2008 Melanoma Fact Sheet

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MELANOMA FACT SHEET

Q. What is melanoma?
A. Melanoma, the most serious form of skin cancer, is characterized by the uncontrolled growth of pigment-producing cells. Melanomas may appear on the skin suddenly without warning, but also can develop on an existing mole. The overall incidence of melanoma continues to rise.

Q. Is melanoma a serious disease?
A. More than 75 percent of all skin cancer deaths are from melanoma.[1] Advanced melanoma spreads to internal organs and may result in death. One American dies from melanoma almost every hour (every 62 minutes).[1] Melanoma is the most common form of cancer for young adults 25-29 years old and the second most common cancer in adolescents and young adults 15-29 years old.[2] If detected in the early stages before it reaches the lymph nodes, melanoma has a 99 percent five-year survival rate.[1]

Q. How many people will develop melanoma this year?
A. It is estimated that there will be 116,500 new cases of melanoma diagnosed in the United States in 2008 — 54,020 noninvasive (in situ) and 62,480 invasive. In 2008, 34,950 men and 27,530 women will be diagnosed with invasive melanoma.[3]

In addition, 8,420 people are expected to die from melanoma — 5,400 men and 3,020 women.[1]

Q. How much does melanoma cost society?
A. In 2005, the American Academy of Dermatology Association and the Society for Investigative Dermatology released a comprehensive study to quantify the toll skin diseases take on the nation's economy and healthcare system.

The estimated total direct cost associated with the treatment of melanoma in 2004 was $291 million. Of that total, office visits account for $101 million; hospital outpatient treatment accounts for $76 million; prescription drugs account for $78 million; hospital inpatient treatment accounts for $35 million; and emergency room treatment accounts for $1 million.[4]

Q. What causes melanoma?
A. Excessive exposure to the ultraviolet radiation of the sun is the most important *preventable* cause of all skin cancers, including melanoma. People who live close to the equator, where the sunlight is more intense, are more likely to develop melanoma than those in other regions. Not all melanomas are exclusively sun related — other possible influences include genetic factors and immune system deficiencies.

Q. Who gets melanoma?
A. Melanoma can strike anyone. Caucasians are more likely to be diagnosed with melanoma than other races. However, even among Caucasians, certain individuals are at higher risk than others.[1] For example:

- You have a substantially increased risk of developing melanoma if you have many moles, large moles or atypical (unusual) moles.
- Your risk is increased if a blood relative (e.g., your parents, children, siblings, cousins, aunts, uncles) has had melanoma.

- If you are a Caucasian with fair skin, your risk is higher than a Caucasian with olive skin.
- Redheads and blondes have a higher risk of developing melanoma. Blue or green eyes also increase your risk of developing melanoma.
- Your chances increase significantly if you've already had a previous melanoma, but also increase if you have had either basal cell carcinoma or squamous cell carcinoma, the more common forms of skin cancer.[5-7]

Q. What are atypical moles?
A. Most people have moles (also known as nevi). Atypical moles are unusual moles that are generally larger than normal moles, variable in color, often have irregular borders and may occur in far greater number than regular moles. Atypical moles occur most often on the back and also occur commonly on the chest, abdomen and legs in women. It is important to recognize that atypical moles are not limited to any specific body area -- they may occur anywhere. The presence of atypical moles is an important clinical risk factor for melanoma developing in a mole or on apparently normal skin.

Q. What does melanoma look like?
A. Recognition of changes in the skin is the best way to detect early melanoma. They most frequently appear on the upper back, torso, lower legs, head and neck.[3] In females 15-29 years old, the torso is the most common location for developing melanoma which may be due to high-risk tanning behaviors.[3] If you have a changing mole, a new mole, or a mole that is different, see a dermatologist as soon as possible.

If you notice a mole on your skin, you should follow the simple ABCDE rule which outlines the warning signs of melanoma:

- **A**stands for **ASYMMETRY**; one half unlike the other half.
- **B** stands for **BORDER**; irregular, scalloped or poorly defined border.
- **C** stands for **COLOR**; varied from one area to another; shades of tan and brown, black; sometimes white, red or blue.
- **D** stands for **DIAMETER;** while melanomas are usually greater than 6mm (the size of a pencil eraser) when diagnosed, they can be smaller.
- **E** stands for **EVOLVING**; a mole or skin lesion that looks different from the rest or is changing in size, shape, or color.

The American Academy of Dermatology urges everyone to examine their skin regularly. This means looking over your entire body including your back, your scalp, the soles of your feet, between your toes and the palms of your hands. **If there are any changes in the size, color, shape or texture of a mole, the development of a new mole, or any other unusual changes in the skin, see your dermatologist as soon as possible.**

Q. Can melanoma be cured?
A. When detected in its earliest stages, melanoma is highly curable. The average five-year survival rate for individuals whose melanoma is localized and has not spread beyond the outer layers of the skin is 99 percent.[1]

Early detection is *essential*; there is a direct correlation between the thickness of the melanoma and survival rate. Dermatologists recommend a regular self-examination of the skin to detect changes in its appearance. Additionally, patients with risk factors should have a complete skin examination by a dermatologist annually. Anyone with a changing, suspicious or unusual mole or blemish should be examined as soon as possible. Individuals with a history of melanoma should have a full-body exam at least annually and perform monthly self-exams for new and changing moles.[8]

Q. Can melanoma be prevented?
A. Sun exposure is the most preventable risk factor for all skin cancers, including melanoma.[1-9] You can have fun in the sun and decrease your risk of skin cancer. Here's how to **Be Sun Smart**[SM]:

Generously apply a water-resistant sunscreen with a Sun Protection Factor (SPF) of at least 15 that provides broad-spectrum protection from both ultraviolet A (UVA) and ultraviolet B (UVB) rays to all exposed skin. Re-apply every two hours, even on cloudy days, and after swimming or sweating. Look for the AAD SEAL OF RECOGNITION[TM] on products that meet these criteria.

- **Wear protective clothing**, such as a long-sleeved shirt, pants, a wide-brimmed hat and sunglasses, where

possible.

- **Seek shade** when appropriate, remembering that the sun's rays are strongest between 10 a.m. and 4 p.m. If your shadow is shorter than you are, seek shade.
- **Protect children** from sun exposure by playing in the shade, using protective clothing and applying sunscreen.
- **Use extra caution near water, snow and sand** as they reflect the damaging rays of the sun, which can increase your chance of sunburn.
- **Get vitamin D safely** through a healthy diet that may include vitamin supplements. Don't ***seek*** the sun.[6]
- **Avoid tanning beds.** Ultraviolet light from the sun and tanning beds can cause skin cancer and wrinkling. If you want to look like you've been in the sun, consider using a sunless self-tanning product, but continue to use sunscreen with it.
- **Check your birthday suit on your birthday.** If you notice anything changing, growing or bleeding on your skin, see a dermatologist. Skin cancer is very treatable when caught early.

[1]American Cancer Society. *2008 Cancer Facts and Figures*.
http://www.cancer.org/downloads/STT/2008CAFFfinalsecured.pdf

[2]Cancer Epidemiology in Older Adolescents & Young Adults. SEER AYA Monograph Pages 53-57.2007.

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[4]The Society for Investigative Dermatology and the American Academy of Dermatology Association, The Burden of Skin Diseases 2004. Copyright 2006.

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http://www.ahrq.gov/clinic/ajpmsuppl/skcarr.htm

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SENATE BILL 357 REGULATE THE USE OF INDOOR TANNING SALONS BY MINORS

Ultraviolet Radiation Spectrum (UV rays) Overexposure Fact Sheet

- There is no such thing as "safe rays." Indoor tanning can be as harmful as outdoor tanning.[1]
- The use of tanning beds and sun lamps are hazardous because the UV radiation they deliver can be damaging.[2]
- Some tanning bed machines have the capacity to emit levels of UV radiation up to five times stronger than the midday Australian summer sun.[3]
- There is a type of UV ray that laterally hits the eye which can damage the eye if the protective goggles, provided by the tanning salon, do not have side protection.
- People risk getting eye infections from others if the tanning salon does not sanitize the protective eye goggles after each time someone uses them.[5]
- Photoageing can cause skin fragility, wrinkling and loss of skin elasticity.[3,4]
- Some of the eye damage includes photokeratitis, eyelid spasm, inflammation of the cornea and the iris, photoconjunctivitis, cataracts and ocular melanoma.[3,4]
- Tanning indoors damages your skin.[5]
- Studies show that it can cause damage in the DNA of skin cells.[6]
- Each year there are more new cases of skin cancer than the combined incidence of breast, prostate, lung and colon cancer.[7]
- There is a 75% increase in melanoma skin risk among those who used indoor tanning booths in their teens and twenties.[8]
- Melanoma is the most serious form of skin cancer.[9]
- The percentage of people in the United States developing melanoma has more than doubled in the last thirty years.[9]
- The annual incidence of invasive cutaneous melanoma increased among Caucasian women, ages 15 to 39, in the United States by 50% between 1980 and 2004.[10]
- Basal cell carcinoma is the most common diagnosed form of cancer and affects approximately 1,000,000 Americans every year.[11]
- Squamous cell carcinoma is the most second most common cancer with more than 250,000 new cases every year.[12]

Notes:

1 "Don't Be in the Dark About Tanning." U.S. Food and Drug Administration. http://www.fda.gov/fdac/features/2003/603_tan.html

2 Detailed Guide: Skin Cancer – Basal and Squamous Cell "Can Squamous and Basal Skin Cancer Be Prevented? American Cancer Society." http://www.cancer.org/docroot/CRI/content/CRI_2_4_2X_Can_skin_cancer_be_prevented_51.asp?sitearea=

3 "Artificial Tanning Sunbeds Risk and Guidance." World Health Organization. http://www.who.int/uv/publications/en/sunbeds.pdf

4 ICNIRP Statement: Health Issues of Ultraviolet Tanning Appliances Used for Cosmetic Purposes. The International Commission on Non-Ionizing Radiation Protection. http://www.icnirp.de/documents/sunbed.pdf

5 "FTC Facts for Consumers." Federal Trade Commission. http://www.ftc.gov/bcp/edu/pubs/consumer/health/hea11.pdf

6 Indoor Tanning Fact Sheet. American Academy of Dermatology. http://www.aad.org/media/background/factsheets/fact_indoortanning.html

7 2009 Skin Cancer Facts. Skin Cancer Foundation. http://www.skincancer.org/Skin-Cancer-Facts/

8 "Cancer Prevention & Early Detection Facts & Figures 2008." American Cancer Society. http://www.cancer.org/downloads/STT/CPED_2008.pdf

9 What You Need To Know About Melanoma. National Cancer Institute. http://www.cancer.gov/cancertopics/wyntk/melanoma

10 "Melanoma Incidence Among Young Women in the U.S. Is Rising." National Cancer Institute. http://www.cancer.gov/cancertopics/melanoma/youngwomen0908

11 Basal Cell Carcinoma. Skin Cancer Foundation. http://www.skincancer.org/Basal-Cell-Carcinoma/

12 Squamous cell carcinoma. http://www.mayoclinic.com/health/squamous-cell-carcinoma/DS00924

United States Federal Regulations: 21CFR 1040.20

(a) Applicability. (1) The provisions of this section, as amended, are applicable as specified herein to the following products manufactured on or after September 8, 1986.
(i) Any sunlamp product.
(ii) Any ultraviolet lamp intended for use in any sunlamp product.
(2) Sunlamp products and ultraviolet lamps manufactured on or after May 7, 1980, but before September 8, 1986, are subject to the provisions of this section as published in the FEDERAL REGISTER of November 9, 1979 (44 FR65357).
(b) Definitions. As used in this section the following definitions apply:
(1) "Exposure position" means any position, distance, orientation, or location relative to the radiating surfaces of the sunlamp product at which the user is intended to be exposed to ultraviolet radiation from the product, as recommended by the manufacturer.
(2) "Intended" means the same as "intended uses" in 801.4.
(3) "Irradiance" means the radiant power incident on a surface at a specified location and orientation relative to the radiating surface divided by the area of the surface, as the area becomes vanishingly small, expressed in units of watts per square centimeter (W/cm2).
(4) "Maximum exposure time" means the greatest continuous exposure time interval recommended by the manufacturer of the product.
(5) "Maximum timer interval" means the greatest timer interval setting on the timer of a product.
(6) "Protective eyewear" means any device designed to be worn by users of a product to reduce exposure of the eyes to radiation emitted by the product.
(7) "Spectral irradiance" means the irradiance resulting from radiation within a wavelength range divided by the wavelength range as the range becomes vaninshingly small, expressed in units of watts per square centimeter per nanometer (W/(cm2/nm)).
(8) "Spectral transmittance" means the spectral irradiance transmitted through protective eyewear divided by the spectral irradiance incident on the protective eyewear.
(9) "Sunlamp product" means any electronic product designed to incorporate one or more ultraviolet lamps and intended for irradiation of any part of the living human body, by ultraviolet radiation with wavelengths in air between 200 and 400 nanometers, to induce skin tanning.
(10) "Timer" means any device incorporated into a product that terminates radiation emission after a preset time interval.
(11) "Ultraviolet lamp" means any lamp that produces ultraviolet radiation in the wavelength interval of 200 to 400 nanometers in air and that is intended for use in any sunlamp product.

(c) Performance requirements. (1) Irradiance ratio limits. For each sunlamp product and ultraviolet lamp, the ratio of the irradiance within the wavelength range of greater than 200 nanometers through 260 nanometers to the irradiance within the wavelength range of greater than 260 nanometers through 320 nanometers may not exceed 0.003 at any distance and direction from the product or lamp.
(2) Timer system. (i) Each sunlamp product shall incorporate a timer system with multiple timer settings adequate for the recommended exposure time intervals for different exposure positions and expected results of the products as specified in the label required by paragraph (d) of this section.
(ii) The maximum timer interval(s) may not exceed the manufacturer's recommended maximum exposure time(s) that is indicated on the label required by paragraph (d)(1)(iv) of this section.
(iii) No timer interval may have an error greater than 10 percent of the maximum timer interval of the product.
(iv) The timer may not automatically reset and cause radiation emission to resume for a period greater than the unused portion of the timer cycle, when emission from the sunlamp product has been terminated.
(v) The timer requirements do not preclude a product from allowing a user to reset the timer before the end of the preset time interval.
(3) Control for termination of radiation emission. Each sunlamp product shall incorporate a control on the product to enable the person being exposed to terminate manually radiation emission from the product at any time without disconnecting the electrical plug or removing the ultraviolet lamp.
(4) Protective eyewear. (i) Each sunlamp product shall be accompanied by the number of sets of protective eyewear that is equal to the maximum number of persons that the instructions provided under paragraph (e)(1)(ii) of this section recommend to be exposed simultaneously to radiation from such product.
(ii) The spectral transmittance to the eye of the protective eyewear required by paragraph (c)(4)(i) of this section shall not exceed a value of 0.001 over the wavelength's range of greater than 200 nanometers through 320 nanometers and a value of 0.01 over the wavelength range of greater than 320 nanometers through 400 nanometers, and shall be sufficient over the wavelength greater than 400 nanometers to enable the user to see clearly enough to reset the timer.
(5) Compatibility of lamps. An ultraviolet lamp may not be capable of insertion and operation in either the "single contact medium screw" or the "double contact medium screw" lamp holders described in American National Standard C81.10-1976, Specifications for Electric Lamp Bases and Holders_Screw Shell Types, which is incorporated by reference. Copies are available from the American National Standards Institute, 1430 Broadway, New York, NY 10018 or available for inspection at the Office of the Federal Register, 1100 L St. NW, Washington, DC 20408.
(d) Label requirements. In addition to the labeling requirements in Part 801 and the certification and identification requirements of 1010.2 and 1010.3, each sunlamp product and ultraviolet lamp shall be subject to the labeling requirements prescribed in this paragraph and paragraph (e) of this section.
(1) Labels for sunlamp products. Each sunlamp product shall have a label(s) which contains:
(i) A warning statement with the words "DANGER_Ultraviolet radiation. Follow instructions. Avoid overexposure. As with natural sunlight, overexposure can cause eye and skin injury and allergic reactions. Repeated exposure may cause premature aging of the skin and skin cancer. WEAR PROTECTIVE EYEWEAR; FAILURE TO MAY RESULT IN SEVERE BURNS OR LONG-TERM INJURY TO THE EYES. Medications or cosmetics may increase your

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- People risk getting eye infections from others if the tanning salon does not sanitize the protective eye goggles after each time someone uses them.[5]
- Photoageing can cause skin fragility, wrinkling and loss of skin elasticity.[3,4]
- Some of the eye damage includes photokeratitis, eyelid spasm, inflammation of the cornea and the iris, photoconjunctivitis, cataracts and ocular melanoma.[3,4]
- Tanning indoors damages your skin.[5]
- Studies show that it can cause damage in the DNA of skin cells.[6]
- Each year there are more new cases of skin cancer than the combined incidence of breast, prostate, lung and colon cancer.[7]
- There is a 75% increase in melanoma skin risk among those who used indoor tanning booths in their teens and twenties.[8]
- Melanoma is the most serious form of skin cancer.[9]
- The percentage of people in the United States developing melanoma has more than doubled in the last thirty years.[9]
- The annual incidence of invasive cutaneous melanoma increased among Caucasian women, ages 15 to 39, in the United States by 50% between 1980 and 2004.[10]
- Basal cell carcinoma is the most common diagnosed form of cancer and affects approximately 1,000,000 Americans every year.[11]
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Notes:

1 "Don't Be in the Dark About Tanning." U.S. Food and Drug Administration. http://www.fda.gov/fdac/features/2003/603_tan.html

2 Detailed Guide: Skin Cancer – Basal and Squamous Cell "Can Squamous and Basal Skin Cancer Be Prevented? American Cancer Society." http://www.cancer.org/docroot/CRI/content/CRI_2_4_2X_Can_skin_cancer_be_prevented_51.asp?sitearea=

3 "Artificial Tanning Sunbeds Risk and Guidance." World Health Organization. http://www.who.int/uv/publications/en/sunbeds.pdf

4 ICNIRP Statement: Health Issues of Ultraviolet Tanning Appliances Used for Cosmetic Purposes. The International Commission on Non-Ionizing Radiation Protection. http://www.icnirp.de/documents/sunbed.pdf

5 "FTC Facts for Consumers." Federal Trade Commission. http://www.ftc.gov/bcp/edu/pubs/consumer/health/hea11.pdf

6 Indoor Tanning Fact Sheet. American Academy of Dermatology. http://www.aad.org/media/background/factsheets/fact_indoortanning.html

7 2009 Skin Cancer Facts. Skin Cancer Foundation. http://www.skincancer.org/Skin-Cancer-Facts/

8 "Cancer Prevention & Early Detection Facts & Figures 2008." American Cancer Society. http://www.cancer.org/downloads/STT/CPED_2008.pdf

9 What You Need To Know About Melanoma. National Cancer Institute. http://www.cancer.gov/cancertopics/wyntk/melanoma

10 "Melanoma Incidence Among Young Women in the U.S. Is Rising." National Cancer Institute. http://www.cancer.gov/cancertopics/melanoma/youngwomen0908

11 Basal Cell Carcinoma. Skin Cancer Foundation. http://www.skincancer.org/Basal-Cell-Carcinoma/

12 Squamous cell carcinoma. http://www.mayoclinic.com/health/squamous-cell-carcinoma/DS00924

Indoor Tanning Fact Sheet

Who Tans Indoors?

- On an average day in the United States, more than 1 million people tan in tanning salons.[1]
- Nearly 70 percent of tanning salon patrons are girls and women, primarily aged 16 to 29 years.[2]
- Nearly 30 million people tan indoors in the United States annually. Of these, 2.3 million are teens.[3, 4]
- The indoor tanning industry has an estimated revenue of $5 billion, a fivefold increase from 1992.[4,5]

Risks of Indoor Tanning

- The United States Department of Health & Human Services has declared ultraviolet (UV) radiation from the sun and artificial sources, such as tanning beds and sun lamps, as a known carcinogen (cancer-causing substance).[6]
- Indoor tanning equipment, which includes all artificial light sources, including beds, lamps, bulbs, booths, etc., emits UVA and UVB radiation.The amount of the radiation produced during indoor tanning is similar to the sun and in some cases may be stronger.[7,8]
- A Swedish study presents strong evidence that exposure to UV radiation during indoor tanning increases the risk of melanoma, especially when exposed at an early age.[9]
- Evidence from several studies has shown that exposure to UV radiation from indoor tanning devices is associated with an increased risk of melanoma and non-melanoma skin cancer such as squamous cell carcinoma and basal cell carcinoma.[1,2, 9-11]
- A review of seven studies found a statistically significant increase in the risk of melanoma in those who had been exposed to UV radiation from indoor tanning before the age of 35.[11]
- Studies have demonstrated that exposure to UV radiation during indoor tanning damages the DNA in the skin cells. Also excessive exposure to UV radiation during indoor tanning can lead to skin aging, immune suppression, and eye damage, including cataracts and ocular melanoma.[1,12-15]
- Because UV radiation from indoor tanning can lead to skin cancer, eye damage, aging skin and immune suppression, it is not safe to use tanning lamps to obtain vitamin D.[16]

Legislation

- Only half of the states in the U.S. regulate indoor tanning use by minors, despite the call from the World Health Organization (WHO) to prohibit minors from indoor tanning because of the danger of skin cancer.[17-19]
- In September 2007, the Tanning Accountability and Notification Act, or TAN Act (FDA reform bill, HR 3580), became law. This law requires the U.S. Food and Drug Administration to determine whether the current labeling of indoor tanning beds provides sufficient information about the risks associated with indoor tanning and whether modifying the warning label required on tanning beds to read "Ultraviolet radiation can cause skin cancer" would more effectively communicate the risks of skin cancer to the general public.

Academy Position Statement on Indoor Tanning

- The American Academy of Dermatology Association (AADA) opposes indoor tanning and supports a ban on the production and sale of indoor tanning equipment for non-medical purposes.
- The American Academy of Dermatology supports the World Health Organization recommendation that minors should not use indoor tanning equipment because indoor tanning devices emit UVA and UVB radiation and overexposure to UV radiation can lead to the development of skin cancer.

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World Health Organization

Fact sheet N°287
March 2005

Sunbeds, tanning and UV exposure

The desire to acquire a tan for fashion or cosmetic purposes has led to a large increase in the use of artificial tanning sunbeds in, mostly, developed countries. Use of sunbeds for tanning continues to increase in popularity, especially among young women.

Sunbeds used in solariums, and sun tanning lamps, are artificial tanning devices that claim to offer an effective, quick and harmless alternative to natural sunlight. However, there is growing evidence that the ultraviolet (UV) radiation emitted by the lamps used in solariums may damage the skin and increase the risk of developing skin cancer.

Some 132 000 cases of malignant melanoma (the most fatal kind of skin cancer) and over two million cases of other skin cancers occur worldwide each year. One in every three cancers diagnosed worldwide is a skin cancer. Most skin cancers are attributable to over-exposure to natural UV radiation. A fact sheet indicating the adverse health consequences from natural (i.e., sun) UV exposure issued by the World Health Organization (WHO) can be found at the link to the right.

This fact sheet is the complement of the above, providing information on artificial sources of UV. Primary among these artificial sources is sunbeds, and this fact sheet looks at the health consequences of sunbed usage and how they can be managed. Information for this fact sheet comes from WHO sponsored meetings and workshops, recent scientific literature, reviews by WHO Member States and the recommendations of international NGOs.

Health consequences

Skin cancers

Exposure to UV, either naturally from the sun or from artificial sources such as sunlamps, is a known risk factor for skin cancer. Short-wavelength UVB (280-315 nm) has been recognized for some time as carcinogenic in experimental animals, and there is increasing evidence that longer-wavelength UVA (315-400 nm) used in sunbeds, which penetrates more deeply into the skin, also contributes to the induction of cancer. A study conducted in Norway and Sweden showed a significant increase in the risk of malignant melanoma among women who had regularly used sunbeds.

Additional exposure to UV from sunbeds is likely to enhance the well-known detrimental consequences of excessive solar UV exposure. There is no evidence to suggest that UV exposure from any type of sunbed is less harmful than UV exposure from the sun. Pre-cancerous actinic keratoses and Bowen's disease have also been found in sunlight-protected but sunbed exposed skin in fair-skinned users after just two to three years of regular sunbed use.

Skin ageing, eye damage and other adverse health effects

Any excessive exposure to UV, not just from sunbeds, can result in structural damage to human skin. In the short term this damage can be due to burning, fragility and scarring and in the longer-term as photoageing. Photoageing, caused by the breakdown of collagen in the skin by UV, manifests itself as wrinkling and loss of elasticity.

The effects of UV on the eye include cataracts, pterygium (a white coloured growth over the cornea) and inflammation of the eye such as photokeratitis and photoconjunctivitis. Furthermore, excessive UV exposure can suppress the immune system, possibly leading to a greater risk of infectious diseases.

Some skin types are unsuitable for tanning

Based on their susceptibility to sunburn, skin types are classified into six different classes (I – VI). People with skin type I have the lightest skin and may not have even a light tan after repeated exposure to a sunbed. Instead, their skin generally suffers sunburn reactions. People with skin type I are more likely to use sunbeds than people with darker skin.

The ability of the consumer to recognize their skin type as not suitable for sunbed use is based on either self-diagnosis, or worst, a bad experience of sunburn. For this reason sunbed operator training is needed to ensure correct skin type diagnosis. While skin type II and

higher can tan, skin damage can still occur following excessive exposure to UV.

Dangers associated with childhood UV exposure

Childhood exposure to UV and the number of times a child is burnt by UV, either from the sun or from sunbeds, are known to increase the risk of developing melanoma later in life. For this reason, particular attention is required to ensure children and adolescents do not use sunbeds. The United States Department of Health and Human Services has classified exposure to sunlamps or sunbeds as "known to be carcinogenic to humans" and states that the longer the exposure, the greater the risk, especially to people exposed before the age of 30 years.

About sunbeds

Sunbeds emit predominantly UVA and some UVB, both of which can damage the DNA in cells of the skin. However, in recent years, lamps of sunbeds have been manufactured that produce higher levels of UVB to mimic the solar spectrum and speed the tanning process. While UVB has well known carcinogenic properties and whose excessive exposure is known to lead to the development of skin cancers, recent scientific studies suggest that high exposures to the longer wavelength UVA could also have an impact on skin cancer occurrence.

As with sun exposure, recent studies indicate a relationship between the use of sunbeds and malignant melanoma as well as non-melanoma skin cancers such as squamous and basal cell carcinomas. Thus, the consequences of regular sunbed use may include disfigurement from removal of skin cancers, early death if the cancer is a malignant melanoma, as well as substantial costs to national health systems for screening, treating and monitoring skin cancer patients.

Health benefits

Aside from tanning, many people claim that use of sunbeds helps them to be more relaxed and have a feeling of wellbeing. It is difficult to quantify such claims.

While sunbed use may increase vitamin D synthesis, predominantly from the UVB component, for the majority of the population, incidental exposure to the sun, combined with normal dietary intake of vitamin D, provides adequate vitamin D for a healthy body throughout the year. If people require more vitamin D than the sun can provide (for example, because of living in polar regions) this should be supplemented through diet rather than sunbed use.

Only in very rare and specific cases should the medically-supervised use of sunbeds be considered. Medical UV devices successfully treat certain skin conditions such as dermatitis and psoriasis. These treatments should only be conducted under qualified medical supervision in an approved medical clinic and not unsupervised either in commercial tanning premises or at home using a domestic sunbed.

There is a widespread false belief that a tan acquired using a sunbed will offer good skin protection against sunburn for a holiday in a sunny location. In reality, a tan acquired using a sunbed offers only limited protection against sunburn from solar UV. It has been estimated that a sunbed tan offers the same protective effect as using a sunscreen with a sun protection factor (SPF) of only 2-3.

Strong case for effective regulations governing sunbed use

As long as sunbeds are available to the public, there is a need for guidelines or legislation to reduce the risks associated with their use. WHO encourages governments to formulate and enforce effective laws governing the use of sunbeds. In countries where voluntary industry codes of practice exist, the sunbed owners have generally not shown significant capacity to self regulate effectively.

Of highest regulatory priority should be the restriction of use by persons under 18 years as well as banning unsupervised trained personel. WHO recommendations are consistent with those of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) and the European Society for Skin Cancer Prevention (EUROSKIN).

The key reasons why regulations are necessary

- Increase in the number of unsupervised commercial sunbeds - Without trained staff and adequate health care advice, the potential for harm to the uninformed consumer is much greater. This, combined with competitive pricing strategies such as unlimited sessions within a specific time frame, increases the likelihood of skin damage.
- High intensity of UV output - Some machines have the capacity to emit very high levels of UV, many times stronger than the midday summer sun in most countries. In a largely unregulated industry where training of staff is not mandatory, this increases the health risks considerably.
- Exposure time and intervals between tanning sessions - Reasonable sunbed use includes keeping to recommended exposure times (which depends on the type of machine used) and having sufficiently long breaks between tanning sessions. Normally at

least 48 hours are needed between tanning sessions for repair of UV-induced DNA damage in skin cells
- Eyewear - UV protective eyewear (such as goggles) must be worn during tanning sessions to protect the eyes.
- Effect of certain drugs and cosmetics - Some drugs, for example anti-depressants, antibiotics, psoralens, antifungals, and antidiabetics as well as some cosmetics make the skin more photosensitive and therefore decrease the time it takes for the skin to burn.
- The size of the skin area exposed - Modern 'clam-type' sunbeds and canopies can expose more skin area to UV than outdoor situations, therefore increasing the health risk. Here young people, , are more sensitive to UV-induced damage from this "all-over" tanning.

ICNIRP recommendations

In its 2003 publication ICNIRP recommends against the use of UV-emitting appliances for tanning or other non-medical purposes. ICNIRP states that the following groups are at particularly high risk of incurring adverse health effects from UV, and therefore should be particularly counseled against the use of tanning appliances:

- People who have skin phototypes I or II;
- Children (i.e., less than 18 years of age);
- People who have large numbers of nevi (moles);
- Persons who tend to freckle;
- Individuals who have a history of frequent childhood sunburn;
- People who have pre-malignant or malignant skin lesions;
- People who have sun-damaged skin;
- Those who are wearing cosmetics. These may enhance their sensitivity to UV exposure; and
- Persons taking medications. In this case they should seek advice from their physician to determine if the medication will make them UV-sensitive.

Action of the World Health Organization

INTERSUN, the Global UV project, is a collaborative project between WHO, the United Nations Environment Programme, the World Meteorological Organization, the International Agency on Cancer Research and ICNIRP that aims to reduce the burden of disease resulting from exposure to UV radiation. The project assesses and quantifies health risks, and develops an appropriate response through guidelines, recommendations and information dissemination. Beyond its scientific objectives, INTERSUN provides guidance to national authorities and other agencies about effective sun awareness programmes. These address different audiences such as occupationally exposed people, tourists, school children and the general public.

In 2003 WHO published a brochure entitled "Artificial tanning beds: risks and guidance" providing advice to the public, operators of sunbed facilities and member states on how sunbeds could be managed to protect public health.

Further information

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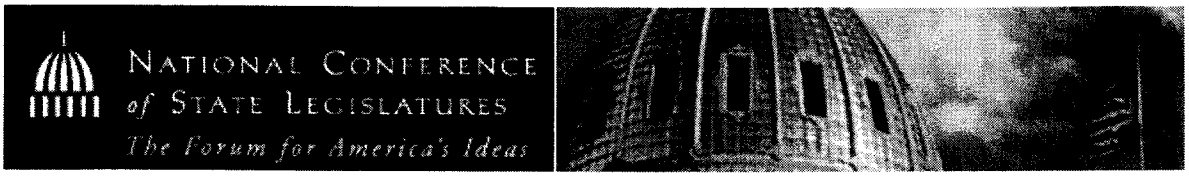

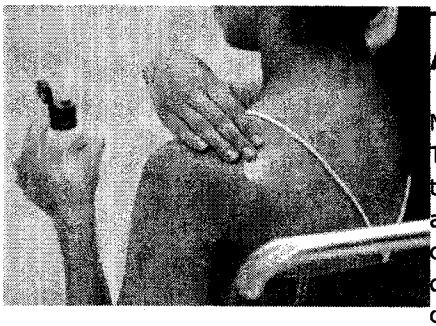

Tanning Restrictions for Minors
A State-by-State Comparison

Most skin damage from the sun occurs before age 18 and, according to the University of Texas MD Anderson Cancer Center, many youth will total 50 percent to 80 percent of their lifetime sun exposure during childhood. Research shows that blistering sunburns and overexposure during childhood greatly increase the chances of developing skin cancer later in life. Because sun exposure in childhood and the teenage years can be so damaging, policymakers in some states are regulating minors' use of tanning devices (like tanning beds). Currently, at least **29 states and 4 counties** regulate the use of tanning facilities by minors.

There are two categories of skin cancer, Melanoma and nonmelanoma. Melanoma is treatable if caught early, but because it is likely to spread to other parts of the body, it is very dangerous and potentially fatal. The American Cancer Society (ACS) estimates in 2008 there were 62,480 new cases of Melanoma and 8,420 Melanoma-related deaths. Risk factors for Melanoma include sun exposure and sunburn, blistering sunburns during childhood or teenage years, fair skin, freckles, moles, and a family history of melanoma. ACS recommends avoiding sunlight between 10 am and 4 pm when the sun's rays are strongest, avoiding tanning devices and sun lamps, using and re-applying sunscreen when exposed to UV rays, covering skin with clothing and wearing hats and sunglasses.

Sun exposure causes most nonmelanoma skin cancers. ACS estimates that over a million people a year are diagnosed with this type of cancer. Nonmelanoma rarely spreads to other parts of the body and, if detected early, is treatable and has excellent survival rates. The National Cancer Institute reports that non-melanoma skin cancer is the most common type of cancer for all people. Just under half of Americans who live to age 65 will have this cancer at least once.

2009 Introduced Legislation | State Laws

Updated January 2009

2009 Introduced Legislation

State	Bill Description
Florida	**SB 546** Strengthens current law by requiring parent or legal guardian of a minor to sign a written statement before the minor is allowed to use a tanning device. Provides requirements for the written statement. Revises the age at which a minor is allowed to use a tanning device. Prohibits a minor younger than a certain age from using a tanning device at a tanning facility. Deletes provisions authorizing the use of a tanning device by certain minors if accompanied by a parent, etc. **Filed 1/6/09.**
Kansas	**SB 101** Prohibits the use of tanning facilities for anyone under the age of 14. Requires a parent or legal guardian consent to the owner/authorized tanning facility personnel for 14 through 18 year olds. The parental/guardian consent acknowledges the danger of tanning facility use and requires proof of age and guardianship. **Introduced 1/26/2009.**
Oklahoma	**SB 544** Prohibits use of a tanning device by a person under 13 without physicians written and parent/legal guardian present. Minors must be accompanied by a parent/legal guardian. Requires informed parent/ legal guardian consent statement for minors age 16 through 17. Punishment of violation is specified in the bill. **Prefiled 1/13/09.**
Wyoming	**HB 178** Prohibits the use of ultraviolet tanning devices for any minor under 15 years of age. Requires parental/ legal guardian consent and presence for use of tanning devices for any minor age 15 through 18. A valid photo ID, which is defined in the bill, must be shown for each person to verify age. Also establishes punishment if violated. **Sent to Committee on Labor, Health and Social Services 1/20/09**

Tanning Restrictions for Minors--State Laws

State	Statute	Age Restriction	Parent must Accompany Minor	Parent must sign written permission
Arizona	Ariz. Admin. Code R12-1-1414 A2	under 18		Written permission from a parent/guardian required for someone under 18 to use the facility.
California	Cal. Bus. and Prof. Code § 22706 (b) (3) and (4)	under 14; 14-18		Written permission required for ages 14-18. Children under 14 prohibited. People between the ages of 14 and 18 must have a parent or guardian sign, in the presence of a salon operator or employee, that they understand the risks and agree to the terms of use; consent valid for 12 months.
Connecticut	Conn. Public Act No. 06-195	under 16		Written permission from parent/guardian required for a person under 16 to use tanning facilities.
Florida	Fla. Stat. Ann. § 381.89 (1998)	under 14; 14-18	Parents/guardians must accompany children under 14 on all visits	Written permission required between the ages of 14-18 signed by the minor's parent/guardian stating the parent/guardian has read and understands the warnings, consents to the minor's use of a tanning device, and agrees the minor will use the provided protective eyewear.
Georgia	Ga. Code Ann. § 31-38-8 (1996)	under 18		Written permission required for those under 18 and must be signed by a parent/guardian at the tanning facility before the minor can use the equipment.
Illinois	Ill. Admin. Code Title 77; Sec. 795.190 (c)	under 14; 14-18		Children under 14 are prohibited; parent/guardian must sign a consent form in the presence of the facility operator if child is between the ages of 14 and 17 indicating they understand the warnings.
Indiana	Ind. Code Ann. § 25-8-15.4-15 and 16	under 16; 16-18	Parent/guardian must accompany children under the age of 16	Parent/guardian of minors aged 16-18 must sign a risk waiver in the presence of the tanning device operator.
Kentucky	Ch. 103 of the Acts of 2006 (HB 151)	under 14; 14-18	Parent/guardian must accompany children under the age of 14	Parents/guardian of minors between ages 14-18 must sign a statement that they read and understand the warnings and certifies that their child will use protective eyewear. The consent is valid for 1 calendar year.
Louisiana	La. Rev. Stat. Ann. § 40:2701 to 40:2718 (2005)	under 14; 14-18	Parent/guardian must accompany children under the age of 14	Parents/guardian of minor between the ages of 14-18 must sign a consent, at the facility, stating they have read and understood the warnings, consents to the minor's use of device and agrees the minor will use protective eyewear.
Maine	10-144 Dept. of Human Services ch. 223 12A (3)(f)	under 18		People under the age of 18 must present written consent form signed by a parent or legal guardian; parents/guardians must have been supplied with standard warning materials.
Maryland	Ch. 691 of the Acts of 2008 (HB 1358)	under 18		Parent/guardian must give written consent in the presence of tanning facility owner, employee or operator in order for a minor to use tanning devices. Tanning facility owner, employee, or operator is required to check documentation to verify the age of the individual before allowing them to use tanning devices. Punishment for violation is specified in the law.

Massachusetts	Mass. Gen. Laws Ann. ch. 111 Public Health § 211	under 14; 14-17	Parent/guardian must accompany children under the age of 14	Parent/guardian must sign prior written consent for minors age 14-17.
Michigan	Mich. Comp. Laws Ann. § 333.13407	under 14; 14-18	Parent/guardian must accompany children under the age of 14	Before someone under 18 can tan, a parent/guardian must present a statement similar to other customers that they read and understand the risks tanning poses to their child and that the child will wear protective eye wear.
Minnesota	Minn. Stat. Ann. § 325H.08	under 16		Tanning device operator must witness a parent/guardian sign and date a warning statement.
Mississippi	Agency Regulations, Division of Radiological Health 801.AA.12 (c)(5)	under 16		No one under 16 allowed to use tanning devices without written consent from a parent/guardian.
New Hampshire	N.H. Rev. Stat. Ann. § tit. XXX 313-A:31	under 14; 14-18	Parent/guardian must accompany children under the age of 14. Parent must accompany minors between 14-18 for their initial use.	A licensed physician must authorize use of the devise for minors under 14. A parent/guardian must sign written consent to use the facility and verify the age of the minor for those 14-18 years old. Parent/guardian must sign in the presence of the operator. Written permission is only good for 12 visits. Minor must present age verification when using the device
New Jersey	N.J. Rev. Stat. § C. 26:2D-82.1	under 14; 14-18		Children under the age of 14 prohibited from using the device; parents/guardians of minors between ages 14-18 must sign documentation stating that they have read and understand the warnings.
New York	N.Y. Public Health Law ch. 573	under 14; 14-18		Children under 14 prohibited. Minors between ages 14 to 18 must have signed permission from a parent/guardian to use the facilities; the signature must be signed in the presence of the facility operator; indicating they have read the warnings; that the minor agrees to wear safety goggles. The consent is only valid for twelve months from the date it is signed and dated.
North Carolina	N.C. Gen. Stat. § 104E-9.1	under 13		Children under 13 are prohibited from using tanning devices without a physician's written prescription specifying the nature of the medical condition requiring the treatment, the number of exposures and the time of exposure.
North Dakota	N.C. Cent. Code § Health and Safety Chapter 249	under 14	Parents/guardian must accompany children under 14 on all visits.	Children under 14 are prohibited from using tanning devices without a physician's written prescription. For minors under 18, parents/guardians must sign a consent that they read the warnings, agree to the terms of use, and agrees the minor will wear FDA approved eyewear, in the presence of a tanning salon employee or provides a notarized signature on the permission form. Permission is good for 12 months. Punishment for violation is specified in the law.
Ohio	Ohio Admin. Code 4713-19-09 (B)	under 18		Facility operators must obtain written consent from a parent/guardian before each tanning session (signed at the facility) that authorizes the number of sessions the minor may purchase. For

				that number of sessions, the minor may sign for themselves.
Oregon	OAR 333-119-0090 (2)	under 18		People under the age of 18 must have a parent/guardian's signature authorizing their use of the device and stating that they understand the risks involved. Signature must occur in the presence of an owner/operator.
Rhode Island	Deptartment of Health Rules and Regulations for the Registration of Tanning Facilities Part III; Sec. 9.5	under 18		Minors under the age of 18 may not use the device unless a parent/guardian has signed a consent form stating that they have read and understand the risks in the presence of an employee. The consent shall be provided in the presence of a facility staff member. Infants and other minors are not allowed in the room with adults who are tanning.
South Carolina	S.C. Code Ann. § ch. 61, sec. 106-4.5	under 18		People under the age of 18 must have written permission from a parent or guardian signed in the presence of the tanning facility operator.
Tennessee	Tenn. Code Ann. § 68-117-104	under 14; 14-18	Parents/guardians of children under 14 must accompany the child.	People under 18 must be accompanied by a parent/guardian who signs a consent form, or presents a notarized statement of consent, stating they understand the risks and a statement of their relationship with the minor.
Texas	Tex. Health and Safety Code Ann. § 145.008	under 13; 13-15; 16-18	For children ages 15 and under, a parent/guardian must be present at the facility while the device is in use.	Under age 13, a physician must recommend its use in writing. For minors 16-17 years old, a parent/guardian must sign stating that they understand the warnings, consents to the device's use and agrees to the minor's use of eyewear.
Utah	Utah Code Ann. § 26-15-13	under 18	Prohibits tanning salon operators from allowing anyone under age 18 to use a tanning device unless a parent/guardian appears in person on the minor's first visit and once every 12 months thereafter.	The parent /guardian must sign a consent form stating that they understand the risks of tanning, that the minor will use protective eyewear, and specify how many tanning sessions the minor is allowed in a 12 month period. Any salon that violates these rules may lose their license.
Virginia	Va. Code § 59.1-310.3	under 15		Unemancipated minors under age 15 must have a parent/guardian sign the release form advising them of the risks associated with indoor tanning, including filling out their skin type on the Fitzpatrick Scale (measuring how the skin reacts to sunlight). The operator of the tanning device must advise the customer of the time they should spend tanning based on the Fitzpatrick Scale. Release form must be signed every 6 months.
Wisconsin	Wis. Code Ann. § 255.08 (9)(a)	under 16		No one under age 16 is permitted to use tanning devices.

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Source: AIM at Melanoma (formerly The Charlie Guild Melanoma Foundation), StateNet, and NCSL, 2006-2008

Tan Now, Pay Later:
An Important Message for Patients

Until a few short years ago, almost everyone thought that spending hours in the sun would get you something commonly called "a nice healthy tan." Now we know better, and an important message is finally getting around: a tan isn't healthy—it's the sign of an increased risk of skin cancer and other problems.

According to the American Academy of Dermatology, skin cancer is now so common in the United States that one out of every five Americans will develop skin cancer in his or her lifetime. More than 1 million new cases of skin cancer were diagnosed in 1998, and the risk of melanoma—the deadliest of the skin cancers—doubles every 8 to 10 years.

OTHER CONSEQUENCES OF TOO MUCH SUN

Skin cancer is the most serious health risk from excessive sun exposure, but other problems can also occur. Another common consequence of skin damage from the sun (also known as *photodamage*) is the development of rough, scaly spots called *actinic keratoses* (AKs). Although AKs are not cancerous, skin cancer may develop later from these lesions.

Photodamage also causes cosmetic problems on the face and other areas of the skin exposed to the sun. These include fine or coarse wrinkling, roughness, dark spots, and laxity (which causes the skin to sag).

TREATMENTS FOR PHOTODAMAGE

Fortunately, a number of treatments are available to repair some of the damage caused by excessive sun exposure. For example, skin cancer that is detected in its early stages can be successfully treated. Topical medication or other techniques (such as freezing with liquid nitrogen) are helpful in eliminating AKs.

The cosmetic consequences of photodamage can be minimized by a variety of products and techniques. Several topical treatments have been clinically tested and found to be helpful in reversing some of the damage from sun exposure. In addition, dermatologists and plastic surgeons use products such as chemical peels and techniques such as dermabrasion, laser therapy, and surgery, to correct such cosmetic problems.

A word of caution: many products now sold over-the-counter carry claims that they reverse the effects of photodamage. Your health care provider is the best source of current, accurate information about products that have been clinically tested and proven to be of benefit.

PROTECTION FROM PHOTODAMAGE

The following are three simple tips for protecting yourself from the harmful effects of sun exposure.

- Avoid sun exposure (as much as possible) during the hours of 10 am to 4 pm. That's when radiation from the sun is strongest.
- Cover your skin. Loose, light clothing—long pants and long-sleeved shirts—will keep you cool but protected. A hat with a brim is a must to reduce sun exposure on the face and neck (and, if you have some hair loss, to protect your scalp as well).
- Use a sunscreen routinely. Many moisturizers and cosmetics are now formulated with a broad-spectrum sunscreen ingredient, providing some protection from minimal sun exposure. However, if you'll be spending time outdoors, add a sunscreen with an SPF of at least 15 or higher (depending on how easily your skin burns and how long you'll be outdoors).

Most Tanning Bed Users Exceed FDA Exposure Limits

BY BRUCE JANCIN
Denver Bureau

CHICAGO — At least 95% of indoor tanning facility patrons fail to follow the Food and Drug Administration's recommended exposure schedules, Dr. Robin L. Hornung reported at the annual meeting of the Society for Investigative Dermatology.

This was the central and disturbing finding of her study of tanning facility usage in one state, North Carolina. The situation is probably even worse elsewhere in the country, because North Carolina is one of only a few states with comprehensive safety regulations governing the indoor tanning industry. The state's approximately 8,000 tanning beds are overseen by three full-time state inspectors, said Dr. Hornung of Northwestern University, Chicago.

She evaluated 10 randomly selected patron records from each of 50 tanning salons throughout North Carolina. She found that even though the FDA-recommended exposure schedules are supposed to be posted on all tanning systems, approximately one-third of users started off at the maximum recommended exposure time, an exposure level that's meant to be reached gradually over a period of weeks.

Patrons averaged 2.37 tanning parlor visits per week during an average 6.3 weeks per year. Tanning bed time per week averaged 43 minutes. This represents a great deal of exposure both to UVA and UVB, Dr. Hornung said. The mean UVA output of the tanning beds averaged 19.2 mW/cm^2—roughly fourfold greater than UVA exposure at solar noon. The beds also emitted UVB at a mean of 6 minimum erythema dose per hour, the dermatologist continued.

These findings regarding indoor tanning excesses have policy implications, Dr. Hornung said. It may be time to provide closer oversight of the indoor tanning industry, with tougher enforcement of adherence to recommended exposure schedules. "More importantly, we may need to concentrate our efforts on further educating tanning system operators and tanning patrons so that they understand the implications of excessive tanning." Or maybe the whole notion of recommended exposure limits should be reconsidered, she said.

> ABOUT *one-third of tanning bed users started off at the maximum recommended exposure.*

Dermatologists will find the indoor tanning industry has become a muscular political foe. The industry is now a $2 billion per year business, with approximately 28 million Americans patronizing at least 25,000 tanning facilities, Dr. Hornung said.

While the epidemiologic evidence regarding a possible association between indoor tanning and malignant melanoma is conflicting, the evidence for other forms of harm is clear cut. The Centers for Disease Control and Prevention estimated that 700 emergency department visits per year were precipitated by indoor tanning. And a Wisconsin survey showed that 42% of the state's dermatologists and ophthalmologists reported treating skin and eye burns due to tanning bed injuries, as did nearly one-third of emergency room physicians. ■