COMING CLEAN

EDUCATIONAL INFOGRAPHICS ABOUT SHAMPOO

TEAM AKA SHAMPOO
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WHAT'S IN SHAMPOO?

SURFACTANTS

Surfactants are detergents that are used mainly to create foam and remove dirt and oil from hair. Many surfactants are harsh chemicals that can cause skin and eye irritation.

COMMON TYPES

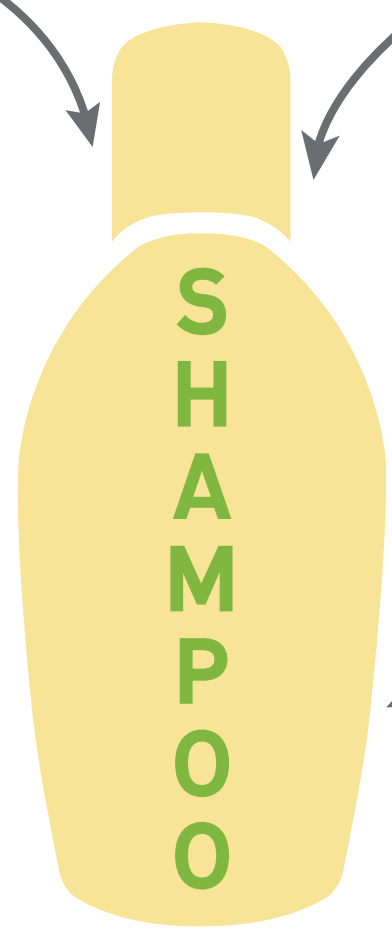
Sodium Laureth Sulfate
Sodium Lauryl Sulfate
Cocamide MEA/DEA
Saponins

HUMECTANTS

Humectants are moisturizers that either smooth out rough cuticles on strands of hair to make the hair feel softer or bind water molecules to hair.

COMMON TYPES

Panthenol
Dimethicone
Panthenyl Ethyl Ether
PEG Variations
Glycerin



PRESERVATIVES

Preservatives are added to shampoos to make sure the chemicals in the shampoo do not go bad. They typically prevent reactions between chemicals in order to do this.

COMMON TYPES

Methylchloroisothiazolinone
Sodium Benzoate

PH ADJUSTORS

pH adjustors are added to shampoos to eliminate the frizz that occurs after showering and keep the shampoo formula neutral enough to be used on humans.

COMMON TYPES

Citric Acid
Sodium Hydroxide

FRAGRANCES

Fragrances are added to shampoos to make them more inticing to use by consumers. They have no impact on hair.

COMMON TYPES

None - fragrance formulations are not required to be publicized and are protected as trade secrets.

Timeline of Soap and Shampoo

3000 B.C. - 500 B.C.

3000 B.C.

2800 B.C. Soap-like material found in clay cylinders is evidence of soap-making in ancient Babylon.

2000 B.C.

1500 B.C. Egyptians used animal and vegetable oils with alkaline salts to form a soap-like material.

1000 B.C.

1100 B.C. Wigs had become popular in Egypt and men often wore artificial beards during ceremonies.

500 B.C.

500 B.C. Sumerian women used mixture of frankincense, cedar, and cypress woods in water.

500 B.C. Soapnuts were found in a monastic complex, which are a natural surfactant .

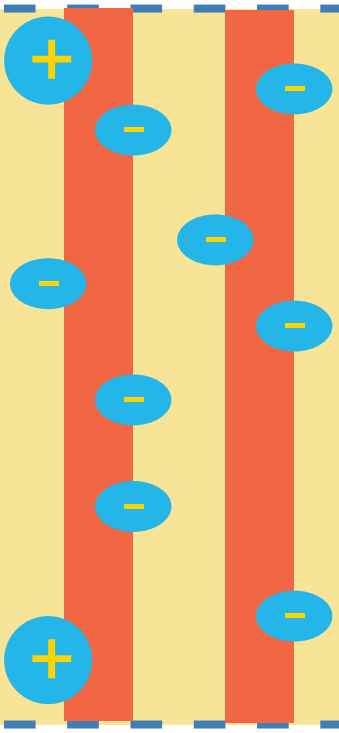
HOW DOES SHAMPOO WORK?

PH CHEMISTRY

pH is a measure of the positive hydrogen ions, and the typical pH of hair is ~ 5.5, meaning it has a positive electric charge. On the other hand, water has a pH of 7 which means it has fewer positive ions than hair and more negative ions.

When hair and water interact, negative ions are introduced which causes strands of hair to repel each other - effectively making your hair more frizzy. This is why your hair gets frizzy on really humid days.

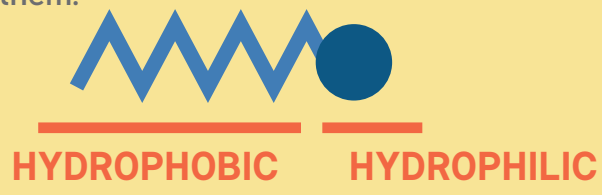
In order to stop the frizz created by the differing pHs, shampoos typically have a pH closer to 5.5, the pH of hair.

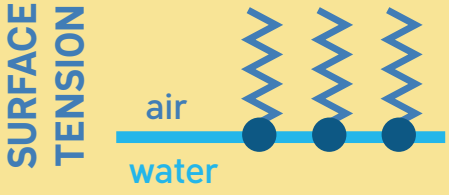


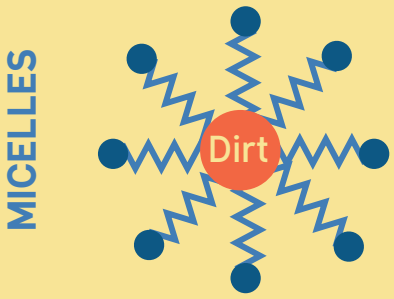
Hair strands Positive ions Negative ions

SURFACTANT CHEMISTRY

Surfactants are long chains of hydrophobic carbons connected to a hydrophilic head of sulphur and other elements. The hydrophobic side of the molecule does two important things: surrounds other hydrophobic substances like dirt by creating micelles and saturates the surface of the soap/water solution to create foam. These two properties make surfactants ideal foaming agents and detergents. The micelles quickly get washed out of hair in showers, taking the dirt and oil with them.







Timeline of Soap and Shampoo

400 B.C. - 800 A.D.

400 B.C. Greeks used perfumed clay well mixed with oil as soap

400 B.C. A clay called sapo (from which the word soap comes) was found near Rome and was used for general cleaning.

300 B.C. Greeks washed their hair with a special Athenian ointment to make hair a beautiful golden blond.

600 A.D. Pliny the Elder indicates the Phoenicians were making soap from goat tallow, causticized beech ashes, and salt.

800 A.D. Wood ashes were replaced by seaweed and kelp in soap - promoting the industry in Germany.

CHEMICALS IN THE UNITED STATES ARE

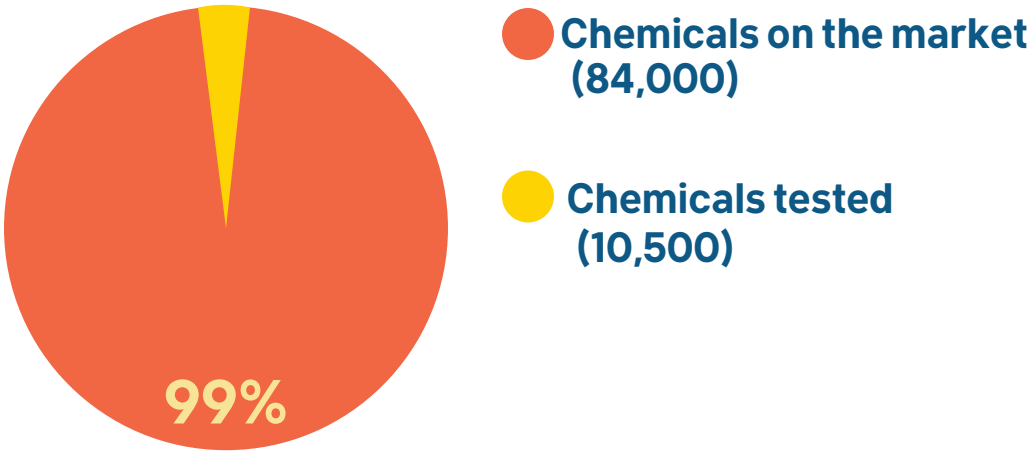
INNOCENT

UNTIL PROVEN

GUILTY

Currently, industries are responsible for determining the safety of the chemicals in their products.

Who is keeping them accountable...



Timeline of Soap and Shampoo **900 A.D. - 1700**

900 A.D. Soapnut trees begin to appear in ceremonies in stories and historical documents.

1200 The English began making enough soap for commercial sale.

1300-1500 The soap trade first started in both France and China. In China, soap was used to conceal aging.

1608 Soap-making in the American colonies began with the arrival of several soap makers from England in Jamestown, VA.

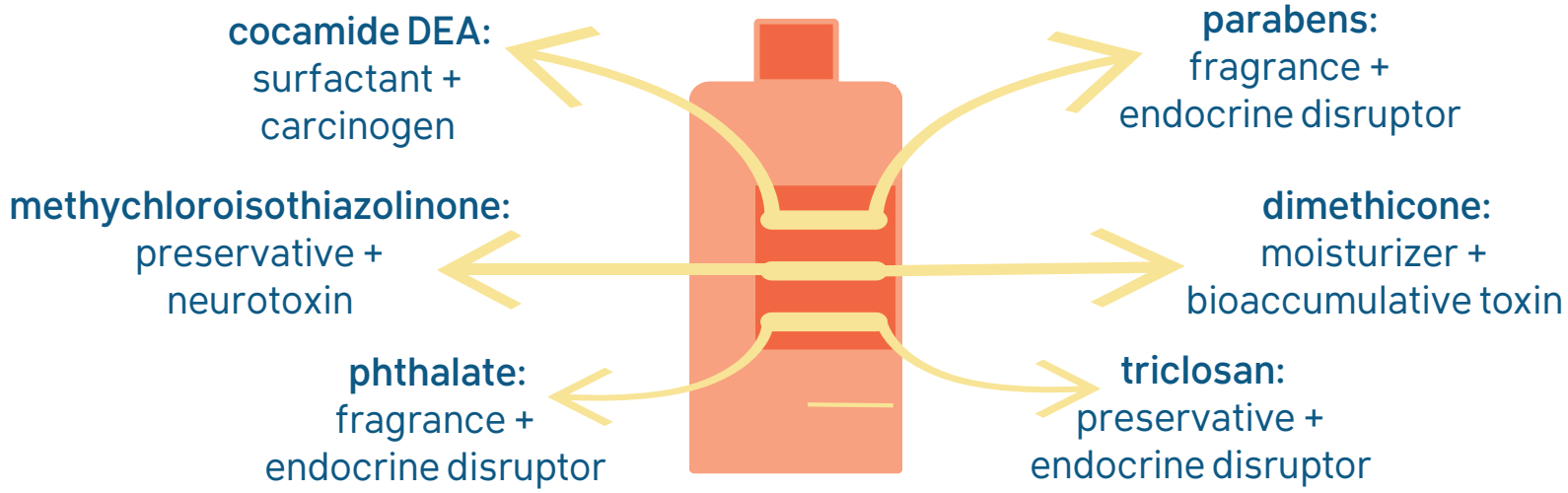
1741 Tax on soap in London leads to even less hygienic practices. Soap was available but rarely used because of this tax.

> ***Companies and individuals who manufacture cosmetics have a legal responsibility to ensure safety of their products. Neither law nor FDA regulations requre tests to demonstrate the safety of products or ingredients.***
>
> ***- Federal Food, Drug, and Cosmetic Act***

NO CHEMICALS HAVE BEEN RESTRICTED FROM USE IN COSMETICS SINCE

(AKA WHEN TAYLOR SWIFT WAS BORN

ALTHOUGH INDEPENDENT STUDIES HAVE FOUND COMMONLY USED CHEMICALS TO BE CARCINOGENS, ENDOCRINE DISRUPTORS, AND BIOACCUMULATIVE TOXINS.



Timeline of Soap and Shampoo 1775 - 1860

1775

1785 Soapmakers begin appearing in UK as a new form of small businesses.

1791 Nicholas Lablanc patents a process that uses common salt to make sodium carbonate, used in early shampoos.

1800

1822 James Muspratt brings the Leblanc soda process to England on a large scale, eliminating small soap businesses.

1823 M.E. Chevreul determines chemical nature of soap - this becomes the basis of modern fat and soap chemistry.

1850

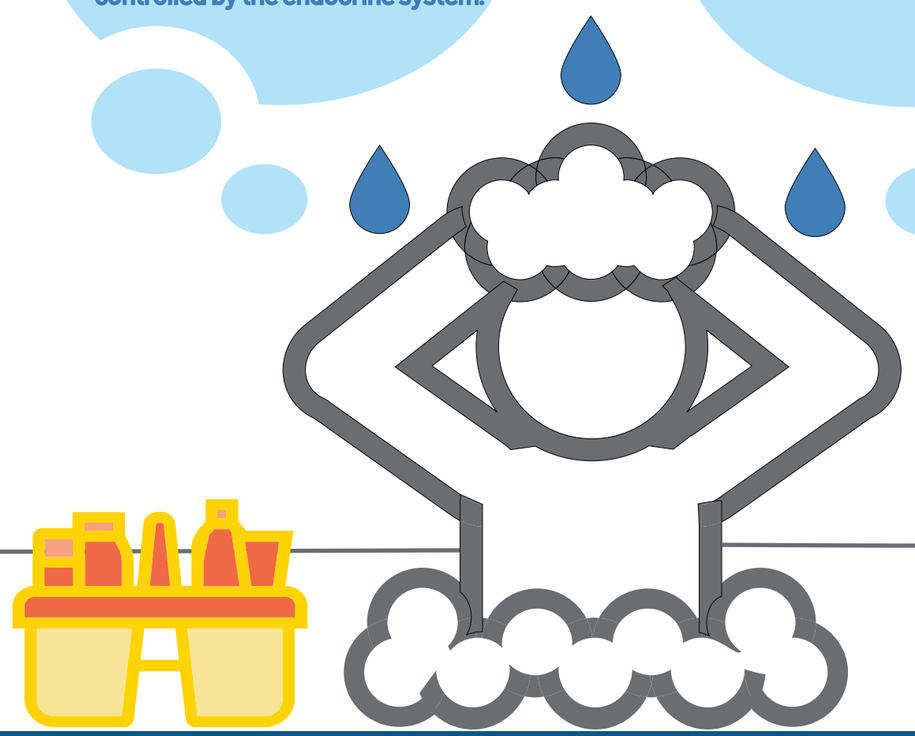
1861 Thomas Graham discovers new information on colloids in emulsion and develops cold cream manufacturing.

IMPACTS OF SHAMPOO ON HUMAN AND ENVIRONMENTAL HEALTH

INDEPENDENT STUDIES HAVE FOUND INGREDIENTS IN SHAMPOO TO BE:

ENDOCRINE DISRUPTORS: chemicals that mimick natural hormones, so when they enter the body at certain doses, they disrupt processes like growth, metabolism, behavior, and fertility which are all controlled by the endocrine system.

CARCINOGEN: a substance that can cause cancer in living tissue. The carcinogenic potential of substances varies and depends on how often an individual is exposed to the substance.



BIOACCUMULATION: the process by which organisms absorb substances faster than they are released from the body. If a substance in shampoo bioaccumulates, it can be especially toxic to aquatic life that are exposed to high concentrations of the chemicals released into our waterways.

If we eat fish that have accumulated high levels of toxins, we take those substances into our bodies at high concentrations.

Triclosan, a common preservative, is a bioaccumulative endocrine disruptor that has been found in the tissue of aquatic life tested across the United States.

Timeline of Soap and Shampoo 1860 - 1930

1862 G.W.S. Piesse releases recipes for hair washes - alkaline rosemary solutions, bay and otto tincture, or perfumed alcohols.

1867 Hydrogen peroxide is used to bleach hair for the first time in Paris.

1890 American, V.C. Dagnet, replacs vegetable oil with refined mineral oil and waxes to create preservatives.

1903 Hans Schwarzkopf creates the first powder shampoo that dissolves in water, the first example of dry shampoo.

1927 Hans Schwarzkopf creates the first liquid shampoo - before this all shampoo was in either power or solid forms.

Timeline of Soap and Shampoo 1930 - 1970

1934 Drene is invented by Procter and Gamble - the first synthetic soap introduced to the market.

1936 Massachusetts man John Breck creates the first pH-balanced shampoo in Springfield.

1940 Phosphate compounds are added to synthetic detergents to improve detergent performance.

1953 Sales of synthetic detergents in U.S. surpass those of natural, original soap.

1970s Shampooing daily with synthetic shampoo becomes the norm in America.

RISE OF SULFATE FREE HAIR CARE

Starting in 2009, hair product companies began releasing sulfate free shampoo and conditioner, claiming sulfates were the cause of dry and faded hair.

It was discovered that frequently washing your hair can lead to drier, more brittle strands. Now, many people swear by sulfate-free shampoos.

Sodium lauryl sulfate and sodium laureth sulfate are two of the harshest surfactants available. They remove all the oil and dirt from hair leaving hair feeling dry.

MYTH: Sulfates leach hair dye from locks

FACT: Any time you expose hair color to water, hair swells up and some color can leak out. Water is will pull more color out of your hair than any shampoo.

The process in which sulfate products are created increase the possibility of contaminating the shampoo with possible carcinogens.

Most sulfate-free shampoos use an alternate surfactant that behaves exactly the same way, removing the natural oil from hair.

NO POO MOVEMENT

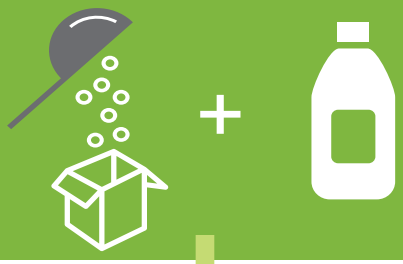
A method of washing hair without the aid of shampoo and surfactants

WHY?

People began to believe that shampoo left their hair in bad shape since it strips hair of all oil.

NO POO METHODS

BAKING SODA + APPLE CIDER VINEGAR



ONLY WATER

DIRECTIONS

BAKING SODA : WATER

1:3

VINEGAR : WATER

1:4

Massage hair with water

DOWNSIDES

Baking soda and vinegar will make hair very brittle because the extreme acidic and basic properties of the two rinses will disrupt the pH balance in hair.

Skipping shampoo is not recommended by dermatologists. The accumulation of hair oil may irritate the scalp and cause local inflammation.

MAKE YOUR OWN SHAMPOO

To make your own shampoo without potentially harmful ingredients, follow this simple recipe. All the ingredients can be purchased online. This recipe makes about 500 ml of shampoo.

INGREDIENTS

60 ml Soapnut Extract

10 ml Panethenol

0.5 g Citric Acid

5 g Guar Gum

450 ml Distilled Hot Water

4-5 Drops Essential Oil of your choice

5 ml Lemon Juice

STEPS:

Mix the hot water and guar gum until smooth.

Add in the remaining ingredients.

Wash your hair with your newly made shampoo!

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Page 8 - No Poo Movement

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