

## QUESTION: What are the safety considerations of working in water?

**Question:** What are the most common safety considerations of working in a therapeutic pool setting? What must I do to maintain a safe pool environment?

There are many questions asked about maintaining a safe pool environment. Here are answers to the most common questions.

### **What kind of policy should we have regarding bowel incontinence in the therapy pool?**

Fecal contamination of pool water can cause serious illnesses. Ingestion of contaminated water while swimming, inhalation of water vapor above the pool surface, and body contact with pathogenic organisms and absorption through the skin, body orifices or open wounds while swimming can result in transmission of a variety of diseases.

Some pathogens may cause mild gastrointestinal discomfort. *E. coli* causes gastroenteritis with symptoms of diarrhea, cramping, nausea, and vomiting. Some strains of *E. coli*, such as O157:H7, responsible for the recent outbreak at Atlanta's White Water waterpark, and the Jack-in-the-Box tainted hamburger outbreak a few years ago, result in life threatening symptoms. Bacterial infections may, or may not, be successfully treated with antibiotics.

If fecal matter is introduced into pool water, it can be neutralized through proper sanitation and oxidation. However, sanitizer efficacy depends on several factors including: residual disinfectant levels maintained in the water, oxidation reduction potential, 24-hour uniform circulation patterns and absence of dead spots, physical characteristics of the water such as TDS level and amount of suspended colloidal solids present, whether settled materials are being removed through vacuuming, the percentage of water circulated through the perimeter overflow system, frequency of dilution and draining of the pool, filter media effectiveness, the pH levels, water temperature, and bather load to water volume ratio. The length of bather exposure to the pathogenic organism, whether pathogens are embedded in higher organisms such as algae, the density or number of organisms present in a specific volume of water, and the microbe strength or virulence will also determine the likelihood of disease transmission.

To lessen the probability of fecal contamination, ask [clients] to use the toilet. Do not permit diaper changing at poolside. Request that patrons not use the pool if they are suffering from an illness that causes diarrhea or have had diarrhea in the past two weeks. Require the wearing of "swimsuit diapers" or tight fitting rubber/plastic pants by children who are not yet toilet trained or individuals who do not have bowel control. Request that patrons remove their street shoes when walking on the pool deck.



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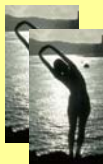
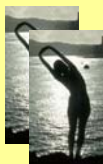
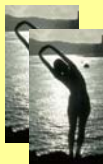
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## What is Aquaticnet.com?

The Aquatic Resources Network (ARN) was founded in 1995-96 when a handful of my students started asking questions about aquatic exercise. At that time, clinicians were struggling to find a credible, international clearinghouse of information devoted solely to aquatic therapy. There was a real need to connect students and clinicians, companies and consumers. Today, I'm proud to say, we have grown from our original 30 charter members to thousands of therapists across the world. So join our members and share your love of aquatic therapy with PTs, OTs, CTRs, ATCs, exercise physiologists, kinesiologists, massage therapists .... and the world! Stop re-creating the wheel. We can help you be a success at what you love the most. [We are The Aquatic Therapy Command Center.](#)

*Andrea Salzman, MS, PT*

Send your application to: ARN, 3500 Vicksburg Lane #250, Plymouth, MN 55447 USA  
PH: (715) 248-7258. FAX: (715) 248-3065. Email: [info@aquaticnet.com](mailto:info@aquaticnet.com) web: [www.aquaticnet.com](http://www.aquaticnet.com)

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If a fecal accident does occur:

- Have swimmers exit the pool and close the pool for 24 hours or a minimum of 3 - 4 complete turnovers
- Remove as much of the solid fecal matter from the pool as possible
- Dispose of the fecal matter to a sanitary sewer
- Disinfect the skimmer net, leaf rake or vacuum equipment used to remove the fecal matter
- Raise the free chlorine residual to at least 20 ppm, and monitor and maintain the 20 ppm FAC residual for a minimum of 9 hours in order to achieve an effective CT value
- Keep the pH between 7.2 and 7.4 to increase the percentage of hypochlorous acid formation
- Backwash the filters and disinfect the filter media or elements with a solution of 20 parts of water to 1 part of 10-15% sodium hypochlorite (liquid chlorine) prior to reopening the pool

In small wading pools and spas, it may be more effective to follow the above listed recommendations, but at the end of the fourth, superchlorinated, 30-minute to 1-hour turnover period, drain the pool. The pool shell and filters should be scrubbed with a 20 parts of water to 1 part of 10-15% sodium hypochlorite disinfectant solution, prior to reassembling the filters, and refilling the pool with water. [1]



### **Sample Policy for Maintaining and Operating a Therapy Pool**

#### **Policy:**

The therapy pool will be maintained and operated in a manner consistent with the State Public Health requirements for infection control for Class A Pools.

#### **Procedure for Disinfection and Quality of Water:**

1. The pool shall be continuously disinfected with a chemical which imparts an easily measured, freely available residual effect. When chlorine is used, a free chlorine residual of at least 0.5 ppm shall be maintained throughout the pool whenever it is open or in use. If other halogens are used, residuals of equivalent disinfecting strength shall be maintained. A testing kit for measuring the concen-

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tration of the disinfectant, accurate within 0.01 ppm, shall be provided.

2. The board may accept other disinfecting materials or methods when they have been adequately demonstrated to provide a satisfactory residual effect, when it is easily measured, and to be otherwise equally as effective under conditions of use as the chlorine concentration required herein, and not be dangerous to public health, create objectionable physiological effects, or impart toxic properties to the water.
3. The pool water shall be maintained in alkaline condition as indicated by a pH of not less than 7.2 and not over 8.2. A pH testing kit accurate to the nearest .2 pH unit shall be provided. The alkalinity of the water shall be at least 5 ppm as measured by the methylorange test.
4. The water shall have sufficient clarity at all times so that a black 6" diameter disc is readily visible when placed on a white field at the deepest point of the swimming pool. Failure to meet this requirement shall constitute grounds for immediate closing of the pool.
5. Not more than 3 of any 5 consecutive samples collected on separate days shall either 1) contain more than 200 bacteria per ml, as determined by the standard (35C) agar plate count, or 2) show positive test (confirmed test) for coliform organisms in any of the five 10 ml portions of a sample or more than 1.0 coliform organisms per 100 ml when membrane filter test is used. Any pool water sample containing a pathogenic microorganism, which is confirmed with a second sample taken not less than three days from the date of the lab results of the first sample, shall constitute grounds for the immediate closing of the pool. All samples shall be collected, dechlorinated, and examined in accordance with the procedures outlined in the latest edition of *Standard Methods for the Examination of Water and Wastewater* (APHA).
6. Chemicals used in controlling the quality of water shall be demonstrated as imparting no toxic properties to the water. Such chemicals as may be used for algae control shall be approved for use by the board.



### **Procedure for Wound/Infection Control:**

#### Inpatients

No patients will be sent to the pool with a wound that could become infected or could transmit infection to others. Patients with post-operative wound closures will be allowed in the pool with physician approval. Transparent dressings may be used over open wounds, scabs, stitches or staples. Incisions must be clean, dry, pink and non-tender, with edges

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approximated. No bandages or bandaids are allowed in the pool.

### Other Pool Users

The therapy pool staff shall be aware of patients with wounds/infections. The staff will recognize wounds that expose considerable areas of subepidermal tissue, open blisters, cuts that could become infected, and recommend that the person not swim until the area has healed. No person with a wound or rash that appears infected shall be allowed in the pool.

### **Procedure for Persons Reporting Communicable Diseases or Infections Following Pool Use:**

Pool manager and pool maintenance staff shall be made aware of persons using the pool with complaints of illness following pool programs. If there are several reported incidents of illness, the pool shall be closed, superchlorinated, and remain closed until acceptable levels of free chlorine are obtained. The Infection Control Practitioner will be notified by the pool manager.

### **Procedure for Sanitation Following Contamination of the Pool:**

#### Urine:

No specific treatment. The public is requested to use toilet facilities prior to entering the pool.

#### Fecal:

1. Upon discovery of pool contamination, patrons will be immediately informed to evacuate the pool and shower using soap for a minimum of 5 minutes.

2. Engineering will be contacted for decontamination.

3. If contamination is local and solid, it will be cleaned out as much as possible and 1/4 to 1/2 gallon of chlorine will be added to the area of the contamination. The pool will be closed for 1 hour, allowing the chlorine to dissipate.

4. If the contamination is liquid and widely dissipated, 1 2/3 gallons of chlorine will be added to super-chlorinate. The pool will remain closed for 2-3 complete water cycles (4 1/2 hours minimum).

5. Pool filters are to be cleaned as soon as possible within 24 hours.

Pool maintenance procedure will be reviewed with employees annually.



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### **Procedure for Person with Indwelling Catheter:**

The catheter is to be clamped and storage bag drained prior to pool use.

### **Procedure for Person with Colostomy:**

Each person is evaluated individually. If there is a good seal between the stoma and the collecting device and no infection present is stoma or surrounding skin, the person may use the pool with approval of physician or pool manager.

### **Procedure for Pool Inspection:**

1. Unannounced inspections may be made periodically by the City Public Health Inspector.
2. Water quality readings (pH, free and total chlorine, water temperature) are recorded daily.
3. The pool is shocked once each week by bringing the chlorine concentration up to 10 ppm for 12 hours.
4. The pool is drained and cleaned every 6 months.
5. Records of the above inspections are kept in the department pool equipment room.

This policy will be reviewed bi-annually by the Infection Control Committee and changes will be approved prior to implementation.

The therapy pool manager will assure compliance with this policy. Failure to meet this requirement may result in pool closure.

