

Sensory deprivation: More is not always better

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In modern days, we often feel stressed due to various types of disturbances from the surrounding environment, from the noisy sounds from transportation to the artificial light disturbance at night. Some may think of being relieved if they become isolated from the world to get rid of all those annoyances. They might be correct, as scientists have found that the sensory deprivation tank – a floatation tank that provides restricted environmental stimulation therapy (REST) – can be helpful for physical and mental health.



An isolation tank, by Trogain (CC BY SA 4.0); https://commons.wikimedia.org/wiki/File:Isolation_tank_helsinki.jpg

In a 2016 pilot study with 60 elite, international-level athletes across nine sports, Matthew W. Driller (University of Waikato) and Christos K. Argus (University of Canberra) discovered that Flotation Restricted Environmental Stimulation Therapy (Flotation REST) could support physical and psychological recovery following training in elite athletes [1]. Flotation REST is a sensory deprivation treatment that lets participants immerse vertically in a flotation tank containing water dense with Epsom salts (Mg_2SO_4). The participants wear opaque helmets surrounding their heads connected to a series of breathing tubes for ventilation during the therapy. After a 45-minute session of Flotation REST, athletes significantly perceived a reduction in muscle soreness and improvement in 15 out of 16 mood states (e.g., less worn-out, less tired, more relaxed, more at-ease). Additional benefits to mood states were also found in athletes that napped during the Flotation REST.

In another study of the Flotation REST conducted by a group of researchers led by Justin S. Feinstein (Laureate Institute for Brain Research), Flotation REST was found to acquire positive impacts on the mental health of 50 people having mental disorders (e.g., posttraumatic stress, generalized anxiety, panic, agoraphobia, social anxiety, and major depressive disorder) [2]. The researchers found that a 1-hour session of float could substantially reduce stress, muscle tension, pain, and depression and increase serenity, relaxation, happiness, and overall well-being. It is noteworthy that the largest effects happened among the group of most severely anxious participants.

However, people with prolonged sensory deprivation can experience hallucinations [3]. Due to this terrifying effect, sensory deprivation punishment is usually employed as punishment in many prisons. The Hole, a cell where all light and sound were isolated completely, at the famous Alcatraz Island prison, is a typical example of this kind of punishment. Inmates confined in the Hole will experience strong hallucinations that make them perceive their inner experiences as completely “real”. Being confined in the Hole can be a “nightmare” for any Alcatraz Island inmate [4].

From the above findings, it is plausible that sensory deprivation is no good without risk. The effects of sensory deprivation on humans’ physical and psychological statuses can be greatly different with different types, lengths, and levels. Moreover, applying the mindsponge mechanism to explore the impacts of sensory deprivation on mental health in social contexts can be a promising approach [5,6]. But it is something for the future. One thing I am certain of right now is that no ordinary person will enjoy being in the Hole to relieve stress.

References

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