



# POOL WATER TREATMENT ADVISORY GROUP

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Interactive Water Features

PWTAG Technical note 13

The last few years have seen a swift rise in the popularity of interactive water features – outdoor jets, sprays etc designed for children and in some respects taking the place of paddling pools. Their design and use is very different from the more traditional, decorative water features like fountains that are not designed for interaction (though they may be used that way).

Unless interactive water features are planned and designed properly, they can represent (and have) an infection risk, partly because of the way they are used.

## Definitions

It is important to distinguish between interactive water features and decorative water features. Different guidelines apply. (Paddling pools are different again: they are dealt with below.)

**Interactive water features are primarily about interaction:** children playing in water sprayed or pumped through a variety of devices. These features include geysers, rooster tails, mushrooms, water cannons, spiral sprays and ground gushers. Interactive water features are sometimes installed as alternatives to traditional paddling pools, and their water quality must be safeguarded to at least the same extent. Users, typically children, are positively encouraged to enter and interact with the various features. Most features can be activated by push buttons. Within such an environment, it is likely that some water will be swallowed (although this is not intended and should be discouraged).

**Decorative water features** can be simply a traditional fountain surrounded by a pond, or ground-based jets across which the public may walk freely. It is not realistic to restrict access to such features, although their use as play areas should not be encouraged. There should be warnings if they contain disinfectant, that they may harm clothes.

## Guidelines for decorative water features

There are some safeguards that can reasonably be applied to decorative water features.

## Guidelines for paddling pools

Paddling pools may be highly polluted relative to their volume, because they may be used by toddlers in nappies; also, children may urinate in them, and introduce pollution from around the pool. So filtration



and disinfection should be maintained, although filtration can be relaxed a little compared to swimming pools as clarity is not so critical in a uniformly very shallow pool. Maintaining safe water in outdoor paddling pools means changing the water regularly, daily if practicable. If for any reason circumstances make proper hygiene standards impossible to maintain, paddling pool managers should consider closing the pool altogether. In any case, dogs must be strictly excluded from paddling pools and their surrounds. There is further guidance about this in Swimming Pool Water. And there is an information note on the subject at <http://www.isrm.co.uk/information/free.htm> .

### **How interactive water features work**

These play features vary from the very basic to the more sophisticated. The sprays etc are installed in a surround which may be hard (eg stone) or softer (eg rubber). The water usually drains through the surround into a holding tank. From there the water is pumped to the sprays etc (sometimes via another holding tank). Disinfectant is introduced at some stage in this. If the water volume is inadequate, and the water is not properly filtered and disinfected, microorganisms introduced on feet, for example, may get to users via the water features. As a result, they could be a source of a number of bacterial and viral microorganisms. This can be a particular problem as people are likely to swallow water from the features.

To counter such risks, their water management should really be in line with that recommended by PWTAG for swimming and paddling pools. And it is equally important that each installation should be subject to a risk assessment. That should take into account the operating water temperatures

### **Risk assessment**

A risk assessment is required by health and safety legislation. It should take into account intended and non-intended use. All features (including decorative features like fountains) should be formally assessed for microbiological risks. The principal risks are cryptosporidiosis (from diarrhoea in the feature) if filtration is inadequate, and legionellosis and other bacteriological and viral infections resulting from inadequate disinfection. The risk assessment should be reviewed at least every two years.

It is worth bearing in mind that at least the risk of drowning - present even with a paddling pool - is generally absent with interactive water features.

### **Design guidelines for interactive water features**

There are a number of design guidelines that should be followed. They all follow the principles of water treatment described in the PWTAG book, Swimming Pool Water treatment and quality standards.

### **Operational guidelines for interactive water features**

Not all of these will be practicable for every facility. Their application should be tempered by a realistic appreciation of the particular circumstances.