• Burns, injuries, and X-rays can cause temporary hair loss. In such cases, normal hair growth usually returns once the injury heals unless a scar is produced. Then, hair will never regrow.

• Autoimmune disease may cause alopecia areata. In alopecia areata, the immune system revs up for unknown reasons and affects the hair follicles. In most people with alopecia areata, the hair grows back, although it may temporarily be very fine and possibly a lighter color before normal coloration and thickness return.

• Medical conditions. Thyroid disease, lupus, diabetes, iron deficiency, eating disorders, and anemia can cause hair loss. Most times, when the underlying condition is treated, the hair will return unless there is scarring as in some forms of lupus, lichen planus, or follicular disorders.

• Diet. A low-protein diet or severely calorie-restricted diet can also cause temporary hair loss.

• Cosmetic procedures, such as shampooing too often, perms, bleaching, and dyeing hair can contribute to overall hair thinning by making hair weak and brittle. Tight braiding, using rollers or hot curlers, and running hair picks through tight curls can also damage and break hair. However, these procedures don’t cause baldness. In most instances hair grows back normally if the source of the problem is removed. Still, severe damage to the hair or scalp sometimes causes permanent bald patches.
• Phytosphingosine extract
• Amino peptide complex
• prolamine
• Beta glucan
• Disodium wheat Germamido PEG-2-Sulfosuccinat
• Fermented grain extract
• AMP-Isostearoyl
• PG-Propyl Silanetriol
• PVP crosspolymer
• Ethylidimonium ethosulfate
• Yeast extract
• Phytosphingosine extract
• "Fragrance" is a broad category that may contain many chemicals that are otherwise unlisted on the label.

All-natural

• Some companies use "all-natural", "organic", "botanical", or "plant-derived" ingredients (such as plant extracts or oils), combining these additions with one or more typical surfactants. The use of the term "natural" is not regulated in any form, leading many companies to "green-wash" consumers into buying shampoos with harsh, stripping surfactants without their knowledge. A company may also slightly change the name of a surfactant to another acceptable form in order to fool unwitting customers.
• Detanglers, which modify the hair surface by pH as acidifiers, or by coating it with polymers, as glossers.

• Thermal protectors, usually heat-absorbing polymers, shielding the hair against excessive heat, caused by, e.g., blow-drying, curling irons or hot rollers.

• Glossers, light-reflecting chemicals which bind to the hair surface. Usually polymers, usually silicones, e.g., dimethicone or cyclomethicone.

• Oils (EFAs - essential fatty acids), which can help dry/porous hair become more soft and pliable. The scalp produces a natural oil called sebum. EFAs are the closest thing to natural sebum (sebum contains EFAs).

• Surfactants - approximately 87% of hair consists of a protein called keratin. The surface of keratin contains negatively charged amino acids. Hair conditioners therefore usually contain cationic surfactants, which don't wash out completely, because their hydrophilic ends strongly bind to keratin. The hydrophobic ends of the surfactant molecules then act as the new hair surface.

• Lubricants, such as fatty alcohols, panthenol, dimethicone, etc.

• Sequestrants, for better function in hard water.

• Antistatic agents

• Preservatives

• Sunscreen, for protection against protein degradation and color loss. Currently benzophenone-4 and ethylhexyl
in medical applications. It is possible to overdose on this compound, resulting in a range of symptoms, from blood in the urine, to convulsions, diarrhea, nausea, unconsciousness, dizziness or rapid heartbeat. It may also cause contact dermatitis with the skin.

- **GLYCERYL MONOSTEARATE**
  This product is an emulsifier and dispersing agent, and also is classified as a pearlescent agent to keep otherwise opposing substances blended in an emulsion. It is also a humectant which absorbs moisture from the air to keep the hair and skin moistened. It can further be used as an emollient, lubricant, emulsifier and diluting agent in cosmetics.

- **GLYCOL DISTEARATE**
  Glycol distearate is a form of various alcohols containing two hydroxyl groups and is a common ingredient in shampoos and hair coloring agents as an emulsifier.

- **HYDROXYETHYLCELLULOSE**
  This nonionic polymer is water-soluble and is used as an emulsifier and a thickening agent.

- **LANOLIN**
  This substance is the sebaceous secretion of wool-bearing mammals such as sheep. It is chemically akin to wax and can
• *demi-permanent* (sometimes called *deposit only*),
• *semi-permanent*, and
• *temporary*.

  o **Permanent**

  • Permanent hair color generally contains ammonia and must be mixed with a developer or oxidizing agent in order to permanently change hair color. Ammonia, in permanent hair color, is used to open the cuticle layer so that the developer and colorants together penetrate into the cortex.

  • The developer or oxidizing agent, comes in various volumes. The higher the developer volume, the higher the lift will be of a person’s natural hair pigment. Someone with dark hair wishing to achieve two or three shades lighter may need a higher developer, whereas someone with lighter hair wishing to achieve darker hair will not need a high developer. Timing may vary with permanent hair coloring but is typically 30 minutes or 45 minutes for those wishing to achieve maximum gray coverage.

  o **Demi-permanent**

  • Demi-permanent hair color is hair color that contains an alkaline agent other than ammonia (e.g. ethanolamine, sodium carbonate) and, while always employed with a developer, the concentration of hydrogen peroxide in that developer may be lower than used with a permanent hair color. Since the alkaline agents employed in demi-permanent colors are less effective in removing the natural
INGREDIENTS OF HAIR DYSES:

- Paraphenylenediamine

- The two main chemical ingredients involved in any coloring process that lasts longer than 12 shampoos are:

- Hydrogen peroxide: This ingredient, in varying forms and strengths, helps initiate the color-forming process and creates longer-lasting color. The larger the volume of the developer, the greater the amount of sulfur is removed from the hair. Loss of sulfur causes hair to harden and lose weight.

- Ammonia -- This alkaline allows for lightening by acting as a catalyst when the permanent hair color comes together with the peroxide. Like all alkalines, ammonia tends to separate the cuticle and allows the hair color to penetrate the cortex of the hair.

Hair straightening:

WHAT MAKES YOUR HAIR CURLY???

- The protein molecule contains sulfur atoms that can sometimes bond with one another, forming what is called a disulfide bond. When these form between atoms that are quite far apart, it causes curving. The more disulfide bonds there are, the curlier the hair will be.

- People with curly hair appear to have a hooked, rather than a straight, follicle shape. It is thought that this shape forces