

A New Survey Reveals Americans' Understanding and Misunderstanding of Pool Chemicals

May 24, 2019

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This spring the American Chemistry Council (ACC) sponsored a survey of over 3,000 American adults to gauge popular knowledge and awareness of a summer mainstay: pool chemicals. Swimmers depend on pool chemicals to help keep pool water safe, comfortable, and enjoyable, but many pool patrons may be unaware that they have a *personal* role to play in maintaining good pool chemistry. As an outside group of public health and consumer advisors to ACC, we reviewed the survey results and report here on the most surprising, most reassuring, and funniest of these findings.



***Most Surprising (and Disgusting) Finding:
Many Swimmers Use the Pool as a
Communal Bathtub***

Even though 64% of the survey respondents agreed that pool chemicals don't eliminate the need to shower before swimming, about half (51%) admit to using the pool as a bathtub in place of the pre-swim shower, or instead of showering after exercise or yardwork. We understand how inviting it is to jump into a cool pool on a hot day after running through the park or mowing the lawn, but there's good reason to rinse off in the shower first. Perspiration, dirt, and oils adhering to swimmers' skin deplete the chlorine-based disinfectants in pool water, leaving less disinfectant available in the pool for killing pathogens, the germs that pass through the water that can make a swimmer sick.

There's more: substances in swimmer perspiration, body oils, and urine combine chemically with chlorine to form irritant compounds in the pool. That harsh odor around some pools, which some refer to as "the smell of chlorine," isn't chlorine at all. It is *chloramine*, the real culprit causing swimmer red eyes and itchy skin. Bottom line: shower before swimming to help chlorine-based pool disinfectants do their job! According to one researcher¹, the first 60 seconds of rinsing in a shower (even without soap) removes the majority of unwanted substances from the skin. Yet the survey reveals that only 31% of

¹ Keuten et al., (2012). Definition and quantification of initial anthropogenic pollutant release in swimming pools. *Water Research*, 46, 3682-3692.

respondents shower for 60 seconds or more before swimming. And if you haven't already put this together, don't pee in the pool! Seventy percent of respondents do not know that peeing in the pool can contribute to red, itchy eyes. It seems like a startling conclusion, but it makes chemical sense.

Most Reassuring Finding: The Public Largely Understands the Need for Pool Chemicals

Based on the new survey, the majority of Americans understand that overall, pool chemicals are needed for healthy swimming in healthy pools. Seventy-six percent of respondents know that pool chemicals help prevent algae growth in the pool; 71% know pool chemicals kill germs; and 56% know that pool chemicals are not optional for backyard pools. We wish that last statistic was a bit higher: even backyard pools need chemicals to prevent the growth of algae, adjust pH, and destroy the pathogens that may enter the water on the bodies of swimmers. Interestingly, only 23% of respondents know that pool chemicals are used in *salt* pools. First, salt is the chemical from which chlorine is generated in a salt pool. Second, other chemicals are also required for pH adjustment, for example. Maintaining an appropriate pH is essential to keep chlorine in an active form.

Funniest Findings: Phantom Dyes in the Pool

Whoever fabricated the myth that if you pee in the pool a urine-activated dye in the water will reveal your covert deed did a good job in spreading amusing misinformation. Thirty-seven percent of Americans believe this myth. That's pretty interesting because according to the survey, 40% of respondents admit to having peed in the pool as an adult. If the urine-revealing dye is present, we should be seeing a lot of colored water in the pool!

Speaking of colored water, 20% of respondents believe the pretty color of pool water is due to a blue dye. In fact, healthy pool water is clear but may look blue because of the color of the pool floor and walls. Just scoop some pool water into your hands and check for yourself.

Pool chemistry is complicated, and good pool chemistry is essential for healthy swimming in healthy pools. Pool chemistry depends not only on the commercial pool chemical products added to the water, but also on the substances that swimmers themselves introduce into the water, knowingly or unknowingly. Minimizing swimmer contributions by showering before swimming and refraining from peeing in the pool will go a long way toward doing your part to help maintain good chemistry in the pool.

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