



September 2024
DOH 333-347

Cold Plunge Frequently Asked Questions

What is a cold plunge?

Any artificial basin or other structure containing cold water, typically 10-15°C or less than 59°F, used or intended to be used for recreation, relaxation, or cold water immersion (CWI). These types of water recreation facilities are considered a "spa pool" per [Chapter 246-260](#) of the Washington Administrative Code (WAC) meaning, "a pool designed for relaxation or recreational use where the user is usually sitting, reclining, or at rest and the pool is not drained, cleaned, and refilled for each user. The spa pool may include, but not be limited to, hydro jet circulation, hot water, cold water, mineral baths, air induction bubbles in any combination." **Cold plunges must comply with all rules for the design, construction, equipment, and operation of spa pools in [Chapter 246-260 WAC](#).**

What is Cold Water Immersion (CWI) therapy?

Cold water immersion (CWI) therapy is the use of cold water (typically less than 59°F) and has been around for millennia with reported health benefits still debated. CWI can involve athletes using deliberate cooling methods such as ice baths between bouts of exercise to reduce inflammation or more recently, has been claimed to boost immune function and induce increased concentrations of dopamine, serotonin, and endorphins associated with improved mood and a "post swim high."^{1,3,4}

What are the risks with Cold Water Immersion (CWI)?

According to the American Heart Association, "plunging the body into cold water triggers a sudden, rapid increase in breathing, heart rate and blood pressure known as the cold shock response. That can cause a person to drown within seconds if they involuntarily gasp while their head is submerged. The shock also places stress on the heart and makes it work harder." These initial responses, or 'cold shock', have been identified as particularly hazardous, accounting for many immersion deaths.^{1,3} Deaths have most often been attributed to drowning, with the physiological responses of a gasp and uncontrollable hyperventilation, initiated by the dynamic response of the skin's cold receptors, resulting in swallowing a small amount of water necessary to initiate the drowning process.^{1,3} Individuals with known or unknown heart conditions are at higher risk as the same dynamic response can activate the sympathetic nervous system triggering a cardiac event even in otherwise young and healthy individuals.¹⁻³ After the initial response, within minutes of the CWI, blood leaves the extremities to support vital organs which can lead to loss of muscular strength and coordination making it difficult to exit the plunge.^{1,2}

What are the design, construction, and equipment challenges for self-contained cold plunges?

Manufacturers of self-contained cold plunge tubs built primarily for the residential market and even those labeled “commercial” are not built to meet Washington State design and construction requirements for regulated uses. As of September 2024, DOH is not aware of any self-contained cold plunge tubs that comply with all Washington state requirements.

The list below provides examples of requirements that may be challenges for owners and designers:

- The Federal Americans with Disabilities Act for Accessibility
 - ADA requirements shall be reviewed and approved by the local building department with jurisdiction.
- [Chapter 246-260](#) WAC, Water Recreation Facilities
 - [WAC 246-260-031](#)(8) Outlets
 - The federal Virginia Graeme Baker Pool and Spa Safety Act (P&SS Act for suction fitting safety)
 - [WAC 246-260-031](#)(11) Pool Appurtenances
 - [WAC 246-260-031](#)(15) Make-up Water
 - Water shall come from a supply conforming to [Chapter 246-290](#) WAC (Group A water source).
 - Conforming to applicable NSF standards for filtration ([WAC 246-260-031](#)(16)) and disinfection equipment ([WAC 246-260-031](#)(17))
 - All components of the filtration and recirculation systems shall be kept in continuous operation 24 hours per day.
 - [WAC 246-260-031](#)(23)(a) Wastewater Disposal
 - The owner shall dispose of all wastewater in a manner approved by the local health officer.

What are the operational and maintenance requirements for cold plunges?

The list below is not intended to be an exhaustive list of requirements, but a list of common requirements that may be challenges for owners and operators. Operational and maintenance requirements in WAC [Chapter 246-260](#) include:

- Spa reservoir cleaning in compliance with [WAC 246-260-131](#)(4).
- Water quality in compliance with [WAC 246-260-111](#) including continuous disinfection, daily removal of any scum or debris, closing during a contamination event, etc.
 - Water quality ranges must be maintained as outlined for spas under [Appendix A— Water quality standards Table 111.1 and 111.2](#).
- Daily water quality testing for parameters outlined in [WAC 246-260-121](#) (free/combined chlorine, pH, and alkalinity weekly). Records must be maintained for at least 3 years.
- Owners/operators must monitor required parameters with a field test kit in compliance with [WAC 246-260-111](#)(6).

- NOTE, test kit manufacturers specify a minimum water temperature as cold water slows the reactions of the test kit, temperatures vary from test kit to test kit, with most requiring a minimum water temperature of 60°F.⁵ Consult your test kit manufacturer's website or instructions for their recommended temperature range when testing.
- Owners must have a written operations plan addressing facility and personnel components listed in [WAC 246-260-131](#) (1). The following considerations for cold plunge pools should be included:
 - The owner must have written procedures for how the cold plunge and physical facility will be maintained. Considerations for how users will be informed on how to use and of the risks of cold plunge use, i.e., waiver, signage, etc. should be included.
 - The water treatment operator must be identified in the operation plan along with any other staff in charge of monitoring the cold plunge area. Due to the increased risk of injury and drowning from cold water shock, the operations plan should include details for how staff will be trained to recognize emergencies and monitor the area during operational hours.
 - Additional rules for spa pools should be posted at cold plunge, see DOH's [Pool Signs for Regulated Facilities](#) webpage (<https://doh.wa.gov/pool-signs>).
 - Written plan should include procedures for responding to an emergency in the pool area including location of emergency equipment, considerations for the different types of emergencies, procedures for staff communicating with guests/EMS/each other during emergencies and staff training plans.
- Lifeguards and/or attendants may be required depending upon type of use (Limited or General) and if other pools are within the WRF as outlined in [WAC 246-260-131](#) (6).

Are there any other agencies that may be involved?

If the cold plunge is being proposed at a location that was not previously a water recreation facility, there could be applicable zoning laws or local ordinances within your jurisdiction that impact where these types of businesses may be allowed. Whether a new water recreation facility or a new spa pool at an existing water recreation facility, electrical, building, fire & life safety compliance will need to be verified by the overseeing building department and Washington State Labor & Industries.

When/how to contact DOH

Water recreation facilities in Clark, King, Pierce, Snohomish, and Spokane counties should contact their local health department for construction permits and other regulatory requirement issues. All other facilities should contact the state health department. For questions regarding this handout contact: WaterRecreation@doh.wa.gov

References:

1. Tipton, M. J., Collier, N., Massey, H., Corbett, J., & Harper, M. (2017). Cold water immersion: kill or cure?. *Experimental physiology*, 102(11), 1335–1355. <https://doi.org/10.1113/EP086283>
2. Williamson, L. (2022, December 9) You're not a polar bear: The plunge into cold water comes with risks. *American Heart Association News*. <https://www.heart.org/en/news/2022/12/09/youre-not-a-polar-bear-the-plunge-into-cold-water-comes-with-risks>
3. Trapper, J. (2023, October 1) Cure or killer? The rewards – and very real risks – of the cold water plunge. *The Guardian*. <https://www.theguardian.com/society/2023/oct/01/cure-or-killer-the-rewards-and-very-real-risks-of-the-cold-water-plunge?ref=upstract.com>
4. Esperland, D., de Weerd, L., & Mercer, J. B. (2022). Health effects of voluntary exposure to cold water - a continuing subject of debate. *International journal of circumpolar health*, 81(1), 2111789. <https://doi.org/10.1080/22423982.2022.2111789>
5. Pool Test Kits and Cold Water. (2023, December 1) Orendatech. <https://blog.orendatech.com/pool-test-kits-and-cold-water>



Water Recreation Program
(360) 236-3330
www.doh.wa.gov/watersafety

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