

A CANNONBALL OF SCARY NEWS ON INDOOR POOLS

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Chicago Tribune



Having rediscovered the joys of swimming, I wanted to pass on the love to my infant son as soon as possible. He was only 9 months old when he attended his first baby swim class at an indoor pool - and obviously he wouldn't be "swimming" for several more years - but I figured that the earlier I dipped his little body into the water, the more natural the whole experience would be.

One factor I hadn't considered, however, was the effect of exposing his still-developing lungs to the pool chemicals, mainly a by-product of chlorine called trichloramines that gives pools their distinctive smell.

In the past, no one gave this much thought because public pools are filthy and chlorine is an effective disinfectant. But now researchers are investigating the "pool chlorine hypothesis", a relatively new theory that asks whether the rise in childhood asthma stems from swimming

indoors. Specifically, the concern is over-exposing very young children to the toxic gases and aerosols found in the air on indoor chlorinated pools.

The most recent evidence comes from Belgian researcher Alfred Bernard, who co-authored an ecological study that found a link between the number of indoor chlorinated swimming pools and the prevalence of asthma in children in various countries.

The findings were published this month in the online version of the journal Occupational Environmental Medicine.

Bernard and several other colleagues also have shown that the chlorination by products found in the air of indoor pools can promote asthma in children who are predisposed to the respiratory allergy.

This is especially true for young children who "swim" in a small, heavily polluted-pool, according to the work published last month in Environmental Health Perspectives. What happens is that when chlorine reacts with swimmers' organic matter like sweat and urine, it produces trichloramines, an irritant gas that is released in pool air.

It's generally not considered a problem if the area is well-ventilated. But many pools reduce ventilation to try to save on energy costs.

The level of chlorine dosing, water temperature, hygiene of swimmers and pool occupancy also factor in to how much trichloramines is found in the air. Bernard and his colleagues theorize that because children cannot really swim before age 6, they end up in pools that are shallow, hot and more heavily polluted than large pools.

Also, when they play or learn to swim, they inhale and swallow more aerosols and water droplets, containing chemicals called hypochloramines. The chemicals can be carried more or less deeply into the respiratory tract, depending on the size of the aerosols and whether the child is breathing through the mouth or nose.

Finally, children are exposed to the chlorination products when their lungs are still developing, an ongoing process until ages 6 to 8.

The great irony - or the most confounding aspect - is that swimming often is recommended as both a recreational activity and a competitive sport for asthmatic children.

It's also an ideal exercise for pregnant women, but few researchers have looked at whether swimming while pregnant predisposes a fetus to asthma.



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