Chapter 21
Haircoloring
“The only thing that makes life possible is permanent, intolerable uncertainty: not knowing what comes next.”

– Ursula K. Le Guin
Objectives

• List the reasons people color their hair.
• Explain how the hair’s porosity affects haircolor.
• Understand the types of melanin found in hair.
• Define and identify levels and their role in formulating haircolor.
Objectives (continued)

- Identify primary, secondary, and tertiary colors.
- Know what role tone and intensity play in haircolor.
- List and describe the categories of haircolor.
Objectives (continued)

• Explain the role of hydrogen peroxide in a haircolor formula.

• Explain the action of hair lighteners.

• List the four key questions to ask when formulating a haircolor.

• Understand why a patch test is useful in haircoloring.
Objectives (continued)

• Define what a preliminary strand test is and explain why it is used.

• List and describe the procedure for a virgin single-process color service.

• Understand the two processes involved in double-process haircoloring.

• Describe the various forms of hair lightener.
Objectives (continued)

• Understand the purpose and use of toners.
• Name and describe the three common methods for highlighting.
• Know how to properly cover gray hair.
• Know the rules of color correction.
• Know the safety precautions to follow during haircoloring.
Haircolor vs. Hair color

- Haircolor: a professional, industry-coined term referring to products and services for artificially coloring the hair

- Hair color: refers to the natural color of the hair
Reasons for Coloring Hair

- Cover up or blend gray hair
- Enhance existing hair color
- Create a fashion statement or statement of self expression
- Correct unwanted tones
- Accentuate a particular haircut
Hair Facts

• The hair structure affects the quality and ultimate success of the haircolor service.

• The structure of the hair and the desired results determine which haircolor product to use.
Hair Structure

- Cuticle: outermost layer that contributes 20 percent of overall strength
- Cortex: middle layer that contributes 80 percent of overall strength
- **Medulla**: innermost layer (sometimes absent)
Texture

- Coarse: large hair-strand diameter.
- Medium: medium hair-strand diameter.
- Fine: small hair-strand diameter.
Density

- Number of hairs per square inch
- Refers to hair thickness
Porosity

- The ability of the hair to absorb moisture
  - Porous hair accepts haircolor faster and permits a darker color than less-porous hair.
Types of Porosity

- Low porosity – tight cuticle, resistant hair
- Average porosity – cuticle slightly raised; average time
- High porosity – cuticle lifted; quicker processing time
- Test for porosity – finger and thumb test
Natural Hair Color

• Melanin in the cortex
  – *Eumelanin*: gives black and brown color
  – *Pheomelanin*: gives blond and red colors
  – Mixed melanin: contains both eumelanin and pheomelanin
  – Contributing pigment: also known as undertone
Level System

- Unit of measurement
- Identifies lightness or darkness
- Arranged on scale of 1 to 10
  - 1 being darkest
  - 10 being lightest
Identifying Natural Level

- Take section in crown area.
- Match swatches.
- Compare strand to determine level.
Gray Hair

• The loss of pigment increases with age. Most people retain a certain percentage of pigmented hair. Gray hair can be solid or blended and requires special attention during haircoloring.
### Determining the Percentage of Gray Hair

<table>
<thead>
<tr>
<th>Percentage of Gray Hair</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>30%</td>
<td>More pigmented than gray hair</td>
</tr>
<tr>
<td>50%</td>
<td>Even mixture of gray and pigmented hair</td>
</tr>
<tr>
<td>70 to 90%</td>
<td>More gray than pigmented; most of remaining pigment is located in the back of the head</td>
</tr>
<tr>
<td>100%</td>
<td>Virtually no pigmented hair; tends to look white</td>
</tr>
</tbody>
</table>

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• Color is the property of objects that depends on the light they reflect. It is perceived as red, green, blue, or other shades.

• Base color is the predominant tone of a color.
Law of Color

• 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 make violet.
  – Equal parts of blue and yellow make green.
  – Equal parts of red and yellow make orange.
Primary Colors

- Blue
- Red
- Yellow
Secondary Colors

- Green
- Orange
- Violet
Tertiary Colors

- Blue-green
- Blue-violet
- Red-orange
- Yellow-orange
- Yellow-green
Complementary Colors

• Blue and orange
• Red and green
• Yellow and violet
Tone or Hue

• Tone or hue: balance of color
  – Warm: golden, orange, red, yellow
  – Cool: blue, green, violet

• Intensity: strength of color tone
### Categories of Haircolor

<table>
<thead>
<tr>
<th>Classifications</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporary color</td>
<td>Creates fun, bold results and easily shampoo from the hair. Neutralizes yellow hair.</td>
</tr>
<tr>
<td>Semipermanent color</td>
<td>Introduces a client to haircolor services. Adds subtle color results. Tones prelightened hair.</td>
</tr>
<tr>
<td>Permanent haircolor</td>
<td>Changes existing haircolor. Covers gray. Creates bright or natural-looking haircolor changes.</td>
</tr>
</tbody>
</table>
Temporary Color

- Does not penetrate cuticle layer
- Coats hair shaft
- Neutralizes unwanted tones
- Available in variety of colors and products
Traditional Semipermanent

- Lasts through several shampoos
- Penetrates hair shaft; stains cuticle layer
- Fades with each shampoo
- Non-oxidation
- Used out of bottle; requires patch test
Demipermanents

- Deposits color; does not lift
- Requires high pH for decolorization
- Ideal for:
  - Introducing hair color services
  - Blending or covering gray
  - Refresh faded color
  - Color corrections
Permanent Haircolor

- Used to match and lighten hair, and to cover gray hair
- Contains ammonia, oxidative tints, and peroxide
- Contains aniline derivatives
- Combine with $\text{H}_2\text{O}_2$ to form larger molecules
- Removes natural pigment while adding artificial color
- Best to cover gray
Permanent Haircolor Action
Gradual Haircolor

- Gradual haircolors, also known as metallic haircolors, contain metal salts that change hair color gradually by progressive buildup and exposure to air, creating a dull, metallic appearance.
Natural Haircolor

- From leaves or bark of plants
- No lightening
- Limited shade range
- Professional products cannot be applied over
Hydrogen Peroxide Developers

- Oxidizing agents or catalysts
- pH between 2.5 and 4.5
- $\text{H}_2\text{O}_2$ most common
- Volume
  - Lower volume, less lift
  - Higher volume, greater lift
# Hydrogen Peroxide Volume and Uses

<table>
<thead>
<tr>
<th>Volume</th>
<th>When to Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-Volume</td>
<td>Used when less lift is desired, to enhance a client’s natural hair color.</td>
</tr>
<tr>
<td>20-Volume</td>
<td>Standard volume; used to achieve most results with permanent haircolor and used for complete gray coverage.</td>
</tr>
<tr>
<td>30-Volume</td>
<td>Used for additional lift with permanent haircolor.</td>
</tr>
<tr>
<td>40-Volume</td>
<td>Used with most high-lift colors; provides maximum lift in a one-step color service.</td>
</tr>
</tbody>
</table>
Lighteners

- Lighten prior to color application
- Lighten to a desired shade
- Lighten and brighten existing shade
- Lighten only certain parts of hair
- Lighten dark natural or color-treated levels
The Ten Degrees of Natural Hair Decolorization

1. Dark red/brown
2. Red brown
3. Red
4. Red/orange
5. Orange
6. Orange/gold
7. Gold
8. Yellow/gold
9. Yellow
10. Pale yellow
Contributing Pigment

- Decolorize to appropriate level.
- Apply new color.
Toners

- Traditional semipermanent, demipermanent, and permanent haircolor products that are used primarily on prelightened hair to achieve pale and delicate colors
Lifting Past Pale Yellow

- Hair will become mushy.
- Hair will lose elasticity.
- Hair will be harsh and brittle when dry.
- Hair will often suffer breakage.
- Hair will often not accept toner.
Consultation

- Book 15 minutes of additional time.
- Have client fill out record card.
- Conduct in proper lighting.
- Look at client directly.
- Recommend two options.
- Be honest.
Consultation (continued)

- Gain approval from client.
- Start haircolor service.
- Educate client regarding home-care maintenance.
- Complete record card.
## Client Service Record Card

### Hair Color Service Record Card

<table>
<thead>
<tr>
<th>Name</th>
<th>Tel.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Day</td>
</tr>
<tr>
<td>Patch Test:</td>
<td>Date</td>
</tr>
<tr>
<td>Eye Color</td>
<td>Skin Tone</td>
</tr>
</tbody>
</table>

### Description of Hair

<table>
<thead>
<tr>
<th>Form</th>
<th>Length</th>
<th>Texture</th>
<th>Density</th>
<th>Porosity</th>
</tr>
</thead>
<tbody>
<tr>
<td>straight</td>
<td>short</td>
<td>coarse</td>
<td>low</td>
<td>very resistant</td>
</tr>
<tr>
<td>wavy</td>
<td>medium</td>
<td>medium</td>
<td>medium</td>
<td>resistant</td>
</tr>
<tr>
<td>curly</td>
<td>long</td>
<td>fine</td>
<td>high</td>
<td>high</td>
</tr>
</tbody>
</table>

### Natural Hair Color

- Level: (1-10)
- Time: (Warm, Cool, etc.)
- Intensity: (Light, Medium, Strong)

### Scalp Condition

- Normal
- Dry
- Oily
- Sensitive

### Conditioner

- Normal
- Dry
- Oily
- Frizzled
- Streaked (攻关)

### Previously Lightened with

- For (time)

### Dyed or Tinted with

- For (time)

### Original Hair Sample Enclosed

- Original hair sample not enclosed

### Corrective Treatments

- **Colored hair used:** Conditioning treatment with

### Hair Testing Process

- **Shade:**
- **Type:**
- **Technique:**
- **Application Technique:**

### Results

- **Good**
- **Poor**
- **Too Light**
- **Too Dark**
- **Smoked**

### Comments

- 
- 
- 
- 
- 

<table>
<thead>
<tr>
<th>Date</th>
<th>Operator</th>
<th>Price</th>
<th>Date</th>
<th>Operator</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
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Release Statement

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.

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Four Basic Questions

• What is natural level?
• What are desired level and tone?
• Are contributing pigments revealed?
• What colors should be mixed?
Deposit and Lifting Ability

- The combination of the shade selected and the volume of hydrogen peroxide determines the deposit and lifting ability of a haircolor.
Mixing Permanent Haircolor

• Applicator bottle: Bottle must be large enough for color and developer; mix according to manufacturer’s directions.

• Brush and bowl: Use nonmetallic bowl. Pour developer first, then product; blend thoroughly.
Double-Process Haircolor

• Hair Lightening – bleaching or decolorizing.
• Double-process high-lift coloring – two step blonding.
• Prelightening – applied the same as hair lightening.
Three Types of Lighteners

• Oil
  – On-the-scalp lightener

• Cream
  – On-the-scalp lightener

• Powder
  – Off-the-scalp lightener

• **Activators**: increase lightening ability
On-the-Scalp Lighteners

- Mildest
- Appropriate for one to two levels of lift
- Give some protection to hair and scalp
- More control from thickeners
- Help prevent overlapping
Powdered Off-the-Scalp Lighteners

- Not applied to scalp
- Strong enough for blonding
- Called quick lighteners
- Contain oxygen-releasing boosters
- Dry out more quickly than other lighteners
- Expand and spread out during processing
Time Factors for Processing

• Darker hair has more melanin and takes longer to lighten.

• Porosity influences timing.

• Tone influences timing.

• Strength of product influences timing.

• Heat leads to quicker lightening.
Preliminary Strand Test

- Watch for discoloration or breakage.
- Reconditioning may be required.
- Increased strength or processing time may be required.
- Patch test is required 24 to 48 hours in advance of application.
Lightener Retouch and Using Toners

- Lighten new growth first.
- Proceed as for virgin lightener, except apply product to new growth only.
Highlighting

• Color some strands lighter than natural color
• Adds variety of lighter shades and illusion of depth
• Does not contrast strongly with natural color
• Light colors cause the light to advance toward the eye, to appear larger, and to make details more visible.
Reverse Highlighting

- Called lowlighting
- Some strands colored darker than natural
- Receding, smaller appearance of dark areas
Cap Technique

• This technique involves pulling clean strands of hair through a perforated cap with a thin plastic or metal hook. The number of strands pulled through the cap determines the degree of highlighting achieved.
Cap Strategies

• Lighten with powder (off-the-scalp) lightener.
• Begin in most resistant area.
• Cover while processing.
• Rinse thoroughly and shampoo.
• Towel-blot and condition.
• Tone if desired.
Foil Technique

• This technique involves coloring selected strands by slicing or weaving out sections, placing them on foil or plastic wrap, applying lightener or permanent haircolor, and sealing them in the wrap.
Foil Technique (continued)

• Slicing: involves making a straight part at scalp, positioning a narrow 1/8-inch section of hair over foil, and applying lightener or color
Foil Technique (continued)

- Weaving: involves selecting strands that are picked up using a zigzag motion of the comb
Baliage

- **Baliage**: involves painting product onto clean, styled hair; also known as the free-form technique
Toning Highlighted and Dimensionally Colored Hair

• Decolorize to desired level.

• Consider porosity and pigmentation.

• Avoid affecting untreated hair.
  – Use nonoxidative toner.
  – Use traditional semipermanent color.
  – Use no-lift, deposit-only demipermanent color that will not cause additional lightening.
Highlighting Shampoos

- Used when slight change in color is desired
- Used when hair processes rapidly
- Used to highlight natural color in a single application
Gray Hair Challenges

• Gray hair can turn orange if lightener is not processed long enough.
Yellow Discoloration Causes

- Smoking
- Medication
- Sun exposure
- Some styling aids
Formulating for Gray Hair

• Level 9 or lighter may not give complete coverage.

• Level 7 or darker can be used to create pastel and blond tones.

• For 80 percent to 100 percent natural gray, blond is more flattering than darker tones.

• When coloring salt and pepper to darker, color on color will make darker shade.
### Formulating for Gray Hair (continued)

<table>
<thead>
<tr>
<th>Percentage of Gray Hair</th>
<th>Semipermanent/ Demipermanent Color Formulation for Gray Hair</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>desired level</td>
</tr>
<tr>
<td>70-90%</td>
<td>equal parts desired and one level lighter</td>
</tr>
<tr>
<td>50-70%</td>
<td>one level lighter than desired level</td>
</tr>
<tr>
<td>30-50%</td>
<td>equal parts one and two levels lighter</td>
</tr>
<tr>
<td>10-30%</td>
<td>two levels lighter than desired level</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of Gray Hair</th>
<th>Permanent Color Formulation for Gray Hair</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>desired level</td>
</tr>
<tr>
<td>70-90%</td>
<td>two parts desired level and one part lighter level</td>
</tr>
<tr>
<td>50-70%</td>
<td>equal parts desired and lighter level</td>
</tr>
<tr>
<td>30-50%</td>
<td>two parts lighter level and one part desired level</td>
</tr>
<tr>
<td>10-30%</td>
<td>one level lighter</td>
</tr>
</tbody>
</table>

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More Gray Hair Considerations

- Client personality
- Personal preferences
- Amount and location of gray hair
Tips for Gray Coverage

- Use 20 volume developer.
- Process color for full 45 minutes.
- Add neutral to formula.
- If 25 percent gray, use 25 percent neutral.
- If 50 percent gray, use 50 percent neutral.
- If 75 percent gray, use 75 percent neutral.
Presoftening

• Apply presoftener to resistant area.
• Process 15 minutes.
• Refer to manufacturer’s directions.
• Blot presoftener off with towel.
• Apply final color formula.
• Process according to instructions.
Rules for Effective Color Correction

- Do not panic.
- Determine true problem.
- Determine cause of problem.
- Develop a solution.
- Take one step at a time.
- Never guarantee results.
- Always strand-test for accuracy.
Damaged Hair Characteristics

• Rough texture
• Overporous condition
• Brittle and dry to touch
• Susceptible to breakage
• No elasticity
• Spongy and matted when wet
• Color fading or absorbing too rapidly
Damaged Hair Treatments

• Use penetrating conditioner.
• Normalize pH with finishing rinse.
• Postpone further chemical services.
• Perform between-service conditioning.
• Recommend retail products for home maintenance.
Fillers

- Conditioner fillers: used to recondition damaged, overly porous hair
- Color fillers: used to equalize porosity and deposit color in one application
Advantages of Color Fillers

• Deposit color to faded ends
• Help hair hold color
• Prevent streaking and dull appearance
• Prevent off-color results
• Produce more uniform color
• Produce more uniform color when coloring hair back to its natural color
Selecting Correct Color Filler

- Select to replace missing primary color.
- Apply directly to hair or mix with haircolor and apply to damaged ends.
Tips for Redheads

• Use red-orange base to create warm, coppery reds.
• Use red-violet for hot, fiery reds.
• Use no-lift, deposit-only color to refresh.
• If gray is present, add 1/2 to 1 oz of a natural color.
• Refresh with a soap cap to brighten color.
Tips for Brunettes

• Use cool blue base to avoid brassy tones.

• Do not lighten more than two levels above natural color to avoid brassy tones.

• Add 1 oz of natural color to cover gray.

• Natural highlights should be deep or caramel colored.
Tips for Blonds

• Watch out for underlying, unwanted warm tones when lightening from brown to blond.

• Use level 7 or darker to cover gray.

• Get light pale blond by double-processing.

• If using high lift blonds to only 5 levels, results may be warm or brassy.

• If highlights become too blond, add lowlights for more natural color.
Common Haircolor Solutions

- Refresh faded color: Apply a demipermanent haircolor within two levels of formula and process for up to 10 minutes.
- Green cast: Remove buildup and use color to neutralize unwanted color.
- Overall color is too light: Apply a no-lift, deposit-only color that is one to two levels darker.
- Overall color is too dark: Apply a haircolor remover for 10 minutes and check.
Tips for Restoring Blond to Natural

• If level 6, soften new growth with level 6 violet base and 20 volume developer. Process 20 minutes.

• If level 7, soften new growth with level 8 light blond-violet base and 20 volume developer. Process 20 minutes.
Tips for Restoring Blond to Natural (continued)

- Apply no-lift, deposit-only glaze with 1 oz level 8 light neutral blond and 1 oz level 9 very light blond red-orange base. Process process 20 minutes.

- Do not apply to new growth.

- Mix a no-lift, deposit-only glaze with 1-1/2 oz level 6 dark neutral blond and 1/2 oz level 4 light brown gold base.
• If level 8 light violet blond at base, use 1-1/2 oz level 8 light neutral blond with 1/2 oz level 6 dark golden blond.

• Apply chosen formula, starting where most overlightened.

• Work color through all hair.

• Process up to 20 minutes, checking every 5 minutes, and then reevaluate.
Safety Precautions

- Administer patch test.
- Do not apply if abrasions are present.
- Do not apply if metallic or compound tint is present.
- Do not brush hair prior to service.
- Read and follow all manufacturer’s directions.
Safety Precautions (continued)

- Use disinfected applicators and tools.
- Drape properly.
- Perform strand test.
- Use glass or plastic bowl or plastic bottle.
- Wear protective gloves.
- Do not let color get in eyes.
Safety Precautions (continued)

- Do not overlap product during retouch.
- Use mild, acid-balanced shampoo.
- Always wash hands before and after serving each client.
Practical Procedures

- Pre-Service Procedure
- Post-Service Procedure
- Patch Test Procedure
- Preliminary Strand Test
- Temporary Haircolor
- Semipermanent Haircolor
Practical Procedures (continued)

• Single-Process Color on Virgin Hair
• Permanent Single-Process Retouch with Glaze
• Lightening Virgin Hair
• Toner Application
• Special Effects Hair Coloring with Foil (Full Head)
Summary and Review

• Why do people color their hair?
• How does the hair’s porosity affect haircolor?
• How many types of melanin are found in hair? Describe each.
• What are levels? What does the level system help determine when formulating haircolor?

• Name the primary, secondary, and tertiary colors.

• What is the role of tone and intensity in haircolor?

• Describe each category of haircolor.
Summary and Review (continued)

- How does hydrogen peroxide developer work in a haircolor formula?
- What are the four key questions to ask when formulating a haircolor?
- Why is a patch test useful in haircoloring?
- What is a preliminary strand test and why is it used?
• Explain the action of hair lighteners.

• What is the procedure for a virgin, single-process color service?

• What are the two processes involved in double-process haircoloring?

• Name and describe the various forms of hair lightener.

• What is the purpose of toner and when is it used?
Summary and Review (continued)

- What are three commonly used methods for highlighting? Describe each.
  - List seven tips for achieving gray coverage.
  - List the rules of color correction.
  - List five safety precautions to follow during haircoloring.
Congratulations!

You have completed one unit of study toward course completion.