

# Haircoloring

## Chapter Outline

**Why Study Haircoloring?**

**Why People Color Their Hair**

**Hair Facts**

**Identifying Natural Hair Color  
and Tone**

**Types of Haircolor**

**Consultation**

**Haircolor Formulation**

**Haircolor Applications**

**Using Lighteners**

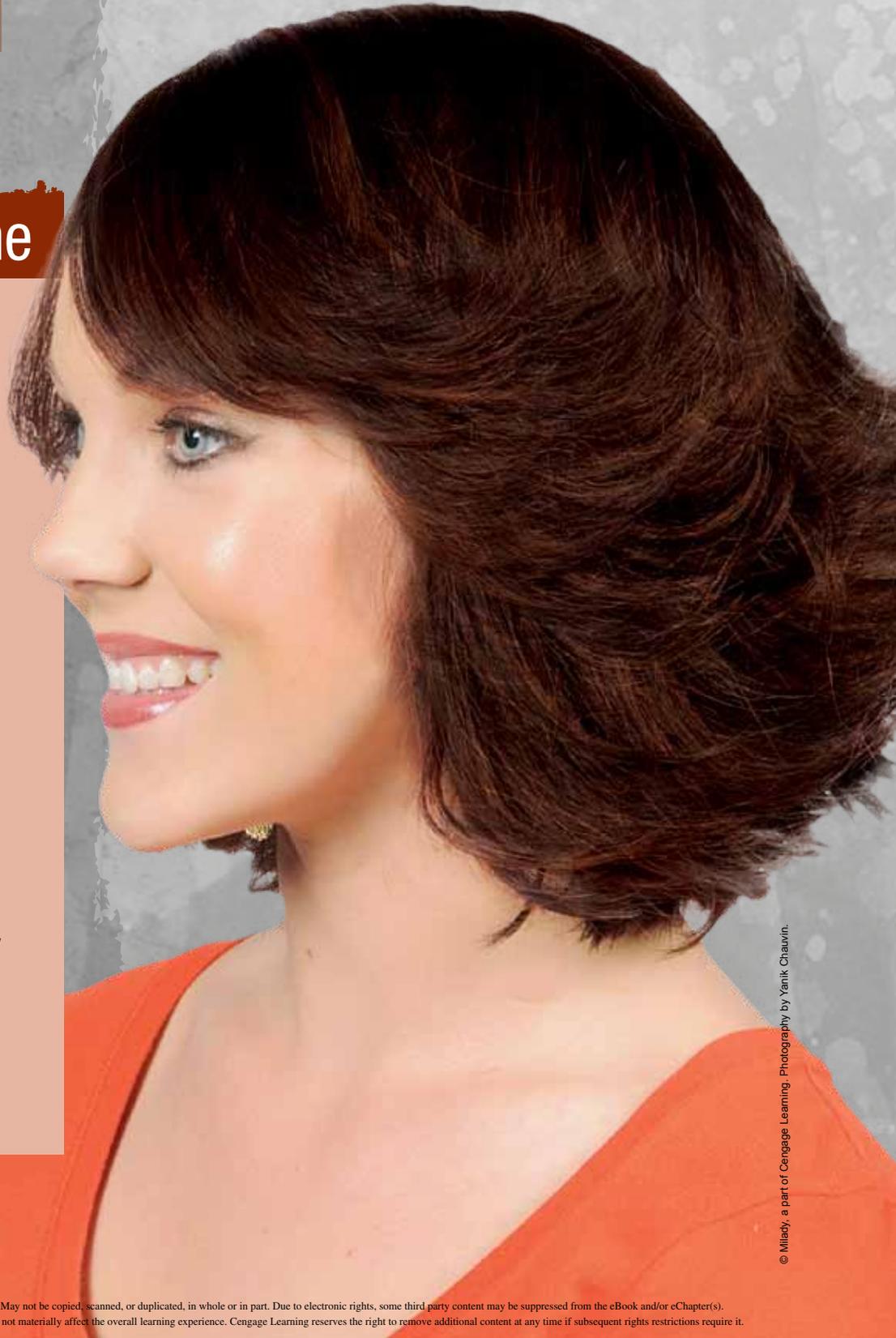
**Using Toners**

**Special Effects Haircoloring**

**Special Challenges in Haircolor/  
Corrective Solutions**

**Haircoloring Safety Precautions**

**Procedures**



# Learning Objectives

After completing this chapter, you will be able to:

- ✓ **L01** List the reasons why people color their hair.
- ✓ **L02** Explain how the hair's porosity affects haircolor.
- ✓ **L03** Understand the types of melanin found in hair.
- ✓ **L04** Define and identify levels and their role in formulating haircolor.
- ✓ **L05** Identify primary, secondary, and tertiary colors.
- ✓ **L06** Know what roles tone and intensity play in haircolor.
- ✓ **L07** List and describe the categories of haircolor.
- ✓ **L08** Explain the role of hydrogen peroxide in a haircolor formula.
- ✓ **L09** Explain the action of hair lighteners.
- ✓ **L010** List the four key questions to ask when formulating a haircolor.
- ✓ **L011** Understand why a patch test is useful in haircoloring.
- ✓ **L012** Define what a preliminary strand test is and why it is used.
- ✓ **L013** List and describe the procedure for a virgin single-process color service.
- ✓ **L014** Understand the two processes involved in double-process haircoloring.
- ✓ **L015** Describe the various forms of hair lightener.
- ✓ **L016** Understand the purpose and use of toners.
- ✓ **L017** Name and describe the three most commonly used methods for highlighting.
- ✓ **L018** Know how to properly cover gray hair.
- ✓ **L019** Know the rules of color correction.
- ✓ **L020** Know the safety precautions to follow during the haircolor process.

# Key Terms

Page number indicates where in the chapter the term is used.

**activators (boosters, protinators, accelerators)**  
pg. 650

**aniline derivatives**  
pg. 638

**baliage (free-form technique)**  
pg. 654

**base color**  
pg. 633

**cap technique**  
pg. 653

**color fillers**  
pg. 660

**complementary colors**  
pg. 635

**conditioner fillers**  
pg. 659

**contributing pigment (undertone)**  
pg. 631

**demipermanent haircolor (no-lift deposit-only color)**  
pg. 637

**developers (oxidizing agents, catalysts)**  
pg. 639

**double-process application (two-step coloring)**  
pg. 640

# Key Terms

Page number indicates where in the chapter the term is used.

**fillers**  
pg. 659

**foil technique**  
pg. 654

**glaze**  
pg. 649

**hair color**  
pg. 630

**hair lightening  
(bleaching,  
decolorizing)**  
pg. 649

**haircolor**  
pg. 630

**haircolor glaze**  
pg. 638

**highlighting**  
pg. 653

**highlighting  
shampoo**  
pg. 655

**hydrogen peroxide  
developer**  
pg. 639

**intensity**  
pg. 635

**law of color**  
pg. 633

**level**  
pg. 632

**level system**  
pg. 632

**lighteners**  
pg. 640

**line of demarcation**  
pg. 649

**metallic haircolors  
(gradual haircolors)**  
pg. 639

**mixed melanin**  
pg. 631

**natural haircolors  
(vegetable  
haircolors)**  
pg. 639

**new growth**  
pg. 652

**off-the-scalp  
lighteners (quick  
lighteners)**  
pg. 650

**on-the-scalp  
lighteners**  
pg. 650

**patch test  
(predisposition test)**  
pg. 647

**permanent  
haircolors**  
pg. 638

**prelightening**  
pg. 649

**presoftening**  
pg. 658

**primary colors**  
pg. 634

**resistant**  
pg. 631

**reverse highlighting  
(lowlighting)**  
pg. 653

**secondary color**  
pg. 634

**semipermanent  
haircolor**  
pg. 637

**single-process  
haircoloring**  
pg. 648

**slicing**  
pg. 654

**soap cap**  
pg. 638

**special effects  
haircoloring**  
pg. 653

**strand test**  
pg. 647

**temporary haircolor**  
pg. 637

**tertiary color**  
pg. 634

**tone (hue)**  
pg. 635

**toners**  
pg. 641

**virgin application**  
pg. 648

**volume**  
pg. 639

**weaving**  
pg. 654

One of the most creative, challenging, and popular salon services is haircoloring. It also has the potential for being one of the most lucrative areas in which a stylist can choose to work. You only have to look around while you are dining at a restaurant or standing in line to see a movie to know this is true. Nearly all adults and many teens now color their hair. You will probably find that most of your clients, at some time or another, will want to enhance their hair color, change their hair color, or cover gray. Clients who have their hair colored usually visit the salon every four to twelve weeks. These are the kind of regulars you want in your client base (**Figure 21-1**).



Photo used with the permission of the authors, Martin Gannon and Richard Thompson, as featured in their book, *Manoogy: Steps to Cutting, Coloring and Finishing Hair*. © Martin Gannon and Richard Thompson.

## WHY STUDY HAIRCOLORING?

Cosmetologists should study and have a thorough understanding of haircoloring because:

- Haircolor services provide stylists and clients with an opportunity for creative expression and artistry.
- Clients increasingly ask for and require excellent haircoloring services to cover gray, to enhance their haircuts and to camouflage face-shape imperfections.
- Haircolor products employ strong chemical ingredients to accomplish services, so being aware of what these chemicals are and how they work will enable you to safely provide color services for your clients.

▲ **Figure 21-1**  
Haircoloring is a popular salon service.

## Why People Color Their Hair

It is important to have an understanding of what motivates people to color their hair. This information will help you determine which products and haircolor services are appropriate for your client. A few common reasons clients color their hair include the following:

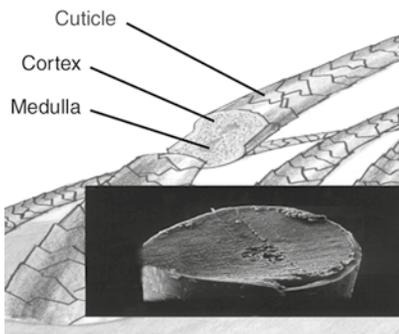
- Cover up or blend gray (unpigmented) hair
- Enhance an existing haircolor
- Create a fashion statement or statement of self-expression
- Correct unwanted tones in hair caused by environmental exposure such as sun or chlorine
- Accentuate a particular haircut

Many people experiment with haircoloring. When a client turns to you for advice and service, you need to have a thorough understanding of the hair structure and how haircoloring products affect it. As a trained professional, you will learn which shades of color are most flattering on your clients and which products and techniques will achieve the desired look. **LO1**



# did you know?

**Haircolor** (one word) is a professional, industry-coined term referring to artificial haircolor products and services. **Hair color** (two words) refers to the natural color of hair. For example, you might say of a client, “Mrs. Bailey’s natural hair color is brown.”



▲ **Figure 21-2**  
A cross-section of the hair shaft.



▲ **Figure 21-3**  
Melanin distribution according to hair texture.

## Hair Facts

The structure of the client’s hair and the desired results determine which haircolor to use. The hair structure affects the quality and ultimate success of the haircolor service. Some haircolor products may cause a dramatic change in the structure of the hair, while others cause relatively little change. Knowing how products affect the hair will allow you to make the best choices for your client.

### Hair Structure

In this section, the structure of hair is quickly reviewed. For an in-depth discussion, see Chapter 11, Properties of the Hair and Scalp.

Hair is composed of the following three major components (**Figure 21-2**):

- The cuticle which is the outermost layer of the hair. It protects the interior cortex layer and contributes up to 20 percent of the overall strength of the hair.
- The cortex which is the middle layer and gives the hair the majority of its strength and elasticity. A healthy cortex contributes about 80 percent to the overall strength of the hair. It contains the natural pigment called melanin that determines hair color. Melanin granules are scattered between the cortex cells like chips in a chocolate chip cookie.
- The medulla which is the innermost layer of the hair. It is sometimes absent from the hair and does not play a role in the haircoloring process.

### Texture

Hair texture is the diameter of an individual hair strand. Large-, medium-, and small-diameter hair strands translate into coarse, medium, and fine hair textures, respectively. Melanin is distributed differently according to texture. The melanin granules in fine hair are grouped more tightly, so the hair takes color faster and can look darker. Medium-textured hair has an average reaction to haircolor. Coarse-textured hair has a larger diameter and loosely grouped melanin granules, so it can take longer to process (**Figure 21-3**).

### Density

Another aspect of hair that plays a role in haircoloring is density. Hair density, the number of hairs per square inch, can range from thin to thick. Density must be taken into account when applying haircolor, to ensure proper coverage.

### Porosity

Porosity is the hair’s ability to absorb moisture. Porous hair accepts haircolor faster, and haircolor application on porous hair can result

in a cooler tone than applications on less porous hair. Degrees of porosity are described below.

- **Low porosity.** The cuticle is tight. The hair is **resistant**, which means it is difficult for moisture or chemicals to penetrate. Thus, it requires a longer processing time.
- **Average porosity.** The cuticle is slightly raised. The hair is normal and processes in an average amount of time.
- **High porosity.** The cuticle is lifted. The hair is overly porous and takes color quickly; color also tends to fade quickly. Permed, colored, chemically relaxed, and straightened hair will have a high degree of porosity.

Test for porosity:

- Take a several strands of hair from four different areas of the head: the front hairline, the temple, the crown, and the nape.
- Hold the strands securely with one hand and slide the thumb and forefinger of the other hand from the ends to the scalp.
- If the hair feels smooth and the cuticle is compact, dense, and hard, it has low porosity. If you can feel a slight roughness, it has average porosity. If the hair feels very rough, dry, or breaks, it has high porosity.
- Observe hair wet and dry to see porosity.
- Extremely porous hair rejects warmth when color is applied and can process more quickly, which results in deeper color. **✔ LO2**

## Identifying Natural Hair Color and Tone

Learning to identify a client's natural hair color is the most important step in becoming a good colorist. Natural hair color ranges from black to dark brown to red, and from dark blond to light blond. Hair color is unique to each individual; no two people have exactly the same color. There are three types of melanin in the cortex:

- **Eumelanin** is the melanin that lends black and brown colors to hair.
- **Pheomelanin** is the melanin that gives blond and red colors to hair.
- **Mixed melanin** is a combination of natural hair color that contains both pheomelanin and eumelanin. **✔ LO3**

**Contributing pigment**, also known as **undertone**, is the varying degrees of warmth exposed during a permanent color or lightening process. Generally, when you lighten natural hair color, the darker the natural level, the more



Courtesy of P&G Salon Professional, Clarifio Professional.



▲ Figure 21-4  
Natural hair color levels.

intense the contributing pigment. This must be taken into consideration before the haircolor selection is made. Haircoloring modifies this pigment to create new pigment.

### The Level System

**Level** is the unit of measurement used to identify the lightness or darkness of a color. Level is the saturation, density, or concentration of color. The level of color answers the following question: How much color?

The **level system** is a system that colorists use to determine the lightness or darkness of a hair color (**Figure 21-4**). Haircolor levels are arranged on a scale of 1 to 10, with 1 being the darkest and 10 the lightest. Although the names for the color levels may vary among manufacturers, the important thing is being able to identify the degrees of lightness to darkness (depth) in each level.

### Identifying Natural Level

Identifying natural level is the first step in performing a haircolor service. Your most valuable tool is the color wheel. Haircolor swatch books provide a visual representation as well (**Figure 21-5**).

To determine the natural level, perform the following four steps:

1. Take a ½-inch square section in the crown area and hold it up from the scalp, allowing light to pass through (**Figure 21-6**).
2. Using the natural level-finder swatches provided by the manufacturer, select a swatch that you think matches the section of hair and place it against the hair. Remember, you are trying to determine depth level (darkness or lightness). Do not part or hold the hair flat against the scalp; that will give you an incorrect reading, as the hair will appear darker (**Figure 21-7**).



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▲ Figure 21-5  
Manufacturers' swatches are a useful tool.



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▲ Figure 21-6  
Take a ½-inch square section in the crown.



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▲ Figure 21-7  
Hold the color swatch against the hair strand.

3. Move the swatch from the scalp area along the hair strand.
4. Determine the natural-hair color level. **LO4**

## Gray Hair

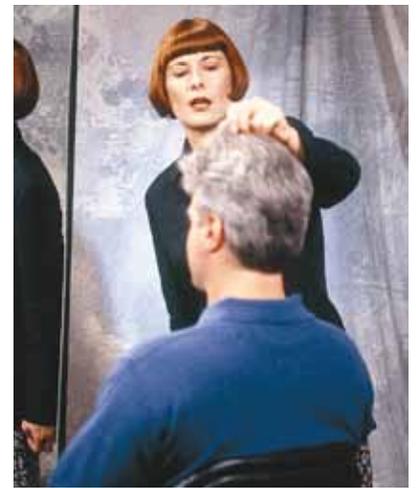
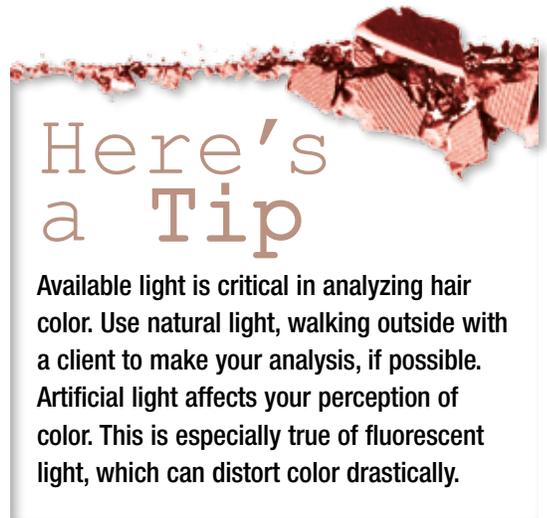
Gray hair is hair that has lost its pigment and is normally associated with aging. Even though the loss of pigment increases as a person ages, few people ever become completely gray haired (**Figure 21–8**). Most retain a certain percentage of pigmented hair (**Table 21-1**). The gray can be solid or blended throughout the head as in salt-and-pepper hair. Gray hair requires special attention in formulating haircolor. This will be discussed later in the chapter.

## Color Theory

Color is described as a property of objects that depends on the light they reflect and is perceived (by the human eye) as red, green, blue, or other shades. Thus, colors (the light reflected by objects that is perceivable) by definition are in the visible spectrum of light. (See Chapter 13, Basics of Electricity.) Before you attempt to apply haircoloring products, it is important to have a general understanding of color theory. A **base color** is the predominant tone of a color. Once you have a better understanding of color theory, you will see how each haircolor manufacturer associates base colors with color lines.

### The Law of Color

The **law of color** is a system for understanding color relationships. When combining colors, you will always get the same result from the same combination. Equal parts of red and blue mixed together always make violet. Equal parts of blue and yellow always make green. Equal parts of red and yellow always make orange. The color wheels in **Figures 21–9** through **21–11** will help you understand colors.

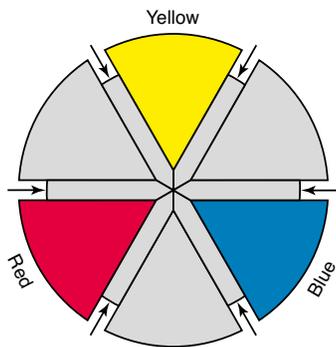


▲ **Figure 21–8**  
Many people choose to cover or blend gray hair.

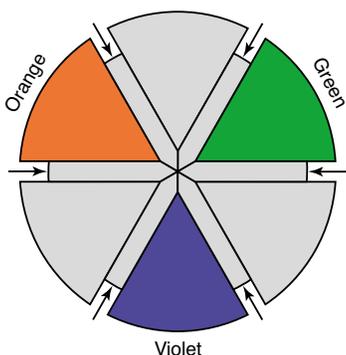
## DETERMINING THE PERCENTAGE OF GRAY HAIR

PERCENTAGE OF GRAY HAIR	CHARACTERISTICS
30%	More pigmented than gray hair
50%	Even mixture of gray and pigmented hair
70 to 90%	More gray than pigmented; most of remaining pigment is located in the back of the head
100%	Virtually no pigmented hair; tends to look white

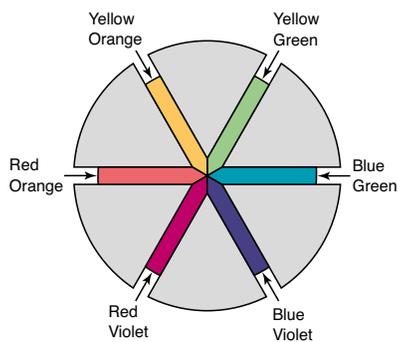
**Table 21–1** Determining the Percentage of Gray Hair.



▲ Figure 21-9  
Primary colors.



▲ Figure 21-10  
Secondary colors.



▲ Figure 21-11  
Tertiary colors.

### Primary Colors

**Primary colors** are pure or fundamental colors (red, yellow, and blue) that cannot be created by combining other colors. All colors are created from these three primaries. Colors with a predominance of blue are cool colors, whereas colors with a predominance of red and/or yellow are warm colors (Figure 21-9).

Blue is the strongest of the primary colors and is the only cool primary color. In addition to coolness, blue can also bring depth or darkness to any color.

Red is the medium primary color. Adding red to blue-based colors will make them appear lighter; adding red to yellow colors will cause them to appear darker.

Yellow is the weakest of the primary colors. When you add yellow to other colors, the resulting color will look lighter and brighter.

When all three primary colors are present in equal proportions, the resulting color is brown. It is helpful to think of hair color in terms of different combinations of primary colors. Natural brown, for example, has the primary colors in the following proportions: blue-B, red-RR, and yellow-YYY. Black and white can't be made by mixing colors together. They get excluded from basic color theory. White can be used to lighten a color. Black can be used to deepen a color.

### Secondary Colors

A **secondary color** is a color obtained by mixing equal parts of two primary colors. The secondary colors are green, orange, and violet. Green is an equal combination of blue and yellow. Orange is an equal combination of red and yellow. Violet is an equal combination of blue and red (Figure 21-10).

### Tertiary Colors

A **tertiary color** is an intermediate color achieved by mixing a secondary color and its neighboring primary color on the color wheel in equal amounts. The tertiary colors include blue-green, blue-violet, red-violet, red-orange, yellow-orange, and yellow-green. Natural-looking haircolor is made up of a combination of primary colors, secondary colors, and tertiary colors (Figure 21-11). **LO5**

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# ACTIVITY

Using primary-colored modeling clay—red, blue, and yellow—create secondary and tertiary colors. You will see that if you mix red clay with yellow clay in equal proportions, you will get orange. If you mix red clay with the orange clay, what is the result? What happens if you change the proportion of each color? The combinations are endless (Figure 21-12).

► Figure 21-12  
Creating the color wheel with clay.



# ACTivity

Use a plain sugar cookie to represent the color wheel. Use a dollop of vanilla frosting on a dish, along with red, blue, and yellow food coloring. Mix a small amount of frosting with each primary color. Place it on the (cookie) color wheel. Then mix the two primary colors together to make the secondary color. Continue until the color wheel is completed.

## Complementary Colors

**Complementary colors** are primary and secondary colors positioned directly opposite each other on the color wheel. Complementary colors include blue and orange, red and green, and yellow and violet.

Complementary colors neutralize each other (**Figure 21–13**). When formulating haircolor, you will find that it is often your goal to emphasize or distract from skin tones or eye color. You may also want to neutralize or refine unwanted tones in the hair. Understanding complementary colors will help you choose the correct tone to accomplish these goals.

Here is an easy reference guide for color correction:

- When hair is green...use red to balance.
- When hair is red...use green to balance.
- When hair is blue...use orange to balance.
- When hair is orange...use blue to balance.
- When hair is yellow...use violet to balance.
- When hair is violet...use yellow to balance.



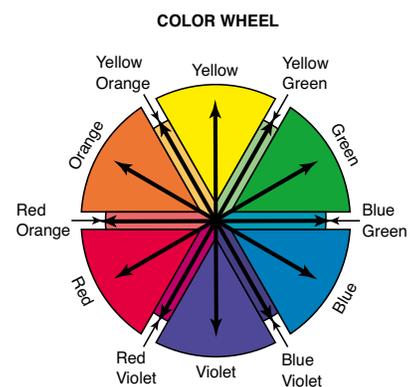
## Tone or Hue of Color

The **tone**, also known as **hue**, is the balance of color. The tone or hue answers the question of which color to use based on the client's desired results. These tones can be described as warm, cool, or neutral.

Warm tones can look lighter than their actual level. These tones are golden, orange, red, and yellow. Some haircolors use words such as auburn, amber, copper, strawberry, and bronze, which may be a better way to discuss and describe haircolor with the client. Cool tones can look deeper than their actual level. These tones are blue, green, and violet. Some describe cool tones as smoky or ash to the client. Natural tones are warm tones and are described as sandy or tan.

**Intensity** refers to the strength of a color. It can be described as soft, medium, or strong. Color intensifiers are tones that can be added to a haircolor formula to intensify the result. **LOG**

Base color is the predominant tone of a color. Each color is identified by a number and a letter. The number indicates the level and the letter indicates the tone. For example: 6G is Level 6-Dark Blond with a G-Gold Base.



▲ **Figure 21–13**  
Complementary colors  
neutralize each other.

When you begin selecting a formula, you must have a good idea of what tones the client likes and dislikes.

Select warm base colors to create brighter colors such as red and gold tones. Select cooler base colors to keep the color result more ash, revealing less gold in the hair. Add a neutral base color to formulate haircolor that will soften and balance colors. Neutral base colors are often used to cover gray hair.

## Types of Haircolor

Haircoloring products generally fall into two categories: nonoxidative and oxidative. The classifications of nonoxidative haircolor are temporary and semipermanent (traditional). The classifications of oxidative haircolor are demipermanent (deposit only) and permanent (lift and deposit) (**Table 21–2**). All these products, except temporary color, require a patch test.

Lighteners, metallic haircolors, and natural colors are also discussed in this chapter. Each of these categories has a unique chemical composition that, in turn, affects the final color result and how long it will last.

All permanent haircolor products and lighteners contain both a developer, or oxidizing agent, and an alkalizing ingredient. (See Chapter 12, Basics of Chemistry.) The roles of the alkalizing ingredient—ammonia or an ammonia substitute—are as follows:

### REVIEW OF HAIRCOLOR CATEGORIES AND THEIR USES

CLASSIFICATIONS	USES
Temporary color	Creates fun, bold results and easily shampoos from the hair. Neutralizes yellow hair.
Semipermanent color	Introduces a client to haircolor services. Adds subtle color results. Tones prelightened hair.
Demipermanent color	Blends gray hair. Enhances natural color. Tones prelightened hair. Refreshes faded color. Filler in color correction.
Permanent haircolor	Changes existing haircolor. Covers gray. Creates bright or natural-looking haircolor changes.

**Table 21–2** Review of Haircolor Categories and Their Uses.



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- Raise the cuticle of the hair so that the haircolor can penetrate into the cortex.
- Increase the penetration of dye within the hair.
- Trigger the lightening action of peroxide.

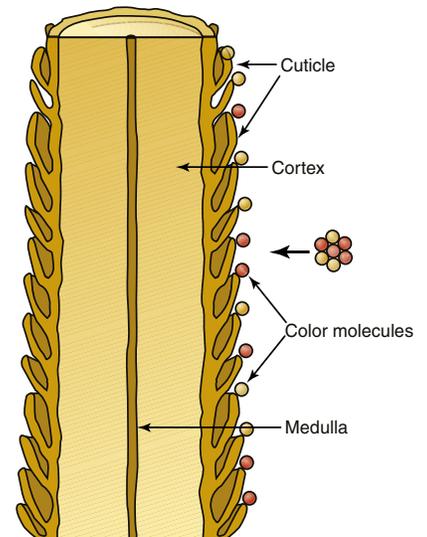
When the haircolor containing the alkalizing ingredient is combined with the developer (usually hydrogen peroxide), the peroxide becomes alkaline and decomposes, or breaks up. Lightening occurs when the alkaline peroxide breaks up or decolorizes the melanin.

## Temporary Haircolor

For those who wish to neutralize yellow hair or unwanted tones, **temporary haircolor**, a nonpermanent color whose large pigment molecules prevent penetration of the cuticle layer, allowing only a coating action that may be removed by shampooing, is a good choice (Figure 21-14). Temporary haircolors are nonoxidation colors that make only a physical change, not a chemical change, in the hair shaft, and no patch test is required.

Temporary haircolors are available in the following variety of colors and products:

- Color rinses applied weekly to shampooed hair to add color; the hair is styled dry.
- Colored mousses and gels used for slight color and for dramatic effects.
- Hair mascara used for dramatic effects.
- Spray-on haircolor that is easy to apply; used for special effects.
- Color-enhancing shampoos used to brighten, impart slight color, and eliminate unwanted tones.

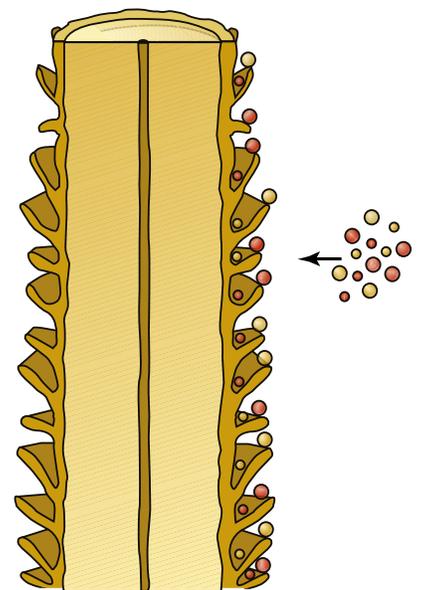


▲ Figure 21-14  
Action of temporary haircolor.

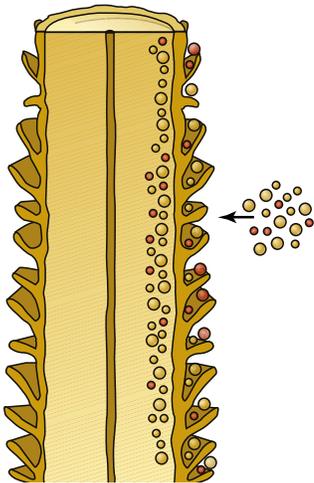
## Semipermanent Haircolor

Traditional **semipermanent haircolor** is a no-lift deposit-only nonoxidation haircolor that is not mixed with peroxide and is formulated to last through several shampoos, depending on the hair's porosity. The pigment molecules are small enough to partially penetrate the hair shaft and stain the cuticle layer, but they are small enough to diffuse out of the hair during shampooing, thus fading with each shampoo. Traditional semipermanent haircolor only lasts four to six weeks, depending on how frequently the hair is shampooed. Semipermanent haircolor is a nonoxidation haircolor. It is not mixed with peroxide, and it only deposits color. It does not lighten the hair, so it does not require maintenance of new growth. Although it is considered gentler than permanent haircolor, it contains some of the same dyes and requires a patch test twenty-four to forty-eight hours before application (Figure 21-15). Traditional semipermanent colors are used right out of the bottle.

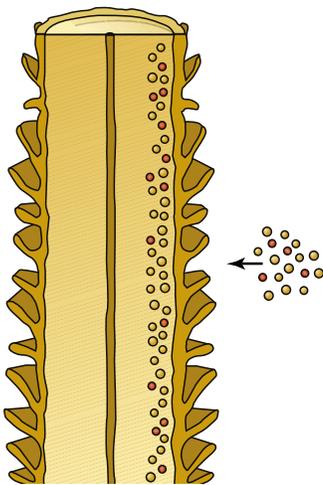
**Demipermanent haircolor**, also known as **no-lift deposit-only color**, is formulated to deposit but not lighten color. These products



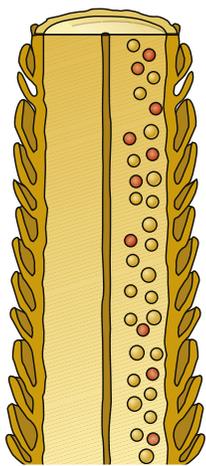
▲ Figure 21-15  
Action of semipermanent haircolor.



▲ Figure 21-16  
Action of demipermanent haircolor.



▲ Figure 21-17  
Action of permanent haircolor.



▲ Figure 21-18  
Permanent haircolor molecules  
inside the cortex.

are able to deposit without lifting because they are usually less alkaline than permanent colors and are mixed with a low-volume developer. Decolorization requires a high pH and a high concentration of peroxide.

Many demipermanent colors use alkalizing agents other than ammonia, and oxidizing agents other than hydrogen peroxide. It is important to note that these products are not necessarily any less damaging because of the type of alkalizing agent or oxidizer that is used. If they are milder, it is because the concentration of these active ingredients is lower. A **haircolor glaze** is a common way to describe a haircolor service that adds shine and color to the hair. The word *glaze* is a cosmetic word used to describe the services listed below that can be achieved by using a deposit-only or no-lift color.

Demipermanent haircolors are ideal for the following objectives:

- Introducing a client to a color service (because these products create a change in tone without lightening the natural hair color)
- Blending or covering gray
- Refreshing faded permanent color on the midshaft and ends
- Making color corrections and restoring natural color

By their very nature, demipermanent haircolors deepen or create a change in tone on the natural hair color (**Figure 21-16**). In recent years, demipermanent haircolors have been used exclusively on the middle of the hair shaft to the ends after permanent color has been applied to the new growth or scalp area. This method of application refreshes the previously colored hair.

Demipermanent haircolor is available as a gel, cream, or liquid. It requires a patch test twenty-four to forty-eight hours before application.

## Permanent Haircolor

**Permanent haircolors** lighten and deposit color at the same time and in a single process because they are more alkaline than demipermanent colors and are usually mixed with a higher-volume developer.

Permanent haircolor is used to match, lighten, and cover gray hair. Permanent haircolor products require a patch test twenty-four to forty-eight hours before application.

Permanent haircolors contain uncolored dye precursors, which are very small and can easily penetrate into the hair shaft. These dye precursors, called **aniline derivatives**, contain small, uncolored dyes that combine with hydrogen peroxide to form larger, permanent dye molecules within the cortex. These molecules are trapped within the cortex of the hair and cannot be easily shampooed out (**Figures 21-17 and 21-18**). Permanent haircolors can also lighten (make a permanent change in) the natural hair color, which is why these products are considered permanent.

A technique called a **soap cap** is a combination of equal parts of a prepared permanent color mixture and shampoo used during the last

five minutes of a haircolor service and worked through the hair to refresh the ends.

Permanent haircoloring products are regarded as the best products for covering gray hair. They remove natural pigment from the hair through lightening, while at the same time adding artificial color to the hair. The action of removing and adding color at the same time, which blends gray and non-gray hair uniformly, results in a natural-looking color.

## Natural and Metallic Haircolors

Haircolors that are not generally used in the salon, but which you should still be familiar with, are natural or vegetable haircolors and metallic haircolors. Metallic haircolors is also referred to as gradual colors. Repeated use of these types of color can create a buildup on the hair causing a grayish or green cast.

### Natural Haircolors

**Natural haircolors**, also known as **vegetable haircolors**, such as henna, are colors obtained from the leaves or bark of plants. They do not lighten natural hair color. The color result tends to be weak, and the process tends to be lengthy and messy. Also, shade ranges are limited. For instance, henna is usually available only in clear, black, chestnut, and auburn tones. Finally, when a client who has used natural haircolor comes to the salon for chemical haircoloring services, she may be distressed to find out that many of these chemical products cannot be applied over natural haircolors.

### Metallic Haircolor

**Metallic haircolors**, also known as **gradual haircolors**, are haircolors containing metal salts that change hair color gradually by progressive buildup and exposure to air, creating a dull, metallic appearance. These products require daily application and historically have been marketed to men. The main problems are unnatural-looking colors and a limited range of available colors. **LO7**

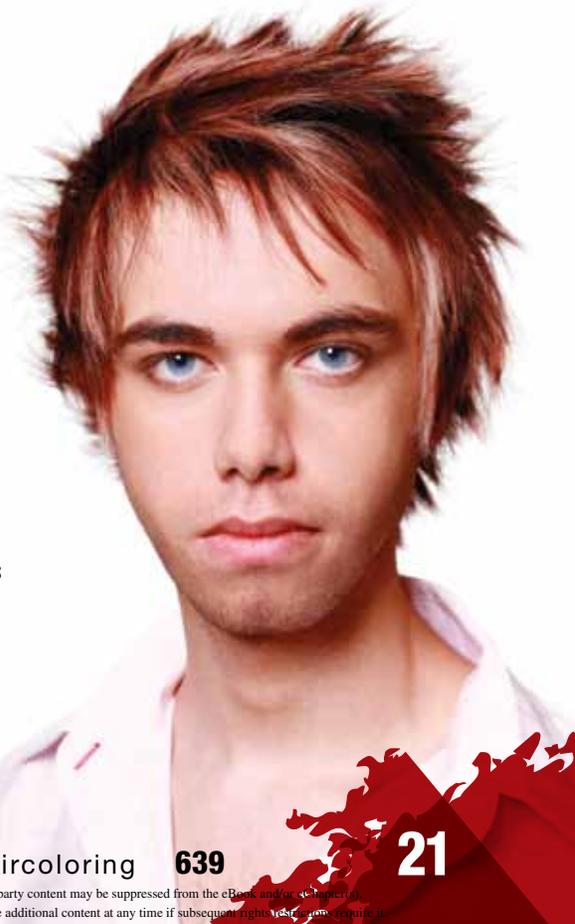
## Hydrogen Peroxide Developers

A **hydrogen peroxide developer** is an oxidizing agent that, when mixed with an oxidation haircolor, supplies the necessary oxygen gas to develop the color molecules and create a change in natural hair color. **Developers**, also known as **oxidizing agents** or **catalysts**, have a pH between 2.5 and 4.5. Although there are a number of developers on the market, hydrogen peroxide ( $H_2O_2$ ) is the one most commonly used in haircolor. Keep in mind, there are different forms of peroxide. There are clear liquids that make it easy to apply the product from an applicator bottle. There are cream forms that are used to make a thicker creamy consistency, sometimes for bowl and brush application. Some manufacturers provide dedicated developers that are used with their own specific haircolor products.

**Volume** measures the concentration and strength of hydrogen peroxide. The lower the volume, the less lift achieved; the higher the volume, the

## CAUTION

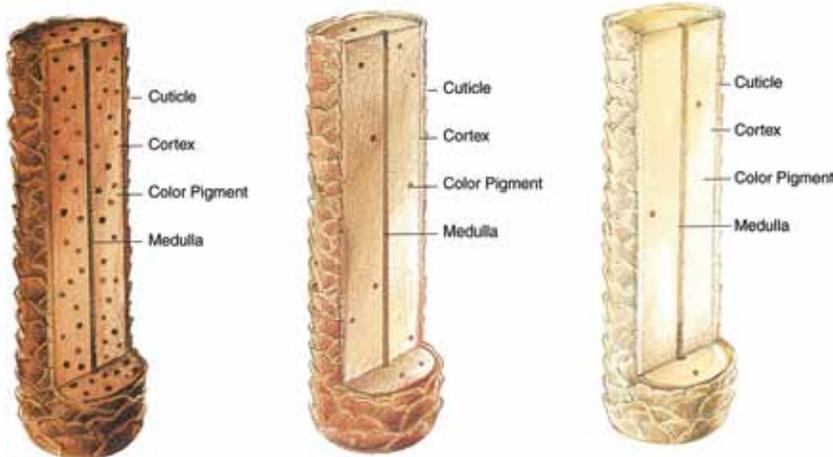
Do not use oxidizing haircolor or haircolor with peroxide on hair that has been treated with metallic hair dye. If you do, the hair will swell and smoke, appearing to be boiling from the inside out.



## HYDROGEN PEROXIDE VOLUME AND USES

VOLUME	WHEN TO USE
10-Volume	Used when less lift is desired, to enhance a client's natural hair color.
20-Volume	Standard volume; used to achieve most results with permanent haircolor and used for complete gray coverage.
30-Volume	Used for additional lift with permanent haircolor.
40-Volume	Used with most high-lift colors; provides maximum lift in a one-step color service.

**Table 21-3** Hydrogen Peroxide Volume and Uses.



▲ **Figure 21-19**  
Haircolor lighteners diffuse pigment.

greater the lifting action (**Table 21-3**). The majority of permanent haircolor products use 10-, 20-, 30-, or 40-volume hydrogen peroxide for proper lift and color development (**Figure 21-19**). Store peroxide in a cool, dark, dry place.

### Volume

Use 10-volume peroxide when less lightening is desired. Use 20-volume peroxide with permanent haircolor, as well as for complete gray coverage. For additional lift, use 30-volume peroxide, and to provide maximum lift in a one-step color service, use 40-volume peroxide. **LO8**

## Lighteners

**Lighteners** are chemical compounds that lighten hair by dispersing, dissolving, and decolorizing the natural hair pigment. As soon as hydrogen peroxide is mixed into the lightener formula, it begins to release oxygen. This is known as oxidation, a process by which oxygen is released, and it occurs within the cortex of the hair shaft. To achieve a very light, pale blond, it is recommended that you use a **double-process application**, also known as **two-step coloring**, which is a coloring technique requiring two separate procedures in which the hair is prelightened before the depositing color is applied. This service includes using a lightener. These products are designed to process up to ninety minutes on the scalp to achieve desired lift. Once the hair is properly decolorized, the second step is to add soft tone back to the hair, called the toning process. There are products called toners designed in a

very light shade palette to add tone to the decolorized hair. Demipermanent colors in a light level, such as a Level 8 (Light Blond) to Level 10 (Lightest Blond), are also used to tone hair.

Hair lighteners are used to create a light blond shade that is not achievable with permanent haircolor alone, as well as to accomplish the following objectives:

- Lighten the hair prior to application of a final color
- Lighten hair to a particular shade
- Brighten and lighten an existing shade
- Lighten only certain parts of the hair
- Lighten dark natural or color-treated levels **LO9**

### The Decolorizing Process

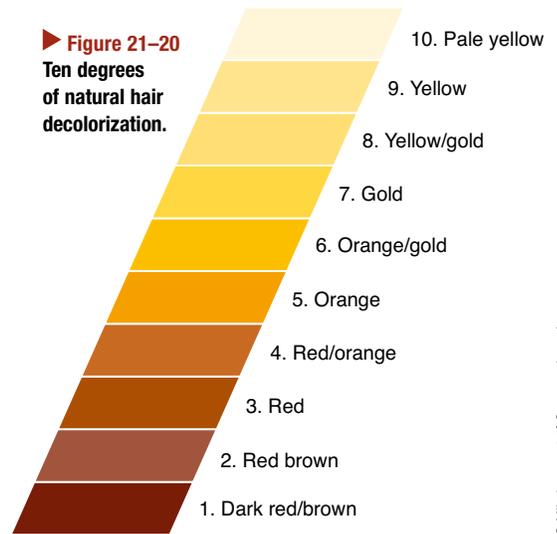
The hair goes through different stages of color as it lightens. The amount of change depends on the amount of pigment in the hair, the strength of the lightening product, and the length of time that the product is processed. During the process of decolorizing, natural hair can go through as many as 10 stages (Figure 21–20).

Decolorizing the hair's natural melanin pigment allows the colorist to create the exact degree of contributing pigment needed for the final result. Contributing pigment is the varying degree of warmth exposed during the lightening process. First, the hair is decolorized to the appropriate level. Then the new color is applied to deposit the desired color. The natural pigment that remains in the hair contributes to the artificial color that is added. Lightening the hair to the correct stage is essential to a beautiful, controlled, final haircoloring result (Figure 21–21).

**Toners** are traditional semipermanent, demipermanent, and permanent haircolor products that are used primarily on prelightened hair to achieve pale and delicate colors. Toners can also be used after dimensional haircolor services. After a highlight service is completed using a lightener, you can tone the hair to create a softer shade of blond. Once the lightener is rinsed, simply towel dry and apply the desired shade of toner over the prelightened hair. This will take up to five minutes for the result.

Not all hair will go through all 10 degrees of decolorization. Each natural hair color starts the decolorization process at a different stage. Remember, the goal is to create the correct degree of contributing pigment as the foundation for the final haircolor.

Hair cannot be safely lifted past the pale yellow stage with lightener. The extreme diffusion of color necessary to give hair a white appearance causes excessive damage to the hair. The result is that when wet, the hair feels mushy and will stretch without returning to its original length. When dry, the hair is harsh and brittle. Such hair often suffers breakage and will not accept a toner properly. However, this does not mean that



**Figure 21–21**  
Level/Contributing pigment.

## CAUTION

It is often difficult to lighten dark hair to a very pale blond without causing extreme damage to the hair. The client should be alerted to this danger before you proceed with the service.

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▲ **Figure 21–22**  
A client consultation should precede every haircolor service.

## CAUTION

Medications can affect hair color. In the consultation, determine whether the client is taking any medications. Medical treatments for conditions such as diabetes, high blood pressure, and thyroid problems may all affect the outcome of color services and most other chemical services. Discuss this with your instructor for more information.

only those born with blond hair can be white-blonds. The baby-blond look can be achieved by lightening to pale yellow and neutralizing the unwanted undertone (contributing pigment) with a toner.

## Consultation

A haircolor consultation is the most critical part of the color service (**Figure 21–22**). The consultation is the first important step in establishing a relationship with your client. During the consultation, your client will communicate what he or she is looking for in a haircolor service. You will listen carefully, taking in all the information so that you can make an appropriate haircolor recommendation. Allowing sufficient time for the consultation is the single most reliable way to help ensure a client's satisfaction.

See Chapter 4, *Communicating for Success*, to review and begin the consultation process. In addition, incorporate the following steps when conducting a haircolor consultation:

1. Book fifteen minutes extra for the consultation. Introduce yourself to the client and welcome him or her to the salon. Offer a beverage. During this time with a new client, make sure there are no interruptions.
2. Have the client fill out a service record card. This allows you to compile a hair history and to note the type of color service the client is looking for. Pay attention to the client's skin and eye color, the condition and length of the client's hair, and the amount of gray in the client's hair.
3. Begin the consultation in an area with proper lighting so that you can accurately determine the client's current hair color. If possible, the walls should be white or neutral.
4. Look at the client directly. Do not look at her through the mirror. Ask what she is thinking about doing with her hair color. Ask leading questions. Let her talk. Keep her on track by discussing the recent history of her hair (over the past six months). Your questions might include the following:
  - Are you looking for a temporary or permanent change?
  - Do you want color all over or just a few highlights?
  - Do you see yourself with a more conservative or dramatic type of color?
  - Have you seen so-and-so's (e.g., a TV celebrity) hair? That color would look great on you.
5. Recommend at least two different haircolor options. Show pictures of different ranges of colors, from brunette to blond, red, and highlighted colors. Review the procedure and application technique, cost of the service, and follow-up maintenance. Sometimes several

## COMMUNICATION

The language you use when discussing haircolor can have a huge impact on how a client perceives haircolor services. Using positive descriptive language to discuss products and services with your clients is an important part of the communication process, and it helps you sell your services. Here are some guidelines:

- Use descriptive language when discussing haircolor (e.g., *soft, buttery blond; rich chocolate brown; spicy, coppery red*).
- Use positive mood words to convey the benefits of haircoloring to your client (e.g., *healthy-looking, richer, natural-looking, and subtle*).
- Avoid words that can be interpreted negatively such as *bleached, frosted, and roots*.

steps may be necessary to obtain a haircolor result. A client may love a certain haircolor, but may not be able to afford the service. Have a more economical backup solution ready.

6. Be honest and do not promise more than you can deliver. If you are faced with a corrective situation, let the client know what you can accomplish today and how many more visits it will take to achieve the final results that she wants.
7. Gain approval from the client.
8. Start the haircolor service.
9. Follow through during the service by educating and informing the client about home care, products, and rebooking. Let the client know what type of shampoo and conditioner is needed to maintain the color. Let her know how many weeks it will be before she needs to come back for another service.
10. Fill out the client's Haircolor Service Record Card (Figure 21–23).

### Release Statement

A release statement is used by schools and many salons when providing chemical services. Its purpose is to explain to clients that there is a risk involved in any chemical service and that if the client's hair is in questionable condition, it may not withstand the requested chemical treatment. It also asks that clients provide more information about any prior chemical services that may affect the current color selection and its end result.

To some degree, the release statement is designed to protect the school or salon from responsibility for accidents or damages. A release statement is required for most malpractice insurance. Take note, however, that a release statement is not a legally binding contract and will not clear the cosmetologist of responsibility for what may happen to a client's hair (see Figure 21–24, on page 645). If you are unsure about causing excessive damage to the hair, it is wise to decline to perform the service.

## Haircolor Formulation

Haircolor formulation is another important aspect of creating a successful haircolor. There are four basic questions that must always be asked when formulating a haircolor. Refer to the additional Formulation Checklist to cover more details (see Figure 21–25, on page 646).

1. What is the natural level and does it include gray hair?
2. What is the client's desired level and tone?
3. Are contributing pigments (undertones) to be revealed?
4. What colors should be mixed to get the desired result?  LO10



## HAIRCOLOR SERVICE RECORD CARD

Name \_\_\_\_\_ Tel. \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_  
 Patch Test:  Negative  Positive Date \_\_\_\_\_  
 Eye Color \_\_\_\_\_ Skin Tone \_\_\_\_\_

### DESCRIPTION OF HAIR

Form	Length	Texture	Density	Porosity	
<input type="checkbox"/> straight	<input type="checkbox"/> short	<input type="checkbox"/> coarse	<input type="checkbox"/> low	<input type="checkbox"/> low	<input type="checkbox"/> resistant
<input type="checkbox"/> wavy	<input type="checkbox"/> medium	<input type="checkbox"/> medium	<input type="checkbox"/> medium	<input type="checkbox"/> average	<input type="checkbox"/> very resistant
<input type="checkbox"/> curly	<input type="checkbox"/> long	<input type="checkbox"/> fine	<input type="checkbox"/> high	<input type="checkbox"/> high	<input type="checkbox"/> perm. waved

Natural hair color \_\_\_\_\_

Level (1-10)	Tone (Warm, Cool, etc.)	Intensity (Mild, Medium, Strong)
-----------------	----------------------------	-------------------------------------

### Scalp Condition

normal  dry  oily  sensitive

### Condition

normal  dry  oily  faded  streaked (uneven)

% unpigmented \_\_\_\_\_ Distribution of unpigmented \_\_\_\_\_

Previously lightened with \_\_\_\_\_ for \_\_\_\_\_ (time)

Previously tinted with \_\_\_\_\_ for \_\_\_\_\_ (time)

original hair sample enclosed  original hair sample not enclosed

Desired hair color \_\_\_\_\_

Level (1-10)	Tone (Warm, Cool, etc.)	Intensity (Mild, Medium, Strong)
-----------------	----------------------------	-------------------------------------

### CORRECTIVE TREATMENTS

Color filler used \_\_\_\_\_ Conditioning treatments with \_\_\_\_\_

### HAIR TINTING PROCESS

whole head \_\_\_\_\_ retouch inches (cm) \_\_\_\_\_ shade desired \_\_\_\_\_

formula: (color/lightener) \_\_\_\_\_ application technique \_\_\_\_\_

Results:  good  poor  too light  too dark  streaked

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Date	Operator	Price	Date	Operator	Price
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

▲ Figure 21-23  
 Haircolor service record card.

## RELEASE FORM

I, the undersigned, \_\_\_\_\_  
(name)

residing at \_\_\_\_\_  
(street, address)

\_\_\_\_\_  
(city, state and zip)

about to receive services in the Clinical Department of

\_\_\_\_\_

and having been advised that the services shall be performed by either students, graduate students, and/or instructors of the school, in consideration of the nominal charge for such services, hereby release the school, its students, graduate students, instructors, agents, representatives, and/or employees, from any and all claims arising out of and in any way connected with the performance of these services.

### The Proprietor Is Not Responsible for Personal Property

Signed \_\_\_\_\_

Date \_\_\_\_\_

Witnessed \_\_\_\_\_

*THIS RELEASE FORM MUST BE SIGNED BY THE PARENT OR GUARDIAN IF THE CLIENT BEING SERVED IS UNDER 18 YEARS OF AGE.*

◀ **Figure 21–24**  
Release form.



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The combination of the shade selected and the volume of hydrogen peroxide determines the deposit and lifting ability of a haircolor. Always remember to formulate with both lift and deposit in mind in order to achieve the proper balance for the desired end result. A higher-lifting formula, however, may not have enough deposit to cancel the warmth of a client's natural contributing pigment. The volume of hydrogen peroxide mixed with the haircolor product will also influence the lift and deposit.

## Mixing Permanent Colors

Your method of mixing permanent colors is determined by the type of application you are using. Permanent color is applied by either the applicator

▶ **Figure 21–25**  
Formulation checklist.

**CAUTION**

A patch test must be given twenty-four to forty-eight hours before coloring the hair with an aniline derivative product. Aniline derivative haircolors must never be used on the eyelashes or eyebrows. To do so may cause blindness.

**FORMULATION CHECKLIST**

Be sure to do a complete analysis of the hair to include:

Level and Tone – scalp area, mid-shaft, ends \_\_\_\_\_

Percentage of gray \_\_\_\_\_

Texture and Porosity \_\_\_\_\_

Basic overall condition of the hair \_\_\_\_\_

Color Selection \_\_\_\_\_

What type of product will be used to create end result \_\_\_\_\_

Do you need to lighten or deposit color \_\_\_\_\_

How many levels of lift are required \_\_\_\_\_

What volume of developer will be used \_\_\_\_\_

What undertones are present \_\_\_\_\_

What tone do you want to see \_\_\_\_\_

What tones do you not want to see \_\_\_\_\_

What are the mixing proportions \_\_\_\_\_

Decide on the application method \_\_\_\_\_

How long will the color process \_\_\_\_\_

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bottle or bowl-and-brush method (always follow the manufacturer’s directions) (**Figure 21–26**).

- **Applicator bottle.** Be sure that the applicator bottle is large enough to hold both the color and developer, with enough air space to shake the bottle until the mixture is thoroughly mixed. For a 1:1 ratio, pour 1 ounce of the color into the bottle, add 1 ounce of developer, put the top on the bottle, and shake gently. For a 1:2 ratio, pour 1 ounce of the color into the bottle, add 2 ounces of developer, and mix. The latter ratio is for most permanent high-lift blond colors (**Figure 21–27**).

- **Brush and bowl.** Use a nonmetallic mixing bowl. Measure and add the developer into the bowl. Add the color or colors you have selected in the appropriate proportions. Using an applicator brush, stir the mixture until it is blended (**Figure 21–28**).

▼ **Figure 21–26**  
Haircolor can be mixed in an applicator bottle or bowl.



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## Patch Test

When working with haircolor, you must determine whether your clients have any allergies or sensitivities to the mixture. To identify an allergy in a client, the U.S. Food, Drug, and Cosmetic Act requires that a patch test be given twenty-four to forty-eight hours prior to each application of an aniline haircolor. A **patch test**, also known as **predisposition test**, is a test for identifying a possible allergy in a client. The color used for the patch test must be the same as the color that will be used for the haircolor service (i.e., if a person is having her or his hair colored with 5BR by a particular manufacturer, use the 5BR shade in the patch test). Procedure 21–1 for patch tests should be closely followed.

A negative skin test will show no sign of inflammation and indicates that the color may be safely applied. A positive result will show redness and a slight rash or welt. A client with these symptoms is allergic, and under no circumstances should she receive a haircolor service with the haircolor tested. **LO11**

PROCEDURE  
**21-1** Performing  
a Patch Test SEE PAGE 664

## Haircolor Applications

To ensure successful results when performing haircoloring services, the colorist must follow a prescribed procedure. A clearly defined system makes for the greatest efficiency, and the safest and most satisfactory results. Without such a plan, the work will take longer, results will be uneven, and mistakes may be made.

### Preliminary Strand Test

Once you have created a color formula for your client, try it out first on a small strand of hair. This preliminary **strand test** determines how the hair will react to the color formula and how long the formula should be left on the hair. The strand test is performed after the client is prepared for the coloring service. **LO12**

PROCEDURE  
**21-2** Preliminary  
Strand Test SEE PAGE 665

### Temporary Colors

There are many methods of applying a temporary color, depending on the product used. Your instructor will help you interpret each manufacturer's directions. One method of applying temporary haircolor is outlined in Procedure 21–3. You may apply colored gels, mousses, foams, or sprays at your workstation after your client has been shampooed. Always use and apply these color products according to the manufacturer's directions.



▲ Figure 21–27  
Applicator bottle.



▲ Figure 21–28  
Application brush and bowl.

## CAUTION

Colorist dermatitis involves the same types of negative reactions to products as those a client may experience. Since a colorist's hands are in contact with chemical solutions repeatedly during an average day, it is important to take proper precautions. Protect yourself from adverse reactions by wearing gloves until the haircolor product is completely removed from the client's hair.

## FOCUS ON

### TICKET UPGRADING

Getting your clients interested in haircoloring can be done in indirect as well as direct ways, such as the following:

- **Wear color in your hair.** As a professional hairstylist, you should be an example of what those services can do.
- **Display haircolor-related materials at your workstation.** These could be swatches, pictures of great haircoloring you clip out of magazines, and so forth.
- **Suggest haircolor to every client.** Remember that every client is a potential haircolor client.

### PROCEDURE 21-3 Temporary Haircolor Application

SEE PAGE 667

### Semipermanent Haircolors

Because semipermanent colors do not contain the oxidizers necessary to lift, they only deposit color and do not lighten color. When selecting a semipermanent color, remember that color applied on top of existing color always creates a deeper color and alters the tone.

The porosity of the hair will determine how well these products saturate the hair. Because they are deposit-only, traditional semipermanent colors can build up on the hair ends with repeated applications. A strand test will help determine the formula and processing time before the service.

### PROCEDURE 21-4 Semipermanent Haircolor Application

SEE PAGE 669

### Demipermanent Haircolor

Demipermanent haircolor is a great way to introduce clients to a color service and to enhance their natural hair color in one easy step.

The application procedure for demipermanent haircolor is similar to that of a traditional semipermanent color, since neither process alters the hair's natural melanin or produces lift. Follow the manufacturer's guidelines for application and processing time for the product you have selected.

Gray hair presents special challenges when formulating demipermanent haircolor. Because there is no lift, the resulting depth of color when covering gray hair may appear too harsh unless you allow for some brightness and warmth in your formulation. Selecting a shade that is one level lighter than the natural color is recommended, so that the gray hair looks somewhat highlighted against the natural color. This will deliver a more natural-looking result.

Hair that has previously received a color service will have a greater degree of porosity, which must also be taken into consideration when formulating and applying a demipermanent haircolor.

### Single-Process Permanent Color

**Single-process haircoloring** lightens and deposits color in a single application. Examples of single-process coloring are virgin color applications and color retouch applications. A **virgin application** refers to the first time the hair is colored. Prelightening or presoftening is not required with these applications. **LO13**

### PROCEDURE 21-5 Single-Process Color on Virgin Hair

SEE PAGE 671

### Single-Process Color Retouch

As the hair grows, you will need to apply haircolor to the new growth to keep it looking attractive and to avoid a two-toned effect, this is called a retouch.

The procedure provided for applying color to new growth and to refresh faded ends also includes the application of a **glaze**, a nonammonia color that adds shine and tone to the hair. For both applications, follow the same preparation steps as for the virgin single-process procedure, including a consultation and patch test.

## PROCEDURE 21-6 Permanent Single-Process Retouch with a Glaze

SEE PAGE 673

Steps for applying color to new growth and faded ends:

1. Apply color to the new growth only, being careful not to overlap on previously colored hair. Overlapping can cause breakage and a **line of demarcation**, which is the visible line separating colored hair from new growth.
2. Process color according to your analysis and strand test results.
3. To refresh faded ends, formulate a demipermanent haircolor for the ends to match the new growth. Work the color through to the ends. Then shampoo and condition. Remember that the same color formula used with different volumes of peroxide will produce different results.

### Double-Process Haircolor

First, let us discuss the process of **hair lightening**, also known as **bleaching** or **decolorizing**, which is a chemical process involving the diffusion of the natural hair color pigment or artificial haircolor from the hair.

If the client asks for a dramatically lighter color, the hair has to be prelightened first. Also, to achieve pale or cool colors, it is sometimes more efficient to use a double-process application. By first decolorizing the hair with a lightener and then using a separate product to deposit the desired tone, you will have more control over the coloring process.

Double-process high-lift coloring, also known as *two-step blonding*, is a technique to create light-blond hair in two steps. The hair is prelightened first and then toned. **Prelightening** is the first step of double-process haircoloring, used to lift or lighten the natural pigment before the application of toner.

Because the lightening action and the deposit of color are independent of each other, a wider range of haircolor is possible.

You may find that the contributing pigment of the hair can help you in a double-process color application. By prelightening the hair to the desired color, you can create a perfect foundation for longer-lasting red colors that avoid muddiness and stay true to tone.

The prelightener is applied in the same manner as a regular hair lightening treatment (see the following section). Once the prelightening has reached the desired shade, the hair is lightly shampooed, acidified, and towel dried. After a strand test has been taken, the color is then applied in the usual manner.

## CAUTION

Do not perform any haircoloring service if the client has abrasions or inflammations on the scalp. Do not brush the hair before a haircolor service.



## CAUTION

Most powdered lighteners are used exclusively for off-the-scalp applications and special effects, such as foil-wrapped highlighting, highlighting with plastic caps, and hair painting. However, some new powder lighteners can be used directly on the scalp. Refer to manufacturer's directions for best results.

Using an applicator brush, stir the lightener until it is thoroughly mixed. A creamy consistency provides the best control during application. **LO14**

PROCEDURE  
**21-7** Lightening  
Virgin Hair SEE PAGE 675

## Using Lighteners

Colorists can choose from three forms of lighteners: oil, cream, and powder. Oil and cream lighteners are considered **on-the-scalp lighteners**, which are lighteners that can be used directly on the scalp by mixing the lightener with activators. New technology has created powder lighteners that can also be used directly on the scalp. Each type has its unique chemical characteristics and formulation procedures. Refer to the manufacturer's directions for best results.

### On-the-Scalp Lighteners

Cream, oil, and some powder lighteners are used on-the-scalp because they are easy to apply. Oil lighteners are the mildest type, appropriate when only one or two levels of lift are desired. Because they are so mild, they are also used professionally to lighten dark facial and body hair.

Cream lighteners are strong enough for high-lift blonding, but gentle enough to be used on the scalp. They have the following features and benefits:

- Conditioning agents give some protection to the hair and scalp.
- Thickeners give more control during application.
- Because cream lighteners do not run or drip, overlapping is prevented during retouching services. Cream lighteners may be mixed with activators in the form of dry crystals.

**Activators**, also known as **boosters**, **protinators**, or **accelerators**, are powdered persulfate salts added to haircolor to increase its lightening ability. Activators are used in powdered off-the-scalp hair lighteners. They are also added to hydrogen peroxide to increase its lifting power. The more activators you use, the lighter the hair will be. Up to three activators can be used for on-the-scalp applications, and up to four for off-the-scalp applications. Activators increase scalp irritation.

### Powdered Off-the-Scalp Lighteners

**Off-the-scalp lighteners**, also known as **quick lighteners**, are powdered lighteners that cannot be used directly on the scalp. Powdered lighteners are strong, fast-acting lighteners in powdered form. Some powders are designed for on-scalp, double-process blonding. There are other powders that are specifically designed for off-scalp use.



Powdered off-the-scalp lighteners contain persulfate salts for quicker and stronger lightening. They may dry out more quickly than other types of lighteners, but they do not run or drip. Most powder lighteners expand and spread out as processing continues.

## ✔ LO15

### Time Factors

Processing time for lightening is affected by the factors listed below:

- The darker the natural hair color, the more melanin it has. The more melanin it has, the longer it takes to lighten the color.
- The amount of time needed to lighten the natural color is also influenced by the hair's porosity. Porous hair of the same color level will lighten faster than hair that is nonporous, because the lightening agent can enter the cortex more rapidly.
- Tone influences the length of time necessary to lighten the natural hair color. The greater the percentage of red reflected in the natural color, the more difficult it is to achieve the delicate shades of a pale blond. Ash blonds are especially difficult to achieve because the melanin must be diffused sufficiently to alter both the level and tone of the hair.
- The strength of the lightening product affects the speed and amount of lightening. Stronger lighteners produce pale shades in the fastest time.
- Heat leads to faster lightening. But the stages of lightening must be carefully observed to avoid excessive lift. Excess lift could diffuse so much natural pigment that the toner may not produce the desired color. When this occurs, the toner may absorb too much color or *grab*, giving the hair an unwanted ashy, cool tone.

### Preliminary Strand Test

Perform a preliminary strand test prior to lightening in order to determine the processing time, the condition of the hair after lightening, and the end results. Watch the strand carefully for its reaction to the lightening mixture, especially noting any discoloration or breakage. Reconditioning may be required prior to toning. If the color and condition are good, you can proceed with the lightening service. Carefully record all data on the client's service record card and file it for future use.

If the test shows that the hair is not light enough, increase the strength of the mixture and/or increase the processing time. If the hair strand is too light, decrease the strength of the mixture and/or decrease the processing time.

A patch test must be taken twenty-four to forty-eight hours prior to each application of a toner containing aniline derivatives.



## CAUTION

When heat is used with hair lighteners, it softens the hair and makes it more fragile. Excessive heat increases the rate of the reaction and swells the hair. Excessive heat can lift and crack the cuticle and break bonds within the cortex. Therefore, extreme caution must always be exercised when using heat.

## CAUTION

In all procedures requiring the use of a towel to check for lightening level, make sure that the towel is damp. Blot—do not rub—the strand. Rubbing could cause a roughening of the cuticle, giving a false reading for the entire process.

## Lightener Retouch

**New growth** is the part of the hair shaft between the scalp and the hair that has been previously colored. New growth will become obvious as the hair grows. When performing a retouch, always lighten the new growth first. The procedure for a lightener retouch is the same as that for lightening a virgin head of hair, except that the mixture is applied only to the new growth. A cream lightener is generally used for a lightener retouch because it is less irritating to the scalp and its consistency helps prevent overlapping of previously lightened hair. Overlapping can cause severe breakage and lines of demarcation.

Always consult the client's service record card for information about which lightener formulas have been used in the past, timing, and other matters.

## Using Toners

Toners are used primarily on prelightened hair to achieve pale, delicate colors. They require a double-process application. The first process is the application of the lightener; the second process is the application of the toner. No-lift demipermanent haircolors are often used as toners.

The contributing pigment is the color that remains in the hair after lightening. It is essential that you achieve the correct foundation in order to create the right color and degree of porosity required for proper toner development.

Toner manufacturers usually provide literature that indicates the contributing pigment necessary to achieve the color you desire. As a general rule, the paler the color you are seeking, the lighter the contributing pigment needs to be. It is important to follow the literature closely and to understand that overlightened hair will grab the color of the toner. Underlightened hair, on the other hand, will appear to have more red, yellow, or orange than the intended color.

It is not advisable to prelighten past the pale-yellow stage. This will create overly porous hair that will not have enough natural pigment left to create the desired effect. Refer to the law of color to select a toner that will neutralize or complement the prelightened hair and produce the desired color. **LO16**

## Toner Application

Administer a patch test for allergies or other sensitivities twenty-four to forty-eight hours before each toner application. Proceed with the application only if the patch test results are negative and the hair is in good condition.

Your speed and accuracy are both important factors in the application and will determine, to a large extent, whether you get good color results. The procedure for applying low- or non-peroxide toners may vary. Check with your instructor for directions.

## Special Effects Haircoloring

**Special effects haircoloring** refers to any technique that involves partial lightening or coloring. Coloring for special effects can be thought of as a pure fashion technique. It is a versatile and exciting haircoloring service.

One way you can create special effects is by strategically placing light and dark colors in the hair. **Highlighting** involves coloring some of the hair strands lighter than the natural color to add a variety of lighter shades and the illusion of depth. Subtle highlights do not contrast strongly with the natural color. Light colors cause the light area to advance toward the eye, to appear larger, and to make details more visible.

**Reverse highlighting**, also known as **lowlighting**, is the technique of coloring strands of hair darker than the natural color. Contrasting dark areas recede, appear smaller, and make detail less visible.

As you begin to expand your knowledge of haircoloring and lightening and to develop your technical ability, you will become more creative. Your instructor will help you master the basic techniques, but the rest is up to you.

The possibilities are limited only by your imagination and your ability to create a finished style that meets the needs of your clients (**Figure 21-29**).

There are several methods for achieving highlights. The three most frequently used techniques follow:

- Cap technique
- Foil technique
- Baliage or free-form technique



▼ **Figure 21-29**  
 Lightening tools.

### Cap Technique

The **cap technique** involves pulling clean, dry strands of hair through a perforated cap with a thin plastic or metal hook, and then combing them to remove tangles (**Figure 21-30**). The number of strands pulled through determines the amount of hair that will be highlighted or lowlighted. When only a small number of strands are pulled through, the result will be a subtle look. A more noticeable effect is achieved if many strands are pulled through, and the effect is even more dramatic if larger strands of hair are pulled through.

For highlighting, the hair is usually lightened with a powdered off-the-scalp lightener or a high-lift color, beginning in the area that is most



▲ **Figure 21-30**  
 Pull strands through holes in cap.



▲ **Figure 21-31**  
Cover loosely with plastic cap.



▲ **Figure 21-32**  
Cap technique finished look.



▲ **Figure 21-33**  
Slicing.



▲ **Figure 21-34**  
Weaving.

resistant. The lightener is covered for processing (**Figure 21-31**). Once processed, the lightener is removed by a thorough rinse and a shampoo. After towel blotting and conditioning (if necessary), the lightened hair can be toned, if desired (**Figure 21-32**).

## Foil Technique

The **foil technique** involves coloring selected strands of hair by slicing or weaving out sections, placing them on foil or plastic wrap, applying lightener or permanent haircolor, and then sealing them in the foil or plastic wrap for processing. You can also apply permanent haircolor to the strands to create softer, more natural-looking highlights.

Placing foil in the hair is an art. It takes practice and discipline. To make it easier, start by working to create clean section blocks on the head. Once you have perfected this, you will fully understand the difference between a slice parting and a weave parting. **Slicing** involves taking a narrow, 1/8-inch (0.3 centimeters) section of hair by making a straight part at the scalp, positioning the hair over the foil, and applying lightener or color (**Figure 21-33**). In **weaving**, selected strands are picked up from a narrow section of hair with a zigzag motion of the comb, and lightener or color is applied only to these strands (**Figure 21-34**).

There are many patterns in which foil can be placed in the hair. There are face-frame, half-head, three-quarter head, and full-head foiling patterns that produce different highlights in different portions of the head.

### PROCEDURE **21-9** Special Effects Haircoloring with Foil (Full Head)

SEE PAGE 679

## Balage Technique

The **balage** (sometimes spelled balyage), also known as **free-form technique**, involves the painting of a lightener (usually powdered off-the-scalp lightener) directly onto clean, styled hair (**Figure 21-35**). The lightener is applied with an applicator brush or a tail comb from scalp to ends around the head. The effects are extremely subtle and are used to draw attention to the surface of the hair (**Figure 21-36**). **LO17**

## Toning Highlighted and Dimensionally Colored Hair

When the hair is decolorized to the desired level during a highlighting service, the use of a toner may not be necessary. However, the use of a pale soft blond with cool or warm tones does create a finished appearance to the overall color result.

When using a toner on highlighted hair, it is important to consider not only the varying degrees of porosity in the hair, but also the

difference in pigmentation from strand to strand that was created by the lightening process. Although an oxidative toner will add color to the highlighted strands, it might also cause a slight amount of lift to the natural or pigmented hair. Perform a strand test to ensure best results.

To avoid affecting the untreated hair, choose from the following options:

- A nonoxidative toner, which contains no ammonia, requires no developer (thus producing no lift of the natural hair color) and is gentle on the scalp and hair.
- Semipermanent color may be used to deposit color without lift. Select a color that is delicate enough to avoid overpowering the prelightened hair. Always check the manufacturer's color chart to make sure that the combination of your chosen toner and the contributing pigment will produce the desired color results.
- A demipermanent haircolor may also be used to deposit color. It will not cause additional lightening and lasts longer than temporary or traditional semipermanent colors.

## Highlighting Shampoos

**Highlighting shampoo** colors are prepared by combining permanent haircolor, hydrogen peroxide, and shampoo. They are used when a slight change in hair shade is desired, or when the client's hair processes very rapidly. This process highlights the hair's natural color in a single application. No patch test is required. Follow the manufacturer's directions.



▲ **Figure 21-35**  
**Balayage technique.**



▲ **Figure 21-36**  
**Finished hair.**

## Special Challenges in Haircolor/Corrective Solutions

Each haircoloring service is unique and can present unique challenges. To give each haircoloring service a good start, the colorist must allow enough time for a complete client consultation and analysis of the client's hair. Strand tests must be performed to ensure satisfactory final results. But even the most skilled colorist will occasionally have a problem that can't be predicted. This may be due to the particular structure or condition of the client's hair. The good news is that most haircoloring problems can be resolved or corrected as long as the colorist remains calm.

## Gray Hair: Challenges and Solutions

Gray hair is caused by the reduction of pigment in the cortical layer. Gray, white, and salt-and-pepper hair all have characteristics that present unique coloring challenges. For instance, gray hair can turn orange if the lightener used is not processed long enough. A great many salon

coloring services, however, will successfully cover or enhance gray hair if performed correctly (**Figures 21–37** and **21–38**).



▲ **Figure 21–37**  
Gray hair presents certain challenges.

### **Yellowed Hair**

A problem that can occur with gray hair is that it can develop a yellow cast which can be caused by a variety of factors:

- Smoking
- Medication
- Sun exposure
- Hair sprays and styling aids

Lightener and haircolor removers help remove yellow discoloration. Undesired yellow can often be overpowered by the artificial pigments deposited by violet-based colors of an equal or darker level than the yellow.

### **Formulating for Gray Hair**

Gray hair accepts the level of the color applied. However, Level 8 or lighter colors may not give complete coverage because of the low concentration of dye found in these lighter colors. Formulations from Level 7 and darker will provide better coverage, and can be used to create pastel and blond tones if desired.

For those clients who are 80 to 100 percent gray, a haircolor within the blond range is generally more flattering than a darker shade. This lighter level of artificial color may be selected to give a warm or cool finished color, depending on the client's skin tone, eye color, and personal preference.

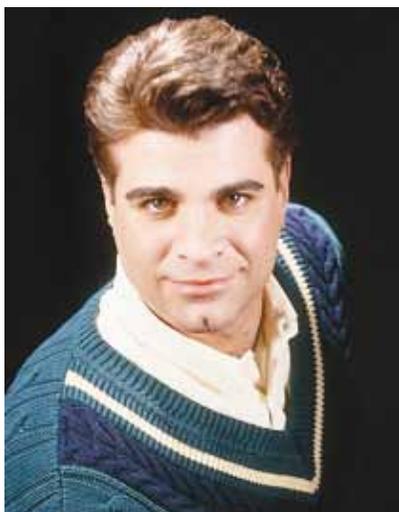
One factor to consider when coloring low percentages of gray or salt-and-pepper hair to a darker level is that color on color will always make a darker color. The addition of dark artificial pigment to the natural pigment results in a color that the eye perceives as darker. For this reason, when attempting to cover the unpigmented hair on a salt-and-pepper head, formulate one to two levels lighter than the natural level to ensure a natural result.

For the purposes of a strand test, a manufacturer's product color chart can be used in conjunction with **Tables 21–4** and **21–5** to select a color within the proper level.

The gray hair formulation tables provide general guidelines, but there are other considerations to take into account, such as the following:

- Client's personality
- Personal preferences
- Amount of gray hair and its location on the head

You will note that in the tables there are no colors given in the formulations, only the levels of haircoloring and various techniques. Also note that the table does not consider the location of the gray hair. The



▲ **Figure 21–38**  
Many haircolor options cover gray successfully.

## SEMIPERMANENT/DEMIPERMANENT COLOR FORMULATION FOR GRAY HAIR

PERCENTAGE OF GRAY HAIR	SEMIPERMANENT/DEMIPERMANENT COLOR FORMULATION FOR GRAY HAIR
90-100%	desired level
70-90%	equal parts desired and one level lighter
50-70%	one level lighter than desired level
30-50%	equal parts one and two levels lighter
10-30%	two levels lighter than desired level

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**Table 21-4** Semipermanent/Demipermanent Color Formulation for Gray Hair.

## PERMANENT COLOR FORMULATION FOR GRAY HAIR

PERCENTAGE OF GRAY HAIR	PERMANENT COLOR FORMULATION FOR GRAY HAIR
90-100%	desired level
70-90%	two parts desired level and one part lighter level
50-70%	equal parts desired and lighter level
30-50%	two parts lighter level and one part desired level
10-30%	one level lighter

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**Table 21-5** Permanent Color Formulation for Gray Hair.

percentage assumes that the gray hair is equally distributed throughout the entire head. If, for instance, the majority of gray hair is located in the front section of the head, that section would be considered to have more gray hair, with the back portion containing less gray hair. In that instance, you would have to determine what formulation would best suit the client. The gray hair around the face is what the client sees, so it may be wise to formulate based on the percentage of gray hair the client actually sees. The section of hair that surrounds the face is what influences the client's self-image.



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### Tips for Achieving Gray Coverage

- Formulate at a Level 7 medium-blond and deeper for best gray coverage.
- Use 20-volume developer.
- Process color for a full forty-five minutes.
- Add neutral tones to the formula.
- If 25 percent gray is present, use 25 percent neutral or natural tones in formula.
- If 50 percent gray is present, use 50 percent neutral or natural tones in formula.
- If 75 percent gray is present, use 75 percent neutral or natural tones in formula.

High-lift blond colors are not designed for gray coverage. To create a very light result, formulate at a Level 7 for the base color and add some highlights over the color to create a balanced blond on blond result. **LO18**

### Presoftening

Occasionally, gray hair is so resistant that even when formulation, application, and time are correct, you will find that the coverage is not satisfactory. In such cases, presoftening becomes necessary. **Presoftening** is the process of treating gray or very resistant hair to allow for better penetration of color. Presoftening raises the cuticle layer of the resistant hair to allow for better penetration of color. A presoftener acts like a stain to the hair. It is applied, processed, and removed. Then the haircolor is applied.

Apply the presoftening formula to the resistant areas and allow it to stay on the hair for fifteen minutes. Refer to manufacturer's directions. While presoftening the resistant areas, you may mix the final formula and start to apply it to the rest of the head.

Once the resistant hair has been presoftened, blot the presoftener color off with a towel and apply the final color formula directly over it. Process per the manufacturer's instructions.

### Rules for Effective Color Correction

Sometimes the color may not turn out as expected. Although this can seem disastrous for your client and for you, it does not need to be. Problems can always be corrected. Keep the following guidelines in mind:

- Do not panic. Remain calm.
- Determine the nature of the problem.
- Determine what caused the problem.
- Develop a solution.

## FOCUS ON

### BUILDING YOUR CLIENT BASE

To build your haircolor clientele:

- Be as knowledgeable about haircolor as you can be. Maintain your skills through continuous education.
- Be honest when recommending color options to your client. That means including information on maintenance, costs, and other issues.
- Keep up to date with celebrity hair trends because your clients will be asking for them.
- Maintain a positive and excited attitude about your work and convey your confidence and enthusiasm to your client.

- Always take one step at a time.
- Never guarantee an exact result.
- Always strand test for accuracy.  **L019**

## Damaged Hair

Blowdrying, flat irons, wind, harsh shampoos, and chemical services all take their toll on the condition of the hair. Coating compounds such as hair sprays, styling agents, and some conditioners can block/interfere with color penetration. Hair is considered damaged when it has one or more of the following characteristics:

- Rough texture
- Overporous condition
- Brittle and dry to the touch
- Susceptible to breakage
- No elasticity
- Becomes spongy and matted when wet
- Color fades too quickly or grabs too dark

Any of these hair conditions will create problems during a haircoloring, lightening, permanent waving, or hair relaxing treatment. Therefore, damaged hair should receive reconditioning treatments both before and after the application of these chemical services. Tips for dealing with damaged hair appear below.

- Use a penetrating conditioner that can deposit protein, oils, and moisture-rich ingredients.
- Complete each chemical service by normalizing the pH with an acidic finishing rinse. This will restore the ability of the cuticle to protect the hair.
- Postpone any further chemical service until the hair is reconditioned.
- Schedule the client for between-service conditioning.
- Recommend retail home-care products that will help prepare the hair for the next service.

## Fillers

**Fillers** are used to equalize porosity. Some fillers are ready to use as they come from the manufacturer. Others are a mixture of haircolor and conditioner that your instructor can help you prepare. There are two types of fillers: conditioner fillers and color fillers.

**Conditioner fillers** are used to recondition damaged, overly porous hair and equalize porosity so that the hair accepts the color evenly from strand to strand and from scalp to ends. They can be applied in a separate procedure or immediately prior to the color application.



**Color fillers** equalize porosity and deposit color in one application to provide a uniform contributing pigment on prelightened hair. Color fillers are used on overly porous, prelightened hair to equalize porosity and provide a uniform contributing pigment that complements the desired finished color. Demipermanent haircolor products are commonly used as color fillers.

Color fillers accomplish the following goals:

- Deposit color to faded ends and hair shaft.
- Help prepare hair to hold a final color by replacing missing building blocks.
- Prevent streaking and dull appearance.
- Prevent off-color results.
- Produce more uniform, natural-looking color.
- Produce uniform color when coloring prelightened hair back to its natural color.

### Selecting the Correct Color Filler

All three primary colors must be present to produce a haircolor that looks natural. To correct an unwanted haircolor, always use the primary or secondary color that is missing in the hair. That color is called the complementary color. Remember, complementary colors are directly opposite each other on the color wheel.

Yellow blond hair can be corrected to a natural blond by adding the two missing primary colors, red and blue—in other words, by adding the secondary color violet. Violet cancels yellow. Orange blond hair can be corrected to a natural blond by adding the missing primary color, blue. Blue cancels orange. Adding blue color to yellow hair would make the hair green. Remember that a primary color always cancels a secondary color and a secondary color always cancels a primary color.

Color fillers may be applied directly from their containers to damaged hair prior to coloring. They may also be added to the haircolor and applied to damaged ends.

### Haircolor Tips for Redheads

Red haircolor is exciting and fun, but fading is a common problem with color-treated red hair (**Figure 21–39**). A daily shampoo and blowdry, an occasional permanent wave, and/or a few days in the pool or at the beach cause the artificial pigment in red hair to oxidize and fade. It is important to recommend the proper products to maintain the finished haircolor. Tips are summarized below.

- To create warm coppery reds, use a red-orange base color (RO, RG).
- To create hot fiery reds, use red-violet or true red colors (R, RR, RV).
- After the hair has been colored with a permanent color, always use a demipermanent color to refresh the shaft and ends.



▲ **Figure 21–39**  
Vibrant red hair.

Photo used with the permission of the authors, Martin Gannon and Richard Thompson, as featured in their book, *Mahogany: Steps to Cutting, Colouring and Finishing Hair*. © Martin Gannon and Richard Thompson.

- If gray hair is present, always add ½ ounce to 1 ounce of a neutral color to the desired red.
- To brighten haircolor, refresh reds with a soap cap of equal parts shampoo and the remaining color formula before rinsing, or mix a demipermanent color and apply it to the ends.

### Haircolor Tips for Brunettes

- To avoid orange or brassy tones when lifting brown hair with permanent color, always use a cool blue base.
- To avoid unwanted brassy tones, do not lighten more than two levels above the natural color.
- Add 1 ounce of a natural color to cover gray in brunette hair.
- Natural highlights in brunette hair should be deep or caramel colored. Blond highlights have too much contrast with brunette hair. Blond highlights do not look natural and require frequent service.



### Haircolor Tips for Blonds

Blond haircolor is popular, profitable, and fun. From single-process blond to highlighting, the possibilities are endless. As you work with blond hair, keep the following tips in mind:

- When lightening brown hair to blond, remember that there may be underlying unwanted warm tones.
- When covering gray hair with a blond color, use a Level 7 or darker for the best coverage.
- Double-process blonding is the best way to obtain pale blond results.
- If high-lift blonds that lift only 5 levels are used on Levels 4 and below, the result may be a color that is too warm or brassy.
- If highlights become too blond or all one color, lowlights or deeper strands can be foiled into the hair to create a more natural color. A great lowlight formula using a demipermanent color is 1½ ounces 8N with ½ ounce of 6G. You can also add all-over warmth to the end result with a glaze of 10RO applied all over the hair for five minutes. This will add a sunshine look to the hair.

### Common Haircolor Solutions

#### Refresh Faded Color

If the hair appears dull and faded, mix a demipermanent haircolor in the same tonal family as the haircolor formula. Stay within two levels of your formula. Apply all over and process up to ten minutes.





### ***Green Cast***

If the hair has a buildup of minerals from well water or chlorine, you may want to purify the hair with a product designed to remove the mineral buildup. You can apply a demipermanent color to neutralize any unwanted color that remains in the hair.

### ***Overall Haircolor Is Too Light***

This is a result of incorrect formulation. To correct, apply a demipermanent color that is one to two levels darker than the previous formula.

### ***Overall Color Is Too Dark***

Determine how much of the color needs to be removed. Use a haircolor remover in cases where the hair is too dark because of buildup or formulation.

Apply haircolor remover to the areas that need to be lightened. Process for ten minutes and check development. These removers are designed to remove artificial pigment from the hair. Once you have achieved the desired color, rinse and shampoo.

### ***Restoring Blond to Natural Haircolor***

Restoring a client's blond hair back to its natural darker color can be tricky. Even if the client says that she wants to go back to her natural color, she may not like it. She is used to seeing light hair and going too dark could be disastrous. A few tips on how to restore the client's natural color are listed below.

#### **Tips for Restoring Blond Hair to Natural Color**

1. If you have a starting regrowth level that is Level 6 dark blond and deeper, soften the new growth with a Level 6 violet base permanent color with 20 volume. Apply to the scalp area, process for twenty minutes, and rinse. Towel dry. If the starting regrowth level is Level 7 medium blond and lighter, soften the regrowth with a Level 8 light blond-violet base permanent color with 20 volume. Apply to the scalp area, process for twenty minutes, and rinse. Towel dry.
2. Next, apply a demipermanent glaze with 1 ounce of a Level 8 light neutral blond and 1 ounce of a Level 9 very light blond red-orange. Apply to all the lightened hair. Do not apply to the scalp area. Process for twenty minutes. Rinse and towel dry. This will turn the hair a very light reddish-gold. Do Not Panic!
3. Finally, mix the final deposit-only glaze. If you formulated with Level 6 dark blond-violet at the base, use 1½ ounces Level 6 dark neutral blond with ½ ounce Level 4 light brown gold base.

If you formulated with Level 8 light violet blond at the base, use 1½ ounces Level 8 light neutral blond with ½ ounce Level 6 dark golden blond. Apply the chosen formula starting on the pieces that were overlitened from the beginning. Work the color through all over. Process up to twenty minutes, checking it every five minutes.

Reevaluate the haircolor at the client's next visit, and determine what is needed to make the color deeper. Apply a separate color to the scalp area and on the remainder of the hair strand for the best results.

## Haircoloring Safety Precautions

- Perform a patch test twenty-four to forty-eight hours prior to each application of aniline-derivative haircolor. Apply haircolor only if the patch test is negative.
- Do not apply haircolor if abrasions are present on the scalp.
- Do not apply haircolor if a metallic or compound haircolor is present.
- Do not brush the hair prior to applying color.
- Always read and follow the manufacturer's directions.
- Use cleaned and disinfected applicator bottles, brushes, combs, and towels.
- Protect your client's clothing with proper draping.
- Perform a strand test for color, breakage, and/or discoloration.
- Use an applicator bottle or bowl (glass or plastic) for mixing the haircolor.
- Do not mix haircolor until you are ready to use it; discard leftover haircolor.
- Wear gloves to protect your hands.
- Do not permit the color to come in contact with the client's eyes.
- Do not overlap during a haircolor retouch.
- Use a mild shampoo. An alkaline or harsh shampoo will strip color.
- Always wash hands before and after serving a client. 

## CAUTION

Sometimes hair is so damaged and overly porous that there may be insufficient structure left within the cortex for the artificial pigment to attach to. Hair that looks gun-metal gray is a real danger sign. Hair that is this porous is very fragile and may be close to the breaking point.

## FOCUS ON

### RETAILING

Your color client needs to use high-quality salon products at home to help prevent their haircolor from fading. Using the right products increases the longevity of the haircolor, preserves the natural integrity (health) of the hair, and makes your client more likely to return to you for more services. Recommending the right professional products increases your client's satisfaction and your income.

# Performing a Patch Test

## Implements and Materials

You will need all of the following implements, materials, and supplies:

- Cotton swab
- Developer
- Glass or plastic mixing bowl
- Haircolor product
- Mild soap
- Towel

## Preparation

### PROCEDURE 15-1 Pre-Service Procedure

- Perform

SEE PAGE 323

## Procedure

**1** Select a test area, behind the ear or on the inside of the elbow are good choices.



**2** Using a mild soap, clean and dry an area about the size of a quarter.



**3** Mix a small amount of product according to the manufacturer's directions.



**4** Apply a small amount of the haircolor mixture to the test area with a sterile cotton swab.

**5** Leave the mixture undisturbed for twenty-four to forty-eight hours.

**6** Examine the test area. If there are no signs of redness or irritation, the test result is negative, and you can proceed with the color service.

**7** Record the results on the service record card.

## Post Service

### PROCEDURE 15-2 Post-Service Procedure

- Complete

SEE PAGE 326

# Preliminary Strand Test

## Implements and Materials

You will need all of the following implements, materials, and supplies:

- Applicator bottle
- Chemical cape
- Color brushes
- Developer
- Glass or plastic mixing bowl
- Protective gloves
- Selected haircolor
- Service record card
- Shampoo
- Sheet of foil or plastic wrap
- Spray bottle containing water
- Towels

## Preparation

- Perform **PROCEDURE 15-1 Pre-Service Procedure** **SEE PAGE 323**

## Procedure

- 1** Perform a scalp and hair analysis.
- 2** Drape client to protect skin and clothing.
- 3** Part off a ½-inch (1.25 centimeters) square section of hair in the lower crown. Using plastic clips, fasten other hair out of the way.



- 4** Place the hair strand over the foil or plastic wrap and apply the color mixture.



- 5** Follow the application method for the color you will be using to apply the color mixture.

# 21-2 Preliminary Strand Test continued

**6****6**

Check the development at five-minute intervals until the desired color has been achieved. Note the timing on the service record card.

**7****7**

When satisfactory color has developed, remove the protective foil or plastic wrap. Place a towel under the strand, mist it thoroughly with water, add shampoo, and massage through. Rinse by spraying with water. Dry the hair strand with the towel and observe the results.

**8**

Adjust the formula, timing, or application method as necessary and proceed with the color service.

## Post Service

PROCEDURE

### 15-2 Post-Service Procedure

- Complete

**SEE PAGE 326**



# PROCEDURE 21-3

## Temporary Haircolor Application

### Implements and Materials

You will need all of the following implements, materials, and supplies:

- Applicator bottle (optional)
- Comb
- Protective gloves
- Service record card
- Shampoo
- Shampoo cape
- Temporary haircolor product
- Timer
- Towels

### Preparation

#### PROCEDURE 15-1 Pre-Service Procedure

- Perform

SEE PAGE 323

### Procedure



- 1** Drape the client for a haircoloring service. Slide a towel down from the back of the client's head and place lengthwise across the client's shoulders. Cross the ends of the towel beneath the chin and place the cape over the towel. Fasten the cape in the back. Fold the towel over the top of the cape and secure in front.
- 2** Shampoo and towel dry the hair.
- 3** Make sure the client is comfortably reclined at the shampoo bowl.
- 4** Put on gloves.

# 21-3 Temporary Haircolor Application continued

**5** Put the color into an applicator bottle as directed by your instructor or use it directly from its bottle. Shake the bottle gently.



**6** Apply the color and work around the entire head.



**7** Blend the color with your gloved hands or comb it through the hair, applying more color as necessary.

**8** Do not rinse the hair. Towel-blot excess product.



**9** Proceed with styling and finish.

## Post Service

- Complete **PROCEDURE 15-2 Post-Service Procedure** **SEE PAGE 326**



# PROCEDURE 21-4

## Semipermanent Haircolor Application

### Implements and Materials

You will need all of the following implements, materials, and supplies:

- Applicator bottle or glass or plastic bowl
- Chemical cape
- Color brushes
- Color chart
- Comb
- Conditioner
- Cotton
- Plastic cap (optional)
- Plastic clips
- Protective cream
- Protective gloves
- Selected color
- Service record card
- Shampoo
- Timer
- Towels

### Preparation

- Perform **PROCEDURE 15-1 Pre-Service Procedure** **SEE PAGE 323**

### Procedure

- 1** Shampoo the client's hair with mild shampoo, and towel dry.
- 2** Put on gloves.
- 3** Part the hair into four sections—from ear to ear and from front center of forehead to center nape—and apply protective cream around the hairline and over the ears.



- 4** Outline the partings with color product.



- 5** Take ½-inch partings, and apply the color to the new growth or scalp area in all four sections.

# 21-4 Semipermanent Haircolor Application continued



6

**6** After all four sections are completed, work the color through the rest of the hair shaft to the ends until the hair is fully saturated.



7

**7** Set timer to process. Follow the manufacturer's directions. Some colors require the use of a plastic cap.

**8** When processing is complete, massage color into a lather and rinse thoroughly with warm water.

**9** Remove any stains from around the hairline with shampoo or stain remover.

**10** Shampoo the hair. Condition as needed.



11

**11** Finished look.

## Post Service

- Complete

PROCEDURE  
**15-2 Post-Service Procedure**

**SEE PAGE 326**



# PROCEDURE 21-5

## Single-Process Color on Virgin Hair

### Implements and Materials

You will need all of the following implements, materials, and supplies:

- Applicator bottle or glass or plastic mixing bowl
- Color brushes
- Color chart
- Comb
- Conditioner
- Cotton
- Hydrogen peroxide developer
- Plastic cap (optional)
- Plastic clips
- Protective cream
- Protective gloves
- Selected permanent color
- Service record card
- Shampoo
- Timer
- Towels
- Waterproof cape

**Note:** The colorist in the photographs completed this application using her left hand. The procedure is exactly the same for right-handed or left-handed application.

### Preparation

- Perform **PROCEDURE 15-1 Pre-Service Procedure** **SEE PAGE 323**

### Procedure

-  **1** Drape the client for a haircolor service.
- 2** Put on gloves.
- 3** Part dry hair into four sections.
- 4** Apply protective cream to the hairline and ears.
- 5** Prepare the color formula for either bottle or brush application.

# 21-5 Single-Process Color on Virgin Hair continued

## Service Tip

The hair at the scalp processes faster due to body heat. For this reason, the color is applied to the mid-strand before being applied to the scalp area. Your strand test will determine the application procedure and timing for even color development.



**6** Begin in the section where the color change will be greatest or where the hair is most resistant, usually the hairline and temple areas. Part off a ¼-inch (0.6 centimeters) subsection with the applicator.



**7** Lift the subsection and apply color to the mid-strand area. Stay at least ½ inch (1.25 centimeters) from the scalp, and do not apply to the porous ends.

**8** Process according to the strand test results. Check for color development by removing color as described in the strand test procedure.



**9** Apply color to the hair at the scalp.



**10** Work the color through the ends of the hair.

**11** Massage color into a lather and rinse thoroughly with warm water.

**12** Remove any stains around the hairline with shampoo or stain remover. Use a towel to gently remove stains.

**13** Shampoo the hair. Condition as needed.



**14** Finished look.

## Post Service

• Complete **PROCEDURE 15-2 Post-Service Procedure**

**SEE PAGE 326**



# PROCEDURE 21-6

## Permanent Single-Process Retouch with a Glaze

### Implements and Materials

You will need all of the following implements, materials, and supplies:

- Applicator bottle or glass or plastic mixing bowl
- Color brushes
- Color chart
- Chemical cape
- Comb
- Conditioner
- Cotton
- Developer
- Plastic cap (optional)
- Plastic clips
- Protective cream
- Protective gloves
- Selected permanent color
- Service record card
- Shampoo
- Timer
- Towels

### Preparation

#### PROCEDURE 15-1 Pre-Service Procedure

- Perform

SEE PAGE 323

### Procedure

- 1 Drape the client for a haircolor service.
- 2 Put on gloves.



3

- 3 Part dry hair into four sections.



4

- 4 Apply the color to the new growth area using 1/4-inch partings.

# 21-6 Permanent Single-Process Retouch with a Glaze continued



5

5 Complete all four sides and set timer for forty-five minutes or whatever the manufacturer's directions indicate.

6 Prepare a no-lift deposit-only glaze formula to apply to the mid-strand and ends.



7a



7b

7 Apply the demipermanent glaze and work through the hair.

8 Check haircolor results before rinsing.



9

9 Finished look.

## Post Service

• Complete **PROCEDURE 15-2 Post-Service Procedure**

**SEE PAGE 326**

# Lightening Virgin Hair

## Implements and Materials

You will need all of the following implements, materials, and supplies:

- Applicator bottle or glass or plastic mixing bowl
- Chemical cape
- Color brushes
- Comb
- Conditioner
- Cotton
- Hydrogen peroxide developer
- Lightener
- Plastic clips
- Protective cream
- Protective gloves
- Service record card
- Shampoo
- Timer
- Towels

**Note:** The colorist in the photographs completed this application using her left hand. The procedure is exactly the same for right-handed or left-handed application.

## Preparation

### PROCEDURE 15-1 Pre-Service Procedure

- Perform

SEE PAGE 323

## Procedure

1



1 Drape the client for a haircolor service.

2

Put on gloves.

3

Part the hair into four sections.

4

Apply a protective cream around the hairline and over the ears.

5

Prepare the lightening formula and use it immediately.

6



6 Place cotton around and through all four sections to protect the scalp so the lightener does not contact the scalp.

# 21-7 Lightening Virgin Hair continued



**7** Apply the lightener ½-inch away from the scalp, working the lightener through the mid-strand and up to the porous ends.



**8** Place strips of cotton at the scalp area along the partings to prevent the lightener from touching the base of the hair, and complete all four sections in this manner.



**9** Continue to apply the lightener. Double check the application, adding more lightener if necessary. Do not comb the lightener through the hair. Keep the lightener moist during development by reapplying if the mixture dries on the hair.



**10** Check for lightening action about fifteen minutes before the time indicated by the preliminary strand test. Spray a hair strand with a water bottle and remove the lightener with a damp towel. Examine the strand. If the strand is not light enough, reapply the mixture and continue testing frequently until the desired level is reached.



**11** Remove the cotton from the scalp area. Apply the lightener to the hair near the scalp with ½-inch (1.25 centimeters) partings. Apply lightener to the porous ends and process until the entire hair strand has reached the desired stage.

**12** Rinse the hair thoroughly with warm water. Shampoo gently and condition as needed, keeping your hands under the hair to avoid tangling.

**13** Neutralize the alkalinity of the hair with an acidic conditioner. Recondition if necessary.

**14** Towel dry the hair, or dry it completely under a cool dryer if required by the manufacturer.

**15** Examine the scalp for any abrasions. Analyze the condition of the hair.

**16** Proceed with a toner application if desired. (See Procedure 21–8, Toner Application.)

**17** If no toner is needed, dry and style the hair.

## Post Service

• Complete **PROCEDURE 15-2 Post-Service Procedure**

**SEE PAGE 326**



# PROCEDURE 21-8

## Toner Application

**Note:** The colorist in the photographs completed this application using her left hand. The procedure is exactly the same for right-handed or left-handed application.

### Implements and Materials

You will need all of the following implements, materials, and supplies:

- Applicator bottle
- Chemical cape
- Conditioner
- Cotton
- Glass or plastic mixing bowl
- Haircolor brushes
- Hydrogen peroxide developer
- Protective cream
- Protective gloves
- Plastic clips
- Selected toner
- Service record card
- Shampoo
- Tail comb
- Timer
- Towels

### Preparation

#### PROCEDURE 15-1 Pre-Service Procedure

- Perform

SEE PAGE 323

### Procedure

- 1** Prelighten the hair to the desired stage of decolorization.
- 2** Shampoo the hair lightly, rinse, and towel dry. Condition as necessary.
- 3** Put on gloves.
- 4** Select the desired toner shade.
- 5** Apply protective cream around the hairline and over the ears.
- 6** Take a strand test and record the results on the client's service record card.



- 7** If using a toner with developer, mix the toner and the developer in a nonmetallic bowl or bottle, following the manufacturer's directions.

- 8** Part the hair into four equal sections, using the end of the tail comb or applicator brush. Avoid scratching the scalp.

# 21-8 Toner Application continued



9

**9** At the crown of one of the back sections, part off ¼-inch (0.6 centimeters) partings and apply the toner from the scalp up to, but not including, the porous ends.



10

**10** Take a strand test. If it indicates proper color development, gently work the toner through the ends of the hair, using an applicator brush or your fingers.

**11** If necessary for coverage, apply additional toner to the hair and distribute evenly. Leave the hair loose or cover with a plastic cap if required.

**12** Time the procedure according to your strand test. Check frequently until the desired color has been reached evenly throughout the entire hair shaft and ends.

**13** Remove the toner by wetting the hair and massaging the toner into a lather.

**14** Rinse with warm water, shampoo gently, and thoroughly rinse again.

**15** Apply an acidic conditioner to close the cuticle, lower the pH, and help prevent fading.

**16** Remove any stains from the skin, hairline, and neck.

**17** Style as desired. Use caution to avoid stretching the hair.

## Service Tip

Do not apply the toner through to the porous ends of the hair until the end of the procedure, and then only do so if you are planning to change the tone or are correcting significant fading. Applying toner through these areas will only make the ends even more porous and more susceptible to continued fading.

18



18 Finished look.

## Post Service

PROCEDURE  
**15-2** Post-Service  
Procedure

- Complete

**SEE PAGE 326**



PROCEDURE

# 21-9

## Special Effects Haircoloring with Foil (Full Head)

### Implements and Materials

You will need all of the following implements, materials, and supplies:

- Applicator bottle
- Conditioner
- Chemical cape
- Foil
- Glass or plastic mixing bowl
- Gloves
- Haircolor brushes
- Lightener
- Plastic clips
- Service record card
- Shampoo
- Tail comb
- Timer
- Towels

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**Note:** The colorist in the photographs completed this application using her left hand. The procedure is exactly the same for right-handed or left-handed application.

### Preparation

- Perform **PROCEDURE 15-1 Pre-Service Procedure** **SEE PAGE 323**

### Procedure



- 1** Drape the client for a haircolor service.
- 2** Part the hair into four sections.
- 3** Apply a protective cream around the hairline and over the ears.
- 4** Put on protective gloves.
- 5** Prepare the lightening formula, and use it immediately.
- 6** Place cotton around and through all four sections to protect the scalp so the lightener does not contact the scalp.

# 21-9 Special Effects Haircoloring with Foil (Full Head) *continued*



**7** With a tail comb, take a slice of hair at the lower crown area of the head and place a piece of foil under the slice of hair.



**8** Holding the hair taut, brush on the lightener, from the upper edge of the foil to the hair ends.

**9** Fold the foil in half until the ends meet.

**10** Fold the foil in half again, using the comb to crease it.

**11** Clip the foil upward.



**12** Take a  $\frac{3}{4}$ -inch (1.8 centimeters) subsection in between foils. Clip this hair up and out of the way. Note the contrast in size between the foiled and unfoiled subsections.



**13** Continue working down the back center of the head until the section is complete.

**14** Once the section is complete, release the clipped-up foils.

**15** Work around the head to the side area; divide it into two smaller sections.

**16** Work down the side, bring fine slices of hair into the foil, and apply lightener to the hair. Clip up the foil.

**17** Move to the other side of the head and complete the matching sections.

**18** Move to the top of the head. Take a fine slice of hair off the top of a large section, place it on the foil, and apply lightener.

**19** Part a larger section and then take a fine slice from the top of this section. Apply lightener.



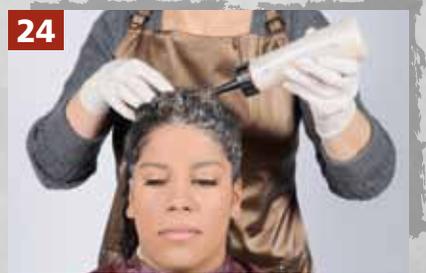
**20** Continue toward the front until the last foil is placed.

**21** Allow the lightener to process according to the strand test. Check the foils for the desired lightness.

**22** Remove the foils one at a time at the shampoo area. Rinse the hair immediately to prevent the color from affecting the untreated hair.



**23** Apply a haircolor glaze to the hair, from scalp to ends. A haircolor glaze is an optional service added on to a highlighting to add shine to the finished result.



**24** Work the glaze into the hair to make sure it is completely saturated and process per the manufacturer's directions.

**25** Rinse the hair, shampoo, condition, and style the hair as desired.



**26** Finished look.

## Post Service

PROCEDURE  
**15-2 Post-Service Procedure**

- Complete

SEE PAGE 326

# Review Questions

1. Why do people color their hair?
2. How does the hair's porosity affect haircolor?
3. How many types of melanin are found in hair? Describe each.
4. What are levels? What does the level system help you to determine when formulating haircolor?
5. Name the primary, secondary, and tertiary colors.
6. What is the role of tone and intensity in haircolor?
7. What are the categories of haircolor? Briefly describe each one.
8. How does hydrogen peroxide developer work in a haircolor formula?
9. What are the four key questions to ask when formulating a haircolor?
10. Why is a patch test useful in haircoloring?
11. What is a preliminary strand test and why is it used?
12. Explain the action of hair lighteners.
13. What is the procedure for a virgin single-process color service?
14. What are the two processes involved in double-process haircoloring?
15. Name and describe the various forms of hair lightener.
16. What is the purpose of toner? When is it used?
17. What are the three most commonly used methods for highlighting? Describe each.
18. List seven tips for achieving gray coverage.
19. List the rules of color correction.
20. List five safety precautions to follow during the haircolor process.

# Chapter Glossary

<b>activators</b>	Also known as <i>boosters</i> , <i>protinators</i> , or <i>accelerators</i> ; powdered persulfate salts added to haircolor to increase its lightening ability.
<b>aniline derivatives</b>	Contain small, uncolored dyes that combine with hydrogen peroxide to form larger, permanent dye molecules within the cortex.
<b>baliage</b>	Also known as <i>free-form technique</i> ; painting a lightener (usually a powdered off-the-scalp lightener) directly onto clean, styled hair.
<b>base color</b>	Predominant tone of a color.
<b>cap technique</b>	Lightening technique that involves pulling clean, dry strands of hair through a perforated cap with a thin plastic or metal hook, and then combing them to remove tangles.
<b>color fillers</b>	Equalize porosity and deposit color in one application to provide a uniform contributing pigment on prelightened hair.
<b>complementary colors</b>	A primary and secondary color positioned directly opposite each other on the color wheel.
<b>conditioner fillers</b>	Used to recondition damaged, overly porous hair and equalize porosity so that the hair accepts the color evenly from strand to strand and scalp to ends.
<b>contributing pigment</b>	Also known as <i>undertone</i> ; the varying degrees of warmth exposed during a permanent color or lightening process.
<b>demipermanent haircolor</b>	Also known as <i>no-lift deposit-only color</i> ; formulated to deposit but not lift (lighten) natural hair color.

# Chapter Glossary

<b>developers</b>	Also known as <i>oxidizing agents</i> or <i>catalysts</i> ; when mixed with an oxidation haircolor, supplies the necessary oxygen gas to develop color molecules and create a change in hair color.
<b>double-process application</b>	Also known as <i>two-step coloring</i> ; a coloring technique requiring two separate procedures in which the hair is prelightened before the depositing color is applied to the hair.
<b>fillers</b>	Used to equalize porosity.
<b>foil technique</b>	Highlighting technique that involves coloring selected strands of hair by slicing or weaving out sections, placing them on foil or plastic wrap, applying lightener or permanent haircolor, and then sealing them in the foil or plastic wrap.
<b>glaze</b>	A nonammonia color that adds shine and tone to the hair.
<b>hair color</b>	The natural color of hair.
<b>hair lightening</b>	Also known as <i>bleaching</i> or <i>decolorizing</i> ; chemical process involving the diffusion of the natural hair color pigment or artificial haircolor from the hair.
<b>haircolor</b>	Professional, salon industry term referring to artificial haircolor products and services.
<b>haircolor glaze</b>	Common way to describe a haircolor service that adds shine and color to the hair.
<b>highlighting</b>	Coloring some of the hair strands lighter than the natural color to add a variety of lighter shades and the illusion of depth.
<b>highlighting shampoo</b>	Colors prepared by combining permanent haircolor, hydrogen peroxide, and shampoo.
<b>hydrogen peroxide developer</b>	Oxidizing agent that, when mixed with an oxidation haircolor, supplies the necessary oxygen gas to develop the color molecules and create a change in natural hair color.
<b>intensity</b>	The strength of a color.
<b>law of color</b>	System for understanding color relationships.
<b>level</b>	The unit of measurement used to identify the lightness or darkness of a color.
<b>level system</b>	System that colorists use to determine the lightness or darkness of a hair color.
<b>lighteners</b>	Chemical compounds that lighten hair by dispersing, dissolving, and decolorizing the natural hair pigment.
<b>line of demarcation</b>	Visible line separating colored hair from new growth.
<b>metallic haircolors</b>	Also known as <i>gradual haircolors</i> ; haircolors containing metal salts that change hair color gradually by progressive buildup and exposure to air creating a dull, metallic appearance.
<b>mixed melanin</b>	Combination of natural hair color that contains both pheomelanin and eumelanin.
<b>natural haircolors</b>	Also known as <i>vegetable haircolors</i> ; colors, such as henna, obtained from the leaves or bark of plants.
<b>new growth</b>	Part of the hair shaft between the scalp and the hair that has been previously colored.
<b>off-the-scalp lighteners</b>	Also known as <i>quick lighteners</i> ; powdered lighteners that cannot be used directly on the scalp.
<b>on-the-scalp lighteners</b>	Lighteners that can be used directly on the scalp by mixing the lightener with activators.

# Chapter Glossary

<b>patch test</b>	Also known as a <i>predisposition test</i> ; test required by the Federal Food, Drug, and Cosmetic Act for identifying a possible allergy in a client.
<b>permanent haircolors</b>	Lighten and deposit color at the same time and in a single process because they are more alkaline than no-lift deposit-only colors and are usually mixed with a higher-volume developer.
<b>prelightening</b>	First step of double-process haircoloring, used to lift or lighten the natural pigment before the application of toner.
<b>presoftening</b>	Process of treating gray or very resistant hair to allow for better penetration of color.
<b>primary colors</b>	Pure or fundamental colors (red, yellow, and blue) that cannot be created by combining other colors.
<b>resistant</b>	Hair type that is difficult for moisture or chemicals to penetrate, and thus requires a longer processing time.
<b>reverse highlighting</b>	Also known as <i>lowlighting</i> ; technique of coloring strands of hair darker than the natural color.
<b>secondary color</b>	Color obtained by mixing equal parts of two primary colors.
<b>semipermanent haircolor</b>	No-lift deposit-only nonoxidation haircolor that is not mixed with peroxide and is formulated to last through several shampoos.
<b>single-process haircoloring</b>	Process that lightens and deposits color in the hair in a single application.
<b>slicing</b>	Coloring technique that involves taking a narrow, $\frac{1}{8}$ -inch (0.3 centimeters) section of hair by making a straight part at the scalp, positioning the hair over the foil, and applying lightener or color.
<b>soap cap</b>	Combination of equal parts of a prepared permanent color mixture and shampoo used the last five minutes and worked through the hair to refresh the ends.
<b>special effects haircoloring</b>	Any technique that involves partial lightening or coloring.
<b>strand test</b>	Determines how the hair will react to the color formula and how long the formula should be left on the hair.
<b>temporary haircolor</b>	Nonpermanent color whose large pigment molecules prevent penetration of the cuticle layer, allowing only a coating action that may be removed by shampooing.
<b>tertiary color</b>	Intermediate color achieved by mixing a secondary color and its neighboring primary color on the color wheel in equal amounts.
<b>tone</b>	Also known as <i>hue</i> ; the balance of color.
<b>toners</b>	Semipermanent, demipermanent, and permanent haircolor products that are used primarily on prelightened hair to achieve pale and delicate colors.
<b>virgin application</b>	First time the hair is colored.
<b>volume</b>	Measures the concentration and strength of hydrogen peroxide.
<b>weaving</b>	Coloring technique in which selected strands are picked up from a narrow section of hair with a zigzag motion of the comb, and lightener or color is applied only to these strands.