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NATIONAL TANNING
TRAINING INSTITUTE



**Training for the
Professional
Operation of Indoor
Tanning Salons**

2009/2010

TRAINING MANUAL

national tanning



training institute

NATIONAL TANNING TRAINING INSTITUTE

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THE INSTITUTE

The National Tanning Training Institute (NTTI) objective is to provide the indoor tanning industry with valuable tanning salon owner/operator training. We believe that the tanning industry will grow in direct proportion to consumer confidence and that confidence can only be gained by knowledgeable tanning salon owners and operators who have the welfare of their customer uppermost in mind. Both technical competency regarding the “science of tanning” and an understanding of how to deliver quality customer service will help to increase your business and this training session is designed to provide the most up-to-date information in both areas.

Once you have participated in our program, you will have more confidence in making day to day working decisions regarding the operation of a first-class professional indoor tanning salon. By using NTTI, you have taken an important step in assuring the future of your business and the success of our industry and we thank you for making that decision.

NTTI
800.529.1101
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CHAPTER

1

your skin,

the largest organ

Skin covers all body surfaces. The skin of an average adult weighs 8-10 pounds and has an average area of about 22 square feet. The purpose of this outer covering for the body is to protect against injury, infection, heat, cold, and store water, fat and vitamins. The human skin is rejuvenated about once every four weeks.

Thinking of your skin as an organ, rather than something that we can use and abuse, puts things in proper perspective. Your skin is a wonderfully resilient organ and for the most part can survive virtually any form of punishment. The skin is the body's boundary, tough enough to resist all sorts of environmental assaults, yet sensitive enough to feel a breeze.

A versatile organ, skin creates the first line of defense against possible invasion by bacteria and germs, while maintaining the body's internal environment to within a few degrees of normal throughout our lifetimes. The skin also secretes fluids that lubricate it and barricade toxic substances, while maintaining this environment. The skin can absorb some soluble substances.

The Skin's Function

The skin is divided into three layers, the epidermis or outer layer which produces the tan; the dermis or middle layer which contains collagen and other materials vital to the skin's strength, its ability to repair itself and fight off infections; and the subcutaneous tissue or bottom layer which serves as insulation, a food reserve and binds the skin to your body. The layers of the epidermis which are involved in the tanning process are the horny (outer) layer and the germinative (inner) layer. Cells from the germinative layer are constantly reproducing and pushing old cells up through the horny layer where in approximately one month they are sloughed off. At the base of the epidermis, cells called melanocytes (about 5% of the epidermal cells) exist. These are the pigment cells involved in the tanning process. The melanocytes produce melanin (pigment), which when oxidized by UVR, provide the adaptive coloration of the skin. Melanin is made from an amino acid called tyrosine.

The melanocytes are spider shaped and have many arms that reach all of the keratinocytes in the basal layer. Keratinocytes, also referred to as skin cells, account for roughly 90 percent of the epidermal cells. Keratinocytes produce keratin, which is a tough fibrous protein. (Keratinocytes will be discussed further on p. 4) The melanin are transferred from the melanocytes to the keratinocytes. The melanin accumulates on the surface of each keratinocyte-creating a shield around the nucleus.

When exposed to ultraviolet radiation, the melanocytes release extra melanin thus making the skin darker and completing melanogenesis which is defined as the UVR-induced production and oxidation of melanin, i.e., the process of developing facultative pigmentation, better known as cosmetic tanning. Facultative pigmentation is simply the level of an acquired tan developed by an individual exposed to ultraviolet light whereas constitutive pigmentation is our natural skin color.

All individuals have roughly the same number of melanocytes, but heredity determines how much melanin can be produced. The skin of a person with higher skin type (genetically darker skin coloring) would contain more melanin than that of a person with a lower skin type (lighter coloring).

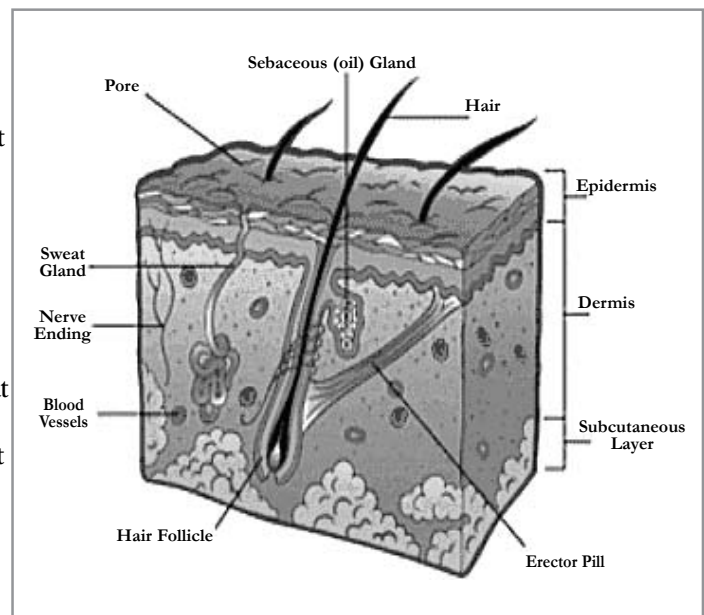
Every individual has only a given amount of melanin which is determined by an

- Layers of skin
- Facultative pigmentation
- Constitutive pigmentation

Notes

individual's skin type. Although a person may gradually increase the amount of melanin production through tanning, the person cannot change from one skin type to another.

One function of the skin is to protect its underlying tissues from invisible radiation i.e. that produced by the sun. The sun emits three kinds of ultraviolet (UV) rays, UVA, UVB and UVC. Although invisible, you can see the results of ultraviolet rays in such things as the growth of plants and the tanning of our skin.



UVC is the shortest, most harmful wavelength of ultraviolet rays, but is virtually stopped by the Earth's ozone layer and pollution. UVB is the medium wavelength and is responsible for initiating the tanning process in the skin.

UVA is the longest wavelength and is responsible for the completion of the tanning process. Tanning is actually the body's natural defense mechanism to protect itself from the sun's rays.

The outer surface of dead cells (horny layer) is the first shield against any invader. These cells, called keratinocytes or skin cells (about 90% of the epidermal cells), arise from the living dividing basal cells (named for their location at the base of the epidermis). New cells rise, pushed from the base by rapidly dividing basal cells. These new cells produce greater and greater quantities of a protein called keratin. The fibrous keratin accumulates within the cells until it nearly replaces their living cellular machinery. This journey to the surface takes approximately four to five weeks. Now they have withered, died and bound themselves firmly to one another, forming a tough nearly impermeable outer shell to the epidermis. Perpetual shedding of this horny layer prevents many microbes from penetrating the skin. As the epidermis goes about the business of renewing the horny layer, it sheds the dried out cells at a rate of one million every forty minutes. This horny layer becomes thicker and tougher in response to UV to protect the skin from overexposure. The remaining 5% of cells found in the epidermis are mostly made up of Langerhans and Merkel cells. Langerhans cells, also known as "immune cells," help fight-off organisms trying to invade the body. Merkel cells, known as "touch receptors," relay touch sensations to the dermis as contact nerve endings.

Ultraviolet B initiates the tanning process by stimulating the melanocytes, releasing melanin into the surrounding cells. As these melanin granules migrate to the skin's surface, there is a chemical reaction that occurs between the tyrosine, the melanin and the UVA rays that turns the skin a light brown or brown giving us the tanned appearance.

The degree of coloring achieved depends on the amount of melanin one has, the duration of the exposure and the individual's reaction to the ultraviolet rays.

The sun is not selective in the proportions of UVA and UVB emitted. Therefore too much UVB can cause sunburn, as well as other types of damage to the skin.

Research has shown UV exposure can diminish the effectiveness of the immune system by changing the activity and distribution of the cells responsible for triggering immune responses.

This highly complex inner world of the skin mandates responsible treatment by its owner as well as those of us entrusted with the cosmetic care of this largest of human organs.

In order to truly understand the tanning process of the skin you need to have at least a basic understanding of the properties and function of light. Although light has played a central role in the histories of religion, art and science and is so common to our everyday existence, it can actually be quite elusive.

Understanding Ultraviolet Radiation

To understand ultraviolet radiation (UV) one needs to know UV's placement in the electromagnetic spectrum. Ultraviolet light is located between X-radiation and visible light. UV has a higher frequency and shorter wavelength than visible light, and it has a lower frequency and longer wavelength than X-radiation. UV with its longer wavelength and less energy is less penetrating than X-ray and is sometimes absorbed by matter. Photobiology studies the interaction of nonionizing radiation between the electromagnetic spectrum and biologic systems. Nonionizing radiation represents the ultraviolet, visible and near infrared regions of the spectrum. Tanning occurs as a result of exposure to ultraviolet radiation. To fully understand this reaction, you must familiarize yourself with the electromagnetic spectrum.

Electromagnetic Spectrum

The electromagnetic spectrum is a way of visualizing the frequency and wavelength proportions of different forms of energy. Electromagnetic radiation has properties of both waves and particles. We divide the electromagnetic spectrum in the UV range for medical purposes.

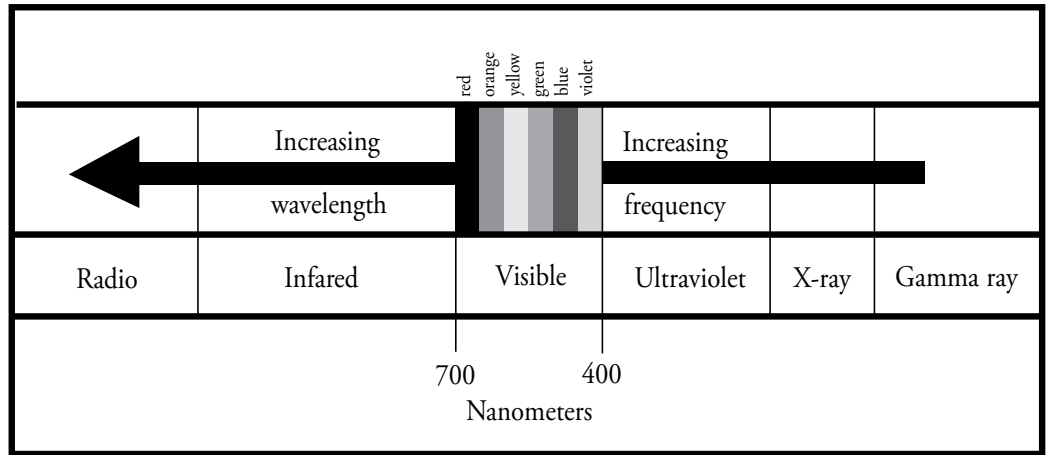
UVA is found in the region between 320 and 400 nm (nm = Nanometer = 1 billionth of a meter) and is the least powerful wavelength band of UV radiation. UVA acts primarily to cause the melanin pigments in the skin to oxidize (darken) creating the cosmetic tan and has limited power to cause erythema (sunburn).

UVB is found in the region between 280 and 320 nm. It comprises the wavelengths primarily associated with erythema (sunburn), is also necessary for the production of vitamin D in the skin and is primarily responsible for stimulating increased melanin production. UVB wavelengths (at 305 nm) have 1,000 times more erythema power than UVA wavelengths.

UVC is found in the region between approximately 200-280 nm and is called germicidal UV because of its proven effectiveness in killing single-cell organisms. Solar radiation in the UVC range is absorbed almost entirely by the atmosphere and that is fortunate considering that even a short overexposure to UVC is very harmful to the eyes and causes severe erythema (sunburn). UVC is emitted by High Intensity Discharge (HID) lamps; therefore these lamps require special filter glass, to contain the output of the UVC spectrum (this will be discussed later). Another place where radiation in the UVC range can be found is in the arc of a welding torch. For that reason, optical damage referred to as "welders eye" is caused by UVC light.

- Electromagnetic spectrum
- UVA, UVB & UVC
- Wave theory
- Quantum theory

Electromagnetic Spectrum

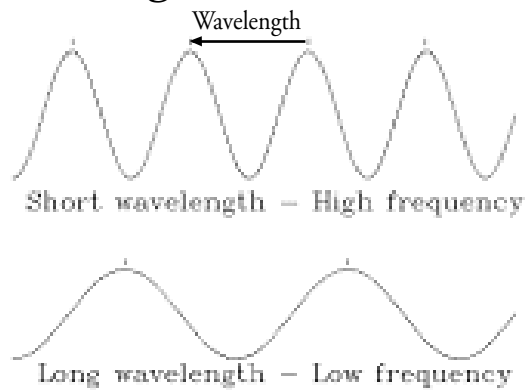


Wave Theory

Ultraviolet rays are similar to X-rays, white (visible) light, infrared and other similar types of radiant energy. They are all electromagnetic waves, wavelike disturbances associated with vibrating electric charges. Most waves are transmitted by some medium; for example, you have all seen waves on the surface of the water, in which case the water is the transmitting material. When a stringed instrument is plucked, waves are set up in the string, so the string becomes the transmitting material. Strangely enough, no one knows what transmits electromagnetic waves, however, we have proof that they are in fact transmitted.

Electromagnetic waves all travel at the same constant speed as light, 186,000 miles per second in a vacuum. All electromagnetic waves have the same form and travel at the same speed, but differ in wavelength. Wavelength is the distance between two successive crests in the wave. The number of crests or cycles per second is the frequency of the wave. The unit of frequency is hertz or 1 cycle per second. Therefore, if the wavelength is decreased, then the frequency is increased. Frequency and wavelength have an inverse relationship which is calculated with one of two equations where the velocity of radiation is 186,000 miles per second.

The Length of a Wave Chart



$$\text{Frequency} = \text{velocity of radiation} / \text{wavelength}$$

$$\text{Wavelength} = \text{velocity of radiation} / \text{frequency}$$

Frequency is calculated using cycles per second and wavelength is calculated in meters. The wavelengths of electromagnetic radiation vary in size from a fraction of an angstrom unit (an angstrom is equal to ten billionths of a meter) to thousands of meters, commonly called the "electromagnetic spectrum." Some of the wavelengths of electromagnetic radiation from this spectrum are classified as follows:

SPECTRUM**APPROXIMATE WAVELENGTH****Notes**

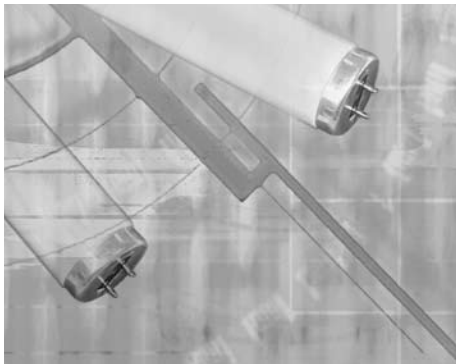
X-Ray	0.1 - 100 angstroms
Vacuum	10 - 200 nanometers
Ultraviolet C (UVC)	200 - 280 nanometers
Ultraviolet B (UVB)	280 - 320 nanometers
Ultraviolet A (UVA)	320 - 400 nanometers
Visible light	400 - 700 nanometers
Near Infrared	0.74 - 1.5 micrometers
Middle Infrared	1.5 - 5.6 micrometers
Far Infrared	5.6 - 1,000 micrometers
Microwave/Radiowaves	greater than one millimeter

Therefore, the useful unit of measure for our purposes is the nanometer. Radiations shorter than 10 nanometers (i.e. gamma rays or X-rays) generally ionize molecules (remove electrons) producing positively or negatively charged ions and are, therefore, known as ionizing radiation. Ultraviolet radiation is absorbed by molecules and is known as nonionizing radiation.

Quantum (Particle) Theory

Another theory used in reference to the electromagnetic spectrum is the quantum theory. In order to explain energy transfer, a bit of energy called a photon was theorized. Photons have no mass and when absorbed this energy is passed on to the absorbing molecule (such as skin cells) and the photon no longer exists in its same state. The amount of energy in a photon is directly proportional to the frequency of the radiation. The energy of a photon increases as the frequency increases. The more cycles per second (frequency) of any given photon, the more energy the photon has. The energy of any given photon decreases as the wavelength increases. The longer the wavelength, the less the frequency.

Light energy is expressed differently. We often express radiant energy in terms of watts per square meter or milliwatts per square centimeter. Skin exposure is usually expressed in Joules per square centimeter. A Joule, is a unit of measure and is equivalent to the electrical work done in one second by an electrical current of one ampere through the resistance of one ohm; named for its inventor, British physicist, J.P. Joule (1818-1889).



CHAPTER

3

tanning lamps,

a brief description

The tanning lamp is probably the single most important element to your tanning unit. Having a better understanding of the function of the tanning lamp will allow you to offer the best level of service to your client.

Lamp Components

The fluorescent lamp is composed of seven main parts:

1. Base—connects the lamp to an external source of power.
2. Lead-in Wires—connects the base to the cathode, which emits electrons during lamp operation.
3. Mercury—atoms in the form of vapor in the lamp which are struck by the electrons and excited from their ground state to a higher state, from which they emit a UV photon with a wavelength of 254 nm.
4. Phosphor—absorbs this UV and converts it to longer wavelengths (usually visible light). It is coated onto the inside of the bulb during lamp manufacturing.
5. Stem Press—is a cathode support structure as well as the means to hermetically seal the lamp ends.
6. Exhaust Tube—is the means of introducing the fill gas and mercury into the lamp during processing. It is then closed off.
7. Fill Gas—is an inert gas which aids in starting and operating the fluorescent lamps.

Tanning Lamps

Tanning lamps emit primarily UVA radiation with a small amount of UVB. The percentage of UVA and UVB is varied through lamp design by changing the phosphor composition. An electric current is passed through mercury vapor gas under low pressure which then becomes ionized. UV emissions are the result of energy transfers between the electrons and the gas atoms. Some lamp manufacturers rate their lamps by percentage of UVB, however, lamp manufacturers who provide a spectral analysis graph will perhaps be easier to understand.

Low pressure fluorescent lamps are the most prevalent in the tanning industry. These lamps vary in size; the average commercial tanning lamps are either 5 or 6 feet in length and range from 80 to 160 watts. Electrical contacts for lamps are found in two types: Bi-Pin and RDC (recessed double contact). Light output ranges across a wide spectrum, including UVA and UVB, plus infrared and visible light. All fluorescent lamps share the same basic design, a glass tube lined with a coating of phosphors, electrodes on the inside and end caps at each end to seal the lamp. To determine the proper lamp type for a particular piece of equipment, you should follow the manufacturer's recommended lamp replacement guide posted on the equipment's operation label. This information may also be found in the owner's manual.

Low pressure lamps' output generally exceeds the sun's natural intensity of the UV

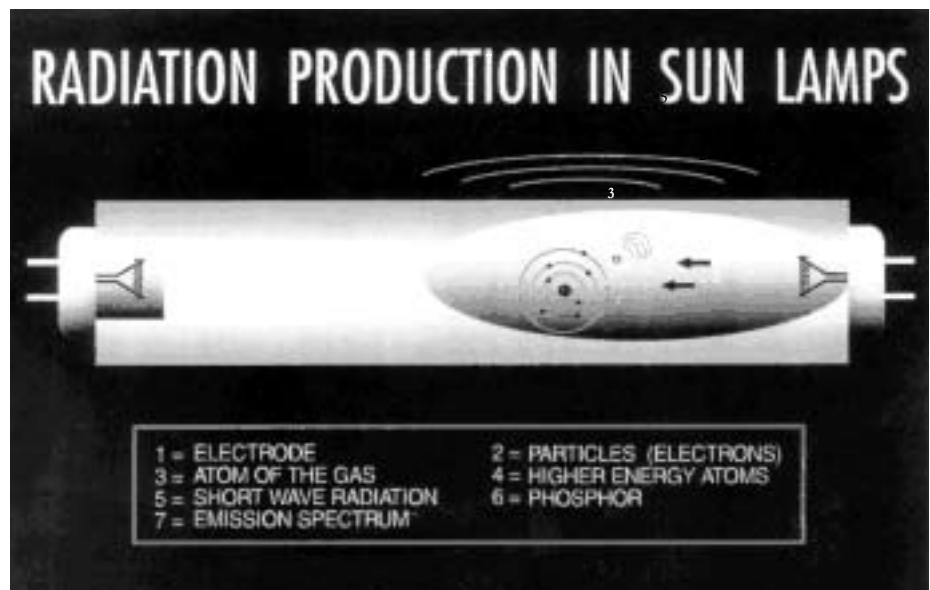
- Low pressure
- High pressure

Notes

spectrum by 2-5 times. The UVA to UVB ratios are determined by the phosphor in the lamp. Other factors also will affect a lamp's output, such as operating temperature, wattage, and lamp age in hours.

High Intensity Discharge (HID) lamps are also known as high pressure lamps that are significantly different than low pressure lamps. Their size is small, averaging from 5 to 8 inches in length. They are primarily used as facial tanning lamps, but are also used in equipment designed for full-body tanning. HP lamps are mercury vapor lamps. The wattage output ranges from 400 to 30,000 watts. The light output is 20 to 100 times that of the sun's natural intensity. They also emit a wide spectrum of light beginning with short wave UVC through visible light. HID lamps require a filter glass, commonly known as "blue glass" to contain the output of the UVC spectrum. This filter glass must be present in order to operate or severe burning will occur. Cracked filter glass must be replaced before the unit can be energized. Cracked glass will allow dangerous levels of UVC and UVB to reach the client. Tanning systems utilizing HP lamps offer shorter overall exposure times, but extra care and maintenance must be observed.

Some tanning units utilize both low pressure and high pressure lamps. Again, extra care must be observed. As always, follow the manufacturer's exposure schedule and the maintenance schedule properly, regardless of the equipment and lamp type utilized.





CHAPTER

4

the complete

tanning process

It is essential that you and your employees understand the biological process by which the skin tans when exposed to ultraviolet radiation. An understanding of the tanning process will aid you in educating your clients in the proper way of achieving the best tan possible.

Skin Absorption

UV radiation must first be absorbed by molecules to cause any chemical change. Only that radiation absorbed by the skin can initiate a biologic response. A molecule that absorbs light is called a chromophore. These include molecules such as DNA, RNA, and proteins. After absorbing the energy of the radiation, the molecule is in an excited state. The molecule exists in this excited state for a fraction of a second before losing the energy at which time a chemical change occurs. The observable effect may be increased pigmentation of the skin or erythema.

The Tanning Process

To understand the tanning process one first needs to realize that the skin is comprised of several different types of cells. Each type of cell has a specific function. The cells involved primarily in the tanning process are called melanocytes. Melanocytes are located at the base of the epidermis between the epidermis and the dermis below. These are the pigment cells involved in the tanning process. The melanocytes produce melanin (pigment). Melanin is made from an amino acid called tyrosine. The melanin is transferred from the melanocytes to the keratinocytes.

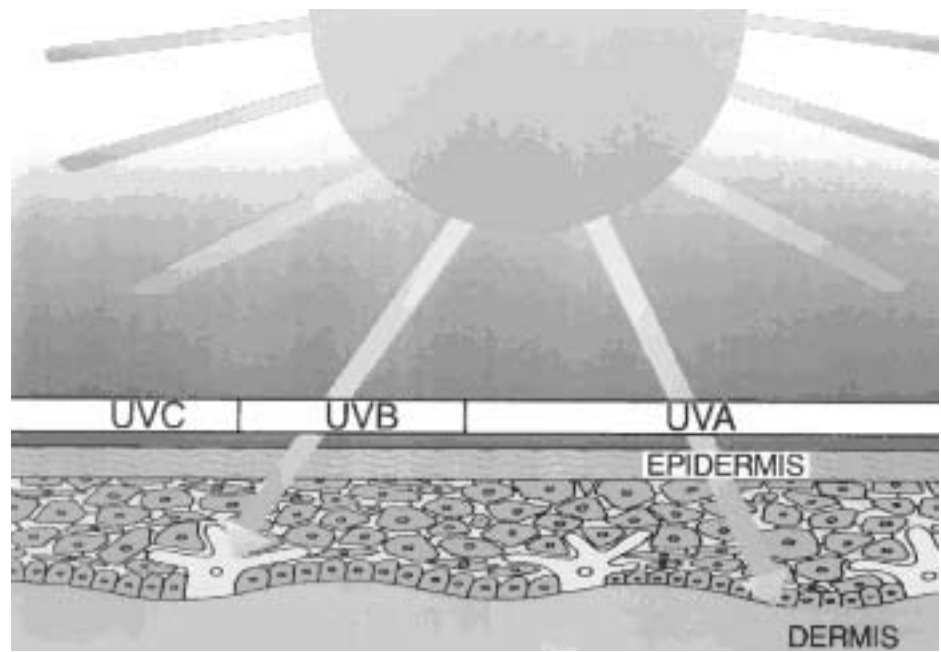
Both UVA and UVB play a role in the tanning process. The main role of UVA in the tanning process is to oxidize (darken) existing melanin. UVB is the primary melanocyte stimulator. The melanocytes then produce melanin.

The tanning process or increased pigmentation occurs in two phases. The first one is immediate pigment darkening (IPD). IPD is a rapid darkening of already existing melanin which begins during exposure to UV radiation and its maximum effect is visible immediately. IPD is most obvious in skin where significant pigmentation already exists and is induced mainly by UVA. IPD may fade within minutes or may last several days and blend in with delayed tanning. Factors including skin type and previous exposure affect the response.

Delayed tanning, induced mostly by UVB exposure, is the result of increased epidermal melanin and first becomes visible 72 hours after exposure. Both UVA and UVB radiation start delayed tanning by creating an excited condition in the melanocytes which in turn releases more melanin into the skin. The degree of IPD is primarily a reflection of the person's skin type. Delayed tanning demands larger doses of both UVA and UVB for any given response.

- Melanocytes
- Tyrosine
- Melanin
- Immediate pigment darkening (IPD)
- Delayed tanning

Notes





CHAPTER

5

skincare

moisturizing

Tanning salon operators need to understand the role good skincare plays in the overall tanning process. Moisture is essential to good skin health because it helps maintain the integrity of an exceptional skin barrier while enhancing the tanning process.

Moisturizing

Your client's skin is gasping for moisture like a flower in the desert. All winter, the elements have taken their toll. For at least three months the dry winter wind has sucked moisture from the delicate skin surface, while the cold temperatures blocked the production of natural oils and emollients. Your client's skin is dry to the touch and tight in appearance. You must come to the rescue with a good moisturizer.

Moisture is critical to good skin health because it helps maintain a good skin barrier and creates a flexible, pliable skin that is soft to touch. Moist skin will tan better and more evenly than dry skin. Your skin knows that moisture is important and uses a variety of methods to retain moisture in its surface.

Moisturize With Oils

Your skin retains water within its natural oils to help them maintain an ordered structure around each skin cell. Each skin cell is surrounded by a variety of different natural oils. Together, the skin cells and the natural oils help form the acid mantle or barrier in the stratum corneum. Water helps increase the flexibility of the oils so the oils can surround the cells to maintain an adequate skin barrier.

During cold winter months, the skin's ability to make natural oils for the stratum corneum is greatly reduced. We have known for many years that cold weather causes skin to become dry and brittle. Recently, scientists discovered that one of the reasons is a decrease in the production of natural oils when skin is exposed to cold temperatures. If the skin is not producing enough natural oils, then we can help by adding oils.

A good moisturizer not only will add moisture to the skin, but also add some oils to the skin. A client with severe dry skin requires a moisturizer with more oils than a client with slightly dry skin. For your clients with severe dry skin, recommend a moisturizer with a greasy feel. Clients with slightly dry skin can expect improvement with a less greasy moisturizer.

However, be careful to remember that the best moisturizer is one that your clients will use. The moisturizer has to be enjoyed by your client; it has to be used regularly. If your client will not use a greasy moisturizer, then the moisturizer will sit in the bottle and you may lose future sales.

- Oils
- Natural moisturizing factors (NMFs)
- Vitamins
- SPFs
- Sunless tanners

Moisturize With NMFs

Your skin retains water within its natural proteins to keep them flexible. Each stratum corneum cell is a flexible sack of proteins. Without water, the proteins lose their flexibility and become rigid. The skin becomes rough to the touch, even cracking in severe cases. Water helps increase the flexibility of the proteins so the cells can relax to a smooth surface that begs to be touched.

Normally, skin creates natural moisturizing factors (NMFs) to hold moisture in the stratum corneum and increase the water content of the skin. In dry winter conditions, the skin cannot make NMFs because the water content of the skin is too low. Also, NMFs are stripped away by the use of hotter bathing water and stronger detergents.

A good moisturizer will add moisturizing factors back to the skin where they can lock moisture into the skin. Sodium PCA, or sodium pyrrolidone carboxylic acid, is one of the most efficient NMFs because it binds lots of water.

Moisturizing lotions also may contain moisturizing factors that are not natural, but moisturize much the same way. Some examples are sodium isethionate, glycerin and panthenol.

Moisturize With Vitamins

The reduced barrier function of the skin caused by the dry cold winter allows a variety of environmental pollutants to enter the skin. These pollutants can deplete the antioxidant system of the skin, making the skin more susceptible to oxidative damage. Vitamins can reduce or eliminate this damage.

A good moisturizer will help replace the vitamins skin needs. Vitamin E, or tocopheryl acetate, is a potent antioxidant that should be found in a good moisturizer. Vitamin C, frequently included as ascorbyl palmitate, acts in concert with vitamin E in a healthy antioxidant system. Scientists have found several situations where these vitamins are more powerful together than alone.

Moisture With AHAs

Alpha hydroxy acids (AHAs) have been used for more than 3,000 years to improve the condition of skin. Scientists are not sure if the AHAs affect the structure of the natural oils or the proteins, or some other system yet to be discovered. They have shown that AHAs increase the flexibility of the skin much like water. Skin treated with AHAs becomes softer, more supple, and the color improves over continued use.

A good moisturizer for your tanning clients will contain a low level (less than 1 percent) of AHAs to generate good moisturization in the skin. A moisturizer with a high level (greater than 1 percent) of AHAs will decrease the melanogenesis process, causing your client to lose their tan.

Results

Dry, cold winter prevents skin from maintaining a moist healthy condition due to the loss of natural oils, natural moisturizing factors, and vitamins. A good moisturizer will contain these three items with a low level of AHAs. Your clients need to use a good moisturizer regularly and to apply it generously. Moisturizing skin helps replenish and retain the normal moisture content of the stratum corneum, keeping the skin soft and supple. Moist skin is healthy skin and healthy skin will tan better and more evenly than dry skin.

SPFs

As responsible indoor tanning salon operators, it is important to promote sensible, moderate and responsible UV exposure whether it occurs indoors or outdoors.

As you know, ultraviolet radiation is divided into three different bands—UVA, UVB and UVC. Virtually all of the UVC is filtered out by our atmosphere so that none actually reaches the earth's surface. However, both UVB and UVA reach the earth in significant amounts.

It is difficult to control the amount of UV exposure received outdoors due to variables such as time of year, geography, pollution, cloud cover, and reflective surfaces, which can easily lead to overexposure. With the public becoming more aware of the dangers of overexposure to sunlight, it would be prudent to offer sun protection in the salon.

Also, as discussed earlier, exposure should be limited to once in a 24-hour period. If a client comes in to tan in the morning and then heads to the lake that afternoon, it is important for him or her to wear sun protection outside.

Anyone who has had the experience of being burned by the sun knows the value of sunscreens and sun blocks. However, most people do not understand how they work to protect the skin.

Sunburn is caused by overexposure to ultraviolet rays, mostly UVB, although it can be attributed to UVA as well. This is important because the SPF system measures UVB protection and not UVA. When choosing a sun protection it is important to make sure that it covers the UVA spectrum as well.

During a sunburn the skin turns red, swells and, in some severe cases, blisters. Sunburn continues to develop for 12 to 24 hours after the exposure.

In order to effectively service the needs of customers, it is important to have a general idea of how the SPF system works. Sunscreens chemically absorb UV rays, while sun blocks physically deflect them. Energy will excite the sunscreen temporarily then, as the chemical relaxes back into its original state, transform the energy into something harmless (usually heat). This process will repeat itself countless times per second.

SPF, or sun-protection factor, is the measurement of the amount of UVB rays that are filtered out by a sunscreen. In other words, it measures the length of time a product protects against skin reddening from UVB, compared to how long the skin takes to redden without protection. The higher the number the greater the amount of protection from sunburn provided. For example an SPF of 2 blocks out 50 percent of the UVB rays, allowing 2 times the length of exposure without sunburn versus unprotected skin, while an SPF of 15 blocks out approximately 92 percent UVB rays, allowing 15 times the length of exposure without sunburn versus unprotected skin.

Most health professionals suggest an SPF of 15 or above. SPF's higher than 30 may be advisable for sun-sensitive individuals, skin cancer patients, and people at high risk of developing skin cancer. They also allow some margin for error if too little sunscreen is applied.

As stated earlier, the SPF system measures only UVB protection, not UVA. A product listed as broad-spectrum protection indicates that it shields against UVA as well as UVB. It does not guarantee protection against all UVA wavelengths, however. Most broad-spectrum products with an SPF of 15 or higher work effectively against UVB and UVA rays if they also contain avobenzone, zinc oxide, or titanium dioxide.

Make sure to inform clients to apply sunscreen approximately 30 minutes before being exposed to the sun. This allows the sunscreen time to "set up" on the skin so that it can do its job correctly. Approximately 1 ounce of sunscreen (a palmful) should be used for full body application.

The sunscreen should be re-applied at least every 2 hours and it should be re-applied immediately after swimming, excessive sweating, or if rubbed off by toweling.

Another point to consider is that different parts of the body require special care in the sun. Because of their prominence, noses, cheeks and lips often require a product with a stronger SPF than needed for arms and legs. It should also be noted that there are areas of the body that do not have melanin- eyelids, palms, soles of the feet and genitals. Educate your customers that regular use of suntan products and common sense about how long to spend in the sun is extremely important.

Sunless Tanners

Imagine this dilemma: One of your customers is leaving on a cruise in less than one week, and she has been so busy that she has not had time to tan. What to do? Being the knowledgeable salon operator, you have the perfect solution—suggest a sunless tanner.

Afraid that offering a sunless tanner is counterproductive to selling indoor tanning? Think again. What better way to secure customer confidence than by showing them how to even out those unsightly pressure points and uneven tan lines? You already offer a complete line of skincare products to keep your customers' skin moisturized and provide darker, more beautiful tans. So round out that skincare promotion by offering sunless tanners and you will find it will shed new light on your profits.

Self-tanners have gained popularity in the past few years for a number of reasons. The medical community's condemnation of UV light has caused some sun worshippers to seek refuge indoors. And while indoor tanning offers a controlled environment and all the comforts one could want, the media's incisive industry bashing has caused some fear to getting in a tanning bed.

Another reason self-tanners are gaining favor is the ease of application and upkeep. In the past, a lot of people thought self-tanners were messy and difficult to apply. Today, self-tanner application has been refined and products have gained a respectable place in the industry.

In addition, many salon owners are noticing a trend toward their clients covering their faces with towels to avoid premature wrinkling. Sunless tanners are the perfect remedies for those telltale towel lines on their faces and necks. In addition, it is a great product for those people who have problems tanning or for those difficult areas to tan such as the feet and hands. Sunless tanners also can be used to fill in pressure points and even out tan lines. And, for some fair-skinned people, sunless tanners can be used to augment the tanning process. (It is important to note that clients need to understand that a towel does not offer complete UVR protection. UVR does penetrate the towel to a great extent and eye protection must still be used.)

In days past, sunless tanners didn't live up to their promise of deep, golden tans. Instead, they left the skin streaked and splotched with a distinctive orange cast. Today's sunless tanning products are far more sophisticated than those introduced nearly 30 years ago. In fact, in the last few years, these products have undergone a sort of metamorphosis—streaks, splotches and orange are gone; smooth, bronze and beautiful are in.

The key ingredient to the products' evolution is dihydroxyacetone, or DHA, which is an extract of sugar cane. DHA reacts with proteins in the skin to produce a bronze coloration on the top layer of skin—in essence, a cosmetic effect that does not saturate the skin.

Over the years, the formulation technology has been greatly improved to provide better application and coloration. Many of the earlier products were formulated using higher DHA concentrations; today, sunless tanners use lower concentrations because of the improved technology.

The majority of self-tanners on the market are a medium grade of color. How dark they tan really depends on the individual's skin type and the condition of the skin. It is important to remind your clients that what works on one person may not

necessarily look the same on another.

The first step to ensuring a great sunless tan is to exfoliate the skin. The skin needs to be clean and free from dead skin cells in order to alleviate uneven distribution. Clients also need to exfoliate well and then dry off completely before applying a sunless tanner. For example, if a client is young and has soft, supple skin, he or she probably doesn't need to exfoliate as much. If he or she has naturally dry skin or are in a place with a lot of humidity, exfoliation is the key to getting an even, all-over tan.

The second, and probably the most important step, is application. Some experts suggest spot testing the product to see what shade of bronze will result. The key to obtaining an even tan is to apply a smooth, thin layer of the self-tanner. Avoid using too much self-tanner in one application; you can always go back and apply another layer if the color isn't dark enough.

When applying the self-tanner, special attention should be paid to the knee, elbow, ankle and eye areas. The reason? Color is proportional to the surface area of the skin, and these areas are likely to become darker because there is a higher concentration of self-tanner in the fine lines.

Additionally, it is important to wait for the product to dry completely before getting dressed, since DHA interacts with proteins and can cause fabrics to stain. Also, avoiding the hairline is crucial since hair is protein and self-tanners will cause it to discolor.

Once the color has fully developed, another coat of self-tanner may be added to darken the tan. Mistakes and uneven patches can be fixed easily by exfoliating the area or by adding more self-tanner. Make sure to tell clients to allow self-tanners to dry before beginning any activity, as sweat during application can cause an uneven or streaked tan.

Since self-tanners work on the top layer of skin, the average tan only will last for approximately three to four days, gradually fading as the top layer dries and flakes off. Salon operators need to remind customers that self-tanners don't contain any sunscreen and even though their skin is tan, they still can get sunburned.

In addition, because DHA often is associated with skin dryness, it is important to suggest a moisturizer to complement self-tanners. Not only will it alleviate the dryness, but it will ensure another sale for you during typically slow months.



CHAPTER

6

understanding

MED and MMD

The terms commonly used in the indoor tanning industry are Minimal Erythema Dose (MED) and Minimal Melanogenic Dose (MMD). Both terms seem to be self-explanatory, however, the true definition of each term is necessary for a clear understanding of the science of tanning.

Understanding MED And MMD

MED is the minimal erythema dose and is defined as the threshold dose that may produce sunburn. MMD on the other hand is the minimal melanogenic dose and is equal to the lowest dose required to develop a visible suntan.

Even though the terms MED and MMD seem to be self-explanatory at first glance, the translation of these values in the daily practice of indoor tanning often leads to misunderstandings and wrong interpretations, especially when it comes to determining exposure times based on MED and MMD values.

How Threshold Dosages Are Determined

Assume that unprotected skin has been exposed to UV radiation for the first time. In order to determine the MED, the reaction of the skin will be recorded 24 hours after exposure. The minimal dose that induces any visible reddening at that point is defined as one MED.

Redness that occurs immediately after exposure, however, and disappears during the following three to five hours is mainly caused by heat and is not comparable with real UV erythema. This is the reason why the reading is not taken until 24 hours later.

For users of tanning units, the MED provides important information about the sunburning effect of the equipment, since an even perceptible reddening is the first sign of a sunburn reaction. In order to prevent possible acute or long term risks due to indoor tanning, the MED should not be exceeded during a session.

The MMD is determined in a very similar manner. In contrast to the MED examination, however, the readings are taken seven days after exposure instead of 24 hours. The minimal dose required to produce an even noticeable tan, which can be observed seven days later, is defined as one MMD. The interval between exposure and reading is necessary to permit the occurrence of new melanin biosynthesis (melanogenesis), which only becomes evident after several days of UV application.

Why Standard Values?

To better understand MED and MMD, it should be said that both are individual values. The lowest effective dose developing a sunburn as well as the value of producing a suntan depend distinctly on the skin sensitivity of the person (i.e. skin types).

In order to eliminate these individually influencing factors, MED and MMD have been standardized. With standardized MED and MMD values, sunlamp products can be characterized and specified and become comparable with respect to their biological capabilities.

Such information based on these standard values is of greater meaning than statements about the physical data such as UVB/UVA ratios or UVB percentages.

- Minimal erythema dose
- Minimal melanogenic dose

Standard MED And MMD Compared

By comparing MED and MMD values of tanning units, it may be surprising that the required exposure time for reaching one MMD is usually longer than the corresponding time for one MED. This seems to indicate that it is impossible to tan without first developing red skin. At the same time, the question comes up: How can we achieve tanning slowly, progressively, and safely without producing a sunburn?

To shed some light on this question, consider the following: As mentioned above, MED and MMD are standardized values and valid for unprotected and untanned Skin Type II. This means that such given values are basically only valid before undergoing the first exposure.

The effect on the skin of a melanogenic dosage will become evident only three to five days after exposure, at the earliest. Further, melanogenesis is a long lasting process, therefore single doses work cumulatively. In other words, the skin does not forget the induced pigment effects and accumulates these single pigment-producing dosages over time.

Besides melanogenesis there exists the 'IPD', an immediate pigment darkening effect which is a rather superficially effective tanning mechanism. IPD is a transient reaction induced by the photochemical oxidation of preformed melanin pigments by long-wave UV, darkening the skin during exposure.

By the use of a sunbed, for example, which is characterized by an exposure time of 20 minutes for one MED and 45 minutes for one MMD. Melanogenesis can be induced in two different and, at least theoretically, conceivable ways.

MED/MMD-Based Schedule

Consider the given MMD exposure time of 45 minutes. Although the applied melanogenic dose is high enough to produce new pigments, an exposure of this duration cannot be recommended because the MED would be exceeded more than twice during such a session.

It is better to get a suntan by starting an exposure schedule consisting of three applications of 15 minutes each during one week. The advantage of such a procedure is twofold. The applied dose per session does not reach the limit of one MED, however, at the same time the skin has received a total melanogenic dose of one MMD. This means that the process of new pigment formation will be induced without the risk of sunburn. In addition to melanogenesis, even during the first exposure session the skin will be tanned immediately if the horny layer contains some weakly colored, preformed pigments which then can be darkened by IPD. Generally, human skin has some pigment pre-stages available (except Skin Type I). In this context, it may be helpful to know that with most of the commonly used sunlamps, the threshold dose to initiate IPD will be reached quicker than 1 MED.

Depending on the amount of available pigment (and skin types), the effect of IPD usually remains only for hours, at the most a few days. With an increasing number of sessions, the amount of pre-stage pigment will be enhanced.

Talking about indoor tanning as well as outdoor tanning, the mechanisms of 'immediate pigment darkening' and of 'pigment formation' (melanogenesis) interact so that a clear differentiation between them is often impossible. As a rule, it can be established that IPD is more important during the first sessions while melanogenesis comes more and more into play during the following exposures.

By using suntanning units, both mechanisms are utilized. At the beginning, the tanning results are mainly caused by IPD. With increasing sessions, the obtained suntan becomes darker and deeper due to further melanin synthesis. Further, with well-tanned skin, the required exposure time to develop erythema will be prolonged, and thus offers an effective sun protection.



CHAPTER

7

determining an

exposure schedule

Accurate control of exposure times is necessary to decrease the risk of overexposure to ultraviolet radiation. Another factor involved in optimal tanning sessions is being able to accurately identify the various skin types of those clients that frequent indoor tanning facilities.

Determining Exposure Time:

Where To Look

FDA standards require that the manufacturer provide an exposure schedule with the product warning label. The exposure schedule allows a user to gradually build up a tan and maintain it while controlling the risk of acute injury and delayed adverse effects. Because the UV dose that causes a barely discernible pink coloration of the skin (MED or minimal erythema dose) is not the same for everyone, the exposure schedule for the first time user will depend on the skin type of the user. Sub-erythema doses of UV received at 24-hour intervals initially lead to a reduction of the erythema thresholds. Therefore, the exposure schedule and maximum recommended exposure time limits the potential for erythema and monitors the dose of radiation necessary to achieve and maintain a tan.

The amount of UV required to achieve a tan is different for each person. The exposure schedule is designed to allow a client to gradually build a tan, while minimizing the risk of erythema. The schedule is based on the skin type of the individual client and the output of lamps in the tanning unit. It takes into account a client's recent exposure, then increases the session time gradually.

Maximum timer intervals depend upon the intensity and spectral distribution of ultraviolet emission from the equipment and must not exceed the maximum recommended exposure time provided on the manufacturer's label. Equipment manufacturers are required to develop an exposure schedule and to establish the recommended exposure time. Therefore, the maximum timer interval based on the characteristics of their particular products.

According to the FDA, the purpose of a sunlamp product timer is to provide for reliable control of exposures and to limit acute (and delayed) damage from unintentionally long exposures.

It is the tanning salon operator's responsibility to determine the amount of time a client can tan. This time is determined by referring to the manufacturer's printed label for suggested tanning time. In order to properly utilize the label the operator must accurately determine the client's skin type and skin sensitivity (see below). Also, a thorough evaluation must be done to determine factors that could eliminate or reduce tanning time (checking for photosensitizing substances and unit past the maximum conditions). Regardless of skin type, a client should never be allowed to exceed the time allowed on the manufacturer's label.

Skin-Typing

The most important factor involved in determining a client's tanning time is his or her skin type. In order to understand and implement exposure schedules, salon operators consistently must be able to skin type clients with accuracy.

- Exposure time
- Skin typing

In some states, salon operators are required to use a state-approved skin typing form. The most common skin typing charts used today are based on the Fitzpatrick system, which evolved from Dr. Thomas B. Fitzpatrick's earlier biological work. The system originally was developed to determine appropriate exposure schedules for patients with psoriasis who were being treated with PUVA therapy. It takes into account an individual's reaction to sunlight exposure lasting 45 to 60 minutes with unexposed (untanned) skin, as well as his or her coloring: hair, eyes, skin (phenotype).

Charts based on the Fitzpatrick system categorize humans into six different skin types, arranged from lightest to darkest coloring. Below is a typical skin typing chart. Skin type is determined by a person's initial response to sun exposure after a long period of no exposure (winter). It remains the same, regardless of tan developing due to further exposures.

Skin Type 1 tans little or not at all; burns easily and severely; then peels. Skin reaction samples include most often fair skin, blue eyes, freckles, and white, unexposed skin. The skin of Type 1 individuals does not have the ability to create natural protection from ultraviolet exposure, and it is particularly susceptible to burning and damage from UV rays. These people should avoid UV exposure, and must not be allowed to go into a tanning bed. Skin typing should eliminate the possibility of a Skin Type 1 individual tanning in a bed. Sunless tanning options would be a good solution for these clients.

Skin Type 2 usually burns easily and severely (painful burn); tans minimally and lightly. Skin reaction samples include: fair skin, blue or hazel eyes, blonde or red hair, and white, unexposed skin.

Skin Type 3 burns moderately; gains average tan. Skin reaction samples include: average Caucasian, with white unexposed skin.

Skin Type 4 burns minimally; tans easily and above average with each exposure; exhibits IPD. Skin reaction samples include: people with light or brown skin, dark-brown hair, and dark eyes, and whose unexposed skin is white or light brown (Asians, Hispanics and Mediterraneans.).

SKIN TYPE SKIN REACTION EXAMPLES

Type	Skin Reaction	Examples
I.	Tans little or not at all; always burns easily and severely; then peels.	People most often with fair skin, blue eyes, freckles, and white, unexposed skin.
II.	Usually burns easily and severely (painful burn); tans minimally and lightly; also peels.	People with fair skin, blue or hazel eyes, blonde or red hair, and white, unexposed skin.
III.	Burns moderately; gains average tan.	Average Caucasian, with white unexposed skin.
IV.	Burns minimally; tans easily and above average with each exposure; exhibits IPD (immediate pigment darkening) reaction.	People with light or brown skin, dark-brown hair, and dark eyes, and whose unexposed skin is white or light brown (Asians, Hispanics and Mediterraneans).
V.	Rarely burns; tans easily and substantially; always exhibits IPD reaction.	Brown-skinned persons whose unexposed skin is brown (East Indians, Hispanics, etc.).
VI.	Tans profusely, never burns; exhibits IPD reaction.	Persons with black skin (Africans and African Americans, Australians and South Indian Aborigines).

Skin Type 5 rarely burns; tans easily and substantially; always exhibits IPD. Skin reaction samples include: brown-skinned persons whose unexposed skin is brown (East Indians, Hispanics, etc.)

The last category, Skin Type 6, tans profusely, never burns; exhibits IPD. Skin reaction samples include: persons with black skin (Africans and African Americans, Austrians and South Indian Aborigines).

Because people with higher skin types have more pigmentation, thus more natural protection, their exposure schedules can progress more rapidly than those with lower skin types. It is extremely important to note that regardless of skin type, the maximum exposure time in a tanning unit should never be exceeded.

Although it is much harder for a person of Skin Type 4, 5 or 6 to burn, it is possible. It is a common belief that indoor-tanning equipment is designed to produce a quick tan without burning, and that tanning for longer periods will bring quicker results. This is not correct. Following the maximum recommended exposure time of the tanning unit will produce the best results.

Ask Questions

When determining the appropriate exposure schedule for a client, it is important to note that a salon operator can't base skin type simply by what he or she sees. Because of the prevalence of hair dyes, colored contacts and sunless tanners, it is nearly impossible to accurately determine a client's natural coloring and a salon operator easily could incorrectly skin type the client. Also, a client can walk in with what appears to be an all-over tan but is only tanned on the arms, legs and face. If operators use the exposure schedule based on what they see, a client easily could incur a burn on previously unexposed skin. It is important for the operator to have an open dialogue with the client.

In addition to skin typing and looking at recent tanning history, other factors should be used to properly utilize the exposure schedule. A salon operator needs to ask a clients about possible photosensitizing medications and medical conditions that could affect recommended tanning times. A questionnaire inquiring about sun sensitivity, natural coloring, recent tanning history, medications and medical history should be used, and is required by certain states. (A questionnaire of this type is listed on the next page. Each response is given a numerical value, after the tanning operator reviews the questions with the client the answers are tallied up and an individual's sun sensitivity is determined. This level of sun sensitivity can then be used when utilizing the manufacturer's printed label for suggested tanning time.)

Tanning Takes Time

Clients need to be educated on the tanning process and made aware that it takes some time. It takes six to 10 sessions following the exposure schedule for a previously unexposed individual to develop a base tan. Because we live in a society that is used to immediate gratification, it would be a smart idea for salons to carry self tanners and bronzers for clients who want immediate color while beginning their tanning regime.

The tanning process occurs in two phases. The color seen immediately after getting out of a tanning unit is due to immediate pigment darkening (IPD). IPD results from the rapid darkening of already existing melanin and is induced mainly by UVA. It is most obvious in skin where high levels of pigmentation already exist. IPD can fade within minutes or last up to several days after longer exposures and blend into the delayed tanning phase.

The delayed tanning phase first becomes visible 72 hours after exposure. It is induced mainly by UVB and is the result of increased melanin. By creating an excited condition in the melanocytes which then release more melanin, both UVA and UVB contribute to the delayed tanning phase.

Notes

Because the length of IPD is primarily determined by skin type, certain individuals will experience IPD for only a few minutes. It is important to educate these clients on the tanning process, otherwise they may incorrectly perceive that they did not receive adequate color from their tanning session and try to tan again within a 24-hour period. This could lead to unintentional overexposure. Supplementing sunless tanning options along with UV tanning will allow these clients to have immediate color while they develop their base tans.

Satisfied Customers

Clients rely on salon operators to maximize their tanning processes while reducing their risks for overexposure. By appropriately determining exposure schedules based on skin type, salon operators can ensure continued business success. Clients who achieve beautiful, golden tans without incurring sunburn will be satisfied, repeat clientele.



CHAPTER

8

photosensitivity

Photosensitivity is typically defined as a chemically-induced alteration in the skin that makes a person more sensitive to light. Photosensitive reactions can fluctuate from mild to chronic depending on the sensitivity of the individual.

Understanding Photosensitivity

Many medications and topical solutions can cause the skin to burn or break out in a rash when exposed to ultraviolet light. Photosensitivity is an adverse skin reaction (dermatitis) to certain substances in the presence of ultraviolet light. The substances may be encountered orally, topically, or subcutaneously, but it must be present when the skin is exposed to ultraviolet light. Photosensitizers may cause erythema, rashes, itching, scaling or inflammation and act to decrease tolerance to ultraviolet light (TUVR) and, therefore, increase sensitivity to UVR (SUVR).

Substances that are ingested (medications, foods, drinks, herbal products), applied topically (perfumes, deodorants, soaps etc.), or injected, all have the possibility of causing a photosensitizing reaction. There is a list of drugs and other substances known to cause photosensitivity at the end of this chapter. The items with the highest probability of causing a reaction are highlighted. A list of this type should be clearly posted in your salon and be thoroughly reviewed by the client before they sign the informed consent form. The brand names of products should be considered only as examples; they do not represent all names under which the generic product may be sold. A document titled “Medications That Increase Sensitivity to Light: A 1990 Listing” (the FDA has confirmed this list to be the most recent) is included in the appendix and contains almost every substance that is known to cause photosensitivity. Remind your clients to notify your tanning salon and check with their physician when they begin taking any medication while they are tanning. Clients taking psoralen drugs may become extremely photosensitive and should only tan under physician supervision. At the beginning of each new tanning season, it is a good idea to remind your clients again about the risks and symptoms of a photosensitivity reaction.

There are numerous factors that determine how a photosensitizer will react. An item which causes a severe reaction in one person may not cause but a minimal reaction in another person. Also an individual who experiences a photosensitive reaction on one occasion may not necessarily experience it again. Everyday items such as perfumes, soaps, artificial sweeteners, tattoos and certain foods may cause photosensitivity. They often cause photodermatitis, which is characterized by inflammation of the skin when exposed to ultraviolet light. Some of the new “tingle” products can cause photodermatitis and you should advise your clients to test them on a small area before using them. If a client complains of rashes and/or itching, find out whether or not they have recently used a photosensitizing substance. If so, they should be referred to a physician or pharmacist for followup.

You should exert every effort to make sure your clients thoroughly review the “Substances That May Cause Photosensitivity” list and recommend that they consult their physician prior to tanning if they are taking any of the “high probability” items. It is also wise to significantly reduce their session time temporarily if they are taking

- Photosensitivity
- Health conditions
- Medications

any items on the list until it can be determined whether or not it will cause the client to experience a photosensitivity reaction.

There are two types of photosensitizing reactions—phototoxic and photoallergic reactions. It can be difficult to distinguish between the two types of reactions. A substance or medication is capable of producing both reactions.

Photoallergic Reactions

Photoallergic reactions usually occur due to substances applied to the skin, but can be caused by substances ingested or injected as well. The reaction is the result of UV light structurally changing the substance, in turn causing the skin to produce antibodies, resulting in allergic reaction

The symptoms typically appear as eczema-like skin conditions, but can also present as lesions or hives. Symptoms usually appear on exposed areas of the body, but the reaction can spread to non-exposed areas of the body. Symptoms usually are delayed for 24 hours up to several days and the recovery period is often slower than that of phototoxic reactions.

Photoallergic reactions are not dependent on the amount of substance applied, ingested, or injected. These reactions require prior or prolonged exposure to the substance and do not occur during the initial exposure to the substance. After the initial exposure period, continued exposure to the substance, even in small amounts, will cause a photoallergic reaction. They are more common in adults than children.

Reactions can occur due to chemically related substances by cross-sensitivity or cross-allergenicity.

Phototoxic Reactions

Phototoxic reactions are more common than photoallergic reactions. These reactions are caused by substances that either can be ingested, applied to the skin, or injected. A phototoxic reaction occurs when the substance absorbs energy from UV light and releases the energy into the skin. This energy causes skin cell damage or death. The reaction usually occurs quickly after exposure—within seconds to hours after exposure. The symptoms usually appear only on the parts of the body that were exposed and present as a sunburn—erythema, pain, blistering, hyperpigmentation and peeling.

Phototoxic reactions can occur on first exposure to a substance and usually do not show cross-sensitivity.

The following health conditions may make tanning hazardous. Do not allow clients with these conditions to tan without written consent from their physician. (It is not likely that a doctor will permit the client to tan under these circumstances.)

AIDS / HIV (*)

Psoriasis
Albinism
Porphyria
Dermatomyositis
Related Allergies
Erythema Prurigo
Rosacea
Lichen Ruber
Solar Urticaria
Lung Tuberculosis

Sun Poisoning
Lupus Erythematosus
Varix
Melasma
Vitiligo
Photoallergic Eczema
Xeroderma Pigmentosum
Polymorphous Light Eruption
(*)Human Immunodeficiency Virus

The risk of photosensitivity and the possibility that a client may have one of the diseases listed above are but two of the many reasons why you need to routinely use a comprehensive Client Release and Informed Consent form. Never forget that you are accountable for the safety of the clients who patronize your tanning salon.

SUBSTANCES THAT MAY CAUSE PHOTOTOXICITY

ANTIDEPRESSANTS

clomipramine (Anafranil)
isocarboxazid (Marplan)
maprotiline (Ludiomil)
mirtazapine (Remeron)
sertaline (Zoloft)

TRICYCLIC AGENTS, eg.,

Elavil, Asendin, Norpramin, Sinequan,
Tofranil, Aventyl, Vivactil, Surmontil,
venlafaxine (Effexor)

ANTIHISTAMINES

astemizole (Hismanal)
cetirizine (Zytec)
cyproheptadine (Periactin)
dimenhydrinate (Dramamine)
diphenhydramine (Benadryl)
hydroxyzine (Atarax, Vistaril)
loratadine (Claritin)
terfenadine (Seldane)

ANTIMICROBIALS

azithromycin (Zithromax)
griseofulvin (Fulvicin, Grisactin)
*nalidixic acid (NegGram)

QUINOLONES, eg., Cipro, Penetrex,, Levaquin, Floxin,

*Maxaquin, Noroxin, * Zagam
sulfasalazine (Azulfidine)
* SULFONAMIDES, eg., Gantrisin, Bactrim,
Septra
TETRACYCLINES, eg., *Declomycin,
Vibramycin, Minocin, Terramycin

ANTIPARASITICS

*bithionol (Bitin)
chloroquine (Aralen)
mefloquine (Lariam)
pyrvinium parnoate (Povan, Vanquin)
quinine

ANTIPSYCHOTICS

chlorprothixene (Taractan, Tarasan)
haloperidol (Haldol)

* PHENOTHIAZINES, eg., Compazine,
Mellaril, Stelazine, Phenergan, Thorazine
risperidone (Risperdal)
thiothixene (Navane)

CANCER CHEMOTHERAPY

*dacarbazine (DTIC)
fluororacil (5-FU)
methotrexate (Mexate)
procarbazine (Matulane, Natulan)
vinblastine (Velban, Belbe)

CARDIOVASCULARS (see also Diuretics)

ACE INHIBITORS, eg., Capoten, Vasotec,
Monapril, Accupril, Altace, Univasc
*amiodarone (Cordarone)
diltiazem (Cardizem)
disopyramide (Norpace)
losartan (Hyzaar)
lovastatin (Mevacor)
nifedipine (Procardia)
pravastin (Pravachol)
quinidine (Quinaglute)
simvastatin (Zocor)
sotalol (Betapace)

DIURETICS (see also Cardiovasculars)

acetazolamide (Diamox)
amiloride (Midamor)
furosemide (Lasix)
metolazone (Diulo, Zaroxolyn)
*THIAZIDES, eg.,
HydroDiuril, Naturetin,

*HYPOGLYCEMIC

SULFONYLUREAS

acetohexamide (Dymelor)
chlorpropamide (Diabinese)
glimepiride (Amaryl)
glipzide (Glucotrol)
glyburide (Diabeta, Micronase)
tolazamide (Tolinase)
tolbutamide (Orinase)

Notes

NSAIDs

All nonsteroidal anti-inflammatory drugs, eg., ibuprofen (Motrin, Naproxen (Anaprox, Naproxyn), Orudis, Feldene, Voltaren, etc. The new NSAID agents include: etodolac (Lodine), nabumetone, (Relafen), oxaprozin (Daypro)

SUNSCREENS

*benzophenones (Arimis, Clinique)
cinnamates (Arimis, Estee Lauder)
dioxbenzone (Solbar Plus)
oxybenzone (Eclipse, Presun, Shade)
PABA (PreSun)
*PABA esters
(Block Out, Sea & Ski, Eclipse)

MISCELLANEOUS

benzocaine
benzoyl peroxide (Oxy 10)
carbamazepine (Tegretol)
chlordiazepoxide (Librium)
coal tar, eg., Tegrin, Zetar)
CONTRACEPTIVES, oral estazolam (ProSom)
*etretinate (Tegison)
felbamate (Felbatol)
gabapentin (Neurontin)
gold salts (Myochrysine, Ridaura, Solganal)
hexachlorophene (pHisoHex)
hypericum (St. John's Wort)
interferon beta-1b (Betaseron)
*isotretinoin (Accutane)
masoprocol (Actinex)
olsalazine (Dipentun)
*PERFUME OILS, eg.,
bergamot, citron, lavender, sandalwood, cedar, musk
*PSORALENS
selegiline (deprenyl, Eldepryl)
*tretinoin (Retin-A, Vitamin A Acid)
zolpidem (Ambien)

Note: items with an asterisk (*) are shown in bold because they are more likely to cause photosensitive reactions. Overall, the drugs listed above cause reactions in less than 1% of patients. Tell clients that get an unusual "sunburn" or allergic or eczematous reaction in skin areas exposed to light to let their physician or pharmacist know about the problem and to discontinue exposure to UV radiation. Photosensitivity data from Pharmacist's Letter.

Provided Courtesy Of:

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CHAPTER

9

risks of

overexposure

Salon owner/operator and client education is the number one factor that can and will diminish the chances of risk during the tanning process. As with any process involving UVR exposure, it is vital to stress moderate, sensible and responsible tanning and consistent use of approved eye protection.

Risks Of Overexposure

Overexposure, which is defined as a UVR dose sufficient to cause erythema, should be avoided. Repeated overexposure is believed to cause eye and skin injury and allergic reactions and increase the risks of developing photoaging of the skin, dryness, wrinkling, and (sometimes fatal) skin cancer.

Skin cancers can be divided into two main categories (melanoma and non-melanoma) and three main types (Basal Cell Carcinoma, Squamous Cell Carcinoma, and Cutaneous Malignant Melanoma). Non-melanoma skin cancers are the most common skin cancers. Basal Cell /carcinoma and Squamous Cell Carcinoma are the two most common forms of non-melanoma skin cancers. Melanomas are cancers that develop from melanocytes.

1. Non-melanoma Skin Cancer

More than 1 million cases of Basal Cell or Squamous Cell cancer will be diagnosed annually. Men are twice as likely to develop non-melanoma cancers than women. Death is uncommon in these cancers. It is estimated that 1,000 to 2,000 people die each year from non-melanoma skin cancer.

Basal Cell Carcinoma (BCC) occurs in the deepest layer of the epidermis and it is named for the skin cell in which it arises. Affecting 800,000 Americans each year, Basal Cell Carcinoma is the most common form of skin cancer. About 70 to 80 percent of all skin cancers in men and 80 percent to 90 percent in women are Basal Cell Carcinomas. They occur most frequently on exposed parts of the body—the face, ears, neck, scalp, shoulders and back.

Basal Cell Carcinoma is slow growing. It is rare for Basal Cell Carcinoma to spread to the lymph nodes or to distant parts of the body. If the cancer is not treated, however, it can grow into and invade the bone and tissue nearby.

After treatment, Basal Cell Carcinoma can recur. Thirty-five percent to 50 percent of people diagnosed with one Basal Cell cancer develop a new skin cancer within five years of the first diagnosis.

Signs—Basal Cell Carcinoma usually appears as a smooth, waxy or pearly bump that grows slowly and rarely spreads.

Squamous Cell Carcinoma (SCC) occurs in the upper layers of the epidermis. Afflicting more than 200,000 Americans each year, Squamous Cell Carcinoma is the second most common form of skin cancer. Squamous Cell Carcinomas account for about 10 percent to 30 percent of all skin cancers. Squamous Cell Carcinomas most commonly appear on exposed areas of the body (the face, ear, neck, lip, and back of the hands) but can occur on mucous membranes and all other areas of the body.

Squamous cell cancers tend to be more aggressive than basal cell cancers. Although it is

- Non-melanoma
- Melanoma
- Actinic Elastosis
- Actinic Keratosis
- Polymorphous light eruption (PLE)
- Sunburn
- Photoaging

uncommon, they are more likely to invade surrounding tissues, and slightly more likely to spread to lymph nodes or distant parts of the body

Signs—Squamous Cell Carcinoma causes a firm, nodular or flat growth with a crusted, ulcerated or scaly surface on the face, ears, neck hands or arms.

2. Melanoma

Cutaneous Malignant Melanoma (CMM) is more rare but is aggressive and can be fatal. It is estimated that in 2005 there will be 59,580 cases diagnosed and 7,770 deaths reported. Since 1981, the incidence of melanoma has increased a little less than 3 percent per year. The percentage of people who develop melanoma has more than doubled in the past 30 years. Malignant melanoma causes more than 75 percent of all deaths from skin cancer. Melanoma is the most common cancer among people 25 to 29 years old.

This disease can spread to other organs, most commonly the lungs and liver.

Malignant melanoma diagnosed at an early stage usually can be cured, but melanoma diagnosed at a late stage is more likely to spread and cause death.

Signs—Melanoma often appears asymmetrical, irregularly bordered and with a diameter larger than the head of a pencil (about ¼ of an inch).

Susceptibility

The following factors increase an individual's susceptibility to skin cancer: a family history of skin cancer, Skin Type 1, multiple sunburns, photosensitivity, and certain types and large numbers of moles. Skin Type 1 individuals should never be allowed in a tanning unit, they are biologically incapable of acquiring a tan. Individuals who have a past history of skin cancer should also not tan.

It is the operators responsibility to follow moderate, sensible, and responsible tanning practices (properly skin typing, following manufacturers recommended exposure schedules, checking medical information for photosensitizing medications and conditions, not allowing a client to tan more than once in a 24-hour period) to ensure that overexposure does not occur.

Medical Help Regarding Skin Cancer

If you notice a new growth, change in skin or sore that doesn't heal in 2 weeks, see your physician. Don't wait for pain; skin cancers are usually not painful. The cure rate for skin cancer is high if you receive treatment early. If a client questions you regarding a growth, change in their skin or a sore, refer them to their physician or dermatologist for evaluation.

There are several other skin conditions that have been associated with overexposure to sunlight (ultraviolet radiation). They are:

Actinic (solar) keratosis (AK). A horny growth or callosity associated with middle-aged or elderly individuals with fair complexion. AK is a premalignant condition that may give rise to squamous cell carcinoma and is linked to repeated overexposure to sunlight.

Polymorphous light eruption (PLE). A common disorder that is characterized by a delayed abnormal response to sunlight, usually a rash or eruption, that is found on UVR-exposed areas of the skin. Women are four times more likely to experience PLE symptoms than are men. Additionally, about 5% of the public is prone to an outbreak of PLE. The typical onset is 1 to 24 hours after exposure and the condition usually resolves itself within seven to ten days.

Sunburn (Erythema)

This condition is an acute reaction in the skin following overexposure to UV radiation. UVB accounts for most sunburn reactions. Symptoms of sunburn usually appear within a few hours after exposure, bringing pain, redness, swelling and occasional blistering. Because a large area of the body is often effected after overexposure, a sunburn can cause headache, fever and fatigue.

Sunburn may not slow you down too much, but a lifetime of overexposure to UV radiation can damage your skin and increase your risk for skin cancer. If you have severe sunburn or immediate complications (rash, itching or fever), contact your physician.

Photoaging

The term photoaging is a relatively new one. Utilized to describe skin changes that result from chronic UVR overexposure that mimic the physiologic aging process, photoaged skin is typically thickened and has increased numbers and activity of skin cells. There is a degeneration of collagen fibers and an increase in elastin of the skin.

Photaged skin appears rough and thickened, with wrinkling and furrowing. It is dry to the touch and may have a yellowish color associated with brown hyperpigmentation.

Photoaging has been linked mainly to UVA radiation. Although UVA carries less energy than UVB rays, it penetrates more deeply into the skin and tissues beneath. Prolonged, intense exposure to UV can damage tissues in the dermis and cause premature aging. It is believed that 90 percent of the visual characteristics associated with aging (less elasticity, hyperpigmented spots, fine lines, wrinkles) are increased by exposure to UV.



CHAPTER

state and federal regulations

10

In addition to various state and local tanning regulations, the Food and Drug Administration (FDA) and the Federal Trade Commission (FTC) share the responsibility of regulating sunlamps and tanning devices. The FDA typically enforces regulations that deal with the labeling and manufacturing of tanning devices; the FTC investigates false, misleading and deceptive advertising claims about the devices. When these agencies determine that a label on a tanning unit does not comply with the regulations or that advertisements are not truthful, they have the authority to take corrective action. Ultimately, the FDA can remove products from the marketplace.

THE FOOD AND DRUG ADMINISTRATION

Performance Standards For Sunlamps

If the proper procedures are not followed, indoor tanning can have negative consequences. Because of this, the FDA developed stringent rules and regulations that govern the manufacturing and use of devices for indoor tanning.

The initial performance standard for sunlamp products (including tanning units) published in the Federal Register became effective for all tanning devices on May 7, 1980. The regulation was designed primarily to promote the safety of home sunlamps. It was developed after a long period of both public and industry commentary.

When the indoor tanning industry began to boom, the FDA revisited its regulations by completing a further investigation on the use of indoor tanning devices. The FDA became concerned with the potential for injury, since use of the products had resulted in several injuries, ranging from “severe sunburn” from overexposure to the ultraviolet radiation to cuts from broken lamps.

It became apparent that additional safety precautions were needed beyond those required by the standard. Therefore, the standard was amended in 1985; the new version became applicable for all tanning devices manufactured on or after Sept. 8, 1986.

Several factors heavily influenced this current set of FDA regulations governing the indoor tanning industry. The initial standards that had been established did not adequately address some of the potential safety issues associated with commercial tanning units. The new regulations suggest possible approaches that manufacturers can take to ensure maximum safety.

Salon owners need to remember that if any products pose a risk to the health of users, the FDA is prepared and authorized to take regulatory action. Safety may be enforced through mandatory or voluntary recalls, injunctions, and imposition of fines or seizure of the products. However, in this specific case, the FDA requested that manufacturers of tanning units that did not meet the standard and recommendations voluntarily discontinue production until modifications could be made. In addition, modification of previously manufactured products was recommended as soon as was feasible.

- FDA
- FTC
- State
- Common violations

Although these regulations were written specifically for manufacturers, salon owners and operators should be familiar with the rules to help them run a secure and more comfortable salon. Knowledge of the regulations also will prove beneficial when educating salon employees and customers.

User Positioning In The Booth

The intensity of the radiation to which a user is exposed usually depends upon the distance the user is from the lamp. The intensity of the radiation at contact can be as much as five times higher than that at a distance of 12 inches. Serious burns can occur if the proper exposure distance is not maintained. Installing handrails, placing markings on the floor or utilizing other suitable physical aids are possible solutions.

Timer Error

The ultraviolet radiation intensity usually found inside a tanning booth is relatively high when compared to the sun or the intensities associated with smaller home portable sunlamps. Because of this, allowable exposure times are shorter. Therefore, more accurate control of exposure duration is necessary to decrease the risk of overexposure and injury. A timer having an accuracy of + or - 10 percent of the maximum timer interval is sufficiently accurate.

Protective Eyewear

Exposure of a person's eyes to ultraviolet radiation may result in eye damage; however, persons being exposed need to see well enough to maintain their balance and to locate the door and the exit quickly and safely should it be necessary. It is important that eyewear meeting the FDA's standards to help protect the eyes from ultraviolet radiation—and allow adequate vision—be provided.

Temperature Control

Operation of sunlamps can increase the temperature in an enclosed area. A large increase in temperature might cause fainting and subsequent injury. Units which keep the temperature below 100 degrees F (38 degrees C) would not be cause for concern.

Electrical Safety

If potential electrical hazards in the unit are not controlled, users, operators and service personnel could be seriously injured. Elevated temperatures cause perspiration, which can enhance the possibility or severity of an electric shock. Even without perspiration, the skin may come into contact with the interior surfaces that house lamps and ballasts and carry a large amount of current. Without proper circuit design and insulation, there is a potential for electric shock.

In addition, there are potential hazards to operators and service personnel. Changing lamps, turning on the device, etc., can be a hazard if the device is not grounded properly and if ground fault protectors are not included. There also is the possibility of a fire due to circuit overloads, wire shorting and the use of flammable material. Electrical hazards will be minimized in booths that conform to currently recognized electrical standards for such equipment.

Mechanical Construction

The collapse of a booth might cause electrical shock, fire or direct physical injury. This can be prevented by designing the booth to have enough strength and rigidity to resist the stress of use and to withstand the impact of a falling person.

Protection From Lamps

A person can be cut and seriously injured by falling into or bumping against bare sunlamps. This can be prevented by the use of physical barriers around the lamps, such as heavy grid wires or ultraviolet-transmitting plastics, which are sturdy enough to withstand the impact of a falling person.

Access And Support

Rapid entrance into or exit from the booth is essential in emergencies. This can be assured by the use of doors that open outwardly and are opened easily from both inside and outside of the booth. The potential for injuries from falls can be reduced by the use of handrails and floors that provide adequate traction for wet or dry bare feet.

For a complete copy of current FDA regulations governing the indoor tanning industry, visit www.tanningtraining.com.

THE FEDERAL TRADE COMMISSION

Tanning salon owners and operators are governed by laws that are based at the local, state and federal levels. When discussing federal guidelines, most people realize the FDA is a governing body. Its guidelines typically deal with the recommended manufacturing, labeling and usage of tanning equipment. However, when considering federal rules, all tanning facility owners and operators also fall under additional restrictions enforced by the Federal Trade Commission (FTC).

The FTC enforces a variety of federal antitrust and consumer protection laws. Although some may argue this point, the FTC's goal is to ensure that the nation's markets function competitively and are vigorous, efficient and free of undue restrictions.

How the Commission most affects tanning facilities is through its objective to eliminate acts or practices that are unfair or deceptive. According to the Commission, "Efforts are directed toward stopping actions that threaten consumers' opportunities to make informed choices."

Truth-In-Advertising

What truth-in-advertising rules apply to advertisers? Under the Federal Trade Commission Act:

1. Advertising must be truthful and non-deceptive;
2. Advertisers must have evidence to back up their claims; and
3. Advertisers cannot be unfair.

Additional laws even apply to ads for specialized products such as consumer leases, credit, 900 telephone numbers and products sold through mail order or telephone sales. In addition to FTC guidelines, all states have consumer protection laws that govern ads running in that state.

According to the FTC, here are some claims that should not be made regarding indoor tanning:

"You can achieve a deep year-round tan with safe ultraviolet light."

"No harsh glare, so no goggles or eye protection is necessary."

"Tan without the harmful side effects associated with natural sunlight."

"No danger in exposure to ultraviolet light."

"Our tanning beds help relieve the pain and discomfort of psoriasis."

What Makes An Ad Deceptive?

According to the FTC's Deceptive Policy Statement, an ad is deceptive if it contains a statement—or omits information—that:

1. Is likely to mislead consumers acting reasonably under the circumstances; and
2. Is “material”—that is, important to consumer's decision to buy or use the product being offered for sale?

The FTC looks at both expressed and implied claims. An expressed claim is literally made in the ad. For example, “Our tanning beds prevent osteoporosis” is an expressed claim that your beds prevent osteoporosis. An implied claim is one that is made indirectly. “Our tanning beds create vitamin D that prevents osteoporosis” contains an implied claim that your beds will prevent osteoporosis. Although your ad may not say that your beds prevent osteoporosis, it would be reasonable for a consumer to conclude from this statement that your beds do prevent osteoporosis.

What You Can Say

Avoiding any and all claims that relate directly or indirectly to any healthful benefit of indoor tanning—or regarding the safety of tanning—is the most prudent thing a salon owner can do. Sometimes finding the correct way to promote the positive aspects of indoor tanning can at first be challenging. However, professional tanning salons across the country have many positive factors that can be promoted without crossing the line of health and safety. Comfort, control, convenience, service and cleanliness are just a few features that are always acceptable in promoting any tanning facility. Below are a few examples that are acceptable in tanning advertising:

“Indoor tanning offers a predictable tanning environment controlled by timers that ensure the accuracy of your tanning session.”

“You can achieve a beautiful year-round tan in the comfortable setting of our tanning salon.”

“Our staff will evaluate your tanning potential using a skin typing chart that determines the most productive tanning session available.”

“Achieve that beautiful golden tan at our salon rain or shine.”

These are just a few suitable statements that are often made in salons' advertisements across the country. Other factors to consider are price, location, hours of operation, exciting new equipment, selections of tanning products and the level of knowledge your staff has about tanning.

If you have questions about claims you can make in your advertising, contact the Federal Trade Commission at (877) FTC-HELP or online at www.ftc.gov.

STATE RADIATION CONTROL OFFICES

The following list indicates the office in each state that has expressed interest or has taken action with regard to indoor tanning regulations, or the office that most likely would be responsible for such action. At press time, several states were in the process of modifying their regulations. Contact your state's radiation control office if you have questions.

ALABAMA

Department of Public Health
Office of Radiation Control
Contact: Kirk Whatley, Director
(334) 206-5391
P.O. Box 303017
201 Monroe St., Suite 700
Montgomery, AL 36130-3017
No regulations, with exception
of Jefferson County

ALASKA

Department of Health
and Social Services
Section of State Laboratories
Radiological Health Program
Contact: Clyde E. Pearce
(907) 334-2107
4500 Boniface Parkway
Anchorage, AK 99507-1270
No regulations

ARIZONA

Radiation Regulatory Agency
Contact: Sonya Carpena,
State Health Physicist
(602) 255-4845
4814 S. 40th St.
Phoenix, AZ 85040
Regulations, registration,
license, fees, training required.
[www.azsos.gov/public_services/
title_12/12-01.pdf](http://www.azsos.gov/public_services/title_12/12-01.pdf)
www.azrra.gov

ARKANSAS

Department of Health
Division of Radiation Control
Contact: Sherri Davidson, Health
Physicist
(501) 661-2922
4815 W. Markam St.
Mail Slot 30
Little Rock, AR 72205
No regulations

CALIFORNIA

Department of Consumer Affairs
Barbering and Cosmetology Program
Enforcement Division
of Licensing and Exams
(800) 952-5210
P. O. Box 944226
Sacramento, CA 94244-2260
Regulations, training required.
Business & Professions Code 22700-
22708, 7414.1-7414.6
Business code in effect as it relates
to the Filante Tanning
Facility Act of 1988.
[http://www.barbercosmo.ca.gov/
laws_regs/laws.shtml](http://www.barbercosmo.ca.gov/laws_regs/laws.shtml)
[http://www.leginfo.ca.gov/cgi-bin/
displaycode?section=
bpc&group=22001-23000&file=
22700-22708](http://www.leginfo.ca.gov/cgi-bin/displaycode?section=bpc&group=22001-23000&file=22700-22708)

COLORADO

Department of Public Health
and Environment Consumer
Protection Division
Contact: Therese Pilonetti,
Program Manager
(303) 692-3645
4300 Cherry Creek Drive S.,
Suite B-205
Denver, CO 80246
Regulations, registration fees,
inspections.
[http://www.cdphs.state.co.us/
cp/medical/ArtTanning/ATMain.html](http://www.cdphs.state.co.us/cp/medical/ArtTanning/ATMain.html)

CONNECTICUT

Department of
Environmental Protection
Radiation Division
Contact: Dr. Edward L. Wilds Jr.,
Director
(860) 424-3029
79 Elm St., Fifth Floor
Hartford, CT 06106
No regulations

DELAWARE

Division of Public Health,
Health Systems Protection
Office of Radiation Control
(302) 744-1220
Jesse Cooper Building
P.O. Box 637
Dover, DE 19903
No regulations

FLORIDA

Florida Department of Health
Community and Environmental Health
Contact: VaKeshia Brown,
Environmental Specialist III; Tanning
Coordinator
(850) 245-4444, ext. 2492
4052 Bald Cypress Way, Bin A08
Tallahassee, FL 32399-1710
Operations are regulated by county.
Inspections, fees, training required.
[www.doh.state.fl.us/environment/
community/tanning/index.html](http://www.doh.state.fl.us/environment/community/tanning/index.html)

GEORGIA

Governor's Office of Consumer Affairs
Contact: Rob Atkinson
(404) 656-3789
2 Martin Luther King Jr. Drive S.E.,
Suite 356
Atlanta, GA 30334
Regulations – City, County.
[http://www.georgia.gov/00/
article/0,2086,5426814_39039081
_38234142,00.html](http://www.georgia.gov/00/article/0,2086,5426814_39039081_38234142,00.html)

HAWAII

Department of Commerce
and Consumer Affairs
Board of Barbering and Cosmetology
Contact: Lauren Kai, Executive Officer
(808) 586-2696
DCCA-PVL
ATT: BAR/COS
P.O. Box 3469
Honolulu, HI 96801
No regulations

IDAHO

Department of Health and Welfare
 Division of Health Bureau
 of Laboratories
 Contact: Dave Eisentrager,
 Radiation Control Program Manager
 (208) 334-2235, Ext. 245
 2220 Old Penitentiary Road
 Boise, ID 83712
 No regulations

ILLINOIS

Department of Public Health
 Division of Food, Drugs and Dairies
 Contact: Melissa Estes
 (217) 785-2439
 525 W. Jefferson
 Springfield, IL 62761-0001
 Regulations, fees, inspections,
 training required, license required.
[http://www.ilga.gov/commission/jcar/
 admincode/077/07700795sections.html](http://www.ilga.gov/commission/jcar/admincode/077/07700795sections.html)

INDIANA

Professional Licensing Agency,
 Cosmetology Board
 Contact: Tracy Hicks, Director
 (317) 232-2980
 402 W. Washington St., Room W072
 Indianapolis, IN 46204-2700
 Regulations, inspections,
 license required.
[http://www.in.gov/legislative/ic/code/
 title25/ar8/ch15.4.html](http://www.in.gov/legislative/ic/code/title25/ar8/ch15.4.html)

IOWA

Department of Public Health
 Bureau of Radiological Health
 Contact: Charlene Craig
 (515) 281-0415
 321 E. 12th St.
 Des Moines, IA, 50319-0075
 Regulations, fees, inspections, formal
 training required, state test required.
[www.idph.state.ia.us/eh/tanning_
 facilities.asp](http://www.idph.state.ia.us/eh/tanning_facilities.asp)

KANSAS

Board of Cosmetology
 Contact: Mary Lou Davis, Director
 (785) 296-3155
 714 S.W. Jackson, Suite 100
 Topeka, KS 66603
 Regulations, inspections, fees,
 training required.
[www.accesskansas.org/kboc/
 StatsandRegs.htm#tanninglaws](http://www.accesskansas.org/kboc/StatsandRegs.htm#tanninglaws)

KENTUCKY

Department of Public Health
 Cabinet for Health Services
 Radiation Health &
 Toxic Agents Branch
 (502) 564-7181, Ext.3718
 Contact: Christine Atkinson
 275 E. Main Street
 Frankfort, KY 40601
 Regulations-pertaining to minors
[http://www.lrc.ky.gov/
 kar/902/045/075.htm](http://www.lrc.ky.gov/kar/902/045/075.htm)

LOUISIANA

Department of Health and Hospitals
 Food and Drug Unit
 Contact: Meloney Rucker,
 Program Assistant
 (225) 342-7517
 628 N. 4th St.
 Baton Rouge, LA 70821-0629
 Regulations, fees, inspections,
 formal classroom training required.
[http://www.dhh.louisiana.gov/offices/
 miscdocs/docs-206/food_drug/tan_
 regs.pdf](http://www.dhh.louisiana.gov/offices/miscdocs/docs-206/food_drug/tan_regs.pdf)

MAINE

Radiation Control Program
 Division of Environmental Health
 Contact: Jay Hyland
 (207) 287-5676
 State House, 11 State House Station
 Augusta, ME 04333
 Regulations, inspections, fees
www.maineradiationcontrol.org
<http://www.maine.gov/dhhs/eng/rad/>

MARYLAND

Department of the Environment
 Department of Health
 & Mental Hygiene
 Contact: Michele Phinney, Director
 (410) 767-6499
 1800 Washington Blvd.
 Baltimore, MD 21230
 Regulations-pertaining to minors
[www.dsd.state.md.us/comar/
 SubtitleSearch.aspx?search=10.52.06](http://www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=10.52.06)

MASSACHUSETTS

Department of Public Health
 Radiation Control Program
 Contact: Robert Walker, Director
 (617) 624-5748
 Schrafft Center Suite 1M2A
 529 Main Street
 Charleston, MA 02129
 Regulations – City, County
www.mass.gov/dph/rcp/123.pdf

MICHIGAN

Department of Community Health,
 Bureau of Health Systems
 Radiation Safety Section
 Contact: Bruce Matkovich
 (517) 241-1989
 P.O. Box 30664
 Lansing, MI 48909
 General requirements
 for indoor tanning
www.michigan.gov/rss
[http://www.michigan.gov/
 mdch/0,1607,7-132-27417_
 35791---,00.html](http://www.michigan.gov/mdch/0,1607,7-132-27417_35791---,00.html)

MINNESOTA

Department of Health
 Radiation Unit
 Contact: George Johns,
 Supervisor of Radiation Control
 (651) 201-4545
 P.O. Box 64975
 St. Paul, MN 55164-0975
 Standards for tanning equipment;
 compliance enforced at county level.
[www.health.state.mn.us/divs/eh/
 radiation/moremdh/tanning.html](http://www.health.state.mn.us/divs/eh/radiation/moremdh/tanning.html)

MISSISSIPPI

Department of Health
 Division of Radiological Health
 Contact: Jimmy Carson,
 Branch Director
 (601) 987-6893
 3150 Lawson Street
 Jackson, MS 39213
 Regulations, fees
[http://www.msdh.state.ms.us/
 msdhsite/_static/
 resources/1710.pdf](http://www.msdh.state.ms.us/msdhsite/_static/resources/1710.pdf)

MISSOURI

Department of Health
 and Senior Services
 Section for Professional Registration
 (573) 751-0293
 P.O. Box 1335
 Jefferson City, MO 65102
 No regulations.

MONTANA

Department of Public Health
 and Human Services
 Radiological Control Program
 Contact: Roy Kemp,
 Deputy Administrator
 (406) 444-2868
 P.O. Box 202953
 Helena, MT 59620-2953
 No Regulations

NEBRASKA

Department of Health
 and Human Services
 Licensure Unit
 Contact: Kris Chiles, Administrator
 (402) 471-2117
 P.O. Box 94986
 Lincoln, NE 68509-4986
 No Regulations

NEVADA

State Health Division
 Bureau of Health Protection Services
 Radiological Health Section
 Contact: Ed Sweeten,
 Radiation Physicist
 (702) 486-5281
 2080 E. Flamingo Rd.
 Las Vegas, NV 89119
 No Regulations

NEW HAMPSHIRE

New Hampshire Board of Barbering,
 Cosmetology and Esthetics
 Contact: Linda Elliott, Administrator
 (603) 271-3608
 2 Industrial Park Drive
 Concord, NH 03301
 Regulations and training required.
[http://www.nh.gov/cosmet/
 tanning1.htm](http://www.nh.gov/cosmet/tanning1.htm)

NEW JERSEY

Department of Health
 and Senior Services
 Consumer and Environmental
 Health Services
 Public Health, Sanitation
 and Safety Program
 Contact: Mark Colicchio,
 Program Manager
 (609) 588-3124
 P.O. Box 369
 Trenton, NJ 08625-0369
 Regulations
www.state.nj.us/health/eoh/phss/

NEW MEXICO

Environment Department
 Health Care Department
 (505) 476-4600
 1190 St. Francis Drive
 P.O. Box 26110
 Santa Fe, NM 87502-6110
 No Regulations

NEW YORK

Department of Health
 Office of Public Affairs
 Contact: Brian Miner
 (518) 474-7354
 Flannigan Square
 547 River Street, Room 530
 Troy, NY 12180-2216
 State regulations in development;
 county regulations in effect for
 Westchester, Nassau, Suffolk, Dutchess
 and Rockland counties
[www.health.state.ny.us/nysdoh/
 environ/tanning.htm](http://www.health.state.ny.us/nysdoh/environ/tanning.htm)
[http://www.tanningtraining.com/
 reginfo/ny_laws.html](http://www.tanningtraining.com/reginfo/ny_laws.html)

NORTH CAROLINA

Department of Environment
 and Natural Resources
 Division of Environmental Health,
 Radiation Protection Section
 Contact: Eileen Dannacker, Tanning
 Registration Coordinator
 (919) 571-4141, Ext.214
 3825 Barrett Drive
 1645 Mail Service Center
 Raleigh NC, 27699-1645
 Regulations, fees, inspections,
 formal classroom training required.
www.ncradiation.net

NORTH DAKOTA

Department of Health
 Division of Food and Lodging
 Contact: Kenan Bullinger, Director
 (701) 328-1292
 600 East Boulevard, Dept. 301
 Bismarck, ND 58505
 Regulations, Board of Cosmetology
 regulates tanning beds for sanitation
[http://www.ndhealth.gov/
 FoodLodging/PDF/Tanning%20regs.pdf](http://www.ndhealth.gov/FoodLodging/PDF/Tanning%20regs.pdf)

OHIO

State Board of Cosmetology
 Contact: Kyra Tyler
 (614) 728-8197
 101 Southland Mall
 3700 S. High St., Suite 101
 Columbus, OH 43207-4041
 Regulations, fees,
 formal training required.
[http://www.cos.ohio.gov/uploads/File/
 TANR6-04.pdf](http://www.cos.ohio.gov/uploads/File/TANR6-04.pdf)

OKLAHOMA

Department of Environmental Quality
 Radiation Management Section
 Contact: Dale McHard,
 Environmental Specialist
 (405) 702-5100
 707 N. Robinson, Fifth Floor
 P.O. Box 1677
 Oklahoma City, OK 73102
 No regulations.

OREGON

Department of Human Services
Radiation Protection Services
(971) 673-0490
800 N.E. Oregon Street, Suite 640
Portland, OR 97232
Regulations, fees, inspection program,
formal classroom training required.
www.healthoregon.org/rps

PENNSYLVANIA

Department of Environmental
Protection
Bureau of Radiation Protection
Radiation Control Division
Contact: Joseph Melnic, Manager
(717) 787-5385
P.O. Box 8469
Harrisburg, PA 17105-8469
No regulations.

RHODE ISLAND

Office of Occupational and
Radiological Health
Radiation Control Program
Contact: Shelley Regan, Supervising
Radiation Specialist
(401) 222-1962
3 Capitol Hill, Room 206
Providence, RI 02908
Regulations, fees, inspections, training
required, license required.
[http://www2.sec.state.ri.us/dar/
regdocs/released/pdf/DOH/4827.pdf](http://www2.sec.state.ri.us/dar/regdocs/released/pdf/DOH/4827.pdf)

SOUTH CAROLINA

Department of Health and
Environmental Control
Bureau of Radiological Health
Contact: Aaron Gantt, Bureau Chief
(803) 545-4400
2600 Bull St.
Columbia, SC 29201
Regulations, fees, training required
www.scdhec.gov/hr/#Radhlth
[www.scdhec.gov/administration/regs/
docs/61-106.pdf](http://www.scdhec.gov/administration/regs/docs/61-106.pdf)

SOUTH DAKOTA

Department of Health
Office of Health Protection
Contact: Clark Hepper, Director
(605) 773-3364
600 E. Capitol Ave.
Pierre, SD 57501-2536
No Regulations

TENNESSEE

Division of Consumer Affairs
Contact: Belinda Campbell
(615) 741-4737
500 James Robertson Parkway,
Fifth Floor
Nashville, TN 37243-0600
No Regulations

TEXAS

Department of State Health, Drugs
and Medical Devices Group
Contact: Tom Brinck, Manager
(512) 834-6755
1100 W. 49th Street
Austin, TX 78756
Regulations, inspections, application
for license required
www.dshs.state.tx.us/dmd

UTAH

Department of Environmental Quality
Division of Radiation Control
Contact: Mario Bettolo, Director
(801) 536-4250
168 N. 1950 W.
P.O. Box 144850
Salt Lake City, UT 84114-4850
Regulations in effect for Davis, Salt
Lake and Utah Counties
[http://www.rules.utah.gov/publicat/
code/r392/r392.700htm](http://www.rules.utah.gov/publicat/code/r392/r392.700htm)
<http://www.radiationcontrol.utah.gov/>

VERMONT

Radiation Control Program
Division of Health Protection
Contact: Carla White,
Radiological Health Specialist
(802) 865-7743
108 Cherry St.
P.O. Box 70
Burlington, VT 05402-0070
No Regulations

VIRGINIA

Department of Agriculture
Radiation Control Programs
Contact: Les Foldesi, Director
(804) 864-8150
P.O. Box 2448
109 Governor St., Room 730
Richmond, VA 23219
Laws
[http://www.vdh.state.va.us/
epidemiology/radiologicalhealth/
tanning/index.htm](http://www.vdh.state.va.us/epidemiology/radiologicalhealth/tanning/index.htm)

WASHINGTON

State Department of Health
Radiation Protection
Contact: Andrew Thatcher,
Manager of X-Ray
(360) 236-3230
P.O. Box 47890
Olympia, WA 98504-7890
No Regulations

WEST VIRGINIA

Office of Environmental
Health Services
Radiation, Toxics and
Indoor Air Quality
(304) 558-2981
Capitol and Washington Streets
1 Davis Square, Suite 200
Charleston, WV 25301-1798
No regulations.

WISCONSIN

Department of Health
and Family Services
Division of Public Health
Radiation Protection Section
Contact: William Balke,
Tanning Supervisor
(608) 267-4782
P.O. Box 2659
Madison, WI 53701-2659
Regulations, registration required,
annual fee
[http://dhs.wisconsin.gov/dph_beh/
BEH/Tanning/index.htm](http://dhs.wisconsin.gov/dph_beh/BEH/Tanning/index.htm)

WYOMING

Department of Agriculture
Board of Cosmetology
Contact: Betty Abernethy
(307) 777-3534
2515 Warren Avenue Suite # 302
Cheyenne, WY 82002
No Regulations



CHAPTER

11

understanding

eye protection

The importance of wearing approved eyewear while tanning can never be stressed enough. No value can be put on something that is so vital it is responsible for 80% of all information we receive on a daily basis.

Understanding Eye Protection

The importance of wearing protective eyewear can never be stressed enough. Federal regulations (CFR 21 1040.20 (c) (4)) require that tanners wear protective eyewear that blocks 99.9% of the UVB light and 99% of the UVA light. In Canada, the government enforces identical requirements. It is the operator's responsibility that the clients use compliant eyewear. Acceptable eyewear must state the product's compliance with federal regulations on the package. Some states require salons provide eyewear free of charge while others only require that clients wear approved eye protection.

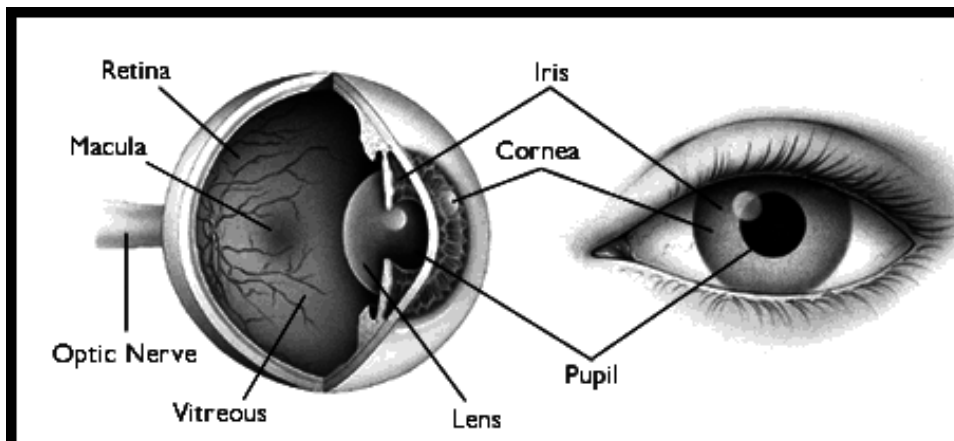
The eyelid is too thin to be able to protect the eye from ultraviolet light penetration. Too much UVB damages the cornea, while too much UVA damages the retina. UVB has such a short wavelength that is completely absorbed by the lens (cornea) of the eye. When these rays are absorbed by the cornea, they can cause corneal burns.

People who have had UVB overexposure to the eyes will experience swelling of the eye tissues, redness, soreness, and a feeling as though a handful of sand has been thrown in their eyes. Because UVA has a longer wavelength, it penetrates the cornea and focuses on the retina, where it does considerable damage at high dosage levels.

Color perception is the first thing to fail with overexposure to UVA. Retinal burns caused by UVA can produce scarring in the rods and cones of the eye which will reduce both visual acuity and sensitivity to color. Unprotected overexposure of the eyes to UVR can also lead to brunescent cataracts.

There are many eye diseases and syndromes caused by exposure to UV including:

Anatomy of the Eye



- CFR 21 1040.20 (c) (4)
- Structure and function of the eye

Photokeratitis (corneal sunburn—the symptoms include pain in the eyes, the feeling of sand in the eye, blurry white vision, the reaction can take up to 48 hours to happen, the condition is not usually permanent), Cataracts (a loss of transparency in the eye clouds vision), Pteryguims (growth of tissue on the whites of the eyes that can block vision, it can be removed-but often grows back), Macular Degeneration (reduces vision and often requires surgery), and cancers around the eye.

Always ask your clients if they have their eye protection with them and ask to see it. Remind them that towels, sunglasses, cotton balls, and their eyelids do not adequately protect their eyes from damage. Eyewear must fit properly to be effective. UV light must not be able to seep in around the corners of the eyewear. The elastic strap that comes with goggles is provided to insure a tight fit.

Do not let your clients risk damaging their eyes to eliminate tan lines. There are types of protective eyewear which fit on each eye in order to eliminate lines from the glasses bridge or elastic strap, however these should not be used in vertical booths. Never allow the use of cracked, pitted or discolored eyewear.

Your eyes are too valuable to risk damaging and you only get two of them to last a lifetime. You are, by law, responsible for your clients eye safety and you can never take that responsibility too seriously.

Structure and Function

The eye is like a camera. The cornea protects the lens and acts as a colorless filter to refract light. The lens of the eye is flexible, changing thickness in response to the contraction and relaxation of the ciliary muscles. The iris corresponds to the aperture in a camera, controlling the amount of light that enters the eye. The retina is like the film in a camera: The images are projected onto it and then changed into electric signals. The visual cells of the retina include rods and cones. Rods are sensitive to changes in light but not color, whereas cones perceive color. The optic nerve relays signals to the visual center of the cerebrum, giving rise to vision.



CHAPTER

12

equipment

sanitation

Equipment Sanitation

Disinfecting your equipment is of utmost importance because of the rise in communicable diseases. The most widely publicized of these today is the HIV virus (AIDS). There are other forms of bacteria and other viruses to think about. Doctors claim that toilet seats, Jacuzzis and shower rooms do not play host to the HIV virus. They are not so certain about more intimate items such as toothbrushes, razors, and in a tanning facility perhaps the protective eyewear. Considering that indoor tanning is a fairly intimate industry, a salon owner/operators need to know how to respond to inquiries about AIDS and tanning units. They also need to know more about equipment maintenance and sanitation to ensure that hygiene problems of any kind are kept at bay.

Some infectious diseases to be aware of include: hepatitis A and B, influenza viruses and conjunctivitis (pinkeye). One thing salons often neglect to disinfect is the tanning pillow. If the vinyl on a pillow is split, bacteria and viruses can live inside the warm foam. Any split or cracked pillow should be replaced immediately, and all pillows should be disinfected after every use. Tanning salon employees must be responsible for disinfecting the entire tanning room rather than leaving it up to your customers. Your customers don't know all the cleaning/disinfecting methods and don't really want to be bothered with it anyway. In some states regulations prohibit customers from cleaning/disinfecting the tanning room.

Another critical area of sanitation is protective eyewear. Because of the risk of infectious diseases (i.e. impetigo, viral and bacterial infections, conjunctivitis etc.), goggles must be cleaned, then disinfected between each use.

Remind clients that the risk of infection does not only come from other people, but it is possible to continually re-infect yourself if you have some type of virus or infection. The cleaning solution used should be designed for protective eyewear specifically. Make sure it has been mixed properly to prevent eye irritation. The solution needs to not leave a film or residue behind after drying. It must clearly state on the product label that it will effectively kill all leading germs and bacteria. The solution must not destroy the plastic in the goggles. Regulations that apply to sanitation vary from area to area and must be complied with in all cases. Check with the regulating body(s) in your area to be sure you are in compliance.



CHAPTER

13

facilities operating

procedures

Consistency is the key to any effective operating or maintenance plan. Having a written schedule or list of procedures helps take the guesswork out of what is expected of staff.

Equipment Operating Procedures

Tanning salon owners and operators have a responsibility to educate themselves and operate under the framework of a well structured, informed and ethical procedure. The biological effects of overexposure to ultraviolet radiation are well established. The following sample list is considered to be a general and responsible list of operating procedures.

1. Utilize a detailed medical history information questionnaire. Include questions on past and present medical history, medications, past tanning history. The client should be reminded to update the tanning facility any time their information changes. A warning statement should be reviewed by the operator with the client. The statement should be signed and dated by the customer on their first visit and renewed annually.
2. Before a minor is allowed to tan (check with your state's regulations concerning minors) a parent or legal guardian should give written authorization in the presence of the tanning operator.
3. Establish your clients' proper skin type. This is very important in order to follow the proper exposure schedule. Utilize a questionnaire to determine sensitivity.
4. Follow the recommended exposure schedule. The duration and spacing of UV exposures is very important. It is important for you to inform the client of the reasons to follow the guidelines of the exposure schedule and the inherent dangers associated with UV exposure. Inform the client that they are never to tan more than once in a 24-hour period.
5. The override timing device, which should be located outside of the tanning room, is to be set by the tanning operator.
6. Post in a conspicuous location warning and proper usage signs. Many states have specific guidelines regarding size, placement and wording of signage.
7. The operator should give a new client complete instructions on how to use the tanning equipment. (locating the emergency shut off switch, indicating user positioning, use of the cooling system, adjusting of the canopy). It should not be assumed that the client will know how to use the equipment.
8. Establish an accurate record-keeping system, detailing each client's visit. Include dates, exposure time, room used and attendant, (many states now require this).
9. Be sure the equipment in place at your facility has been manufactured in accordance with FDA regulations 21 CFR Part 1040.20.
10. Be sure that your equipment meets FDA's 21 CFR Part 1040.20 regarding timer accuracy. (FDA's policy allows for no more than a $\pm 10\%$ error.) Check the timer regularly for accuracy.
11. Make sure your equipment has all of the required labeling required as part of FDA's 21 CFR 1040.20.
12. Be sure the lamps utilized in your equipment are compliant with the manufacturer's requirements and labeling or replacement lamps are certified to FDA standards to be equivalent to the original equipment lamp listed on the equipment labels (or listed in the Owner's Manual). Have the lamp compatibility sheet in the records.

- Standard operating procedures
- Equipment and salon maintenance problems
- Maintenance programs
 - Daily
 - Weekly
 - Monthly

13. Follow the manufacturer's recommended replacement schedule for acrylic panels or sooner if damaged, cracked or the transmission level has deteriorated.

NOTE: The use of a UV irradiance metering device can be very helpful for determining acrylic and lamp degradation. Take your initial readings when lamps are new and follow up every 100 hours. Record the date, hours and readings each time.

When transmission levels drop below 70 percent, the acrylic panels should be replaced. Therefore a reading of 10 milliwatts with the acrylic off and a reading of less than 7 with it on, is at the replacement stage. Also tanning units equipped with higher UVB output lamps, do in fact reduce acrylic life.

14. Ensure your equipment has a visible and labeled emergency cut-off switch located on the tanning unit within the reach of the client without having to get out of the tanning unit. This is very important in order for the client to terminate a session. Check to ensure that emergency shut off switch works.
15. Provide compliance protective eyewear for each client. Protective eyewear must be compliant with CFR 21 1040.20 (c) (4). The eyewear must fit properly, thus not allowing light to filter in through the sides of the eyewear. The purpose for the elastic strap is to provide a proper fit. Ensure that the eyewear is disinfected after each use.
16. Be sure that your equipment meets the required electrical code requirements for your area. The following are examples of recognized electrical circuitry testing institutions, (UL) Underwriter's Laboratory, (ETL) Electrical Testing Laboratory, (CSA) Canadian Standard Association. NOTE: Many states and local areas have specific guidelines regarding acceptable testing.
17. Be sure that your staff never misinforms a client about the health risks associated with UV exposure. Never use the verbiage SAFE or APPROVED in any way to describe the usage of tanning equipment.

Injuries

Emergency Procedures

When in doubt, have the client seek medical attention immediately. If it is an emergency or the client is unable to seek attention on their own, contact 911. (A list of appropriate contact numbers should be kept by the phone.) All injuries should be documented and brought to the attention of management. Certain state's regulations require that a particular state agency must be notified within a given time frame. Check with your state's regulations.

If an eye injury occurs, depending the severity, the client should be referred to an ophthalmologist or an emergency room.

Self Care

If a sunburn has occurred a cool bath or shower will be helpful in pulling out the heat. Not type of ointment should be put on to the skin until the heat is out. Products containing benzocaine should be avoided because they can cause an allergic reaction in some people.

It is important to note that if a sunburn begins to blister or the client feels ill, they should seek the advice of their physician immediately.

Most Common Equipment & Salon Maintenance Problems

1. Sunbed is overheating
 - a. Inspect the fan filters and grills for cleanliness

- b. Check the fans to see if operating
 - c. Provide adequate air conditioning and ventilation
2. Tanning unit not providing favorable tanning results
- a. Check your lamps
 - * Check the lamp's hours of operation (most tanning devices have an hour meter to record total unit hours. Check owner's manual for location.)
 - * Use a UV meter to review and compare outputs
 - * Check for lamp compatibility and compliance
 - b. Inspect the acrylic panels
 - * Check the usage hours (Refer to manufacturer's life expectancy guide)
 - * Visually inspect for yellowing
 - * Use a UV meter to compare output
 - * Clean and polish acrylic panels
 - c. Clean and polish reflector systems
 - d. Check incoming line voltage
 - * Applies to choke start and electronic ballast only
 - * Use a digital display voltmeter for testing
3. Lamps flickering and hard to start
- a. Classic low voltage problem
 - * Check voltage with a digital voltmeter
 - * Install a buck boost transformer
 - b. Could be the result of a bad starter
4. Burning odor in sunroom
- a. The most common source is a bad lamp socket
 - b. Electrical short at a terminal
 - c. Bad ballast, very common with electronic ballasts
 - d. A binding fan motor
 - e. An electrical short at the power plug
5. Salon is excessively warm
- a. All salons require additional air conditioning
 - b. A 24-26 lamp bed requires 3/4 ton a/c per bed
 - c. A 30-40 lamp bed will require 1 + ton a/c per bed
 - d. Booths should be vented to the outside
 - e. 3.90 times total wattage equals BTU output
 - f. 1 Ton A/C = 12,000 BTU
 - g. Leaving the front or back door open doesn't work
 - * Allows warm damp air in
 - * Bugs are drawn to light
 - * Incredible liability problems
6. Timer not accurate and/or inoperable
- a. Test with an accurate watch and record timer test results in minutes and seconds in your maintenance log
 - b. Replace immediately any timer that is inaccurate by more than 10%
 - c. Should always have a remote timer
7. Top of sunbed will not stay up
- a. Adjust brake system if applicable
 - b. Adjust gas shock mounting position if applicable
 - c. Adjust spring mounting points on spring lift beds
 - d. Insure the correct weight value on gas shock
 - e. Replace gas shocks or springs where applicable
 - f. Incorrect acrylic panel on top

* The top acrylic is usually thinner, thus lighter

* Rotating the acrylics is not recommended

NOTE: Do not leave sunbeds in the exposure (down) position between clients uses. This wears out the shocks at least twice as fast.

8. Not getting the advertised lamp life as expected

a. Start a lamp rotation system

b. Rotate at 50 percent to 60 percent of the manufacturer's suggest life

c. If a lamp is advertised at 1000 hours

* Replace the top with new lamps at 500-600 hours

* Move the top lamps to the bottom

* Document the lamp change

* The net result is a true 1,000-1,200 hours of life

d. Also invoke more frequent cleaning of sunbed

e. Check and replace acrylics if degraded

9. Acrylic panels crack prematurely

a. Always ask for acrylic that has been "annealed"

b. Go to the next thickness of acrylic if on bottom

c. Install extra acrylic supports

The following is a brief daily, weekly and monthly maintenance program.

Daily

Turn the tanning bed on and make sure the lamps are lit.

Run the unit for three minutes. Check for unusual noises and smell the bed for any electrical problems or burning.

Check the vents for any clogs caused by dust or hair.

Dust the outside of the unit.

After each use of the tanning unit, clean and disinfect the acrylic shield, top and bottom, and any other areas of the unit that may have come in contact with the client with an approved acrylic cleaner and disinfectant.

*Wear eye protection when turning on the beds. This applies to all maintenance issues where the bed needs to be turned on to check proper functioning.

Weekly

Remove the acrylic shields, top and bottom, clean and dust both sides of each.

Wipe the reflectors and lamps with a clean, damp cloth.

Wipe the entire machine with an approved disinfectant.

Vacuum the fan inlets and screen as well as the ends of the beds where the air flow begins.

Vacuum around the starters if your unit has them also vacuum around the sockets where the lamps are mounted and along the sides of the lamps.

Monthly

Remove the inspection plates and vacuum the area.

Vacuum around the ballasts.

Vacuum the reflector channels, air-flow inlets and fan mounts.

Remove and wipe the lamps with a clean, damp cloth.

Clean the reflectors while the lamps are out.

Clean both sides of the acrylic with an approved cleanser and disinfectant.



CHAPTER

14

tanning salon

professionalism

* NOTE: Chapter 14 - Tanning Salon Professionalism- is not part of the curriculum required by the state of Oregon, and there are no test questions pertaining to it. The training materials include this information as a courtesy based on NTTI's commitment to help advance the professionalism of the industry.

Professionalism is defined as the standing, practice, or methods of a professional, as distinguished from an amateur. A professional is defined as a person who is expert at his or her work. Finally, a profession is defined as an occupation requiring advanced education and experience.

As the indoor tanning industry moves toward becoming more professional, in order to be considered a true profession, it is necessary that all of us privileged to work in the indoor tanning industry seek to advance our knowledge of the “science of tanning” and in the professional operation of a fully compliant tanning salon.

Customer Rapport

To a customer, walking in and seeing a familiar smiling face behind the counter is one of the things that helps them to feel comfortable when making a buying decision. Building rapport (a harmonious relationship) with the customer will help them understand that you are sincere and are leading them in the right direction.

It is important to take the time to make a client feel comfortable about the decision they have made to tan at your facility. Make sure to initiate a conversation when they come in to tan, even though they may not need to purchase anything. Start off by remembering their name, shaking their hand, and of course greeting them with a smile. As you get to know your clients you will remember things you can ask them about their family, job, pet or anything else they may have told you.

When a client is tanning for a special occasion, like a vacation or wedding, always ask detailed questions about the status of the event and wish the customer good luck and invite them back to continue tanning after the event. Tell them to make sure that they bring photographs of the event to share with you. If the client is vacationing in a tropical area, be sure to warn them about the intensity of sunlight in the tropics and suggest that they consider purchasing appropriate sunscreen products to take with them.

Customer Complaints

The old adage “the customer is always right” is particularly true in the indoor tanning industry when it comes to handling complaints because tanning is a business built primarily on referrals from customers. It is much easier to keep a customer that currently patronizes you than it is to try to regain one that has left. The majority of customer complaints, even those that may start off with the client being very irate, can usually be handled in a calm, mature manner. A good strategy is to “kill them with kindness” when handling customer complaints.

It is important than employee never argue with a customer and it is recommended that they listen carefully to the customer in order to determine the reasons that they are unhappy. When the employee does not have the authority to resolve the problem, the customer should be politely informed that the owner or manager must be informed of the situation.

- Customer rapport
- Customer complaints
- Customer service

Consider working up a list of past complaints and develop methods for handling them should they happen again. New employees can practice “role playing” exercises so that they will feel better prepared regarding how to handle certain complaints that may arise.

There are situations in the tanning salon where the customer is not always right and they involve issues relating to their safety. For instance, if a client states that they do not intend to wear protective eyewear while tanning, they must not be allowed to tan. Also, a client must never be allowed to tan longer than the MTI (maximum timer interval) posted on the tanning unit for any reason.

Anything that would adversely impact the safety of the client is the responsibility of the tanning salon, not the client and, therefore, in these situations the client is not always right.

Customer Service

Your philosophy of customer service should be to provide necessary information to your clients in the most friendly and professional manner that is possible. They should be educated about your equipment, tanning packages, lotions and their phototype/subtype. In addition, each new client should sign a Client Release and Informed Consent form in order to make sure that you have properly covered the risks of indoor tanning.

In addition, you want to give your clients as much information about the “science of tanning” as possible without overloading them with more information than they are able to comprehend. Each client has a different educational background and, therefore, a different threshold of understanding. It is important for you to stay up-to-date with the latest information so that you can deal with all levels of clients. It is important to understand that if a question arises and you are not sure of the answer that you tell the client that you will find out the answer for them. This is a much more professional approach than “guessing” and possibly providing the client with the wrong answer.

It is the responsibility of all employees to work within the company guidelines of professionalism at all times. Should there be a situation where an employee of a tanning salon feels that they have been instructed to operate in a manner that is against federal and state regulations and not in the best interests of the client, it is incumbent upon the employee to bring the matter to the attention of the manager or owner for resolution.

Finally, the client deserves an appropriate and professional level of attention from the time they enter your facility until the time that they have completed their tanning session and leave. Saying “goodbye” when they leave is just as important as saying “hello” when they arrive!

Cleanliness Standards

The highest standards of cleanliness should be maintained at all times. Your clients should feel comfortable that they are tanning in a clean and properly sanitized environment. This pertains not only to the tanning equipment they will be using but also to the entire salon. It is important to make the cleanliness of the facility a major factor in the training of new employees. The owner or manager must set the guidelines for the cleanliness of the salon and routinely check to make sure that they are being adhered to.

It should be noted that overall sanitation should be looked at. Check the tanning bed rooms for such things as goggles, lotion bottles and packets, towels, socks, underwear, large dust bunnies, cobwebs, etc. All of this makes for an unsightly salon and ruins the experience for the client.

A good “pop quiz about cleaning” is to ask yourself if the salon is ready for an FDA or state inspection at all times. If every aspect of your tanning salon is ready for the

inspector, then you are most certainly ready for your valued clients. Your customers deserve the very best you can offer and they should never be given anything less.

It may be helpful to create “checklists” to help remind employees of tasks that are to be completed by the end of a shift. Put on the list the mandatory things that must be done daily as well as less critical tasks that can be scheduled during the slower parts of the day if time allows.

Any employee who wants to be considered as a true indoor tanning industry professional must act responsibly and proactively when it comes to maintaining a clean and inviting tanning salon environment.

Glossary of Terms

Acrylic: A plastic-like material that covers and protects the lamps on a tanning unit on which a client lays during the tanning process.

Angstrom Unit: Named after the Swedish physicist, J. J. Angstrom (1814-1874), it is a measuring unit mainly of light wavelength; equal to a unit of a hundred-millionth of a centimeter, or a tenth of a millimicron or ten billionths of a meter.

Ballast: Ballasts is a voltage and current regulating device. Ballast transforms line voltage to the proper open circuit voltage necessary for a lamp to light.

Benzophenone-3 (oxybenzone): A sunscreen agent, absorbing primarily UVA and UVB rays.

Bi-pin Lamp: A lamp having two (2) contact pins protruding from both ends. This type of lamp end is most common with European-built equipment and all F71 and F59 lamp designations.

Capacitor: A device for storing an electric charge.

Cathode: Part of the lamp, which emits electrons.

Circuit Breaker: A safety switch that automatically interrupts electrical current in case of an overload or short.

Constitutive Pigmentation: Our natural skin color.

Cosmic Rays: Streams of highly penetrating charged particles, composed of protons, alpha particles and a few heavier nuclei; these bombard the earth from outer space and collide at high speed in the upper atmosphere with atoms, penetrate their nuclei to produce mesons and various secondary nuclear particles.

Dermis: The layer of skin just below the epidermis.

Electric Circuit: A path through which an electrical current can flow.

Electrode: Any terminal that conducts an electric current into or away from various conducting substances in a circuit.

Electromagnetic Spectrum: The range of radiant energy, which travels through space in the form of electromagnetic waves.

Electron: A minute particle rotating around the nucleus of an atom.

Emission: the act of emitting; the transmission of radio waves; the ejections of electrons from a surface by heat radiation, etc.

Energy: Essentially the capacity to do work, to overcome resistance; various forms of available energy (kinetic, electrical, heat, radiation, atomic) may be inter-convertible under suitable conditions, but energy itself is quantity that is conserved – not created or destroyed.

Epidermis: The outermost layer of the skin in vertebrates, having no blood vessels and consisting of several layers of cells, covering the dermis.

Erythema: The reddening, blush; an abnormal redness of the skin resulting from irritation and dilation of the capillaries, often caused from overexposure to ultraviolet light (natural and artificial.)

Exposure: The optimal UVR dose.

Facilitative Pigmentation: The levels of acquired “tan” develop.

Fluorescence: Emitting radiation (such as light) as a result of, and only during the time of, exposure to radiation from another source; if the emission lasts after the exposure has stopped, the phenomenon is known as phosphorescence.

Fluorescent Lamp: The fluorescent is a type of electrical discharge source in which light is produced predominantly by the fluorescence of phosphor activated by ultraviolet energy from a mercury vapor at a low pressure with a small amount of inert gases for starting.

Frequency: The number of regular vibrations or cycles that takes place in a given unit of time; in electricity, it refers to the complete cycles per second in an alternating current.

Gas Shock: Pressurized cylinder used to support and assist with the use of the tanning beds top canopy.

Hertz: SI unit of frequency to equal to one cycle per second.

IPD: Immediate Pigment Darkening.

Infrared: Wavelengths longer than those at the visible red end of the spectrum and shorter than microwaves.

Intensity, Electric: The intensity of strength of an electric field at any point in space numerically equals the force that the field exerts upon a unit of positive charge.

Joule: A unit of electrical work; equivalent to the work done in one second by an electrical current of one ampere through a resistance of one ohm; named in honor of J.P. Joule, British physicist (1818 – 1889).

Light: A form of radiant energy received from the sun and other sources which can act on the eye to make objects visible, the term is now extended to refer to electromagnetic radiation in general, encompassing wavelengths of ultraviolet light and the like which are beyond the vision ranges.

Light Velocity: Electromagnetic waves of light travel through space at a speed of 186,326 miles per second.

Light waves: Transverse waves which undulate at right angles to the direction of travel distinct from sound waves, which have longitudinal motion.

Master Control System (MCS): Master Control System generally operated as a central timer, an elapsed hour meter, a click meter, an on/off switch and a number of optional features that help control the timing of tanning beds in a tanning salon.

Maximum Time Interval (MTI): the maximum tanning time allowed.

Melanin: A brownish-black pigment found in skin, hair and other animal tissues.

Melanocyte: A specialized cell containing melanin.

Metric System: A system of measurement using the meter as a basic unit of weight, all units are in multiples of ten; multiples in the metric system: deci – one tenth of; centi – on hundredth of; milli – one thousandth of; deka – ten times; hecto - one thousandth of; deka - ten times; hecto – One hundred times: kilo – one thousand times.

Micro: combining form meaning 1) very small, as in “microcephaly”, 2) magnify size or capacity, as in “microscopy”, 3) one millionth of a particular unit, as in “microvolt.”

Micro-Micron: One millionth of a millimeter.

Micromillimeter: One millionth of a millimeter.

Milliwatts: Milliwatts are equal to mw/(cm squared) – a measurement of energy.

Minimal Erythema Dose (MED): Minimal Erythema Dose refers to the least amount of UV radiation a person can receive which induces a distinct erythema within 7- 24 hours following irradiation.

Minutes to Erythema (MTE): The time it will take to sunburn.

MW: Milliwatt, one thousandth of a watt.

Nanometer: A measurement for measuring light, which is equal to 0.000001 or one millionth of one millimeter.

Ozone: An unstable, pale blue gas, with a penetrating odor; it is an allotropic form of oxygen and is used as an oxidizing, deodorizing and bleaching agent in the purification of water.

Paba (Para Amino Benzoic Acid): A vitamin B complex with tremendous UVB absorption qualities.

Phosphorescence: The condition of property of a substance of giving off a lingering emission of light after exposure to radiant energy as light.

Photo immunostimulatory: Stimulating the immune system.

Photo immunosuppressive: Suppressing the immune system.

Photon: A quantum of electromagnetic energy having both particle and wave behavior, it has no charge or mass but possesses momentum; the energy of light and is carried by photons.

Photosensitizing substances; Drugs, cosmetics, food, lotions and other items that increase sensitivity to UVR.

Pigment: Any coloring matter in the cells and tissues of plants or animals, to take on to cause to take on pigment, color or become colored.

Psoriasis: A condition, which causes the skin's cell renewal process to go into overdrive. New cells grow every four days versus the usual four weeks. The results are an accumulation of scaly gray or silvery areas of thickening skin. Treatment consists of medication and tightly controlled UV light exposures.

Radiometer: Used to measure the intensity of radiant energy; one common form consists of four vanes, each blackened on one side and suspended on a pivotal frame that revolves when exposed any source of radiant energy.

Reflector: A highly polished metal material used to reflect the lamps energy outward for maximum lamp efficiency.

R.D. C. (Recessed Double Contact): This type of electrical fitting on the end of American-made tanning lamps.

Ruva Lamp: A lamp containing its own built – in – reflector, eliminating the need for reflectors in the tanning unit.

SUVR (Sensitivity to UVR): The degree of response to a UVR dose.

Solar Radiation: The total electromagnetic radiation emitted by the sun.

Solar Spectrum: The Band of color, which results when a prism disperses sunlight.

Spectrum, Spectra: A visual pattern in the form of bands or lines, of any series of radiant energies in a arrangement according to wavelengths: this is applicable to all electromagnetic phenomena including the radio –frequency spectrum, the infrared spectrum and the visible light spectrum.

Starter: An electrical device used to control the flow of electrical current to a lamp when starting a lamp to light.

Temperature Effect: Temperature is an important factor in the overall performance of fluorescent lamps The temperature of the bulb wall has a substantial effect on the amount of ultraviolet light generated by the arc. Light output is significantly affected by the temperature and movement of the surrounding air.

Timer: A devise used to measure time intervals and to terminate a device at the end of the timer's cycle.

Transformer: An electrical device used to increase or decrease voltage to the proper voltage required.

TUVA (Tolerance to UVR): UVR dose withstood without developing erythema (sunburn)>

Tyrosine: The amino acid, which encourages production of the melanin by the skin.

Ultra-: Prefix meaning "beyond, extreme or the other side of."

Ultraviolet Radiation: Electromagnetic waves having similar wavelength as the violet rays of the visible spectrum.

Underexposure: A sub-optimal UVR dose.

UVA: That part of the ultraviolet spectrum which ranges from 320 nanometers to 400 nanometers generally causes premature aging, wrinkling and drying out of the skin due to the longer wavelength and deeper skin penetration.

UVB: That part of the ultraviolet spectrum, which ranges from 280 to 320 nanometers; causes sunburn and peeling. Overexposure to UVB may cause non-melanoma skin cancer.

UVC: That part of the ultraviolet spectrum which ranges form 160 to 280 nanometers and is mostly absorbed b y the ozone layer of our atmosphere; most energetic component of UV-light.

Velocity: Velocity of light is found by multiplying the wavelength time frequency.

Visible Radiation: The electromagnetic spectrum which is found between ionizing radiation and infrared radiation; a wavelength from about 0.4 to .017 microns (or 4,000 to 7,000 angstroms) to which the human eye is sensitive.

Volt: Named after Allesandro Volta, the unit of electromotive force.

Voltage: The electromotive force expressed in volts.

Watt: unit of measurement of the power of electric current equal to the rate of work in joules per second; the energy per second on one ampere across a potential difference of one volt; 1 watt = 1 volt-ampere, 1 watt-hour = 350 joules.

Wavelength: The distance between crests of successive waves.

White Light: Radiation containing all visible colors of the spectrum as the color sensation rendered by sunlight at full moon.

X-ray: A non-luminous electromagnetic ray or radiation of extremely short wavelength, generally less than 2 angstroms, produced by the bombardment f a substance (usually one of the heavy metals) by a stream of electrons moving at a great velocity, as in a vacuum tube. X-rays are capable of penetrating opaque or solid substances, ionizing gasses and body tissues through which they pass, or by extended exposure, destroying tissue and affecting photographic plates and fluorescent screens, they are widely used in medicine for study, diagnosis and treatment of certain organic disorders.

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