, which is www.brainrehabilitation.org./rehab_ team so you can access it from a couple of places. And the idea of this PDF is to help clients, patients, people who had neurological injury or stroke, understand what sort of professionals they might need.

Dr. Ettie Ben-Shabat 39:52
Because the rehab team could be large or it could be small. You might need a certain professional at one time but not in other or you might discover down the track that you need someone to work with you. So the idea is for people to have in one place all the different professions what they do, why would you see them? And what sort of questions you might ask them.

Dr. Ettie Ben-Shabat 40:13
Again, it's that concept of giving people the ability to be their own advocates, their own managers have their conditions to have the control of the reins, not rely on someone else to have the control for them. That's what I had in mind when I created that particular resource for for people.

Dr. Ettie Ben-Shabat 40:37
So yeah, It need explains a little bit about the difference between neurologist and rehabilitation physicians, because they're two different doctors, the neurologist is usually involved in the more acute stage, and we things that might go wrong. But in some hospitals, there's not a neurologist that is going to see you it's going to be a rehab physician from the beginning.

Dr. Ettie Ben-Shabat 40:56
Or if you're from America, it's called the physiatrist. So there's also little differences like that. So don't think you need to have all the different professionals you may not need all of them. So that was one example. The other example was a physiotherapist. Now some people call themselves near logical physiotherapist, whilst other calls them call themselves physiotherapist. I'm not fazed at all with the title.

Dr. Ettie Ben-Shabat 41:25
What I want to know is whether this person has special interest in urology? If so how long have they been working with patients with neurology? And what kind of additional courses they've been taking? So it's not? That's me personally, that I think if I had a stroke, that's the sort of questions I would ask my physio. Do you have a special interest in urology? How long have you been working people with neurological condition? And what additional training have you been taking in the area?

Dr. Ettie Ben-Shabat 42:00

And you have the right to ask those questions? And I think sometimes people feel a bit funny about asking it. But you can ask it in a nice way you can say hey, I know that neurological Physiotherapy is a big area, and some people call themselves neurological physiotherapist and other node. But I'm really curious about what sort of neurological conditions you worked with, what sort of injuries you worked with? Or just ask it in a nice way.

Dr. Ettie Ben-Shabat 42:27
So people don't feel threatened? Because those questions can can feel, I think if a clinician is insecure, because we are all humans, and we all have our flaws. Some people are insecure. And sometimes if you ask questions in a particular way, and they're quite confronting questions, it could put them in the backfoot.

Dr. Ettie Ben-Shabat 42:49
So if you aren't going to ask a confronting question, ask it in a nice way from a good place. You're coming from a place of wanting to understand where they at not from a place of making them feel like they don't know enough kind of thing. That's the way I see it.

Bill Gasiamis 43:10
I agree. And then we talked about, there's a couple of other things that you actually have. Where you reference you talk about.

Dr. Ettie Ben-Shabat 43:20
I'm talking about occupational therapists. They're excellent problem solvers. So sometimes, and I see that quite a lot. Sometimes people go back home after stroke. And then they all of a sudden discover that there's something they want to do that they didn't think about, and they can't do it. So sometimes the problem-solving process of how do I go about doing it?

Dr. Ettie Ben-Shabat 43:39
Or how do I go about going back to work or going back to uni, or going back to do the things I like doing, or dressing myself for eating, they're the sort of things that occupational therapists can really help with. They're good with that speech and language therapist would help you with communication issues, but also swallowing swallowing is a big thing.

Dr. Ettie Ben-Shabat 43:59
Again, I keep on saying to Speech and Language Therapists, when you look at the

brain images, you can see who are the people that are going to have problems with swallowing, and which ones are going to recover from it well, and which ones are going to work much harder at to get back the swallowing.

Dr. Ettie Ben-Shabat 44:16
Most of the people get this following back. It's just that depending on where the lesion is, that will determine what sort of work you'll need to do with them and how long or how slow or fast it's going to be. And sometimes I find that it's really helpful to tell clients, look, this is going to take a long time, but eventually you'll be able to talk.

Dr. Ettie Ben-Shabat 44:41
Yeah, or you'll be able to confess or you'll be able to give a talk in front of audience or whatever it is. Sometimes just giving them that knowledge that it will be possible in the future. Give gives people hope, gives them a target to work towards. And I I think that's really important.

Dr. Ettie Ben-Shabat 45:02
And so that speech and language therapist, what else do they have their own neuro psychologist, neuro psychologists are really important because neuropsychologist, usually they're involved down the track. So no one really would give you a neuro psychology assessment before three months. And the reason is that neuro psychology tests are long.

Dr. Ettie Ben-Shabat 45:25
There's not many neuropsychologist, and it's an expensive service. So hospitals don't have a lot of neuro psychologists, they have to prioritize. And in the first three months, when things change so much, there's no point really doing a full on cognitive assessment.

Dr. Ettie Ben-Shabat 45:44
So the cognitive assessment that the neuropsychologist do is very thorough, and it involves different aspects and abilities of thinking. It involves memory, it involves speed of processing, it involves a lot of ideation, how are you coming up with idea how you problem solving, there's lots of different aspects of it.

Dr. Ettie Ben-Shabat 46:06
And so doing it down the track gives you information about what sort of thinking abilities or cognitive abilities are affected. So if you're finding that you're

struggling with something, after three months, you might want to get a neuro-psych assessment.

Importance Of Neuropsychological Assessments

Bill Gasiamis 46:23
I had a neuropsych assessment. And what was interesting was, nobody mentioned the neuro-psych assessment at all, I went to my psychologist who suggested a neuro-psych assessment because I was having trouble with making sentences and remembering the sentence that I wanted to say, and then pausing in the middle of a sentence and never finishing it, and all sorts of things, memory issues at the beginning.

Bill Gasiamis 46:52
And because I didn't understand that I could go and get a private consultation with an a neuro psychological assessment, I waited about, I would say, about nine months to actually get one through the public system. And by the time I got to the neuro psych assessment, and the guys took me through my paces, it was very thorough took so long, I was exhausted at the end of it.

Bill Gasiamis 47:17
But they reported back that I didn't have any serious neuro psychological challenges that wouldn't come good. And, and I kind of felt that going into the assessment anyway, because so much time had elapsed, and things had settled down in my brain so much. And I had started to regain all these functions. So I didn't understand them. Why? Why they wouldn't give me a neuropsychological assessment.

Bill Gasiamis 47:52
But or suggest that but now that you've described that, it's exactly my experience, so much change for the positive. That was if that I think it would have been

leading me down the wrong path. If I had had a neuro psych assessment early on. Because I would have had information that wasn't accurate nine months down the track, it would have been completely, that's a different person that wasn't.

Dr. Ettie Ben-Shabat 48:19
Or even worse, it would have been demoralizing for you.

Bill Gasiamis 48:23
Maybe, yeah I never thought about it like that.

Dr. Ettie Ben-Shabat 48:27
I think it's important to remember that neuropsychologist is excellent. But let recovery, spontaneous recovery happen. Because in terms of cognitive treatments, a lot of the a lot of the treatments are come compensatory, so not all of them, but most of the ones that are used in the health system, at least in Australia are compensatory. So when we think about treatment, when you're a clinician and think about the treatment, you think about, is it compensatory?

Dr. Ettie Ben-Shabat 48:58
Or is it a rehabilitative kind of approach? So this person can't walk? Or this person can't move their hand? Are they going to be able to move a walk in the future? If I think the answer is yes, then I go ahead and do everything I can to get that back.

Dr. Ettie Ben-Shabat 49:19
But if I think they're not gonna get it back, like the example we used off the hand before, then I'm gonna try and do things to make it easier for them to manage the world with a problem that they have. So one of them is about changing is about plasticity. And the other one is about what kind of scaffolding can we do around this challenge to make it possible for the person to do whatever it is that they want to do.

Bill Gasiamis 49:49
How can we compensate? So one of them is Neuroplasticity, it's rewiring and the other one is compensating?

Dr. Ettie Ben-Shabat 49:55
Yes. So one is rehabilitate and the other one is compensate. And if I was to bring all rehab into the most basic principles, they're the two principles am I'm trying

to make these better? Or am I accepting the fact that this particular challenge is not going to get any better? So, with cognitive except for the Arrowsmith program, which is definitely rehabilitative.

Dr. Ettie Ben-Shabat 50:21
A lot of the other neuropsych approaches or psych approaches in general, no, I should say neuroscience or cognitive treatment, I should say, are compensatory, like a lot of the memory strategies for people to cope with memory are not exercises to improve memory, there are using diary or different tools that can help you to improve your way of coping in the world with reduced memory or compromised memory.

Dr. Ettie Ben-Shabat 50:50
So the other thing to remember, bear in mind is that when you do the assessment with a neuropsychologist, you're not wasting time by waiting for the neuropsychologist, because most of the time, they're not going to give you a rehabilitative treatment, they're not going to give you a treatment that is going to change the deficit and get back the memory that you lost.

Dr. Ettie Ben-Shabat 51:14
They're gonna give you tools to work around it. So I think people need to understand that perhaps neuro psych, the urgency of neuro Psych is not let's, let's say there is a trade-off, you'll be better off doing it later when all the cognitive processes settled before, before getting that expensive assessment. And then once you've got the assessment, yeah, there'll be some compensation, but some, you can still rehabilitate. So that's a conversation for every person with their particular deficits. I hope it's not a complicated answer.

Bill Gasiamis 51:55
It's a necessary answer. I think it's a good answer. You mentioned Arrowsmith program. That's Barbara Arrowsmith. Somebody who I've listened to present as well. Who is somebody who has done amazing work in the rehabilitation space. So anyone who is curious, and is listening and making notes, make a note of Barbara Arrowsmith go just check out her work, because she does amazing work in this space, and I heard Barbara speak with Michael Merzenich in Melbourne a few years ago, way before lock-down.

Dr. Ettie Ben-Shabat 52:28

I think we were were both in the same home and we didn't even know it because I'm a Melbourne person as well.

Bill Gasiamis 52:38
Yeah, it was in. What was it down there at Federation Square? Yeah. Okay. Awesome. I love that we were both there. So this, I love your list. I love your PDF that, people are going to go and get from brainrehabilitation.org. Because it's like a who's who in the rehabilitation space. And it says this is what the person's title is, this is what they do. This is why you might need to speak to that person. As we continue down the list. There's a couple more to talk about. And I think you're up to social worker.

Dr. Ettie Ben-Shabat 53:20
So social workers are underestimated, in my opinion, I think every patient who had a stroke or any other neurological injury needs to see a social worker, because they have phenomenal knowledge on what services are around. So except for the emotional support that they can give.

Dr. Ettie Ben-Shabat 53:39
They also their job is to know exactly what sort of services are available and what you can access to help you with whatever challenges you've got, be it a day groups be here to help at home be whatever it is that you need. So there's a wealth of knowledge and resources that you really need to get in touch with, I believe, did you have a social worker? Did you meet a social worker?

Bill Gasiamis 54:07
No, I think I substituted my social worker with my counselor.

Dr. Ettie Ben-Shabat 54:13
Okay. That's fair.

Bill Gasiamis 54:16
Which was really awesome. Because it was my guiding light. You know, my counselor was my guiding light, you might want to look at this, think about that, see this person, check out that person. She was amazing. So I think we got a lot of support there.

Dr. Ettie Ben-Shabat 54:31
Yeah. And dietitian is another one. So sometimes, well, for many people,

neurological injuries associated with changes or what they eat, how they eat, how they taste, sometimes with traumatic brain injuries, often that taste like sense of taste changes, which is a massive risk. Because if your smell is affected, and you can smell the food that goes off in the fridge, and then you go and eat it, you'll get very sick.

Dr. Ettie Ben-Shabat 54:59
So, dieticians are people that help you with a diet with what you eat, how you eat, how you take care of your food, etc, etc. And sometimes people after neurological injuries, lose weight or put on weight. So dieticians can also help you with guiding you, with regards to how you monitor what you eat, to make sure you don't want to put on too much weight or lose too much weight, you want to stay around about how you were before the stroke.

Dr. Ettie Ben-Shabat 55:27
And then the nurses that can help you with all sorts of things that can happen with changes of medications and your symptoms, what to do with new symptoms, do I need to see a doctor need to see a doctor do I need to see a specialist, etcetera, etcetera. So they're quite handy like and the GPs are really good as well. So you can always go to the GP and say, hey, look, this is what I'm experiencing.

Dr. Ettie Ben-Shabat 55:50
I'm thinking I need to see blah, blah, blah, whichever professional from that list you think you might see. And then they can discuss that with you. So use your GP as a bouncing, like as a sounding board to bounce your ideas off, do think about what you're going to need next. But talk to people that you talk to professionals, people are there to help you make sure you use that. And in that little list that I've got it set up in a way that you can do like a little tick next to each one of them if you feel you need it. So you can easily visualize it. That was the aim.

Nutrition And Its Impact On Brain Recovery After A Stroke

Bill Gasiamis 56:29
I love it. The dietitian one I like particularly the questions that are what food should I eat to support my recovery? Are there any foods I should avoid? And I think in stroke recovery, if you've got a dietician who understands the neurological impact that food has, especially sugar, it'd be great if your dietitian

was a little more knowledgeable about neurological recovery, because sugar is definitely one of those avoid categories in neuro neurological rehabilitation, and so is alcohol clearly, I mean, that's obvious. But still, maybe you know your dietitian, it should be somebody that has a lot a little bit more time in the in the field and has perhaps a specialty or an interest in neurological recovery.

Dr. Ettie Ben-Shabat 57:23
And your book has a chapter on that which is worth reading too.

Bill Gasiamis 57:27
Yeah it does. My book has a chapter on nutrition. And I like to go to nutrition from the what I should avoid space more than anything. And because when I avoided caffeine, in many cases, dairy, in many cases, sugar, gluten, they really improved, my deficits, my deficits got better, and they decreased my fatigue when I avoided those foods. And I was just stunned by how much I could support my rehabilitation by doing that thing at home, you know.

Bill Gasiamis 58:04
And it didn't cost extra to not eat sugar, and it didn't cost any extra to not eat with the amount of bread that I used to eat, which was tons. So I love that PDF, we're gonna make that available to everybody, the links will be in the show notes. So now tell me a little bit about, is there something else before we talked about your course?

Dr. Ettie Ben-Shabat 58:28
I just wanted to make a little comment about sugar. So sugar is problematic because it's a pro inflammatory substance. And when your brain has an injury, there's inflammation that's going on there. So reducing the amount of sugar reduces or promotes less inflammation. So there's few things and if you want to look more into that just look into just Google food to reduce inflammation.

Dr. Ettie Ben-Shabat 58:57
And you'll find quite a lot of information about what sort of food to eat or not eat if you want to reduce the amount of inflammation in your body. And it's not just brain inflammation, it's gut inflammation as well. And there's also a connection between the gut and the brain, which people are discovering now with research. So it's an active space. I always tell this story.

Dr. Ettie Ben-Shabat 58:57

You were talking about my course. I'll tell you a little thing that I teach people in my course. I teach them embryology, lot embryology but just a little bit of embryology. Embryology is how the baby developing the womb. And I'm talking three weeks when there's no baby, there's just group of cells, right? And when that group of cells develop, there's two tubes that form first before heart before muscles before head before anything at all.

Dr. Ettie Ben-Shabat 59:23
One tube for the gut and one tube for the nervous system, the neural tube and the tube that will form the gut. And that link be between the gut and the nervous system exists there at three weeks when there is nothing at all. So, you know, there's even evidence from embryology that the link between gut and the nervous system is close. And we're seeing it more now we did research on the whole concept of inflammation, and what kind of the health of the bacteria in your gut influences the health of your brain, etc.

Bill Gasiamis 1:00:28
And to give a very simple version of the explanation of what it's like, in the very early stages of a human being, it's like a womb, it's basically a gut and a nervous system, there's a brain, there's no nothing. And then the the heart and the brain actually come on after the gut. And then all of that starts developing later. So the, you know, the first part of it is kind of, you know, is a way to create nutrition for the nervous system. So that then it has the ability to spread and for the other organs to come online.

Dr. Ettie Ben-Shabat 1:01:03
I don't know if it's one or the other, because it's very hard to tell. But that fact tells me that those are the two most important systems of our body, otherwise, why do they develop first? And why do they develop in such a parallel way? So that's the sort of thoughts that this had in me, so I say to people be very careful in what you put in your gut, and what you put in your brain.

Bill Gasiamis 1:01:33
And especially when you're pregnant, and what you put into your new developing embryos.

Dr. Ettie Ben-Shabat 1:01:39
Yeah, for sure.

Dr. Ettie Ben-Shabat's Course

Bill Gasiamis 1:01:42
All right. Tell me about the course. Now, what I want to know is, I want to know, the type of people that have attended, as in, you know, what kind of backgrounds they have, what are they hoping to achieve? And what you take them through what they learn? And how long does it take to complete the course? And then what can they do with their course. So, you know, that doesn't go to the additional learning points and all that kind of stuff, just so that people can understand how they can enhance their skills.

Dr. Ettie Ben-Shabat 1:02:16
Yeah. So the people who I teach are clinicians. So I teach physios and occupational therapists, and I teach neuropsychologist and I teach speech and language therapists, and I teach rehabilitation physician, registrar's, which are doctors that are training to be rehabilitation physicians, etc, etc. And some nurses as well. So basically, it's very similar to what you will see in that list of the rehab team.

Dr. Ettie Ben-Shabat 1:02:17
For the people that come to do the course. Most of I mean, with the exception of the social worker, and the dietician, most of them are people that come and do the course. And the reason they do the course is because they want to understand how to use brain imaging, how to do better rehab, how to do personalized rehab, more personalized rehab, that is based not just on the assessment, but also on what the brain images tell us.

Dr. Ettie Ben-Shabat 1:03:04
And there's different levels of training, there is a basic training that people do on their own. And that's how they get the basic skills, and they can start with more

brain images. And then there is the advanced course in which I take people over seven weeks, and then they do additional studying on their own. And that's designed to work with them every week, so that they really look at all the different parts of the brain and know how to identify all the different parts of the brain, they understand all the different types of images that can be in the film bag.

Dr. Ettie Ben-Shabat 1:03:55
So that's where the different scans are put in, in the notes in the medical notes. And I also teach them how to understand the brain as a system. So the brain brain function is something that exploded over the last 20 years. And we know so much more about how the brain works. And we know that there are certain networks in the brain, the brain is divided in networks, and they're responsible for different things.

Dr. Ettie Ben-Shabat 1:04:23
So by understanding what those networks are, and how they work and what they do, then you can look really carefully at which parts of the networks are affected, and therefore what do I need to do in my treatment? So there's three parts really one part is to know the anatomy, so know how to identify different parts of the brain on the scan. The second part is about knowing about the different images.

Dr. Ettie Ben-Shabat 1:04:50
There's so many different types of images. Which one tells you what Which one do you look at? That's the second part. And the third part is about the brain function. How Do I know which part of our brain does what? And so it's quite extensive the training.

Dr. Ettie Ben-Shabat 1:05:07
And you can always ask clinicians whether they had brain imaging training, and if so what sort of brain imaging training and then they've been trained with BRAC or with me then have got a full training. And usually, yeah, depending on the level of training people get certificate some of training as well. So that's something you could ask for as well. And yeah, so that's what I do. So my aim is to change the world, kind of, in my own little way.

Dr. Ettie Ben-Shabat 1:05:44
I would like to see patients getting better treatment. That's what I really liked.

Bill Gasiamis 1:05:47
See were aligned. That's what I was saying before, when I was having a go at everybody. I was saying that I'd like to see them better trained, is exactly how I was saying it just I had different words.

Dr. Ettie Ben-Shabat 1:06:00
Yeah. So that's why I'm training clinicians. But I know that not everybody can get that. So clients or patients can also contact me if they want me to look at their brain images, you can find it via the website.

Bill Gasiamis 1:06:15
Okay, tell me about that. So what can you do like you can have a look at if somebody's listening has had a stroke, and they haven't had their images investigated? Is that the word as thoroughly as they may have wanted? You can do that and give them a report?

Dr. Ettie Ben-Shabat 1:06:33
Exactly. So when people approached me that way, then the aim for me is to understand where they at, understand their specific lesion and form some kind of idea of what do they need, the list of clinicians, that's the sort of thing I do, what sort of actions do you need to take, and what are the people that can help you with those actions.

Dr. Ettie Ben-Shabat 1:06:55
So then I create that little report, and we have a zoom session together, and we discuss all of that. And, yeah, and the idea there, again, is to give people the control the knowledge and the control, if you have the knowledge, then you have the ability to advocate for yourself. If you don't know, then you don't know what you need to do. That's why I think it's really important for clients to have the knowledge.

Bill Gasiamis 1:07:26
I love that idea of having somebody that you can send images to that can look at them, give you a report, make that report available, so that then you can take to the people recommended. And this is what I said it's decreasing, have the time to work out what is going to be the most effective treatment and where to put your resources and your investment. That's exactly what I'm talking about. That's brilliant.

Dr. Ettie Ben-Shabat 1:07:59
It's actually quite simple to do and all people need to do is to get a copy of their brain scan. So on my website, there is a little if you Google, how exactly do I get my MRIs, you will find a little blog that I've written that explains exactly the seven steps you need to take to get a copy of your brain scans. And I personally think that everybody should have a copy of their brain scan a CD copy of their brain scan, so that they can show it to whoever they want.

Dr. Ettie Ben-Shabat 1:08:28
Because what if you decide to leave somewhere else in the world, somewhere else in the world and you're going to see neurologist, someone else somewhere else in the world, at least you've got your own scans to show them. I think it's really important. And there's a platform here in Australia called Aura box that you can basically upload your images and say I'm giving Ettie a permission to see my images for a week.

Dr. Ettie Ben-Shabat 1:08:54
And then I can look at them, or you can send me your CD, there's few options. But everything has become a lot easier these days because of digital access. So once you have your scan, it's easy enough to share those images, with your doctor with your neurologist with someone elsewhere with someone in a different country.

Bill Gasiamis 1:09:18
Ettie, thank you so much for your time and all the information that you just shared. I really appreciate it. I think this is going to be an important interview that I am going to send people back to again and again. You know, there's sometimes there's those interviews, check that out, listen to that, go back. This is going to be one of those. And for everyone watching and listening. We're going to have all the links all the resources that Ettie mentioned. We're going to have him in the show notes and you guys are going to be able to go to Ettie's website, which is brainrehabilitation.org and check out All those things in more detail. Thank you.

Dr. Ettie Ben-Shabat 1:10:03
Thank you for having me. And thank you for doing all this work. Because the more help people get, the more knowledge they have, the better off they are. I'm glad I could help.

Bill Gasiamis 1:10:15
Well thanks again for joining us on today's episode, I do hope you enjoy the conversation with Dr. Ben-Shabat. If you're interested in my book about stroke recovery, you can grab a copy on Amazon by visiting recoveryafterstroke.com/book. To learn more about my guests, including links to their social media and download the full transcript, head over to recoveryafterstroke.com/episodes.

Bill Gasiamis 1:10:40
A massive thank you to everyone who has left a review it means the world to me. Reviews are crucial for podcasts to thrive and your feedback helps others find this valuable content, making their stroke recovery journey a little easier. If you haven't left a review, please consider leaving a five-star review and a few words about what the show means to you on iTunes, and Spotify.

Bill Gasiamis 1:11:04
If you're watching on YouTube, leave a comment below, like the episode and subscribe to the show on the preferred platform to get notified of future episodes. If you are a stroke survivor with a story to share now's the perfect time to join me on the show that interviews are not scripted, you do not have to plan for them. Just be yourself and share your experience to help others in similar situations.

Bill Gasiamis 1:11:29
If you have a commercial product that supports stroke survivors in their recovery, you can join me on a sponsored episode of the show. Just visit recoveryafterstroke.com/contact Fill out the form with your category and I'll get back to you with the details on how we can connect via Zoom. Thanks again for being here and listening. I really appreciate you so you're on the next episode.

Intro 1:11:53
Importantly, we present many podcast designed to give you an insight and understanding into the experiences of other individuals opinions and treatment protocols discussed during any podcast or the individual's own experience and we do not necessarily share the same opinion nor do we recommend any treatment protocol discussed.

Intro 1:12:10
All content on this website at any linked blog, podcast or video material controlled

this website or content is created and produced for informational purposes only and is largely based on the personal experience of Bill Gasiamis the content is intended to complement your medical treatment and support healing. It is not intended to be a substitute for professional medical advice and should not be relied on as health advice.

Intro 1:12:33
The information is general and may not be suitable for your personal injuries, circumstances or health objectives. Do not use our content as a standalone resource to diagnose treat, cure or prevent any disease for therapeutic purposes or as a substitute for the advice of a health professional. Never delay seeking advice or disregard the advice of a medical professional, your doctor or your rehabilitation program based on our content if you have any questions or concerns about your health or medical condition, please seek guidance from a doctor or other medical professional.

Intro 1:13:01
If you are experiencing a health emergency or think you might be, call 000 if in Australia or your local emergency number immediately for emergency assistance or go to the nearest hospital emergency department medical information changes constantly. While we aim to provide current quality information in our content.

Intro 1:13:17
We do not provide any guarantees and assume no legal liability or responsibility for the accuracy, currency or completeness of the content. If you choose to rely on any information within our content you do so solely at your own risk. We are careful with links we provide however third party links from our website are followed at your own risk and we are not responsible for any information you find there.