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The proven health benefits of floatation therapy

A roundup of studies

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Summary

This paper offers

1. A range of well researched, peer-reviewed studies that conclusively demonstrate the significant benefits offered by floatation therapy in managing or alleviating conditions including anxiety and depression, stress, pain (particularly stress-related muscular pain), hypertension and chronic tension headaches. It reduces blood pressure and levels of stress-related hormones and offers improved sleep (and improved ease in falling asleep) and heightened feelings of optimism, serenity, relaxation and wellbeing, with increased energy and performance.

2. How those benefits can help those experiencing clinically established symptoms of Long Covid, as part of a holistic, person-centred approach to their care, alleviation and rehabilitation.

Part one: the general health benefits of floatation

This section examines floatation and its clinically proven benefits.

What is floatation?

The principle behind floatation (sometimes spelt flotation) is that floating supine for a period of time in a pool or deep bath of warm water containing a high concentration of Epsom salts significantly reduces sensory input to the nervous system. Sensory input can be further minimised through the use of lighting and other external conditions. Floatation has long been associated with soothing and hastening recovery of muscle pain, soreness or injury, as well as alleviation of mental health conditions.

Epsom salts (named after the Surrey town – and not actually the same chemical composition as table salt) is in fact magnesium sulphate, a naturally occurring chemical compound of magnesium, sulphur and oxygen. Magnesium sulphate has been in medical use since at least 1618[1] and is on the World Health Organisation's list of essential medicines.[2] As a medication (administered, for example, internally), it is used to treat and prevent magnesium deficiency, seizures in women with eclampsia[3] [4], the cardiac condition torsades de pointes, some asthma, constipation and more.[5]

The high solubility of Epsom salts in water yields a bath with high specific gravity, making the body more buoyant, so that the user floats effortlessly, typically with about two thirds of the body submerged.

Magnesium sulphate used in floatation also has the cosmetic benefit of increased ionic strength that prevents some of the temporary skin wrinkling (partial maceration) that would occur with plain water baths.

Therapeutic benefits of sensory input reduction through floatation

Floatation-REST (Reduced Environmental Stimulation Therapy) reduces sensory input to the nervous system through a float experience calibrated so that sensory signals from visual, auditory, olfactory, gustatory, thermal, tactile, vestibular, gravitational and proprioceptive channels are minimized, as is most movement and speech.[6]

Clinical research over some years into the value of the therapy has reported largely beneficial effects across a range of different stress-related conditions, including:

- hypertension[7]
- chronic tension headaches[8] [9]
- the benefits listed in more detail below

Much research assumes a series of floatation sessions. Relatively recently, a 2018 study in Tulsa, Oklahoma[10] concluded that even a single, one hour floatation-REST session

- substantially reduced state anxiety
- led to significant reductions reported in
    - stress
    - muscle tension
    - pain
    - depression
    - negative affect
- provided a significant improvement in mood, characterised by increases in
    - serenity
    - relaxation
    - happiness
    - overall wellbeing
- provided more robust effects reported by the anxious sample than by the non-anxious sample (which may be deemed a control group)
- found the anxious sample approaching non-anxious levels during the post-float period
- provided the largest effects for the most severely anxious participants

This study found these improvements in individuals (the ‘anxious sample’) suffering a spectrum of different anxiety and stress-related disorders including PTSD, Generalized Anxiety Disorder, Panic Disorder, Agoraphobia, and Social Anxiety Disorder, as well as comorbid unipolar Major Depression.

A separate 2018 study[11] looked specifically at a clinical sample of patients with high levels of anxiety sensitivity (AS)[12] and similarly found

- reductions in state anxiety and muscle tension
- increases in feelings of relaxation and serenity
- significant blood pressure reductions throughout the float session

Benefits of floatation for stress management

A 2004 analysis of floatation-REST from the Netherlands looked at 27 separate studies for the purposes of stress management.[13] Together they showed a relatively strong, positive effect on

- physiology, including
    - lower levels of cortisol (a stress hormone)
    - lower blood pressure
- wellbeing
- performance

Benefits of floatation for pain relief

For three decades, the Human Performance Laboratory at Sweden's Karlstad University has been studying the effects of floatation. Generally, its studies concur with the above findings, with the addition of

- improved sleep
- increased energy

Three of the lab's studies in particular looked at pain.

A 2001 study[14] looked at the use of floatation-REST for pain relief, with a group of chronic pain sufferers (aching muscles in neck and back) given nine floatations over three weeks and compared to a control group of sufferers who did not receive the therapy. The results indicated

- significant reduction in the most severe perceived pain intensity
- significant reduction in circulating levels of a chemical associated with stress levels[15]
- significant reduction in the degree of anxiety or depression
- rise in optimism
- improved ease in falling asleep at night

A further study[16] led by Professor Torsten Norlander for the lab showed that for individuals who had been suffering long term from stress-related health problems such as chronic pain, depression, or anxiety, after a seven week period of treatment

- 22% were entirely free of pain
- 56% experienced a clear improvement
- 23% slept better
- 31% experienced less stress
- 27% felt less anxiety
- 24% were less depressed or came out of their depression completely

And the positive effects were still in evidence four months after the floatation therapy ended.

A 2005 study (detailed below) looked at floatation's beneficial effects on stress-related muscle pain.

Are the benefits due specifically to floatation

… as opposed to general relaxation or heightened attention?

A 1987 study[17] on patients with borderline hypertension compared bio-feedback relaxation with REST-based relaxation over ten weeks. At the end, two thirds of participants in both therapies had benefited from a significant reduction in blood pressure. However, 83% of the REST patients also enjoyed a decrease in all stress-related hormones studied, compared with only 33% of the other patients.

A 2005 study[18] examined whether floatation alone had beneficial effects on chronic, stress-related muscle pain or whether heightened attention during therapy also played a role. All of the patients had chronic, stress-related muscle pain and half had also received the diagnosis of burnout depression. By giving half the group heightened attention and the other half a normal level of attention, the study determined that the benefits came from the floatation therapy, rather than from heightened attention. Benefits found included

- reduced pain
- lowered blood pressure
- reduced anxiety, depression, stress and negative affectivity
- increased optimism, energy and positive affectivity

The study concluded

> "*flotation therapy is an effective, noninvasive method for treating stress-related pain... The treatment of both burnout depression and pain related to muscle tension constitutes a major challenge for the patient as well as the care provider, an area in which great gains can be made if the treatment is effective. Flotation therapy may constitute an integral part of such treatment.*"

A further study[19] by the lab found that floatation showed benefits even in relatively healthy patients, including

- a significant decrease in stress, depression, anxiety and worst pain
- a significant increase in optimism and sleep quality

Sleep is also the subject of a 1993 study[20] that looked at floatation-REST as "an effective treatment for persistent, psychophysiological insomnia."

Part two: floatation and Long Covid

This section examines the agreed nature of Long Covid (still only becoming established) and floatation benefits that may be applicable.

Long Covid symptoms

In its December 2020 guidelines (*COVID-19 rapid guideline: managing the long-term effects of COVID-19*),[21] NICE (the UK's National Institute for Health and Care excellence) defines Long Covid thus:

> "*'long COVID' is commonly used to describe signs and symptoms that continue or develop after acute COVID-19. It includes both ongoing symptomatic COVID-19 and post-COVID-19 syndrome*"

Ongoing symptomatic COVID-19 is "*signs and symptoms of COVID-19 from 4 to 12 weeks*".

Post-COVID-19 syndrome is "*signs and symptoms that develop during or after an infection consistent with COVID-19, continue for more than 12 weeks and are not explained by an alternative diagnosis*".

For practical purposes, this paper looks at new or ongoing symptoms that are present four weeks or more after the start of acute COVID-19.

The UK government Department of Health and Social Care stated in February 2021[22] that "*Approximately 1 in 10 people with COVID-19 continue to experience symptoms beyond 12 weeks*" and that

> "*Long COVID can present with clusters of symptoms that are often overlapping and/or fluctuating. A systematic review has highlighted 55 different long-term effects but common symptoms of long COVID include breathlessness, headaches, cough, fatigue and cognitive impairment or 'brain fog'. There is also emerging evidence that some people experience organ damage.*"

The NICE guidelines further list[23] the most common symptoms as:

Respiratory symptoms

- Breathlessness
- Cough

Cardiovascular symptoms

- Chest tightness
- Chest pain
- Palpitations

Generalised symptoms

- Fatigue

Gastrointestinal symptoms

- Abdominal pain
- Nausea
- Diarrhoea
- Anorexia and reduced appetite (in older populations)

Musculoskeletal symptoms

- Joint pain
- Muscle pain

- Fever
- Pain

Neurological symptoms

- Cognitive impairment ('brain fog', loss of concentration or memory issues)
- Headache
- Sleep disturbance
- Peripheral neuropathy symptoms (pins and needles and numbness)
- Dizziness
- Delirium (in older populations)

Psychological/psychiatric symptoms

- Symptoms of depression
- Symptoms of anxiety

Ear, nose and throat symptoms

- Tinnitus
- Earache
- Sore throat
- Dizziness
- Loss of taste and/or smell

Dermatological

- Skin rashes

The NICE guidelines also state "*that people can have wide-ranging and fluctuating symptoms after acute COVID-19, which can change in nature over time*".[24]

Assessing people for Long Covid symptoms

The NICE guidelines recommend[25] that assessment should "use a holistic, person-centred approach" and include "assessing physical, cognitive, psychological and psychiatric symptoms, as well as functional abilities". They also recommend, in addition to the above symptoms:

> "*When investigating possible causes of a gradual decline, deconditioning, worsening frailty or dementia, or loss of interest in eating and drinking in older people, bear in mind that these can be signs of ongoing symptomatic COVID-19 or suspected post-COVID-19 syndrome.*"

General management of symptoms

It is only in recent months that Long Covid has received official recognition, meaning that clinical research into treatment of the condition is only in very early stages. In February, the UK government announced funding for four studies "*to identify the causes of long COVID and effective therapies to treat people who experience chronic symptoms of the disease*".[26] However, these studies will not be concluded for two or three years.

It is therefore not possible to refer people for treatment or care based on a diagnosis of 'Long Covid' as a condition. Instead, treatment or care should be based on signs and symptoms as presented, which may be multiple.

Assessment of some signs or symptoms may necessitate urgent or emergency referral to acute clinical or psychiatric services (from physical symptoms such as oxygen desaturation or cardiac chest pain to severe psychiatric symptoms). Others may require referrals for specific symptom-based treatments based on specific clinical tests (blood tests, x-rays etc).

However, many may have multidisciplinary needs to provide care, alleviation and rehabilitation for a wide range of signs and symptoms affecting physical and mental health and wellbeing. Self-management and supported self-management are key ingredients, including support groups and

social prescribing, as is multidisciplinary rehabilitation, including physical, psychological and psychiatric aspects of rehabilitation.[27]

The NICE guidelines make specific mention of the possible need for additional support for older people, including not only care but "*support with social isolation, loneliness and bereavement, if relevant.*"[28]

Floatation therapy for symptom care

At this stage in the history of Long Covid, it is too early for there to be specific studies into the use of floatation therapy in its overall treatment or care.

However, as shown earlier, floatation is well established as a means for managing or alleviating a number of the symptoms that are now presented as symptoms within Long Covid. And also as shown above, NICE recommends a holistic, person-centred approach to provide care, alleviation and rehabilitation for each of a wide range of signs and symptoms, with supported self-management, including social prescribing, as key features.

As part one of this report establishes, floatation can provide care or alleviation for a number of Long Covid symptoms listed above. These include

- Physiological and neurological symptoms such as
    - Muscle pain
    - General pain
    - Sleep disturbance
    - Headache (where related to stress, anxiety, high blood pressure or raised stress hormones)
    - Delirium (in part, through alleviation of related anxieties and increases in feelings of relaxation and serenity)
    - Loss of concentration or 'brain fog' (where they respond to improved general wellbeing, energy and positive affectivity)

- Psychological and mental health symptoms such as
    - Symptoms of depression
    - Symptoms of anxiety

Conclusion

Floatation therapy is a well-established, proven therapy for the care and alleviation of a range of physiological/neurological, psychological and mental health symptoms, including a number of common symptoms experienced by Long Covid patients. Floatation has the potential to play a significant part in their care, symptom management and rehabilitation.

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