floatation therapy
AUSTRALIA

Floatation Tank Operation Best Practice Guidelines

Purpose

The purpose of this document is to set Australian Best Practice Guidelines for the Floatation Tank Centres relating to Risk Management, Operation and Monitoring, while highlighting the major ways float tanks differ from aquatic facilities. It also provides guidance aiming for best practice standards on preventing health hazards and standards for the management and sanitisation of water (float tank solution).

The guidelines have been informed by North American Float Tank Standards V2, Victoria Health, the Western Australia Health Department, manufacturers users manuals and consultation with the industry.

Floatation Therapy Australia

Our mission is to inspire the evolution of human potential through Floatation Therapy, and together we are passionate about a new era of health and wellness, evolving as a local and global community.

Our Purpose

Promote floatation therapy within Australia and collaborate with other float associations internationally.

Educate the community and practitioners about the benefits of floatation as a therapy for health and wellbeing, while promoting **good mental health and wellness** across a range of population groups and places in which people live, learn, work and play.

Build research partnerships with academics, governments, non-government, corporate, service providers and the community to add to the global research library.

Sponsor academics and researchers to present contemporary and up to date research to health professionals and inspire local research and trials in Australia.

Establish float therapy as a mainstream therapeutic and recovery option for the community within the health, allied health, disability, aged care, veterans and sports sectors.

Floatation Therapy Background

Floatation Therapy emerged in the 1950's, when it was developed by neuropsychologist Dr. John C Lilly while he was working at the United States National Institute of Mental Health.

Throughout nearly 70 years, it has been called a few different things such as floating, sensory deprivation, isolation tank therapy, float tank and REST – Restricted (or Reduced) Environmental Stimulation Therapy. Today the practice is known as Floatation Therapy.

A little-known fact about floatation therapy is its contribution to the space program in the 50s and 60s. Many NASA astronauts trained in early floatation tanks for the zero-gravity environment.

Context

Float tanks are also referred to as floatation pods, float chambers, open float pools or sensory reduction systems that contain between 500 to 1,000 Litres of float tank solution.

The float tank solution inside a float tank contains very high concentrations of Magnesium Sulphate (Epsom salts) at around 30-40% by weight and is warmed to approximately 35 degrees Celsius. Float tanks are designed to be used by one person at a time, although there is an emergence of dual (with known partners) float tank options. They are marketed as providing a sensation of floating in a zero-gravity environment combined with various potential health benefits.

Monitoring and managing the potential microbiological risks in float tanks is important for the safety of its users.

Float tanks are becoming more popular, and they can be a stand-alone float centre or part of a multiple disciplinary wellness centre. The following guidance is provided to assist floatation therapy operators to ensure their safe use.

Three Major Ways Float Tanks Differ from Pools and Spas (Aquatic Facilities)

1. Reduced Contaminants & Protection of Typical Portals of Entry

Compared to a pool or spa, the way users interact with the float tank results in significantly lower levels of contaminants being introduced into the float tank solution, as well as much lower risks of those contaminants colonizing and potentially infecting the user, see Risk Matrix below.

RISK MATRIX – POOLS/SPAS VS FLOAT TANKS	
INCREASES RISKS - POOL/SPA	**REDUCES RISKS - FLOAT TANK**
Multiple Users	Single User
Users may be sick or recently ill	Users sign a consent form highlighting the reasons why they should not enter the Float Tank, i.e. If they've experienced diarrhoea in the last 14 days.
Continuous circulation	Filtration 3-5 times between each user.
Users may or may not shower before or after use	Users shower before entering the tank, greatly reducing the contaminant load they bring into the solution. Users also thoroughly shower afterwards to remove residual salt, reducing the chance any potential pollutants from the solution would remain on their body.
Swimmers may ingest pool water each time they swim or play in the water	Users float with their mouth, nose and eyes above the solution. A comprehensive induction also occurs with all first-time floaters. Floating is a passive activity where users lie still on their back. Ear plugs are also provided to users to keep float solutions from entering ears. There is little opportunity to ingest and transmit gastrointestinal pathogens via the faecal-oral route.

Swimmers may use pools or spas with open wounds	Individuals are discouraged to float while having open wounds. The Epsom salt solution stings alerting users to the open wounds and discouraging them to persist.
Children regularly use pools. Children are known contributors of faecal contamination in pools and spas and are highly likely to ingest recreational water through their play activity	It is less common for children and never for toddlers and preschoolers. Older children may float for therapeutic purposes and do so under supervision.
Swimmers exercise in pools and may excrete sweat	Floating requires no vigorous movement. The aim is to lie still and remain quiet throughout the session. The solution is kept at skin-temperature, resulting in users producing much less sweat than in a swimming pool.
Bathing suits may introduce detergents and other contaminants into pools	Users typically do not wear bathing suits while floating, thus eliminating this risk.
Passive signage at pools and spas	Each client is given a thorough float orientation, educating them on proper hygiene procedures for best sanitation and safety practices.
Large volumes of water in pools	Float tanks are relatively small devices with small volumes of float tank solution and short lengths of piping for filtration. This maximises exposure to UV light and filtration between clients.
Multiple users and faecal or vomit incidence may go unnoticed for any length of time	Room cleaning and visual inspection of the water for hair and debris occurs between each user. This, combined with the small volume of solution, makes it very unlikely contaminants would go unnoticed.

2. High Concentration of Magnesium Sulphate (Epsom Salt)

Float tanks are filled with a solution made of approximately 600 kg Magnesium Sulphate (Epsom Salts) to 1,000 litres of water.

This concentration of Epsom salt has a significant impact on the chemistry of the solution, making it difficult for pathogens to grow or even survive.

3. Circulation & Filtration

The noise and movement of the solution generated by continuously running a pump during a user's float significantly disrupts the sensory reduction that is fundamental to the purpose of a float tank and conserving its specific environment. For this reason, the normal pool/spa requirement of continuous filtration is not suitable for float tanks.

Float tanks employ a filtration process (typically one-micron filters) that happens between each float session. Manufacturers guide the turnover rate of 3-5 per session. Four turnovers will achieve about 98% filtration of the total solution.

Hygiene and Use

- All patrons receive an in-person induction of the protocols and expectations when floating to ensure safety and maintain hygiene and health including:
    - Need to shower before and after each float to assist in maintaining hygiene of water and to reduce any potential for infection after the float.
    - Direction for positioning head and feet whilst floating.
    - How to open and close the lid/door of the device.
    - Float in nude.
    - Positioning of lighting and alert buttons.
- Users float on their back and do not submerge their face in the float tank solution.
- Users lie still throughout the float with no splashing or vigorous activity.
- Users do not ingest the water.
- Periodic disinfection of all surfaces that might harbour staph or athlete's foot: toilets, showers, hand basins, changing areas and hair drying stations.
- Operators prohibit sick patrons seeking to use float tanks, who may then contaminate the water. Do not admit anyone who has had diarrhoea in the previous fourteen days. This is typically done through providing a questionnaire/waiver to customers before use.
- If there is a faecal accident in the tank it is drained, disinfected, and refilled with new solution.
- If a patron has mobility issues or special needs and requires assistance, they are required to provide their own carer as centres are generally not trained nor carry insurance to manage these requirements.

Microbiological Risks

SUMMARY OF KNOWN MICROBIOLOGICAL RISKS / INFECTIOUS DISEASES IN POOLS & SPAS AND HOW PEOPLE ARE INFECTED*[1]			
PORT OF ENTRY	**SWIMMING POOLS**	**SPAS**	**HOW THE RISKS ARE MITIGATED IN FLOAT TANKS**
Respiratory	None	Legionella pneumophila (via aerosol generation)	No aerosol generation therefore *Legionella* cannot grow.
Gastrointestinal	Bacterial: E. Coli (O157:H7) and Shigella	None	None - User behaviour is similar to spas which do not have these types of infections. Users shower prior to and post floats. Users float on their back with their face out of the water. Water ingestion is rare.
	Virus: Norovirus		
	Parasites: Giardia & Cryptosporidium		
Dermal	Pseudomonas aeruginosa	Pseudomonas aeruginosa	Low - 30% salt levels in float solution prohibit growth of Pseudomonas aeruginosa.

[1] *Dr. Roy Vore, Microbiologist and expert in aquatics, spas and float*

Mitigation of Microbiological Risks in Float Tanks & Float Centres

Float Centres throughout Australia operate with a variety of methods for disinfection, guided by the manufacturers of their various float devices. The manufacturers of float tanks currently in use in Australia typically have supplied float tanks to float centres around the world and have been guided by best practice for water safety guidelines within the floating environment of their floatation device and specifications.

The FTA is aware that most states have not specifically classified float centres under specific legislation however understands that float centres may by default, be incorrectly classified as aquatic facilities. Some states have specifically classified Float Centres as an aquatic facility, and therefore Guidelines for sanitation requirements for aquatic facilities in all the states have been outlined in the Appendix as a reference. The FTA emphasises that float tank environments are significantly different than pools and spas, as previously outlined in this document, which makes following pool and spa guidelines inappropriate.

The following are guidelines to assist operators in mitigating microbiological risks within the float tank and within float centres:

- Develop a Facility Operations Manual that includes:
    - How employees are trained.
    - How records of training are maintained.
    - What to do in the case of a faecal accident.
- Do not admit anyone who has had diarrhoea in the previous fourteen days.
- Depth of solution should be within the parameters for proper surface level skimming.
- Specific Gravity: 1.23 - 1.3.
- Periodically disinfect all surfaces that might harbour Staph and Athlete's Foot.
- Use a filter with 1 Micron pore size and multiple turnovers between users. Filters are cleaned / replaced based on manufacturer’s recommendation.
- Consider using UV to inactivate Giardia and Cryptosporidium. UV bulbs to be cleaned / replaced based on manufacturer’s recommendations.
- If there is a faecal accident in the tank, drain, disinfect and refill with a new solution.
- Conducting regular water testing, as per guidelines.

Following are a variety of methods recommended by float tank manufacturers for maintaining safe water standards for users:

- Use of Ozone, UV and 1 micron filters.
- APO - Advanced Oxidation Process - H2O2 in combination with UV and 1 micron filter - for H2O2 systems, H2O2 levels are required to be maintained between 70-100ppm.
- Chlorine together with 1 micron filter. For chlorinated systems, chlorine levels are required to be maintained at a minimum of 3ppm.
- Bromine together with 1 micron filter. For nominated systems, bromine levels are required to be maintained at a minimum of 6ppm.
- Four full float tank solution turnover cycles are necessary between patrons (i.e., the volume of the float tank solution is to be pumped through the filters three to five times) to allow for adequate filtration and disinfection. This feature is expected to be built into the unit by the manufacturer. Operators need to ensure that the full filtration cycle is completed between each client session.

Operation

- It is recommended that float centre owners follow the guidelines of their float tank manufacturer for maintaining safe floating environments.
- Float centre owners must operate in accordance with their state requirements for float tanks as outlined by their regulatory body. See Appendix for Summary of the state aquatic facilities regulations.
- Float centre owners to follow the guidelines of their local regulator.

Contaminants

For dealing with unexpected contaminants, the following protocol will be followed.

Blood is not considered a contaminant, in the instance of blood, in the tank, the following measures should be taken:

- Do not circulate the solution.
- Staff must wear gloves whilst cleaning.
- Remove all visible particles from the float solution and the basin walls and dispose of the cleaning cloth.
- Once thorough manual cleaning is complete, add a measured amount of sodium hypochlorite (household bleach) to the basin to achieve a 2.0ppm residual.
- Once thorough manual cleaning is completed disinfect all surfaces of the tank.
- Maintain this 2ppm residual for a period of no less than thirty minutes.
- After a minimum of 30 minutes the water should be filtered according to the normal turn-over rate.
- At this point it should be safe for floating to resume.

For any faecal matter, suspected diarrhoea or vomit contamination, it is recommended that the float water should be drained and cleaned in the following manner:

- Do not circulate the solution.
- Staff to wear gloves whilst cleaning.
- Remove all visible particles from the float solution and the basin walls.
- Completely drain the float tank and filtration pack.
- Thoroughly clean the empty basin and then disinfect with a 100ppm bleach solution thoroughly.

Monitoring and Testing

- Monitoring of water chemistry is done daily. Records of all testing are kept in a log-book or registry of the results of each test undertaken for:
    - Disinfectant (Chlorine, Hydro Peroxide, Bromine)
    - PH level
    - Total Alkalinity (pH Buffer)
- Monitoring and testing by local government officers varies across states and Territories of Australia. Float centre operators are to conduct water testing as required by their local regulations.
- In addition, local operators should arrange for their own laboratory testing for microbiological analysis minimum twice yearly for the following:
    - **E. coli** - indicator of possible faecal contamination
    - **Pseudomonas aeruginosa** - problematic bacteria that grows well in warm water
    - **Enterococci** - indicator of possible faecal contamination
    - **Heterotrophic plate count** - indicator of possible issues with disinfection process
- Amoeba testing is not relevant due to the hyper saline character of the water creating environmental conditions that are considered non-conducive to amoebic proliferation.

Acknowledgements

- Floatation Therapy Australia Association (FTA)
- North American Float Tank Standard Version 2 – 2017 – Floatation Tank Association
- Victorian Health – Public Aquatic Facilities Fey Compliance Requirements – Float Tank exemption
- Guidelines for Floatation Tank Installation, Operation, Monitoring and Risk Management - Department of Health WA 2015.
- Float Tanks: Review of Current Guidance and Considerations for Public Health Inspectors, Shelley Beaudeta and Angela Eykelboshb, National Collaboration Centre for Environmental Health.
- Dr Roy Vore Microbial physiologist International viral expert in aquatics, spas and floatation tanks. *Should We Worry about Germs in Float Tanks?,* Float Conference 2018.

Thanks to the FTA Committee members for reviewing and finalising the document: Toni Basile, Kate Hindmarsh, Karen Lewis, Kurt Mirow, Kathy Rees, Jamie Strong, Cheryl Wegner. A special thank you to Daniel Eastwood who got the ball rolling with the first draft and Jonathan Gibbs for researching and clarifying all Aquatic Facilities Legislation, Regulations, and Standards.

FTA wishes to acknowledge all the floaters who have been early adopters of this amazing therapy, that gives so much by doing so little, and given their feedback over the years to make floating a better understood and more extended experience for everyone.

For questions contact: info@floattherapy.org.au

Appendix

Summary by State – Legislation & Regulations Relating to Aquatic Facilities

Presently there is little uniformity between Australian states and Territories in relation to the regulation and classification of the Floatation Therapy Industry. It is an emerging industry and relatively young. In 2010 there were less than 10 floatation centres in Australia. In 2020 there are over 155 centres with new centres opening regularly.

To date the Floatation Therapy industry is poorly understood by Health Departments and local councils and as such Float tanks have been mis-classified under Public Health and Aquatic Legislations.

CURRENT AQUATIC FACILITIES REGULATIONS*[2]

STATE	LEGISLATION	REGULATION	PERMIT TO OPERATE FLOAT TANKS	INDUSTRY CLASSIFICA-TION FOR FLOAT TANKS	DISINFECTANT USE
ACT	Section 133(1) Public Health Act 1997	ACT Public Swimming Pool and Spa Pool Code of Practice	Certificate of Occupancy and Use	N/A	Chlorine Bromine Ozone UV Hydro Peroxide + UV
NSW	Public Health Act 2010 Public Health Regulation 2012 Schedule 1 - Public Health Regulation 2012	Public Swimming Pools and Spa Pools Advisory Document APVMA Guide for Demonstrating Efficacy of Pool & Spa Sanitisers - July 2014	Notification form to notify local council of existence of public pool or spa pool	N/A	Chlorine Bromine

[2] Accurate as of July 2021

NT	Public and Environmental Health Act 2011	Guidelines For Public Aquatic Facilities	No specific permit requirement	Group2 Restricted to discrete users and user groups	Chlorine Bromine Ozone
QLD	No laws for water quality at public aquatic facilities (pools, spas etc) Under Public Health Act 2005, "a public aquatic facility must not pose a public health risk"	Water quality guidelines for public aquatic facilities December 2019 Local council is responsible for the regulation of public aquatic facilities. Some councils have applied local laws to public aquatic facilities	Check if local Council permits are required.	N/A	Chlorine Bromine Queensland Health only supports using primary disinfectants in Aquatic Facilities (as discussed in section 4.2.2) registered with the APVMA or undergone independent testing against APVMA's guidelines
SA	South Australian Public Health Act 2011	Standard for the Operation of Swimming Pools - SA Health Code-of-Practice-for-SA-Public-Swimming-Pools	Local Council Application	Group4 Small Centre	Chlorine Bromine UV + Hydrogen Peroxide
TAS	Public Health Act 1997	Recreational Water Quality Guidelines 2007	Local Council Application 16/1/21 Certificate of occupancy and use	N/A	Chlorine Bromine
WA	Health (Aquatic Facilities) Regulations 2007	Code of Practice for Design, Construction, Operation, Management & maintenance of Aquatic Facilities	Executive Director Public Health (EDPH) approves Certificate of Compliance and Permit to Operate. The Department of Health inspects the facility	Regulated Aquatic Facility Group3	Chlorine or Bromine Not Permitted - Hydrogen Peroxide & associated solutions
VIC	Public Health and Wellbeing Act 2008 and the Public Health and Wellbeing Regulations 2019	Water quality guidelines for public aquatic facilities	No specific permit requirement	Float tanks exempt from classification	Chlorine Bromine Not Permitted - Hydrogen Peroxide According to water quality guidelines

References

- ACT Code of Practice for the Operation of Swimming and Spa Pools.
- British Columbia Floatation Tank Guidelines, January 2016
- CDC 2018 Model Aquatic Health Code - US Dept of Health and Human Services, Centers for Disease Control and Prevention
- CDC Standards - disinfection team chlorine ph fact sheet
- Hydrogen Peroxide Material Compatibility Chart
- NCCEH (Canada) Float Tanks Review Current Guidance July 2016 NSF International Recreational Water Program - Component Certification for Floatation or Sensory Deprivation Systems and Related Equipment (CCS-12804)
- Float Tank Association North American Float Tank Standard, Feb 2017
- VIC Public Health and Wellbeing Regulations 2009
- Victorian Health – Public Aquatic Facilities Key Compliance Requirements – Float Tank exemption
- WA Code of Practice for the Design, Construction, Cooperation, Management & Maintenance of Aquatic Facilities January 2020
- WA Guidelines for Float Tanks
- WHO Guidelines for Safe Recreational Water Environments, Volume 2 Swimming Pools and Similar Environments