



Reduced Environmental Stimulation in Anorexia Nervosa: An Early-Phase Clinical Trial

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Reduced Environmental Stimulation Therapy (REST) alters the balance of sensory input to the nervous system by systematically attenuating sensory signals from visual, auditory, thermal, tactile, vestibular, and proprioceptive channels. Previous research from our group has shown that REST *via* floatation acutely reduces anxiety and blood pressure (BP) while simultaneously heightening interoceptive awareness in clinically anxious populations. Anorexia nervosa (AN) is an eating disorder characterized by elevated anxiety, distorted body representation, and abnormal interoception, raising the question of whether REST might positively impact these symptoms. However, this approach has never been studied in eating disorders, and it is unknown whether exposure to floatation REST might worsen AN symptoms. To examine these possibilities, we conducted an open-label study to investigate the safety and tolerability of REST in AN. We also explored the acute impact of REST on BP, affective symptoms, body image disturbance, and interoception. Twenty-one partially weight-restored AN outpatients completed a protocol involving four sequential sessions of REST: reclining in a zero-gravity chair, floating in an open pool, and two sessions of floating in an enclosed pool. All sessions were 90 min, approximately 1 week apart. We measured orthostatic BP before and immediately after each session (primary outcome), in addition to collecting BP readings every 10 min during the session using a wireless waterproof system as a secondary outcome measure. Each participant's affective state, awareness of interoceptive sensations, and body image were assessed before and after every session (exploratory outcomes). There was no evidence of orthostatic hypotension following floating, and no adverse events (primary outcome). Secondary analyses revealed that REST induced statistically significant reductions in BP ($p < 0.001$; Cohen's d , 0.2–0.5), anxiety ($p < 0.001$; Cohen's d , > 1) and negative affect ($p < 0.01$; Cohen's d , > 0.5), heightened awareness of cardiorespiratory ($p < 0.01$; Cohen's d , 0.2–0.5) but not gastrointestinal sensations, and reduced body image dissatisfaction

($p < 0.001$; Cohen's d , >0.5). The findings from this initial trial suggest that individuals with AN can safely tolerate the physical effects of REST *via* floatation. Future randomized controlled trials will need to investigate whether these initial observations of improved anxiety, interoception, and body image disturbance occur in acutely ill AN populations.

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Keywords: eating disorder, floatation therapy, interoception, stress, body image, body awareness, interoceptive awareness

INTRODUCTION

Anorexia nervosa is an unusually deadly disorder with the highest mortality risk of all psychiatric disorders (Sullivan, 1995; Suokas et al., 2013), carrying an estimated standardized mortality rate two to three times higher than schizophrenia, bipolar disorder, and unipolar depression (Arcelus et al., 2011; Hoang et al., 2014). Disability from AN peaks during the second and third decades of life, jeopardizing developmental milestones including adult individuation and educational and occupational achievements. Although many AN patients die from complications associated with starvation, others die as a result of suicide (Keshaviah et al., 2014). Of those remaining, 20% are chronically ill (Steinhausen, 2002; Bulik et al., 2007; Lock, 2010; McElroy et al., 2015), with relapse rates as high as 30–50% following inpatient treatment (Khalsa et al., 2017; Berends et al., 2018).

Individuals with AN show evidence of heightened anxiety expression, including premorbid anxious personality traits, and the disorder shares a high degree of comorbidity (nearly 60–80%) with anxiety disorders and depression (Bulik et al., 1997; Kaye et al., 2004). The diagnosis of an anxiety disorder has been observed to increase the subsequent risk of developing AN (Meier et al., 2015), suggesting the possibility of shared etiological mechanisms or common pathophysiological pathways. However, medical treatments for anxiety and mood disturbances show limited efficacy in AN, with serotonergic agents being the primary long-term medication treatment option (Himmerich and Treasure, 2018). One especially concerning finding is that anxiolytic medications that are effective at reducing anxiety over the short term in anxiety-disordered patients, such as benzodiazepines, are ineffective in lowering the anxiety associated with AN (Steinglass et al., 2014). Alternative anxiolytic medications, such as beta-blockers, are often contraindicated in these patients due to the compensatory bradycardia that often follows chronic caloric restriction in AN patients. Therefore, additional treatments which can effectively ameliorate affective disturbances in AN are needed.

One pathophysiological model of AN posits that these individuals have a fundamentally disturbed relationship between

the way that afferent internal bodily signals are processed in the brain, and that this disturbance causally contributes to the emergence of aversive visceral sensations and emotions when exposed to food or food-related stimuli (Kaye et al., 2009, 2011). For example, individuals with AN show evidence of exaggerated perceptual processing of anxiety-associated cardiac and respiratory sensations (e.g., heightened feelings of palpitations and dyspnea) (Khalsa et al., 2015), as well as abnormal neural activation in interoceptive brain regions such as the cingulate and insular cortices (Kerr et al., 2016; Berner et al., 2017). However, the evidence for causal influences of interoception on the development and expression of AN and other eating disorders is limited by a lack of basic and clinical studies focusing on mechanistic underpinnings (Martin et al., 2019).

Reduced Environmental Stimulation Therapy *via* floatation is a relatively unexplored non-pharmacological intervention that has recently begun to be investigated for potential anxiolytic effects (Jonsson and Kjellgren, 2016; Feinstein et al., 2018a,b). The REST experience is calibrated so that input from exteroceptive sensory channels (e.g., visual, auditory, olfactory, gustatory, thermal, and tactile) is minimized, as is most vestibular, gravitational, and proprioceptive input, movement, and speech. As a first step toward exploring whether floatation-REST could help individuals with anxiety and depression, we conducted an open-label trial in 50 anxious and depressed individuals, spanning a range of different anxiety and stress-related disorders (including posttraumatic stress disorder, generalized anxiety disorder, social anxiety disorder, panic disorder, and agoraphobia) (Feinstein et al., 2018b). A single 1-h session of floatation-REST was well tolerated by the anxious sample, with no major safety concerns or adverse events. Regardless of diagnosis, the float experience induced a strong short-term reduction in state anxiety and a substantial improvement in mood. In a recent follow-up study using a within-subject crossover design, we recruited 31 participants with clinically elevated levels of anxiety to undergo a 90-min session of floatation-REST and an exteroceptive comparison condition (watching a relaxing documentary film) (Feinstein et al., 2018a). Measures of self-reported affect and interoceptive awareness were collected before and after each session, and BP was measured during each session. Floatation-REST generated a significant anxiolytic effect relative to the comparison condition that was characterized by reductions in state anxiety and muscle tension and increases in feelings of relaxation and serenity. In addition, significant BP reductions were evident throughout the float session. Despite the observed anxiolytic effects in

Abbreviations: AN, Anorexia nervosa; BAS-2, Body Appreciation Scale Version 2; BISS, Body Image States Scale; BMI, Body Mass Index; BP, blood pressure; DBP, diastolic blood pressure; DSM-5, Diagnostic and Statistical Manual Version 5; EDE-Q, Eating Disorder Examination Questionnaire; ICC, intraclass correlation coefficient; IQR, interquartile range; LIBR, Laureate Institute for Brain Research; LMM, linear mixed-effects models; PANAS-X, Positive and Negative Affect Schedule Version X; POMP, Percent of Maximum Possible; PRFS, Photographic Figure Rating Scale; REST, Reduced Environmental Stimulation Therapy; SBP, systolic blood pressure; STAI, Spielberger Trait Anxiety Inventory.

these individuals, exposure to the float environment significantly enhanced awareness for interoceptive (cardiac and respiratory) sensations, a finding that we attributed to a process of reciprocal inhibition (Wolpe, 1968).

Based on our initial findings with anxious individuals, we wondered whether REST *via* floatation might positively impact affective and interoceptive symptoms in individuals with AN. However, there have been no studies documenting the safety or tolerability of the procedure in eating disorders populations (acutely ill or remitted/recovered), and we could find only one brief theoretical review of the topic suggesting that “there are some qualities of REST that make it particularly appropriate for the treatment of eating disorders” (Barabasz, 1993). Moreover, we were uncertain whether exposure to REST might worsen AN symptoms. We therefore aimed to conduct an open-label clinical trial to assess the safety and tolerability of REST in AN, and secondarily, to explore the impact of this procedure on clinically relevant symptoms related to affective experience, body image disturbance, and interoception. With no previous studies of REST in eating disorder populations, we focused our recruitment for this initial study on partially weight-restored AN individuals drawn from outpatient settings (1) in case the intervention was anxiety provoking or non-therapeutic and (2) preclude imminent fall risk under normal physical activity levels (as can occur in AN individuals who are severely underweight).

The primary objective of the study was to investigate whether there is evidence of negative health consequences associated with exposure to the REST environment in partially weight-restored AN. We selected orthostatic hypotension as our primary outcome for safety since (1) our prior research (Feinstein et al., 2018a) identified reductions in BP as an acute effect associated with floating, (2) orthostatic hypotension could increase fall risk when transitioning from laying to standing (an action occurring at the end of each float) (Sachs et al., 2016), and (3) orthostatic hypotension is a major medical condition associated with acute dehydration that is especially common in underweight and even partially weight-restored AN (Lanier et al., 2011). We hypothesized that floating would be safe and well tolerated by individuals with AN and predicted that there would be no adverse physical effects (e.g., no orthostatic BP reductions, or falls, upon standing). We chose several secondary outcome measures including anxiety, stress, mood, body representation, and interoceptive awareness (introduced further in the next section) and investigated the effects of floating on these subjective measures using two-tailed hypothesis tests and Cohen’s *d* effect size.

MATERIALS AND METHODS

Aim

The primary objective of this study was to determine whether individuals with partially weight-restored AN would exhibit evidence of orthostatic hypotension following REST. We defined orthostatic hypotension (primary outcome) as a drop of ≥ 20 mmHg in SBP or a drop of ≥ 10 mmHg in DBP when measured shortly after transitioning from lying down to

standing, according to consensus guidelines (Kaufmann, 1996). The secondary objective of this study was to examine the acute effects of REST on BP during floating and subjective measures of emotional experience (including anxiety and mood), body image disturbance, and interoception. These secondary aims were exploratory and intended to provide information on the subjective changes induced by REST in individuals with AN, assisting in the identification of potentially useful targets for future studies.

Participant Recruitment

Participants were recruited *via* online and print advertisements and *via* referral from eating disorder treatment providers in the local community. To be included in the study, participants were required to have met the *Diagnostic and Statistical Manual 5* (DSM-5) criteria for a lifetime diagnosis of AN during an interview with a board-certified psychiatrist. Additionally, all participants were required to be partially weight restored to a BMI range above the cut-off for a current diagnosis of AN according to ICD10 (World Health Organization, 1993), defined as having a BMI of >17.5 . Exclusion criteria included the presence of any schizophrenia spectrum disorder, other psychotic disorder, and bipolar and related disorders. Inpatients were excluded, as were individuals reporting active suicidal ideation with intent or plan (as determined by psychiatric interview). Subjects who exhibited orthostatic hypotension prior to REST (defined as a drop of ≥ 20 mmHg in SBP or a drop of ≥ 10 mmHg in DBP when measured shortly after transitioning from lying down to standing) were excluded. We chose to examine BP changes between lying and standing, as these measures provide the greatest postural differences and were considered to be the most sensitive measure of orthostasis. Participants were also excluded if they reported use of any psychoactive drugs within the past week (e.g., marijuana, cocaine, ecstasy, psilocybin, phencyclidine, and ketamine), any alcohol consumed within the previous 12 h, and any caffeine or nicotine consumed within the previous 3 h for each float. For all other medications, participants were required to be stably medicated prior to participation, defined as having taken the medication for 6 weeks or longer. Participants were also screened for a history of unstable liver or renal insufficiency, glaucoma, diabetes, significant and unstable cardiac, vascular, pulmonary, gastrointestinal, endocrine, neurologic, hematologic, dermatologic, rheumatologic, or metabolic disturbance and excluded if they reported any of these conditions. All study procedures were approved by the Western Institutional Review Board. All participants provided written informed consent prior to participation and received compensation for study participation.

Clinical Assessments

After providing informed consent, all participants underwent diagnostic verification *via* a clinical history and evaluation by a board certified psychiatrist (SSK or SEM) with the application of DSM-5 criteria (American Psychiatric Association, 2013). During this session, participants completed a measurement of their BMI, medical history, medication assessment, and vital sign measurements including orthostatic BP.

Experimental Protocol

In this single group open-label pre-post-study design, all participants were provided access to four sequential REST sessions involving supine floating: reclining in a comfortable zero-gravity chair (chair-REST), followed on three occasions by floating in a pool of water (floatation-REST). The pool floats also followed a sequential protocol whereby participants first floated in an open pool (floatation-REST, open) before floating in an identically sized pool with an enclosure (floatation-REST, enclosed). For each session, participants were encouraged to float for the full 90 min, but they could also stop the experience at any time. These procedures were intended to help participants accommodate to the float environment and to ensure they were in full control over the experience. Sessions were spaced approximately 1 week apart. To ensure there were no external distractions, participants removed all personal belongings (including cellular phones) before each float.

Session 1: Chair-REST

Participants first reclined in a zero-gravity chair (Human Touch Perfect Chair PC510, Classic Power, Series 2) in the supine position for up to 90 min (**Figure 1**). The chair was ergonomically designed to take pressure off the spinal cord and contained memory foam backing to help the chair conform to each participant's body shape. A motorized lever allowed the participant to recline the chair to a comfortable position. The chair was located in a dimly lit room using the same light as that used in the float pool. Participants could turn the light on and off using an infrared air switch. Participants remained clothed throughout (unlike the typical floatation-REST procedure, in which individuals are typically naked), and consequently, the room was maintained at a normal room temperature of approximately 23.3°C.

Session 2: Floatation-REST, Open

Participants floated in a supine position for up to 90 min in an open circular fiberglass pool (2.44 m diameter, 0.28 m depth), custom designed for research purposes by Floataway (Norfolk, United Kingdom) (**Figure 1**), a design that we selected to optimize the float experience for individuals with heightened

anxiety and claustrophobia (see Feinstein et al., 2018b). The pool contained water filled with approximately 816 kg of USP-grade Epsom salt (magnesium sulfate), creating a dense saltwater solution maintained at a specific gravity of ~ 1.26 , allowing participants to effortlessly float on their back. The room around the pool was constructed to be waterproof, soundproof, lightproof, and temperature controlled. Silent heaters were placed under the pool to maintain the water at a constant temperature and a dedicated heating, ventilation, and air conditioning system maintained the air at a constant temperature. The temperature of the water and air approximated the surface temperature of the skin ($\sim 35.0^{\circ}\text{C}$), and could be adjusted remotely by the experimenter in a nearby control room. An intercom system allowed the participant to freely communicate with the experimenter throughout the float session should any issues arise, and specialized speakers placed around the perimeter of the pool allowed the experimenter to communicate with the participant and play music to signal the end of the session.

Sessions 3 and 4: Floatation-REST, Enclosed

Participants then floated in a supine position for up to 90 min in an enclosed pool with the same dimensions as the open pool (2.44 m diameter, 0.28 m depth) that was also fitted with a rounded wall and a 2.44-m domed ceiling. We included the enclosed condition as this procedure reflects the manner in which most recreational float pools are designed. The experience between the open and enclosed pools was essentially identical, with the exception that the enclosed pool allowed us to calibrate humidity with greater precision. Thus, the room dimensions, temperature controls, and intercom system for this room were identical to the open pool (see **Figure 1** for a visual comparison of both pools). No physiological recordings were made during session 3 to allow each participant one "naturalistic" experience of the floatation-REST environment without any concurrent physiological measurements.

Outcome Measures

Blood Pressure Measurements

During each session, orthostatic BP was measured before and after each float. Prior to initiating the first BP measurement,

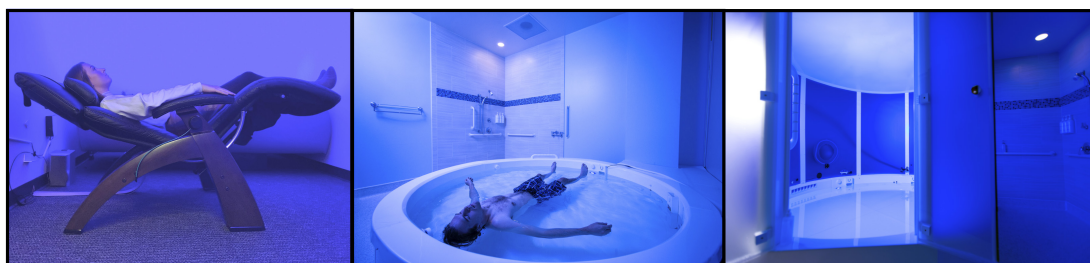


FIGURE 1 | REST at LIBR. **(Left)** Chair-REST. **(Middle)** Floatation-REST in an open pool. **(Right)** Floatation-REST in an enclosed pool. The open **(middle)** and enclosed **(right)** pools are both 2.44 m in diameter and 0.28 m in depth. The domed pool contains an enclosure with a 2.44-m domed ceiling. Each pool contains 11 in. of reverse osmosis water saturated with ~ 816 kg of USP grade Epsom salt (magnesium sulfate), creating a dense saltwater solution that is maintained at a specific gravity of ~ 1.26 , allowing participants to effortlessly float on their back while the water hovers just above the ears. The temperature of the water and the temperature of the air are both calibrated to match the temperature of the skin ($\sim 35.0^{\circ}\text{C}$). For more details about how our float pools were engineered to minimize exteroceptive sensory stimulation to the nervous system, please see Feinstein et al. (2018a; 2018b).

participants were asked to lay quietly for 5 min, to ensure that they had accommodated to their true resting physiological state for that session. Following the first lying BP measurement, all other measurements were taken after a 1-min delay during each position (sitting, then standing) to ensure that participants had equilibrated to the position, and so that readings were not artificially influenced by physical activity. Prefloat BP measurements were taken with a clinical-standard device CASMED 740 (CAS Medical Systems Inc., Branford, CT, United States) that is commonly utilized for vital sign measurement in inpatient hospital settings. In order to obtain BP measurements during the float environment, we used the QardioArm wireless BP monitor (Qardio Inc., San Francisco, CA, United States), an FDA-cleared automated sphygmomanometer which uses the Oscillometric method to achieve a measurement range of 40–250 mmHg and an accuracy of ± 3 mmHg. The QardioArm has been clinically validated according to ANSI/AAMI/ISO 81060–2:2009 as well as the European Society for Hypertension International Protocol Revision 2010 (O'Brien et al., 2010). Thus, each participant underwent orthostatic BP measurement with both the CASMED and QardioArm devices during the preefloat condition, to ensure comparability between the devices. For each measurement, the BP cuff was positioned approximately 1 in. above the elbow, so that it was situated at the same level as the heart. During each float, participants were instructed to keep their arms positioned along the side of their body. A Limbo Waterproof Protector (Limbo USA, Portland, ME, United States) was placed over the QardioArm BP device in order to prevent water from reaching it during the pool float sessions (in which case all QardioArm BP measures were obtained with this sleeve applied, to avoid any external influences on the pre- and post-float data points). After collecting orthostatic BP measurements with the QardioArm, to characterize BP responses during the float, nine additional BP measurements were collected once every 10 min (less if the participant exited the float before the full 90 min)¹. The initial BP measurement of this sequence occurred approximately 5 min into the float session. All BP data from the QardioArm was wirelessly transmitted in real time *via* Bluetooth 4.0 to an iPad tablet located in the adjacent control room. Each BP measurement took 30–60 s to complete and was initiated remotely by the experimenter using

an application on the iPad. Since application of an intermittently inflating BP cuff represents a departure from the naturalistic experience of floatation-REST, after completing their first pool float participants were given the opportunity to experience the next float without any instrumentation applied. As a result, pre- and post-float BP data were available for only three sessions: the chair float, the first pool float, and the third (final) pool float.

Self-Report Measures

All self-report measurements were administered electronically to participants *via* an electronic tablet (Apple iPad). Survey measures were obtained using Research Electronic Data Capture (REDCap²), a secure Web-based application for electronic collection and management of research and clinical trial data. All self-report measures were administered during the pre- and post-REST time periods, before and after the primary outcome measures had been collected (Figure 2), for each of the four sessions. Several different types of self-report measures were administered before and after each session of REST, as described next.

State-Trait Anxiety Inventory-State Form

The Spielberger State Anxiety Inventory (Spielberger et al., 1983) is a widely used 20-item self-report questionnaire intended to assess an individual's level of anxiety at the present moment with total scores ranging from 20 to 80. The items assess for the presence or absence of current anxiety symptoms, and the measure has been shown to have excellent internal consistency and good convergent and discriminant validity (Spielberger et al., 1983). Participants completed the State-Trait Anxiety Inventory (STAI) immediately before and after each REST session.

Positive and Negative Affect Schedule—Expanded Form

The Positive and Negative Affect Schedule—Expanded Form (PANAS-X) (Watson et al., 1988) is one of the most commonly used measures of mood, with high internal consistency, and good convergent, discriminant, and construct validity. We chose the expanded form, which has several subscales measuring general dimensions of affect (positive and negative), as well as basic emotions (e.g., fear, sadness, joviality, etc.). We included the negative affect, positive affect, joviality, fatigue, and serenity subscales. Each subscale uses the same 5-point Likert-type response scale to collect ratings, ranging from 1 (very slightly or not at all) to 5 (extremely). The positive affect subscale

¹Participants were not informed of the temporal intervals between BP measurements, to prevent them from estimating the duration of each float. Instead, they were informed they might feel the BP device inflate “periodically, from time to time.” Furthermore, the exact inflation interval was jittered randomly up to 1 min by the experimenter.

²www.project-redcap.org

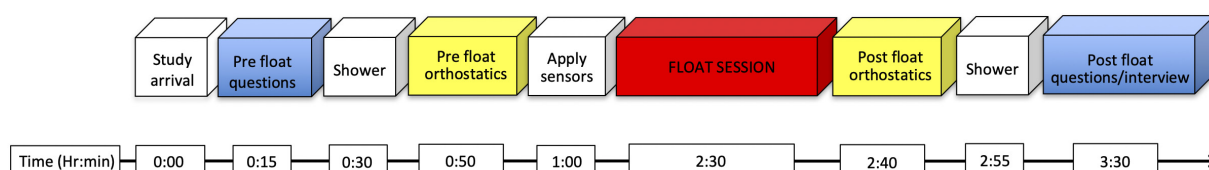


FIGURE 2 | Approximate timeline of assessments during each REST session. Sensor application included the application of a wireless blood pressure monitor and waterproof cast. The total duration of each session was approximately 3.5 h.

has participants rate how *active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, and strong* they feel at the present moment. The negative affect subscale has participants rate how *afraid, scared, nervous, jittery, irritable, hostile, guilty, ashamed, upset, and distressed* they feel at the present moment. The joviality subscale has participants rate how *happy, joyful, delighted, cheerful, lively, and energetic* they feel at the present moment. The fatigue affect subscale has participants rate how *sleepy, tired, sluggish, and drowsy* they feel at the present moment. Finally, the serenity subscale has participants rate how *calm, relaxed, and at ease* they feel at the present moment. Participants completed the PANAS-X immediately before and after each REST session.

Visual Analog Scales

Participants completed several Visual Analog Scale (VAS) measures where they rated how they currently felt on a 100-point scale that went from 0 (Not at all/None) to 100 (Extremely/The most I have ever felt). Each scale contained a digital slider that participants could move along a horizontal axis. We included affective VAS measures for *relaxation, stress, refreshed, and energy*. The Relaxation VAS asked, “How relaxed do you feel right now?” The Stress VAS asked, “How stressed or anxious do you feel right now?” The Refreshed VAS asked, “How refreshed do you feel right now?” The Energy VAS asked, “How much energy do you have right now?” Participants completed the VAS measures immediately before and after each REST session.

Interoceptive Awareness Measures

Participants completed several interoceptive awareness VAS measures assessing the intensity of *heartbeat, breath, and stomach/digestive* sensations immediately before and after each REST session, on a 100-point scale that went from 0 (Not at all/None) to 100 (Extremely/The most I have ever felt). For the pre session questions, the heartbeat VAS asked, “How intensely do you feel your heartbeat right now?” The breath VAS asked, “How intensely do you feel your breath right now?” The stomach VAS asked, “How intensely do you feel your stomach or digestive system right now?” For the post session questions, the heartbeat VAS asked, “How intensely did you feel your heartbeat while floating?” The breath VAS asked, “How intensely did you feel your breath while floating?” The stomach VAS asked, “How intensely did you feel your stomach or digestive system while floating?”

Body Appreciation Scale 2

The Body Appreciation Scale (Tylka and Wood-Barcalow, 2015) was developed to assess an individual's trait level of positive acceptance of attitudinal characteristics toward their body. The Body Appreciation Scale 2 (BAS-2) was modified from its original version (to remove sex-specific terms and body dissatisfaction-based language), with 10 items using a 5-point Likert scale from 1 (Never) to 5 (Always), with total scores ranging from 10 to 50. Participants completed the BAS-2 once prior to floating (at baseline), and again immediately following each REST session. As a trait measure, the BAS-2 trait instructs participants to “Please indicate whether the question is true about you never, seldom,

sometimes, often or always.” However, since each REST session reflected a state measurement, we modified the post-REST instructions for the BAS-2 accordingly. Thus, the postsession measures instructed participants: “For each of the questions below, please rate how you felt during the float.”

Body Image States Scale

The BISS (Cash et al., 2002) was developed to assess an individual's level of negative attitudinal characteristics toward their body, *via* six items that query feelings about physical appearance, body size, shape, weight, and attractiveness. Participants choose among nine options that best describe how they feel “right now at this very moment” from “Extremely dissatisfied” to “Extremely satisfied” (or *vice versa*), with total scores computed as the mean of the six items after reverse scoring three of the positive-to-negative items. Participants completed the BISS immediately before and after each REST session.

Photographic Figure Rating Scale

The PFRS (Swami et al., 2008) was developed to assess an individual's visual perceptual preference for different body types. It consists of 10 photographic images of different women (with the head obscured), each with BMI measurements that vary from emaciated to obese. Participants are instructed to select the body type that they perceive most accurately reflects (1) their current body type and (2) their ideal body type. A body dissatisfaction score is then calculated by subtracting the participant's ideal self-rating from their current self-rating. The measure has been reported to demonstrate good construct validity (Swami et al., 2008) and good test-retest reliability on repeated administrations (Swami et al., 2012). Participants completed the PFRS immediately before and after each REST session.

Eating Disorder Examination Questionnaire 6.0

The Eating Disorder Examination Questionnaire 6.0 (EDE-Q 6.0) (Fairburn and Beglin, 2008) is a commonly used 28-item self-report measure based on the eating disorder examination interview used by clinicians to diagnose and assess severity of an eating disorder. The EDE-Q 6.0 consists of a global eating disorder score (total of four facets averaged), as well as four groups of eating disorder symptoms, which include eating restraint, eating concerns, shape concerns, and weight concerns, with each ranging from a score of 0 to 6 (higher scores are considered to index greater illness severity, with normative studies suggesting that a score of 2.2 or greater is indicative of symptoms above the 65th percentile; Luce et al., 2008). For the purposes of this study, we collected and report EDE-Q 6.0 total scores during the initial prefloat baseline assessment in order to provide an indication of self-reported illness severity.

Presession Instructions

Prior to each session, all participants were instructed that they could remain in the session “for up to 90 min” and that they could stop at any time. During each session, participants were encouraged to try to remain still and to try not to fall asleep. Participants were encouraged to experience each session with the lights turned off, but they were also reminded that they were

free to turn the lights on whenever they needed them. The full instruction set can be found in the **Supplementary Material**.

Postsession Interviews

After each REST session, participants completed a debriefing interview with an experimenter to assess their experience. Questions were open-ended and asked about how the session went, their general experience, as well as questions about positive and negative thoughts or experiences during each session. These interviews were recorded and transcribed.

Setting

All assessments were conducted at the Laureate Institute for Brain Research facilities.

Sample Size Calculation

Sample size was estimated based on the primary outcome (orthostatic hypotension). We intended to obtain an estimate on the proportion of orthostatic hypotension with a margin of error <15%. Assuming no participant would show orthostatic hypotension, we calculated that $N = 19$ participants would provide an exact one-sided 95% confidence interval of 14.6%. Our recruitment assumed a 20% incompleteness rate (i.e., 23 participants needed).

Statistical Analysis

Primary Outcome

The standing-vs.-lying changes in BP were calculated for each participant, and the proportion of participants demonstrating orthostatic hypotension was evaluated using the exact binomial method.

Secondary Outcomes

The secondary outcomes were obtained on the same participants repeatedly across REST sessions, which were analyzed using LMM. Three different LMMs were built according to the availability of outcome measures, with the inference of interest focused on time of floating (for BP) or post-vs.-pre-REST changes (for all other secondary outcomes). Before assessing the secondary outcome measure of BP, we evaluated the reliability of the QardioArm vs. CSMED devices was evaluated for each session and each position using the Pearson correlation coefficient, and for all sessions and positions combined using the intraclass coefficient (ICC), determined by the sum of between-subject random-effect variance components divided by the total (between- and within-subject) random variance components obtained from a random-effects model with fixed intercept and random intercepts of subject, session, and measure (lying, sitting, and standing). The secondary outcome of BP measures were obtained during REST and were modeled by a LMM with session, time, and/or session-by-time interaction as potential fixed effects, and random subject and/or session intercepts, with a potential first-order autoregressive (AR1) correlation structure. For each of the SBP and DBP measures, we fitted three fixed-effects options (time only; time and Session main effects; main effects plus time and Session interaction) \times 5 random-effects/correlation-structure options (random subject intercepts

only; random session intercepts only; random subject and session intercepts; random subject and session intercepts plus random time slope; random subject and session intercepts plus AR1 correlation structure) = 15 combinations. The final models of optimal fixed and random effects were chosen by the smallest values of Bayesian Information Criterion (BIC). To make all other secondary outcome measures consistent in scale, each participant's raw and change scores for state anxiety, affect, body image disturbance, and interoceptive awareness were first converted into standardized units representing the percent of maximum possible (POMP) for each measure ranging from 0 to 100% (Cohen et al., 1999), a procedure modeled after our previous study (Feinstein et al., 2018a). This step made all measures in the same scale as VAS ranging from 0 to 100%. For all secondary outcome measures (except the BAS-2 scale), these POMP scores were then fitted to a 2nd LMM with fixed session (pre vs. post) effect and random subject and session intercepts. The inference of interests was on the post-vs.-pre-POMP changes.

For the BAS-2 scale, its POMP was fitted to a 3rd LMM with 2 fixed-effect options [intercept only; session (baseline, Chair-REST, Floatation-pool open, Floatation-pool enclosed 1 and 2) main effect] \times 3 random-effects/correlation-structure options (random subject intercept; random session intercept, random subject intercept and AR1 correlation structure across sessions) = 6 combinations. As before, the optimal fixed- and random-effects/correlation structure was determined by BIC.

Parameters in all LMMs were obtained using the restricted maximum likelihood (ReML) method, and the degrees of freedom were calculated using the Kenward–Roger method for LMM with only random effects but no AR1 correlation. The 95% confidence intervals (CIs) of the fixed-effect parameters were calculated by either the approximate method assuming normal distributions for the fixed-effects when AR1 correlation structure was evaluated, or otherwise by the percentile method using 500 parametric bootstrap samples. The overall time or session effects (i.e., variables with more than two levels) were assessed by the *F*-test via type III analysis of variance. Considering the early phase of the study and exploratory nature of the measures, no procedure was applied for multiple comparisons, and our inference focused on point and interval estimates. The whole analysis was performed on R version 3.5.2, using R packages lme4 version 1.1-21 (Bates et al., 2015) and nlme version 3.1-137 (Pinheiro et al., 2018) for LMM, lmerTest version 3.1-0 for the Kenward–Roger method (Kuznetsova et al., 2017), and emmeans version 1.3.5 for marginal means (Lenth, 2019).

RESULTS

Participant Demographics

Demographic characteristics for the 23 recruited partially weight-restored AN participants are listed in **Table 1**. During the structured clinical interview, the lifetime history of AN as defined by DSM-5 criteria was confirmed for all participants. The group showed an average age of onset of 15 years, an average illness duration of 9 years, and an average lowest self-reported BMI of

TABLE 1 | Demographics for the AN participant group.

Demographic	AN participants
Age	26.6 ± 9 years
Sex	22 females, 1 male
Education	14.9 ± 2.6 years
Age of illness onset	15.9 ± 4.9 years
Illness duration	9.0 ± 6.1 years
Lowest BMI	15.2 ± 1.9 units
Current Body mass index (BMI)	21.8 ± 2.7 units
Eating Disorder Examination Questionnaire Total score (range, 0–6)	2.26 ± 1.4 units
Spielberger Trait Anxiety Inventory (range, 20–80)	54.1 ± 8.8 units

Means ± standard deviation. AN, anorexia nervosa.

15.2. Although the current BMI average for the group was in the normal range, there was evidence of residual AN symptoms based on higher-than-normal EDE-Q global scores and elevated trait anxiety on the STAI-trait scale (Table 1).

Completion Rate

All 23 of the participants completed the chair and the open-pool sessions, but only 21 of them completed the two enclosed-pool sessions (see Figure 3 for CONSORT diagram). Of the two participants who withdrew after the second session, one cited a lack of interest in the float pool environment, and the other did not give a reason and stopped responding to appointment requests.

Session Duration

The median and IQR (in bracket parentheses) of each session duration was 90 [82, 90], 90 [85, 90], 90 [90, 91], and 90 [85, 90] min for chair, open pool, and the two enclosed pool sessions, respectively (see Supplementary Material), demonstrating that participants were able to tolerate the 90 min sessions.

Reliability Check for Blood Pressure Measurement

Across all sessions and positions, the median and IQR of the Pearson correlation coefficients measured between the QardioArm and CASMED devices was 0.80 [0.75, 0.83] and 0.80 [0.73, 0.83] for SBP and DBP, respectively (see Supplementary Material for details). When all sessions and positions were considered together, the ICC for systolic BP was 0.70 and for diastolic BP was 0.73, indicating good reliability across devices.

Primary Outcome of Orthostatic Hypotension

None of the participants completing any float session exhibited evidence of meeting the established criteria for orthostatic hypotension, suggesting a one-sided 95% CI of 13% (upper tail) in this population. Figure 4 displays the postfloat orthostatic BP measurements for each individual. At the group level, the median and range (in bracket parentheses) of the systolic and diastolic BP changes from lying to standing

was 5 [−12, 30] and 11 [−5, 46] mmHg, respectively, across the three sessions (Figure 5). With respect to other safety measures, we did not observe any falls upon standing, and there were no reports of feeling lightheaded or dizzy. Additionally, there were no adverse events such as acute panic attacks, severe dysphoria, agitation, or increased suicidal ideation.

Secondary Outcomes

Blood Pressure Responses During REST

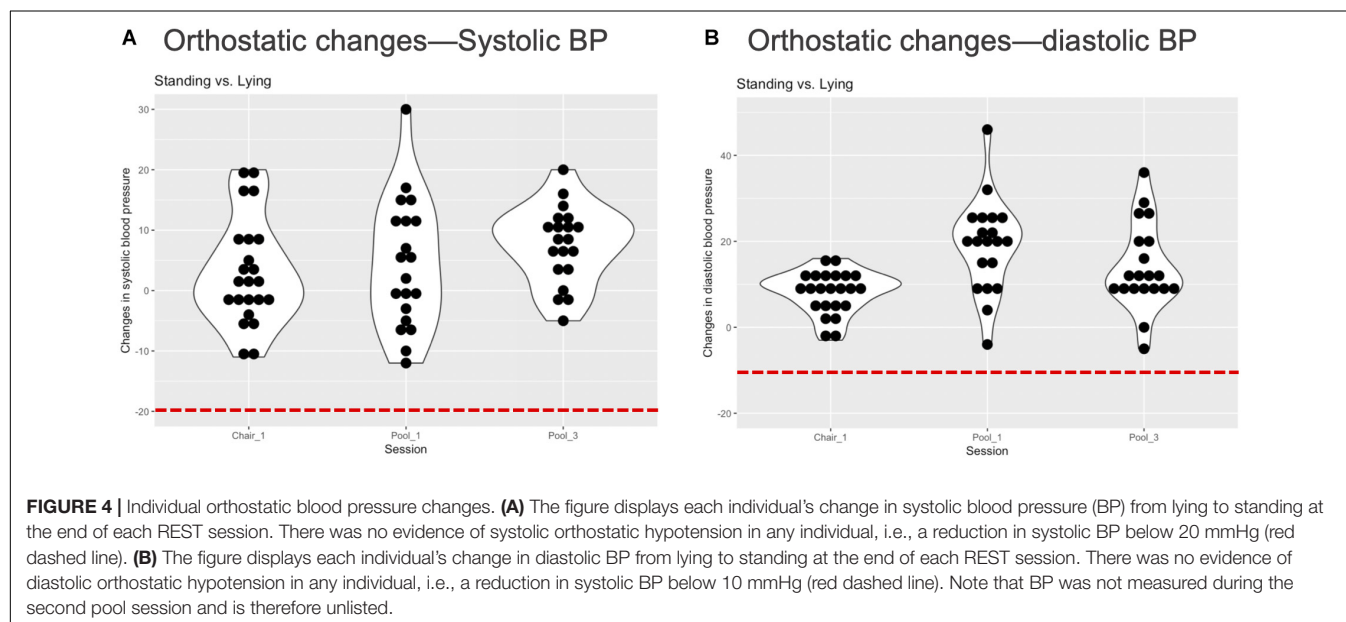
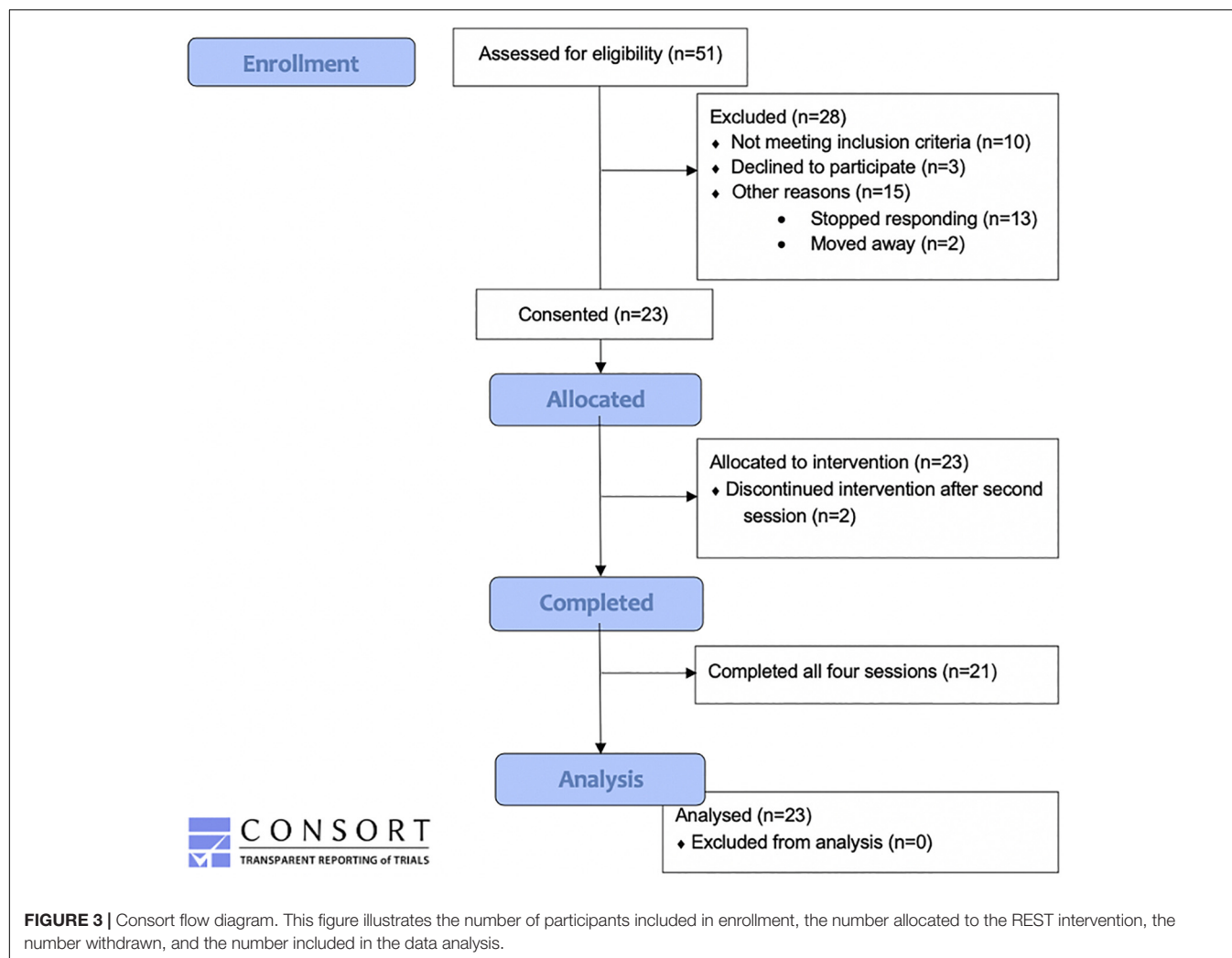
Systolic BP appeared to slightly increase during Chair-REST but showed a U-shaped pattern (decreased, remained stable, and then increased) during floatation-REST, with the largest decrease occurring during the final session (Figure 6A). Nonetheless, the differences across sessions were not substantial, and BIC suggested a LMM with only the time but not the session nor the session-by-time interaction fixed-effects. The LMM suggested the largest reductions (with 95% CI, *t*-statistic, and *p* value) ranged between 2.3 [(0.47, 4.13), *t*(592) = −2.47, *p* = 0.014] and 3.7 [(1.83, 5.49), *t*(592) = −3.93, *p* < 0.0001] mmHg between the 25th and 65th minutes of REST. Diastolic BP showed a more consistent decrease across both sessions of floatation-REST as compared with chair-REST (Figure 6B) and BIC also selected a LMM with only time as a fixed-effect. The LMM suggested the largest reductions ranged between 1.8 [(0.17, 3.48), *t*(592) = −2.17, *p* = 0.030] and 2.6 [(0.83, 4.39), *t*(592) = −2.88, *p* = 0.004] mmHg between the 25th and 65th minutes of REST.

State-Trait Anxiety Inventory-State Form

For the secondary outcome of STAI-state anxiety, the LMM suggested that the post-vs.-pre-POMP change was on average −15.2% (with a 95% CI of −18.3 to −12.1%) across all four REST sessions (*p* < 0.0001).

Positive and Negative Affect Schedule—Expanded Form

For the secondary outcome of PANAS negative affect, the LMM suggested that the post-vs.-pre-POMP change was on average −8.3% (with a 95% CI of −11.2 to −5.3%) across all four sessions (*p* < 0.0001). For the secondary outcome of PANAS positive affect, the LMM suggested that the post-vs.-pre-POMP change was on average 4.5% (with a 95% CI of 1.2 to 7.9%) across all four sessions (*p* = 0.007). For the secondary outcome of PANAS joviality, the LMM suggested that the post-vs.-pre-POMP change was on average 5.5% (with a 95% CI of 1.9–9.8%) across all four sessions (*p* = 0.007). For the secondary outcome of PANAS fatigue, the LMM suggested that the post-vs.-pre-POMP change was on average −13.9% (with a 95% CI of −20.2 to −8.4%) across all four sessions (*p* < 0.0001). For the secondary outcome of PANAS serenity, the LMM suggested that the post-vs.-pre-POMP change was on average 25.3% (with a 95% CI of 19.8, 31.5%) across all four sessions (*p* < 0.0001). Thus, participants reported reduced negative affect and fatigue from pre- to post-REST, whereas they reported increased positive affect, joviality, and serenity from pre- to post-REST.



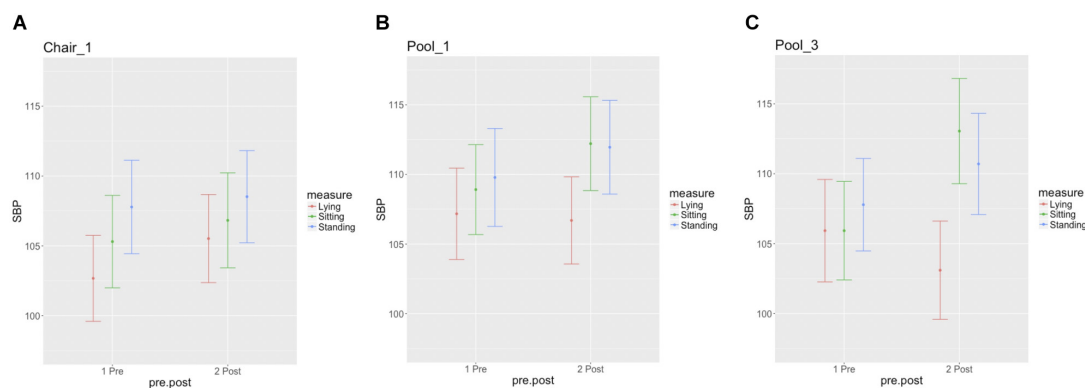


FIGURE 5 | Group summary of orthostatic blood pressure measures. Each figure displays the mean and standard error for the lying, sitting, and standing blood pressure measurements, at pre- and postsession intervals for the (A) chair-REST (B) the first and (C) final floatation-REST sessions.

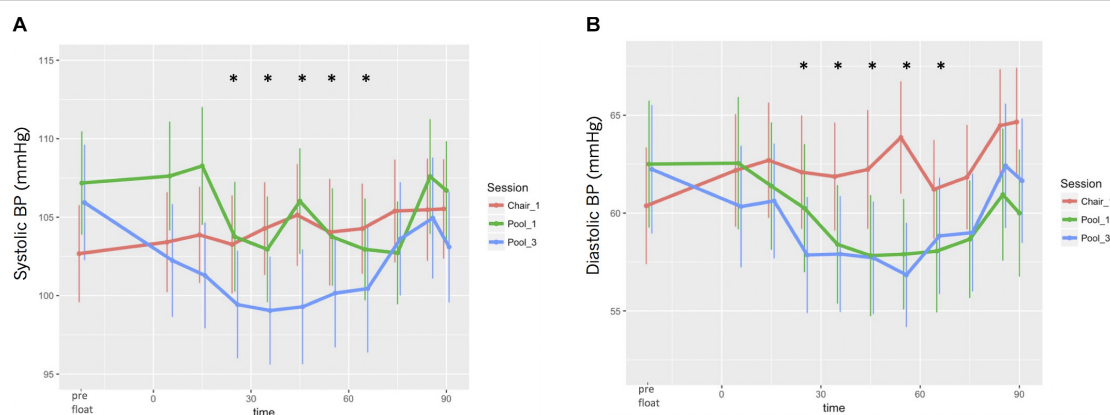


FIGURE 6 | Blood pressure responses during REST. (A) Systolic BP. (B) Diastolic BP. Significant reductions in both systolic and diastolic BP occurred between the 25th and 65th minutes of REST.

Visual Analog Scales

For the secondary outcome of VAS relaxation, the LMM suggested that the post-vs.-pre-POMP change was on average 21.9% (with a 95% CI of 17.3–26.1%) across all four sessions ($p < 0.0001$). For the secondary outcome of VAS stress, the LMM suggested that the post-vs.-pre-POMP change was on average -22.9% (with a 95% CI of -27.3 to -18.5%) across all four sessions ($p < 0.0001$). For the secondary outcome of VAS refreshed, the LMM suggested that the post-vs.-pre-POMP change was on average 32.0% (with a 95% CI of 27.0–36.4%) across all four sessions ($p < 0.0001$). For the secondary outcome of VAS energy, the LMM suggested that the post-vs.-pre-POMP change was on average 16.6% (with a 95% CI of 12.0–20.6%) across all four sessions ($p < 0.0001$). Thus participants reported reduced stress from pre- to post-REST, whereas they reported increased relaxation, refreshment, and energy from pre- to post-REST.

Interoceptive Awareness Measures

For the secondary outcome of heartbeat intensity, the LMM suggested that the REST-vs.-baseline POMP change was on

average 10.6% (with a 95% CI of 2.7–17.9%) across all four sessions ($p = 0.0032$). For the secondary outcome of breath intensity, the LMM suggested that the REST-vs.-baseline POMP change was on average 8.8% (with a 95% CI of 2.7–14.8%) across all four sessions ($p = 0.0043$). For the secondary outcome of stomach/digestive intensity, the LMM suggested that the REST-vs.-baseline POMP change was on average -1.8% (with a 95% CI of -8.7 to 5.1%) across all four sessions ($p = 0.581$). Thus, during REST, participants reported feeling significant increases in the intensity of the sensations from their heartbeat and breath but not from their stomach/digestive system.

Body Appreciation Scale 2

For the BAS-2, the score increased by 0.26 (95% CI from -0.06 to 0.58), 0.10 (from -0.28 to 0.48), 0.10 (from -0.32 to 0.51), and 0.08 (from -0.34 to 0.50) across the four sessions of REST. The type III analysis of variance comparing the post-float assessments vs. the initial baseline assessment did not observe a statistically significant difference across sessions: $F(4,84) = 1.38$, $p = 0.25$, and BIC suggested a model without a session effect.

Body Image States Scale

For the BISS, a negative attitudinal body image secondary outcome measure, the LMM suggested that the post-vs.-pre-POMP change was on average 1.05% (with a 95% CI of 0.7–1.5%) across all four REST sessions ($p < 0.0001$), suggesting a statistically significant increase in more favorable body image state.

Photographic Figure Rating Scale

For body dissatisfaction ratings on the PFRS, a visual perceptual body image secondary outcome measure, the LMM suggested that the post-vs.-pre-POMP change was on average -4.66% (with a 95% CI of -6.58 to -2.67%) across all four float sessions ($p < 0.0001$). Thus, participants reported significantly reduced body image dissatisfaction from pre- to post-REST.

Effect Sizes for Secondary and Exploratory Outcome Measures

Effect size calculations (Cohen's d) for all secondary and exploratory outcome measures are listed in **Figure 7**. REST elicited moderate (0.5) to large (0.8 and greater) effects on ratings of state anxiety, stress, refreshment, serenity, relaxation, energy, and PFRS body dissatisfaction. REST elicited small (0.2)

to moderate (0.5) effects on BP, heartbeat and breath intensity, and negative attitudinal body image. REST appeared to have minimal effects on stomach/gastrointestinal sensation intensity ratings and positive body appreciation ratings.

Postsession Interviews

A complete transcription of the post-REST interviews is provided in the **Supplementary Material**. Overall, most participants found the REST experience to be positive. Many participants stated that the idea of the REST environment elicited some apprehension, particularly during the initial minutes of exposure to REST or when they turned the lights off (in which case they kept the lights on during the session). These feelings were usually followed by a sense of physical relaxation and a slowing of their thought process. Many individuals spontaneously reported experiencing their heartbeat and breathing sensations more intensely, as well as a sense of weightlessness, particularly in the floatation pools. Many found that the REST environment elicited thoughts about their bodies and body image concerns, with a couple of individuals reporting performing body checking maneuvers, but more individuals noted that they experienced a positive change in their relation to their bodies during REST. For example, some individuals reported positively experiencing a sense that they could not feel their outer body limits or their stomach sensations at certain times, eventually moving their limbs or trunk to re-engage the sense of body ownership. A few reported consciously noting that their sense of distress and focus about their body image was lower during the sessions. When directly queried, there were more positive endorsements of the REST environments during each float than there were negative endorsements.

DISCUSSION

We conducted this single group open-label study with the primary aim of investigating the safety and tolerability of REST in AN. Secondly, we aimed to explore the impact of REST on affective symptoms, body image disturbance, and interoception. Prior to the current study, there have been no studies documenting the safety or tolerability of the procedure in any eating disorders population, and we could find only one brief theoretical review of the topic (Barabasz, 1993). Therefore, this study represents the first empirical investigation of REST in eating disorders.

With respect to the primary outcome of safety, we did not observe any evidence of orthostatic BP reductions for either the systolic or diastolic measure. We also did not observe any falls or other signs of adverse experiences such as acute panic attacks, severe dysphoria, agitation, or suicidal ideation in response to the REST environment. Some participants reported mild apprehension with exposure to the dark, with thoughts about their body image, or with worry about having increased anxiety in the REST environment, but ultimately these were felt to be tolerable as evidenced by the significant reduction in state anxiety, comments provided during postsession interviews, and high rate of study completion (21 out of 23 individuals

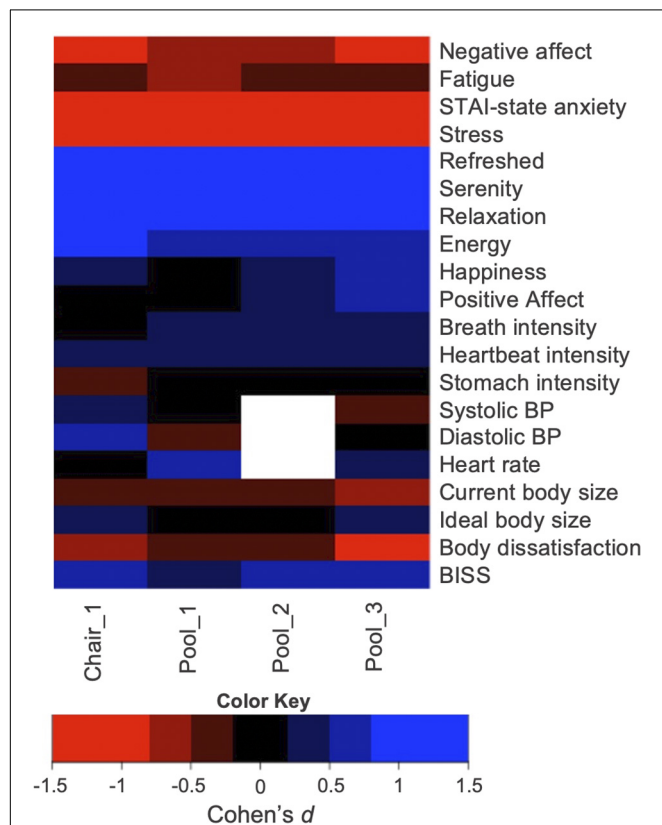


FIGURE 7 | Effect size estimates for the secondary outcome measures. Note that there were no blood pressure measures taken during the second pool float, and therefore that field is blank. A table showing the exact effect size estimates and associated confidence intervals is located in the **Supplementary Material**.

completing the entire four session protocol). Collectively, these results suggest that the participants in this study safely tolerated the REST environment and found it to be acceptable. The sample recruited for this study was composed of outpatients with a lifetime diagnosis of AN, with moderate levels of residual symptoms according to their scores on the EDE-Q, and heightened levels of trait anxiety according to the STAI. To reduce the risk of falling while in an unsupervised environment, future studies of more acutely ill individuals (e.g., inpatients) would need to demonstrate that they do not exhibit signs of orthostatic hypotension before commencing REST.

With respect to the secondary outcome measures, we observed significant reductions in several affective measures from pre- to post-float including self-reported state anxiety, stress, fatigue, and negative affect, as well as significantly increased positive affect, relaxation, joviality, refreshment, energy, and serenity. The observed reductions in state anxiety on the STAI are potentially noteworthy for several reasons: (1) current anxiolytic medications such as benzodiazepines (Steinglass et al., 2014) and behavioral treatments for anxiety in AN show limited efficacy, (2) the magnitude of the effect was large, and (3) they mirror our previous observation of acute anxiety reductions in a transdiagnostic group of individuals with heightened anxiety sensitivity (Feinstein et al., 2018a). At this juncture, it is important to emphasize that such observations are to be regarded as preliminary until they can be verified in subsequent studies employing control conditions and randomized participant assignment, to account for the potential impact of expectancies on responses to this novel behavioral intervention.

In the current study, we observed significant reductions in body dissatisfaction measured *via* the PFRS, with effect sizes ranging from small during the first few floats to large during the final float. This amounted to a POMP reduction of nearly 5%. We also observed an improvement in the BISS, a negative attitudinal measure of body image disturbance but to a much smaller extent (only about 1% POMP). There was also no effect of floating on the BAS, a positive attitudinal measure of body image. These results are important because it is well known that individuals with AN often retain body image disturbances long after achieving weight restoration, and body image disturbance has been identified as a predictor of relapse (Keel et al., 2005). Explanatory models of AN have traditionally focused on the roles of personality traits [e.g., obsessiveness (Lilenfeld et al., 2006), perfectionism (Zucker et al., 2011), cognitive inflexibility (Friederich and Herzog, 2011)], culturally derived values [e.g., “thinness ideal” (Levine and Smolak, 2010)], or family environment (Klump et al., 2002). While such models have revealed key aspects of eating disorders, it has been suggested that treatments directed toward them yield only moderate recovery rates (Pike, 1998; Couturier et al., 2013; Galsworthy-Francis and Allan, 2014; Tchanturia et al., 2014), indicating that research into novel therapies is needed. The possibility that REST could have a therapeutic impact on measures of body image is potentially noteworthy, but it should also be noted that the observed effects were short term and were not compared against a control intervention.

We also observed significant changes in interoceptive awareness for heartbeat and breathing sensations (with a medium effect size) but not for the stomach/digestive system. Increased cardiorespiratory sensation changes during floatation-REST mirrored our previous observation with anxious individuals (Feinstein et al., 2018a), but the lack of change in stomach/digestive system changes was noteworthy given the predominant focus on such symptoms outside of meal times, such as fullness, bloating, and constipation (Robinson, 1989; Halmi and Sunday, 1991; Sato and Fukudo, 2015) in AN. While we cannot know whether this pattern of interoceptive changes is the source of their positive affective responses to REST, it would seem that changes in gastrointestinal (GI) sensation were not a major contributing factor. The fact that GI sensations were actually diminished during REST (and not heightened like other interoceptive sensations) is also important from a safety perspective, as it highlights that REST does not seem to exacerbate the intensity of their already uncomfortable GI sensations. Interestingly, several recent studies exclusively using self-report measures have suggested that interoceptive awareness may be positively associated with positive body image in adolescents and adults (Todd et al., 2019a,b). The current study extends this link *via* physical exposure of AN individuals to the REST environment, finding both increases in cardiorespiratory interoceptive sensations and improved positive body image measures.

Limitations

This study has several limitations that elicit considerations for future investigations. For this initial study, we recruited a relatively small sample that was partially weight restored, was composed of individuals with a lifetime history of AN (i.e., some did not have a current diagnosis of AN), and was thoroughly screened to exclude the presence of acute medical illness. We therefore cannot rule out the possibility that a larger or more clinically heterogeneous sample might have had a different outcome with respect to safety, tolerability, and subjective outcome. The lack of a control condition in our use of an open-label design means that the observed results could be susceptible to the effects of expectation. Although such effects can impact any type of clinical trial, they are especially important to consider when conducting non-pharmacological clinical trials. In the current study, we attempted to constrain such expectations by providing participants with only the minimum information necessary for them to consider the potential risks and time constraints involved in study participation. We also decided against randomizing to a control condition in this initial study based on (1) our primary interest in gathering safety and feasibility data and (2) ensuring in this initial study a gradual exposure to REST so as to minimize potential safety risks from a more rapid immersion directly into floatation-REST. Thus our approach followed the development principles of behavioral clinical trials optimization [e.g., the ORBIT model (Czajkowski et al., 2015)], in which the early-phase (akin to Phase I) relates to ‘defining and refining’ the intervention, leading to future proof-of-concept and pilot feasibility studies (akin to Phase II), and finally, late-phase efficacy trials (akin to Phase III). Now that there

are some safety data available, we recommend that future studies investigating the efficacy of REST in modifying clinically relevant outcomes incorporate a randomized control condition (e.g., a wait-list control group) or a crossover design (Feinstein et al., 2018a). Other comparator options include employing a usual care group or attentional control group (Freedland et al., 2011); these latter approaches may be preferable on an inpatient unit, where usual care for AN is intensive and includes multiple forms of treatment such as pharmacotherapy and psychotherapy. Another consideration is the finding that the chair-REST condition exhibited effect sizes that were similar to floatation-REST for some of the secondary outcome measures, such as negative affect, anxiety, stress, relaxation, serenity, and refreshment, potentially raising questions about whether exposure to the pool environment would even be necessary to elicit some of these effects. However, the observed effects on body image (particularly, body dissatisfaction on the PFRS), interoception, BP, as well as positive affect could indicate some specificity to the float pool environment. Future trials employing a randomized controlled design can help disentangle whether specific types of REST (Suedfeld and Borrie, 1999) are more efficacious than others for treating AN. Finally, a third limitation relates to the lack of control for multiple comparisons when examining the numerous secondary objectives. With these considerations in mind, we regard these results as preliminary and hypothesis generating for future studies. We have chosen to emphasize the observed effect sizes (which also must be interpreted with caution given the aforementioned lack of a control group to manage potential influences of expectancy), in hopes that they are of use in the design of future studies.

CONCLUSION

Overall, the findings from this initial trial suggest that individuals with partially weight-restored AN can safely tolerate the physical effects of REST. They may also experience improvements in anxiety and body image disturbance, but further studies involving randomized controlled designs would be required to confirm this finding.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation, to any qualified researcher.

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ETHICS STATEMENT

This study involving human participants was reviewed and approved by Western Institutional Review Board. All participants provided their written informed consent to participate in this study. Written informed consent was also obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

AUTHOR CONTRIBUTIONS

SK and JF conceived the research idea, with input into the experimental design from SM, BP, VU, and MP. VU, RP, EB, and SC collected, collated, and transcribed the data. H-WY, SK, and JF analyzed the data. SK, JF, and H-WY drafted and edited the manuscript. All authors have read and approved the final manuscript before submission.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.567499/full#supplementary-material>

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Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Reduced environmental stimulation in anorexia nervosa:

an early phase clinical trial

Supplemental Information

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Pre session instructions – chair REST (session #1)

This will be your first float, out of four. Today you will be floating in the chair. Today we will be recording your blood pressure, heart and breathing rate during the float.

A few things to remember: while floating, try to remain still. It's okay if you move, but just try your best not to move too much. Also, try your best not to fall asleep. We realize that you might fall asleep on occasion, but it's important to keep in mind that our study is focused on what happens to the brain while you are awake. Try your best to float with the lights off. You are free to turn the lights on whenever you need them, but please try your best to float with the lights off.

You can float for as long as you want, for up to 90 minutes. You are always free to stop floating at any time. Don't worry, we'll be sure to turn on some music at the end of the session to let you know that the float is almost over. Please remain floating with the lights off until the music stops, at which point we will turn on the lights for you.

After the float is over, you can put on your bathrobe and we will help take off your sensors before showering. We don't want to interfere with your float experience before we collect your ratings, so we will try to minimize our dialogue until after we collect your ratings.

After you have showered, all you need to do is come back to the lounge area and take a seat on the couch. We will collect your ratings and interview you about your experience.

Before you start floating, we will be collecting 3 minutes of baseline measurements. There is nothing for you to do except remain quiet and still while you stand next to the chair. I will let you know when the baseline period ends, at which point you can begin your float session.

Do you have any questions? Are you ready to begin?

Pre session instructions – open pool float (session #2)

This will be your second float, out of four. Today you will be floating in the open pool. Today we will be recording your blood pressure, heart and breathing rate during the float.

A few things to remember: while floating, try to remain still. It's okay if you move, but just try your best not to move too much. Also, try your best not to fall asleep. We realize that you might fall asleep on occasion, but it's important to keep in mind that our study is focused on what happens to the brain while you are awake. Try your best to float with the lights off. You are free to turn the lights on whenever you need them, but please try your best to float with the lights off.

You can float for as long as you want, for up to 90 minutes. You are always free to stop floating at any time. Don't worry, we'll be sure to turn on some music at the end of the session to let you know that the float is almost over. Please remain floating with the lights off until the music stops, at which point we will turn on the lights for you.

After the float is over, you can put on your bathrobe and we will help take off your sensors before showering. We don't want to interfere with your float experience before we collect your ratings, so we will try to minimize our dialogue until after we collect your ratings.

After you have showered, all you need to do is come back to the lounge area and take a seat on the couch. We will collect your ratings and interview you about your experience.

Before you start floating, we will be collecting 3 minutes of baseline measurements. There is nothing for you to do except remain quiet and still while you stand next to the pool. I will let you know when the baseline period ends, at which point you can begin your float session.

Do you have any questions? Are you ready to begin?

Pre session instructions – enclosed pool float (session #3)

This will be your third float, out of four. Today you will be floating in the domed pool. Today we will not be measuring your blood pressure, heart or breathing rate during the float.

A few things to remember: while floating, try to remain still. It's okay if you move, but just try your best not to move too much. Also, try your best not to fall asleep. We realize that you might fall asleep on occasion, but it's important to keep in mind that our study is focused on what happens to the brain while you are awake. Try your best to float with the lights off. You are free to turn the lights on whenever you need them, but please try your best to float with the lights off.

For this float, we would like you to float for the full 90 minutes. However, you are always free to stop floating at any time if you want to get out early. We would also like you to float with the lights off. Don't worry, we'll be sure to turn on some music at the end of the session to let you know that the float is almost over. Please remain floating with the lights off until the music stops, at which point we will turn on the lights for you.

After the float is over you can immediately begin showering. We don't want to interfere with your float experience before we collect your ratings, so we will try to minimize our dialogue until after we collect your ratings.

After you have showered, all you need to do is come back to the lounge area and take a seat on the couch. We will collect your ratings and interview you about your experience.

Before you start floating, we will be collecting 3 minutes of baseline measurements. There is nothing for you to do except remain quiet and still while you stand next to the pool. I will let you know when the baseline period ends, at which point you can begin your float session.

Do you have any questions? Are you ready to begin?

Pre session instructions – enclosed pool float (session #4)

This will be your fourth and final float, out of four. Today you will be floating in the domed pool.

Today we will be recording your blood pressure, heart and breathing rate during the float.

A few things to remember: while floating, try to remain still. It's okay if you move, but just try your best not to move too much. Also, try your best not to fall asleep. We realize that you might fall asleep on occasion, but it's important to keep in mind that our study is focused on what happens to the brain while you are awake. Try your best to float with the lights off. You are free to turn the lights on whenever you need them, but please try your best to float with the lights off.

For this float, we would like you to float for the full 90 minutes. However, you are always free to stop floating at any time if you want to get out early. We would also like you to float with the lights off. Don't worry, we'll be sure to turn on some music at the end of the session to let you know that the float is almost over. Please remain floating with the lights off until the music stops, at which point we will turn on the lights for you.

After the float is over, you can put on your bathrobe and we will help take off your sensors before showering. We don't want to interfere with your float experience before we collect your ratings, so we will try to minimize our dialogue until after we collect your ratings.

After you have showered, all you need to do is come back to the lounge area and take a seat on the couch. We will collect your ratings and interview you about your experience.

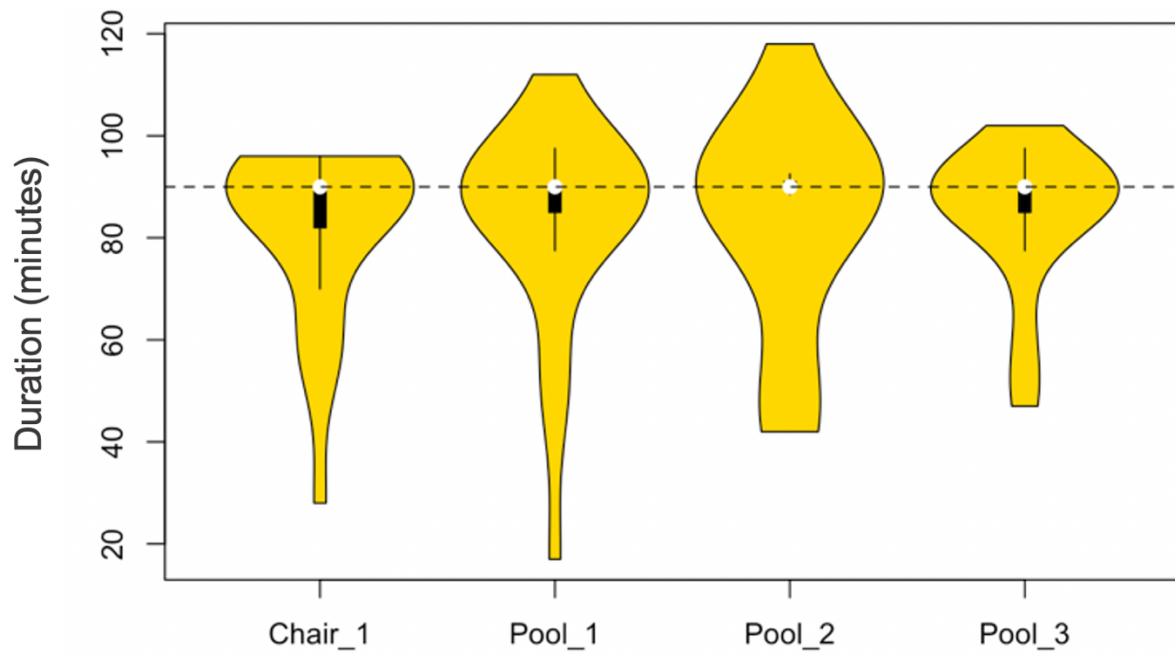
Before you start floating, we will be collecting 3 minutes of baseline measurements. There is nothing for you to do except remain quiet and still while you stand next to the pool. I will let you know when the baseline period ends, at which point you can begin your float session.

Do you have any questions? Are you ready to begin?

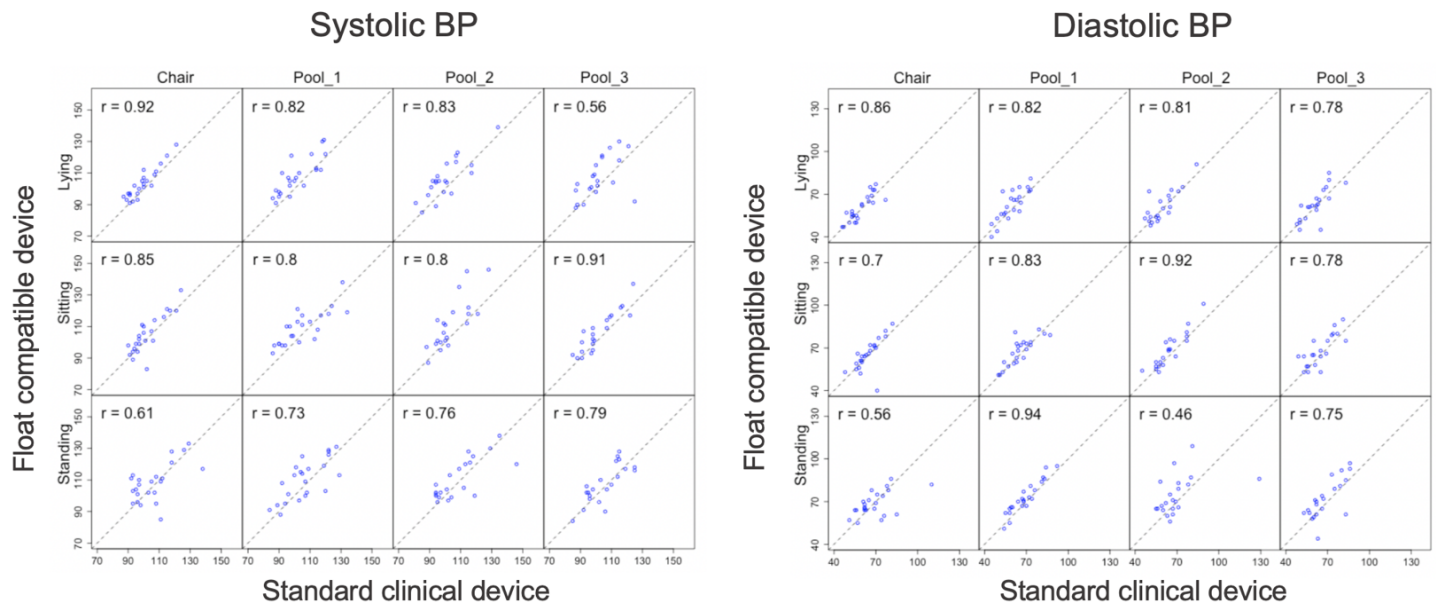
Supplemental Table 1. Individual effect sizes and 95% confidence interval estimates for all secondary outcome measures.

Measure	Session	Effect size	Lower boundary	Upper boundary
Negative Affect	Chair_1	-1.13	-1.78	-0.74
Fatigue	Chair_1	-0.47	-0.96	-0.08
State Anxiety	Chair_1	-1.2	-1.98	-0.86
Stress	Chair_1	-1.28	-1.86	-0.94
Refreshed	Chair_1	1.33	0.88	2.19
Serenity	Chair_1	1.08	0.65	1.85
Relaxation	Chair_1	1.22	0.84	1.86
Energy	Chair_1	1.13	0.78	1.7
Happiness	Chair_1	0.4	0.02	0.9
Positive Affect	Chair_1	0.06	-0.4	0.47
Breath Intensity	Chair_1	0.08	-0.4	0.47
Heartbeat Intensity	Chair_1	0.38	-0.02	0.87
Stomach Intensity	Chair_1	-0.33	-0.81	0.07
Systolic BP	Chair_1	0.45	0.03	1.03
Diastolic BP	Chair_1	0.74	0.27	1.52
Heart Rate	Chair_1	0.03	-0.48	0.5
Current Body Size	Chair_1	-0.5	-0.86	-0.17
Ideal Body Size	Chair_1	0.35	0	0.71
Body Dissatisfaction	Chair_1	-0.67	-1.14	-0.35
BISS	Chair_1	0.71	0.37	1.14
Negative Affect	Pool_1	-0.59	-1.55	-0.13
Fatigue	Pool_1	-0.65	-1.05	-0.33
State Anxiety	Pool_1	-1.12	-2.22	-0.61
Stress	Pool_1	-1.3	-1.94	-0.95
Refreshed	Pool_1	1.09	0.6	2.05
Serenity	Pool_1	1.23	0.74	2.13
Relaxation	Pool_1	1.13	0.61	2.21
Energy	Pool_1	0.56	0.16	1.12
Happiness	Pool_1	0.17	-0.25	0.64
Positive Affect	Pool_1	0.14	-0.28	0.57
Breath Intensity	Pool_1	0.34	-0.07	0.86
Heartbeat Intensity	Pool_1	0.44	0.02	1
Stomach Intensity	Pool_1	-0.01	-0.46	0.42
Systolic BP	Pool_1	-0.08	-0.47	0.5
Diastolic BP	Pool_1	-0.38	-0.76	0
Heart Rate	Pool_1	0.6	0.12	1.43
Current Body Size	Pool_1	-0.32	-0.86	0.08

Ideal Body Size	Pool_1	0.12	-0.3	0.45
Body Dissatisfaction	Pool_1	-0.3	-0.73	0.11
BISS	Pool_1	0.48	0.11	0.91
Negative Affect	Pool_2	-0.53	-1.15	-0.1
Fatigue	Pool_2	-0.43	-0.96	-0.01
State Anxiety	Pool_2	-0.99	-1.8	-0.5
Stress	Pool_2	-1.26	-2.03	-0.81
Refreshed	Pool_2	1.26	0.75	2.23
Serenity	Pool_2	1.01	0.61	1.68
Relaxation	Pool_2	1.43	0.91	2.55
Energy	Pool_2	0.61	0.17	1.27
Happiness	Pool_2	0.26	-0.16	0.93
Positive Affect	Pool_2	0.34	-0.08	0.88
Breath Intensity	Pool_2	0.49	0.07	1.06
Heartbeat Intensity	Pool_2	0.33	-0.09	0.98
Stomach Intensity	Pool_2	-0.11	-0.5	0.39
Current Body Size	Pool_2	-0.46	-1.24	0
Ideal Body Size	Pool_2	0.12	-0.32	0.47
Body Dissatisfaction	Pool_2	-0.41	-1.01	0
BISS	Pool_2	0.77	0.51	1.15
Negative Affect	Pool_3	-0.91	-1.32	-0.66
Fatigue	Pool_3	-0.43	-1.07	-0.01
State Anxiety	Pool_3	-1.42	-2.1	-1.02
Stress	Pool_3	-1.34	-2.12	-0.91
Refreshed	Pool_3	1.58	1.03	2.61
Serenity	Pool_3	1.67	1.28	2.41
Relaxation	Pool_3	1.64	1.21	2.59
Energy	Pool_3	0.76	0.32	1.54
Happiness	Pool_3	0.59	0.24	1
Positive Affect	Pool_3	0.69	0.28	1.29
Breath Intensity	Pool_3	0.35	-0.08	0.83
Heartbeat Intensity	Pool_3	0.27	-0.15	0.8
Stomach Intensity	Pool_3	0.09	-0.34	0.57
Systolic BP	Pool_3	-0.24	-0.98	0.17
Diastolic BP	Pool_3	-0.08	-0.56	0.37
Heart Rate	Pool_3	0.27	-0.17	1.03
Current Body Size	Pool_3	-0.79	-1.24	-0.51
Ideal Body Size	Pool_3	0.47	0.22	0.77
Body Dissatisfaction	Pool_3	-0.91	-1.35	-0.63
BISS	Pool_3	0.77	0.36	1.35



Supplemental Figure 1. Session duration. Violin plot showing the distribution of float durations for each float session. The white circles indicate the maximum duration of the float session (90 minutes). Most individuals floated for the entire 90 minutes.



Supplemental Figure 2. Reliability check for blood pressure (BP) devices. Reliability was assessed for each visit by computing the intraclass correlation coefficient (ICC) between the standard clinical device (CASMED 740) and the float compatible device (QardioArm wireless BP monitor secured in a waterproof sleeve). The overall reliability for the systolic BP measurements was 0.70, and for the diastolic BP measurements was 0.73. All units are in millimeters of mercury (mmHg).

Chair-REST (Session #1)¹**Q- In general, how did the float go?**

It was pretty pleasant. It was what I expected it to be. I mean it was about, it was no more pleasant than I expected or any less pleasant than just sitting in the chair and having the lights off.

-PARTICIPANT 1

Um, it was good.

-PARTICIPANT 2

Um, I think it went very well. Um, it was really enjoyable and relaxing (laughs).

-PARTICIPANT 3

Um... I think I forgot that the first time was gonna be like, just in the chair and then I thought maybe a chair in a pool, so...It was, um, it was okay. But I didn't, I got a little antsy.

-PARTICIPANT 4

Pretty well. Do you want me to elaborate? [Yes please.] Okay. The beginning was really great. Then I ended up falling asleep for a little bit, and then I woke back up. And then it was still good. And then at the very end I was just like DONE. [How long do you think

you felt done?] Probably 30 minutes, 20 minutes.

-Participant 5

I thought it was really fun. I really enjoyed it! (laughs)

-PARTICIPANT 6

Um, it went okay. At first I was really stressed out. And then I got so stressed out that I got tired. And then it felt like it lasted forever (laughs). [Why did you get stressed out?] I don't know! I got like a lot of emotions all at once. Like when I first started. Like I got really panicked kind of. And sad. It was weird.

-PARTICIPANT 7

Great. It went really well. [Can you elaborate a little more?] Um, it was a lot more relaxing than I thought it was gonna be, just sitting in a chair. Lying in a chair. And, um, there were times where I did feel like, um, I was aware that I didn't feel heavy. So, that was kind of a different experience.

-PARTICIPANT 8

Um, the float was comfortable and relaxing and I enjoyed the posture of laying back. My neck felt comfortable, um, but I did

¹ Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by the -A prefix.

have to use the bathroom pretty significantly for probably three quarters of the float so I had to end early to go to the bathroom.

-PARTICIPANT 9

It went well! Um, it was comfortable, relaxing.

-PARTICIPANT 10

I think it went fine. Do you want more detail? (laughs) [Yes please!] Um, I slept, which I was trying not to, but I had to. I was worried about being bored or, I was worried about being stressed about other stuff I need to be doing and I didn't feel that way so that was good.

-PARTICIPANT 11

It was okay. Not great. Kind of uncomfortable because of my back pain. And, just got distracted kind of easily and my mind was racing so I couldn't really relax.

Q- What did you think about while floating that made your mind race?

A- I think just the boredom did, so...

-PARTICIPANT 12

It went really well! I felt very relaxed, to my surprise actually.

-PARTICIPANT 13

In general the float went pretty well. Um, felt pretty relaxed and at ease, especially in the beginning. Near the end I started to get kind of fidgety and a little anxious. Um, and just kind of like "okay I'm ready to go". But overall it was pretty relaxing.

-PARTICIPANT 14

It went really well. Time went by faster than I expected it. It was pretty relaxing. I didn't actually fall asleep fall asleep, but I was like super relaxed. I think I fell asleep anyway (laughs). But no I was really relaxed.

-PARTICIPANT 15

It was fine!

-PARTICIPANT 16

Good! Good, yeah.

-PARTICIPANT 17

Um...pretty well. I didn't feel anything at first, but then I was relaxed and got to, um, enjoy my body I guess?

-PARTICIPANT 18

Um, pretty good. It was kind of different than I expected. Like I didn't know once it started, if you were not present, like was I gonna feel something different? I thought there was like a button you were gonna push that was gonna make the chair feel like it disappeared? Um but that didn't

really happen but I did feel at some points like, I was kind of like floating, but not like...Like I could still feel the chair. So...it was kind of a weird, weird sensation.

-PARTICIPANT 19

It was good. I spent a lot of time worrying about who was supposed to be seeing anything at all, or not. Um...and the beginning, I don't know when it stopped, I just felt like I was thinking a lot and I didn't know if I was supposed to be thinking about something, make myself not think about anything, or what I should be thinking about. So that was like the very beginning and then somewhere in there it stopped or changed. [So you felt that you stopped worrying about it?] Mhmm. But I don't know how long that was.

-PARTICIPANT 20

It went well.

-PARTICIPANT 21

Um, good. It was relaxing and comfortable. Um, it went well.

-PARTICIPANT 22

Think it went well. I don't know how long I was in the chair but for the most part I felt really calm. [You were there for an hour.] That's what I thought! That's what I put on there.

-PARTICIPANT 23

Open pool float (Session #2)²

Q- In general, how did the float go?

It was very pleasant, relaxing. Um... I did experience a desire like I said, to swim around because I knew I was in water, so I wanted to swim. But, it was relaxing just to lie there. By the end I was not as interested in being still and wanted to get out. But overall it was pleasant.

-PARTICIPANT 1

Um, it went really well. Yeah. Yeah it was (hard to relax) at the beginning and at the end, but the middle was good.

-PARTICIPANT 2

It was really good. It was a lot more enjoyable than the last one. Um, it was just really interesting. Um, I didn't really know what to expect. I kind of lost my body, if that makes sense. So it was really neat.

-PARTICIPANT 3

It was pleasant. Um (laughs) I thought a lot about like my body position. So that was, it was interesting. I don't know. I expected to not think about that as much.

-PARTICIPANT 5

Um, it was better than I thought it was gonna be.

-PARTICIPANT 7

Great! I really loved it (laughs). Feeling weightless.

-PARTICIPANT 8

Um, the float went well. It took a little while to get acclimated to the environment, being my first float ever. Um, but it was, it, after 20 or 30 minutes I definitely was calm and so I felt like, um, like it was an enjoyable experience.

-PARTICIPANT 9

It went really well.

-PARTICIPANT 10

It was wonderfully relaxing.

-PARTICIPANT 12

In general it went pretty well. I was pretty relaxed and, I don't know, it was just a very unique experience. [What made it unique?] I don't know. There's numerous times where I couldn't really feel my body. I couldn't kind of feel where it started and then where the water was, and then I opened my eyes and I remember (mumbling) "oh and I can't see anything

² Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

either. And I can't hear anything." So I was like "okay, sensations!"

-PARTICIPANT 14

It went well.

-PARTICIPANT 16

Um, my experience was, um, pretty negative. Um I think when I had the lights off at first was when I was most panicked. Like too much going on in my head and not having any other senses around me, like not having my body. Um, like there was no safe place for me. So I did as much as I could with the lights off but then I needed to turn them on about halfway through or something... [And you just left them on when you turned them on?] Yeah. Yeah. And it was better after that. It wasn't nearly as like—I mean I was crying for the whole time the lights were off. Um, so it was, it was scary for me.

-PARTICIPANT 18

Um it went by faster than the chair (laughs). And I, I enjoyed it. I didn't really stay—the end part, like the last part, I stayed more still but in the beginning half I was kind of like, kind of like pushing myself back and forth I guess. So that was kind of fun, um, and yeah I liked it. The only thing that I didn't like was, um, it took a while for my neck to get used to it. Had to like position itself so it wouldn't be tight.

-PARTICIPANT 19

It was great! It was good.

-PARTICIPANT 20

It went well.

-PARTICIPANT 21

Um, I was pretty anxious. I was calm for part of the time but then—I was calm for a little while and then that went away and I got anxious. Yeah I would say like 20% of the time I felt good and that other 80% I was anxious.

-PARTICIPANT 22

It went really well. It was really relaxing and I was able to stay in for the whole time. And I would've stayed in longer too.

-PARTICIPANT 23

It was okay. It wasn't as good as the first one... Um I think it was just more awkward I guess. I don't know I just didn't feel used to something like that. Well at first like keeping my head, like trying to like relax my neck and my head. Um, and then when I did I felt like the water was right, like at the center area of my face. But yeah I don't know it just felt kinda long. It's just something I'm not used to.

-PARTICIPANT 17

It went really well. I adjusted to it fairly...I don't know it took about 20 minutes to...Ok so I was comfortable when I got in but then I felt nauseas for about 20 minutes after I laid back. Um and I was a little bit tense but then was able to relax pretty easily. The time went by faster than I thought it would. Um... it was extremely—I got out of the pool a lot more relaxed than when I got in. So overall it was really pleasant.

-PARTICIPANT 15

It went well. It was, it took a while to get relaxed, but I did feel like I eventually got to a very, very relaxed, pretty comfortable state.

-PARTICIPANT 11

Um, it was enjoyable in general. It was just kind of taking some getting used to. I felt like I was paralyzed for a few minutes. Kinda freaked me out. Yeah. Once I started to get into the floating, like I felt like, what if my body can't move.

-SUBJECT 4

It went well! Took a little bit of getting used to at first, but...

-PARTICIPANT 13

(laughs) Not very well. It was not relaxing at all. I was anxious the entire time. So, eventually I just decided it wasn't gonna get

any better so I just got out before I panicked. Um, I really didn't like not having any clothes on. Like that made me feel very vulnerable. And then I could just hear my heart, like pulsing in my ears and stuff, which made me just, I don't know if that makes me more anxious because I feel like it was beating faster than it usually does. And then just like thinking about other people being in the pool without any clothes on and just like contamination stuff, and so I was like just ready to get out (laughs).

-PARTICIPANT 6

Enclosed pool float (Session #3)³

Q: In general, how did the float go?

It was so miserable. I hated it so much. I wanted to get out almost the second I got in. Um... I'm trying to figure out why I would just, I didn't want to be there. I felt anxious and when I tried to relax and um... you know, open up to the experience and so I mean I breathed and... um... did try to let myself go, but I didn't, I didn't enjoy it. And at one point... at one point kind of after I had been there probably half way through, I kind of started getting nerv—like, um...feeling claustrophobic. The air was heavy and I just... I mean I could breath, but it wasn't... wasn't pleasant.

-PARTICIPANT 1

Good.

-PARTICIPANT 2

It went really well. It was different than the other one. I couldn't move a lot more. But I stayed awake the whole time. But yeah, I wouldn't say it was better, but it was really positive.

-PARTICIPANT 3

It went better than the first time. I felt a little more comfortable. I was able to relax a little faster.

-SUBJECT 4

It went pretty well. Um, in the beginning I was really anxious but I was calm towards the end.

Q- What were you anxious about?

A- Um, I don't know. I'm just not so good at sitting still so long. And it was closer to lunch time.

-PARTICIPANT 5

It was--it was good. I wasn't anxious like I was last time. I was pretty calm. But not as calm as the chair.

-PARTICIPANT 6

It was great. And it went by really fast so I loved it.

-PARTICIPANT 8

The float went well. It was easier than the first tank float just because I kind of knew what to expect. And I had an overall positive experience.

-PARTICIPANT 9

It went well. I mean, about the same as last time. I thought—I think I was a little more antsy in the middle this time than last time.

³Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

-PARTICIPANT 10

It was relaxing and easier than last time to really get comfortable and feel just really relaxed. I didn't have that moment of panic at the end. I, just whatever that panic, I did want to turn the light off and I did just for a second, but I didn't want to keep it off because I was afraid of having that feeling at the end. And it wasn't that it bothered me to have the light off. I liked that better and really wanted to keep it that way, but it was that feeling, or that concern, that when I was floating I would get separated from it and then, kind of just be in that almost disconnected place and want to turn it off and not, and then be disoriented and not be where I was or be able to get to it. So, I thought it would be really nice if I could just hold that thing I saw hanging there or a little button that I knew would be easy to turn it off and on. I probably would've kept it off. It was mostly with my eyes closed, so that was still good.

-PARTICIPANT 11

Initially, it was really relaxing and I liked the atmosphere, the construct, and the build in this particular float room. Um... but my towel fell in the water, got wet, the salt got in my eyes, I have terrible hangnails so I was constantly distracted and I had to be mindful of keeping my hands above the water instead of focusing on truly relaxing. So I was really distracted. I was able to hold on to some straps for a little while and float, you know, in the dark. But I did get, you know, water in my eye and it was just ample on my mind. And so in comparison to the last one it was not near as good, but, that's more on me and my hangnails.

-PARTICIPANT 12

It went well!

-PARTICIPANT 13

In general it went okay. I was a little more anxious this time than the last float.

Q- Okay. Do you know why, or...?

A - I don't know. I feel like at first the lights in the room were still on. And so, I don't know I felt, like, I don't know almost claustrophobic because I could, like, see the dome over me. I just felt like, "Okay, it's kinda hard to breathe in here." I was just a little more anxious, but once the lights went out I felt way better.

-PARTICIPANT 14

It went really well. The lights to the outside bathroom were on for part of it so it wasn't completely dark but it was still really relaxing. I almost wonder if that was why I didn't feel as like dizzy or nauseas at first because I wasn't as disoriented? Kind of helped me transition in a little bit. And, I didn't—so compared to the last float, I wasn't as—again the last one I was almost in a meditative place. This one, I was for a little while but then I was more just, I was more aware for the majority of this float. But I was still super relaxed. I felt the crystals on my stomach and played with my hair again (laughs).

-PARTICIPANT 15

It went pretty well. I think it felt better than the float in that open pool.

-PARTICIPANT 16

It was good. Um, maybe a little bit longer than I wanted it to be. But overall I liked it better than the other float without the dome.

-PARTICIPANT 17

Overall the float was a good experience.
Um...yeah! I actually really enjoyed it this time.

-PARTICIPANT 18

I guess it was a little distressing. Just because my chest started itching, and then it started burning. So I just couldn't, like I felt relaxed in the beginning. I just couldn't—after that I was just like I couldn't relax.

-PARTICIPANT 19

It went pretty well. Felt like it took me a while to relax but after I relaxed it was great.

-PARTICIPANT 20

It went well. I was a lot more calm. Like I knew what to expect this time. And I just enjoyed it a lot more.

-PARTICIPANT 22

I thought it went really well. It was very relaxing and I enjoyed the experience.

-PARTICIPANT 23

Enclosed pool float (Session #4)⁴

Q- In general, how did the float go?

This was definitely the best one. It was not unpleasant. It wasn't like so pleasant that I would want to do it all the time, but it was definitely the most pleasant. And we were talking, I think one difference was that I came in just a really foul mood so right now I feel a lot better, um, and I really didn't want to do the float at all, um, so maybe it was just because I was so dramatically negative and then when I finally did it, it ended up being really pleasant.

Q- So right now you're feeling better?

A- A lot better, yeah. A lot more relaxed, um, not as um, more steady and not as emotional. Um, and a little more rational, which is unusual because normally I feel like, illogical.

-PARTICIPANT 1

Um, it was really good.

-PARTICIPANT 2

It went really well. I think it was my best float. I don't know why, but I stayed awake the whole time and I feel more energetic afterwards.

-PARTICIPANT 3

Um, I felt it was um, relaxing. Um... this time my mind just for outside factors was a little more, um, chatterful. So I kind of really um, I couldn't really let myself go.

Q- So what did you think about during the float? Positive thoughts? Negative thoughts? And if you had negative thoughts, how did you cope with them?

A- Um, I was kind of having some thoughts about while I was a patient here (laughs) and then I was having these, like, thoughts about being back in here. It was really weird. So some, like, things, memories that were popping up. And a little bit later I was thinking about what the rest of my day, what I needed to get done. And when I had the thoughts they were mainly, they were more neutral. They weren't, yknow, positive or negative. So...

-SUBJECT 4

It was very relaxing.

-PARTICIPANT 5

It was my best one!

Q- You made it the longest!

A- I made it the longest and I enjoyed it the most as compared to the other ones.

⁴ Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by the -A prefix.

Q- What made it the best compared to the other ones?

A- Um I think I was acclimated to the process by now, and, I don't know...It was like, privy to relax. Like my attitude going into it was better than before.

-PARTICIPANT 6

It went great. It felt great.

-PARTICIPANT 8

Um, the float went really well. It was probably the...maybe I was more comfortable with the procedure and I'm gonna say that was probably the best one out of all of them so far. So I think it went very smoothly.

-PARTICIPANT 9

Um, I think it was a lot harder to relax this time than last time just cuz it was pretty warm, but like for the last maybe 30-40 minutes I got a lot more relaxed and it was more pleasant.

-PARTICIPANT 10

It went well. It was good. It was pretty, it didn't seem to take as long to get relaxed. I was a little more alert having the blood pressure and heart monitor on. And a little more focused on my heartrate than before. And, I felt like there were a few times

where it would, my heart would start to race a little bit, or something, I don't know if it was something I was thinking or feeling or what, or maybe it was the blood pressure, uh, that it would just bring my attention to that more, to my heart, and it made me feel, I don't wanna say anxious, but maybe aware of it, more focused on it.

-PARTICIPANT 11

It was probably the second best one because I was sad that I felt sleeping couldn't enjoy it (?) but it was enjoyable still even though I slept through part of it. But it was very relaxing.

-PARTICIPANT 12

It was good! It was probably my best of the 4.

-PARTICIPANT 13

The float went really well. It was really relaxing and it felt like the time went by fairly quickly.

-PARTICIPANT 14

Um, overall it went well. It was...I got a little restless probably the last 20-30 minutes. I had to pee and then I just kind of was like wanting to move a little bit. Um, but overall it was pretty good. I was able to relax for a good portion of it, and, um I did think about

more I guess. Just about like, I prayed again and then I was thinking about this girl that came into this place that I volunteer yesterday and, um...I don't know just stuff that's going on with her and I was thinking about stuff with my kids and Christmas and stuff like that. So...but I was still really relaxed. I wasn't like "oh my gosh I gotta get stuff done". I was able to relax and just clearly think about stuff.

-PARTICIPANT 15

Well.

-PARTICIPANT 16

It was really good! It was probably the most relaxing float actually compared, even compared to last time. Yeah.

-PARTICIPANT 17

It went really well. Um, I would say this was my best float, maybe I've gotten used to it. Um, but for the most part it was really pleasant.

-PARTICIPANT 18

Um, the time passed really fast this time I thought. Like it did not feel like 90 minutes. Um, and, like initially the like, tickaderm, is that what it's called?

-PARTICIPANT 19

It went well. I was able to stay in the whole time and I wasn't super anxious or bored. I was pretty calm and relaxed.

-PARTICIPANT 22

It went really well. I felt relaxed most of the time. It was weird, I'd like—my mind was really awake but I think my body started falling asleep so I kept twitching, like a lot. I usually don't do that all, but I probably twitched like 8 times.

-PARTICIPANT 23

Session 1 (Chair-REST)⁵

Q: What did you experience during the float?

I experienced that panickiness, and then—I really feel like I thought, it was kind of obsessing about my body in the sense that, like, I couldn't feel...like I felt kind of dissociated, like I couldn't feel where the bounds of my body were if that makes any sense. Like I kind of morphed into the chair. And then I started thinking about, like, how cool that was and then I started thinking about my organs and like the implications my eating disorder has on my organs (mumbling).

Q- Did you have any positive experiences?

A- Yes! I think it was, like, a very, like, my mind tends to run 100 mph, so it was a good calming-down experience, but also like I was saying, I started thinking, like, not so much about my physical body as like the capacities that my body has. I don't know I was thinking a lot about my kidneys...I don't know (laughs).

-PARTICIPANT 6

Um... definitely at first, before I really had to go to the bathroom, I enjoyed the, uh, the darkened room, um, and laying back. So that was positive. On the other hand, negative experience: just kind of feeling, um... a little bit trapped and needing to go

the bathroom really badly but not really wanting to, um, skew any of the results. So I was trying to maintain, um, thinking I could make it the full time, so I got a little bit anxious and a little panicky just, um, in the fact that I might not be able to complete the full 90 minutes as planned. So that was more of an anxious, nervous, negative experience.

-PARTICIPANT 9

Um, just felt very like relaxing and cozy (laughs). Just kind of funny to say. I think like the position of the chair, I think really helped too just because you were able to relax every single part of your body. And with the neck support too, I think that helped.

-PARTICIPANT 13

Um, like, I mean I, I got pretty tired. Cuz I had to like, it was hard to stay awake at some points.

-PARTICIPANT 14

Kinda just explained it in the last answer, but um... Really just, I was just relaxed and (laughs) it was nice! I was able to relax without my kids around. Yeah! I thought I was gonna be pretty bored and almost get agitated like I did for one of the last, like, in the MRI scanner. But it was actually just

⁵ Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

really relaxing and the time went by a lot faster.

A- No, not really negative. I mean my neck was to the side so my neck would get kind of stiff so I would just move it to the side. But other than that, no.

-PARTICIPANT 15

.....it was a lot colder than I wanted it to be. I might fall asleep (mumbling).

-PARTICIPANT 16

What did I experience? Um just a lot of relaxation.

-PARTICIPANT 17

Okay. Um I experienced...heaviness of my body. Um...I experienced, um, trying to stay still and be with myself, which I don't do very often. Umm...I experienced tingling sensation, um...Felt kinda fuzzy in my body but really clear minded.

-PARTICIPANT 18

Um...I did notice my headache was worse at the beginning and then it kind of...it's not as bad now. So that was a good thing.

-PARTICIPANT 19

Um...I mean it's kinda interesting, you know I think I was trying to get my mind to calm down a little bit but I don't know that it was really working. And then, I don't, I don't know. I don't know maybe I fell asleep. I don't know I was like "oh okay", I just felt, I'm not very good with my words at putting what I feel, but... I don't know I just didn't feel as, um, rushed or something? I don't know. Pressured? I don't know. Sorry.

-PARTICIPANT 20

.....

-PARTICIPANT 21

Umm, I could feel my heartbeat like in my neck and I could hear it, kinda feel it in my ears. Um, just a feeling of like calmness and stillness kind of. I didn't really feel, um—a lot times when I lay still I feel fidgety but this time I didn't.

-PARTICIPANT 22

It was really—it didn't take long for my eyes to adjust to the darkness. And then after a while I was like it's almost too light in here, and that was weird. And after I think about 45 minutes I realized that I had to go to the bathroom and I waited as long as I could and then I was like I cant wait anymore.

-PARTICIPANT 23

NA

-All others

Session 2 (Open pool float)⁶

Q- What did you experience during the float?

Um, I found myself the first, like 20 or 30 minutes, like I kind of mentioned dealing with, like, my head and neck and kind of a little worried and anxious about, um, that. So I, um, think that was a little bit of a negative experience. And I coped with that by, um, just waiting and kind of readjusting and realizing that, um, yknow my body was just tense, and, uh, so I. And the positive experiences, I felt like it was relaxing, um, I mean I'm always pretty tense so even floating I felt a bit on the anxious, tense side. But I just, I felt a little bit positive in that my mind wasn't racing by so much. I think I felt like I kind of maybe was hitting a wall where I couldn't quite get my brain moving quickly like it usually is. That was a positive thing, and a little bit distressing at the same time. But I would say mostly positive. It was a bit of a rest from—a forced rest bit—from excessive thoughts. It was just, yeah, I'm really used to overanalyzing everything and so when my mind isn't constantly understanding and analyzing and figuring out what my surroundings are and how they effect my body and my mind, and kind of be able to anticipate, um, the future, like at this point floating, I just didn't have a whole lot to, um, to think about and I think that's a little distressing to me. Cuz I think generally I feel like whenever I can think through things it gives me a sense of confidence or a sense of

control. So it was a little distressing just, um... But I would say that's like a 10 out of 100 so, yknow, pretty minimal distress.

-PARTICIPANT 9

Most—99% positive. I just felt very comfortable in my body and very relaxed and it was a sensation that I've never felt before so that part was very new and exciting, which added to the positive aspect of it.

Q- Any negative?

A- Just my...looking at my fat belly (laughs).

Q- And how did you cope with that?

A- Uh I just kind of closed my eyes and drifted off, so...

-PARTICIPANT 12

Um well at first I felt like really heavy, and just like a lot of weight. Then eventually that kinda went away. But yeah that's about it. I mean sometimes I could hear my breath or feel my heartrate a little bit, um, but other than that, no. Not a whole lot (laughs).

Q- Any specific positive experiences?

A- Um...it was kinda nice to feel weightless for a little while. And that kinda happened towards the end of it.

⁶ Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

Q- Did you have any negative experiences?

A- Only kind of the first part where my neck was starting to hurt cuz I was holding my head up. But other than that no.

Q- How did you feel you coped with that?

A- Um eventually it just hurt so much that I just poked my head out.

-PARTICIPANT 17

Um I thought it was really cool how right when I got in I just laid back and floated to the top. I thought that was really neat. And I did at a few points, like I didn't really even feel my body at all and then I kind of wiggled my toes and wiggled my fingers and I was like "oh yeah you're still here". I did get dizzy a few times, especially—because I opened my eyes even though it was pitch dark. Kind of made me dizzy so I just kept them closed a majority of the time. Um and then at the end when the music started playing I was like "okay I'm gonna move a little bit and just see what this feels like" so I was just playing with my hair, and stuff like that. It felt really cool. Kind of moving my arms around.

-PARTICIPANT 15

Well obviously physically I experienced like, feeling my breath and my heartbeat and then not being able to feel my body. Every once in a while I would kind of notice the water or I would notice like, the sound of the water or something maybe. And then I guess I felt, um, I don't know just kind of attentive to that. Pretty at ease and relaxed

and then near the end like I said a little anxious.

-PARTICIPANT 14

Um...I mean I had the neck tension that they described with like trying to hold your head up so I kept trying to relax it. And then I was more conscious of my breath then I've ever been. And then, yeah just feeling like the noises my stomach was making and my heart beating in my ears like I said. I don't know I felt like I was super vigilant, like I felt like something was gonna happen at any moment. I don't know just like laying there, I felt really vulnerable, so...

-PARTICIPANT 6

Um, I felt my heartbeat and breathing a lot more than I did when I was floating in the chair.

-PARTICIPANT 16

I could see colored spots like twice. Um, my eyes were open I think for the whole time. I can't think of anything else. [Any positive experiences?] Um there were a few times where I would take a deep breath in. I guess I was able to relax my body for a short while. Like I didn't feel as tense, like I made a real effort to like "okay relax your neck. I know I'll still be floating. Relax this cuz it was hurting". So I guess that was nice to be able to like relax for a pretty good time. (No other negative experiences)

-PARTICIPANT 18

Um, I don't know, just, I felt like I was floating (laughs). I have a pool in my backyard so I just kind of felt like I was at my pool. Um...I did feel like the salt kind of crystallized on my face, which felt kind of weird. Yeah, I don't know. I liked it.

-PARTICIPANT 19

I mean, I thought the whole thing was posi—I mean I guess I felt positive the whole time. After, I don't know how long it takes me to get out of the "I'm stressed, I'm not doing right, I'm thinking about work", I have no idea if that's 5 minutes or 30 minutes. But then after, I guess I did have positive thoughts. I was like "well, I don't even know if I'll work today after this when I'm done." Before I came here I was like "I have to go to work after this when I'm done", which I really don't have to. So I was laying there like "ohh maybe I don't have to", so for me that's positive, like being able to make a decision. I don't know I liked whenever I was stretching. The very end, when I couldn't believe you could stretch and move and you didn't sink. That was amazing! I really liked it. I really liked it. And I thought oh my gosh I wish this was something I could do all the time. Like I really feel like it helped me. I feel like it's weird. Like I feel calm but I'm not sleepy. I'm not, I don't know if I'm really energetic, but I'm just like good! So that was positive for me. I don't know. I don't know if that answered that your question. I told you I drove the grad student nuts last week probably.

-PARTICIPANT 20

Relaxation and I was a little cold.

-PARTICIPANT 21

I guess just the anxiety—like some anxiety, some calmness, and like when I was thinking about the ocean and stuff it was peaceful and my body felt pretty peaceful, but for some reason it switched. Umm, I didn't like the feeling of like the salt drying on my skin. At very first before I put the Vaseline on it was painful, but otherwise it wasn't painful. But like I didn't like the feeling of the salt drying on my skin—like it felt gritty—but it wasn't painful.

-PARTICIPANT 22

Just a very calm atmosphere, sort of refreshing.

-PARTICIPANT 23

Um, it didn't...it felt shorter than it was. I didn't think I'd been in there for almost an hour. And then I couldn't, I was really surprised by how I couldn't really feel myself moving at all. That was really weird to me! Yknow and then like, I kinda moved my arm in the water and I couldn't really feel it. So that was weird, but it didn't make me feel uncomfortable. I was just like "huh".

-PARTICIPANT 13

NA

-All others

Session 3 (First enclosed pool float)⁷

Q: What did you experience during the float?

I first thought... I first tried to pray the Rosary and I just gave up on that attempt because I really could not... I feel like I couldn't concentrate, um... and so I just sort of let my mind go. I didn't really think about anything, sort of had a blank mind. And then often, and then I just sort of started thinking when can we get out, when can I get out. So I tried to distract myself about thinking about other things, like reciting things that I have in my mind that are helpful for me to recite.

Q: Like what types of things?

A: Like a poem, um... that... yeah, a few months ago I realized I don't really know... like I can't really recite anything so I like learned it and that was very, um... helpful to be able to repeat, to repeat words. Um... so I have a poem I like to recite.

-PARTICIPANT 1

I had a song stuck in my head.

-PARTICIPANT 2

My mind just kind of wandered. Nothing in particular.

-PARTICIPANT 3

I was thinking about some of the things I had to do this afternoon, and about trying to let go of some body image issues that I've been trying to work out.

-SUBJECT 4

Well, in the beginning I was kind of like doing CBT things and then not really anything. Just like what I'm gonna do after this. And that's it.

-PARTICIPANT 5

I don't even know. *Laughs* Like, I'm just trying...I can't really think. I can't recall anything specific, like concentrating on anything.

Q- So no positive thoughts or negative thoughts?

A- No. It was just like being (laughs). Just floating.

-PARTICIPANT 6

I had negative thoughts about my body, but the more you start the float that I got, the less weight you felt, and that helped a lot, so I just tried to focus on the water and not my body. It was really hard at first, but, yeah... Yes I thought about my family. I thought about my schedule for just a

⁷Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

minute and then I decided to just forget about it. So...

-PARTICIPANT 8

I had some positive thoughts in that I was glad not to be kind of, maybe worrying as quite as much as usual. Then I had some negative thoughts as far as body image goes, um, and I coped with those by... I think my mind just naturally kind of centered back to nothingness since it was so dark. So I don't know if I really intentionally was able to put those thoughts out of my head but I did a little body checking, but I kind of was just able to let that go. It was just so dark and, and my mind was really sluggish.

-PARTICIPANT 9

I think that like in the middle I started thinking about homework and stuff that I had to do and I think that might be why I got a little bit like, "Oh god I have stuff to do!" But other than that, I kind of ended up blanking out at the beginning and end.

-PARTICIPANT 10

I thought about relaxing, trying to or to kinda, starting at my toes and trying to progressive relaxation. Make sure I was relaxing. I was thinking about all the different feelings and trying to figure out how, what words I could use to explain it to you. I did spend a lot of time doing that. I thought about my breathing a lot because it was, I could feel it and hear it quite a bit. But that was in a good way. Although I did, I

forgot there were a couple times where I felt like I was kind of in tune with it, and then I wasn't and I felt a bit startled, if that makes sense.

-PARTICIPANT 11

I thought about my boyfriend for a little bit. I thought about that my tattoos I've been wanting to get. I thought that I need to order some jelly plates for my art. I thought about how I need to finish my shopping.

-PARTICIPANT 12

I probably had a little more of just random thoughts this time. I think probably just because it was a Sunday afternoon and thinking about the week and stuff. But probably about halfway through I was able to kind of turn that off and just relax.

-PARTICIPANT 13

I thought about how my body felt in the water, and not being able to feel it, like I was just kind of floating around. I thought about just like the temperature and I guess I just thought a lot about how I felt in the pool.

-PARTICIPANT 14

Um...gosh I don't really remember. It was just kind of fading thoughts. Nothing really—I did pray for part of it. I prayed a couple times actually. But like as far as...I didn't...I don't know. Just little flicking thoughts. Nothing that I can really

remember for some reason. But I did—like I was just thinking about how it felt—like the way the water felt when I was moving around a little bit. I didn't stay quite as still this time.

-PARTICIPANT 15

Nothing that stood out.

-PARTICIPANT 16

I really don't know. Not a lot. I think I kind of fell asleep for a part of it.

-PARTICIPANT 17

I started off thinking about, um, well just kind of getting my surroundings, like checking the pool out. And then I did a lot of body checking. I was thinking like how much space I was taking up, how much water am I about to get in—things like that. So a lot of body at first and then, yeah I just kind of got most familiar with the stars, and like ping-ponged myself, so I was able to relax.

Q- And then you left the blue light on the whole time...

A- I did.

Q- So was that helpful?

A- Very helpful, yeah. I think just having the sense of being able to see where I am and like, I'm still here and I'm okay, and not having so much mind-body separation was helpful for me.

-PARTICIPANT 18

I just kind of, like, thought about what I did before, er, just kind of like leaving because like I really like the brain scan, so just thinking about all the people that I couldn't, not scan. (?)

-PARTICIPANT 19

First trying to relax. Then sometimes I'd think about things I needed to do. Oh and then I was actually thinking about some people I needed to forgive. So...

-PARTICIPANT 20

I kind of tried to, like, just imagine, like, my dogs and just being at home, and what I was gonna do when I went home. Just like, stuff like that.

-PARTICIPANT 22

I thought this nightmare that I had last night. And then like floating in the pool kind of helped relax me and eventually bat that down.

-PARTICIPANT 23

Session 4 (Second enclosed float pool)⁸

Q- What did you experience during the float?

Floating (laughs). Um the only thing that was kind of negative was when my neck got kind of stiff and my lower back got kind of stiff so I just bent my knees and put my feet on the bottom of the tank for a bit until that relaxed. Umm... I don't know. The water was comfortable when I first got in but then it felt cooler towards the end. I felt a little chilly at the very end. I don't know. That's about it.

-PARTICIPANT 15

Um, positively I didn't feel my outer body for a good amount of time so that felt really refreshing and I noticed that even my view of my physical appearance before and after changed a little bit. Um, negatively, it was just uh, I thought my armpits hurt. But I'm like "oh it'll go away" and then my stomach was kind of gurgling a lot and I'm like "well...it's okay".

-SUBJECT 4

Mmm, my back quit hurting. I was in no pain. And that was the best part. I was in so much pain when I came in and the pain was just gone for the rest.

-PARTICIPANT 12

I was kinda like zoned out for a while. I don't really know what happened. Time just kind of passed. I was just kind of there. It was kind of nice (laughs).

-PARTICIPANT 6

I could feel like, I could feel my breath and hear my breath and feel my heartbeat. And then I experienced not being able to feel my outer body for, not like the entire time but a majority of the time. And then just like being relaxed.

-PARTICIPANT 14

Sluggishness of thinking. My mind was kind of slow. Um... a little bit of mind wandering this time, yknow, kind of maybe it too... I don't...I really, it might be one of my better floats because I didn't have as much chatter. Yeah. I forget the rest of the question. (laughs)

-PARTICIPANT 9

.....I don't know. I was just more relaxed than normal.

-PARTICIPANT 16

⁸ Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

Um, well I kinda felt a period where my legs kinda felt like they went away for a second. Um...but yeah.

-PARTICIPANT 17

Okay, um so I kind of said already that, like, there was a point where I really could not feel my body or, like, I wanted to turn the light on really bad cuz I...like one of my dreams or whatever was here turn the stars off. So I was like “I need to turn the light on” um, and I couldn’t move my arm, like I kept thinking that I had turned the light on and my eyes were opened, I was fully aware that the lights were not on. So that went on for a while, where like my eyelids would close but I wouldn’t realize they were closed and I was like “she turned the stars off. Like why did she turn the stars off?” Um, so and when I did hear the knocking on the door, my response was really to, cuz I couldn’t—I knew I couldn’t get up. I was like, I can’t do anything and so finally I was like 1, 2, 3 go and then poked my head up and then I thought you were there but you weren’t so that was like my biggest experience this time, was like my mind was there. Like I was...I didn’t feel like I was sleeping but I just really could not feel my body very much, so. It was a strange feeling.

-PARTICIPANT 18

Um...again I thought the temperature was good. Er I mean I do wish it was a little warmer but I didn’t feel like a big difference between the air and the water.

-PARTICIPANT 19

Um, nothing really, just kind of a calm feeling. I fell asleep for maybe a fifth of it or less. Something like that. But yeah.

-PARTICIPANT 22

Um, overall, a sense of calm, refreshing.

-PARTICIPANT 23

Session 1 (Chair-REST)⁹

Q: Did you have any positive experiences during the float?

Yes! I think it was, like, a very, like, my mind tends to run 100 mph, so it was a good calming-down experience, but also like I was saying, I started thinking, like, not so much about my physical body as like the capacities that my body has. I don't know I was thinking a lot about my kidneys...I don't know (laughs).

-PARTICIPANT 6

Just was able to think more rationally. [What do you mean by that?] Um, instead of letting my anxiety kind of rule my thoughts and everything. Cuz I think about, yknow stuff I've been told over the years, and trained somewhat to think, um it was much easier to take that route, so...

-PARTICIPANT 13

I felt pretty relaxed coming into it, but I think it is a positive that I didn't feel like—that I don't feel like as relaxed now. Like I wasn't really anxious during the time. So I'd say that's a positive.

-PARTICIPANT 19

I'd say being relaxed was pretty positive.

-PARTICIPANT 14

I didn't have any negative experiences, but it was, um, and nothing like positive that I can...I mean nothing bothered me. It's not that. But...one time I felt like maybe just for like a second or two I felt that maybe I just didn't feel my outer body. It was not long at all. Just very few seconds. [And would you say that was positive, negative, or neutral?] Positive!

-PARTICIPANT 20

I think floating in the chair was positive. [And what made it positive?] It was relaxing.

-PARTICIPANT 21

Just like the relaxation.

-PARTICIPANT 16

Yeah I mean I think overall the entire thing was really positive.

-PARTICIPANT 17

It was really relaxing.

-PARTICIPANT 23

NA

-All others

⁹ Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

Session 2 (Open pool float)¹⁰

Q: Did you have any positive experiences during the float?

Um...it was kinda nice to feel weightless for a little while. And that kinda happened towards the end of it.

-PARTICIPANT 17

Yeah I would say just the, it was a neat experience being able to not feel some of my sensations.

-PARTICIPANT 14

None that I haven't mentioned.

-PARTICIPANT 19

Umm, it was kinda cool to see what it's like to be like, buoyant like that. (laughs)

-PARTICIPANT 6

Just like the float, like, overall, was positive. [What made it positive?] It was relaxing.

-PARTICIPANT 16

It was—a positive experience was that it was relaxing.

-PARTICIPANT 21

Um, I feel like that 20% that I felt calm, it was positive. I felt like, mindful and relaxed and I thought that it was cool that I was just floating. So I guess I thought it was cool how it worked.

-PARTICIPANT 22

NA

-All others

¹⁰ Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

Session 3 (First enclosed pool float)¹¹

Q: Did you have any positive experiences during the float?

Pleasant aspects, uh... um... I think it's fun to experience just lying on the surface of water, but... it was pleasant to have a quiet still room. But, I think that... I mean you could add this in later, but I think that since I don't have like a very stimulated life, cause I live alone, and... I don't have children... it's not this huge drastic change from my normal, regular life. My life isn't very loud or very active, intentionally; I did that on purpose.

-PARTICIPANT 1

It was pretty neutral.

-PARTICIPANT 2

Yes. It was very relaxing.

-PARTICIPANT 3

Just relaxation and then in general it relieved muscle tension and pain.

-SUBJECT 4

Yeah, I got comfortable. It was like I settled in a lot quicker today. So that was good.

-PARTICIPANT 5

Yeah I made it longer than I did last time, so I'm pretty proud of myself. So that was pretty good.

-PARTICIPANT 6

Oh definitely! Just the peace and quiet and the weightlessness was a nice break for me and just being able to not stay focused on my body image and my body was really nice for a change.

-PARTICIPANT 8

I enjoyed the feeling of weightlessness. Kind of when I, I tried to stay as still as possible, but when I did move my arms at all, they just kind of readjusted to some neutral/natural position. So that was kind of how my experience was as far as the float goes.

-PARTICIPANT 9

Oh yeah. The rest of the float was great. Really relaxing.

-PARTICIPANT 10

¹¹Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

So far it was telling you a minute ago that it was like this last time too, but I wasn't really sure how to describe it. Related to my eating disorder, I've always had an issue with my stomach and then uncomfortable with it, and it's always, on some level, in my awareness. And, when I was floating, it was more of a neutral feeling that it, I almost felt like my body felt stretched and a little bit disconnected from my limbs at times, and maybe even from my stomach. But it was a little bit like it was pressure on it, but not at all uncomfortable. It felt, just normal, I guess would be a good word. It felt normal and okay.

-PARTICIPANT 11

The atmosphere was awesome. It was so beautiful and I did like being in the water and I was able to relax for 20 minutes or so.

-PARTICIPANT 12

Just really the relaxation. So obviously that 50 minutes is kind of a good magic number for me I guess.

-PARTICIPANT 13

Yeah I thought it felt kind of cool, like, "Oh I can't really feel my body! Oh I can't really see anything." Yeah, I was kind of losing the sensation.

-PARTICIPANT 14

Really just the—I don't know, the water feels really good when you move, just the way it passes over the skin. I did, like I didn't feel myself there for a while. Just kind of didn't feel much of anything. But, I don't know. I think the whole experience is pretty positive. I did have to pee towards the end so that wasn't real pleasant, but it wasn't bad enough where I needed to get out.

-PARTICIPANT 15

I guess you can count, like, at one point, because this didn't really happen last float, I couldn't really tell where my skin stopped and the water started. I guess that's positive. It was kinda cool.

-PARTICIPANT 16

Yeah my body was just really relaxed, I think, the most it's been throughout this process.

-PARTICIPANT 17

I feel like my mind just kind of, kind of went blank. I was really enjoying the sensation of floating so I guess that's a thought. Of, like, almost feeling weightless, so I thought about that for a while.

-PARTICIPANT 18

I did feel like, like the past few days I haven't really had any body image distress, and I think this is the only thing I've done differently. So I think it has helped in that

regard. [And] I did think that the like domed part helped with the temperature.

-PARTICIPANT 19

Well yeah I mean I like not feeling like—it's kind of a "you don't really feel your extremities, you don't feel your body, you don't feel your weight." But you're not floating going crazy on drugs, which I've never done drugs. But it's just like a good, it's kind of like a high, but, I don't know... I liked it! I liked floating. I liked feeling like you're just laying on air.

-PARTICIPANT 20

The water and like the air was a really good temperature, and it was just very comfortable, and I guess for some reason I liked the dome more than the open one. I don't really know why. I guess just the feeling that it was enclosed felt good I guess. I don't really know. Because I had the light off so it wasn't like I could really tell. I guess it was just knowing it. But yeah.

-PARTICIPANT 22

It didn't sting! I have a little cut on my finger but I put Vaseline on and it didn't hurt. I was worried about it.

-PARTICIPANT 23

Session 4 (Second enclosed pool float)¹²

Q: Did you have any positive experiences during the float?

It was just nice to get away and like, I don't know, a secluded atmosphere where nobody's gonna bother you, and just really be alone because, you never really are, so...Just taking time off I guess.

-PARTICIPANT 12

Yeah! I wasn't like, I felt like my mind shut off more this float than it did the other ones. Um, so that was, that like made it easier instead of thinking about more I was doing the whole time, which isn't relaxing at all.

-PARTICIPANT 6

Um, I probably felt the most—I think with all of them I always kind of felt like I was literally floating and you couldn't feel the rest of your body, but probably more so this one. And it was the first time I was able to feel my heartbeat, and, um, like I could hear my digestive system a lot better too (laughs).

-PARTICIPANT 13

Um, yeah I would say that being relaxed and losing the sensations.

-PARTICIPANT 14

Eh.

-PARTICIPANT 16

I felt like the temperature of the air and the water were a lot closer this time. I don't know if they were changed or not but they felt like they were the same.

-PARTICIPANT 17

I felt like, like that was positive. Um, I thought it was cool that I wasn't, I didn't feel bad in my body. I just didn't feel my body at all. So I thought that that was cool.

-PARTICIPANT 18

Um, yeah I liked—well I mean the light was neutral but like the feeling of my body and the water, that was positive.

-PARTICIPANT 19

¹²Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

Um, I felt really calm so that was good. And, um, the temperature was really good. It felt pleasant.

-PARTICIPANT 22

The calmness was nice.

-PARTICIPANT 23

NA

-All others

Session 1 (Chair-REST)¹³

Q: Did you have any negative experiences during the float?

Um...No I got a little cold, but, that's it.

-PARTICIPANT 18

shakes head no

-PARTICIPANT 13

I did feel like I was kind of fidgeting a lot. I think it was cuz I was trying to like warm myself up a little bit. [How did you cope with that?] Um, I just tried to, like, find the position that was most comfortable and just kind of stick with that.

-PARTICIPANT 19

I just got kinda cold and tired. [And how did you cope with those experiences?] I just kinda pushed through 'em I guess (laughs).

-PARTICIPANT 14

No, not really negative. I mean my neck was to the side so my neck would get kind of stiff so I would just move it to the side. But other than that, no.

-PARTICIPANT 15

shakes head no

-PARTICIPANT 20

No.

-PARTICIPANT 21

Aside from the thoughts, no.

-PARTICIPANT 17

No.

-PARTICIPANT 22

No.

-PARTICIPANT 23

NA

-All others

¹³ Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

Session 2 (Open pool float)¹⁴

Q: Did you have any negative experiences during the float?

Just my...looking at my fat belly (laughs).
Uh I just kind of closed my eyes and drifted off, so...

-PARTICIPANT 12

Only kind of the first part where my neck was starting to hurt cuz I was holding my head up. But other than that no. Um eventually it just hurt so much that I just poked my head out.

-PARTICIPANT 17

Not really besides just wanting to get out at the end.

-PARTICIPANT 14

Um, I probably got some of the water in my mouth and it tasted really bitter. I just kinda got some spit and just...

-PARTICIPANT 19

Like just talking myself down like I already said.

-PARTICIPANT 6

No.

-PARTICIPANT 16

Um when I turned the light off I did not like that. No. I felt like, I just didn't like not seeing where I was and then being in water. It just felt too not in control and, yeah. Like I was just in some random ocean floating away (laughs).

-PARTICIPANT 13

[So how did you cope with being cold?]
Umm...I would like put my hand down, cuz like at the bottom of the pool it was warmer.

-PARTICIPANT 21

Just tried to think about other things.

-PARTICIPANT 22

NA

-All others

¹⁴ Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

Session 3 (First enclosed pool float)¹⁵

Q: Did you have any negative experiences during the float?

Unpleasant aspect of the float...uh... um... okay. Air felt heavy on me. I could breathe, but I prefer cooler air. Unpleasant... I didn't... I guess I didn't know what the point of it was, like why was I there and what was I doing. And I thought, okay I am here to relax and it wasn't compelling enough to make me stay. A few times I thought I was going to get out. Unpleasant... I... guess I don't... really felt warm. Yeah, it kind of felt heavy. I was going to say it's pleasant to lie down. I guess it just overall felt too warm... yeah.

-PARTICIPANT 1

I got a little bored at times, but not as much as before.

-PARTICIPANT 2

No.

-PARTICIPANT 3

Just, I had a very slight pain spasm in my left knee and butt. Lower butt area. But it wasn't very long.

-SUBJECT 4

shakes head no

-PARTICIPANT 5

I kept on twitching. Like I'd be totally calm and then my body would like twitch or one of my limbs would twitch and then that kind of aroused me.

-PARTICIPANT 6

No. There were no negatives.

-PARTICIPANT 8

Um, no. Not really. It was all very pleasant.

-PARTICIPANT 9

I think that I just like normally, the last time I floated I was like, a little bit antsy at the beginning of the float and this time that happened randomly in the middle, but it passed so...

-PARTICIPANT 10

A little bit discomfort in my neck but not nearly as much as last time. I had to go to the bathroom at the beginning but that was resolved, so it wasn't uncomfortable for long, so, no.

-PARTICIPANT 11

¹⁵Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

Session 4 (Second enclosed pool float)¹⁶

Q: Did you have any negative experiences during the float?

No.

-PARTICIPANT 15

No.

-PARTICIPANT 6

Um, just kind of anxiety about the future. I think I probably did play over some, kind of, some kind of going through a job transition right now, and, um, well, I don't have a job right now so, as of pretty recently, so those are kind of some negative thoughts. Just what the future holds. It wasn't really terrible or frightening, but it was kind of depressing. A little depressing.

Q- How did you cope with the negative thoughts?

A- I think I coped—a lot of times I seem to cope, like new experiences or thinking about things in different...reframing I guess as therapists like to say. So I think I coped with them kind of by realizing that I was in kind of a different, I was experiencing something pretty unique and that kind of is distracting from negative thoughts. Just the simple fact of,

um, of experiencing something new and kind of, um, just seeing, wanting to do everything right and, um just, experience something new. (laughs)

-PARTICIPANT 9

Um, body image thoughts yeah.

Q- How did you cope with those thoughts?

A- I just figured "well I could lose weight so it's okay".

-PARTICIPANT 12

Just near the end when I was ready to get out.

-PARTICIPANT 14

Nope.

-PARTICIPANT 16

Um, body stuff was pretty, um, I mean it just kept coming up. I guess it was negative but I would redirect myself. Um...other than that...no.

-PARTICIPANT 18

¹⁶Note: subsequent prompting questions are identified via the -Q prefix, with answers denoted by

the -A prefix. Missing responses = no answer provided. NA = participant stated not applicable.

Um I guess I thought a little bit about, why did I come here? Like, sometimes I deal--I'm like I shouldn't have come here, like I didn't need to come here-- I mean I needed to come here, but—

NA

*-SUBJECT 4**-PARTICIPANT 19*

NA

-PARTICIPANT 5

Um, a little bit just about like body image. But other than that....

-PARTICIPANT 22

NA

-PARTICIPANT 8

NA

-PARTICIPANT 23

NA

-PARTICIPANT 10

NA

-PARTICIPANT 17

NA

-PARTICIPANT 11

NA

-PARTICIPANT 1

NA

-PARTICIPANT 13

NA

-PARTICIPANT 2

NA

-PARTICIPANT 3