



# A guide to controlling the risk of infection in spa baths

Issued by the  
**Lincolnshire Health &  
Safety Liaison Group**



**East Lindsey**  
DISTRICT COUNCIL

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# A guide to controlling the risk of infection in spa baths

## Developed by the Lincolnshire Health & Safety Liaison Group

For further information or clarification of any issues within this guide, please contact your local Environmental Health team.

This short guide has been produced for people who offer spa baths for public use or sale. It is intended to give an overview of how to implement an effective management regime to ensure safe water quality standards and to advise you of some of the problems that may arise if you do not implement such a regime. This guide also aims to signpost you towards more comprehensive information that will be helpful in achieving your duties in respect of your spa bath.



## What is a Spa Bath?

Spa baths have been popular in Great Britain for thousands of years.

Historically, spa baths would have been developed on the site of natural hot springs. People would bathe in the waters believing them to have healing powers.

Today, technology has largely taken the place of natural hot springs enabling spa baths to become a common feature of leisure facilities.

For the purpose of this guide a spa bath would be described as 'a self-contained body of water designed for sitting rather than swimming in, which has a mechanism to cause the water to flow around the user'. This definition would include both natural spas and modern spas. It would also include all spa baths which are used purely for demonstration and display purposes.

Spa baths may also be called spa pools, hot spas, whirlpool spas or be referred to by the trade name 'Jacuzzi'.



## Why are there potential health risks associated with Spa Baths?

Spa baths have the potential to cause an increased risk to people's health, when compared with a swimming pool, for the following three reasons:

1. The temperature of the water is generally maintained between 30°C and 40°C. The human body functions at a temperature of 37°C. Bacteria that cause illness in humans are therefore able to multiply rapidly in temperatures that are around 37°C.
2. Spa baths contain small volumes of water. This water is not changed between users. All of the contamination that enters the spa bath therefore becomes highly concentrated. This contamination may include bacteria that cause disease and dead skin, blood, bodily fluids, hair, faeces and sweat all of which provide food for these bacteria.
3. Spa baths incorporate some means of agitating the water. This agitation process can cause splashes and aerosols which can spread any bacteria over a wide area.

*Bacteria that cause illness in humans multiply rapidly in temperatures that are around 37°C...*



## What diseases are usually associated with Spa Baths?

There are a number of infectious diseases that have been shown to cause illness through the use of improperly managed spa baths. These include:

- Legionnaire's disease which causes a serious and potentially life threatening respiratory infection.
- Pontiac fever which causes a respiratory condition and flu like symptoms.
- Pseudomonas aeruginosa infection which results in an infection of hair follicles.
- Mycobacterium avium infection which results in a respiratory infection.
- Naegleria fowleri infection which can cause meningitis.
- Hepatitis A.
- Cryptosporidium infections causing severe gastrointestinal symptoms.
- Herpes virus.
- Staphylococcus aureus causing infections of the skin.
- Molluscum contagiosum a viral skin infection.

*Infectious diseases can cause respiratory, gastrontestinal and skin problems...*



## What is the biggest health risk associated with using a poorly managed Spa Bath?

The biggest risk of using a badly managed spa bath is the risk that the water will become colonised with Legionnaire's disease.

If the water becomes colonised with Legionnaires disease then it will not only be those who use the spa bath that will be at risk. The agitated water will be forming aerosols which will be carried on air currents over large distances. If a person inhales an aerosol containing Legionnella bacteria then they are at risk of developing Legionnaires disease.

Legionnaire's disease has a high mortality rate. It has been estimated that the worldwide average mortality rate stands at 15%. This means that for every 100 people who contract Legionnaire's disease; 15 of these would be expected to die.

*If the water becomes colonised with Legionnaires disease then it will not only be those who use the spa bath that will be at risk...*



## How can I reduce the health risks associated with my Spa Bath?

There are a number of things that you must do to ensure that your spa bath does not present a health risk to bathers or others who may be affected by it. These are:

1. Obtain, read and implement the Health Protection Agency guide entitled 'Management of Spa Pools Controlling the Risk of Infection'. This guide is freely available, in two parts, at: [http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb\\_C/12004716651rob70](http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/12004716651rob70)
2. Ensure that a free chlorine residual of between 3–5mg/l or an active bromine level of between 4–6mg/l is maintained. Keep detailed records of your water quality readings.
3. Maintain the pH of the water between 7.0 and 7.6. If the pH is outside this range it will have a negative effect on the ability of the disinfectant to effectively destroy bacteria.
4. Undertake regular microbiological sampling of the spa bath. This will involve taking a water sample and having it analysed at an accredited laboratory. Initially once a month, a sample should be taken for indicator organisms. Indicator organisms will show whether or not your management regime is proving effective and the water is safe. Once every three months, in addition to the sampling for indicator organisms, you should also take a sample looking specifically for Legionnaires disease. This frequency may be reviewed if continued compliance and effective controls can be demonstrated. It is important that you realise that any test undertaken by the Environmental Health Department is intended to be additional to and not replace your own sampling regime. You should also be aware that this is the minimum sampling regime considered appropriate and that, if there are additional risk factors, such as the spa bath being located outside or having a particular high level of usage then the frequency of sampling may need to be increased. You should ensure





that the person analysing the water samples provides you with a clear and simple to understand analysis of the results which would ideally tell you whether the sample 'passes' or 'fails' the accepted standards.

5. Ensure that the entire system is drained and cleaned on a frequency not exceeding seven days. During this time all areas including the inside surfaces of the balance tank, the inside surfaces of the spa bath, the flexible hoses, the strainer baskets, the areas behind the headrests, the covers used on the spa bath should all be cleaned and disinfected.
6. Ensure that the jets are removed and thoroughly cleaned on a frequency not exceeding 30 days.
7. Provide information to bathers to reduce any risks. This information should:
  - Discourage them from putting their heads beneath the water.
  - Prohibit children under four from using them.
  - Encourage bathers to use the showers before and after using the spa bath.
  - Prohibit anyone who has had diarrhoea within the past 14 days from using the spa bath.
  - Restrict bathers to no more that 15 minutes in the spa bath at any time.
  - Advise pregnant women to seek medical advice before using the spa bath.
8. Know what action to take in the event that things go wrong.
9. Ensure that all of your staff members have received appropriate training.
10. Make early contact with Environmental Health if you become aware of or suspect a problem with your spa bath.

## Quick 'trouble shooting' guide

Issue	Remedial actions
pH out of limits; that is to say below 7.0 or greater than 7.6	Close the spa bath and check the acid/alkali dosing unit. If the dosing unit cannot rectify the issue then the spa bath will need to be emptied and refilled. The spa bath should remain closed until the pH has been brought back into range. Turn off the water jets.
The chlorine is below 3mg/l or the bromine is below 4mg/l	Close the spa bath until the disinfectant can be restored to acceptable levels. Low disinfectant levels will allow bacteria to multiply in the water. Turn off the water jets.
The chlorine is above 10mg/l or the bromine is above 12mg/l	Close the spa bath until the disinfectant can be restored to acceptable levels. High disinfectant levels will cause irritation to the bather's skin, eyes and mucous membranes.
Cloudy spa bath water	Close the spa bath immediately if you cannot see the bottom. Check sand filters and circulation pumps. Cloudy water can be caused by excessive microbiological growth. Turn off the water jets.
Dirt and grease around overflow channels.	Ensure adequate cleaning is being undertaken using cleaner that it designed for the purpose and that is compatible with the water treatment chemicals being used.



## Further Information

Further information can be obtained from:

Your local Environmental Health team,  
The Health Protection Agency  
[www.hpa.org.uk](http://www.hpa.org.uk)

The Health and Safety Executive  
[www.hse.gov.uk](http://www.hse.gov.uk)





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