



# Clinical Flotation & Perceived Stress in College Students

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## Literature Review

Clinical flotation or flotation Restricted Environmental Stimulation Therapy (REST) is a less common relaxation technique that reduces the level of environmental stimulus and allows for the feeling of weightlessness while floating in a salt-water solution (Van Dierendonck & Te Nijenhuis, 2005). During clinical flotation, participants lie down in a dark, soundproof tank filled with water at skin temperature and saturated with Epsom salts that allow the body to easily float supine with the face just above the water, making it impossible to accidentally turn over (Van Dierendonck & Te Nijenhuis, 2005). The salt-water solution allows for complete muscle relaxation to reduce stress and overall arousal; this allows for positive effects on physiology, well-being, and performance (Van Dierendonck & Te Nijenhuis, 2005). These flotation sessions average at 45 minutes and often result in an automatic relaxation response (Van Dierendonck & Te Nijenhuis, 2005). These psychological and physiological changes are known as “relaxation responses” and are recorded to have lasted up to 4 months following float sessions (Bood et al., 2006).

Previous studies have demonstrated that clinical flotation is classified as an emotion-focused coping strategy, reducing blood pressure, cortisol levels, heart rate, and muscle tension (Van Dierendonck & Te Nijenhuis, 2005). Much research has focused on recording the psychophysiological changes in individuals before and after floats including stress reduction, pain relief, muscle hypertonicity, and “side-effects” such as mood improvements, deeper thinking, smoking/drinking cessation, better relationship quality, etc., (Suedfeld & Borrie, 1999).

Many studies over ten years of research and 2,500 patients with symptoms from chronic muscle tension pain to depression have had success relieving symptoms following flotation sessions (Kjellgren, Lindahl, & Norlander, 2009). However, there has been little to no research looking at how different effects from relaxation techniques such as progressive muscle relaxation (PMR) compare to the effects of clinical flotation. While PMR is a widely known and used method of stress relief, there is indication that clinical flotation could compete as an equal or more successful relaxation technique. With further research and understanding, clinical flotation can be explored in a variety of ways that could prove that it is the best practice for alleviating symptoms caused by stress.

## Purpose & Hypotheses

The goal of the study is to determine college student’s perceived stress before and after engaging in clinical flotation in comparison to no intervention and a relaxation technique known as progressive muscle relaxation (PMR). It is hypothesized that those partaking in the float sessions will report a larger decrease in stress than those receiving no intervention or a relaxation technique. The proposed study supports previous literature that records positive changes in participants and could direct future interventions to decrease levels of stress for those with stress-related problems. In addition, by comparing clinical flotation to progressive muscle relaxation it will establish a superior method of stress relief.



## Proposed Methods

**Participants:** Participants must be enrolled in a college/university, age 18 or older, and English speaking. As this is a pilot project, a sample size of 45 is desired.

**Measures:**

**Questionnaires.** Each participant will complete the Perceived Stress Scale, which is used widely to measure the perception of stress. There are general questions about perceptions of the stress that they experienced over the last month and ten questions to measure how unpredictable, uncontrollable, and overloaded respondents find their lives to be. The participants will respond on a five-point Likert scale from 0 (never) to 4 (very often).

**Demographics.** Each participant will provide their age, race, ethnicity, and their gender.

**Procedure:** Participants will be recruited by fliers placed in classroom buildings and announcements to psychology classes. Interested individuals will be provided with contact information for the research team and will be invited to set up an individual appointment where they will be informed about the study and decide if they wish to enroll. Participants will then be randomly assigned to either no intervention, a 45-minute float session, or a 45-minute progressive muscle relaxation training. 15 participants will have no intervention, 15 will complete a float session, and 15 will be trained in progressive muscle relaxation techniques. After completing the informed consent process, participants will complete an initial questionnaire regarding demographics and the Perceived Stress Scale. All questionnaires will be administered through Qualtrics. All participants including those who received no intervention will be asked to complete the same questionnaires provided before, a week after, and a month after their intervention to record any change in perceived stress.

## Potential Implications

This study compares clinical flotation with a more popular relaxation technique, progressive muscle relaxation (PMR). If supporting evidence is found, this study could provide a basis for future studies, as well as a change in treatment recommendations for individuals experiencing symptoms related to stress. If the data provides indication that clinical flotation has more positive effects on stress than PMR, there may be a rise in clinicians recommending that their patients engage in clinical flotation. It is anticipated that the data collected from this study will be utilized in future research and contribute to the overall understanding of clinical flotation as a method of stress relief.

## Limitations & Future Research

In regard to the limitations of this study, the psychological changes in participants were not explored any further than the changes indicated by responses to the Perceived Stress Scale. This study did not include any data representing physiological responses and did not incorporate the possible benefits of repetitive flotation sessions. Participants were also limited to college students and did not include those with more serious psychological conditions such as a diagnosis of schizophrenia or other psychotic disorders. Future studies could benefit from researching with larger sample sizes and to investigate each physiological and psychological response in depth.

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## References available on request