

## **Skincare - Moisturizing**

- **Oils**
- **Natural moisturizing factors NMFs**
- **Vitamins**
- **SPFs**
- **Sunless tanners**

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.

### **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.

### **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**

It's only the middle of March, the winds are still blowing cold, arctic air from the north and salons nationwide are filled to capacity with clients seeking solace from Old Man Winter. Yet, before long, those winds will be shifting to the south, and many of your loyal customers will be turning to Mother Nature for a dose of relaxation and nourishment.

While many salon owners believe that the summer doldrums brings a dramatic decrease in their tanning business, this is not true for marketing savvy operators. By marketing your facility as a

one-stop shop for clients' skincare needs such as outdoor lotions and oils, you will keep your cash ringing throughout the summer months.

The sun is responsible for our very existence here on earth. Its light is the fuel for photosynthesis, which is the process by which plants create their energy, and we, in turn, depend on the plants for food and oxygen. The sun's infrared rays keep us warm and its visible rays give us light to see by. The sun's ultraviolet radiation also is useful; however, at the same time, it is dangerous to us.

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.

The summer months of June, July and August bring heat and discomfort as well as dry, thirsty skin in need of nourishment and care. By offering a complete array of moisturizers and SPFs, your clients will turn to your salon as their complete skincare source instead of spending money at the drug or department store down the street.

With the public becoming more aware of the dangers of overexposure to sunlight, SPFs are a natural fit into your retailing sector. Not only can you promote sunscreens for outdoor use to your faithful tanners, but also word-of-mouth advertising from these clients may attract additional customers who don't tan indoors. Just because you are a tanning facility, doesn't mean that non-tanners can't turn to you for skincare education.

In addition, it is important to promote responsible tanning whether it occurs indoors or outdoors. By taking a proactive approach and acting as an ambassador to this industry, you as a salon owner and educator can squelch bad publicity about tanning as well as secure additional sales of sunscreens.

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

Sunburn is caused by overexposure to ultraviolet rays, mostly UVB. In fact, sunburn almost is exclusively a UVB phenomenon; however, research continues on the different effects of UVB and UVA rays. This is important because the SPF system measures UVB protection and not UVA. During a sunburn the skin turns red, swells and, in some severe cases, blisters. A sunburn continues to develop for 12 to 24 hours after the exposure.

Sunscreens are chemicals that, when applied topically, keep ultraviolet rays from penetrating the skin. They work either by absorbing or reflecting solar energy. The absorbed energy excites the sunscreen temporarily; then, as the chemical relaxes back into its original state, it transforms that energy into something harmless (usually heat). This process is repeated countless times per second.

In addition, every sunscreen has a characteristic absorption spectrum that is capable of absorbing only certain wavelengths of ultraviolet light energy. High SPF sunscreen formulas contain blends

of more than one sunscreen because no single-chemical is capable of absorbing all UVB radiation.

High SPF products contain Oxybenzone (or Benzophenone-3), a UVA absorber. In 1986 (the last year data was published) Padimate (or Octyl Dimethyl PABA) was found to be the most widely used UVA absorber in the United States. Contrary to consumer belief, this is not the same as PABA, which rarely is used anymore because a small percentage of people are known to be sensitive to it.

One of the newest ingredients to hit the SPF market is Parsol® 1789, a highly effective filter against the sun's UVA rays. Many of the leading SPF manufacturers have begun using Parson 1789 because currently it is the only sunscreen that also contains skincare properties.

Another new property that has been incorporated in SPF formulas is zinc oxide. Most people associate zinc oxide with the white thick paste lifeguards used in the past. It was known to be the best sunblock available, but it was cosmetically unacceptable and therefore not used by the mainstream population. Fortunately, things have changed, and you now can get the physical sunscreens that are transparent. For example, zinco oxide is now manufactured so that the particles are so small that you cannot see them. These space age physical sunscreens are referred to as microfine powders and Z-CODE (microfine zinc oxide) is an example that has been incorporated into one manufacturer's higher block SPF's in the past year.

Additionally, Ethylhexyl Methoxycinnamate (Octyl Methoxycinnamate) is becoming an increasingly popular UVB absorber, especially in PABA-free and sensitive skin sun products. Use of a broad-spectrum sunscreen product that block UVA and UVB is much safer than UVB blocks alone.

Make sure to inform clients to apply sunscreen approximately 20 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. Remember, an SPF 2 blocks out approximately 50 percent of ultraviolet rays; an SPF 10 blocks out about 85 percent of ultraviolet rays; and, an SPF 15 blocks out approximately 95 percent of ultraviolet rays and is the reason that most health professionals suggest an SPF of 15 or above.

It is useful to have an assortment of products with varying SPF numbers. The suntan lotion that is desired in the early days of summer may have too great an SPF for the last days of August.

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. 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, 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 skin people, sunless tanners can be used to augment the tanning process.

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; 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.

## **Understanding MED and MMD**

- **Minimal Erythematous Dose**
- **Minimal Melanogenic Dose**

*Two terms commonly used in the indoor tanning industry is Minimal Erythematous 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 Erythematous 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 (melano-genesis), 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.

### **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. Furthermore, at the beginning of each session series, this exposure schedule is in agreement with FDA regulations. 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 sun tanning 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.

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### **Determining an Exposure Schedule**

- **Exposure time**
- **Skin typing**

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 operators responsibility to determine the amount of time a client can tan. This time is determined by referring to the manufacturers 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 do 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.

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**

<b>Type</b>	<b>Skin Reaction</b>	<b>Examples</b>
<b>I.</b>	Tans little or not at all, always burns easily and severely, then peels	People most often with fair skin, blue eyes, freckles; white unexposed skin
<b>II.</b>	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; white unexposed skin
<b>III.</b>	Burns moderately gains average tan	Average Caucasian; white unexposed skin
<b>IV.</b>	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, dark eyes; unexposed skin is white or light brown (Orientals, Hispanics and Mediterraneans)
<b>V.</b>	Rarely burns, tans easily and substantially; always exhibits IPD reaction	Brown skinned persons; unexposed skin is brown (East Indians, Hispanics etc.)
<b>VI.</b>	Tans profusely and never burns; exhibits IPD reaction	Persons with black skin (e.g. African & American Blacks, Australian & 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 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 manufacturers 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.

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.



- **Risks Of Overexposure**

- **Non-melanoma**
- **Melanoma**
- **Actinic elastosis**
- **Actinic karatosis**
- **Polymorphous light eruption (PLE)**
- **Sunburn**
- **Photoaging**
- 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 photo aging 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 more 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 nonmelanoma 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; ½the 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 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 ½ 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. Do not 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 affected 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.
  - Photoaged 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.
- .....

### State and Federal Regulations

- **FDA**
- **FTC**
- **State**

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; ½ 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. All sunlamp products must have a warning label, an accurate timer, an emergency stop control, and include an exposure schedule and protective goggles. To review the Performance Standard for Sunlamp and Sunlamp Product, 21 CFR 1040.20 - [click here](#)

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.

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.

To view the FDA Laws, Regulations and Standards pertaining to tanning [click here](#)

## **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 consumer's 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 that is false or omits information that:

1. Is likely to mislead consumers acting reasonably under the circumstances; and
2. Is material that is, important to consumers' 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 related 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](http://www.ftc.gov).

### **State Regulations**

Please contact your local government regarding your specific state regulations.

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## **Understanding Eye Protection**

### **CFR 21 1040.20 (C) (4)**

#### **Structure and function of the eye**

The importance of wearing approved eyewear while tanning can never be stressed enough. What value can you put on something that is so vital it is responsible for 80% of all information we receive on a daily bases.

### **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 block 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.

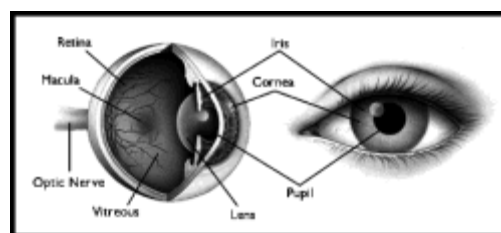
People who have had UVB overexposure to the eyes will experience swelling of the eye tissues, redness, soreness, and a feeling as though a handful of sand has been thrown in their eyes. Because UVA has a longer wavelength, it penetrates the cornea and focuses on the retina, where it does considerable 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 brunescant cataracts which cannot be removed by surgery.

Always ask your clients if they have their eye protection with them. 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 client's 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.

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## 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. Most microorganisms' die immediately upon exposure to ultraviolet light, but when left on handles and the sunbed frame, they can live for an unspecified time period.

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 be non-toxic and 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 and make the plastic fall below FDA standards.

State, local and FDA 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.

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### **Equipment Operating Procedures**

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

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 states regulations concerning minors) a parent or legal guardian should give written authorization in the presence of the tanning operator.
3. Establish your client's 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 21 CFR Part 1040.20 regarding timer accuracy. (FDA policy allows for no more than a 10% error.) Check the timer regularly for accuracy.
11. Make sure your equipment has all of the required labeling required as part of FDA 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.
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 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 on 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. No 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 lamps 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 manufacturers 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.



**Tanning Lamps  
(A Brief Description)**

**Low pressure**

**High pressure**

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 foot 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 are required to follow the manufacturer's recommended lamp replacement guide posted on the equipment's operation label. This information can also be found in the owner's manual. (Note: Sunbeds manufactured prior to 9/8/86 do not always have replacement lamps listed on bed labels. Consult the Owner's Manual if not listed on bed labels.)

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