

**WATER
WELLNESS
2016**





Shower Yourself With Love

YOUR SHOWER HOLDS THE KEY TO HEALTHY SKIN AND HAIR

Chlorine isn't just for pools anymore--the water that comes out of your tap and pipes is actually spiked with the stuff. A highly efficient disinfectant, chlorine is added to the public water supply to kill disease-causing bacteria and viruses. Though it is widely considered safe as it is kept under certain levels mandated by the Environmental Protection Agency (EPA), it could be wreaking havoc on your skin and hair. While disinfecting drinking water is a necessity, you don't have to stand for it when standing under your shower. Thankfully, Speakman has engineered a revolutionary product designed specifically to remove chlorine before it hits your body, a practical and luxurious solution to eliminating skin and hair's exposure to this harsh but unavoidable additive.

Where You Live May Be Affecting How You Feel

The EPA has set maximum chlorine level at 4 mg per liter of water (mg/L) as higher levels can cause serious health effects, such as burning and irritation to the eyes and nose, and major stomach discomfort (USEPA, 2013). Take a look to see the average chlorine levels reported in 2014 for 15 of the largest cities in the United States. Does your city make the list?

LA
2.3

DALLAS
4.0

CHI
1.0

CITY	TOTAL CHLORINE RESIDUAL (MG/L) AVERAGE (RANGE)
Dallas	4.04 (2.73 - 5.12)
Los Angeles	2.3 (1.3 - 2.9) ¹
San Francisco	2.3 (0.1 - 3.0)
Philadelphia	2.08 (1.43 - 2.08)
Nashville	1.87 (0.6 - 3.6)
Columbus	1.57 (0.4 - 2.90) ²
Indianapolis	1.4 (ND - 2.7)
Atlanta	1.38 (0.27 - 1.38)
Charlotte	1.22 (0.76 - 1.74) ³
Jacksonville	1.09 (0.2 - 2.5) ⁴
Chicago	1.00 (1 - 1)
Seattle	0.85 (0 - 1.7)
Phoenix	0.8 (0.1 - 2.7)
New York	0.63 (0 - 1.51)
Baltimore	0.49

ND = Non Detect
 Average = Highest running annual average
 1 = Met Water District of Southern California
 2 = Hap Cremean Plant
 3 = Franklin Plant
 4 = Major Grid

To find the disinfectant concentration in your water supply, visit: the EPA website: <http://ofmpub.epa.gov/apex/safewater/f?p=136:102>



Chlorine is a leading cause of dry skin



Chlorine can irritate and sting eyes



Chlorine can accelerate the aging process



Chlorine strips away natural oils of the skin



Chlorine can result in weakened hair

Save Your Own Skin

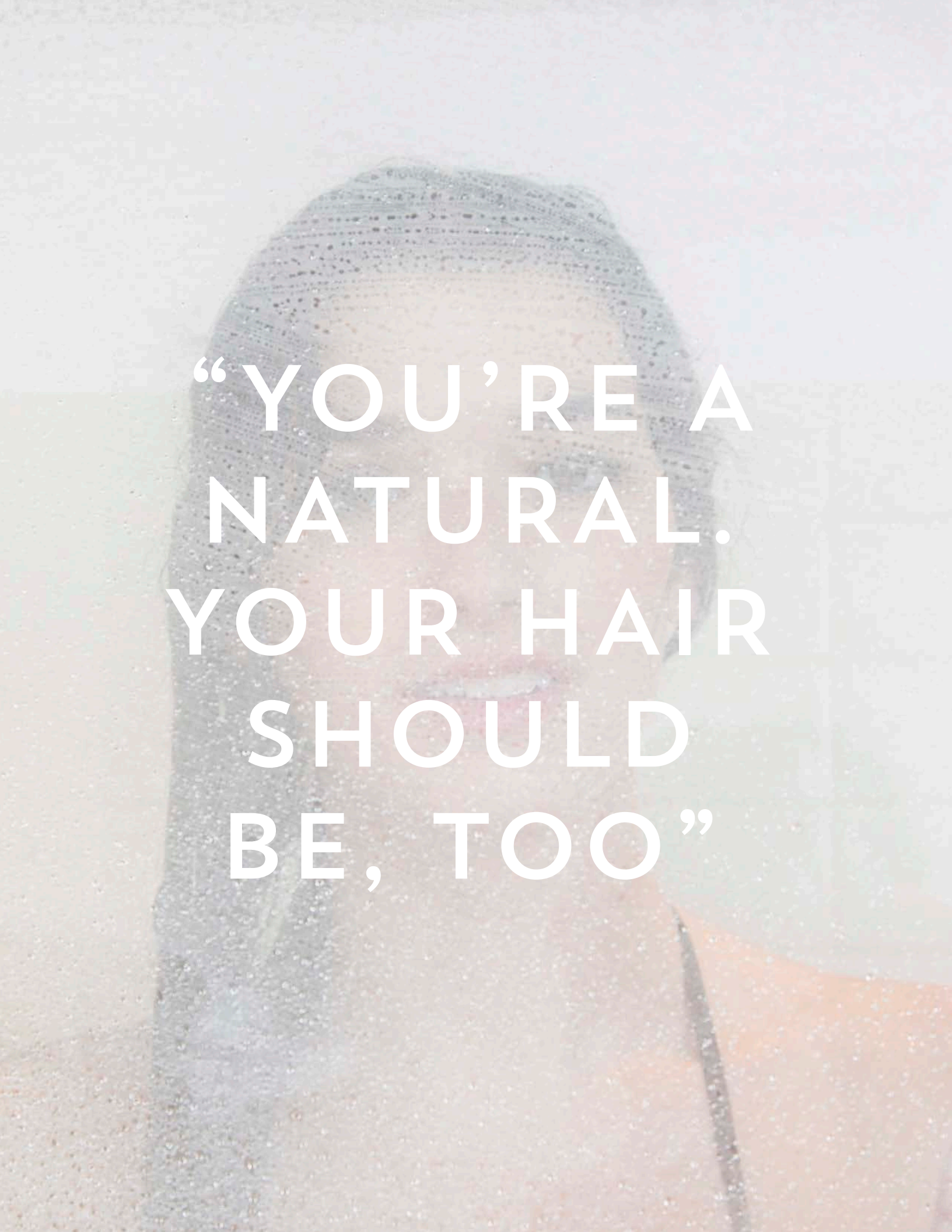
While the chlorine concentration in tap water is required to be below levels established by the EPA, bathing in normal chlorinated tap water has been shown to exacerbate or worsen existing skin conditions such as eczema. In fact, experts suggest that exposure to chlorinated water is one of the causes leading to or worsening of symptoms of skin dryness (Gardinier, 2009).

To investigate the impact of chlorine on skin hydration, researchers have exposed participants to chlorinated water

and then measured the water holding capacity of the skin. **In participants with eczema and in those with normal skin, typical tap water chlorine concentrations significantly reduced the water holding capacity of the outermost layer of the skin, the stratum corneum, after a 10 minute exposure** (Seki, 2003). As lipids (or oils) play a role in the hydration of the skin, these results suggest that chlorine is stripping away the natural oils of the skin.

When examined under a high-powered microscope, the outer layer of normal skin was shown to be rough and “unhealthily shiny” after the interaction with chlorine. The images also show the pores on the skin turned larger after contact with the chlorine-containing water. **The authors indicated that large pores can cause one’s complexion to appear dull and uneven, and that the reaction of chlorine with the skin could even accelerate the aging process (Xiao, 2012).**

Chlorine has also been associated with eczema in children. In a study on infant swimming practices on development of childhood eczema, the authors found that increased swimming was associated with an increased prevalence in childhood eczema, and suggested that the chlorine may explain this association (Chaumont, 2012).



“YOU’RE A
NATURAL.
YOUR HAIR
SHOULD
BE, TOO”

Hair Your Grievances

You’re a natural. Your hair should be, too. Chlorine at levels typical in the water supply is capable of stripping the natural oils that make hair shiny and soft, resulting in hair that is drier and susceptible to damage (Fair, 1982; Keratin, 2015).

Shower With Care

Many personal care products used for showering contain triclosan, a common antibacterial agent. In chemical analysis studies, researchers have shown that water with typical chlorine levels when mixed with personal care products containing triclosan result in the formation of potentially hazardous byproducts including chloroform and 2,4,6-trichlorophenol, which are classified by the U.S. EPA as probable human carcinogens (Fiss, 2007).

The Solution: A (Shower) Head Start

Hotel Pure Filtration Shower (S-2005-HBF): This revolutionary fixture combines the iconic Hotel Shower Head design and engineering with the latest water filtration technology - resulting in the cleanest, crispest water possible. The copper-zinc alloy filter removes and converts up to 99% of chlorine, heavy metals, and bacteria, providing you with a shower you can feel good about. Now you can shower easy knowing that your water is as clean as possible, all while providing remarkable benefits for you and your skin.

Speakman: For the Love of Water.

Removes



CHLORINE



HEAVY METALS



BACTERIA



DIRT





References

Chaumont A, Voisin C, Sardella A, Bernard A. (2012) Interactions between domestic water hardness, infant swimming and atopy in the development of childhood eczema. *Environ Res* 116: 52-57.

Fair NB, Gupta BS. (1987) Effects of chlorine on friction and morphology of human hair. *J. Soc. Cosmet Chem* 33, 229-242.

Fair NB, Gupta BS. (1987) The chlorine-hair interaction. I. Review of mechanisms and changes in properties of keratin fibers. *J. Soc. Cosmet Chem* 38, 359-370.

Fiss EM, Rule K, Vikesland PJ. (2007) Formation of Chloroform and Other Chlorinated Byproducts by Chlorination of Triclosan-Containing Antibacterial Products. *Environ Sci Technol* 41, 2387-2394.

Gardinier S, Gue'henneux S, Latreille J, Guinot C, Tschachler E. (2009) Variations of skin biophysical properties after recreational swimming. *Skin Res. Technol.* 15,427-435.

Hicks JH. (1977) Swimming and the skin. *Cutis* 19: 448-450.

Keratin.com. (2015) Hair cosmetics - swimmers' hair. Retrieved November 27, 2015, from <http://www.keratin.com/ai/ai009.shtml>

Larsen FS, Hanifin JM. (2002) Epidemiology of atopic dermatitis. *Immunol Allergy Clin North Am* 22: 1-25.

McNally NJ, Williams HC, Phillips DR, Smallman-Raynor M, Lewis S, Venn A, Britton J. (1998) Atopic eczema and domestic water hardness. *Lancet* 352: 527-31.

Morren M, Przybilla B, Bamelis M, Heykants B, Reynaers A, Degreef H. (1994) Atopic dermatitis: triggering factors. *J Am Acad Dermatol* 31:467-73.

Sawyer CN, McCarty PL, Parkin L, Parkin GF. (1994) *Chemistry for Environmental Engineering*. McGraw Hill, Inc., New York, NY

Seki T, Morimatsu S, Nagahori H, Morohashi M. (2003) Free residual chlorine in bathing water reduces the water-holding capacity of the stratum corneum in atopic skin. *J. Dermatol.* 30 (3), 196-202.

USEPA (U.S. Environmental Protection Agency) (1997) *Community Water System Survey - Volume II. Detailed Survey Result Tables and Methodology Report*. EPA 815-R-97-001b

USEPA (2013) *Basic Information about Disinfectants in Drinking Water: Chloramine, Chlorine and Chlorine Dioxide*. Retrieved November 26, 2015, from <http://water.epa.gov/drink/contaminants/basicinformation/disinfectants.cfm>

Xiao F, Zhang X, Zhai H, Lo IMC, Tipoe, GL, Yang M, Pan Y, Chen G. (2012) New halogenated disinfection byproducts in swimming pool water and their permeability across skin. *Environ Sci Technol* 46: 7112-7119.