



Pseudomonas Aeruginosa

A bacteria found in swimming pools

What is Pseudomonas aeruginosa?

Pseudomonas aeruginosa is an organism that usually does not cause disease in an individual with a healthy immune system. A compromised immune system, however, presents an opportunity for this pathogen to infect. These bacteria can live in many places and are common inhabitants of soil, water, plants, and animals (including humans) in addition to swimming pools, whirlpools, and hot tubs. Often seen growing in distilled water, *P. aeruginosa* is a bacteria that can grow where nutrients are lacking. *P. aeruginosa* lives mainly in slime-enclosed biofilms. These bacteria are relatively unaffected to antiseptics, disinfectants, and antibiotics compared with the other natural surrounding bacteria.

How does Pseudomonas aeruginosa get into water?

The exact source and way of spreading of *P. aeruginosa* is often unclear because it is very common in nature. However, the most common source of this bacteria in swimming pools and spas is believed to be due to skin shed from infected individuals. Individuals are likely to pick up this bacteria on their hands and feet. The pool water then washes the bacteria off the hands and feet and into the pool.

P. aeruginosa may grow in poorly maintained swimming/ spa pools filters and in areas where there is stagnant water (e.g. under moveable floors). Warm and damp environments can also be a place where *P. aeruginosa* can grow (e.g. decks, drains, benches, and floors). Skin cells and other small debris protect the organism from being killed by disinfectants while providing a food source for bacterial growth.

How do Pseudomonas bacteria affect my health?

When *Pseudomonas aeruginosa* is found in water, it suggests relatively unclean water conditions. These bacteria may cause minor problems associated with color, taste, odor, and turbidity of the water. The main concern is related to the biological slime they form. These slimes, which protect the *Pseudomonas aeruginosa*, also have the ability to harbour other disease-causing bacteria such as coliforms and *E. coli*. Common illnesses associated with *Pseudomonas* include skin rashes, swimmers ear, infection of the blood and urinary and respiratory tract infections. Other infections may also be caused and, in rare cases, even pneumonia. In most cases of infection the individual's skin or mucous membranes is damaged or an underlying immune deficiency is present.

How can I remove Pseudomonas from my swimming pool, etc.?

The best way of controlling *P. aeruginosa* growth in swimming pools, hot tubs, and spas is to prevent its growth in the first place. Keeping adequate residual disinfection levels and frequent monitoring and adjusting of pH and disinfectant levels (chlorine / bromine) is essential. Regular complete cleaning of the swimming pool/spa interior, including pipe-work, and surrounding surfaces is also very helpful.

Operators and facilities alike should strongly encourage patrons to shower prior to going into the swimming area, and limit the length of spa use.

How much *Pseudomonas* is okay in a swimming pool?

The presence or absence of *Pseudomonas aeruginosa* is most commonly tested for. The presence of *Pseudomonas* may indicate that additional potentially harmful organisms may inhabit the water.

For more information . . .

For information on sampling instructions and containers, you should contact an accredited laboratory. If you are using the Saskatchewan Disease Control Laboratory (Provincial Lab), sample containers are available from Environmental Services www.health.gov.sk.ca/water-testing, rural municipalities, or local health region public health offices:

Public Health Offices		
Cypress	Swift Current	(306) 778-5280
Five Hills	Moose Jaw	(306) 691-1500
Heartland	Rosetown	(306) 882-6413
Keewatin Yatthé	Buffalo Narrows	(306) 235-5811
Kelsey Trail	Melfort	(306) 752-6310
Mamawetan Churchill River	La Ronge	(306) 425-8512
Prairie North	North Battleford	(306) 446-6400
Prince Albert Parkland	Prince Albert	(306) 765-6600
Regina Qu'Appelle	Regina	(306) 766-7755
Saskatoon	Saskatoon	(306) 655-4605
Sun Country	Weyburn	(306) 842-8618
Sunrise	Yorkton	(306) 786-0600

For more information, go online to: <http://www.health.gov.sk.ca/rha-community-list>

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