



Subscribe Today
 Sign Up for our Free Newsletter
 Subscriber Login
 Subscription Orders, Changes,
 Problems

Advanced Search

- [HOME](#)
- [LOGIN](#)
- [SUBSCRIBE](#)
- [BACK ISSUES](#)
- [ADVERTISE](#)
- [ABOUT US](#)
- [CONTACT US](#)
- [DONATE](#)



March/April 2008
Vol. XIX, no. 2
[Full Table of Contents](#)

IN OUR CURRENT ISSUE

- ◆ [CLEANER, GREENER U.](#)
- ◆ [Green U](#)
- ◆ [The High Cost of Coal-to-Liquids](#)
- ◆ [The New Super Foods](#)

WEEKLY NEWSLETTER



Sign up for OurPlanet, our **FREE** weekly newsletter
 Enter e-mail address:

Email:

NEWS ARCHIVE

COMMENTARY ARCHIVE

FEEDBACK

- ◆ Letters
- ◆ Ask an Environmental Question

CHANGES TODAY, WE CAN LIVE WITH TOMORROW!
 Orlando, Florida Orange County Convention Center – MAY 14-18, 2008
 Booth Registrations Are Filling Fast. Call Now To Reserve Yours Today! 1-877-541-0887

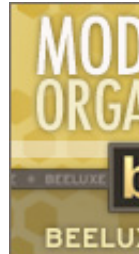
COMMENTARY [Print View](#) [Print View Without Graphics](#) [Mail to a Friend](#)
COMMENTARY:
Swim At Your Own Risk:
Lifeguards Can't Protect You from Indoor Pool Chemicals
Dr. Gary Ginsberg

Itchy skin, irritated eyes, brittle hair, breathing difficulties—who would sign up for that kind of workout? Yet that is the reality for many who swim in indoor pools. As a toxicologist, I've been asked repeatedly whether the chlorine in swimming pools is unhealthy. But until now, I haven't taken up the issue. After all, who wants to point fingers at something with so many benefits? Indoor swimming is a great form of exercise, especially in the cold, dark winter months. However, the hazards associated with pools keep popping up like weeds in the flower bed. The news of a six-year-old boy nearly dying from a Nebraska motel pool has pushed me over the edge into the witches' brew of swimming pool toxics.

Pool water is a complex bit of chemistry that all begins with an old friend, that double-edged sword called chlorine. Gallons of chlorine are added to pools in the form of bleach to kill off bacteria. Without a disinfectant like chlorine, swimming pools would be an infectious disease outbreak waiting to happen. The flip side is that chlorine is highly reactive; it not only kills bacteria, but also combines with organic chemicals coming from people's bodies. Yes, humans release sweat and sometimes other excretions into the pool, which is where the chemistry really gets sticky. These reactions create



Chlorine and its byproducts have been linked to asthma, particularly in children.
 © Getty Images



SUBSCRIBER SERVICES

- ◆ Renewals
- ◆ Gift Subscriptions
- ◆ All Other Questions
- ◆ Contact E Magazine

SYNDICATED COLUMN



EarthTalk en Español

GET INVOLVED

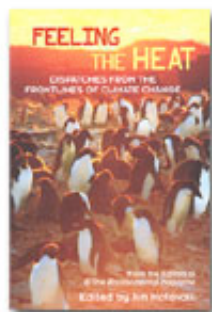
- ◆ Event Calendar
- ◆ Partner With E
- ◆ Green Directory
- ◆ Reprints & Permissions

AFFILIATE PROGRAM

- ◆ Organizations: Sell E Subscriptions Earn \$10 on each!

PREMIUM PROGRAM

- ◆ Organizations: Use E Subscriptions To Raise Money and Build Membership!



E's Global Warming

chloramines and trihalomethanes (THMs), a brew of toxic chemicals that are the culprits behind all the dry skin, frizzy hair and heavy chlorine odor.

Not Just Dry Skin

Worst of all, these chlorine byproducts are volatile. Like swamp gas emerging out of a lagoon, the chloramines and THMs waft out of the pool and into swimmers' lungs. And they are just as harsh, if not harsher on airways than on skin. The lung irritation can lead to asthma, causing both new cases and the worsening of pre-existing disease. Studies in Europe have shown that lifeguards at chlorinated pools have greater rates of asthma. It appears that young children are most vulnerable. Those under age seven had the greatest odds of developing asthma from indoor pools, with the risk increasing with more frequent visits. The evidence has evolved to the point where researchers have given it a name: the swimming pool hypothesis of asthma. Yet this health concern pales in comparison to the acute, life threatening illnesses that have occasionally been seen at indoor pools.

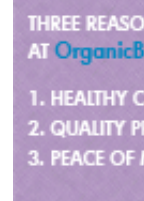
What Happened in Nebraska?

On Christmas Day 2006, a family stayed at a national chain motel that had an indoor pool. The six-year-old boy played in the water for three hours, at which point he developed a barking cough that persisted. The family checked out of the motel and went home, assuming that their son had caught a cold. However, when his cough continued to worsen and was accompanied by a wheeze, his parents took him to the emergency room. As his airways progressively shut down, the boy went into respiratory distress. Fortunately, drugs that open airways worked and the boy lived. After hearing the boy's history, the attending physician labeled the illness as "chlorine irritation." The Centers for Disease Control investigated the case and found an outbreak of some 24 people who had breathing problems because of this one motel pool. The water quality had been poorly managed, chloramine levels were high and the air exhaust had been turned off to save heat. This led to life-threatening conditions.

Lessons Learned

The Nebraska case and the emerging asthma evidence show that chlorinated indoor pools can be a hazard, especially if the water chemistry is not carefully maintained. While motel pools may automatically be suspect, the reality is that any pool can get out of balance and turn toxic. I know of several high school swim meets that have been cancelled because the air was so irritating that swimmers couldn't compete. The fault usually resides with pool operators who slip up due to poor training or carelessness. Proper management can hold down chloramine levels, which will help prevent these acute outbreaks and also minimize the asthma risk. Therefore, the following tips are essential for all pool swimmers:

- Shower before entering the pool; not only will sweat cause chloramine formation, but so will body lotion, deodorant and hair gel. Do a quick but thorough job in the shower to keep the pool from becoming chemically



Book is Here!

NOW AVAILABLE



FROM E MAGAZINE

stressed;

- Look for signs of an out of control pool: cloudy water or a heavy chlorine odor are telltale signs. Don't put your big toe in a pool if you can't see to the bottom from the deep end. Report your concerns to the manager on duty; he or she should know how to rebalance the pool;
- Look for a pool that uses alternative forms of disinfection. Ozone has been safely used to kill pool pathogens for decades in Europe and has seen limited use in this country. New technologies are emerging which, while still experimental, appear to be an improvement. In my area alone, two non-chlorine pools now exist;
- Swim when the lane traffic is the lightest. The more bodies in the pool, the more chloramine that will form;
- If you or your children are asthmatic, consider less indoor swimming and more time in other fitness/activity environments.

DR. GARY GINSBERG teaches at Yale and the University of Connecticut Medical School. He is also coauthor of *What's Toxic, What's Not* (Berkley/Penguin, 2006).

CONTACT: [Dr. Gary Ginsberg](#)

Did you enjoy this article? [Subscribe to E/The Environmental Magazine!](#)

Editors, if you are interested in reprinting this article, please contact [Featurewell](#) / (212) 924-2283

For photocopy or other reuse requests please click this link:



[Environme Rele:](#)

[Conservatio News R](#)

FREE TRIAL ISSUE!



Please send me a FREE TRIAL ISSUE of **E / The Environmental Magazine**. I'm under NO OBLIGATION to subscribe. If **E** is all I hope it will be, I'll become a subscriber at \$19.95 for one full year (6 big issues), a savings of 33% off of the bookstore price. If **E** fails to meet my expectations, I can write 'cancel' on the bill, return it to you and owe nothing. The FREE TRIAL ISSUE is mine to keep without further obligation. [Free offer for U.S. residents only. Canadian and foreign subscribers please click here.](#)

Risk-Free. Just fill out the form and click submit.

First Name: City:
 Last Name: State: Zip:
 Address: Country:
 Email:

Email

Premium Water Filtration

V-750 Whole House Filter System. 7yrs capacity. Free Ship. Now \$677.

Chlorine Free Pools

Save time and money on maintenance! Healthy water for you & your family



[Shopping Cart](#) and [eCommerce Software](#) by Volusion [eCommerce Solutions](#).

[HOME](#)

[LOGIN](#)

[SUBSCRIBE](#)

[BACK ISSUES](#)

[ADVERTISE](#)

[ABOUT US](#)

[CONTACT US](#)

[DONATE](#)

[Terms of Use](#)

[Privacy Policy](#)

[Copyright Notice](#)

E MAGAZINE.COM

A service of E/The Environmental Magazine. Copyright 1995 - 2004. All Rights Reserved.