

Floatation Therapy and Ehlers-Danlos Syndrome

A case study evaluating floatation therapy for Ehlers-Danlos Syndrome

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Background

Autoimmune disorders are steadily on the rise and our culture of fear, stress, and anxiety is a breeding ground for their proliferation. Ehlers-Danlos Syndrome (“EDS”) is an excellent example of a complex, under-recognized, and diagnosed epidemic that is now gaining awareness due to new medical testing procedures. EDS is a genetic connective tissue disorder, featuring chronic and debilitating musculoskeletal pain, poor muscle tone, arterial/intestinal/uterine fragility or rupture. One can experience severe fluctuations in blood pressure, constipation, and problems regulating the vagus nerve, which keeps some in a permanent state of sympathetic nervous system overdrive.

Despite greater awareness through better diagnosis methods, the treatment options are lagging far behind, including strong medications, such as opiates and immunosuppressive drugs. This puts further strain upon a medical society already entangled in a pain management crisis. Options to medications are now on the rise and gaining attention.

One therapy that has been showing tremendous promise is that of float therapy, or floating and both the medical and alternative medical professionals are taking note.

Objective

The objective of this case study is to observe the effects of four (4) weeks of floatation therapy upon the intensity and frequency of chronic musculoskeletal pain, including the perception of overall disability, emotional state and quality of sleep. A second objective is to see how long any perceived positive effects last, up to one month after the study, with no further intervention.

Method

Participants were sought through an online screening process based on the following criteria:

- (a) Diagnosed with EDS for more than 3 years (although it is a genetic condition);
- (b) no prior history of floating;
- (c) not taking opioids;
- (d) is currently receiving other medical treatment or alternative medicine intervention including injections or therapy; and
- (e) is having multiple symptoms including painful joints, dislocations, easy bruising, fatigue, cardiovascular/respiratory issues, gynecologic/urinary, digestive, poor healing and other - and

rated their level of dysfunction in these areas at a 5 or greater, on a 0-10 scale, with 0=none and 10=worst pain.

The intervention for this case study involved “floating” in a 9’ long x 5’ wide fiberglass tank with a hinged lid, shaped like a large egg and filled with 175 gallons (10” deep) of a salt solution. This solution contains 1000 pounds of medical grade Epsom salt, or magnesium sulfate (MgSO₄) and is maintained at skin temperature (approximately 94 degrees F). The tank is within a private room containing a shower. To “float” the individual disrobes, showers, inserts earplugs, turns off the overhead room light, then climbs inside the tank which has an internal light and music controls. The individual closes the float tank lid and then transitions onto a supine (face up) position and begins to float effortlessly.

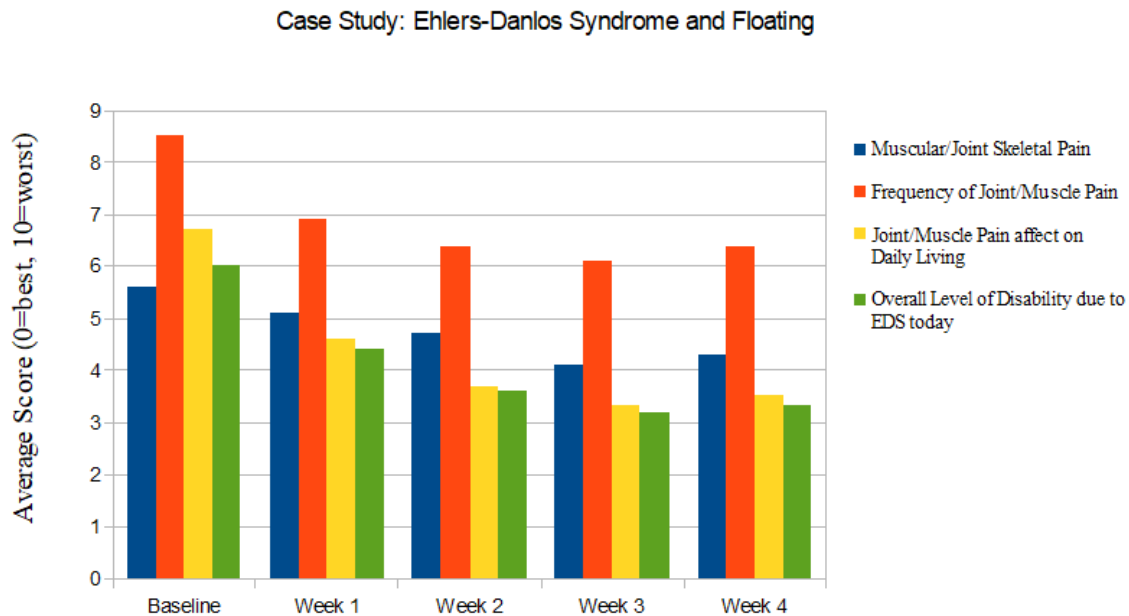
Of 41 applicants, 12 subjects fit the criteria and were accepted into the study. Of those twelve (12) selected, nine (9), elected to participate - eight (8) female and one (1) male. They were all placed into a single case study group. The study lasted four (4) weeks in duration¹ and involved this one group of nine (9) participants that floated twice weekly for four (4) weeks for a total of eight (8) float sessions.

A daily subjective survey was completed by each individual, using a numeric scale on a 0-10 continuum with descriptors. This month long daily survey was initiated on day one of the study, regardless of the day of their first float in week one. For purposes of comparison, a baseline survey with the same questions was completed by the participants prior to their first float. There was a follow-up survey completed one week, two weeks and one month after the study was complete.

There was minimal interaction with the participants during the course of the study, other than keeping them on track with their surveys and making sure they had no questions before and after floating. There was no cost for the participants and there was no financial gain from The Float Zone, where the case study took place. There are no other disclosures.

¹ The four week time frame was chosen to reflect a common period of most therapeutic approaches, such as chiropractic or physical therapy to establish if a protocol is working.

Results



Severity of musculoskeletal pain (see graph)

Evaluating the intervention of floating on *severity of muscle and joint pain*, the Group **improved 23%** representing a drop from a baseline average of 5.6/10 to a week 4 average of 4.3/10.

Frequency of musculoskeletal pain (see graph)

Evaluating the intervention of floating on *frequency of musculoskeletal pain*, the Group **improved 25%**, representing a drop from a baseline average of 8.5/10 to a 4 week average of 6.4/10.

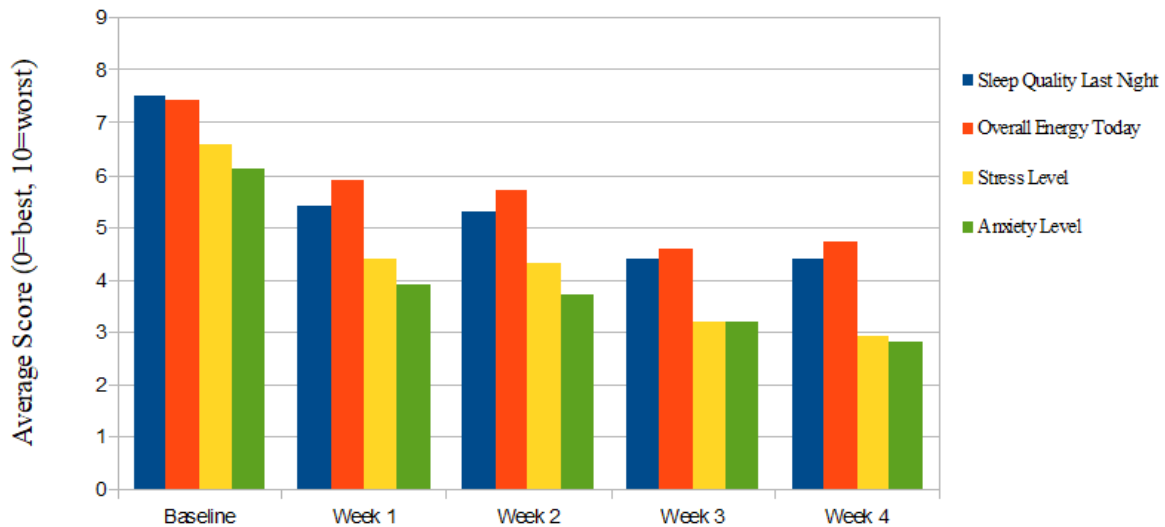
Affect on Activities of Daily Living (see graph)

Evaluating the intervention of floating on *affect on activities of daily living*, the Group **improved 48%**, representing a drop from a baseline average of 6.7/10 to a 4 week average of 3.5/10.

Overall Level of Disability (see graph)

Evaluating the intervention of floating on *overall level of disability*, the Group **improved 45%**, representing a drop from a baseline average of 6.0/10 to a week 4 average of 3.3/10.

Case Study: Ehlers-Danlos Syndrome and Floating



Quality of Sleep Last Night (see graph)

Evaluating the intervention of floating on *quality of sleep last night*, the Group **improved 41%**, representing a drop from a baseline average of 7.5/10 to a week 4 average of 4.4/10.

Overall Energy Level (see graph)

Evaluating the intervention of floating on *overall energy level*, the Group **improved 36%**, representing a drop from a baseline average of 7.4/10, to a week 4 average of 4.7/10.

Stress Level (see graph)

Evaluating the intervention of floating on *stress level*, the Group **improved 56%**, representing a drop from a baseline average of 6.6 /10 to a week 4 average of 2.9/10.

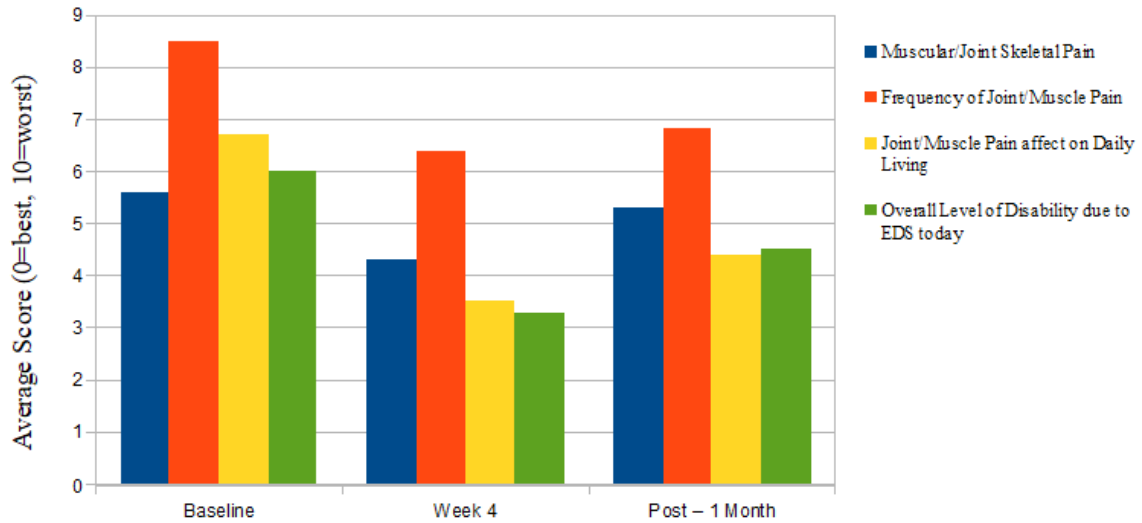
Anxiety Level (see graph)

Evaluating the intervention of floating on *anxiety level*, the Group **improved 54%**, representing a drop from a baseline average of 6.1/10 to a week 4 average of 2.8/10.

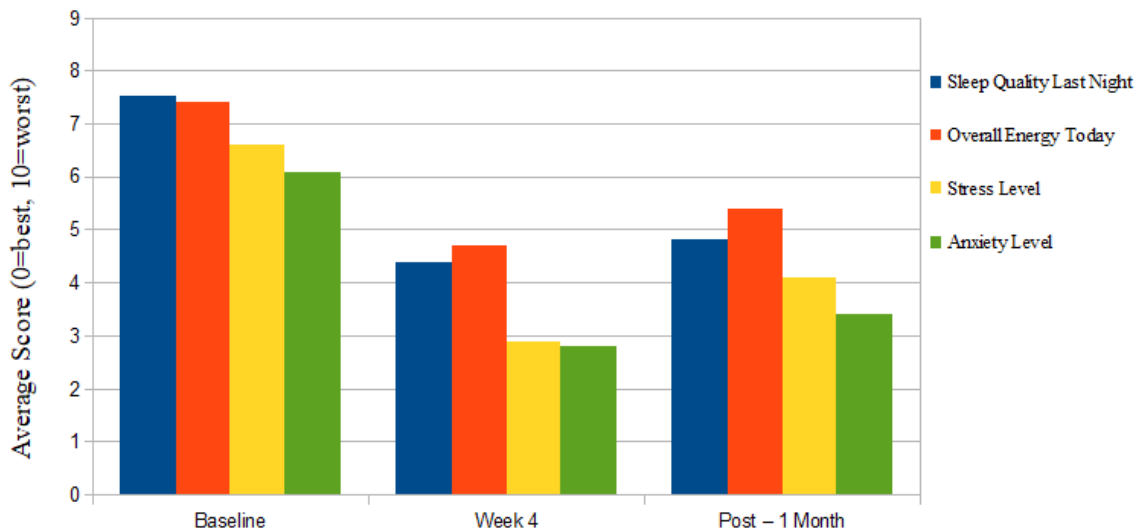
Below are two associated graphs relative to the amount of **lasting improvement** without any intervention for a month duration. (See above). With reference to these lasting improvements, the original baseline scores are compared to both the end of the four week study and one month after the study (eight weeks from the baseline). All the improvements made at the conclusion of the study were substantially maintained a month later, with a minimum of 22% (severity of pain), but with 7 of 8 categories maintaining over 50% of their improvements all the way to 80 %, None of the gains made during the course of the study returned even close to their original score after 1 month. (See below for details).

No further longitudinal tendencies were studied after one month post intervention.

Case Study: Ehlers-Danlos Syndrome and Floating



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SLEEP QUALITY:

From baseline average to week 4 average, there was a 41% improvement
 From baseline average to post-1 month average (no intervention), improvement was at 36%.
One (1) month post study, more than 88% of the improvements in sleep quality had remained.

OVERALL ENERGY:

From baseline average to week 4 average, there was a 36% improvement.

From baseline average to post-1 month average (no intervention), the overall improvement was at 27%.

One (1) month post study, 75% of the improvements in overall energy had remained.

STRESS LEVEL:

From baseline average to week 4 average, there was a 56% improvement.

From baseline average to post-1 month average (no intervention), the overall improvement was at 38%.

One (1) month post study, more than 68% of the improvements in stress level had remained.

ANXIETY LEVEL:

From baseline average to week 4 average, there was a 54% improvement.

From baseline average to post-1 month average (no intervention), the overall improvement was 44%.

One (1) month post study, 71% of the improvements in anxiety levels had remained.

SEVERITY OF PAIN:

From baseline average to week 4 average, there was a 23% improvement.

From baseline average to post- 1 month average (no intervention), the overall improvement was 5%.

One (1) month post study, 22% of the improvements in severity of pain, had remained.

FREQUENCY OF PAIN:

From baseline average to week 4 average, there was a 25% improvement.

From baseline average to post- 1 month average (no intervention), the overall improvement was 20%.

One (1) month post study, 80% of the improvements in frequency of pain, had remained.

AFFECT ON DAILY LIVING:

From baseline average to week 4 average, there was a 48% improvement.

From baseline average to post- 1 month average (no intervention), the overall improvement was 34%.

One (1) month post study, 71% of the improvements in affect on daily living, had remained.

PERCEIVED LEVEL OF DISABILITY:

From baseline average to week 4 average, there was a 45% improvement (other graph)

From baseline average to post- 1 month average (no intervention), the overall improvement was 25%.

One (1) month post study, 56% of the improvements in perceived level of disability, had remained.

Conclusion

Float therapy, otherwise known as floatation therapy, or floating, has a direct positive, and lasting effect on the intensity and frequency of chronic musculoskeletal pain associated with Ehlers-Danlos Syndrome. Float therapy showed improvement of the subjects' perception of overall disability, emotional state including anxiety and stress, sleep quality, and daily energy levels.

One month after conclusion of the case study, and without further intervention, the subjects reported that all areas of improvement were maintained to a significant degree.

Patients, medical professionals and alternative health care providers should consider floatation therapy by itself or in tandem with other mind/body approaches to manage the serial effects of Ehlers-Danlos Syndrome.

Discussion

This study was prompted after a group presentation in front of medical providers in Richmond, Virginia. Previous floatation case studies at The Float Zone had an exclusionary criteria if an individual was being treated by another practitioner via therapy, medications or injections. The medical audience was asked if they had a subgroup they were currently treating for which a floatation therapy case study would be helpful and instructive. EDS was unanimously requested.

Due to an abnormal immune system, which boosts inflammation and attacks itself, EDS affects connective tissues and weakens collagen. It is a progressive disease, with multiple variations that affect different sites and systems in the body, such as joints, heart valves, organs (heart, lungs, kidney) and arterial walls. There are also multiple variants of the condition, making it complex to both understand and treat. Often, EDS patients seek multiple specialists.

Each case study participant had a different constellation of symptoms. All had moderate to extreme musculoskeletal pain and dysfunction, both locally and regionally. Low daily energy and poor sleep quality were universally problematic and high on the baseline rating score. Emotional factors such as stress and anxiety were also universally high as a baseline, as well as perceived level of general disability as a result of the overall effects of EDS.

The high baseline scores reflect the concept that EDS has many co-morbidities and is not as simple as just having “widespread joint pain.” One such condition intimately related to EDS is postural orthostatic tachycardia syndrome (“POTS”) where blood pressure and heart rate change rapidly based on moving from a lying to a seated/standing position or in cases of mild to moderate exercise. Similarly, with EDS the vagus nerve (a cranial nerve that communicates with the peripheral nervous system such as the organs) can be abnormally stuck in a feedback loop, creating a chronic fight or flight adrenal burnout syndrome and even issues like chronic constipation. Also, it is commonplace to have a distorted immune system which can present as intermittent bouts of disabling fatigue or flu like symptoms. Lastly, because those with EDS are prone to joint dislocations, there can be sudden, excruciating emergency like situations.

Often with EDS, medication is necessary to help with dizziness or nausea - the nausea can especially be an issue while floating. Several participants noted nausea with floating, yet had

these issues already present in their daily life. A few of the participants routinely take anti-nausea drugs. For some in the study, the float experience made this nausea symptom more apparent - but not severe enough to end any given float early or to discontinue participation. One individual was able to mitigate the nausea sensation by using the headrest, putting her arms above her head, anchoring herself in a corner and leaving the overhead light on with the pod almost closed and left her eyes open. The sensation of nausea was less each successive float. This insight of nausea while floating may also be an under diagnosed observation of the float experience in general, due to the impact of stress and /or other co-morbidities on the body.

Of all the various improvements and maintenance of gains post-case study, it is noted that the symptom to improve the least and to maintain the least amount of progress was severity of pain. Thus, while there were definite improvements in the severity of pain, they were temporary and seemed to be more influenced by day to day activities than any other tracked symptom.

Frequency of pain was improved and positive gains were maintained considerably more than severity. The symptom of “frequency” that was tracked, also included how often joints would dislocate, as well as how frequently one noticed pain in general - regardless of many or few body regions. In speaking to the participants, one of the possible reasons for not noting greater gains in severity of pain, is because of the perception of feeling better as a whole, then pushing harder physically and paying for it.

As mentioned, many of the participants were being treated on a regular basis with other physical therapy interventions. These interventions focused solely on the severity of pain and functional improvement of muscles and joints versus assisting with sleep, emotional state and other. As such, regardless of receiving additional care or not, the frequency of pain and dysfunction was lessened to a large degree and was maintained over time, even without intervention. One such therapist, treating a shoulder issue on one of the participants, shared the following:

“People don’t relate function to improvement because they are so focused on the symptom of pain itself and the reduction of it. A common approach among therapists is to “downregulate” the sympathetic nervous system through trigger point release, gentle ranges of motion and generally reducing stressors. I have seen great strides in functional improvement of my patient’s shoulder in large part due to the allowing the parasympathetic nervous system to activate and facilitate healing, through floating. I feel that the floating leveraged my ability to get more done and make more progress. It was apparent that floating also helped many other areas of the patient’s life and lifestyle.”

Thus, coincident with the improvement in physical and emotional arenas as well as perceived disability, the barometer of one’s general functional state, were viewed by all participants as positively improved. Whether it was better sleeps, more emotional stability, less pain or a greater sense of energy and ability, floating affected a broad range of areas that resulted in a positive experience for all involved.

Some relevant comments by the EDS and Floating Case Study Participants:

“The past month has been significant for me. While my physical health has been poor, my emotional response to it has been FAR better than I expected. I have held off on asking for help largely due to emotional reasons. I have been able to make that step and have also experienced very mild anxiety and stress, as well as a much more positive outlook as far as the response has gone. I believe that participating in this study gave me a chance to clear my mind in a way and also allowed me to have some strength when progressing through. I fully believe I would not be handling this with the grace I am, had I continued on from the place I was pre-study.”

“Reasons for participating: Chronic neck and back pain from EDS I had experienced chronic pain in my neck and head that was exacerbated simply by holding my head up for too long. I also experienced a lot of discomfort with rib dislocations. During my first float, I experienced nausea from what seemed to be a type of motion sickness. While I never vomited, I came very close to it. With each consecutive float, I learned to anchor myself visually at times in the pod and also physically in the pod. By my final session, the nausea was very minimal. Also, given my prior neck injury and ongoing neck pain, I found it to be a struggle to trust the floating experience with relaxing my head back completely. Historically, due to my injury, I had positional vertigo and I’ve always guarded my neck. I worked with both types of float support devices for my head. By the end, I had gained trust in the overall process and did not use any support assistance for my head. Since I wasn’t trying to maneuver the head support device, I was able to minimize my overall movement during my session. This, therefore, reduced my motion sickness and nausea. While I still have intermittent pain associated with my ongoing rib dislocations, I’ve experienced an estimated 90% reduction in pain in my head and neck. I no longer feel like I have to rest my head during the middle of the day. The muscles don’t feel like they are constantly overworking just to hold my head up. It’s now 6 weeks after my last float. I don’t know if that pain will return, but I’m astonished that floating has caused such a change. I was feeling quite hopeless and out of holistic options for managing my worsening discomfort. I have also found I need many fewer massages to deal with the ongoing pain.”

“I’m very grateful Dr. Berv held a lecture on floating. Without his lecture, I don’t believe I would have found my way to this solution. Due to his experience as a chiropractor, and my experience as a 30+ year chiropractic patient, I trusted his advice regarding floating and what it could potentially do for me.”

“I’m experiencing a dramatic reduction in my neck and back pain. This study has helped me realize how much my sleep quality impacts my pain level - which has been helped by floating.”

“I forgot to put this on the other survey but on Thursday when I had my float I considered not going when I woke up due to how ill I felt. I decided to go anyways and afterwards felt significantly better and was glad I hadn't changed my appointment.”

“I looked forward to my float sessions. I knew I would be in less pain afterwards. And that I would maybe have a close to pain free day the next day. Perhaps even two days if I was lucky!”

“The trial is going wonderfully. At first I was feeling extreme fatigue and a lot of nausea the day of my floats, but as I’ve gone on I believe that I have more energy than I had had before beginning. I believe my joints are less aggravated as well, though not to the extent that I would participate in the normal exercise I would like to be doing - yet.”

“I woke up feeling really unwell and fatigued (I went on a trip yesterday and those will generally wear me down the next day lately.) I wanted to reschedule my appointment. I decided to keep it and while I did experience some autonomic nervous system issues (had issues breathing and handling temperature change/difference in the room, over heated slightly once in pod, only significant enough to cause me to sit up for less than a minute and drink water), I felt much better after my float. My energy level reached its peak in the two hours following my float and I was much more level headed and felt “clear”. I let go of the dragging feeling I had all day. I also fell asleep really easily this afternoon without remembering doing so (rare for me.) I woke up and remembered I hadn't completed the survey yet but I fell asleep around 9:30 and I'm usually not able to fall asleep before 11-12.”

“I forgot to put this on the other survey but on Thursday when I had my float I considered not going when I woke up due to how ill I felt. I decided to go anyways and afterwards felt significantly better and was glad I hadn't changed my appointment.”

“I had a hard time with my POTS today. I had a hard time controlling my reaction to the heat of the day and was very dizzy and shaky. I was able to float without using the neck pillow for the first time with no pain. I also thought my eyes were closed at the end but the light came on and they were open. Before going in I felt miserable but during the float and for the rest of the day I felt significantly better.”

“I only woke up one time last night. I also didn't feel groggy when waking up this morning which is unusual for me. I was able to go on a hike and stopped a lot less frequently than normal. I have noticed a definite reduction in my stress and anxiety levels and frequency of these symptoms during the course of this study. I had my float on this day and feel like I finally grasped the meaning of these floats. I have been very focused on what it will do for my overall pain level thus far and less focused on the mind aspect of it. During my float today I entered a state where I could no longer feel my body, this is why I put 9 for my pain frequency instead of 10 as usual, this is something I've never experienced. It was as if only my mind was awake and dealing with what was going on with it instead of also being very aware of what was happening/hurting on my body. My body wasn't "numb", as I experienced my first float, but simply not "there" or present. I see how helpful this treatment could be for me or somebody with EDS now, we constantly are hyper-aware of every part of our bodies and each joint popping out, how our toes hurt, stomach, neck, etc.

This float session allowed me an opportunity to have a break from that completely and I believe that is incredibly helpful/necessary in order to deal with the 24/7 symptoms that are EDS. I've been able to do more than I am used to doing recently. For example I've been taking my son to either a park or pool at least every other day, this is something that happened maybe once a week prior to this last week.”

“I did my float today and was able to relax. I was also able to float on my side through some weird movements/positioning and it was incredibly comfortable. I believe this is partially because my left hip was supported and it usually falls out while floating. As opposed to my last "night" float I was barely able to stay awake and fell asleep shortly after arriving home. I have noticed that my reaction to stress is much more calm recently and I am also able to sleep much more soundly. I don't wake unless my son wakes me up and I feel like I actually slept instead of being semi-conscious all night. I also feel like my mental health is much more stable than it was prior to the study. Things don't upset me as much as they did before.”

“I did my float yesterday and my energy level today was oddly high. I was able to clean almost my entire house and play in the water with my son via the help of my boyfriend/his father. I came home and cleaned the kitchen after laying him down which is a very rare thing for me to have energy for.”

“Floating is really helping my muscle spasms and tremors.”

"Slept much better than normal. Woke up without feeling tired. Had physical therapy for the shoulder this morning, it has been very painful since mid-afternoon on thru the evening. Taking Ibuprofen to try and relieve it, along with heat and ice. We had our basement flood, which caused my stress level to go up. Then because I knew I would be doing things that would cause my joints and muscles to hurt, my anxiety level went up. On Sunday my pain levels were staying in the 7 to 8 range as a result. When I did my float last night, it felt like my muscles were fighting me and would not let go or "relax". Afterwards, while my shoulder was definitely hurting, I did sleep very well; and am almost pain free this morning. The pain I feel today is not from EDS. It is all related to the shoulder injury, and it feels better than it has in awhile; pain is minimal compared to usual... Actually woke up early today and played extra-long time with my puppies. Feel better today than I have in months! Went Fishing. No issues casting a rod/reel. This is new.”

“Slept better than usual after my first float, didn't wake up during the night and I usually do. My back is usually in more pain than it was today. Able to accomplish needed tasks.”

“Incredible night sleep last night after floating yesterday evening. I usually toss and turn and wake up in the night at least once, and I did not do any of those things last night. Spike in my anxiety today- likely not linked to EDS, I am moving apartments in 2 days and packing and coordinating all the components is very stressful, coupled with stress in my love life. Slept very well last night though, which I think is definitely due to the floating.”

“Consistently great sleep on floating nights. The nights when I get a rough evening of sleep I definitely notice a spike in my joint pain the next day, and the nights I float consistently give me better sleep.”

“The day right after I float the positive effects seem to be the strongest, I think due to always sleeping so soundly.”

“Best night sleep ever last night after floating, always makes my next day have far less pain and more energy!”