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Making Waves: Perms from Then to Now Angelica Jungbluth

CE CREDIT: 8 HOURS

This material is provided for licensed cosmetologists. Reading the material and practicing the steps for safe services on a mannequin or model should take 8 hours.

Learning Objectives

At the end of this course, the licensee will be able to:

- Recognize historical highlights pertaining to permanent waves
- Identify and troubleshoot elements of common perms
- Distinguish between modern permanent wave options

Course Outline

I. Introduction

II. History

III. Back to Basics – A Review

The Consultation; Safety Precautions; Pre-Perm Shampoo; Rod Placement, Wrapping, and End Papers; Types of Perm; Types of Perm Rods; Sectioning; Processing Time; Neutralizing; Problems and Solutions

IV. Today's Permanent Waves

Modern Options; Perms for Men; Relaxers

V. Conclusion

Introduction

Haven't we been through enough years of hair that is poker straight?

I know – I say "perms," and you start having 1980's flashbacks, right? "The bigger the better," and "the higher the hair the closer to God," with tight, brittle waves, lots of extra volume, curly bangs, tons of hairspray and maybe a headband or a scrunchie. Sure, it worked at the time for stars like Julia Roberts, Olivia Newton John, Barbra Streisand, and even the queen of pop - Madonna. But that look is long gone.

Or is it? We're seeing increasing interest in what some salons are calling the "new-wave" or "modern" perm: the beachy look, showcasing tousled, effortless-looking waves. You could catch it on Julianne Hough in 2016 and Emma Stone in 2018, and now it's turning up on nearly every red carpet: notably, Gucci had a number of curly-haired models walking in their spring/summer 2019 shows.

What's changed? When the perm first became a thing, our options were limited, and the result was pretty much one size fits all. By contrast, today's approach is individual and unique. For starters, it can be done with much larger rods, to create a looser and softer bend to the hair. Also, it can incorporate varying techniques: for example, the top half of the hair can be straighter, with the bend starting at the mid length and flowing down to the ends. Rather than creating a tight curl (that then needs to be blow-dried out), the modern perm achieves a soft bend without adding additional heat and styling time. It leaves the hair in a more natural, lived-in state – with added volume.

So now, if you have clients who are interested in adding volume and enhancing the hair's natural texture, spending less time styling the hair on a daily basis, and even letting the hair air dry rather than having to blow dry... the answer may be a perm. As a result, a number of salons are adding permanent waves to their service menus – even though the stylists may have not done them in quite awhile. That makes this the perfect time to review the basics, and also consider some new ideas.

History

As long as people have had hair, they have been looking for ways to improve and change it. To fully appreciate the perms of the present, let's reflect on the past.

Ancient paintings and carving show us that having curls was fashionable in many cultures – and curling irons of one form or another have been around for just as long. Babylonian and Assyrian men, for example, used heated irons to add curl to their hair and beards; likewise, nobility in Persia and Greece used heated bronze or iron rods to style their hair. Egyptian nobility, by contrast, mostly trimmed their hair close or shaved their heads entirely – but wore highly braided and curled wigs for special occasions like ceremonies, using tools like this one.



The tool pictured above, made of iron or bronze, was called a curling tong. It was heated over a fire, and hair was then wrapped around it to create the curls. While it was used, pretty much unchanged, for centuries, it wasn't the safest method: it easily damaged the hair, or even burned it completely, as the temperature control was minimal at best.



A man of French descent named Marcel Grateau (also referred to as Francois R. Marcel, Francois Marcel Grateau, and Francois Marcel Woelffle) invented the very first long-lasting hair waving technique in the 1870's. After experimenting with new ways to use heat and an iron to curl hair, he created a special pair of tongs – one convex and the other concave, so that one fitted into the other. He heated the tongs on a gas flame, then applied them to the hair, creating a two-dimensional wave (similar in appearance to the finger wave). Later called (you guessed it) the Marcel wave, the style would stay in unwashed hair for days.



Marcel's salon in Montemarte, France served mostly the poorer classes, so he initially offered the wave for free in order to find clients to practice on. As the popularity of the hairstyle spread, more women wanted their hair "marcelled," and he began to charge for the service. He finally received massive publicity when he styled the hair of popular actress Jane Hading. The look remained fashionable through the 1920's and has enjoyed bursts of popularity since, as well: variations exist to this day.

While the first patent for a curling iron device was actually obtained by Hiram Maxim in 1866, Grateau is often credited with inventing it, due in large part to his tongs' popularity. True, temperature control remained minimal – the tongs were applied to a piece of newspaper, and if it turned slightly brown, the tongs were ready! – and there was always the risk of the scalp being burnt. In addition, the process's heat did little for the integrity of the hair. Despite these flaws, because of their low cost and speedy results, the Marcel crimping tongs were used until 1959. At this point, Rene Lelievre and Roger Lemoine invented the first electric curling iron, which allowed for temperature control: easier styling, and no more burns!

In the meantime, the quest for curly hair continued: after all, the Marcel waves only lasted for days. One of the people experimenting was German inventor Karl Nessler. He began work around 1896, using his wife in his first experiments (and burning off the poor woman's hair twice). He combined Grateau's use of heat to curl hair with a wig-curling method using caustic chemicals, and developed a procedure called the spiral heat method. The hair was wrapped in a spiral around metal rods, which were themselves connected to an electric machine; the hair was then soaked in an alkaline solution (originally cow urine and water; later sodium hydroxide). The rods were heated to about 100° F, and six hours later – curls!

Presented publicly for the first time in London, on October 8, 1906, the permanent wave machine took awhile to catch on. As we mentioned, the entire process took a long time. Also, the 12 metal rods it used were both heavy (about two pounds each) and hot, requiring a complicated system of counterweights. Finally, it could only be used on long hair. But Nessler continued to refine his process, and it began to enjoy widespread use by around 1909.

During World War I the British arrested Nessler – not because he was setting women's hair on fire, but because he was German – and required him to surrender his assets. He escaped to New York City under an assumed name, and opened a salon on East 49th Street in 1915. Increasingly known as Charles Nessler, or Charles Nestle, he eventually had salons in Chicago, Detroit, Palm Beach, and Philadelphia, employing about 500 stylists. While he lost most of his wealth in the Black Friday stock market crash of 1929, his perming method represented a huge advance in curling technology and was the predecessor to the modern day perm.

SIDEBAR

Nessler's extremely patient wife is far from the only person to suffer in the name of curls. Occasionally, in my many years behind the hairdressing chair, I've met mature women with dime size, completely circular bald spots somewhere on their heads. How did it happen? The answer was always the same: it was from an electric permanent wave machine.



At left is an advertisement for Nessler’s permanent wave: “Genuine Nestle Lanoil Permanent – the hair is guaranteed durable in the rain and after washing.”

As it became obvious that they were popular, variations on the permanent waving machine began to spring up, still featuring two parts: a method for winding and securing the hair onto a metal form, and a heater.

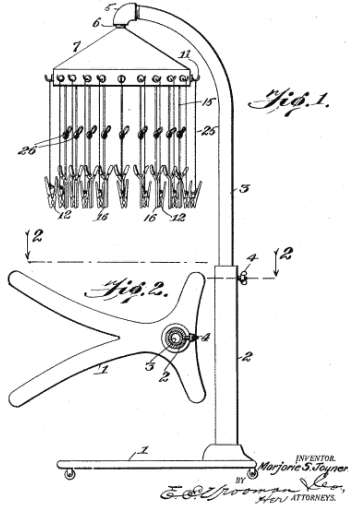
Both together and separately, Eugene Suter and Isidoro Calvete generated advances to the equipment used during the process. Suter, a Swiss immigrant to London, owned a salon in the West End. He began trying to adapt his process just as smaller equipment was allowing women with shorter hair to also benefit from the permanent waving process. Unable to design the heater he wanted on his own, in 1917, he consulted with Calvete, a Spanish immigrant who repaired and manufactured electrical equipment. Calvete’s design featured two windings inserted into an aluminum tube, which allowed for variations in heating: the thicker hair by the root stayed hotter than the thinner hair at the end. Suter patented the machine, ordered equipment from Calvete, and marketed it under his own name.

Meanwhile, Calvete continued to develop other products, including the croquignole heater – a heater for a new type of curler that came along in 1924 (arguably invented by Josef Mayer, a Czech hairdresser). Unlike the tubular heaters described above, where sections of hair were wound onto rods beginning near the scalp and spiraling up (root winding), this new heater required hairdressers to hold the ends of the hair on a roller which was wound around a point until it reached a clamp (point-winding).



To allow for greater versatility in styling, it became the fashion to use croquignole rollers on the sides of the head and tubular rollers on the top of the head.

Early machines were both unwieldy and expensive. Often they had only a few tubular heaters, and the process had to take place in stages. A more compact, speedy machine was created by Marjorie Stewart Joyner, an African-American hairstylist working in Chicago. One day, she was pondering alternatives to the section-by-section approach to the Marcel wave... and she was also making a pot roast, which was both held together and heated by inserting metal rods. Envisioning a system that incorporated many rods simultaneously, she began experimenting, initially using pot roast rods and a hair dryer hood. She patented her permanent waving machine in 1928, and



added a scalp protector in 1929. This popular machine was used both to curl straight hair, and to relax already-curly hair.

Sure, the process was still fairly uncomfortable, and could be downright dangerous: for example, it was completely normal for stylists to wrap wet hair and add electrical equipment without any kind of grounding. Even ignoring the risk of electrocution, the hair was wound extremely tightly on the curling devices, and once attached to the machine, you could not move at all throughout the lengthy process. The extreme heat generated by the machine could cause steam to the point of scalding the scalp. And if that wasn't bad enough, sometimes the process caused the client's hair to break off! (It's said that the stylists would try to

slip the broken hair into their pockets to avoid alerting their clients, which coined the term "pocket perms.")

Despite this, permanent waves were hugely popular, and striking, sculpted waves stayed in demand throughout the 1920's and 30's. You can trace the rise of the perm by the increase in beauty parlors that sprang up around it: in 1920 there were about 5,000 in America; by 1930, about 40,000. Their popularity was even immune to outside factors like the Great Depression and World War II – possibly providing a much-needed morale boost to women during hard times.

In the meantime, perming continued to evolve – and while some inventors stuck with refining the heat-based process, others were headed in an entirely different direction.

Ralph L. Evans and Everett G. McDonough premiered a heatless system at the 1932 Midwest Beauty Show in Chicago: to achieve this "overnight wave," bi-sulfide solution was applied and the hair was wrapped with small, flexible pads at the salon, the client went home, and returned the next day to have the wraps removed.

The cold wave, ancestor of our modern perm, appeared in 1938. Invented by Arnold F. Willatt, it used a reduction lotion, or waving lotion (ammonium thioglycolate), to soften and expand the hair strands, which were wrapped on rods. An oxidation lotion, or neutralizer (hydrogen peroxide), was applied, to harden and shrink the hair into its new curly shape. The process was performed at room temperature, and typically took 6-8 hours.

By the mid 1940's, these cold waves were increasingly popular – in part because Europe stopped producing heat-based equipment during World War II. Home permanent kits also became available in the 1940's, pioneered by Toni.

The 1970's ushered in the next breakthrough: the acid perm, which eliminated the use of ammonia in favor of glyceryl monothioglycolate. These slower, gentler perms have a pH range of 4.5-7 (as opposed to the 1940's cold waves, which were usually between 9 and 10). The wrapped hair is covered with a plastic cap, and heat from a dryer is added to process the perm.

Despite the decades of development and advances, the perm was a hard sell to many: some simply didn't like it; others preferred to keep their hair short. The explosive popularity of the perm in the 1980's stemmed mainly from its appearance on movies and TV shows – viewers increasingly accepted it as the “in thing,” and it became more popular every year.

Finally, the 1980's also saw the widespread adoption of perms that relaxed tightly curled hair. Jheri Redding (born Robert William Redding), an American hairdresser and chemist, was disappointed with the products available to him, and began mixing his own. He eventually founded multiple companies, including Redken, Nexxus, the Jheri Redding Products Company, and Jhirmack. Redding first experimented with permanent waving on tightly-curved hair using toothpicks; Willie Morrow, an expert on black hair, perfected the process in 1978, creating a curly, wet look.

The resulting style, the Jheri curl, relied on a two-part application process: first a softener, or rearranging cream, was applied to loosen naturally tight curls. The loose curls were then wound on perm rods, and another chemical solution was added to set the curls.

While effective, the process was labor-intensive; it also tended to damage the hair, leaving it brittle and dry. To combat this, heavy moisturizers needed to be used daily, which could cause grease stains on clothing; new growth also required touch-ups.

Worn in its heyday by celebrities such as Ashford & Simpson, Rick James, Ice Cube, and of course Michael Jackson. the end of the 1980's also saw the Jheri curl decrease in popularity. Still, the style stayed around through the 1990's, and is still available today.

Back to Basics – A Review

Permanently changing the natural wave pattern of a client's hair can be a problem-solver for a stylist: altering the texture of the hair, making it more manageable, and offering a variety of styling options that would otherwise not be possible. Texture services can not only be used to curl straight hair, but also soften coarse straight hair or straighten tightly-curled hair.

The Consultation

Let's begin our review with the consultation – it's important in general, and especially when doing a chemical service such as a permanent wave. Technically the consultation is a verbal communication with a client to determine the desired result, but we all know that it is much more than that. The consultation offers a chance to develop a rapport with your client, assuring them that they are in the best of hands.

It's true that you'll pretty much always start your interaction with a client with a friendly greeting: providing your name and using their name if you know it, letting them know when you'll be ready for them and showing them where to wait, etc. But communication with your client is more than just words. It also involves your actions, gestures, tone of voice, and speed, all of which you can adapt to those of your client. For example, an outgoing stylist trying to create a rapport with a shy client needs to relax and be less pushy so as not to overwhelm them. Attention to details like these can help avoid communication problems.

Even with excellent communication, the relationship between the client and the stylist is a delicate balance between what the client is asking for and what the stylist knows is in the best interest of the client. So start by seeking out all the details you can about your client's hair now vs. their dream perm.

Get a hair history: are you working with virgin hair? If not, when was the last time it was colored, either at home or professionally? Is this the first perm? If not, when was the last perm, and what did the client think of it? Has the client had allergic reactions to salon products in the past? What's the overall condition of the hair right now (you'll do a hair analysis in a minute, but does anything leap out at you right away)? Does it appear normal, fragile or damaged, dry or oily? Helpful questions at this stage include:

- How happy are you with your hair right now?
- How do you feel about your hair's volume?
- How manageable would you say your hair is?
- Are you generally happy with how long your hairstyle lasts?
- Is this your first permanent?
- If not, were you happy with how long your previous perm lasted?
- If not, how would you describe the condition of your hair after your previous perm?

Learn as much as you can about the desired look, including the size of the curl they're looking for. If the client has inspiration pictures, it's important to pin down

SIDEBAR: Metallic Dyes

Metallic dyes, sometimes found in progressive hair colors that darken with repeated applications (such as Grecian Formula or Lady Grecian Formula), don't play well with others, and are not compatible with permanent waving solutions. They leave a coating on the hair, causing uneven curl, discoloration, breakage, or all three at once.

Fortunately, you can test for the presence of metallic dyes. Put 1 ounce of 20-volume peroxide and 20 drops of 28% ammonia in a glass bowl. Add at least 20 strands of hair, and leave them in the solution for about 30 minutes. If metallic salts are not present, after 30 minutes the hair will have lightened slightly. However, if metallic salts are present, it's a different story:

- Lead = the hair will change color immediately
- Silver, silver nitrate, bismuth = no change in hair color
- Copper = the solution will get hot and smell bad; the hair may disintegrate

...and either way, you should definitely not perm the hair.

what exactly they like about them: I find that if you break down the pictures as to specifics (what do they like about the front, sides, or back of each) you can get a better idea of what the client is looking for overall. Also, factor in elements of the client's lifestyle, especially how much time and money they're willing to spend on their look. Are they aware of what goes into keeping permed hair healthy and looking good? Are they willing to invest in the proper shampoo and conditioner to maintain the style? Do they have hard water at home (which can build up on the hair, preventing the perm from processing properly)? Are they okay with spending some time styling the hair each day, or are they unwilling to take the time to do anything but air dry?

Finally, use reflective listening: repeat the key elements back to the client. You're making sure you've understood what they're telling you, demonstrating that

you care about what they have to say, and determining that you're on the same page so far.

A hair analysis is also a vital part of the consultation: the integrity of the hair as-is lets you know whether it can be permed without losing too much quality.

Reminder: before you even get to the hair, examine the scalp for abrasions, irritations, infections, open sores, and/or any sign of disease. Should any of these exist it is advisable to end services and refer to a physician.

Next, examine the physical characteristics of the hair: density, length, porosity, elasticity, and texture.

Density measures how thickly the hair grows on your client's head – in other words, how many hairs there are per square inch of scalp (2,200 is about average). Knowing the hair's density helps you determine the size of the partings you'll use: for example, high-density hair will need smaller partings so as not to have too much hair wrapped around the rod.

The size of your partings and the type of wrap you'll use are also impacted by the hair's length. Remember that the waving lotion and the neutralizer need to penetrate fully through the entire strand.

SIDEBAR: Sections vs. Partings

Remember, "sections" refers to the initial 9 sections you'll divide the hair into – they're roughly the size of the length of the rod you will be using. "Partings" are subsections within each section – they're roughly the size of the diameter of each rod.

Porosity refers to the hair's ability to absorb liquids: exposure to sun and wind, harsh shampoos, color or highlights, previous perms, and excessive use of hot styling tools can all make the hair more porous. Whereas hair with low porosity is resistant to absorbing moisture, highly porous hair absorbs moisture very easily, so the hair's porosity directly affects the processing time and solution. The more porous the hair, the less processing time required, and the milder the solution should be. In general, hair that is rough, dull-looking, or very dry is generally porous. You can also easily check porosity: select a strand of hair, hold the end securely between your thumb and forefinger, and slide the thumb and forefinger of the other hand from end to scalp. If the hair feels smooth, and the cuticle is dense and hard, the hair is resistant – it has low porosity and will not easily absorb perm solution. If you feel slight roughness and the cuticle is open, the hair is porous.

The ability of the hair to stretch and return to its original length without breaking is elasticity. Without elasticity, it's impossible to get a good perm – you need at least 20% elasticity for a perm to "take." To test this, stretch a single strand of dry hair 20% past its normal length, and check to see if it returns. If the hair breaks instead, it's a sign that it may also do so during the process, and it's best not to perm. Hair that feels spongy when wet or tangles easily may also have poor elasticity.

Texture describes how thick or thin the individual strands of hair are: fine hair has a much smaller diameter than thick hair. Like porosity, texture impacts the processing time of the permanent wave: generally, the thicker the hair, the longer the processing solution takes to penetrate it.

In the end, the three factors that absolutely have to be determined in the hair analysis are:

- Is it safe and advisable to give the client a permanent wave?
- Which perm should you use for the best result?
- Which perm technique should be used?

Once you have a clear understanding of those three things, a grasp of what your client is looking for, and how all of those elements interact, you can make your recommendations.

Sometimes, those recommendations may include not doing a perm at all. In general, perms should be avoided when the hair is extremely highlighted, when multiple color services such as color and highlights are present, or if the hair is damaged. Instead, you can make recommendations to improve the health of the hair, and potentially move forward with a gentle perm at a later date.

Remember: one of the biggest reasons people seek out a professional is for advice. Should it appear that your client doesn't understand that their first choice will not benefit them, it's your obligation to find a way to sensitively let them know. Putting the wrong style on a client can be a big mistake – not only for the client, but for you as the stylist. No matter how gorgeous the perm looks when the client leaves the salon, if they can't maintain that look on their own, you'll probably take the blame and lose that client. On the other hand, finding the style that works for your client will earn their loyalty – and their repeat business.

Finally, preserve all the data you just worked for: fill out an information card. The client's name, address, phone number, and email address are just the beginning. Record the hair history, styling and product preferences (along with any recommendations you made), known allergies, results of the hair analysis, all specific ideas discussed, exactly what your procedure was, the type of rods used, the type of perm used, processing time, how the style was finished, and the date of the service. The more details the better – for several reasons. First, careful record-keeping keeps you abreast of each client's preferences and helps you to continue to refine and personalize each client's experience. Info cards can also be a useful reference, allowing another stylist to cover for you in the event you're on vacation or unavoidably out of the salon. Finally, accurate records can be useful to you in the unlikely event of a complaint.

Safety Precautions

As we've discussed previously, you should postpone perm services if the scalp examination turns up abrasions, irritations, infections, open sores, and/or any signs of scalp diseases. Likewise, do not perm hair that shows any signs of breakage, is excessively damaged, and/or has been treated with metallic dyes. And it's vital to be aware of any past allergic reactions caused by salon products, including past perms.

As you prepare the client for services, ask them to remove any glasses, earrings, and necklaces. Protect the client's clothing with a waterproof cape or robe; use a towel underneath the cape and one on top to help with drips (I also use a small plastic baggie under the cape to make sure the client stays dry).

Always apply a protective barrier around the client's hairline and ears prior to applying the processing solution. It can be anything that places a physical barrier between the skin and the processing solution, from cotton, to Vaseline, to any skin cream.

Always, 100% of the time. follow the manufacturer's directions. Do not dilute or add anything to the processing solution or neutralizer unless directed to do so by the manufacturer.

Protect yourself and your hands: wear gloves while applying the processing solution. Also, keep processing solution away from the client's eyes (in case of accidental exposure rinse with cool water) and skin, removing and re-applying any barrier cotton after application to avoid irritation. Blot any processing lotion that comes in contact with the scalp with cotton saturated in water. Replace towels that have come in contact with processing solution.

Take a test curl to determine in advance how the client's hair is reacting to the perm and to avoid over-processing. This is especially important if you're working with hair that has been colored or bleached, is a bit overly porous, or shows small signs of damage. We'll discuss test curls in more detail in the next section.

Always discard unused lotions and neutralizers, as they lose strength and effectiveness once opened.

Pre-Perm Shampoo

As before most services, you'll shampoo the client's hair thoroughly yet gently (so as not to agitate the scalp) prior to perming. In order to enable damage-free curls, soft silky hair, and shorter processing times, you may want to take this opportunity to pre-treat the hair – especially if the client's hair has a coating of styling products, hair spray, or conditioner, or if it is usually washed in hard water. These coatings can prevent the penetration of the waving lotion and interfere with the perm results.

Having worked in a hard water community most of my career, I am well versed in what hard water can do to the hair! Let's spend a little time on the topic.

The term "hard water" describes water with a higher mineral content – usually calcium and magnesium, but bicarbonates and sulfates may also be present. The degree of hardness becomes greater as the mineral content increases. But "hard water" can also reflect that the water is difficult to work with! It requires more soap, shampoo, and detergent than soft water; and the minerals in hard water can lead to decreased lather. This may have negative impacts on the hair, usually leaving it looking dull, feeling lifeless, and more prone to breakage.

How widespread is hard water? According to a water study performed by Virginia Polytechnic Institute and State University (Virginia Tech), hard water is prevalent

in over 85% of households within the United States. Many clients are unknowingly using hard water to shampoo their hair. It's up to you to see the signs and ask the right questions during the consultation.

Sometimes – especially when iron is present, and the hair is light-colored and porous – you can actually see an orange-y buildup. In the absence of obvious signs like this, ask clients about the “feel” of their water: soft water feels, for lack of a better description, slippery, and allows shampoo and other soaps to lather better. Likewise, you can ask clients about how much shampoo they use: due to the decrease in lathering, those with hard water generally use more. You can even ask if they need to clean their sinks and toilets often due to mineral build-up! (It's also worth noting that hard water can be an eczema trigger: the calcium and magnesium in the hard water makes everything drier, and using more soap can also aggravate eczema.)

If you suspect that your client is dealing with hard water at home, you can suggest they use hard water test strips. Hard water test kits are also an option, and often provide additional information on the water's chemical makeup. Although it can be pricy, a water softener – which removes calcium, plus magnesium and other metals, from the hard water – is a good solution. If cost is an issue, you might recommend a shower filter, which can also considerably reduce the chemicals present in the water. There are many types to choose from, and they're readily available online or at home stores.

In the meantime, you need to remove the hard water deposits (as well as any product build-up) from your client's hair in order to achieve their desired curl. There are many chelating shampoos available that will do the trick.

Rod Placement, Wrapping, and End Papers

Next, it's time for a quick review of perm rod placement.

On base – The hair is wrapped at an angle of 45 degrees beyond perpendicular to its base section. The rod sits between the partings. On base placement creates the most volume to the hair. Use caution with this placement as it causes additional stress and tension to the hair.

Half off base – Refers to wrapping the hair at an angle of 90 degrees perpendicular to its base. Half off base minimizes the tension on the hair while still allowing for some volume at the base.

Off base – Refers to wrapping the hair at an angle of 45 degrees below perpendicular to the base section. Off base placement creates the least amount of volume and a curl pattern that starts farthest away from the scalp.

Even today, when doing a basic perm, there are still two fundamental wrapping techniques.

Croquignole – Hair strands are wrapped from ends to scalp in overlapping layers.

Spiral perms – The hair is still wound from ends to scalp, but at an angle rather than perpendicular to the rod. The angle causes the hair to spiral along the length of the rod, like the grip on a tennis racquet.

(As you know, there are also tools that are wrapped from scalp to ends; we'll discuss that later.)

There are three ways to use end papers.

Bookend – Consists of one end paper folded in half; for short hair or short rods.

Double flat – Consists of two endpapers, one on top and one on the bottom. This is the most common and allows for maximum control of the hair.

Cushion – Incorporates several end papers: it starts as a double flat wrap, then additional papers are added as you wrap up the hair strand. This provides an extra layer of protection between the hair and the perm rod, and helps in wrapping different layers in the same section of hair.

End papers should extend beyond the ends of the hair to prevent fish-hooks, which are the crimped ends caused by not winding the ends of the hair smoothly around the perm rod. The first turn of the rod should only be end paper.

Types of Perm

There are quite a few different formulas to choose from! Your decision should be based on your client's hair type and what type of curl they are looking for.

Alkaline waves – Also known as cold waves, this is probably the most common perm, as it is great for creating firm, long-lasting curls. This perm processes quickly at room temperature – no added heat necessary (thus the name cold wave) – usually within 20 minutes. The key ingredient is ammonium thioglycolate. With a pH of 9.0 to 9.6, this perm is relatively strong; therefore it's great on coarse, thick, or resistant hair types. It is a bit more damaging than other waves, and comes with a slightly unpleasant ammonia odor.

Acid waves – As the name suggests, these perms are much more acidic (most have a pH of 4.5 to 7.0); they also require additional heat in order to process. On the other hand, they are much gentler on the hair, making them appropriate for porous and slightly damaged hair. An acid wave will produce a looser curl which relaxes faster. All acid waves have three components: the waving lotion, the activator, and the neutralizer. The activator tube contains glyceryl monothioglycolate (GMTG), which must be added to the permanent waving solution before applying it to the hair. When the scalp and skin are too frequently

exposed to their active ingredient, acid waves can sometimes cause allergic reactions.

Exothermic waves -- Like acid waves, exothermic waves have three components: waving lotion, activator, and neutralizer. The activator contains an oxidizing agent (usually hydrogen peroxide) that must be added to the permanent waving solution immediately before use. Combining the waving lotion and the activator creates instant heat and an increase in the temperature of the solution. This speeds the chemical reaction, which shortens the processing time. Exothermic waves are great for coarse and or resistant hair, and most process faster than alkaline waves. However, like alkaline waves, these perms have an ammonia odor and can damage delicate hair. *Caution: accidentally mixing the activator tube with the neutralizer instead of the permanent waving solution will cause a chemical reaction that can cause injury, especially to the eyes. Always read the label and use caution when mixing these perms.*

Endothermic waves – This permanent wave needs heat from an outside source – usually a conventional hair dryer – to activate. Endothermic perms are usually low pH perms, making them better for clients with fine hair types and/or those who want a softer curl.

Ammonia-free waves – A frequently-used substitute for ammonia is an alkanolamine, such as aminomethylproanol and monoethanolamine. These perms create a medium-sized curl. They usually process the same as an alkaline wave, but there is very little odor, as the substitute typically doesn't evaporate as efficiently as ammonia. It's important to remember that they can be just as strong as alkaline waves: ammonia free doesn't mean damage free.

Thio-free waves – The most common ingredient used in perming is a weak acid called thioglycolic acid (shortened to thio). Combined with a weak base, it creates perm salt (ammonium thioglycolate), which is the chemical responsible for breaking the bonds in the hair. All of the above perms are thio waves. Thio-free waves, on the other hand, use cysteamine or mercaptamine instead of thioglycolic acid. They process at room temperature and create a nice medium curl. While thio-free perms are often marketed as damage free, this is not necessarily the case. They can be gentler on the hair, but if left on too long or used in high concentrations these perms can be as damaging as a thio perm.

Low pH waves – An alternative to standard waving lotion, these perms use sulfates, sulfites, and bisulfites, as opposed to ammonium thioglycolate, and work at a very low pH. They require added heat to process. While very gentle, they are also weak: they produce a wave rather than a curl, and in fact are typically marketed as body waves. They are best for fine or very damaged hair.

American Wave – This technique is the brainchild of New York-based hair stylist Nick Arrojo (who does not want it to be called a perm). While standard perms

break the bonds of the hair to force them into their new curlier position, the American Wave uses an “ionic waving lotion” to penetrate the hair shaft and soften the bonds without roughing or swelling the cuticle. A gentle technique, it can be used on hair with semi-permanent and permanent color, and even on highlighted hair provided it is in good condition. It can create curls, waves, and/or volume, and lasts approximately 3 months; if not kept up, it will slowly loosen. It’s well-suited to the client looking for low-maintenance hair. Finally, the word is it smells like eucalyptus while processing! Stylists must become certified in this technique in order to gain access to the waving lotion.

Types of Perm Rods

In order to obtain a good curl, the hair should be long enough to wrap around the rod two and a half times. Think about the S pattern: the top curve of the S is formed by going around the rod one full turn, the bottom curve by the second turn. The size of the wave pattern is determined by the rod you choose. In addition to diameter, remember to select the length of the rod (they do come in different lengths!), taking into account the size of your clients head and the width of each section.



Concave rods – Larger at the ends and smaller in the center. Initially designed for slightly longer hair, this rod creates a curl that is larger and looser nearer the scalp and tighter at the ends.

Straight rods – Just as large in the center as on the ends. Generally used when trying to imitate the natural curl, this rod will create an equal wave pattern from scalp to ends across the entire section of hair.



Perm loops – Not rods, but loops of soft plastic (or sometimes foam) that easily attach to themselves end to end. An alternative tool for perming long hair, they permit faster wrapping, and reduce breakage-causing weight on the hair. However, the resulting curl is often soft and not defined. Also, taking test curls to judge the progress is difficult because the curl distorts as it unwinds.

Spiral rods – Made of ridged plastic with grooves that run around and around the rod at an angle. They were designed to produce a visibly springy curl on long hair. You can also produce special effects on long hair by wrapping from scalp to ends.



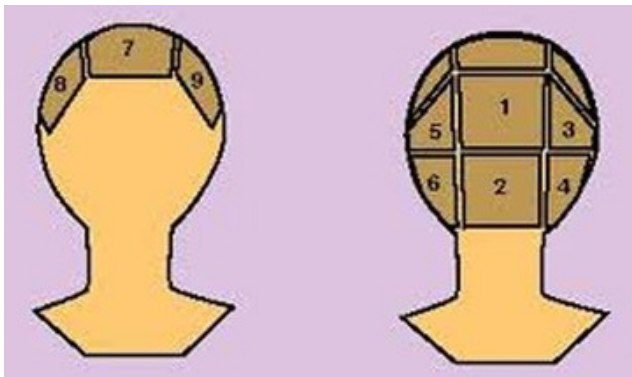
Sectioning

From what I’ve seen, stylists are increasingly losing sight of this crucial skill. Simply put, sectioning is the overall plan for the rod placement – but as we know, it’s also an art, and it can make or break a permanent. It’s always important to know where to place the rods to give the design the support, direction, and curl

pattern you are looking for, and it becomes even more important when we get into today's beachy waves – there, rod placement is everything.

Remember, the size, shape, and type of curl is determined by the size, shape, and type of rod that is used in wrapping the hair. Equally subdivide sections, creating clean, neat, uniform partings that match the size of the rod in length and width.

Nine section wrap – Sometimes referred to as the single halo wrap, this was the only way we wrapped perms in the 1970's through part of the 1980's. The single halo wrap is still used today on short hair. In general, though it's not the best option: as it does not follow the growth of the hair, the curls show splits along the hairline and especially along the center front. Likewise, since the pattern does not follow the contour of the head, varying sizes of perm rods are needed to fit into the sections.



Natural wrap technique – Also called the curvature perm wrap, this is considered a better choice than the single halo wrap today. It's kindest to the hair during the chemical process, since it simulates natural curl which provides for the largest variety of styles. The partings follow the curvature of the head. The wrapping pattern uses pie shaped base sections in the curvature areas. This wrap will show no splits or partings around the hairline.

Bricklayer wrap – As you can imagine, this looks like bricks in a wall, which is how it got its name. For longer hair, this wrap begins at the nape and proceeds towards the top of the head; for shorter hair, it begins at the crown of the head and works towards the nape. Either way, the bricklayer wrap is done horizontally across the head, wrapping an entire line, then moving up/down a layer. This pattern can also be used in one single section, such as the nape. Bricklayering takes organization and time, and requires you to take the hairline growth pattern into



consideration. However, with this wrap, splits are completely eliminated or at least not visible.

Weave technique – This technique uses zigzag partings to divide base areas. It can be used throughout the entire head, or kept to selected areas. It is very effective for blending between perm rods, and also creates a smooth transition between permed areas and non-permed areas on partial perms.

Piggyback wrap – Also called the double tool technique, this wrap incorporates two tools on one parting. First the lower half is wrapped around one tool, then the second half is wrapped around another tool and stacked on top of the first. Doubling the number of tools used increases the amount of curl in the finished perm, making this technique especially effective on long hair. Tools with different diameters can be used to create different effects.

Spiral technique – As mentioned previously, when using this technique the hair is wrapped at an angle perpendicular to the length of the rod. Spirals may overlap as they go along, but any overlap should be uniform and the angle should remain constant along the entire strand of hair. This should produce a uniform curl from scalp to ends.

And of course, there are many more specialty techniques – we'll look at some later in the course.

Processing Time

Most if not all modern perms come with directions as to the timing of the perm: usually they process for 20 minutes. Timing is the one exception to my earlier statement about following the manufacturer's directions: processing time can vary according to the strength of the solution, hair type and condition, and desired results. The manufacturer doesn't have that information, but you, as the stylist, do.

For example, if the hair you're working with is a high lift color, and you follow the directions to process for 20 minutes, you might wind up with a head full of frizz – even when you're using the appropriate perm! This is why some stylists have taken to not doing perms at all. There's no need to get that drastic: instead, rather than setting a timer for 20 minutes and going to lunch, a true perm professional will rely on their ability to take a proper test curl.

The first test curl should be taken as soon as the application is finished – use the area where the application began. After that, you'll want to test again about every five minutes depending on the texture of the hair (fine hair needs to be more closely watched than coarser hair), and remember to keep an eye on several areas of the head (top, sides, back).



With your thumbs at each end of the rod, unwind the curl $1\frac{1}{2}$ times. Do not allow the hair to become loose or completely unwound. As you unwind, gently push the hair towards the scalp. If not completely processed, the hair will arch up. If the processing is complete, the hair will, creating an S pattern and usually breaking into separate strands.

Different hair textures will have slightly different S formations. The wave pattern for fine, thin hair may be weak, with little definition. The wave pattern for coarse, thick hair is usually stronger and better defined. Also, when larger rods are used on longer hair, the diameter of the wave widens closer to the scalp.

To return to the topic of timing: I have a client who gets perms regularly, and she processes in exactly 13 minutes with a perfect S formation. If I'd waited 20 minutes instead of taking a test curl... let's just say she wouldn't still be my client!

An alternative method is to remove the rod completely, checking the hair ends for the diameter of the rod and "flip-up" effect (in other words, do the ends flip up, or lay limp? If they flip up, the curl formation is complete).

Neutralizing

Neutralizers are oxidizers (in other words, they add oxygen to the hair). Hydrogen peroxide is the most common, typically used in concentrations between 5 volume (1.5%) and 10 volume (3%). Neutralizing is the final step in the chemical process: it deactivates any remaining waving lotion in the hair, lowering the hair's pH while reforming its bonds. This change fixes the hair in the new position determined by the size of the rod, making the change permanent. Handle the hair carefully throughout this process, since it is still swollen and can be easily damaged.

Once you have your perfect S formation, rinse the hair with warm water for at least 5 minutes (coarse, thick, or long hair will need a longer rinse), making sure all the processing solution is rinsed out. Thoroughly blot the hair with a towel or paper towels to remove the excess water: this is a very important step, because excess water left in the hair will dilute the neutralizer, causing weak curls that may relax prematurely.

Apply the neutralizer and process according to manufacturer's directions – usually 5 minutes. While some stylists consider this a minimum rather than a maximum time, the fact is, when neutralizer is left on the hair for longer than recommended it can dry the hair excessively, so you'll want to remove the rods and work the neutralizer through the ends of the hair promptly. The hair will then need to be rinsed again, to remove all chemicals.

At this point you can use an instant conditioner if you choose – and your basic perm is finished.

Problems and Solutions

The perm is finished, and totally perfect – right? Well, ideally, sure. Just in case, though, let's look at some common issues that may arise, and ways to deal with each.

Weak or limp curl – Generally this means the perm was under-processed; in other words, the perm solution was not left on long enough. You can avoid this issue by following the manufacturer's timing recommendations, backed up by taking an accurate test curl. Other possibilities include:

- The rods were too large for the desired curl – when wrapping, make sure the hair goes around the rod two and half times, or use a smaller rod.
- The hair was wrapped too loosely – hair needs to be wrapped smoothly and with even tension. Also, remember to consult the manufacturer's directions: most acid waves require a bit more tension than an alkaline wave.
- The wrong perm product was used – double down on analyzing your client's hair.

Very fine, limp hair has been traditionally hard to perm – it's often fragile, and the individual strand has a small cortex, so there are fewer bonds to be reformed through the perming process. Yet often, I find that these clients are the very ones hoping a perm will add more volume to their hair. One method that works well is air oxidation: using natural air instead of the neutralizer. Ideally you would rinse the perm solution, blot the hair, and let the hair completely dry on the rods, producing a perfect curl, but you may not find many clients willing to do that. The alternative is to blot the hair thoroughly and let the client air dry for 30 minutes: with a small adjustment to both your schedules this can be easily accomplished and your fine-haired clients will thank you. Another method to address this issue is sometimes called a transfer perm. The hair is permed on a rod one size smaller than the curl the client would like, as this does a better job of reforming the bonds. Once the perm is processed to the size of the smaller rod and rinsed, remove two rods, comb the hair together, and wrap it onto a larger rod. Repeat until the entire head is wrapped with the larger rod, then neutralize the hair. This helps prevent both overly tight curls and frizziness. It's time-consuming, but the results for fine-haired clients are well worth it.

Uneven curl – This may be caused by inconsistent application of the perm solution and/or neutralizer – both the perm solution and the neutralizer need to be applied in a systematic manner to avoid missing rods. Likewise, incomplete rinsing or blotting may cause uneven curl – all rods need to be rinsed (rinsing for a full 3-5 minutes depending on the thickness of the hair) and blotted thoroughly. Finally, there may have been too much hair on the rods, or the hair may have

been unevenly distributed. Remember, for the most consistent curl pattern, the subsection size needs to be equal to the diameter of the rod used. Avoid bunching the hair, and wrap it around the rod as smoothly as possible.

Frizziness – Over-processing (the perm solution left on too long) may be the culprit here – taking frequent test curls can help avoid this problem, as can using a timer to accurately track processing time. Alternately, the hair may have been stretched or worked too much after the perm, during styling – to keep this from happening, use finishing products to define the curl, and dry using as little tension as possible.

Breakage or dryness – Right out of the gate, the hair may simply be too fragile for the perming process. Your hair analysis should help you determine if a perm is advisable; when in doubt, do preliminary test curls. Also, hair that is wound on the rod with too much tension may break – stick to moderate tension, with no excessive stretching. Another source of tension may be the perm band, which places a certain amount of pressure on the hair – you can lift the band and place a roller pick under it to relieve the pressure (and eliminate band marks).

Skin irritation – Most likely, the cotton or towel was not removed after saturation with perm solution. Always replace the cotton or towel as needed, and do not allow perm-soaked cotton to stay on the skin, especially under a plastic cap.

Unpleasant odor after perming – The perm solution and/or neutralizer were not rinsed long enough. You need to rinse hair for a full 3-5 minutes or longer, depending on the length of the hair. After rinsing, smell the hair: if you still smell perm solution and/or neutralizer, rinse more. Note that acid perms and thio-free perms, in particular, take longer to rinse out of the hair.

Hair lightens after perming – Many neutralizers contain hydrogen peroxide, which can lighten hair slightly; this effect is more apparent on very porous hair. Follow the manufacturer's directions, and consider their recommended time to be the maximum time for neutralization: any longer and you increase the risk of lightening the hair. If a client is doing both perm and color, always do the perm first.

Perm did not last as long as expected – Was the hair in poor condition? Weak/damaged hair may need reconditioning treatments to help restore it to a healthy state prior to perming. Alternately, incomplete neutralization can cause the perm to loosen up – most often, too much water left on the hair after rinsing off the perm solution will dilute the neutralizer. Remove excess water by first blotting the entire head and then each individual rod before applying the neutralizer.

Today's Permanent Waves

Today's permanent waves are not always called permanent waves; we also refer to them as chemical texturizing because they use chemicals to change the hair's appearance (most often from smooth and straight to curly or wavy). Using the term chemical texturizing also helps the client feel like they are getting something other than the 80's frizzy perm.

An important thing to consider is the particular hair you are dealing with. Obviously, fine straight hair picks up texture and volume from the right perm, making even a simple cut interesting and touchable. Wavy hair can also benefit from a perm: when a natural wave lacks in definition and volume and has uneven curl, a body perm can deliver both the volume and a sense of increased density, as well as even curl throughout the hair. Finally, thick heavy hair can benefit too: a perm can help reduce styling time and allow for the creation of multiple styles that straight hair couldn't support.

As mentioned earlier, today's perms are shifting away from the over-styled curling iron waves of the past to a more natural, air-dried texture. Before going into some of the new processes out there, let's look at a new additive to the traditional perm: a product called Olaplex, which is incorporated into the perm solution itself. Olaplex itself has been around since 2016, used in coloring processes to limit damage to the hair. Its ability to help protect and repair bonds in the hair without hindering processing has made it a natural addition to the perm service as well, making perming safer for color treated or bleached hair. As Olaplex has increased in popularity, other companies have developed similar products. The growth of this market has enabled stylists to offer a broad range of looks to almost any client. (That said, the surest way to build your perm clientele is still by saying "no," not by saying "yes" – if the client is asking for something you can't deliver, be honest upfront and avoid later disappointment.)

Modern Options

Braid perms – A recent trend, braid perms yield a softer texture than the old school perm, adding bend to straight hair and creating an effortless bed head look. Instead of being wrapped on traditional perm rods, the hair is braided: you can use either one or many French or Dutch braids, depending on the thickness of the hair and how much wave your client would like. You can also add a perm rod to the ends of the hair to add a bend – the size of the perm rod also depends on the thickness of the hair and how much bend the client would like. The perm solution needs to be applied in a "zig zag" pattern to ensure all of the hair is completely saturated.

There are several things to be aware of with braid perms. As with any chemical service, it's best to perm hair that is in reasonably good condition. If you've ever washed your hair, braided it, let it dry, and taken it down, remember that the finished braid perm will be looser than that. Also, as we know, perming formulas

swell the hair shaft, opening the cuticle layer, which leaves the hair more susceptible to damage. To reduce the friction of hair against hair, the braids should have even tension, and not rest too tightly against the scalp. Finally, it's hard to achieve a great result when this perm is done on superfine hair: it can tend to leave the hair too fluffy.

Post-perm care is always very important, and braid perms are no exception. The client needs to avoid wetting or shampooing for a full 48 hours, as it can take that long to lock in the wave permanently. Brushing or combing the hair should be kept to a minimum, especially when dry; instead, use fingers to style. The client should consider air drying or using a diffuser attachment on their hair dryer, and should lower the heat on irons. Finally, using gentle, protein-building hair care products can help repair broken bonds in the hair.

Beach waves – A popular trend that leaves the hair with loose waves, beach waves are usually done on shoulder length or longer hair. The perm uses either very large rods, or bendable soft foam tube-like rods that come in multiple sizes, and partings are of varying thickness. Wrapping is concentrated on the center and ends of the hair, with no height at the scalp. This type of perm will last approximately 2 to 3 months, and maintenance is relatively effortless: wash, add the product of your choice, and let it air dry.

Multi-textured perms – another way to create a less-defined and more natural-looking head of curls is to use two different sized perm rods. It's a great choice if you want to add body and varying dimension to long hair.



Hopscotch perm wind – This creates a very textured look, with a variety of different size curls. It is accomplished by winding the rods in different directions. The first layer of perm rods is wound leaving out small sections between each rod. These small sections are wound in the opposite direction and stacked on top of the first rods. The final result will be a textured loopy finish. This can be done on long or short hair.

Spot perms – These perms focus on a specific section of the hair, for clients who may want some limited curl in support of a particular style. Spot perms can incorporate tight or loose curls.

Root perms – As the name suggests, these perms are done at the root area of the hair only. A root perm might be perfect for the client who really likes their straight hair, but wants a long-lasting boost in volume and texture. Alternately, you might offer a previously-permed client with 3 months new growth who doesn't want the old perm cut off a root perm, rather than perming over the already-permed hair.

There are several ways to do a root perm. In one, the rods are wrapped from the scalp out with only 2-4 inches of hair; the rest is left off the rod, and needs to be protected from contact with the perm solution with conditioner or any type of barrier cream. In another, the hair that will not be permed is covered with plastic wrap, and the entire length of hair is wrapped from ends to roots in the traditional way; only the hair not covered in plastic wrap will be permed. A final option is to wrap the 2-4 inches (from the scalp out) with your small rod for root lift, and wrap the remaining hair in a much larger rod. The larger rod can either be processed with perm solution, giving your client both root lift and a wave towards the ends of the hair, or wrapped with a barrier cream and left unpermed. Note: make sure clients are aware that as root perms grow out the hair will develop a “straight curly straight” look, so they’ll want to keep up with their root perms in order to prevent this.

Stack perms – These can add volume to one-length hair, creating the illusion of layers. They use varying size of perm rods added to the middle and bottom sections of the hair to create a textured look that is softened because the top is left flat. If you perfect this wrapping style it will look exactly like it would if the client had natural curls at the ends of their hair.



Digital perms – Because the name "digital perm" is copyrighted by Paimore Co., you may hear this called a "hot perm" instead. Either way, this modern process feels to me like we're going back in time! These perms use a combination of chemicals and heat on the hair, and feature rods as hot as 185° F, with the temperature regulated by a machine (which has a digital display, hence the name). Digital perms are said to leave the hair soft, as well as smoothing frizzy, fly-away hair.

Prior to beginning a digital perm, a protein conditioning treatment is applied to the hair. The hair is next saturated with perm solution, and wrapped onto special rods that are then hooked to the machine, which heats them for a predetermined time (note: because heat is used the rods need to be kept off the scalp). Once the hair is dry and cooled down, a neutralizer is applied per manufacturer's directions. Once the neutralizer has been rinsed from the hair, an additional protein treatment is applied. (Note: conditioner should NOT be used for a minimum of 48 hours after a digital perm, or it could deactivate the neutralizer.)

This perm may not suit all hair types: it works best with very healthy, thick, coarse hair. You'll also want to be sure your client understands that digital perms take longer than cold waves, typically involving a 2.5-3 hour time commitment. Finally, you'll most likely need to charge more as well, since your investment in the digital machine will be reflected in the price: depending on the location of

your salon, an average fee for digitally perming medium length hair is around \$175.00. However, due to the specificity provided by digitally controlling the heat, fans of the digital perm say the curls last longer, look more natural, stay smooth and shiny, and are more versatile than those created by a traditional cold wave. In addition to curling hair, digital perms can be used to relax overly curly, frizzy hair, yielding soft curls. Interestingly, while the curl produced by a cold wave is most prominent when wet, a bit looser when dry, and can be blown dry straight, the opposite is true for a digital wave: the curl is looser when wet, curlier when dry, and is harder to style straight.

Perms for Men

Increasingly, men are also choosing to enjoy a little added texture to their hair. And of course, depending on desired look and hair length, there are plenty of options out there! Medium length hair with a fairly tight curl can give an “adventurer” vibe, while a looser perm with a deep side part can emphasize the angles and planes of the face. Adding a little curl to the front of a closely-cropped cut can soften the look (and allow a nervous client to test the perm waters); medium-sized, natural-looking curls can go perfectly with an overgrown fade.

Should a man choose to perm his entire head, that doesn’t necessarily mean a head full of tight curls. The Bruno Mars look is definitely one way to go, and can be achieved with a standard permanent wave lotion. Longer-haired clients, in particular, may benefit from a much looser wave for a more laid back look, via the American wave perm may be the way to go.

A partial perm is another option, and can provide added style support: the top length of the hair is permed, while sides are generally faded or left in their natural state. Your client has several choices as to the loose beach look or tight curls or anywhere in between.

One caution: to avoid having his hair take over his entire face, you may wish to advise your male clients to keep a well-groomed beard.

Relaxers

We should also return to the other side of the coin – relaxers! As you know, a relaxer (also sometimes called a relaxer perm, or a perm for black hair) is a chemical treatment that relaxes tightly-curved hair by breaking down the bonds in the hair shaft. Hair can end up in a much looser curl, or straight, depending on what the client is looking for. And, much like the modern perm has moved beyond its 80’s past, relaxers no longer mean the Jheri curl.

Just like a perm, there are times you need to tell your clients that they should not relax their hair – particularly when it’s damaged, thinning, breaking, or bleached hair. Using a relaxer on top of damaged hair will only make the problem worse. Likewise, a healthy scalp is essential, as the chemicals used during the process can harm the skin as well as the hair. Assuming the hair and scalp are healthy,

there are still some things your client should do to get ready: don't scratch or in any way aggravate the scalp, and avoid shampooing the hair at least 3-5 days prior. Finally, on the day of the appointment, detangle the client's hair as much as possible without a lot of manipulation.

Before we get into the process, it's time to make an important decision: lye or no-lye?

The active ingredient in lye-based relaxers is sodium hydroxide; its pH level is approximately 12-14. (So-called "super strength" relaxers are just relaxers with a higher concentration of sodium hydroxide, used only on the most resistant hair.) Lye relaxers break the bonds of the hair more quickly due to the high pH level, don't cause as much damage to the hair itself, and leave the hair strands able to absorb moisture well, which keeps the hair looking shiny and feeling silky. However, they don't straighten the hair as completely as no-lye relaxers, and are harder on the scalp.

The active ingredient in no-lye relaxers is usually calcium hydroxide or potassium hydroxide; its pH level is approximately 9-11. They're often used by people with fine hair, and children's hair relaxers are also typically no-lye. They need to process longer, and can get hair straighter. They're easier on the scalp than lye-based relaxers, but harder on the hair: they cause heavy breakage to the bonds of the hair, and tend to leave behind a build-up that can leave the hair dull and dry. Using a clarifying shampoo once a month can help remove these deposits, but as these shampoos can also be drying, a regular deep conditioning treatment should likewise be part of the home maintenance plan.

A very broad rule of thumb might be to use a no-lye relaxer if your client has a sensitive scalp because it is less irritating; since no-lye relaxers tend to dry the hair out, if your client is not sensitive, consider a lye relaxer. Either way, once you decide on the appropriate relaxer for your client, you can't switch: in other words, you can't move from a no-lye relaxer to a lye relaxer during the same process. However, you can apply a different relaxer to new growth, should the previous relaxer not give you the results you were looking for.

Moving on to the relaxing process, you'll use a smooth comb with no rough edges to divide the hair into 4-6 different sections, and use plastic not metal clips to secure the sections. Apply a barrier cream to the nape, hairline, and ears.

Mix the relaxer in a plastic bowl. Apply the relaxer to very small partings – no more than ½ inch thick – and only to hair that hasn't been previously straightened (if you're working on virgin hair, then you would apply the relaxer all the way to the ends). The relaxer should be smoothed down with the hands, the back of a smooth comb, or the handle of the applicator brush, never combed. Apply the relaxer to the nape and hairline last, as the hair in these areas tends to process more quickly, and over-processing may cause breakage. Avoid getting relaxer on

the client's scalp. Once you have finished the application, return to each section and again smooth it out with the above-mentioned methods.

Next, set a timer according to the manufacturer's directions (usually 10-15 minutes). Some stylists will leave the relaxer on longer to achieve bone straight hair, but you risk damage, both during processing and post-processing as the hair is blow dried and/or and curled over time. The recommended level of straightening in the relaxing process is between 65-75%, and in my opinion adhering to these recommendations leaves the hair with some body.

The absolute best way to decide if the processing is complete is to do a strand test. Select a section of hair in a resistant area, smooth the hair with one of the tools mentioned, and see if the hair remains smooth or resumes its curly position. If it remains smooth, the processing is complete regardless of the time.

Once the processing is finished, rinse the hair with water as warm as the client can handle for no less than 5 minutes; if the hair is longer, you may need 7-8 minutes. It is important to remove all the relaxer product from the hair, and the sooner the better, to avoid scalp irritation. Next apply either a lathering or non-lathering neutralizer, per the manufacturer's directions, and repeat this process as many times as recommended. A conditioning product should be applied after neutralization to help lower the pH and restore the hair to a normal healthy state; some manufacturers recommend the conditioning process prior to the neutralizing step.

After being relaxed, the hair is still vulnerable to breakage; you'll want to avoid using highly heated tools as you finish styling your client.

If your client is looking for a color, whether semi-permanent or permanent, you can usually schedule that about two weeks after the relaxer perm. Hair that is both relaxed and colored will require a lot of attention, but regular protein treatments can help keep the client's hair as healthy as possible.

There's a strange misconception out there that relaxers promote hair growth. This is false: while straightened hair may look longer, relaxers do not make the hair grow. Also, since the hair grows in curly, a touch up at the roots is usually required every 6-8 weeks for the best results. This should not be done more frequently as relaxing too often can lead to over-processing, which can cause thinning and breakage.

As we wind up the topic of relaxers, I need to return to the importance of timing. Relaxers being left on the hair too long is a serious issue: should you choose to ignore the manufacturer's recommended timeframe, you run a heavy risk of damage and hair loss. Also, to safely relax hair, it is imperative that you practice until you can apply the relaxer proficiently, and as quickly as possible. The faster and accurately the product is applied, the better the outcome.

Finally, please be aware: this is a very basic discussion of relaxers. Should you wish to offer this process, a more in-depth course is needed.

Conclusion

Don't fear the 80's! Today's perms can be as versatile as your clients themselves – provided your grasp of the basics supports them.

Don't rush through your scalp and hair analysis. Cuts, scratches, or open sores on the scalp will require that services be postponed; the hair's texture, density, length, porosity, and elasticity will affect the process and rod size you choose.

Don't give a perm

- if the client is allergic,
- if the hair is excessively damaged,
- if the hair has previously been treated with any type of relaxers, and/or
- if metallic dyes are present.

Follow all necessary safety precautions when working with perm chemicals. Protect the client's clothing, apply a protective barrier around the hairline and ears, always keep solutions away from the eyes and skin, and replace wet cotton and towels. It's also a good idea for you to wear gloves when applying solutions.

Always follow manufacturers' directions: do not dilute perm solutions, and discard all unused perm solutions.

To sum up: always put the safety, comfort, and best interests of your client first and foremost in your work, from the consultation to the final styling, and it's hard to go wrong.

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IMAGE 1

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IMAGE 2

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IMAGE 3

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IMAGE 4

<https://commons.wikimedia.org/w/index.php?curid=16599637>

IMAGE 5

https://commons.wikimedia.org/wiki/File:Hair_Windings.jpg

IMAGE 6

<https://en.wikipedia.org/wiki/File:Permmach.gif>

IMAGE 7

https://www.google.com/search?q=concave+permanent+rods&source=Inms&tbm=isch&sa=X&ved=0ahUKEwi4_9uc4oDkAhWBHc0KHbIQAgMQ_AUIEigC&biw=2048&bih=989&dpr=1.25#imgrc=zQOkW3Ci2EPAuM:

IMAGE 8

https://www.google.com/search?biw=2048&bih=989&tbm=isch&sa=1&ei=dChTXcmlHJXStQbf6azYCw&q=STRAIGHT+permanent+rods&oq=STRAIGHT+permanent+rods&gs_l=img.3...60832.64574..65284...0.0..0.93.956.15.....0....1..gws-wiz-img.....0i67j0i8i30j0i24.Max3U_Am9Wg&ved=0ahUKEwjJr6yg4oDkAhUVac0KHd80C7sQ4dUDCAY&uact=5#imgrc=nxhOGP9YMYIe2M:

IMAGE 9

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IMAGE 10

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IMAGE 11

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IMAGE 12

<https://www.pinterest.com/pin/127930445635476910/?lp=true>

IMAGE 13

<https://www.pinterest.com/pin/776026579514665101/?lp=true>

IMAGE 14

<https://www.pinterest.com/pin/125045327124581285/>

IMAGE 15

https://www.google.com/search?biw=2048&bih=989&tbm=isch&sa=1&ei=9u5iXfiZJqSQ_Qbmsl6oCw&q=demonstration+of+permanent+wave+test+curl&oq=demonstration+of+permanent+wave+test+curl&gs_l=img.3...74445.80163..80477...0.0..098.1512.17.....0....1..gws-wiz-img.CaSiq0XtWZ8&ved=0ahUKEwj47KrW7Z7kAhUkSN8KHWaYA7UQ4dUDCA Y&uact=5#imgrc=aDH4BBIbfA_0YM:

IMAGE 16

https://www.google.com/search?q=HOPSCOTCH+PERM&client=firefox-b-1-d&sxsrf=ACYBGNTfLcvalTYxoxgXgeSjg4SLroazKQ:1568742117180&tbm=isch&source=iu&ictx=1&fir=6NvIEvYYk2FpsM%253A%252CaYcOtKtUZTaoUM%252C_&vet=1&usq=AI4_kRpy4ws1sbK2aWqD5A7laRNRJpA8g&sa=X&ved=2ahUKEwj6zI3ls9jkAhXHtp4KHScMA8gQ_h0wHHoECAsQBA&biw=2048&bih=989#imgrc=uGDaulDqDRk-KM:&vet=1

IMAGE 17

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