1 - What is HIV ? HIV vs. AIDS

HIV is the Human Immunodeficiency Virus. It is the virus that can lead to Acquired Immune Deficiency Syndrome, or AIDS. According to the CDC, approximately 50,000 people are infected each year. At the end of 2012 it is estimated that 1.2 million people in the U.S. are living with HIV and roughly 12.8 percent are unaware of their infection.

There are two types of HIV, HIV-1 and HIV-2. In the United States, unless otherwise noted, the term "HIV" primarily refers to HIV-1. Both types of HIV damage a person's body by destroying specific blood cells, called CD4+ T cells, which are crucial to helping the body fight diseases.

AIDS is the late clinical stage of HIV infection, when a person's immune system is severely compromised and has difficulty fighting infections, diseases and certain cancers. Before the development of certain medications, people with HIV could progress to AIDS in just a few years. Because of the release of highly aggressive medications in the 1990's, individuals can live much longer - even decades - with HIV before they develop AIDS.

2 - Origin of HIV

Scientists have identified a chimpanzee in West Africa as the source of HIV infection in humans. Scientists believe that the chimpanzee version of the immunodeficiency virus (called simian immunodeficiency virus or SIV) most likely was transmitted to humans because humans hunted these chimpanzees for meat and came into contact with their infected blood. The virus mutated into what we know as HIV. Over

decades, the virus slowly spread across Africa and later traveled into other parts of the world.

3 - Symptoms of HIV

Some individuals show no symptoms of HIV for many years. According to aidshealth.org, when someone does show signs of HIV infection the symptoms include:

- Dry, flaky skin
- Persistent tiredness
- Fever that comes and goes
- Diarrhea that last more than a week
- Night Sweats
- Swollen lymph nodes in armpits, groin or neck
- White Spots on Tongue
- Headache

4 - Transmission of HIV

HIV is spread primarily by:

- Not using a condom when having sex with a person who has HIV. All unprotected sex with someone who has HIV contains some risk. Anal sex presents the highest risk.
- Having multiple sex partners or the presence of other sexually transmitted diseases (STDs) can increase the risk of infection during sex. Unprotected oral sex can also be a risk for HIV transmission, but it is a much lower risk than anal or vaginal sex.
- Sharing needles, syringes, rinse water, or other equipment used to prepare illicit drugs for injection.
- Being born to an infected mother-HIV can be passed from mother to child during pregnancy, birth, or breast-feeding.

Less common modes of transmission include:

- Being "stuck" with an HIV-contaminated needle or other sharp object. This risk pertains mainly to healthcare workers.
- Receiving blood transfusions, blood products, or organ/tissue transplants that are contaminated with HIV. This risk is extremely remote due to the rigorous testing of the U.S. blood supply and donated organs/tissue.
- Being bitten by a person with HIV. Each of the very small number of cases has included severe trauma with extensive tissue damage and the presence of blood.
- There is an extremely remote chance that HIV could be transmitted during "French" or deep, open-mouth kissing with an HIV-infected person if the HIV-infected person's mouth or gums are bleeding.
- Tattooing or body piercing present a potential risk of HIV transmission, but no cases of HIV transmission from these activities have been documented. Only sterile equipment should be used for tattooing or body piercing.

HIV Transmission Myths, HIV can NOT be spread by:

- Air or water.
- Insects, including mosquitoes. Studies conducted by CDC researchers and others have shown no evidence of HIV transmission from insects.
- Saliva, tears, or sweat. There is no documented case of HIV being transmitted by spitting.
- Casual contact like shaking hands or sharing dishes.
- Closed-mouth or "social kissing"

5 - HIV Testing

The most commonly used HIV tests detect HIV antibodies. Antibodies are the substances the body creates in response to becoming infected with HIV. There are tests that look for HIV's genetic material or proteins directly; these may also be used to find out if someone has been infected with HIV. Most people will develop detectable antibodies that can be detected by the most commonly used tests in the United States within 2 to 8 weeks (the average is 25 days) of their infection. Ninety-seven percent (97%) of persons will develop detectable antibodies in the first 3 months. Even so, there is a small chance that some individuals will take longer to develop detectable antibodies. Therefore, a person should consider a follow-up test more than three months after their last potential exposure to HIV. Recently, rapid HIV tests became available that can give results in as little as 20 minutes.

6 - Preventing HIV

As mentioned previously, the most common ways HIV is transmitted is through anal or vaginal sex or sharing drug injection equipment with a person infected with HIV. It is important to take steps to reduce the risks associated with these. They include:

- Know your HIV status. Everyone between the ages of 13 and 64 should be tested for HIV at least once. If you are at increased risk for HIV, you should be tested for HIV at least once a year.
- If you have HIV, you can get medical care, treatment, and supportive services to help you stay healthy and reduce your ability to transmit the virus to others.
- If you are pregnant and find that you have HIV, treatments are available to reduce the chance that your baby will have HIV.

7 - Treatment of HIV / AIDS

Currently, there is no cure for HIV/AIDS, but a variety of drugs do exist which can be used in combination to control the virus. According to the Mayo clinic, each of the classes of anti-HIV drugs blocks the virus in different ways. It's best to combine at least three drugs from two different classes to avoid creating strains of HIV that are immune to single drugs. The classes of anti-HIV drugs include:

- Non-nucleoside reverse transcriptase inhibitors (NNRTIs). NNRTIs disable a protein needed by HIV to make copies of itself. Examples include efavirenz (Sustiva), etravirine (Intelence) and nevirapine (Viramune).
- Nucleoside reverse transcriptase inhibitors (NRTIs). NRTIs are faulty versions of building blocks that HIV needs to make copies of itself. Examples include Abacavir (Ziagen), and the combination drugs emtricitabine and tenofovir (Truvada), and Iamivudine and zidovudine (Combivir).
- Protease inhibitors (PIs). PIs disable protease, another protein that HIV needs to make copies of itself. Examples include atazanavir (Reyataz), darunavir (Prezista), fosamprenavir (Lexiva) and ritonavir (Norvir).

II - HEPATITIS B

Hepatitis B is irritation and inflammation of the liver due to infection with the hepatitis B virus (HBV).

Other types of viral hepatitis include:

Hepatitis A Hepatitis C Hepatitis D

Transmission

- Hepatitis B infection can be spread through having contact with the blood, semen, vaginal fluids, and other body fluids of someone who already has a hepatitis B infection.
- Blood transfusions (not common in the United States)
- Direct contact with blood in health care settings
- Sexual contact with an infected person
- Tattoo or acupuncture with unclean needles or instruments
- Shared needles during drug use
- Shared personal items (such as toothbrushes, razors, and nail clippers) with an infected person
- The hepatitis B virus can be passed to an infant during childbirth if the mother is infected.

Symptoms

- Appetite loss
- Fatigue
- Fever, low-grade

Muscle and joint aches

- Nausea and vomitting
- Yellow skin and dark urine due to jaundice

Prevention

Vaccination is available. Salon workers are strongly encouraged to receive Hepatitis B Vaccination due to the fact that they experience frequent exposure to body fluids.

Summary

HIV/AIDS is a devastating disease that attacks the immune system and infecting approximately 50,000 U.S. citizens each year. Through research, knowledge of its transmission and progression has been obtained. By ways of medical advancements, means have been established to hinder and prevent HIV transmission and manage infections. As service providers we must do our due diligence to ensure the safety of our clients and ourselves by taking stern precautions in the spread of disease. Perhaps a good place to start would be following recommendations for hepatitis vaccination.

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CHEMICAL MAKEUP OF THE SKIN, HAIR & NAILS

I - INTEGUMENT means a covering:



The Integumentary System Integument means a covering. Our skin is the covering of the body hence the Integumentary System. The integumentary system includes skin, its

appendages which are: hair, nails, sebaceous, ceruminous and sweat glands. The skin provides the following functions: Remember the Acronym: PASSER * Important to Remember

- **P Protection** as unbroken skin is the body's first line of defense against infection and offers cushion to the internal organs.
- **A Absorption** of beneficial substances and reduces the absorption of harmful substances.

S - **Secretion** - The skin's sebaceous glands secrete sebum, a complex mixture of fatty acids. Secretions of the skin, hair and nails make up the acid mantle. The acid mantle is the protective coating that shields our delicate tissues from environmental toxins, such as bacteria, viruses and harsh UV rays, which over time cause the greatest environmental damage to the human body

- **S Sensation** of touch, pressure, pain, heat, cold and textures.
- **E Excretion** or the elimination of waste through the skins sudoriferous glands.
- **R** *Regulates* the body's internal temperature so that the organs can function properly.

II - POTENTIAL HYDROGEN (PH)

Though our goal as cosmetologist, estheticians and nail specialists is to provide results oriented services, we must respect the complex function of the acid mantle in order to healthfully enhance the overall beauty of our clients. The salon professional must have a working

knowledge of the anatomy of the skin, hair and nails as well as a solid understanding of the proper methods of manipulation to the acid mantle in order to obtain and provide complete optimal salon treatments.

In addition to the anatomy of the skin, hair, and nails, this block of instruction will concentrate of the use of specific pH on the skin, hair and nails in order to change and optimize physical characteristics. Before we began to delve into each area of the amazing network of the Integumentary system, let's take a look at the pH scale and how, as a professional you can utilize it in order to get results!

Definition : Potential Hydrogen is the unit of measurement that indicates whether a substance is acidic, neutral or alkaline. Only matter that contains and/or dissolves water can possess an acidic or alkaline nature, water being neutal (7). Just as degrees measure temperature and inches measure distance, PH measures the amount of acidity or alkalinity of something. What determines the acid or alkaline value of something? PH is determined by the number of positive hydrogen ions or conversely, the number of negative hydroxide ions it contains. Specifically, if a solution has more positive hydrogen ions it is acidic. If a solution has more negatively charged hydroxide ions, it is alkaline.

PH SCALE : As a ruler measures inches and centimeters, the PH scale measures potential hydrogen. The PH scale ranges from O to 14. The number 7 is the mid point; the point of neutrality. Everything with a value between O and 7 is considered to be acidic. The skin, hair and nails are all slightly acidic with a shared PH of approximately 5.5. In contrast, everything with a PH value of more than 7 to 14 is considered alkaline. Note, each number on the PH scale denotes a difference of 10. For example a PH of 6 is 10 times more acidic than neutral 7. Conversely, 6 is 10 times LESS acidic than 5.

What does PH mean to the Beauty Professional?

Think of the PH measurement as a number which denotes the comfort level of the skin, hair and nails. The skin, hair and nails all employ the protective function of the acid mantle. It is the acid mantle which makes it possible to determine the PH of the skin, hair and nails. As stated before, the skin, hair and nails all share a slightly acidic PH of 5.5. Meaning, each exist in a state of homeostasis with a PH value of 5.5. So, for the skin, hair and nails, 5.5 is the magic number for maximum comfort.

It is similar to the commercials for sleep number beds! The wife needs a soft low number in order to get a restful night's sleep whereas the husband needs a firmer larger number so that he will not awake with aches and pains. The concept is the same for human skin, hair and nails. Products that are "Skin Friendly", or rather, have PH values which mimic the PH of the skin hair and nails, do not disturb the protective eco system of the acid mantle of the skin hair or nails. Skin friendly products support the daily functioning of the skin, hair and nails. With that in mind, also note that stylist and beauty technicians can manipulate the ph of the skin hair and nails during professional treatments in order to change their physical constitutions, thus creating optimum results!

Manipulating PH in the Treatment Room:

Introducing various PH values to the skin, hair and nails will change the physical makeup of the areas to which the solution is applied.

<u>* Important to Remember</u>

Acidic Solutions

- tightens integumentary tissues, constrict the body's blood network as well as eliminate water.

Alkaline Solutions

- soften and expand tissues, dilate or open the blood network and breakdown oil and eliminate water..

Cosmetologist, skin care therapist and nail technicians alike all manipulate the PH of the Integumentary System in order to obtain results. **Below are a few of the professional services which change PH.**

Facial - Desincrustation/ Alkaline wash

These treatments both employ the use of extremely alkaline solutions (PH @12) in order to aggressively breakdown oils (sebum) in the skin. Desincrustation solutions are typically done before extractions because in addition to degreasing the skin, the solution also softens skin tissue relaxing the follicle opening making extractions easier. In addition to a very alkaline PH, alkaline washes contain enzymes which force the skin to slough off; hence they are used at the beginning of professional facial treatments in order to effectively prepare the skin for the skin specific treatment. Alkaline wash allows the treatment solutions to absorb more readily and evenly into deeper layers of the skin. Think of it like the dusting of furniture. You wouldn't put wood treatment oil on your dining room table before you removed the layers of dust. Another benefit of an alkaline wash is that the wash, over a series of treatments will remove the unwanted hairs on the tip of the nose.

Permanent Waving

Stylist will mold the hair to its desired texture, utilizing huge rollers for straight hair, tiny rollers for curls, and then introduce an alkaline solution to the cortex of the hair which ultimately breaks apart the united keratinized cells. Then the stylist will introduce an extremely acidic solution which will re-establish a connection between the cells of the newly textured hair. Because the process of chemical waving does not affect the root of the hair, this service is deemed temporary as new growth is already programmed with the individual's natural cortex.

Chemical Texturizing of the Hair

Whether an individual wants straight bone straight hair or she desires a day at the beach soft sexy waves. The hair stylist can customize the texture of the hair to meet her exact needs! This manipulation is called permanent waving. Stylists will mold the hair to its desired texture, utilizing huge rollers for straight hair, tiny rollers for curls, and then introduce an alkaline solution to the cortex of the hair which ultimately breaks apart the united keratinized cells. Then the stylist will introduce an extremely acidic solution which will reestablish a connection between the cells of the newly textured hair. Because the process of chemical waving does not affect the root of the hair, this service is deemed temporary as new growth is already. programmed with the individual's natural cortex.

PH of Retail Products:

Products that you are retailing to your client for home care use should match that of the skin, hair and nails as closely as possible, (slightly acidic in PH). As professionals, our responsibility is to perform results oriented services. Manipulating the client's skin, hair and nails is a necessary part of that goal. Client's main responsibility however, is to protect their skin hair and nails, thus safeguarding their results! You have learned that the skin, hair and nails react differently depending on the PH of a solution. More specifically, PH can literally change the physical makeup of the skin, hair and nails allowing products to penetrate faster and deeper into the skin. PH can change the texture of hair and introduce semi-permanent materials into the fingernails. This manipulation of PH is best left to the professional as negative cosmetic and health effects can be caused from improper application of PH.

FOR EXAMPLE : A client with acne, determined to remove oil, washes frequently with a cleanser which has an alkaline pH. Thus, the cleanser leaves the pores open, removes water and oil from the acid mantle. Her acne worsens.

Why? Human sebum contains strong antibacterial properties. Bacteria that cause acne are only harmful after they have penetrated into the skin. It is within the skin that oil is a growth medium for bacteria. The protective nature of the oils atop our skin should not be stripped away by harsh alkaline cleansers. The removal of the acid mantle is allowing bacteria to penetrate more readily. Also, the body reacts to the dehydration caused by the alkaline cleanser by creating oil underneath the skin. The client needs an antibacterial cleanser in which the pH mimics the client's skin.

Client is using an alkaline over the counter shampoo and conditioner daily and finds that their hair seems to be frizzy, oily at the root yet, very dry throughout the hair.

Why? The alkaline cleanser is stripping the hair of the shield of the acid mantle of sebum, thus stimulating the sebaceous glands to produce

more oil. Hence, the oily scalp yet, the dry frizzy ends. The client needs a shampoo and conditioner with a pH that mimics that of the clients scalp.

III - ANATOMY OF THE SKIN

There are three distinct divisions of the skin: **Epidermis, Dermis, and Subcutaneous.**

THE DERMAL SYSTEM / THE 3 LAYERS OF THE SKIN



The epidermis is the outermost layer of the skin.

Also referred to as the true skin or the live layer because dense connective tissue, blood vessels, nerves, lymph vessels, smooth muscles, sweat glands, hair follicles and sebaceous glands

3 - SUBCUTANEOUS

Also referred to as the hypodermis because of its positioning beneath the dermis is made up of adipose or fat cells.

1-EPIDERMIS

The **Epidermis** is the outermost division of the skin. It is in the epidermis that keratinization occurs. The process of keratinization begins with

mitosis. Mitosis is when skin cells are born by dividing in half. These cells then travel up through the epidermis creating distinctive layers. The distinctive layers the skin cells create are called strata.

As the epithelial cells work their way to the surface of the epidermis, they change shape and chemical composition because they lose most of their water and eventually die. This evolution of the skin cells is what makes each strata distinct.

THE STRATA

Stratum Germinativum (STRAT-um-jer-mih-NAY-tih-vum)

Gives birth to skin new cells through a process called mitosis, dividing in order to duplicate.

Melanocytes

Produces skin color, irregularly shaped their cell bodies extend and weave between the other epithelial cells of this layer. Melanocytes are activated to produce melanin by exposure to sunlight. Everyone has the same number of melanocytes, but every person has specific genetic information or rather their genes are programmed to produce different amounts of melanin. This is because all humans evolved in Africa. The first humans had to withstand scorching temperatures, 20 degrees higher than the average temperature today as well as long periods of drought. Subsequently the stratum Germinativum is approximately 70% water in this basement layer of the human shield. Overtime, humans migrated away from the equator to regions such as the Baltic states of Norway and Sweden in search of more resources and mild temperatures. This migration caused genetic recombinations which govern the activity of melanocytes. Hence, the many variations of skin color we see today.

Stratum Spinosum (STRAT-um spy-NOH-sum)

Here the cells are prickly or spiny shaped skin cells. ere cells come to die! The dead cells are converted to protein. Keratinized cells converted

Stratum Granulosum (STRAT-um-GRAN-you-LHO-sum)

The Stratum Granulosum has grainy like cells and these cells lose their nucleus and become compact and brittle.

Stratum Lucidum (STRAT-um-LOO-sid-um)

The Stratum Lucidium is a clear layer as the skin cells become transparent and thick.

Stratum Corneum (STRAT-um-CORN-E-um)

The Stratum Corneum is made of a protein called keratin. It is this layer that prevents absorption of harmful substances and protects us from our environment.

2 - DERMIS

Also referred to as the true skin or the live layer because dense connective tissue, blood vessels, nerves, lymph vessels, smooth muscles, sweat glands, hair follicles and sebaceous glands are all embedded in the dermis. The dermis can be divided into two sub layers; the papillary dermis and the reticular dermis. Papillary portion is the sub layer that houses the blood vessels or capillaries which nourish the overlying epidermis Reticular dermis is the deepest layer of the dermis. Within this layer live fibroblasts. Fibroblasts are specialized cells whose main function is to make collagen and elastin; thick fibrous proteins which give the skin its strength and turgor.

3 - SUBCUTANEOUS

The subcutis, also referred to as the hypodermis because of its positioning beneath the dermis is made up of adipose or fat cells. This layers main job is to act as a cushion in that it protects our internal organ systems from trauma.

IV - Anatomy of the Hair

Hair is a main characteristic of all mammals. In some parts of the body, hair is so small it seems invisible yet, in other places it is very obvious as on the head, armpits and around the genitalia. The amount of hair a person develops is related to complex genetic factors.



Hair is a main characteristic of all mammals. In some parts of the body hair is so small it seems invisible, yet in other places it is very obvious as on the head, armpits and around the genitalia. The amount of hair a person develops is related to complex genetic factors.

1. Shaft

Outermost, visible portion of the hair. The shaft of the hair is coated with sebum. This sebum makes up the acid mantle of the hair.

2. Cuticle

Outermost portion which consist of several layers of overlapping scale like cells.

3. Cortex

Principle portion of the hair. It is the cortex of the hair that contains pigment and thus is responsible for the different shades of hair color. It is also in the cortex where kerinatization is most active. It is this process which actually determines the texture of an individual's hair. The keratinized cells which makeup the cortex are united, elastic, dense and fibrous. These cells are also elongated. The degree of this individualized lengthening of the cortex cells is what gives hair its different textured appearance. For example, curly hair's keratinized cells are less elongated than the cells of straight hair.

4. Medulla

The central or middle part of the hair is the medulla. The cells that make up the medulla have many sides. Furthermore within these cells are many pockets of air.

5. Hair Follicle

Within the hair follicle, the actual root or bulb of the hair is connected to blood vessels which nourish the growth of the hair. The epidermal cradle continuous with the stratum germanitivum is where the hair rests. Because the hair follicle is an involution of the epidermis, the growth of the hair is very similar to that of the skin. Mitosis, the division of cells starts in the root of the hair. As a result of the skin cells in the stratum gernamitivum pushng upwards, hair cells are pushed outwards toward the hair shaft. During this journey the hair cells keratinize and eventually will make up the hair shaft. Hair growth cycles vary from person to person. Generally, scalp hair grows for three years and rest for 1 to 2 years.

V. ANATOMY OF THE NAIL



While our furry mammal friends such as birds, cats, dogs have claws, humanoids have finger and toe nails. The nail, technically referred to as onyx (AHN-iks) is actually leathery epidermal skin cells which modify our outermost layer of skin at the hands and feet. Their function is to create traction and grip for us as well as provide protection from predators. A healthy nail is whitish and somewhat translucent, with a pinkish hue apparent. Nails are porous, allowing water to pass. The water content of the nail actually depends on the environment. It is the water content of a nail thiat gives the nails their flexability.

1. Nail bed

Is the bed of living skin where the nail plate, or hardened keratin sits. The nail bed is supplied with many nerves and is enriched with many blood vessels.

2. Matrix

The actual root of the nail. The matrix is composed of nerves, lymph, and blood vessels which provide the nourishment for the nail to form. The visible portion of the matrix is the lunula. The lunula extends from underneath living skin, out and underneath the nail palate. The lunula is the white half moon shaped area at the bottom of the nail.

3. Nail Plate

Most visible portion of the nail. The nail plate is composed of 100s of layers of nail cells whose primary function is to manufacture the hard keratinized nail plate.

4. Cuticle

Dead, sticky tissue attached to the nail plate. The cuticles job is seal the space between the nail plate and the living skin of the finger above the nail plate. The seal that the cuticle created protects the matrix from microorganisms, thus preventing infection and disease.

5. Eponychium (ep-oh-NIK-eeum)

Living skin at base of the nail plate. Cuticle tissue is attached to the underside of the eponychium and the top of the nail plate. As the nail plate slides along the nail bed, growing out, the cuticle breaks away from the eponychium and eventually serves as a protective seal between the nail plate and the eponychium.

6. Hyponychium (hy-poh-NIK-eeum)

Slightly thickened skin underneath the free edge of the nail plate (portion of nail that extends over the tip of the finger). This tissue protects the underside of the nail plate from infection.

SUMMARY

Our integumentary system along with its appendages offers the human body important protection and functions. To ensure that protection is optimal we must take measures to maintain a healthy pH balance. This must be achieved even when performing various services that require a disruption of natural pH for desired results. Armed with a solid knowledge of the structures and physiology of the skin, hair and nails makes obtaining those results easier and more attainable.

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STATE & FEDERAL LAW

LEARNING OBJECTIVES

1 - List and describe your legal responsibilities according to the Florida Cosmetology Practice Act and Florida Administrative Code.

2 - Know your duties and responsibilities under Florida Law

Introduction

Two primary areas of law pertaining to the practice of cosmetology in the state of Florida are: The Florida Cosmetology Practice Act: Chapter 477 of the Florida Statutes Chapter 61G5 of the Florida Administrative Code

The following page simplify excerpts of these documents, clarifying the regulations that address you as a cosmetologist, and explaining your legal responsibilities and obligations.

Other sections or chapters of the Florida Statutes and Florida Administrative Code that apply to the practice of cosmetology (such as Chapter 456: Health Professions and Occupations; or Chapter 120: Administrative Procedure Act: among others) are not addressed in this chapter.

Text in full for the laws of Florida may be found at

http://www.myfloridalicense.com/dbpr/pro/cosmo/documents/printable_cosmetology_lawbook.pdf

Please refer directly to the Laws of Florida to determine the effective date of a creating act or a particular amendment.

Department of Business A Professional Regulation			
Board of Cosmetology			
CHAPTER 477, Florida Statutes			
CHAPTER 61G5, Florida Administrative Code Sections of CHAPTER 455, Florida Statutes CHAPTER 61, Florida Administrative Code Updated on August 24, 2016			
		2601 Blai Tallahassee 85	r Stone Road Florida 32399-0790 0.487.1395
		www.MyFloridaLicense.com	
		Rick Scott, Governor	Ken Lawson, Secretary

Chapter 477 - Cosmetology Florida Laws & Rules

477.0132 Hair braiding, hair wrapping, and body wrapping registration -

- **A**. Persons whose occupations or practice is confined solely to hair braiding must register with the department, pay the applicable registration fee, and take a two-day 16 hour course. This course shall be board approved and consist of 5 hours of HIV/AIDS and other communicable diseases, 5 hours of sanitation and sterilization, 4 hours of disorders and diseases of the scalp, and 2 hours of studies regarding laws affecting hair braiding

B. Persons whose occupation or practice is confined solely to hair wrapping must register with the department, pay the applicable registration fee and take a one-day 6 hour course. This course shall be board approved and consist of education in HIV/AIDS and other communicable diseases, sanitation and sterilization, disorders and diseases of the scalp, and studies regarding law affecting hair wrapping

- **C**. Unless otherwise licensed or exempted from licensure under this chapter, any person whose occupation or practice is body wrapping must register with the department, pay the applicable registration fee and take a two-day 12 hour course. This course shall be board approved and consist of education in HIV/AIDS and other communicable diseases, sanitation and sterilization, disorder and diseases of the skin and studies regarding laws affecting body wrapping.

- **D**. Only the board may review , evaluate, and approve a course required of an applicant for registration under this subsection in the occupation or practice of hair braiding, hair wrapping or body wrapping. A provider of such a course is not required to hold a license under chapter 1005.

Hair braiding, hair wrapping and body wrapping are not required to be practiced in a cosmetology salon or specialty salon. When hair braiding, hair wrapping or body wrapping is practiced outside a cosmetology salon or specialty salon, disposal implements must be used or all implements must be sanitized in a disinfectant approved for hospital use or approved by the federal Environment Protection Agency.

Pending Issuance of registration, a person is eligible to practice hair braiding, hair wrapping, or body wrapping upon submission of a registration application that includes proof of successful completion of the education requirements and payment of the applicable fees required by this chapter.

477.014 Qualifications for practice. -

On and after January 1, 1979, no person other than a duly licensed cosmetologist shall practice cosmetology or use the name or title of s cosmetologist.

477.015 Board of Cosmetology. -

- There is created within the department the Board of Cosmetology consisting of seven members who shall be appointed by the governor, subject to confirmation by the Senate, and whose function it shall be to carry out the provisions of this act.

- Five members of the board shall be licensed cosmetologist and shall have been engaged in the practice of cosmetology in this state for not less than 5 years. Two members of the board shall be laypersons. Each board member shall be a resident of this state and shall have been a resident of this state for not less than 5 continuous years.

- The governor may at any time fill vacancies on the board for the remainder of unexpired terms. Each member of the board shall hold over the expiration of his or her term until a successor is duly appointed and qualified. No board member shall serve more than two consecutive terms, whether full or partial.

- Before assuming his or her duties as a board member, each appointee shall take the constitutional oath of office and shall file it with the Department of State, which shall then issue to such member a certificate of his or her appointment.

- The board shall, in the month on January, elect from its number a chair and a vice chair.

- The board shall hold such meetings during the year as it may determine to be necessary, one of which shall be the annual meeting. The chair of the board shall have the authority to call other meeting at his or her discretion. A quorum of the board shall consist of not less than four staycurrentflorida.com

members.

- Each member of the board shall receive \$50 for each day spent in the performance of official board business, with the total annual compensation per member not to exceed \$2000. Additionally, board members shall receive per diem and mileage at provided in s. 112.061, from place of resident to place of meeting and return.

- Each board member shall be held accountable to the governor for the proper performance of all his or her duties and obligations. The governor shall investigate any complaints or unfavorable reports received concerning the actions of the board, or its members, and shall take appropriate action thereon, which action may include removal of any board member. The governor may remove from office any board member for neglect of duty, incompetence, or unprofessional or dishonorable conduct.

477.019 Cosmetologists; qualifications; licensure; supervised practice; licensure renewal; endorsement; continuing educations. -

-A person desiring to be licensed as a cosmetologist shall apply to the department for licensure.

- An applicant shall be eligible for licensure by examination to practice cosmetology if the applicant: Is at least 16 years of age or has receive a high school diploma;

- Pays the required application fee, which is not refundable, and the required examination fee, which is refundable if the applicant is determined to not be eligible for licensure for any reason other than to successfully complete the licensure examination; and failure

- Is authorized to practice cosmetology in another state or country, has been so authorized for at least 1 year, and does not qualify for licensure

- Has received a minimum of 1,200 hours of training as established by the board, which shall include, but shall not be limited to, the equivalent of completion of services directly related to the practice of cosmetology of one of the following:

- A school of cosmetology licensed pursuant to chapter 1005.
- A cosmetology program within the public school system
- The Cosmetology Division of the Florida School for the Deaf and the Blind, provided the division meets the standards of this chapter.
- A government-operated cosmetology program in this state.

The board shall establish by rule procedures whereby the school or program may certify that a person is qualified to take the required examination after the completion of a minimum on 1,000 actual school hours. If the person then passes the examination he or she shall have satisfied the requirement; but if the person fails the examination, he or she shall not be qualified to take the examination again until the completion of the full requirements provided by this section.

- An application for the licensure examination for any licensure under this section may be submitted for examination approval in the last 100 hours of training by a pre-graduate of a licensed cosmetology school or program within the public school system, which school or program is certified by the Department of Education with fees as required in paragraph (2)(b). Upon approval, the application may schedule the examination on a date when the training hours are completed. An applicant shall have 6 months from the date of approval to take the examination. After the 6 months have passed,, if the applicant failed to take the examination , the applicant may re-apply. The board shall establish by rule the procedures for the pre-graduate application process.

Upon an applicant receiving a passing grade, as established by board rule, on examination and pay the initial licensing fee, the department staycurrentflorida.com

- If an applicant passes all parts of the examination for licensure as a cosmetologist, he or she may practice in the time between passing the examination and receiving a physical copy of his or her license if he or she practices under the super vision of a licensed cosmetologist in a licensed salon. An applicant who fails any part of the examination may not practice as a cosmetologist and my immediately apply or examination.

- Renewal of license registration shall be accomplished pursuant to rules adopted by the board.

- The board shall adopt rules specifying procedures for the licensure by endorsement of practitioners desiring to be license in the state who hold a current active license in another state and who have met qualifications substantially similar to, equivalent to, or greater that the qualifications required of applicants from this state.

- The board shall prescribe by rule continuing education requirements intended to ensure protection of the public through updated training of the licensees and registered specialists, not to exceed 16 hours biennially, as a condition for renewal of a license or registration as a specialist under this chapter, Continuing education courses shall include but not limited to, the following subjects as they relate to the practice of cosmetology: human immunodeficiency virus and acquired immune deficiency syndrome; Occupational Safety and Health Administration regulations; workers' compensation issues; state and federal laws and rules as they pertain to cosmetologist, cosmetology, salons, specialists, speciality salons, and booth renters; chemical makeup as it pertains to hair, skin, and nails; and environmental issues. Courses given at cosmetology conferences may be counted toward the number of continuing education hours required if approved by the board.

- Any person whose occupation or practice is confined solely to hair braiding, hair wrapping, or body wrapping is exempt from continuing education requirements of this subsection.

- The board may, by rule, require any licensee in violation of a continuing education requirement to take a refresher course or refresher course and examination in addition to any other penalty. The number of hours for the refresher course may not exceed 48 hours.

477.0201 Specialty registration; qualifications; registration renewal; endorsement.

Any person is qualified for registration as a specialist in any one or more of the specialty practices within the practice of cosmetology under this chapter who: Is at least 16 year of age or has received a high school diploma. Has received a certificate of completion in specialty pursuant to s. **477.013(6)** from one of the following:

- A school licensed pursuant to s. **477.023** A school licensed pursuant to chapter 1005 or the equivalent licensing authority of another state.

- A specialty program within the public school system.

- A specialty division within the Cosmetology Division of the Florida School for the Deaf and Blind provided the training programs comply with the minimum curriculum requirements established by the board.

- A person desiring to be registered as a specialist shall apply to the department in writing upon forms prepared and furnished by the department. Upon pay the initial registration fee, the department shall register the applicant to practice one or more of the specialty practices within the practice of cosmetology. Renewal of registration shall be accomplished pursuant the rules adopted by the board. The board shall adopt rules specifying procedures for the registration of specialty practitioners desiring to be registered in this state who have been registered or licensed and are practicing in states which have standard substantially similar to, equivalent to, or more stringent that the standards of this state.

- Pending issuance of registration, a person is eligible to practice as a specialist upon submission of a registration application that includes proof of successful completion of the education requirements and payment of the applicable fees required by this chapter, provided such practice is under the supervision of a registered specialist in a licensed speciality or cosmetology salon.

477.0263 Cosmetology services to be performed in licensed salon; exception. -

- Cosmetology services shall be performed only by licensed cosmetologist in licensed salons, except as otherwise provided in this section.

- Pursuant to rules established by the board cosmetology services may be performed by a licensed cosmetologist in a location not limited to, a nursing home, hospital, or residence when a client for reasons to fill health is unable to go to a licensed salon. Arrangements for the performance of such cosmetology services in a location other than a licensed salon shall be made only through a licensed salon.

- Any person who holds a valid cosmetology license in any state or who is authorized to practice cosmetology in any country, territory, or jurisdiction of the United States may perform cosmetology services in a location other than a licensed salon when such services are performed in connection with the motion picture, fashion photography, theatrical, or television industry; a photography studio salon; a manufacturer trade show demonstration; or an educational seminar.

477.0625 Prohibited acts. -**It is unlawful for any person to:**

- Engage in the practice of cosmetology or a specialty without an active license as a cosmetologist or registration as a specialist issued by the department pursuant to the provisions of this chapter.

Own, operate, maintain, open, establish, conduct, or have changed to either alone or with another person or persons, a cosmetology salon or specialty salon:

- Which is not licensed under the provisions of this chapter; or
- In which a person not licensed or registered as a cosmetologist or a specialist is

permitted to perform cosmetology services or any specialty.

Engage in willful or repeated violations of this chapter or of any rule adopted by the board. Permit an employed person to engage in the practice of cosmetology or of a specialty unless such person holds a valid active license as a cosmetologist or registration as a specialist.

- Obtain or attempt to obtain a license or registration for money, other that the required fee, or any other thing of value or by fraudulent misrepresentations.

- Use or attempt to use a license to practice cosmetology or a registration to practice a specialty, which license or registration is suspended or revoked.

- Advertised or imply that skin care services or body wrapping, as performed under this chapter have any relationship to the practice of massage therapy as defined in s.**480.033(3)**, except those practices or activities defined in s **477.013**.

- In the practice of cosmetology, use or possess a cosmetic product containing a liquid nail monomer containing any trace of methyl methacrylate (MMA). Any person who violated any provision of this section commits a misdemeanor or the second degree, punishable as provided in s. **775.082** or s. **775.083**.

CHAPTER 61G5

61G5 - 17.006 / General Information & Forms

- The board may be contacted through the Department of Business and Professional Regulation, Northwood Centre, 1940 N. Monroe Street, Tallahassee, Florida 32399-0790, telephone, **(850) 488-5702**. Office hours are 8:00 A.M. to 5:00 P.M., Monday through Friday, except for state holidays.

- The following forms are used by the department and may be obtained by writing to the board office. Examination application for cosmetologists and specialty registration applications Re-examination applications for cosmetologists. Application for endorsement of cosmetologists and specialists. Salon and specialty salon applications.

61G5 - 17.017 Board Member Compensation

In addition to receiving \$50 compensation per day for attending official meetings of the board, a board member shall also be eligible to receive compensation for the following "other business involving the board."

- All joint board or committee meetings required by statute, Board, rule or board action;

- Official meetings or workshops called by the chairman at which either a committee composed of two (2) or more board members or a quorum of the board is present pursuant to Chapter 120 and 477, F.S.;

- Meeting of board members with department staff or contractors of the department at the department's or the board's request. Any participation or meeting of members noticed or unnoticed will be on file in the board office;

- Meeting or conference which the board member attends at the request of the secretary or the secretary's designee;

- Administrative hearing or legal proceedings at which the board member appears as witness or representative of the board at the request of

counsel to the board;

- All activity of board members, if authorized by the board, when grading, proctoring or reviewing examinations given by the department; All participation in board-authorized meetings with professional associations of which the board is a member or invitee. This would include all meetings of national associations or registration boards of which the board is a member as well as board-authorized participation in meetings of national or professional associations or organizations involved in educating, regulating or reviewing the profession over which the board has statutory authority;

- Any and all other activities which are board approved and which are necessary for board members to attend in order to further protect the public health, safety and welfare, through the regulation of which the board has statutory authority;

- In the event that a board member is present for a meeting or hearing defined above, and the meeting is cancelled without prior notice, the attending board member will be eligible for compensation provided the member was present at the scheduled time.

61G5 - 18.001 / Who may apply.

- Individuals desiring to be licensed as a cosmetologist shall meet all required qualifications as specified in **Section 477.019, F.S**.

- If an applicant for licensure by examinations meets all required qualifications except the required minimum hours of training, he or she shall be entitled to take the licensure examination to practice cosmetology if the applicant has received a minimum of 1,000 hours of training established by the board, and has been certified by the director of the school or program in which he or she is currently enrolled to have achieved the minimum competency standards of performance as prescribed in **Chapter 61G5-22, F.A.C**., for the hours completed.

Summary

You now have a clear understanding of Florida Statutes , **Chapter 477** and its supporting Administrative Code **Chapter 61G5** and why they were created to protect the health, safety and welfare of the Florida consumer. You are equipped with the knowledge of where, when and how the practice of cosmetology and specialties can be performed legally, the requirements and restrictions of the facilities and renewal procedures.

Works Cited

State of Florida Department of Business and Professional Regulation, Board of Cosmetology, Chapter 477, Florida Statutes, March 17, 2015

Board of Cosmetology. (n.d.). Retrieved April 15, 2016, from http://www.myfloridalicense.com/dbpr/pro/cosmo/statutes.html

Division of Workers' Compensation **NEW RULES**

Rules 69L-5.205 and 69L-5.217, Florida

Administrative Code: The Florida Department of Financial Services, Division of Workers' Compensation announces that **Rule 69L**-**5.205** (Loss Data Reporting), F.A.C., and **Rule 69L-5.217**, (Civil Penalties and Fines), F.A.C., have been adopted with an effective date of December 29, 2011. **Rule 69L-5.205**, F.A.C., clarifies that former self-insurers must report loss data for the final period of authorization only once. **Rule 69L-5.217**, F.A.C., reduces the penalties assessed against self-insurers for late filing of required forms, reports and documents.

Both rules may also be found via http://www.myfloridacfo.com/wc/forms.html Or https://www.flrules.org/gateway/ChapterHome.asp?Chapter=69L-5

Revisions to Rule 69L-7.100 Florida Administrative Code (F.A.C.) has been adopted with an effective date of November 13, 2011. This rule incorporates by reference the Florida Workers' Compensation Reimbursement Manual for Ambulatory Surgical Centers (ASC Manual), 2011 Edition. The ASC Manual contains the Maximum Reimbursement Allowances determined by the Three-Member Panel, pursuant to Section 440.13(12), F.S. and establishes reimbursement policies, guidelines, codes and maximum reimbursement allowances (MRAs) for items and services provided to an injured worker in connection with a surgical procedure performed in an Ambulatory Surgical Center. The official rule and ASC Manual can be view at http://www.flules.org/Gateway/reference.asp?No-Ref-00686. Florida Workers' Compensation Reimbursement Manual for Ambulatory Surgical Centers, 2011 Edition

Fraud and Consumer Protection

CONSUMER SERVICES

The Division of Consumer Services helps consumers make informed insurance and financial decisions. Our dedicated and experienced staff are continuously trained and informed about any changes that occur in the 26 different categories of insurance. Consumer Assistance and Protection is Our Mission.

STRIKE FORCE

The 11-member Medicaid and Public Assistance Fraud Strike Force was created during the 2010 Legislative Session to increase the effectiveness of programs and initiatives that work to prevent, detect and prosecute Medicaid and public assistance fraud. It is CFO Atwater's goal through the Strike Force to bring all the parties to the table to ensure that the cheats and thieves that are taking Floridians' hard-earned money end up behind bars.

INSURANCE FRAUD

The Division of Insurance Fraud is the law enforcement arm of the Department of Financial Services and is responsible for investigating insurance fraud, crimes associated with claim fraud, insurance premium fraud, workers' compensation claim fraud, workers' compensation premium avoidance and diversions, insurer insolvency fraud, unauthorized insurance entity fraud and insurance agent crimes. The law enforcement detectives of the Division of Insurance Fraud also investigate viatical application fraud, defalcations of escrow funds held in trust by title insurance firms and non-Medicaid related health care fraud.

MONEY SERVICE BUSINESS WORKERS' COMP FRAUD WORK GROUP

The purpose of the work group is to review in depth the practices of the check cashing services industry that aid in workers' compensation premium fraud. Through research and hearings the work group shall identify the loopholes that allow "shell" construction companies to be established; evaluate the operation of check cashing services; identify any ambiguity related to enforcement of the laws governing these entities; and identify any potential revisions to the statutory framework to eliminate workers' compensation premium fraud.

REPORT FRAUD

The Department of Financial Services is proud of our accomplishments finding and prosecuting fraud but we could use your help. If you are a victim of fraud or suspect fraud is occurring, we want to hear from you. Together we can work to put these criminals out of business and make sure that Floridians are protected from those who seek to defraud their fellow citizens.

PUBLIC ASSISTANCE FRAUD

The Division of Public Assistance Fraud works to prevent, detect and prosecute public assistance fraud. With field offices around the state, the Division of Public Assistance Fraud's staff is well positioned to take a regional approach to identifying and addressing fraud.

WORKERS' COMP

The Division of Workers' Compensation ensures that Florida's workers' compensation system is healthy and useful. The division's duties include educating the public about their workers' compensation rights and responsibilities, compiling and monitoring system data and promoting and advocating accident prevention in the workplace.

DECTECT ARSON

The Bureau of Fire and Arson Investigations is the law enforcement branch of the division, and is responsible for conducting fire, arson and explosives investigations as well as other associated crimes (i.e. insurance fraud, homicide, motor vehicle theft, terrorism, etc.) across the state, "Suppression of arson and the investigation of the cause, origin, and circumstances of fire."

FREQUENTLY ASKED QUESTIONS

Regardless of what position you find yourself in, here are some questions that might help you:

Q. How long after an accident do I have to report it to my employer?

You should report it as soon as possible but no later than 30 day or your claim may be denied.

Q. When should my employer report the injury to its insurance company?

Your employer should report the injury as soon as possible, but no later than seven (7) days after knowledge of it The insurance company must send you an information brochure within three days after receiving notice form your employer. The brochure will explain your rights and responsibilities, as well as provide additional information about the workers' compensation law.

Q. My employer will not report my injury to the insurance company. What can I do?

You have the right to report to report the injury to its insurance company. However, if you need assistance, contact the Employee Assistance Office (EAO) at (800) 342-1741 or email wceao@myfloridacfo.com. Q. What kind of medical treatment can I get? The medical provider, authorized by your employer or the insurance company, will provide the necessary medical care, treatment and prescriptions related to your injury.

Q. What kind of medical treatment can I get?

The medical provider, authorized by your employer or the insurance company, will provide the necessary medical care, treatment and prescriptions related to your injury.

Q. Do I have to pay any of my medical bills?

No, all authorized medical bill should be submitted by the medical provider to your employer's insurance company for payment.

Q. Will I be paid if I lose time from work?

Under Florida law, you are not paid for the first seven day of disability. However, if you lose time because your disability extends to over 21 days, you may be paid for the first seven day by the insurance company. How much will I be paid? In most cases, your benefit check, which is paid biweekly, will be 66 2/3 percent of your average weekly wage. If you were injured before October 1, 2003, this amount is calculated by using wages earned during the 91-day period immediately preceding the date of your injury, not to exceed the state limit. If you worked less that 90 percent of the 91 day period, the wages of a similar employee in the same employment who has worked the whole of the 91 day period or your full-time weekly wage may be used. If you were injured on or after October 1, 2003, your average wage is calculated using wages
earned 13 weeks prior to your injury, not counting the week in which you were injured. In addition, if you worked less than 75 nercent of the 13week period, a similar employee in the same employment who has worked 75 percent of the 13-week period or your full time weekly wages shall be used.

Q. Do I have to pay income tax on the money?

No. However, if you go back to work on light or limited duty and are still under the care of the authorized doctor, you will pay taxes on any wages earned while working. For additional information on income tax, you may want to visit the internal Revenue Service website at: www.irs.gov.

Q. When will I get my first check?

You should receive the first check within 21 days after reporting your injury to your employer.

Q. If I'm only temporarily disabled, how long can I get these checks?

You can receive temporary total, temporary partial disability payments or a combination of the two benefits during the continuance of your disability for no more than a maximum of 104 weeks.

Q. Can I receive Social Security benefits and workers' compensation benefits at the same time?

Yes. However an offset, or reduction in you workers' compensation check, may be applied because the law states that the two combined may not exceed O percent of your average weekly wage earned prior to your injury. For further information on Social Security, you may contact the Social Security Administration at (800) 772-2323 or visit its website at www.ssa.gov.

Q. What can I do if I am not receiving my benefit check?

Call the insurance company and ask for the adjuster or claims representative. If you still have questions and don't understand why the checks

Q. If I am unable to return to work until my doctor releases me, does my employer have to hold my job for me?

No, there is no provision in the law that requires your employers to hold the job open for you.

Q. Can my employer fire me if I am unable to work because of an injury and am receiving workers' compensation benefits? No. It is against the law to fire you because you have filed or attempted to file a workers' compensation claim.

Q. If I am unable to return to the type of work I did before I was injured, what can I do?

The law provides at no cost to you, reemployment services to help you return to work. Services include vocational counseling, transferable skills, analysis, job-seeking skills, job placement, on-the-job training, and formal retraining. To find out more about this program, you may contact the Department of Education, Division of Vocation Rehabilitation, Bureau of Rehabilitation and Reemployment Services at (850) 245-3470 or visit it website at: www.rehabworks.org

Q. My employer and the insurance company have denied my claim for workers' compensation benefits. Do I need legal representation to get my benefits? What should I do?

It is your decision whether or not to hire an attorney. However, the EAO can assist you and attempt to resolve the dispute. If unable to resolve, the EAO can further assist you in completing and filing a petition for benefits. This service is provided at no cost to you. For assistance call: (800) 342-171 or email wceao@myfloridacfo.com. For location of the nearest EAO, click on: wceao@myfloridacfo.com/WC/dist_offices.html.

Q. What is the time limit for filing a petition for benefits?

In general, there is a two-year period to file a petition. However, it depends on the type of issue in dispute. You may call the EAO at (800) 342-1741 or email wceao@myfloridacfo.com for specific information.

Q. Is there period of time after which my claim is no longer open?

If you were injured on o after January 1, 1994, the claim is closed one year from the date of your last medical treatment or payment of compensation. This period of time is referred to as the statute of limitations. If you were injured before January 1, 1994, the period is two years.

Q. Can I get a settlement from my claim?

Settlement may be made under certain circumstances and are voluntary, not automatic or mandatory.

Q. If I settle my claim for medical benefits with the insurance company and my conditions get worse later, who pays for my future medical care, surgeries, etc.?

You are responsible for your future medical needs after your claim for medical benefits is settled.

Q. What can I do when it is difficult to get a prescription filled or I am having problems with the pharmacy where I get my workers' compensation medication?

In Florida, an injured worker has the right to select a pharmacy or pharmacist. Florida law prohibits interference with your right to choose a pharmacy or pharmacist. However, a pharmacy is not required to participate in the workers' compensation program. If at any time, your become dissatisfied with your pharmacy or pharmacist's services, you can seek another pharmacy to fill your prescription.

Q. I am one of the individuals covered by s. 119.071 (4) (d), Florida Statutes who is eligible to have my "personal information" exempt from a public record release. If I am injured on the job, and my first report of injury or illness is reported to your office, will our agency automatically withhold my person information forma public record request? No. The "personal information" in s.119.071 (4) d), F.S. is defined as your address, telephone number, photographs, and Social Security number. Although photographs are not collected by out office, our Social Security number will always be redacted from any public record request? request pursuant to s.119.071 (5)5., F.S. However, s. 119.071 (4) (d) 2,. F.S., requires you or your employer to formally writes to the custodial agency that is in possession of your personal information in order to claim the exempt status. Our office accepts emails, faxes or written correspondence when claiming the personal information exempt status. You must provide your full name, complete Social Security number, and occupation title. To request exemption of personal information maintained by our division, you should email, fax, or write to the follow person:

Division of Worker' Compensation Bureau of Data Quality and Collection Attention:

Tonya Ganger 200 E. Gaines Street Tallahassee, FL 32399-4226 dwcreordsprivacy@myfloridacfo.com

SUMMARY

The goal is to ensure that any worker that has involvement with the system; has all the tools needed for a positive outcome. Other government agencies may be enlisted to reach that goal. The FAQ portion answers the most common concerns regarding the worker's rights to compensation and time limits for filing a claim.

WORKS CITED

Division of Workers' Compensation. (n.d.). Retrieved April 15, 2016, from http://www.myfloridacfo.com/division/WC/

OCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE REGULATIONS

OSHA : FORMALDEHYDE IN HAIR PRODUCTS

INTRODUCTION

OSHA has found that many hair smoothing products contain formaldehyde or **METHYLENE GLYCOL**, formaldehyde dissolved in water using products that contain these substances can result in worker exposure to unsafe levels of formaldehyde. As stated in an **OSHA** 2011 press release three salons were found using products containing methylene glycol and were exposed to formaldehyde above **OSHA's** 15-minute short term exposure limit (STEL) of 2 parts formaldehyde per million parts of air (ppm). In one salon, formaldehyde levels during the blow drying phase of treatment were measured at 10 ppm - five times the OSHA STEL.

FORMALDEHYDE IN HAIR PRODUCTS

A - PRODUCT LABELS and SDS (SAFETY DATA SHEETS)

OSHA's Hazard Communication and formaldehyde standard require formaldehyde and other substances that can lead to formaldehyde exposure to be listed in two places for products: on the label of the product bottle or box and in the product's safety data sheets (SDSs), which are documents that explain the health hazards of products that contain hazardous chemicals and the recommended safe practices for working with them.

If a product contains 0.1% or more formaldehyde or releases at least 0.1 ppm of it into the air, manufacturers, importers, and distributors must include the following on the label:

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- Notice that the product contains formaldehyde or may release formaldehyde.
- Name and address of the manufacturer, importer, and/or other responsible companies.
- Notice that employers and SDS can provide additional hazard information.

If a product can release more than 0.5 ppm of formaldehyde into the air, the label must also include:

- **A** List of all product health and safety hazards
- **B** The words "Potential Cancer Hazard"

B. Chemicals that CAN release formaldehyde

Formaldehyde and methylene glycol are not the only "ingredients" on a product label or SDS that will expose workers to formaldehyde. Stated on OSHA's website, "Sometimes, manufacturers or distributors intentionally omit ingredients from labels or SDS. There are also other names for formaldehyde, and other chemicals that can expose you to formaldehyde when the product is used. These are listed in the table below, and are subject to the same OSHA rules as formaldehyde."

CHEMICALS THAT CAN RELEASE FORMALDEHYDE

CHEMICAL NAME	SYNONYM	CAS NUMBER
Formaldehyde	Formalin	50-00-0
	Methanal	
Methylene glycol	Methanediol	463-57-0
	formalin	
	formaldehyde monohydrate	
Timonacic acid	thiazolidinecarboxylic acid, 1,3-	60731-25-1
	thiazolidine-4-carboxylic acid	
(Phenylmethoxy)methanol	Benzylhemiformal	14548-60-8
	benzyloxymethanol	
	phenylmethoxymethanol	
	Preventol D2	
7a-ethyldihydro-1H, 3H,5H-	Bioban CS-1246	7747-35-5
oxazolo[3,4-c]oxazole	ethyldihydrooxazolo[3,4-c]-oxazole	
	5-ethyl-1-aza-3,7-dioxa-bi-cyclo[3.3.0]	
	octane	
Minturo of	Dioban D-1497	27201_00_4

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MIXLULE OL.	DIVUGII F-1407	3/301-00-4
4-(2-nitrobutyl)morpholine and	Mixture of:	2224-44-4
4,4'-(2-ethyl-2-nitro-1,3-	nitrobutylmorpholine and	1854-23-5
propanediyl)bismorpholine	ethylnitrotrimethylenedimorpholine	
5-bromo-5-nitro-1,3-dioxane	Bromonitrodioxane	30007-47-7
-	Bronidox	
2-bromo-2-nitro-1,3-propanediol	Bromonitropropanediol	52-51-7
	Bronopol	
N-(3-chloroallyl)hexamethylene-	Chloroallylhexaminium chloride	4080-31-3
tetraminiumchloride	3-chloroallyl hexaminiumchloride	cis(51229-78-8)
	Dowicil 75	
	Dowicil 200	
	Quaternium 15	
N-(1,3-bis(hydroxymethyl)2-5-	Diazolidinyl urea	78491-02-8
dioxo-4-imidiazolidinyl)-N,N'-	tetramethylol hydanotin urea	
bis(hydroxymethyl)urea	Germaben II	
	Germall II	
Dimethoxymethane	Formal	109-87-8
	methylal	
Formaldehyde, polymer with	Dimethylhydantoin formaldehyde resin	9065-13-8
dimethyl-2,4-imidazolidinedione	DMHF	
N,N'-bis(hydroxymethyl)urea	Dimethylol urea	140-95-4
	dihydroxymethylurea	
	dimethylurea	
	urea formaldehyde	
1,3-bis(hydroxymethyl)-5,5-	DMDM hydantoin	6440-58-0
dimethyl-2,4-imidazolidinedione	dimethyloldimethylhydantoin	
	1,3-dimethylol-5,5-dimethylhydantoin	
	DMDMH	
	Glydant	
Mixture of:	Forcide 78	91925-30-3
1,3,5-triethylhexahydro-1,3,5-	Mixture of:	7779-27-3
triazine	Triethylhexahydro s-triazine and	4719-04-4
1,3,5-triazine-1,3,5(2H,4H,6H)	trihydroxyethylhexahydro s-triazine	
triethanol		
1,3,5,7-tetraazatricyclo(3.3.1.1)	Hexamethylenetetramine	100-97-0
decane	hexamine	
	methenamine	
	Urotropine	
2,4-imidazolidinedione	Hydantoin	461-72-3
	glycolylurea	
N,N"-methylenebis(N'-(3-	Imidazolidinyl urea	39236-46-9
(hydroxymethyl)-2,5-dioxo-4-	bis(methylolhydantoin urea) methane	
imidazolidinyl)urea)	Euxyl K 200	
	Germall 115	
Hydroxymethly-5,5-dimethyl-2,4-	MDM hydantoin	27636-82-4
imidazolidinedione	monomethyloldimethylhydanotin	
	Dantoin 685	
	MDMH	
1-hydroxymethyl-5,5-dimethyl-2,4-		116-25-6
imidazolidinedione		
3-hydroxymethyl-5,5-dimethyl-2,4-		16228-00-5
imidazolidinedione		
3,3'-methylenebis(5-	N,N'methylenebis(5-	66204-44-2
methyloxazolidine)	methyloxazolidine)	
	Grotan OX	
2-chloro-N-(hydroxymethyl)-	N-methylolchloracetamide	2832-19-1
acetamide	Grotan HD	
	Parmetol K50	
	Preventol D3	
	Preventol D5	
2-(hydroxymethylamino)ethanol	N-methylolethanolamine	34375-28-5
Davaformaldebude	Daluasamathulana	20525 00 4

Dahuaramathulana

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Paratormaldehyde	Polyoxymethylene	30525-89-4		
1,3,5-triazine-1,3,5(2H,4H,6H)-	Trihydroxyethylhexahydro s-triazine	4719-04-4		
triethanol	Grotan BK			
	KM 200			
2-(hydroxymethyl)-2-nitro-1,3-	Tris(hydroxymethyl)nitromethane	126-11-4		
propanediol	trimethylolnitromethane			
¹ Adapted From: Fyvholm, MA, Andersen, P (1993): Identification of Formaldehyde Releasers and				
Occurrence of Formaldehyde and Formaldehyde Releasers in Registered Chemical Products. American				
Journal of Industrial Medicine 24(5):533-52.				
Note: This list may not	include all formaldehyde	releasing chemicals		

HEALTH RISKS OF FORMALDEHYDE EXPOSURE

The health symptoms reported include the following:

- Burning of eyes and throat
- Watering of eyes
- Dry mouth
- Loss of smell
- Headache and a feeling of "grogginess,"
- Malaise
- Shortness of breath and breathing problems
- Diagnosis of epiglottitis attributed by the stylist to their use of the product
- Fingertip numbness
- Dermatitis

PROTECTING SALON WORKER'S HEALTH

A. The Salon Worker: Steps to protect your Health

- Read the SDS for each product you use. Your salon must have this document and make it available to you. The SDS provides the most thorough information about product ingredients and associated hazards.

- Use available ventilation systems, such as fans and/or windows, and personal protective equipment; such as gloves, face shield, goggles, and chemical resistant aprons as necessary.

- Know the location of eye washing, skin washing, and other first aid equipment in your workplace. Learn the hazards of the products you use and how to safely clean up spills.

- Alert your employer and get medical attention if you develop symptoms of formaldehyde exposure, or if you know you've been exposed directly to large amounts of formaldehyde (such as during a spill).

B. THE SALON OWNER: EMPLOYER RESPONSIBILITIES

Failure to follow OSHA regulations regarding formaldehyde and hazard communication can result in citations and fines.

- If products containing formaldehyde are being used, salon owners must test the air and record results for employees. Salon Owners must keep records of any medical attention needed by their employees and respirator fit-testing.

- Install and maintain ventilation systems in areas where the products are mixed and used to keep formaldehyde levels below **OSHA** limits.

- Use work practices that may reduce exposures, such as requiring lower heat settings on blow dryers and flat irons. Ensure workers are using appropriate protective equipment such as gloves, goggles, face shields, and chemical resistant aprons at no cost to the worker.

- Provide workers with respirators at no cost to them and train them in proper respirator usage if ventilation and other work practices do not reduce formaldehyde levels below **OSHA** limits. If respirators are used, salon owners must also meet all other requirements outlined in **OSHA**"S **29 CFR 1910.134**.

- Post signs warning workers that formaldehyde is present above OSHA limits and restrict access to authorized personnel.

SUMMARY

OSHA has guidelines that must be adhered to, in order to prevent over exposure of formaldehyde. This begins with the product label. As we now know, by reading the label we can safely determine any potential exposure. Further, we are now aware of the symptoms of over exposure and steps to take to protect our health and that of our clients, co-workers and employees. Failure to follow the guidelines set forth may result in poor health conditions, citations and fines.

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What we DO know.

The cosmetics industry is one of the largest and most profitable of all industries, spending more on advertising than any other trade. According to Business Wire it can readily afford its advertising budget; as the Global Cosmetic Market yielded **\$460 billion** in 2014 and estimates a **6.4%** increase by 2020, totaling **\$675 billion**. The average person applies approximately **200** chemicals to their skin, hair and nails daily. As beauty therapists, serving in various capacities we are in the trenches working with cosmetic products daily: increasing our exposure.

What we may NOT know.

When we stumble upon the phrases: "**our**

studies show" and "**dermatologist tested**" and other trusted statements, rarely do we know if the dermatologist involved in the study was on the payroll of the cosmetic company. Most of these trusted studies are not even done on humans; they are performed in a glass tube.

According to the **Food and Drug Administration / FDA**, it does not have the legal authority to approve cosmetics before they go on the market however; they do approve color additives, except coal tar hair dyes. To ensure the public's safety, the **FDA** states that cosmetics must not be "**adulterated**" or "**misbranded**", they must be safe for consumers when following the directions on the label, or used in a customary or expected way. Further, cosmetics must be properly labelled and the manufacturer has the legal responsibility for the safety and the labeling of their product.

The **Cosmetic Ingredient Review Board (CIRB)** is the regulating body that oversees cosmetic safety and only **10%** of cosmetic ingredients have been analyzed by **CIRB** for health impacts. This leaves an overwhelming **90%** untested. As for the **FDA**, in **68** years it has only banned **9** personal products.

So what are we exposing ourselves to?

Environmental Working Group: a nonprofit organization, released a study in regards to thousands of the bestselling beauty products-Listed are some of their findings:

- **50%** of products contain synthetic penetration enhancers that increase the ability of toxic cosmetic chemicals to enter the blood stream.

- More than **70** of the popular hair dye products contain ingredients derived from Coal Tar, a known carcinogen (bladder cancer & lymphoma) (**Zhang et al.2008**.)

- Cosmetic companies have accused the informative media as alarmist yet, disease causing plastic components called phthalates are being found in urine. (**Adibi et al. 2008**)



A Secret Killer 1, 4- Dioxane

- Found primarily in products that create suds (**shampoo, liquid soaps**) and hair relaxers, this deadly petrochemical is easily absorbed through the lungs, skin and gastrointestinal tract. (http://www.safecosmetics.org/faqs/mvf_dioxane.cfm)

- Test performed show indisputably that 1, 4-Dioxane causes cancerous tumor-promoting activity (Stickney et al. 2003).

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- In fact, the Integrated Risk Information System, a U.S. federal regulatory agency, considers **1, 4-Dioxane** to be comparable to pesticide (**EPA 1992, 2000**).

This human pesticide is even more dangerous within the treatment room as many therapist use warm water, a penetration enhancer, during their treatments! Particularly vulnerable are pregnant women, infants and teenagers.



WHY you will never find 1. 4-DIOXANE on an ingredient list: SNEAKY SNEAKY!

1, 4 - Dioxane is formed during a procedure used by formulating companies to give mildness to harsh detergent-like ingredients. This procedure uses a toxic chemical called ethylene oxide. Ethylene oxide makes **1, 4-Dixoane** as a byproduct, during the chemical conversion of harsh- to- mild. Because **1,4-Dioxane** is not a primary ingredient physically used for the above mentioned process, the U.S. Department of Agriculture does not require **1,4-Dioxane** to be listed as an ingredient on product labels. (**EPA**)

HOW TO AVOID 1, 4 - DIOXANE

The **FDA** does not require this deadly ingredient to be listed as an ingredient, due to its production during manufacturing. If you want to avoid this sneaky chemical the **Organic Consumer Association** suggests that you look for cosmetics that are certified under the **USDA** National Organic Program.

PHALATES / DON'T RECYCLE

We are surrounded by **phthalates** (*pronounced THAL-ates*): PVC pipes, automobiles, earphones, phone cords, cooking and eating utensils, toys, shower curtains, water bottles, perfumes, hairspray, fingernail polish, body washes, fragrances and fragrant lotions! **EVERYWHERE!!!**

Though some media focus has praised phthalates for making our lives easier. Medical data proves that phthalates, especially when combined and exposure is constant, are toxic! Phthalates are proven to majorly disrupt reproductive functions in both women and men and may compromise the endocrine system. Some specific medical conditions are as follows: polycystic ovarian syndrome, infertility and breast and testicular cancer (**Hauser 2006**).

A study completed at the University of Puerto Rico, linked the use of phthalates in beauty products to early puberty in girls (**Colo'n et al 2000**) (**Gabriel et al 2008**).

Most vulnerable to this menace are pregnant women and breastfeeding women. Some doctors recommend that pregnant women avoid new cars for the first trimester of pregnancy because of the toxic brew emitted from the hot dashboard and seats! (**Gabriel et al. 2008, 18**)

HOW TO RECOGNIZE PHALATES

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Most often hiding under the word FRAGRANCE

di-n-butyl phthalate - DBP- commonly found in nail polish

di (2-ehtylhexyl) phthalate- commonly found in perfumes

How to Avoid Phthalates

- Read all labels and choose products without DBP. Beware of all and any products that list fragrance as an ingredient. Some nail products indicate "phthalate free".

SPREAD THE WORD!!!

As cosmetic industry professionals; it is not only our responsibility to protect ourselves but; action is needed from us in order to protect our clients. In the recent, past many bills have been put forth in congress to ensure that beauty practice and health practice may begin living in sync with one another. Several professional and not for profit coalitions exists whose sole focus is to educate professionals as well as the public on the toxic nature of chemicals used and available. Listed below are some online resources for extending your awareness of creating and promoting a healthful beauty practice.

SUMMARY

As beauty professionals; when deciding to embark in this wonderful and exciting career, the potential to be exposed to harmful chemicals would be greater than the average person. We now know some things to look for in an effort of avoidance when reading labels. By spreading the word to your clients about these hidden dangers your services will be valued even greater.

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INFECTION CONTROL

In the past when we talked about the subject that is now infection control we talked in terms of sanitation, decontamination, safety in the salon and bacteriology and we viewed them as separate entities. Logically speaking it makes extreme sense to merge them together. After all it is because of bacteria that we as professionals must effectively clean our work environment and the tools of our trade further; this must be done in a manner that ensures safety in the salon for all those concerned. Perhaps the best place to start in the subject of infection control is right where the need for control begins. The need to exhibit control is due to bacteria.

BACTERIA



Bacteria are one celled living micro-organisms so very minute that a microscope is needed to see them. Imagine if you can a pencil eraser. Now imagine, we line 1000 bacteria straight across the eraser, we would still have room to spare. If being tiny were not enough, with the correct conditions, bacteria have the audacity and capacity to multiply at a very rapid pace. We could have one bacterium cell at midday and due to the process of mitosis we would have sixteen million by midnight.

Scientists believe there are millions of different species of bacteria however only **4,500** have been identified to date and they are classified by two classifications; pathogenic and non-pathogenic. Fortunately **70%** of bacteria are **non-pathogenic** (beneficial) but; unfortunately

the **30%** that are **pathogenic** (disease causing) can be very dangerous.

Let us first take a look at non-pathogenic bacteria. As stated earlier non-pathogenic are beneficial and harmless. They can be found in a number of places. The human digestive system is rich in beneficial bacteria that begin with the saliva in the mouth which is assisted by the salivary glands. The pepsin found in the stomach along with chymotrypsin and trypsin continues to break down the food that is ingested and broken down through the complex process of metabolism. This is just one example of the beneficial bacteria that are found in the human body.

Saprophytes are another example of beneficial bacteria. If given the choice of being placed in a room with a person that is experiencing an active cough and running nose or a dead animal that is covered in maggots; most people would take the choice of the person that is showing signs of illness. The best choice however; would be to opt for the dead animal. Yes there might be some unpleasant odors associated with this choice but the fact is the presence of the dead animal and the maggots offer no threat. The sick person however would be of concern as they are most likely contagious. The maggots are saprophytes and they are very important to our ecology. They live on dead or decaying matter/ organisms, where they obtain their nourishment and recycle organic material into the soil breaking it down into simpler compounds that can be used to nourish other sources i.e. the vegetables we eat or the grain that is eaten by livestock. So it can be said that saprophytes aid in decomposition and actually give back to the earth.

As beneficial as non-pathogenic bacteria are, pathogenic bacteria can be a disaster waiting to happen. Pathogenic bacteria may account for only 30% of all bacteria but it is because of the havoc they can evoke that infection control is imperative in every phase of life and is extremely important to the professional of every aspect of cosmetology.



There are 3 classifications of pathogenic bacteria: **Cocci**, **Bacilli** and **Spirilla** we shall take a look at them individually.

- **Cocci** are round or spherical shape pus producers that grow singularly or in groups. **Cocci** will manifest in three forms: **Staphylococci**, **Streptococci**, **and Diplococci**.

- **Staphylococci** grow in clusters and are responsible for local infections such as boils, abscesses and pustules. Typically it is called a staph infection and infections of the skin are the most common however; pneumonia, food poisoning, toxic shock syndrome and blood poisoning are also common. Most staph infections are easily treated with antibiotics however; there are MRSA / Methicillin-resistant Staphylococcus Aureus which are resistant to common antibiotics. These bacteria are spread by direct contact or contact with contaminated items or surfaces. It is believed that at least 30% of the population carries the infection on their skin and in their nose.

- **Streptococcus** grows in strips or chains and is classified as Group A or Group B bacterium. Group A are responsible for such infamous infections like strep throat, necrotizing fasciitis (aka the flesh eating disease) and toxic shock syndrome. Many people actually have streptococci in their throat or skin and have no signs of illness and most of these infections are easily cured with antibiotics. What makes this bacteria life threating is when it has access to areas in the body where bacteria typically does not exist such as blood, muscle and lungs. Necrotizing fasciitis is aggressive and can rapidly destroy muscle, fat and skin tissue. STSS or streptococcal toxic shock syndrome (not to be

confuse with staphylococcus aureus which is associated with tampon usage) can cause rapid drop in blood pressure and the result can be organ failure (typically kidney, liver, or lungs).

The spread of these bacteria comes from direct contact of nose or throat mucus from persons that are infected. Direct contact with infected wounds and sores are the cause for cross contamination. Persons that are infected are much more likely to spread the infection than those who have no symptoms or evidence of infection. Annually there are approximately 9000 to 11,500 cases of invasive Group A Streptococci compared to several million cases of strep throat and impetigo.

- **Group B Streptococcus** is sometime referred to as "baby strep" and is the cause of blood infections, pneumonia, skin, soft tissue, bone and joint infections. It is the leading cause of meningitis. The Center for Disease Control recommend that all pregnant women in their 35th to 37th week be tested for GBS because **25%** of pregnant women carry the bacteria in their rectum or vagina and the rate of infection very high in newborns. GBS can occur in all age groups and the rate of occurrences increases with age. These bacteria can come and go in the human body without any symptoms, or it can cause mild infections such as urinary tract infections. The transmission of this bacterium is uncertain however; since GSB is a common organism in the gastrointestinal, this may be the source.

- **Diplococci** commonly grow in pairs and are responsible for pneumonia and pneumococcal meningitis.

- **Bacilli** most often applies to any rod like bacteria most commonly found in soil and water. When conditions are unfavorable it can easily form spores that are resistant to heat, chemicals and sunlight which allows them to stay dormant for long periods of time. Fortunately most are not harmful to humans with the major exceptions of bacillus anthracis causing anthrax (human contact with animals) and bacillus cereus that causes food borne illnesses (food that is improperly cooked or stored).

- **Spirilla** the third distinct bacterial cell shape that twist and turn like a spiral. It is most common for its responsibility in the sexually

There are other pathogens that give cause for concern:

Viruses are many times smaller than bacteria and can actually infect bacteria. Unlike bacteria they need a living host in order to live and thrive. Viruses cause such nasty diseases like chicken pox, measles, mumps, influenza and the common cold. As we well know these ailments can be easily spread through casual contact. Viruses can also prove to be deadly in severe cases of influenza, hepatitis, HIV and AIDS just to name a few.

Fungi can be either beneficial or harmful. Fungi are devoid of chlorophyll and therefore cannot photosynthesize so it must absorb nutrients from organic matter produced by other organisms. Most fungi live on dead matter (saprophytes) and a small few live off organic matter (parasites). Parasites can be either plant or animal and unlike saprophytes are never beneficial to anything but themselves. They can invade the body's tissues either externally or internally and cause disease.

PIONEERS

The world of germs is nothing new and pathogens have been creating havoc for centuries and scientist have been studying them for almost as long. There are some pioneers and heroes in this war on pathogens that we must pay homage to.

- **Girolamo Fracastoro** was an Italian physician as well as an astronomer and geologist. Of all the hats **Fracastoro** wore perhaps those of physician and scientist were the most important. Born in Verona Republic of Venice, in the year 1478 he proposed the "germ theory of disease" some 300 years, before it was formulated by **Louis Pasteur** and **Robert Koch**. **Fracastoro** was also responsible for studying and naming the syphilis disease in 1530. In 1546 his Concept of Epidemic Disease was told in a piece published on Contagion and Contagious disease which stated that each disease was caused by an individual type of rapidly multiplying germs that was spread or transferred from the infector

to the infected by direct contact through the air, and on such items as clothes and linens. This concept was not completely new as 1st century Roman scholar Marcus Varro believed that micro-organisms were the cause of disease. When **Fracastoro** first announced his concept it was greatly accepted and there was much excitement surrounding it however it soon fell into disrepute and acceptance waned until the experiments in the 1800's turned concept into fact.





- **Agostino Bassi (1773 - 1856)** an Italian entomologist whose love for biology placed him on a 25 year journey to aid silk farmers in 1849 and discovered that fungus and its spores were the cause of their devastation. Perhaps one of his most important contributions was his recommendation for the use of disinfectants and cleanliness. His work explained that many diseases whether plant, animal or human were caused by pathogenic organisms.

- A pioneer in the field of microscopic anatomy and pathology, **Friedrich Gustav Jacob Henle (1809** - **1885)** drew his work on the achievements of **Agostino Bassi** and actually laid ground work for future scientists and physicians. His publication "Von den Miasman und Kontagien" (On Miasmata and Contagia) in 1840 revisited and reaffirmed the concept that micro-organisms were the reason for many diseases and the morbid matter, in relations to communicable diseases increases in amount in the host after a period of incubation. Further his work set the stage for his student **Robert Koch.**

Probably one of the greatest bacteriologists to live is 1905 Nobel Prize winner **Robert Koch (1843 - 1910)**. His accomplishments are many but, the most prevalent to the cosmetology industry are the isolation and identification of anthrax bacillus in 1876 and tubercle bacillus in 1882. **Koch** was appointed Professor of Hygiene and Bacteriology at the University of Berlin where he researched bacterial diseases in humans and animals. He was fundamental in the development of a whole generation of medical



Louis Pasteur

scientist and bacteriologist in a wide range of fields and studies.

With the collaboration of **Jacob Henle** he developed the **Henle - Koch** postulates of 4 criteria required to prove a micro-organism caused a disease:

- Organism can be isolated in case of the disease.
- It can be cultivated in pure culture.
- Cultured organisms can induce the disease in experimental animals.
- The organism can be recovered from the infected experimental animals.

Louis Pasteur (1822-1895) was an amazing French biologist and chemist, he is one of the worlds most celebrated scientist. Convinced of "the germ theory" (belief that infectious diseases are caused by micro-organisms), he was bound and determined to take his knowledge of science and discover a way to help people live healthier lives. His contribution to medicine, chemistry and biology proves that he was successful in his ambition.

Known as the "**father of pasteurization**" it was through his efforts to help French winemakers succeed in delivering un-spoiled wine to buyers, he discovered that heating the wine would not change the taste

but would kill early bacteria. Hence the process of pasteurization was born. He customized some of the applications of pasteurization to accommodate its use in other foods.

Due to his insistence that infectious diseases were a product of micro-organisms he led other scientists to pursue and conquer sterilization, disinfection, vaccines and in the 19th century antibiotics. **Pasteur** himself developed vaccines for rabies and anthrax as well as treatments for tetanus, tuberculosis and diphtheria.

As reward for his many contributions to ensure the possibilities of healthy living the **Louis Pasteur Institute** was created through international funds in 1888. In keeping with his resolve to study micro-organism; the institute continues to research microbiology and immunology. It has made vast contributions to eradicate **HIV**.

Famed British surgeon and scientist **Joseph Lister**, born April 5, 1827, developed methods that changed the practice of surgery and medicine forever and his methods eventually trickled into the industry of cosmetology.

After witnessing the death of **40**-**50%** of amputation patients due to sepsis he first theorized that perhaps airborne dust maybe the cause. He soon learned of the work of **Louis Pasteur** in regards to infectious micro-organisms and decided to use phenol as an antiseptic. Prior to this ground breaking act surgeons and their assistance were not required to wash their hands. As a matter of fact, dirty laboratory coats were seen as a sign of knowledge and experience and the stench was referred to as "**good surgical stink**".

An earlier discovery by **Friedlieb Runge (1797 - 1867)** of creosote which was later turned into carbolic acid would prove crucial to Joseph Lister's work. **Dr. Runge's** work as a chemist led him to discover many coal tar products (creosote and phenol are some of its byproducts). Early uses were the treatment of wood used for the railway ties and ships (to retard decay), sewage in England and to fight parasites and manage odors during cholera and cattle plagues.

Building on **Dr. Runge's** findings **Dr. Lister** started spraying his surgical instruments and surfaces with a solution of phenol. He also washed his hands in the solution and even used diluted portions to swab surgical and accidental wounds. Within **4 years** the mortality rate was reduced by **15%**. His discovery also was credited for increasing the safety for both mother and child during child birth.

The number of infections was greatly reduced in hospital settings and eventually in other area such as food handling and general house cleaning. This is why Joseph Lister is "the father of modern antisepsis". In 1879 the mouthwash Listerine was name in his honor as well as the bacterial genus "**Listeria**".



Last but, not least of our pioneers and the only women acknowledged here is **Sarah Breedlove (1867-1919) a.k.a. Madame C.J. Walker**. A pioneer in more ways than one she grew a business that she started in her kitchen into a multi-million dollar business, making her the first female self-made millionaire in American history. Though not formally educated Madame Walker's business acumen allowed female entrepreneurs across the nation to improve their economic situation.

After successfully formulating a concoction to restore her hair after losing it to damaging hair care products and the stress from being widowed at age 20 (she was probably suffering from a form of alopecia), she was approached by many who witness the transformation of her hair. She began teaching women how to use the product and sell the product and service. This created such a demand that she soon had to create a strict protocol for her team of followers to adhere to. It was her desire to perform hair care services in a sanitary manner to ensure that no harm would come to her patrons. Many states began adopting her practices and actually used much of her protocol in state laws and regulations.

LEVELS OF INFECTION CONTROL

There are three levels of infection control and they are Sanitation, Disinfection and Sterilization. Sanitation is the lowest level of

infection control, but it is important to understand that though it may be the lowest it is not the least important. In the fight against pathogens it is probably the most important. If sanitation is not performed disinfection or sterilization cannot be achieved.

Sanitation allows for the physical removal of debris (i.e. hair from combs and clippers, dead cut skin from cuticle nippers and body fluids from comedome extractors) and is performed on items that are deemed non critical. Non- critical; meaning that the item is used on unbroken skin. Sanitation is the first step in the process of protecting the professional and their clients from the unnecessary transmission of disease.

Next in line for defense against pathogens is **disinfection**. Disinfection is accomplished with the use of chemicals rendering most pathogens inert. However; it allows bacterial spores to survive which if not addressed can lead to contamination. In most salon settings and situations disinfection is the highest level of infection control necessary as the implements in use are typically semi critical.

When more effective measures are needed the highest level of infection control is implemented. **Sterilization** will kill everything. It does not discriminate as it does not recognize the difference between pathogenic agents and nonpathogenic agents. Also it will destroy those bacterial spores that disinfection procedures leave behind. Sterilization practices can be labor intensive and costly and though not necessary for non-critical or semi- critical it is reserved for critical items

Items to be Disinfected

In all of the areas of cosmetology whether it is hairdressing, facials or a polish gel, service tools are used that are either characterized as noncritical, semi-critical or critical items. Determining the difference of the three is crucial. Non-critical items are used with the intention of coming into contact with only unbroken skin. Unbroken skin is the first line of defense against pathogens and acts as a barrier. For this reason non-critical items only need to be sanitized. Examples of Non-Critical Items:

Countertops Magnifying Lamps U.V. Lamps Hands

Semi-critical items are intended to or may have a likely chance of coming in contact with broken skin or mucous membrane. With those intentions these items require disinfection with a high level, broad spectrum, hospital grade disinfectant.

Examples of Semi-Critical Items: Tweezers, Combs, Cuticle nippers.

Unlike non-critical and semi-critical items, critical items are designed and intended to come in contact with blood, body fluids and other tissue therefore; it is required that if these items are not disposable (disposable is preferred) they must be sterilized. As per their design; no critical items are used in the cosmetology profession.

Lancets Electrology needles

DISENFECTANT PROCEDURE

- Clean with soap and water (removing all debris)
- Rinse and dry with clean towel or paper towel
- Completely immerse in hospital level or EPA approved disinfectant for 10 minutes or required time of manufacturer.
- Remove items from wet disinfection container with tongs, basket or gloved hands.
- Rinse and dry.
- Store in clean, closed container.

Per CHAPTER 61G5, Florida Administrative Code -61G5-20.002

Salon Requirements - Disinfecting methods which are effective and approved for salons: First, clean articles with soap and water, completely immerse in a chemical solution that is hospital level or EPA approved disinfectant as follows:

- Combs and brushes, remove hair first and immerse in hospital level or EPA approved disinfectant;
- Metallic instruments, immerse in hospital level or EPA approved disinfectant;
- Instruments with cutting edge, wipe with a hospital level or EPA approved disinfectant;
- Implements may be immersed in a hospital level or EPA approved disinfectant solution.
- Shampoo bowls, facial beds and neck rest, clean and disinfect between each use.
- All disinfectants shall be mixed and used according to the manufacturer's directions.
- Ultra violet Irradiation may be used to store articles and instruments after they have been properly cleaned and disinfected.
- For complete guidelines for pedicure unit cleansing and disinfecting please refer to 61G5-20.002 Salon Requirements.

TYPES OF DISINFECTANTS AND EQUIPMENT

Disinfectants are strong and powerful chemicals that must be respected and used correctly. When used correctly disinfectants can destroy pathogens on contaminated implements and surfaces. If used incorrectly they can be quite dangerous.

DISINFECTANTS

- Quaternary Ammonium Compounds or commonly called Quats are very safe and highly effective when used properly. Quats are widely

used as disinfectants and make good cleaning agents. Typically they are sold as hospital disinfectants as they are fungicidal, bactericidal and virucidal. Most formulas contain rust inhibitors making them even more appealing to salon professionals along with its typical disinfection time of 10 minutes. REMEMBER to always follow manufacturer's instructions.

- **Bleach 5.25% sodium hypochlorite** (household bleach) can be an effective disinfectant however; it is a strong corrosive chemical. It can easily cause damage to plastics, rubber and metals. On the human side it can irritate eyes, skin and the respiratory track. Bleach has been strongly linked to breast cancer. When using bleach always follow manufacturer's instructions and remember that OSHA requires that gloves and mask be worn. Bleach solution is an unstable mixture and cannot be saved from one day to another.

EQUIPMENT

Personal protective equipment (PPE) are items that are worn to eliminate or reduce one's exposure to hazardous chemicals. They include: Gloves, goggles, protective clothing and even respirators.

ANTIBIOTICS and their MISUSES

Another element in infection control that typically gets little attention in our industry is antibiotics. By definition, antibiotics are drugs used to treat bacterial infections. They are produced by living organisms with attention to bacteria and fungi with intention to kill or prevent the growth of harmful pathogens. What is important to mention is; antibiotics have no effect on viral infections.

Antibiotics have become a staple in the world of medicine. Most of the populous takes the existence of antibiotics for granted as something that has always been and will always be. This attitude in a sense has jeopardized their usefulness.

The need for antibiotics has been recognized for thousands of years. Historians and scientists show evidence that ancient civilizations used molds, plants, warm soil, frog bile with sour milk, turtle shells, snake skins and oil cakes (just to name a few) in the fight against infections.

Modern history gave the world even more promise with research and experimentation by various scientists. As early as 1640, John Parkington recommended the use of mold for treatment in his book on pharmacology and by 1932 another massive breakthrough was achieved when Gerhard Domagk discovered sulfonamidochrysoidine which was the first antibiotic on the market. In between these two amazing discoveries were many great works and accomplishments, one being Louis Pasteur's discovering that bacteria could kill another bacteria (anthrax bacilli).

Perhaps one of the most important is Sir Alexander Fleming, in 1928 he discovered lysozyme a powerful enzyme that prompts the breakdown of certain carbohydrates housed in the cell walls of certain bacteria. Much by accident Sir Fleming upon cleaning his cluttered laboratory realized that a glass plate previously covered with staphylococcus contained mold in the shape of a ring, within the ring the glass plate was bacteria free. This mold was penicillium notatum. It would be another 10 years before the bacteria killing substance would be isolated and named - penicillin. This was done through extensive research by Howard Florey and Ernst Chain at Oxford University. Florey successfully commissioned an American drug company to mass produce the penicillin and its usage was first confined to the U.S. Military and was nicknamed "the wonder drug". In 1945, Fleming, Florey and Chain were awarded the Nobel Prize for Medicine. Post 1945 was deemed the era of antibiotics and in 1947 antibiotics were available to the U.S. masses.

Since their introduction antibiotics have transformed medicine by treating and preventing infections and protecting individuals with compromised immune systems. They have promoted growth and prevented disease in livestock and other food animals. Their existence has been both lifesaving and life changing. Unfortunately, the overuse of these "wonder drugs" has caused once treatable infections to become hard to treat and cure. Our "wonder drug" is less than 100 years old and is becoming less effective and our arsenal is dwindling! Overuse is not limited to the unnecessary prescriptions being written by physicians but; can also be attributed to its massive misuse in poultry, cattle, swine and fish – which harbors significant populations of antibiotic resistant bacteria. The bacteria are then transmitted to

humans through their meat, eggs and milk.

Driven by prosperity and population growth, demand for animal protein is at an all-time high and farmers, in an effort to satisfy demand are using antibiotics to cure disease, prevent disease/infection and controversially to promote rapid growth. In 2010, according to the Center for Disease Dynamics, Economics and Policy (CDDEP) estimated that 63,200 tons of antibiotics were consumed by livestock.

The CDC credits antibiotic resistance for more than 2 million infections and 23,000 deaths each year in the U.S., with cost totaling approximately \$55 billion.

Antibiotic resistance is a major problem and it is in our best interest as a society to preserve antibiotic effectiveness. This can be achieved by the following practices:

- Antibiotics only prescribed and taken when absolutely needed.
- When prescribed and dispensed antibiotics should be taken as prescribed with adherence to dosage and duration.
- Reduce need for antibiotics through proper sanitation and immunization.
- Reduce and eventually eliminate antibiotic usage in agriculture.
- Educate health professionals, policy makers and the public on sustainable antibiotic usage.

A national campaign for awareness on the misuse of antibiotics and the consequences is needed to draw attention to this universal problem and promote conversations for changes by and through our politicians, law and policy makers.



PROPER HANDWASHING

The Center for Disease Control says that the single most important act that anyone can do to limit the risk of transferring pathogens is hand washing. The recommended method of hand washing is listed below.

- Wet your hands with clean, running water (warm or cold) and apply soap.
- Lather your hands by rubbing them together with the soap. Be sure to lather the backs of your hands, between your fingers and under your nails.
- Wash your hands for at least 20 seconds. Sing or hum the "Happy Birthday " song from beginning to end twice.
- Rinse your hands well under clean running water.
- Dry your hands using a clean towel or air dry them.

The following is a list of when the CDC says handwashing is required:

 $\circ~$ Before, during, and after preparing food.

- $\circ~$ Before eating food.
- $\circ~$ Before and after caring for someone who is sick.
- $\circ~$ Before and after treating a cut or wound.
- $\circ~$ After using the toilet.
- \circ After changing diapers or cleaning up a child who has used the toilet.
- $\circ~$ After blowing your nose, coughing, or sneezing.
- $\circ~$ After touching an animal, animal feed or animal waste.
- $\circ~$ After handling pet food or pet treats.

SUMMARY

Due to the many pathogens, it is necessary to exercise good and proper infection control measures. As we see, over the ages by way of dedicated and determined individuals from various branches of science and medicine we have acquired a better understanding of these disease producing micro-organisms. Understanding their structures, growth patterns, growth cycles and vulnerabilities, we know which level of infection control is needed to render a safe environment for our clients and ourselves.

Proper implementation of cleaning and disinfecting along with proper handwashing is paramount in reducing the spread of contamination, disease and the need for antibiotics.

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Chemical Texturizing is the process of changing the chemical bonds of the hair's inter-structure through the use of alkaline agents and some acid chemical agents that can permanently and/or temporarily alter the inter-structure of the hairs' cortex as well as what the outside looks and feels like. The cuticle layer is the outside layer and it is transparent. There are several products that are being used in beauty salons to alter the bonds of the hair, but the stylist should be trained and knowledgeable about how the chemicals can affect the pH level of the hair. Extreme caution should be taken when applying any type of chemical to the hair. The hair and skin can burn if proper timing and strength are not considered. Prior to the start of the service, there should be a consultation and a hair analysis performed on the client. This ensures that the stylist is aware of the state of the hair and scalp and he or she will be more prepared to determine how to better service the client's hair.

RELAXER THEORY

There are several types of products to chemically relax the hair. The most common types are/: sodium hydroxide (lye/no base), No-lye relaxers and ammonium thioglycolate. To avoid major problems it is imperative for the client to know which chemical ingredient was used on their hair in the past or after this service if this is their first service. (a) Sodium hydroxide (lye) and No-lye relaxers are not interchangeable.

A - **Sodium hydroxide (lye)** relaxer - used to straighten tightly curled hair. This type of relaxer is alkaline in pH (11.5 to 14), which forces the cuticle to open so that the relaxer can penetrate in the cortex layer of the hair. Once there, the sodium hydroxide breaks down the cross bonds (sulfur and hydrogen). When this happens, the hair will turn out to a straightened and softened form.

B - **No-lye relaxers** – contain a byproduct of sodium hydroxide. The active ingredients include guanidine, calcium, potassium, lithium hydroxide or bisulfate. This type of relaxer would be best for less resistant hair.

C - **Ammonium thioglycolate relaxer** - This relaxer has a pH of 8.5 to 9.5; hair usually will swell and soften. There are 3 strength levels of mild, regular and super. There are three (3) standard ingredients: an active alkaline agent, oil and water.

D - *Today's Straightening Alternatives* - These products are amino acid based treatments and do not permit "permanent" straightening to the hair; but rather loosen the curl pattern for a certain amount of time, most lasting for 12 weeks with proper care, products and styling. Research still exist on some of these treatments, as some have been linked to formaldehyde, which can be harmful to a client's health and hair.

E - What is Formaldehyde and How Can It Affect My Health?

Formaldehyde is a colorless, strong smelling gas that presents a health hazard if exposed on a regular basis. If you breathe in the fumes it causes asthma-like breathing problems. If it gets in your skin it could cause skin rashes and itching. Formaldehyde is a sensitizer and it can irritate the eyes and nose and cause coughing and wheezing as well as blindness. It is also a cancer hazard.

F - Other Relaxing Services

Thermal Reconditioning- Use of heat to restructure the bonds of the hair. Recommended for those with coarse curly or wavy hair that wants their hair up to 100% straight. Also may be known as Japanese straightening, ionic reconditioning and thermal rebonding/restructuring. **Curl Reformation**- Introduced in the 1970s as a styling option for those with tightly curled hair. Hair goes from tightly curled to curly/wavy. This service has three main steps: reduce existing pattern, reform on a perm tools and rebond (neutralize) and lock in the new pattern.

II - PERMING THEORY

Perming is a highly valued service in the salon. Not only does it create changes in the client's appearance, it is also a significant revenue generator. Today's clients request perms to add volume, texture and movement to their hair. Fortunately, manufacturers have created perm

formulas that remove the chemical guesswork and allow you, as a designer, to concentrate on the creative side of the service, such as determining how much curl is introduced and in what direction it moves.

- HISTORY OF PERMING

The desire for curly or wavy hair dates back to ancient cultures, as early as the Ancient Egyptians. In 1905, Charles Nessler made history with the 1st heat permanent waving machine. Hair was wrapped spirally around the machine's heat rollers. The croquignole (overlap) wrapping method was introduced after WW1 and was used with heated roller clamps.

- Heat Waves: Acid/Endothermic and Exothermic

Acid waves appeared on the market in the early 1970s. Acid waves contained a thioglycolic derivative called glycerol monothioglycolate and did not contain ammonia. They were also called "buffered waves" because they were gentler on the hair and penetrated the hair strand more slowly than cold waves. To speed up the processing time, place a plastic cap on the client's head and place her under the preheated dryer. This method of processing is called endothermic because heat is absorbed from the surroundings. Heat causes the pH to rise gradually, leaving the hair in much healthier condition. Today's acid perms are in the pH range of 6.9 to 7.2

Appearing on the market next were **exothermic perms**. These perms are able to generate their own heat without an external heat source, because an additive is mixed with the perm solution to create heat through a chemical reaction. Exothermic perms are self-timing and range from acid to alkaline depending upon the manufacturer.

- Cold Waves: Thioglycolic Acid and Alkaline

Invented by Arnold F. Willatt in 1938 for a safer and more practical perming process and because no machine was used and chemicals caused no heat reaction. The process still involves wrapping the hair on a perm tool with a waving solution (thioglycolic acid) working without heat. Once processed, solution is rinsed and a neutralizer is applied to reform the hair to the perm tool shape. These early cold wave perms took 6-8 hours to complete. Today's cold waves are called alkaline waves and normally take 15-30 minutes to process. Contains thioglycolic acid and ammonia or ammonium thioglycolate, which has a pH between 8.0 to 9.5. This allows the solution to penetrate the hair faster. Neutralizing brings down the pH and rebonds the curl pattern to make it permanent.

- New Technology

Perm technology and products are continually evolving. More recent perm products on today's market include neutral, low pH alkaline and low/no thio perms, which may or may not require heat. As a salon professional, it is your responsibility to stay current with the latest technology and products and always follow the manufacturer's directions.

Today's perms involve two major phases. The first phase is the physical actins of wrapping the hair around specifically selected perm tools in particular patterns and directions. The second step is the chemical phase, which involves applying the perm solution, rinsing it from the hair, applying the neutralizer and rinsing it from the hair. Both phases of the perm process are of equal importance.

PHYSICAL PHASE OF PERMING

In this phase, hair is wrapped around perm tools based on desired size and shape of new wave or curl pattern. Hair must be smoothly and consistently wrapped around perm tool with appropriate tension to make sure it reaches your client's desired look and shape. This phase is an equally important part of the service and must be done efficiently. Must be familiar with distributing and sectioning and wrapping (perm tool, end paper techniques, base control and perm patterns).

There are 2 basic wrapping techniques: **overlap (croquignole) and spiral**. Each technique has variations but it is important to be skilled with the basics.

CHEMICAL PHASE OF PERMING

Once the hair has been wrapped on perm tools, the chemical phase begins. The chemical process transforms the hair into lasting perm texture. Two chemicals are use during the chemical phase: The perm solution, which is a reducing agent and the neutralizer, which is an oxidizing agent. Perm solution is also known as waving lotion or reforming lotion. Be sure to follow manufacturer's directions to ensure the best possible results when using perm solutions and neutralizers.

The procedures that you follow during the chemical phase may vary with perm products developed for individual hair types, such as fine, normal or color-treated hair. The basic steps of the chemical phase include:

Processing

- Applying perm solution
- Tinting and Testing
- Rinsing
- Blotting

PROCESSING

Neutralizing

- Applying neutralizer
- Rinsing
- Removing perm tools

To permanently change the hair from a straight to curly state, strong disulfide bonds found in the cortex of the protein chains are softened and split. The disulfide bond is a chemical bond formed between two sulfur (s) atoms found in the amino acid called cystine. The perm solution breaks the disulfide or S-S bonds. This softening process allows the disulfide bonds to shift to a new configuration.

In alkaline (cold) waves, the perm solution chemically breaks, or reduces, the strong disulfide bonds while the hair is wrapped on the perm

tools. With acid (heat) waves, heat tension, and the perm solution break the disulfide bonds. With both types of perm solutions, the processing action softens the protein structure and allows the disulfide bonds to shift, assuming the shape of the tool.

An accurately performed perm pattern and smoothly wrapped hair will allow for proper saturation of the perm solution. Once the hair is wrapped, a barrier cream is applied around the client's hairline and cotton is positioned on top of that. Cotton should be replaced when it becomes saturated. Leaving the cotton on the client's skin could cause burns.

NEUTRALIZING

Neutralizing is the final chemical step in the perm process. It reforms the disulfide bonds while lowering the pH of the hair. The main ingredient found in most neutralizers is hydrogen peroxide, sodium perborate or sodium bromate. The pH can range from 2.5 to 7, depending on the type on neutralizer. Neutralizing is also known as re-bonding or oxidation.

The neutralizer reduces the swelling caused by the alkalinity of the perm solution and re-bonds and restores the disulfide bonds. This change re-hardens, or fixes, the disulfide bonds into the new shifted position, which is determined by the size of the perm tool, making the texture change "permanent."

It is interesting to know that oxygen from the air (air oxidation) can achieve the same results as the neutralizer. Air oxidation is impractical; however, because the hair must dry naturally on the perm tools, without heat, from 24 to 48 hours, depending on the length and texture of the hair.

RINSING

After the hair is neutralized, it needs to be rinsed with water again to remove all chemicals. Handle the hair carefully while rinsing because it is still swollen and can easily damage. There are two methods for rinsing the neutralizer. With the first method, and for a stronger curl result, leave the perm tools in position and thoroughly rinse the neutralizer. With the second method, remove the perm tools, work the neutralizer through to the ends and rinse. The chemical phase is now complete and the hair will retain the shape of the tool, resulting in a new texture configuration.

PERMING SOLUTIONS

Alkaline perms should be wrapped without tension (minimal stretching or straining of the hair) because alkaline reforming lotion causes the hair to swell. This swelling creates the necessary tension on the hair. Wrapping the hair with too much tension prior to applying an alkaline perm solution could result in an uneven penetration of the lotion and lead to breakage. Instead, hair should be held just taut enough to control the hair, creating a smooth, even wrap from ends to scalp. Keep in mind that, because of the hair swell, it is easier to rinse and blot the hair when using an alkaline solution.

With alkaline perming, the hair starts to process as soon as the solution is applied. Because of its higher pH, it processes faster than an acid perm, increasing the risk for hair damage, which is why it is so important to watch the process carefully. **Remember that alkaline perms** *are applied without heat.*

- Acid perms are in the pH range of 6.9 to 7.2. Acid perms in the market today are now capable of processing without heat. They start out with a higher pH and heat is an option for a firmer curl. Unlike alkaline perms, **acid perms cause only minimal swelling, therefore, it is essential that the hair be wrapped with firm**, even tension. Without uniform tension throughout the strand, the perm will not process correctly, which may produce an uneven curl pattern. Heat and wrapping with even tension boost the penetration of the glycerol monothioglycolate into the hair strands where it breaks the disulfide bonds. The heat needed for acid perms is often just the client's body heat that is trapped by placing a plastic bag over the perm wrap. Additional heat is achieved by placing the client under a hooded dryer.

-A real benefit of working with lower pH in an acid perm is that you avoid exposure to higher alkaline pH solutions and excessive hair swelling, which would need to be counteracted during neutralizing.

- Acid perms are slower acting than alkaline perms and are recommended for damaged, highly porous and previously permed hair. Since the lower pH of an acid per requires longer processing time, there is less chance of damage from over processing; however, you still want to monitor the process carefully.

- It is essential to completely rinse the perm solution from the hair before neutralizing. Since acid perms cause little swelling, it takes more time (at least 5 minutes) and attention to remove the perm solution from the hair than with an alkaline perm. Insufficient rinsing before neutralizing can trap order in the hair.

ADVANTAGES OF ALKALINE AND ACID PERMS

ALKALINE PERMS

- Strong curl Pattern
- Faster processing time
- Better for resistant hair More control due to slower processing time
- No need for heat



- Soft, natural curl pattern
- Gentler to the hair
- More control due to slower processing
- Better for fragile or tinted hair.

LOW / NO THIO

The low/no thio perm, introduced in 1992, have a different reducing agent known as cystemine hydrochloride (hi-dro-CLOR-id). There are many benefits to using this type of perm, such as deeper penetration of the solution for longer-lasting and more consistent curls, less dilation of the cuticle layer, and the ability to reform up to 60% more bond during neutralization. The low/no thio option makes perming available to people who may have an allergic reaction to thiogylcolic acid, which is found in both alkaline and acid perms.

SUMMARY

Chemical Texturizing is a money generating service that has been in demand for many years. Whether relaxing or perming; powerful chemicals are involved and they deserve and demand proper handling.

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