

Growing Together Through Connections

To Color or Not To Color? About Permanent Hair Colors



Do you or someone you care about color their hair? If so, there are some facts you should know about permanent hair colors.

Until the early 1900's hair coloring was made from a wide range of herbal and natural dyes.

In 1909 French chemist Eugene Schuller created the first "safe" commercial hair coloring based on the chemical paraphenylenediamine. Eugene's company was called L'Oreal. Hair coloring experts then claimed the only effective permanent hair color must be ammonia based.

The problem with ammonia-based hair color, though, is it can cause adverse symptoms like coughing, nose, throat, skin, or eye irritation. Ammonia also affects your eyes and lungs and can cause olfactory fatigue affecting one's sense of smell. And it damages the hair itself. It not only affects the cuticle of the hair, it also damages the amino acid or pH of the hair and damages the keratin protein.

A study published in the American Journal of Epidemiology suggests that long-term use of hair dye, especially dark colors, may increase your risk of developing non-Hodgkin's lymphoma. Other studies claim that hairdressers are six times more at risk of having bladder cancer from the heavy use of hair colors on clients.

To explain how hair color works, you must understand pH. pH is the balance between alkaline and acid. The perfect pH of hair is between 4.5 to 5.5. But for hair to "take" color, the pH must be taken to a higher value. Ph values are used to open and close the hair. Traditional hair color is ammonia-based. Ammonia opens and swells the second layer of the hair called the cortex layer. Inside the cortex is a system of springs called helix coils that are suspended in a

soft protein which is called intercellular cement. This cement also contains fatty acids which hold moisture. The helix is a strong hard protein that gives the hair the ability to stretch and retract. This ability will depend on the moisture level found in the fatty acid.

Try a test on your own hair. On wet hair take 5 strands, gently pull apart making sure that the pressure is even. If your hair is in good condition it will stretch 30% of its natural length and return showing no signs of damage.

There is also an outer layer called the cuticle layer. Its job is to protect the cortex layer. It is transparent but can be seen under a microscope and looks like shingles on your roof. We rely on cuticle

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scales to open and close for technical services because we have to penetrate the cuticle to get to the cortex. To open the cuticle we suspend the hair in a chemical, which will have a high pH value allowing the hair to swell and push open the cuticle. The problem with the ammonia system is that it is so strong it can create damage within the cortex: affecting the intercellular cement and disturbing the fatty acids, making it difficult to return the hair back to the correct pH without causing damage.

But don't fret—help is on the way! Scientists have now discovered a better technique to color hair. There are now organic hair color systems available. Organic systems are designed to not damage hair and to repair hair, eliminating the problems associated with pro-

tein and moisture. Instead of using ammonia to blast open the cuticle and cortex, organic colors are designed to soften the layers using natural extracts and oils and use low heat to open and penetrate the helix coils.

With this system, the pH is able to come back to its normal level easily, leaving the protein and moisture unaffected. The hair will be healthier, the colors more vibrant, longer lasting, and natural looking. The other advantages are no ammonia gases or fumes to breathe, no burn or itch, and no plastics, sulfites or parabens to cause you and your hair any harm.

Ask your hairdresser about the hair colors they use in the salon. Asking questions can help you learn more about the new choices in beauty care today.

By Kathy Gehrs

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She has been licensed since 1968 and studied with the International Beauty Academy, the Vidall Sassoon Academy, the Rusk Academy, as well as with Tony Beckerman, Allen Benfield Bush of Abba Products, and the late Paul Mitchell.

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Resources:

Technical manual for Organic Colour systems; Wikipedia: Permanent Hair Dyes/Healthy and Green Living.

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