



## Indoor swim meets and water/air quality.

The first and foremost principle pertaining to good air quality is:

### **Air Quality is totally dependent on Water Quality.**

It won't matter how much air you move or exhaust or introduce if the water in the pool is constantly off-gassing (evaporating) chloramines.

- Moving bad air around the facility at more CFM's (Cubic Feet per Minute) only negatively affects more people.
- Large fans in doorways blowing air from outdoors may seem to help at deck level but at water level the chloramines are still evaporating across the swimmers breathing area.
- Exhausting more air through vents or the HVAC system is always advisable but we still have the bad air at water level.
- Gimmicky air filters won't work - that is treating the smoke not putting out the fire. Air filters won't take out all of the chloramines regardless of their marketing claims.

Good quality indoor pool air is not magic it is a process depending on a variety of factors.

### **Whose responsibility is a safe healthy venue?**

The only acceptable answer is EVERYONES !

The facility has to have the right equipment installed and it has to be properly maintained.

The meet host needs to ask the right questions pre-meet.

The coaches need to educate (and support) their athletes on proper behavior in accordance with health codes.

The athletes need to take showers before entering pool and never pee in pool – use the bathrooms.

The parents of age group swimmers need to constantly reinforce healthy athlete behavior.

All indoor pools need to have Medium Pressure UV units installed in the filter room. These need to be properly sized for each pool and the bulbs need to be at full strength and checked to make sure they are functioning.

Pre meet – at 10 days to 2 weeks before a large meet - the facility and meet host needs to make sure the meet pool has had no recent air quality issues and that they know their HVAC equipment has been recently inspected and properly maintained. Also pre-meet make sure the pool logs for water quality have been properly filled out. Water quality problems rarely happen overnight (except with 500+ swimmers using pool all the same day. The CPO (Certified Pool Operator) should NOT shock the pool before or during the meet. This accelerates the formation of chloramines regardless of published information to the contrary.

Swimmers need to be advised to use the bathrooms and not pee in the pool. This has to be reinforced by their coaches. It only takes 10 swimmers peeing in a 6 lane 25 yard pool to adversely affect the water quality therefore the air quality. The UV system can only treat the water when it travels through the filter room once every 6 hours. Chloramines can form in the pool from swimmers not taking showers or not using bathroom in less than 30 minutes.

Chloramine formation will be accelerated by:

1. Swimmers not properly showering before entering pool. *There are over 70 chemicals in lotions and deodorants and shampoo/conditioners and makeup (etc) that combine with chlorine to form chloramines.*
2. People using the pool rather than getting out and going to the restroom.
3. People doing a high level of aerobic activity and sweating in the water. (everyone sweats in the water – the same as if they were doing exercise on land)
4. Residues from ammonia based cleaning products that are used on decks or in shower rooms/lavatories.
5. Residues from fertilizers used on landscaping (nitrogen based) that get tracked into building on everyone's shoes.
6. Poor air circulation and lack of fresh air introduction into the pool building.

7. Overuse of “shocking” the pool for maintenance purposes. *Shocking the pool before or during a meet can form chloramines. Never shock the pool unless there is a proven bacteria problem.*
8. Improper use of certain brands of chemicals not suitable for conditions specific to a geographic area.
9. Pool filters not performing at peak efficiency. Many facilities have upgraded their pool-water filters to Regenerative DE filters which are 10 time more effective and efficient than sand filters.
10. Pools being overloaded with more swimmers than the facility was designed and rated to handle.

Many times preventative maintenance can stop problems before they start. If a problem occurs it will most likely be during a high capacity event, usually on a weekend when it is almost impossible to find someone to fix the problem.

Water Quality/Air Quality problems cannot be ignored. If the air smells like chlorine there is a problem. You are most likely smelling chloramines rather than chlorine. Chloramines in the air puts everyone at a serious health risk:

Swimmers  
Coaches  
Officials  
Staff  
Spectators

The last thing anyone wants is for a meet to be delayed or cancelled and the facility closed by the Department of Public Health. That is what will happen if there is a health risk from Chloramines. There is a 3 part water test that will tell the concentration of chloramines vs free chlorine. Every commercial pool is required to have one of these test kits and to log the test results three times a day minimum – usually more often during a swim meet. This isn't a guessing game – the problem can be identified and proven in less than 90 seconds. It just can't be solved quickly so prevention is the key.

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