

E-HAIR COLLEGE

- 1. Read Chapter in Salon Fundamental textbook.**
- 2. Complete study guide.**
- 3. Read these additional notes.**
- 4. For review go to Practice online and review quizzes, puzzles.**
- 5. Study and complete Test**

LESSON #14 Chemical Texturizing

- The history of permanent waving.
- The steps in hair analysis.
- The steps in client consultation.
- Permanent wave theory.
- Tools, product and supplies required for permanent waving.
- Wrapping patterns.
- The steps in performing a permanent wave on short hair.
- Infection control.

HISTORY OF PERMING

In the earlier years permanent waving was very crude and not very permanent. Mud was used in the Egyptian days and left to dry on the hair. After years gone by a machine method of permanent waving was invented.

In 1905 Charles Nessler invented the first permanent wave machine. The spiral permanent wave was the first method used. It involved winding the hair from the scalp to the ends and was suitable for long hair.

The croquignole method was introduced in 1926 to meet the needs of short hair. It required the hair be wound from the ends to the scalp. A combination spiral and croquignole permanent wave soon came into vogue. The crown of the head was given a spiral wave, to take care of the longer hair; while the rest of the head was wound in the croquignole.

In 1938- 1940 Arnold F. Willat invented the first cold wave. Cold waving employs no heat and no machines. Cold waving has made considerable progress both to materials and techniques used. Cold waving is now called alkaline perms, the same method is still being used today but the products are much better and easier on the hair.

In the 1970's acid waves hit the market. They were much milder and did not contain ammonia but require some type of heat source. This made them very popular and is still used today.

Exothermic perms were next; they are self timing perms and self heating. They range from acid to alkaline depending on the manufacturer.

Perm technology and products are continually evolving. As a professional cosmetologist, it is your responsibility to stay current with the latest technology and products and always follow the manufacturer's directions.

HAIR / SCALP ANALYSIS

PROPERTIES OF THE HAIR

POROSITY: The ability of the hair to absorb moisture. If the hair is too porous it will absorb product too quickly and damage the hair. Chemicals should not be used on over porous hair. The following is a ruffle test to determine if the hair is porous or not and to what degree.

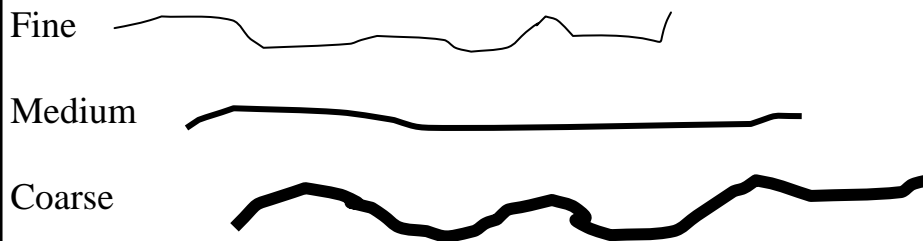
When the hair does not ruffle the cuticle is closed and the hair is healthier.
When the hair ruffles the hair is very porous and will absorb lotions too fast and cause damage to the hair.



ELASTICITY: The ability of the hair to be stretched and return to its original condition without breaking. If hair breaks easily you should not perm the hair. The wave will be weak and breakage will occur.



TEXTURE: Is classified as fine, medium or coarse. Fine hair will need a mild solution since it does not have as many cuticle layers and tends to be weaker. Medium texture is your average head of hair and coarse hair is usually resistant and takes longer to process. A stronger perm would be used.



DENSITY:

Density is the number of hairs per square inch of the head. When sectioning and wrapping the hair if the hair is thin you will require fewer products and take less time. If the hair is thick you will require more products and more time to wind the hair.

Thin or thick refers to the whole head not just one hair. A person could have fine hair and be very thick.

Manufacturer's have labeled their perms according to hair texture, porosity, and desired curl. With correct hair analysis the choice of permanent wave solution for your client will be more accurate.

Scalp Analysis

Look for scalp abnormalities such as cuts, abrasions, scratches, sores, or moles. If you find these irregularities, postpone the chemical texturizing for another time. If the skin is sensitive on the hairline and the scalp or the client has skin allergies suggest an alternative to chemical texturizing.

CLIENT CONSULTATION

1. Introduce and call client by name, shake hands firmly and have a pleasant tone.
2. Discuss the client's options; listen to what they have to say and begin by showing her some pictures.
3. Ask client what type of texture they want in their hair and explain the maintenance they will have to do at home.
4. Have client fill out record card and sign release form.
5. Examine answers the client has put down, examine past history with permanent waves.
6. Complete a full hair and scalp analysis.
7. Analyze face, head and body shape to determine if a chemical texturizing will suit the client. If they have a small head and the hair is too large they will lose their features and all you will see is hair.
8. After completion offer appreciation to your client for visiting the school or salon. Complete all important information on the record card for future services and file in a secure area with other record cards.

CLIENT CHEMICAL REFORMATION/RELAXER RELEASE FORM

Name _____ Phone Number _____
 Address _____ City, State, Zip _____

I request a relaxer and I fully understand that this service is to
 be given by a student of cosmetology at Your Name Beauty School.
 I hereby express my willingness for a student to do this work. I furthermore
 understand that I will assume full responsibility thereof.

Your Name Beauty School

Witness _____ Client Signature _____
 Date _____ Date _____

CLIENT CHEMICAL REFORMATION/RELAXER RECORD CARD

Date	Wrap	Rod Size	Products	Process Time	Results
			Booster		<input type="checkbox"/> Good <input type="checkbox"/> Poor <input type="checkbox"/> Too Tight <input type="checkbox"/> Too Loose
			Reformation		

Description of Hair

Length	Density	Texture	Porosity	Tress-Tester Results	Test Curl Results
•Short	•Light	•Fine	•Average	•Strength _____	•Negative
•Medium	•Medium	•Medium	•Resistant	•Stretch _____	•Positive
•Long	•Heavy	•Coarse	•Extreme Porosity		

Medications _____

Vitamins _____

Comments _____

Home Care _____

Price of Service \$ _____

Signature of Student _____ Signature of Instructor _____

CLIENT CHEMICAL PERMANENT RELEASE FORM

Name _____ Phone Number _____
 Address _____ City, State, Zip _____

I request a permanent and I fully understand that this service is to
 be given by a student of cosmetology at Your Name Beauty School.
 I hereby express my willingness for a student to do this work. I furthermore
 understand that I will assume full responsibility thereof.

Your Name Beauty School

Witness _____ Client Signature _____
 Date _____ Date _____

CLIENT CHEMICAL PERMANENT RECORD CARD

Date	Wrap	Rod Size	Products	Process Time	Results
					_____ Good _____ Poor _____ Too Tight _____ Too Loose

Description of Hair

Length	Density	Texture	Porosity	Tress-Tester Results	Test Curl Results
•Short	•Light	•Fine	•Average	▪Strength _____	•Negative
•Medium	•Medium	•Medium	•Resistant	▪Stretch _____	•Positive
•Long	•Heavy	•Coarse	•Extreme Porosity		

Medications _____

Vitamins _____

Comments _____

Home Care _____

Price of Service \$ _____

Signature of Student _____ Signature of Instructor _____

Permanent wave theory

Chemical Phase

1. Applying perm lotion
2. Applying neutralizer
3. Rinsing the hair.
4. Bonds changing and taking new forms around rod.

Physical Phase

1. Placing end papers in hair.
2. Placing perm rods in hair
3. Wrapping hair around rods.
4. Towel blotting.

Chemistry of perms:

1. Client's hair is wrapped around perm tools chosen to reflect the desired curl pattern.
2. The waving lotion is applied to break disulfide bonds. This softens the protein structure and allows the protein chains to assume the shape of the perm tool.
3. Rinsing removes the perm lotion.
4. A second chemical, the neutralizer (also called rebonding lotion) reforms the disulfide bonds into the new configuration. The resulting chemical change in the hair holds the hair in its new position.

Two types of waves

1. Alkaline wave (cold wave) which are processed without heat and have a pH of approximately 8.0 -9.5.
2. Acid waves (heat waves), which are processed with heat and must be wrapped with tension. Acid waves have an approximate pH of 6.9 to 7.2.

Alkaline waves have a main ingredient of thioglycolic acid or its derivatives and ammonium hydroxide. Ammonium hydroxide is added to the formula to shorten the processing time. It is also responsible for the swelling of the hair during processing. This process makes it easier for the thioglycolic acid to penetrate the hair structure and break the disulfide bonds. The processing time is from the time the lotion is applied to the hair until it is rinsed off.

The **acid wave** contains an ingredient called glycerol monothioglycolate. This lotion is slower in processing and less damage occurs. The acid wave usually requires heat from the body or a hairdryer to assist in the processing this is called **endothermic**.

Exothermic perms are self timed and self heating. An additive that created heat through a chemical reaction was mixed with the perm solution. The timing has to be accurate since they quit working after a certain length of time or when they cool off.

Neutralizers contain hydrogen peroxide, sodium perborate or sodium bromate. All three ingredients can cause additional damage to the hair if left on the hair longer than required. Color lifting can also occur from the peroxide based neutralizers. Recommend that the client colors her hair after a perm not before. The waiting time is approximately one week. The hair should be free of chemicals by this time and adding new chemicals from hair colors should not react after a couple of shampoos.

Relaxers

A **chemical relaxer** reduces curl in excessively curly or wavy hair by changing its molecular structure.

The reforming (relaxing) product is usually purchased in a heavy cream base and applied to the hair. The cream holds onto the hair and straightens hair. A pressing or rubbing action assists in straightening the hair, some people will use a large tooth comb to comb the hair through, it is better not to comb the hair too much it is in a weakened state and could break.

The **neutralizer** which is the bonding; or second step in the relaxer utilizes neutralizing shampoo or lotion to reduce the swelling caused by alkaline formulas. The chemical change causes the hair to be held in the new straight position.

Two products used to relax hair

1. Sodium hydroxide formulated with 2% to 4% sodium hydroxide in a heavy cream base with an alkaline pH of 11.5-14.
2. Ammonium thioglycolate formulated with 4% to 6% thioglycolic acid or its derivatives with 1% ammonium hydroxide and an 8.8 to 9.5 pH. A cream base is usually added.

Products and supplies required for permanent waving.

Rod types

Concave are most commonly used with the croquinole which is wrapping the hair from the ends to the roots or scalp. The concave rod produces a tighter curl in the center and a looser, larger curl on either side of the strand. To create a consistent curl the hair should wrap around the rod 2.5 times.

Straight rods also used for croquinole wrapping but the center of the rod is straight. Produces uniform curls.

Spiral rods are wrapped from the ends to the scalp in a spiral wrap, longer specialized perm rods may be used.

Soft bender rods are usually about 12 inches long with a uniform diameter along the entire length. They have a stiff inner wire that allows them to take on a variety of shapes.

End papers come in a variety of sizes and are used to control the hair ends and keep the hair smoothly wrapped around the perm tool.

End paper techniques

Double flat wrap uses two end papers, one is placed under and one over the hair section and extend past the hair ends. This technique is used for hair that may not be even in length.

Single flat wrap uses one end paper placed over top of the section of hair and past the hair ends. This wrapping technique is rarely used.

Book end wrap uses one end paper folded in half over the ends like an envelope. Pre-folded wraps are larger so they can be folded without bunching the hair. They are pulled down past the hair ends. These wraps are used quite often in the salon.

Base size for perm rods

The area between two partings for an individual perm rod is called a **base**, panel, blocking or subsection. The base should not be longer than the perm rod. The length minus ¼ in. on either side of the rod is a common measurement. The diameter of the rod is used for an on base curl. Each color of rods has a different diameter. The wider the base size the straighter the scalp area.

Tool position

On base is a one diameter base size section directed back 45 degrees and placed between the two partings to create high volume.

Half off base is a one diameter base size section held at 90 degrees to create a half off base. The base size can create a maximum amount of curl from the scalp to the ends. The rod sits half on and half off its base.

Off base is a one base size section held at a 45 degree angle forward and placed at the bottom of the base. This will create no curl at the scalp and create minimal degree of volume and a curl pattern concentrated on the midstrand and ends.

Over directed or under directed bases sizes may be used for a variety of designs. The bases will vary from one and a half size to 2 diameters in width. Hair may be held at 30 to flat on the head to create new direction in the hair. These custom perms may complement a haircut and help to support the style.

Perm solutions reduce the disulfide bonds so hair can assume new shape to rod.

Neutralizer fixes, locks in, and restores bonds to make new shape of hair.

Protective cream protects the skin around the hairline from burns or chemical reaction.

Applicator bottle controls and applies perm solution or neutralizer.

Perm rods determine the size and shape of new curl configuration.

Plastic shampoo cape protects client from chemicals and protects the client's clothing.

Cloth towels absorb and remove water, perm solution and neutralizer through blotting.

Perm bib/ neutralizing cape catches excess chemicals as they run off the scalp; protects client from getting wet when rinsing.

Cotton strips protect client's face from chemicals when applied around hairline.

Plastic sectioning clips holds hair in place and out of the way when wrapping the hair in rods. Metal clips will rust if the perm lotion touches it.

Styling comb controls, distributes and parts the hair to be wrapped within a section.

Tail comb parts off sections of hair and individual bases when wrapping.

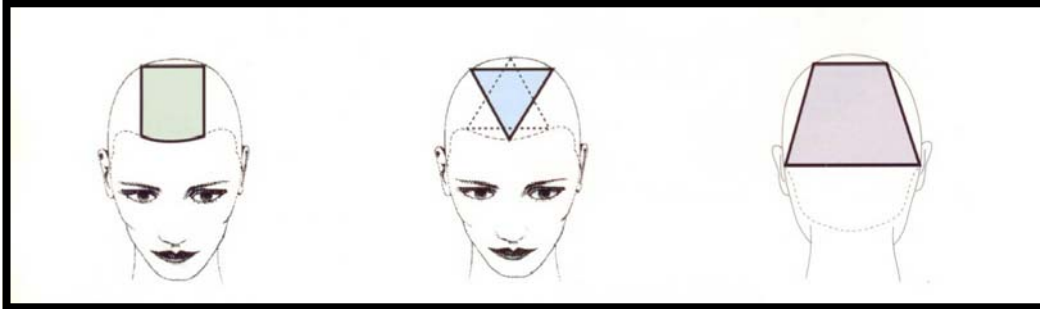
Spray bottle holds water used to keep hair damp for more control of hair while wrapping.

Protective gloves shield stylist's hands from chemicals during processing. Gloves are not necessary unless you have allergy problems.

Timer alerts stylist to check for test curls, processing and neutralizing times as recommended by the manufacturer.

Wrapping patterns.

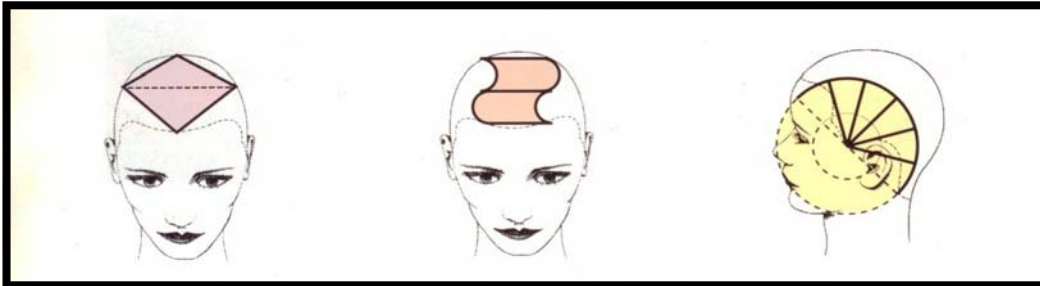
Wrapping patterns are determined by the client's hairstyle that you are designing for them, specialty patterns enhance the looks you create.



RECTANGLE

TRIANGLE

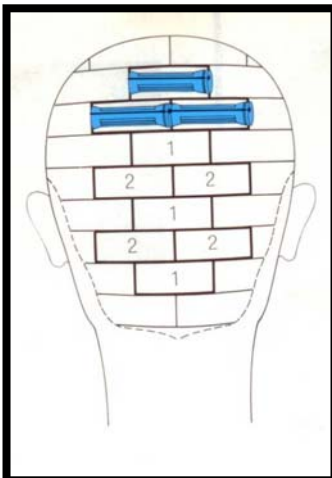
TRAPEZOID



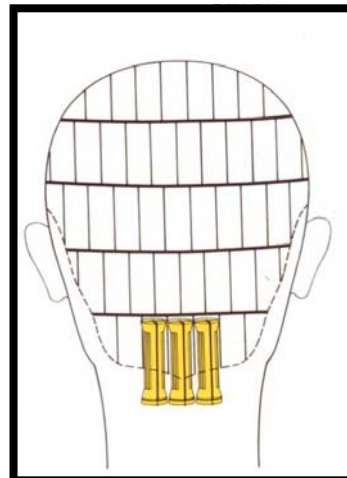
DIAMOND

OBLONG

CIRCLE



BRICKLAY
PATTERN



VERTICAL
PATTERN

Basic steps for a perm wrap on short hair

1. Perform client consultation.
2. Perform hair and scalp analysis.
3. Fill out record card.
4. Shampoo the hair with a clarifying shampoo to remove all sprays and gels from the hair. Do not apply conditioner to the hair; it will block the perm lotion from penetrating the hair.
5. Take client back to station and towel dry hair.
6. Decide on wrapping pattern and perm rod size.
7. Section and subsection the hair and begin wrapping the hair.
8. Secure rod with picks if necessary and when going against gravity.
9. Determine bases and check sections for base direction.
10. Elastics should not be twisted or breakage may occur.
11. Follow the selected wave pattern; use this technique for the rest of the head. Complete the wrapping.
12. Apply protective cream around hairline.
13. Wrap cotton around hairline twice. Don't forget to replace cotton after the lotion has been applied. Keep your towels and cotton dry at all times to prevent chemical burns.
14. Apply perm lotion across the top of the perm rod three times.
15. Follow manufacturer's directions for timing, processing and use of plastic cap.
16. Set a timer.
17. In the school the teachers will require that you have them check the perm after rod placement, perm selection and test curls every 5 minutes. Follow the teacher's directions if this is your first perm.
18. Take a test curl every five minutes unless you have a record card or teacher that tells you differently. If the curl has spiraled or an "S" formation has been achieved the client's hair is ready to rinse off.
19. Rinse for five minutes, towel blot until the hair is damp.
20. Apply neutralizer to each rod three times across the top of the rod.
21. Set a timer; follow manufacturer's direction for timing of neutralizer. Some companies will have you save some neutralizer and run it through the hair after you have removed the rods.
22. When time is up rinse hair and remove rods, take the end papers off at the same time as the perm rod.
23. Run extra neutralizer through hair and rinse the hair again.
24. Place towel on client's head and towel blot.

25. Clean sink area and take all tools with you back to your station, other people may need to use the sink and it should be clean and sanitized before you go back to your station.
26. Use a pick or large tooth comb to comb the hair after a permanent wave. The hair is curly and will tangle if the teeth of the comb are too small.
27. Style the hair as the client wishes. Some people do not recommend stretching the hair with a brush and blow dryer after a fresh perm; this can sometimes cause the hair to become frizzy. The hair is permanently changed. The hair will not lose any of its curl. It is recommend allowing the hair to dry naturally or place client under a hood hairdryer and then use a hot brush. This technique does not create damage to the hair.
28. Cutting the hair prior to the perm is acceptable as long as you don't cut it to short. The rods must wrap around the hair 2.5 times. Doing a precut or rough cut prior to perming and then doing a finished cut after is also acceptable.
29. Offer to rebook your client for a trim or style before they leave.
30. Suggest some retail products for home maintenance of their freshly permed hair.
31. Disinfect your station and tools and wash your hands with anti-bacterial soap.

Infection control.

1. Protect client's clothing and have them keep their jewelry in their purse or pocket.
2. Complete record card and if client has allergies do a test perm rod first. If allergies are bad do not use chemicals on her hair or scalp, suggest a different style that does not involve a permanent wave.
3. Discard unused products, do not save extra perm lotion or neutralizer when the air gets to it, it loses strength.
4. Protect yourself and wear gloves or protective barrier cream

- on your hands.
5. Do a thorough hair and scalp analysis and a full consultation.
 6. Avoid perming damaged hair that shows breakage. If hair is dry, brittle or over porous recondition first. Cut off damaged hair ends and select a mild perm formula.
 7. Keep solution away from skin and eyes; use an eye wash if client gets some in her eye.
 8. Always follow manufacturer's directions.
 9. Never perm hair that has been treated with a sodium hydroxide or a no-lye relaxer.
 10. Perform test for metallic salts, if the hair has been colored with a metallic color the hair will lighten rapidly; solution may get hot and give off an unpleasant odor and may dissolve. To test this cut a small piece of hair from underneath and place it in a glass bowl with some perm solution if any reaction occurs do not perm the hair.
 11. Always use a protective cream around the hairline and change the cotton and towels frequently.