

Gain Resilience After TBI with Specialized Yoga and Mindfulness Exercises

2024 Winter BrainStorm

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- ANNOUNCER: 00:00 LoveYourBrain was presented by Dr. Kyla Pearce on January 11th, 2024. Join us to explore how using yoga and mindfulness exercises developed by national nonprofit LoveYourBrain can help individuals with traumatic brain injury. Listen to tips from certified brain injury specialist and registered yoga teacher Dr. Kyla Pearce. Welcome to the 2024 Winter Brainstorm. This quarterly speaker series and presentation is sponsored by Kessler Foundation as part of our Traumatic Brain Injury Model System grant, which is funded by the National Institute on Disability, Independent Living, and Rehabilitation Research.
- JEAN LENGENFELDER: 00:38 Winter Brainstorm. This series is sponsored by the Kessler Foundation as part of our TBI Model Systems grant, which is funded by the National Institute on Disability, Independent Living, and Rehabilitation Research. It's now my pleasure to introduce Dr. Kyla Pearce, who will be presenting today, Gain Resilience After TBI with Specialized Yoga and Mindfulness Exercises. Dr. Pearce is the senior director of programs and research at LoveYourBrain, a national nonprofit that delivers evidence-based holistic health programs for the brain injury community. She oversees the design, implementation, and evaluation of LoveYourBrain programs on a large scale across the US, Canada, and overseas. She has developed a range of TBI-specific, evidence-based yoga and mindfulness program curricula and integrated them into 60-plus community and 30-plus clinical contexts and online. She has trained over 2,600 yoga teachers, clinicians, people with brain injury, and caregivers in how to adapt yoga, mindfulness, and psychoeducation for TBI.
- LENGENFELDER: 02:03 She recently completed an NIH postdoctoral research fellowship at Dartmouth College, investigating the impact of yoga and meditation for people with neurological conditions, including traumatic brain injury, and is published in several peer-reviewed scientific journals on these topics. She lives in Vermont with her husband, the executive director of LoveYourBrain Foundation, and their three children. It's my pleasure to welcome Dr. Pearce. Thank you so much for being here with us today.
- PEARCE: 02:36 Thank you, Dr. Lengenfelder and the whole Kessler team for the opportunity to share a topic that I'm passionate about and have also felt a huge amount of reward in my life thus far. So let's go ahead and I'll start sharing my screen. And we'll try and make this presentation somewhat interactive. So we'll do some experiential exercises. I'll offer a few invitations for you to share your perspective in the chat. So hopefully, by the end, you'll feel a nice blend of information as well as practice. And appreciate seeing some familiar faces that I-- hi, Susan, as well as some new folks. So really looking forward to getting to know you all during our time together today.
- PEARCE: 03:27 So I'm going to go ahead and share my screen. And I will be talking about resilience after brain injury really through the lens of mindfulness, yoga, and social connection. And as I touched on briefly a moment ago, we'll kind of give first an overarching

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description of why we organizationally within LoveYourBrain, as well as in my research, focus on resilience, as well as have a blend of nuggets around some of the research, why yoga and mindfulness have benefits after brain injury, peppering in some experiential and embodied techniques so you can really feel it instead of just having it be intellectual, and then also learn about how you can access free resilience-based programs through LoveYourBrain and beyond. So to start us off, would like to offer a meditation practice called Calm. And this is a practice that stands for chest, arms, legs, and mind. So it's a simple framework that we use in several of LoveYourBrain's programs for the brain injury community. So I'll invite you over the next few minutes to experience this practice, and throughout the rest of the presentation, we'll reference why we did some of the things that we did specific for brain injury.

PEARCE: 04:57

So a few things. If you are newer to meditation, letting this be an exploration or an experiment. There's really no right or wrong way to experience this practice. So offer this as a way to become curious about what a meditation practice can feel like. I know we're all in very different settings, so there may be lots of noise and other people around you. And the invitation is to let that continue to be the soundscape around you. So over the next few minutes, would like to invite you to set aside anything you don't need right now. So setting aside any pens and paper, any drinks or food - I know it's lunchtime - and to find a way to be in your body that brings some steadiness. You might place your feet a little more intentionally on the surface beneath you. Rest your hands somewhere easy in your lap. And you're in choice, whether closing your eyes brings some steadiness or lowering your gaze towards the floor.

PEARCE: 06:15

Together, let's gather our attention through our breath. As you're ready, take a slow full breath in - feel your lungs expand - and a slow, easy breath out, feeling a release. Good. Again, slow, full breath in, lungs expand, and a slow, long breath out, feeling a release. Allow your breath to continue to move in a natural pace, just becoming curious of how it feels to breathe in your body. You might notice when your breath moves in and when it moves out. You might sense the movement of your breath in your chest expanding as you breathe in and softening as you breathe out.

PEARCE: 07:28

And as thoughts arise, no problem, that's what the mind does. So gently bring your attention back to the movement of your chest. This breath moving in, expanding, moving out, softening. Guide your attention to your arms, allow them to be heavy and at ease by your sides. Sensing down from your shoulders, you might feel them release away from your ears. Feeling a heaviness move through your elbows all the way down to your fingertips.

PEARCE: 08:20

Can you release your arms just 5% more? Sensing your legs, the support that meets your legs under your hips and under your feet. How do you know your legs are there without looking at them? Sensing the steadiness of support, trusting it to hold you. Noticing the state of your mind, if you're coming into this moment distracted with a full plate or perhaps feeling more easefulness, just for a moment noticing the quality

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of thoughts that are moving through. Without any judgment, just bringing some curiosity to how you're starting from right now.

PEARCE: 09:41

And then finally, let's cross our hands over our elbows and give our arms a little squeeze. So a gentle massage. First, gently massaging the lower parts of your arms, and then you might move up towards your shoulders, maybe along your neck, moving up to the base of your hair, maybe even up to your temples or the hairline on your scalp. But really anywhere that feels supportive, just sensing how it feels to offer yourself some kindness and care. And then eventually drawing your hands, maybe one over the other on your heart, or somewhere else on your body, that communicates care inwardly. For a final moment, appreciating the goodness of your intentions to be here. There are many other places you can be, but you've chosen to be here. So offering yourself some gratitude for this choice, for your curiosity, for your desire to learn and grow. And you might also sense the whole group of us from across New Jersey and elsewhere who have joined truly from a place of care.

PEARCE: 11:31

So let's take a final breath for all of us. Slowly breathe in - you might feel your heart lift a little higher - and slowly breathe out, feeling a release. Without any rush, transitioning out of the practice, you might look around your space and orient to your surroundings, and then eventually rejoin our collective group here. And if you'd be open to it, would invite you to find the chat at the bottom of your Zoom toolbar and share with the group one quality or emotion you're feeling right now. So after that practice, what is your awareness sensing? What are you feeling in this moment to help give us a kind of collective sense of where we're all coming from?

PEARCE: 12:45

Thank you, Marcian. I see relaxation, calm, stillness, content, relief. Thank you, Rebecca and Lauren, and Darcy, calm. Pain distracted and patient. Thank you for sharing just the full range of experience that happens when we pause and notice what's happening on the inside. So that really brings up the full range of experience, and we'll keep talking about that. But I appreciate having a chance to pause intentionally with you all and open through a tone of experience. And now we'll shift to talking about a bit more of the information of why we did the things that we did.

PEARCE: 13:35

So I will now transition to kind of starting big picture, resilience and recovery, two important terms in the kind of more traditional medical lens, as well as now increasingly kind of a buzzword, especially resilience in the collective challenges that our societies are facing. We hear a lot about the importance of building resilience. So what do we mean by that? Recovery is a term that largely implies trying to return to an original state of how you were. And after a brain injury, when we know that there are often chronic changes, the expectation to try and get back to where you were before your injury can set a lot of disappointment or challenges, not only for yourself but also for family members, community members. So we talk much more in the context of brain injury as developing tools to build resilience. So finding a more forward-facing direction. And I'll play a short video that describes this idea of resilience to help frame more further from the TBI lens.

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- VIDEO ANNOUNCER:
14:59
- After a brain injury, you might feel lost. Maybe you think you'll never find your way again, but you will. In fact, you already know the way. It's like you're in a dark room, hesitant to move. You don't want to trip or walk in the wrong direction. But suddenly you remember you have a small flashlight in your pocket. The light is soft, but it brightens a path for you to see a few feet in front of you. You follow the light and take your first step forward. This is different from recovery. Rather than just trying to return to the person you were, you're working to accept and evolve into the person you're now becoming. Resilience is your light. It's your ability to bounce back from adversity and find a way forward.
- VIDEO ANNOUNCER:
15:50
- The good news is everybody already has resilience. It's just how you unlock it. Research tells us resilience is many things, including physical and mental activity, facing fears, community connection, mental flexibility, helping others, finding new meaning and purpose. Our program focuses on different aspects of resilience to help you grow the resilience you already have. Take a moment to reflect on one thing that has helped you become more resilient following your brain injury. The power is within you.
- PEARCE: 16:35
- So what we know is that resilience, one's ability to move through adversity and find a way forward, has, through research, many positive implications on quality of life. Research shows that people who have resilience have increased coping with their brain injury, psychological adjustment, and motivation. There's also some studies that it can improve, for instance, in a study of 74 people with concussion, there were less symptoms, including PTS, fatigue, depression. And there's research that shows resilience increases participation in jobs, education, leisure, and relationships. So overall, important opportunities to enhance quality of life after brain injury. And because resilience is so often thrown around as an important word, really want to break this down a little bit further and then describe why yoga and mindfulness are an important piece of resilience.
- PEARCE: 17:39
- There's a book called The Science of Mastering Life's Greatest Challenges by Steven Southwick and Dennis Charney, two psychiatrists who worked in the VA. And they did a study where they interviewed many people who had experienced complex trauma and distilled 10 qualities that people who had unbelievable resilience exhibited. And these are included here. So one is realistic optimism, a attitude where you can see that and expect challenges will happen but not get bogged down by them. So feel a sense of possibility in working through challenges. Facing fears, seeing fears as an opportunity to learn and grow. Social connection, the power of feeling validated, seen, and heard, and understood in community. Role models, looking at people whose behavior you want to emulate and are inspired by. A sense of spirituality or connection to something bigger. People who were able to overcome trauma had a practice where there was physical fitness. There were exercises that they were doing to improve their brain health. There was cognitive and emotional flexibility, so meaning different ways of reframing the experience to find a sense of possibility. And identifying how challenge or adversity can bring a sense of meaning and purpose. And

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then finally, people who had greater resilience showed altruism or an ability to want to give back and help others.

PEARCE: 19:18

So we won't do an official poll here, but as I was describing those, you might think about for yourself, when you're feeling challenge or adversity, which of these are you leaning on? And this may change at different points of your life, and some may be more or less accessible. But the point here is that resilience is many things, and they're all qualities that are cultivatable, which is very empowering. And qualities that we inherently have, we can just work towards growing them.

PEARCE: 19:50

So I'll speak just briefly about LoveYourBrain is a nonprofit organization that was really built to support individuals affected by traumatic brain injury to grow skills and resilience. Kevin Pearce was a professional snowboarder. Over 10 years ago, he suffered a severe traumatic brain injury that led him and his brother, Adam, who's also my husband, to found LoveYourBrain, really with this desire to empower individuals impacted by brain injury, experiencing dramatic changes to life, to tap back into and grow the resilience that they have to find greater meaning and purpose and quality of life. So the programs that we offer blend a holistic model, knowing that TBI and other forms of brain injury are so complex, that weave together different practices for creating a balanced mind, supporting healthy body, and fostering social connection. These include our in-person yoga program, an online yoga, mindfulness, and psychoeducation program, a retreat program, as well as training yoga teachers, clinicians, people with lived experience of brain injury, and how to build resilience through yoga, mindfulness, and social connection.

PEARCE: 21:14

So why focus on yoga? Well, I'll first define it here given that yoga sometimes has the misperception of just being the physical practice. While that's an important dimension of yoga, yoga is much more multifaceted. Yoga includes certainly the physical movement, the postures. It also includes breathing exercises, meditation, a system of ethics, and through all these practices, designed to create a sense of balanced well-being. What we're really trying to avoid is this kind of joke graphic here. Instead of "warrior" pose, it's "worrier" pose. So knowing that after brain injury, there can be a heightened awareness of how things are different, not wanting yoga to be another pathway of self-judgment, but really a set of tools and practices to gain greater awareness of self and tools to build resilience, knowing the challenges that are presented physically, socially, cognitively, and behaviorally after brain injury.

PEARCE: 22:22

So why are these practices beneficial for TBI? Well, we know that TBI and other forms of acquired brain injury impact many dimensions of one's well-being and health. So the complexity and individualized nature of TBI really lends itself to yoga as a practice based on the fact that yoga encompasses such a wide range of different practices, from physical to the breathwork, to meditation, focusing more cognitively. And what we know is that after brain injury, specifically TBI, nearly one in two people experience some mental health diagnosis, including anxiety and depression as the most common sources of mental health challenges after brain injury. So what's exciting about yoga as a tool is that it supports mind-body integration that can have

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meaningful impacts to mental health. And I'll do a brief exercise now to, in a more embodied way, highlight this connection of mind and body.

PEARCE: 23:33

So what I'll offer is a brief visualization practice that you can do as I guide it, if you'd like. So if you'd like to listen to this visualization, invite you to look away from the screen. You might close your eyes or lower your gaze to a steady point. And I'll invite you to imagine that you are moving into your kitchen. So you're in your kitchen and you look around and notice the familiar objects. Perhaps you see your stove, your sink, your refrigerator. And then imagine there's a bowl of bright yellow lemons resting on your counter. You approach this bowl and take the largest juiciest-looking lemon and place it on a cutting board. You first bring the lemon up towards your nose and take a long, slow breath in, smelling the scent of the lemon.

PEARCE: 24:46

And then you place it on the cutting board and take a knife and cut it in half. The juice of the lemon oozes out on either side, and you see the glistening yellow color of the inside. You bring this half of the lemon up towards your lips. And imagine sinking your teeth into the flesh of the lemon, the juices oozing down into your mouth. Just for a moment, notice any sensations, what may be happening in your body. And then as you're ready, we'll transition out of this visualization, rejoining our group, and would love to invite anyone to share in the chat, anything that they noticed happening in their body.

[silence]

PEARCE: 26:03

Any sensations or anything that folks noticed? All right, so there was some mouthwatering. There was a feeling of freshness. Thank you, Jackie and Dorothy. Anyone notice a feeling of tightening maybe or salivating, sour and puckering? The bite took me out [inaudible]. So thanks, everybody, for trying out that practice, which, as folks are illustrating, simply by visualizing or imagining through our mind and experience was initiating a physiologic response in our bodies. So showing through a yoga practice that we're really working on this connection of what we think impacts how we feel. And that can be particularly important after brain injury with heightened ruminating thoughts and other patterns that can create a sense of anxiety and lead to greater depression.

PEARCE: 27:08

So I'll also do the reverse. So mind-body integration is the other direction as well. So would like to invite everyone to find a way to be in your body that reflects a feeling of confidence. So how would you position your body right now to convey a feeling of confidence? And notice how your body is positioned, how this feels on the inside. And then what would you do to shift your body to reflect instead a feeling, a state of fear? And then a state of anger, what would your body do if it was reflecting anger? And then again, how does this feel on the inside? And then finally, joy.

PEARCE: 28:14

So a simple exercise. And I know even in looking at some of the folks who have their camera on, even how clearly the body changed to reflect these different feeling states. So you might have gotten a little taste of what it's like to sense how to position your body and how that then impacts the state of your mind. So that has implications

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on our mental health, as well as after TBI and other forms of acquired brain injury, we know that executive functioning is often impacted. The prefrontal cortex and frontal lobe is often impacted either directly or indirectly from injury. And that has many implications on our ability to focus our attention, make decisions, plan ahead. And what's exciting about yoga and mindfulness is that neuroscience shows that it switches the regions of our brain that are active, such that when we're at rest or we're not focusing on anything in particular, regions of our brain that are part of the default mode network are more active. This is associated with more self-referential thinking where we're thinking about the past, the future, and how we relate to it, and is associated with ruminating thought patterns that are more common with anxiety and depression.

PEARCE: 29:43

When we start to focus through a mindfulness practice, involving movement, involving breath work, involving a meditation practice, it switches the regions of our brain that are more activated to what's called the task-positive network that help us stay in the present moment and interrupt those ruminating thought patterns. Also, after brain injury, there can be a co-occurrence of post-traumatic stress or post-traumatic stress disorder, as well as other nervous system dysregulation that can cause a heightened sense of sympathetic nervous system, kind of fight-flight activation. And with these practices that are engaging different aspects of our sensory experience, that is a pathway to supporting greater nervous system regulation. So greater emotional regulation, greater behavioral regulation. This graphic shows that there are different ways of thinking about nervous system regulation. Some are kind of top-down approaches that are using our cognitive abilities to help us think differently about the sources of trauma or difficulty, whereas there's other bottom-up approaches that use our sensory experience to help us cope with when our heart beats, when we start to feel our nervous system get activated. There's different ways to help create balance, which we'll do a little bit more of.

PEARCE: 31:22

And really what that's getting at is that after TBI, our nervous system can be impacted such that it becomes easier to get outside of our window of tolerance. And if you think about it, our window of tolerance is when we're able to respond to daily stressors in a pretty balanced way. Nothing is perfect by all means, but we're able to kind of handle the ups and downs of life. What can happen after brain injury is this becomes more narrow, so it's easier to get into a hyper-aroused state where we get activated and feel a sense of distress, agitation, can't calm down. Practices like mindfulness and breathwork activate the part of our nervous system that initiates a calming effect. On the flip side, sometimes the nervous system can feel more of a hypo-aroused state where it's hard to get motivated. We're on the couch. We're unable to kind of feel a sense of energy. And similarly, we can use movement patterns, breathwork, and awareness to help us increase our energy.

PEARCE: 32:32

So let's just do a brief practice called Take Five. That is a simple way to pause and bring in some breathwork and sensory information. There's higher sensory information in the nerves of our hands. So sometimes after TBI, when there's disconnection between mind and body, this can be a helpful place to do meditations

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or sensory information. So I'll guide this over the next few minutes, but I'll just explain it briefly first. So the idea here is to place one finger on the base of your wrist. And alongside of our breath, we'll move our finger. So what this will look like is on our inhale, we'll glide our finger to the tip of our thumb. And then on your exhale, we'll glide it back down to the base of your wrist. On your next inhale, glide up to the next finger, and then on your exhale, glide it back down to the base of your wrist. And we'll do that for all five fingers.

PEARCE: 33:33

So let's give this a try. And for a moment, we'll invite you to think about if today or over the past few days there's been something that has been causing you some stress and how easy it is to get swept up by emotional, reactivity, or frustration. And imagine in the heat of that moment what it would be like to pause and take five. So pause and give yourself a few minutes to regulate. So you might have this experience in mind, and we'll go ahead and do this practice together. So let's all start by placing your finger in the base of your wrist. You're welcome to do this with your eyes open or closed. And your breathing may be a little bit different than mine, and that's okay. So follow your own lead.

PEARCE: 34:35

Let's all just take a centering breath to begin. So as you're ready, breathe in, feel your lungs expand. Breathe out, feeling a release. As you breathe in, glide your finger up to the base of your thumb. As you breathe out, glide it back to the base of your wrist. Inhale, up to your next finger. Exhale, back down to the base of your wrist. Inhale, up to the tip of your next finger. Exhale, back down. Nice, slow, fluid breaths. Inhale, tip of the next finger. Exhale, back down. Inhale, final finger. And exhale, back down. Take a moment to notice any lingering sensations on your hand and how it feels to pause.

PEARCE: 35:53

All right. So we'll end that little exercise. And we'll just offer also that when we focus on slightly extending our breath, that can help activate part of our nervous system, our parasympathetic nervous system, that creates a sense of calm. And when our breath, the balance between inhale and exhale is the same, that creates a sense of neutralizing or regulating our nervous system. So relatively simple practice, doesn't work for everyone by all means, but something for you to explore as a way to pause in the future.

PEARCE: 36:38

So what does some of the research show? Recently, well, a few years ago, but one of the most recent and only meta-analyses of mindfulness-type practices for concussion pooled together 20 studies of over 500 participants that looked at different interventions using types of yogic practices, including meditation, breathing practices, yoga. Some are one-on-one and some are groups. And what they found was after pooling all the data, the most significant improvements were in depression and fatigue. Other research that has looked at mindfulness-based stress reduction programs, these are 8 to 10-week programs, sometimes they're adapted to 10 weeks for the TBI community, have found improvements, for instance, in attention skills. This was among nine veterans with co-occurring traumatic brain injury and post-traumatic stress disorder. So they did a before and after study and looked at attention skills and found significant improvement. Another study in 22 individuals with post-

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concussion symptoms found improvements in working memory when looking before and after a mindfulness intervention. And then one of the only randomized controlled trials that I'm aware of looked at mental fatigue in individuals with stroke and TBI, I believe about 25 individuals, and found significant improvements in mental fatigue, whereas no improvements in the control group.

PEARCE: 38:21

So showing potential benefits cognitively, physically, psychologically, and then also some of LoveYourBrains research, which I won't go into. But we've really made a point where possible to try and inform the scientific understanding of why yoga, mindfulness, and social connection are essential, at least as-- maybe I shouldn't say essential, but are an important tool that should be accessible for anyone interested after brain injury for supporting a range of different health outcomes. I'll just share the main study that I'll mention is we conducted a before and after study, a pre-post study of just over 1,000 individuals who went through our online LoveYourBrain Mindset program. This is a six-week online program that participants are taken through a curriculum that includes gentle yoga practice, group discussion based on specific themes, designed to promote resilience, as well as our email tools, including a brief video - that resilience video that I shared at the beginning of this presentation is one of those kind of psychoeducation videos - as well as a meditation, a yoga nidra guided relaxation. And these are the themes that participants are guided to discuss around these different topics related to finding greater resilience after their brain injury.

PEARCE: 40:05

And what we found in this study is we looked at five different clinical outcomes, and using multiple linear regression, found that there was an improvement in all clinical outcomes we looked at - quality of life, resilience, cognition, positive affect, and emotional and behavioral dysregulation - and there was high satisfaction. So this was an exciting first-ever large-scale study of online yoga, mindfulness, and education for the TBI community. And although I just mentioned a body of research that is showing the benefits of these types of practices, it's important to have different considerations around meditation techniques that could be associated with unpleasant psychological experiences. Some movement patterns can exacerbate cognitive and physical symptoms, and some breathwork may increase the stress response. So really important to have TBI-specific types of practices.

PEARCE: 41:09

So what does that mean? First, it's really helpful to have a framework when doing a mindfulness practice. The framework that we use is called Intention, Attention, and Attitude. So really this idea that a mindfulness practice is about how you're learning to pay attention. And setting, knowing that executive functions are often impacted after brain injury, it's really helpful to use an intention. So knowing why you're doing what you're doing. So for instance, starting a meditation practice or a yoga practice by saying, "My intention is to meditate for the next few minutes." So what's my, essentially, goal here? Or is it about more treating myself in a certain way? And what we know is when we set intentions, this releases different-- has a neurochemical impact, such as releasing dopamine, that helps with motivation and learning. And then knowing the next stages after we set an intention, to think about paying

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attention, focusing your attention on what's happening now, and really normalizing that the mind will wander. So not feeling like we're failing if our mind is bouncing off and wandering towards what we're supposed to do after the practice, to ruminating on what happened in the past. So how to treat ourselves with an attitude of gentleness and kindness instead of self-judgment when our attention wanders. Really, really important, knowing how there can be a heightened sense of self-judgment after brain injury.

PEARCE: 42:55

So just in the interest of time, I won't do this brief activity, but we'll often lead a little exercise where we try and notice how many thoughts we have to really hone in on this idea that we cannot stop our thoughts. And a meditation or mindfulness practice is not about stopping our thoughts. It's about noticing them and then focusing our attention with a gentle, kind attitude on whatever the object of the practice is. So a few other best practices, knowing that, especially after brain injury, there can be chronic pain or other sources of tension in the body. So knowing that you're empowered to sit, lie down, or stand in your practice, and there's a variety of different tools for working with chronic pain that we won't get into here, but can be a powerful way of building awareness and tolerance of chronic pain. Creating choice around eyes closed or open, knowing that one or the other could exacerbate vestibular symptoms or a sense of lack of safety. And then knowing that orienting and grounding techniques are a really helpful way of helping the mind gather attention in the present.

PEARCE: 44:20

So we'll just do this brief exercise now. This is called 3, 2, 1, and this can be a helpful thing when you're feeling scattered and you need a way of coming and grounding yourself into the moment. So what I'll invite you to do is - this is a 30-second exercise - look away from the screen and look around the space you're in and name three things you can see just to yourself. Open your ears to the sounds around you and name to yourself two things you can hear. And then finally, sense into your body and name one thing you can feel. And for a moment, just notice the quality of presence that's here. Do you feel more or less distracted than you did at the beginning of that exercise? Then finally, another best practice is to choose an anchor of attention and have that be the place that you come back to. And that can be many. Your breath, especially because the breath is always changing, it can bring a little bit more interest to your attention. A common anchor of attention that we teach in our mindfulness courses is the touchpoints between the body and the surfaces beneath you. That can bring a sense of steadiness. But then also sometimes, depending on if there's discomfort going inward, listening and setting an anchor of attention to sounds around you can be more accessible.

PEARCE: 46:15

One of the most common frustrations that I get when teaching mindfulness among the brain injury community, as well as outside of it, is this idea that even though you're told or we're told mind wandering will happen, there still can be this feeling of, "Oh, I'm doing it wrong because my mind keeps wandering. How can I stop these thoughts?" So using tools like labeling your thoughts can be a really helpful strategy or tool for working with bringing more awareness to the thought patterns that you're

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having and then reorienting your attention back to the anchor of your practice. So finally, thinking about finding teachers and practices that are accessible from a sensory and information-processing perspective. So slower, simple, repeated instruction, finding practices that are shorter in duration. And then ones that, if folks have tinnitus, sometimes having some background music or kind of white noise can be helpful. Otherwise, knowing that bells and background music can be distracting.

PEARCE: 47:27

So I want to leave time for questions. So we'll leave just finally some resources. If folks are interested more specifically in diving into resilience, there's an intervention called the Resilience and Adjustment Intervention that was developed by Jeff Kreutzer out of a model system in Virginia. You can read about that. Brainline has a wealth of information about resilience. And then you're always welcome to access LoveYourBrain programs. These are free and include, as I mentioned before, yoga, mindfulness, and social connection. We have a team of over 60 program leaders delivering these programs, many with lived TBI experience. There's a yoga and meditation library that is free. There's over 100 practices specifically designed to support brain health for the brain injury community. We have a mindfulness course if you're looking more specifically at building mindfulness tools. And then the study that I mentioned on the LoveYourBrain Mindset program, the online yoga, mindfulness, and education program focused on resilience that really serves as a peer support model, that's offered every quarter, including a few programs in January that are still open in case that's of interest. And that program also has affinity groups to deepen a sense of belonging amongst subgroups within the TBI and acquired brain injury community that face further discrimination. And then we also offer in-person residential retreats that blend gentle movement, mindfulness, nutrition, community building, and art inquiry in Colorado and Maine.

PEARCE: 49:14

So thank you for your attention and really look forward to having some time for questions right now. So I'll stop sharing my screen and hand it over to--

LENGENFELDER: 49:26

Yeah, thank you so much for that wonderful presentation, Dr. Pearce. We really appreciate it. So at this time, we'd love to open it up for questions.

SHARON: 49:36

Hi, I'm Sharon. I'm wondering if I can't do the six weeks straight, is it okay if I participate when I can based on my schedule?

PEARCE: 49:48

Great question. I think it's a kind of both-and. So, certainly, the curriculum builds on itself. So folks will probably have the maximum benefit by participating in a majority of the six weeks. And we recognize life happens and that's not possible for everyone. So there is a real sense of group cohesiveness. So typically, we ask that everyone attends especially the first class because that's when there's some group expectations and connections really built that serves the foundation of trust for the six weeks. And recognize that not everybody, yeah, can do the remaining full six weeks. So as best you can, great. And we would never turn you away if you couldn't do the full six weeks.

LENGENFELDER: 50:38

Susan has her hand raised for a question.

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- FEMALE 1: 50:40 Hi there. Can you speak more about the rumination and the thought patterns that can lead more into depression?
- PEARCE: 50:53 So I am not a trained psychologist, so don't have-- and if there's other clinicians on the call who have more expertise in the kind of technical side of this. But what I'll offer is that, and you can think about this maybe in your own experience or others on the call, when there's this looping pattern of thoughts, it's very easy to get swept away in that cycle and feel like that is what is most present in your mind, and that is what is most present in your mind. And that, as we did in that lemon exercise, creates a sense of-- it can erode your sense of self-worth. So to have practices that help bring you back to the present moment through our sensory experience can interrupt those thought patterns so that we have more awareness to decide, is that a thought kind of worth spending time chewing on, or am I just stuck in this thought pattern and it's feeding a sense of lack of self-worth that is not actually helpful?
- LENGENFELDER: 52:03 Kyla, there was a question from Kathleen about the name of the book with the 10 factors that you mentioned.
- PEARCE: 52:12 Yes. So it's called Resilience: The Science of Mastering Life's Greatest Challenges. And you can actually get it on Amazon. It's a really kind of approachable and engaging read. So it's not very technical, but it'll capture this idea of resilience and how to think about it, I think, in a really compelling way.
- LENGENFELDER: 52:38 Would you mind just typing that in the chat? Because [crosstalk].
- PEARCE: 52:41 Yeah.
- LENGENFELDER: 52:43 Thank you. And then when you're done with that, I see Dorothy has a question.
- PEARCE: 52:47 Hi, Dorothy.
- FEMALE 2: 52:49 Hi, how are you? We took one of your classes, me and my fiance, and we had it in Cranford, and we had it for two sessions for eight weeks. And we simply loved it. And I loved the group of people putting together. It was just simply amazing. And it's really a great opportunity for other people to do it. It's really something. My question is, would you continue to do it, or does it end up at the end of that six or eight weeks?
- PEARCE: 53:27 Thanks, Dorothy, for sharing about your and your husband's experience. And yes, we always-- so there's two different perspectives. From an equity perspective, want to ensure people who haven't participated have an opportunity to experience the program. And at this point, our online programs, we also see the benefit of people coming again and deepening and building on their learnings and connections. So everyone is welcome to apply and will be accepted in the online program. Our in-person program that you participated in at Allium in Cranford is on hold now just due to the pandemic. But all other programs, people can take as many times as they like.
- FEMALE 2: 54:15 That was the reason why things had stopped, and then that was happening. And I didn't follow up with that. So yeah, but I always think about it. Always made an impact for both of us. And I want to thank you so much.

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- PEARCE: 54:33 Well, you're so welcome. And thanks for being, yeah, part of our community so much from everyone who comes together.
- LENGENFELDER: 54:42 We have another question. Angela, would you like to ask your question?
- ANGELA SMITH: 54:49 Kyla, thank you so much for a really great practical presentation. Mine is more of a kudos to you and your husband and your brother-in-law for your CNN Heroes Award that your organization received a couple of weeks ago. And I know I was watching and cheering. Jackie had told me about it and put it out there, and it must have been so well-deserved.
- PEARCE: 55:16 Thank you so much.
- ANGELA SMITH: 55:18 Congratulations on that. Yes.
- PEARCE: 55:20 Thank you. It was definitely a win for the entire brain injury community to have more awareness.
- ANGELA SMITH: 55:27 Absolutely. Especially with the CNN Heroes thing. That was pretty big time. So you're doing well. Thank you.
- LENGENFELDER: 55:35 And I think we have time for one more question. I see that Michael has her hand raised.
- FEMALE 3: 55:40 Yes. Well, several years ago, I took a year-long course in yoga training. And I was just wondering if there was any focus on the asanas or postures.
- PEARCE: 56:09 Yes, very much so. And chose for this presentation not to get into the physical asana part of yoga. And that is a huge piece of all of our programs. And we also offer a training that teaches different professionals around how to adapt the movement and shapes in the body to support TBI.
- FEMALE 3: 56:33 Well, in case anyone's getting a little worried about movements, there's a practice called - what's it called? - Iyengar yoga, which uses props. And thank God it did because I wouldn't have been able to stand on my head.
- PEARCE: 57:10 Such a great suggestion. Thanks for, yeah, sharing as well as being, it sounds like, a yoga teacher. So hopefully, you're able to teach and at least practice.
- LENGENFELDER: 57:21 Thank you so much. So we just really want to thank you, Dr. Pearce, for your presentation today, and thank all of you for attending. And again, as Dr. Pearce had said, if you'd like any more information, please visit loveyourbrain.com for all those resources that were listed. So immediately after this presentation, there'll be a survey for you to answer about today's presentation. If you're unable to do that at this time, we'll be following up with an email survey. And be sure to be on the lookout for information on our Spring Brainstorm, which will be from Mike-at-the-Mic from the Brain Injury Alliance of New Jersey. And as always, if you're interested in any more of our events or participating in our research, much of which that can be done remotely, please check us out on Kessler Foundation website. Again, thank you so much, Dr. Pearce, for being with us today and for your presentation.

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- PEARCE: 58:21 It was a pleasure and honor. So I hope we all stay connected. And thank you for, yeah, for hosting me so warmly.
- LENGENFELDER: 58:30 Thank you so much.
- ANNOUNCER: 58:32 Join us for our next 2024 Spring Brainstorm, Mike-at-the-Mic with BIANJ Voices on Friday, March 22nd, 2024, 10:00 AM to 11:00 AM Eastern Time.