

HSE Information sheet

Legionnaires' Disease: Controlling the risks associated with using spa baths

Introduction

You are probably already aware that people can catch Legionnaires' disease from exposure to contaminated water droplets. Air conditioning systems (including cooling towers), and hot and cold water systems in buildings are common sources. But did you know that people using your spa bath(s) could also be at risk from catching Legionnaires' disease, as well as other infections (eg folliculitis – a skin infection caused by the bacterium *Pseudomonas aeruginosa*)?

This Information Sheet only covers legionella; giving you some guidance on how to meet your responsibilities under health and safety law, and in turn prevent people from being exposed to legionella. For more details on your responsibilities, and how you can meet them, you will need to consult the HSE's Approved Code of Practice (ACoP) and guidance *Legionnaires' Disease: The control of legionella bacteria in water systems*. HSE hopes a more detailed guidance, covering all issues of safely using spa baths, will be published in the near future.

Who is this Information Sheet aimed at?

If you supply spa baths or manage premises where one or more are used, eg

- health clubs and leisure centres,
- hotels,
- swimming pools,

- a communal spa bath for residents in a block of flats etc,

you have responsibilities under several pieces of health and safety law

- the Health and Safety at Work etc Act (HSWA) 1974,
- the Control of Substances Hazardous to Health (COSHH) Regulations 2002, and
- the Management of Health and Safety at Work Regulations (MHSWR) 1999,

to manage any risks associated with using the equipment.

What is a spa bath?

A spa bath is a **'self-contained body of warm water designed for sitting rather than swimming in, which has a mechanism to ensure the water flows around the user'**. It is designed for a small number of people to use at one time. The water temperature is kept between 30 to 40°C, and is not usually drained between users, so has to be continually filtered and cleaned. A hydrojet circulation or air induction bubble system is used to stir up the water.

You may also call your spa bath a **spa pool, hot spa, hot tub, portable spa, or whirlpool spa** (a term commonly used in American publications). **'Jacuzzi'** is the trade name for one type of spa bath.

This guidance covers the following spa baths or related products:

- a **domestic spa** – a spa bath supplied to a private residence for private use;
- a **public spa** – a spa in a commercial, public or private building to be used by people visiting the building (whether they pay to use it or not), including a spa bath for joint use by residents of dwellings such as flats;
- a **swim spa** – a combined spa bath and swimming pool (this could be one pool or a spa bath attached to a larger swimming pool); and
- a **whirlpool bath** – similar to a spa bath, however, draining between each use will reduce the level of risk associated with it.

What is Legionnaires' disease?

This is a potentially fatal form of pneumonia caused by the legionella bacteria. There are actually several pneumonia-like diseases caused by different types of legionella bacteria, known as legionellosis. Some of these are less serious than Legionnaires' disease, eg Pontiac fever, with flu-like symptoms.

Anyone can be infected by legionella bacteria but older people (over 45), smokers, heavy drinkers, those suffering from chronic breathing problems or kidney disease, and those with impaired immune systems (eg HIV positive) are more likely to develop life-threatening symptoms.

Legionella bacteria occur naturally in our environment (rivers, lakes etc) where they are not a problem for people. However, they also live

in water systems associated with buildings and the workplace, eg hot or cold storage tanks, cooling towers, fire-fighting equipment, spa baths. In these situations if the bacteria get into water sprays or mists people can breathe them in. Exposing the lungs to the bacteria could then lead to Legionnaires' disease.

The bacteria can survive at low temperatures, although will not multiply. However, at 20 to 45°C they thrive and readily multiply. Above 60°C they are killed off.

Why do you need to consider the hazard of Legionnaires' disease?

There have been several outbreaks of Legionnaires' disease where the cause was traced back to a spa bath. Large numbers of people were infected and quite a number died. You may not have heard of these only because the worst cases occurred in Belgium and the Netherlands. People can be exposed while using a spa bath, but also by just being close enough to it to breathe in the fine spray created, eg during demonstrations.

Legionella are a particular problem in spa baths because

- the water is at an optimum temperature for them to grow;
- dirt, dead skin cells etc from the people using them accumulate providing food;
- the piping for the air and water circulation provide a large surface area for the bacteria to grow on; and
- the agitated water forms aerosols and spray via which the bacteria can be breathed in.

What are your legal duties?

If you are responsible for manufacturing or supplying spa baths, you need to

- ensure they are designed and constructed so they are safe to use; and
- give the user adequate information about the risks of the product, and importantly keep them updated if any of the information changes.

If you are responsible for managing spa baths, you need to

- identify and assess any potential sources of legionella, and consider who and how these people could be exposed; in other words conduct a **risk assessment***;
- prepare a plan to prevent or control any risks you have identified;
- implement, manage and monitor the precautions you put in place (the ACoP and guidance can give you further advice on how to do this);
- keep records of this work;
- appoint someone to manage this responsibility if you cannot do so yourself; and
- train your staff to correctly operate the spa bath - giving them appropriate information about the risks and your plan to manage them.

(* If you decide the risks are insignificant record this, then you need take no further action, except to review the assessment.)

If you do not think you can do a risk assessment yourself, you can obtain help and advice from a

consultant. Remember, however, that you are still ultimately responsible for controlling risks from infection with legionella.

You (or your consultant) will need to review your risk assessment regularly, and especially if any of the circumstances surrounding use of the spa bath change, eg the method of cleaning the water, elderly people become your main clients.

What else needs to be considered?

Do not forget that the chemicals used to clean the water in spa baths can be hazardous.

Spray cleaning the spa bath could also expose your staff to the legionella bacteria.

You should not automatically put chemicals used to treat the water (called biocides) into the sewers; you will need consent from the Environment Agency. Also, only trained operators should work with these chemicals.

How frequently should you check your spa bath?

Every 2 hours	Residual disinfectant levels and pH - after the initial test
Three times a day	Water treatment (if not continual)
Daily	Water clarity (before use) Automatic dosing systems Disinfectant levels in reservoirs Filters Strainers Backwash sand filters
Weekly	Drain, clean & disinfect whole system

	Clean strainers
Monthly	Bacteriological test Clean input air filter Clean pipes All automatic systems
Every three months	Filters (thoroughly)
Annually	Written procedures are up-to-date Sand filter effectiveness

Need more information to help you control the risk of Legionnaires' disease in other water systems?

You should find the following HSE information useful:

- the ACoP and guidance *Legionnaires' Disease: The control of legionella bacteria in water systems* (L8). HSE Books 2000. ISBN 0 7176 1772 6;
- *Legionnaires' Disease: A guide for employers* (IAC27 rev 2); and
- *Control of legionella* (video) UK 4139 1991.

All of these are available from HSE Books (01787 881165).

If you have any questions that these publications cannot help you with we can provide **advice via the HSE Infoline (08701 545500)**.

You can also seek advice from:

- the environmental health department of your local authority;
- professional bodies such as the Institute of Sports and Recreation Management (ISRM);
- associations such as the Water Management Society (WMS) or British Association for Chemical Specialities (BACS).

Other publications you may find useful:

- *Swimming pool water treatment and quality standards*. Pool Water Treatment Advisory Group, 1999. ISBN 0951700766;
- BS 7592:1992 *Methods for sampling for legionella organisms in water and related materials*. BSi, 1992. ISBN 0580211010;
- *Minimising the risk of Legionnaires' disease*, CIBSE 2002. ISBN 1903287235;
- *The Swimming Pool and Allied Trades Association: Standards for spa pools: installation, chemicals and water treatment* (Volumes 3 & 4) – available directly from the association; and
- *Hygiene for Spa Pools*. Public Health Laboratory Service 1994. ISBN 0 901144 371.