



## Water and Your Skin and Hair Facts

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Water Hair and Skin Facts

### **Condition: Hard Water**

Over 95% of the population in the Los Angeles area, according to the Water Quality Association, are bathing and showering with hard water. While hard water is fine for drinking, it can cause many problems for your hair, scalp and skin.

These problems include:

- Hair feels dry
- Hair is resistant to color or perking
- Dandruff or eczema of the scalp
- Dry, flaky skin
- Thinning hair
- Colors fading too quickly
- Perms appearing to fall out
- Discoloration or darkening of hair
- Hair lacks body and shine

### **HOW YOUR WATER AFFECTS YOUR HAIR**

The water you use to wash your hair, scalp, and skin comes from one of two sources:

- Ground Water
- Surface Water

#### **Ground Water**

If your water comes from the ground, it is either from your own well or from the local treatment plant that derives the water from wells pumping water from the ground. The source of ground water is from rain passing through aquifers, which are layers of minerals. The acidity (pH below 7) of the rain increases the dissolving effect of minerals. These dissolved solids are found in the water when pumped above the ground and used to bathe.

#### **Surface Water**

If your water comes from the treatment plant which derives the water from a surface source, the water is coming from either a river or a lake. Surface water usually contains fewer minerals because the water has not filtered



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down through the mineral layers. However, increasing populations are polluting the water causing additional bacteria growth. As a result, the treatment plants must add more chlorine to kill bacteria and then add lime (a calcium compound) to help control the chlorine levels.

Water hardness is determined by the level of calcium that is in the water either found naturally from the ground or put into the water by the treatment plant.

While calcium is the element that determines hardness of water, there are many other elements in the water that affect the texture, volume, shine, control and health of hair.

### What are the minerals that effect hair?

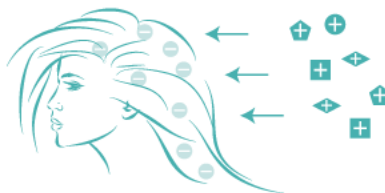
- Calcium
- Iron
- Copper
- Magnesium
- Silica
- Lead

### What other elements effect hair?

- Chlorine -a harsh oxidizer added to the water to kill bacteria also adversely effects hair.

### How do minerals and chlorine attach to the hair?

Our hair, scalp and skin have an electrical charge and that charge is negative. Minerals and oxidizers are charged positive. When a positively charged mineral comes in contact with our hair, scalp, or skin, it attaches on like a magnet.

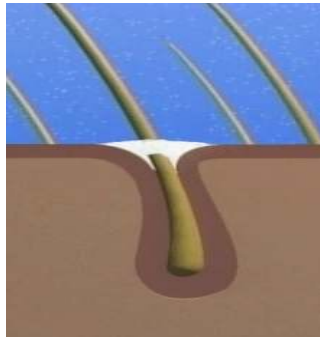


### How do hard water minerals and chlorine affect hair?

**Calcium** - If your source for water is a well, then more than likely you have calcium in your water. If your source for water is coming from a treatment plant, calcium may have been added to your water. Calcium is the mineral that determines hardness of water.

### How calcium affects hair:

- Calcium leaves the hair feeling dry and weighted down. It can even cause a perm to appear relaxed.
- Calcium builds up on the scalp causing flaking of the scalp, giving the appearance of dandruff.
- Calcium can choke the hair at the mouth of the follicle causing the hair to break off, and then coating the scalp, blocking further new hair growth.



**Iron** - Iron is found in ground water from domestic wells and wells used by treatment plants as the source for local water.

### How iron effects hair:

- Iron leaves the hair feeling dry, brittle and weighted down.
- Iron can cause dark hair to tint darker and blonde hair to turn orange.
- Iron can block perms and color from properly processing.

**Copper** - Copper originates in water in three ways:

1. It comes from the ground and is pumped into the water from a well.
2. Particles of copper can come from copper piping. The corrosion caused by hard water lifts the copper particles off the pipes and deposits them into the water.
3. Copper sulfates are added to swimming pools to control the growth of algae. Copper is often added to lakes (that are a source of drinking water) in the summer to kill algae.



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### How copper affects hair:

- Copper discolors hair causing blonde hair to turn green and dark hair to tint darker.
- Copper can weigh hair down and cause dryness.
- Copper can inhibit the proper processing of perms, color and relaxers.

**Magnesium** - Usually found wherever calcium comes naturally from the ground, magnesium is abundant in the soil and is very much a part of the mineral complex associated with hard water.

### How magnesium affects hair:

- Magnesium causes hair to feel dry.
- Magnesium causes hair to appear weighted down.
- Magnesium can inhibit the proper processing of perms, color and relaxers.
- Magnesium causes hair to lack shine.

**Silica** - Silica is a sand-like substance found in desert or volcanic areas. It is usually bound to calcium or magnesium and forms very hard, virtually insoluble deposits.

### How silica affects hair:

Silica causes many of the same effects on the hair as calcium.

- Silica causes hair to feel dry.
- Silica weighs hair down.
- Silica can cause dandruff-like symptoms of flaking.
- Build up of silica can choke the hair follicle causing hair to fall out.

**Lead** - Lead acetate is used in certain home remedy gray hair cover-ups.

### How lead effects hair:

- Lead can cause the hair to feel dry.
- Lead can prevent the proper processing of perms, color, and relaxers.

**Chlorine** - unlike the other elements listed above, chlorine is not a mineral but an oxidizer. Chlorine is put into drinking water and swimming pools to kill bacteria. In addition to the following effects chlorine has on hair, due to its oxidizing effects, chlorine also oxidizes minerals onto the hair causing worse effects of those minerals.

### How chlorine affects hair:



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- Active chlorine in the hair can cause hair to feel gummy when wet and straw-like when dry.
- Chlorine can damage the cuticle and proteins of the hair.
- As an oxidizer, chlorine can cause the air and sun to oxidize hair and worsen the conditions listed above.
- Chlorine can cause hair to feel dry.
- Chlorine can cause hair to become brittle.
- Chlorine can cause hair to lack shine.