*DERM 101: SKIN CARE THROUGH THE LIFESPAN

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* Promotional Speaker for Pfizer, Inc.
* Any unlabeled/unapproved uses of drugs or products referenced will be disclosed

*CONFLICT OF INTEREST
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RESTRICTIONS
* Identify two structures in the skin
* Discuss Fitzpatrick Skin Types
* Describe the two most common non-melanoma skin cancers
“My teacher says little girls can grow up to be anything they choose! Why did you choose to be an old lady?”
We are not getting any younger

Better than the alternative

We all do SOMETHING to age gracefully

One in three Caucasians will be diagnosed with skin cancer this year

Skin cancer is most deadly for African-Americans, Asians, and Latinos
1- Hair Shaft
2- Sebaceous Gland
3- Hair Follicle
4- Arrector Pili Muscle
5- Sudoriferous Gland
6- Epidermis
7- Dermis
8- Hypodermis
EPIDERMIS

- OUTER, THIN LAYER
- KERATINOCYTES, BASAL CELLS, MELANOCYTE CELLS
- LACKS BLOOD VESSELS
- FEW NERVE ENDINGS
- PROVIDES MECHANICAL PROTECTION AND BARRIER FUNCTION
- PHOTOSYNTHESIS OF VITAMIN D
**DERMIS**

- Thicker, connective tissue layer
- Collagen, elastin and reticular fibers
- Hair follicles, sweat and sebaceous glands, blood vessels, nerve, lymphatic vessels
- May constitute up to 20% of body weight
- Protects body from mechanical injury and maintenance of homeostasis
* SUBCUTANEOUS LAYER

* CONNECTIVE TISSUE LAYER BELOW THE SKIN CONTAINING LARGE AMOUNT OF FAT

* CARRIES MAJOR BLOOD VESSELS AND NERVES TO OVERLYING SKIN
SKIN FUNCTIONS

*BARRIER
* PHOTOPROTECTION
* THERMOREGULATION
* IMMUNE SURVEILLANCE
* HORMONAL SYNTHESIS
* INSENSIBLE FLUID LOSS PREVENTION
* SENSORY PERCEPTION
* THINNER STRATUM CORNEUM (EPIDERMIS)
* FEWER SWEAT AND OIL GLAND SECRETIONS
* DECREASED SUBCUTANEOUS FAT STORES
* RATIO OF SKIN SURFACE TO BODY WEIGHT HIGHEST AT BIRTH
* LESS MELANIN
* HIGHER WATER CONTENT: ABLE TO ABSORB MORE WATER AND LOSE EXCESS WATER FASTER THAN ADULT SKIN

* INFANT SKIN
<table>
<thead>
<tr>
<th>TYPE</th>
<th>SUN HISTORY</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>ALWAYS BURNS, NEVER TANS</td>
<td>RED-HEAD, FRECKLES IRISH, SCOT, WELSH</td>
</tr>
<tr>
<td>II</td>
<td>ALWAYS BURNS EASILY, TANS MINIMALLY</td>
<td>FAIR-SKINNED, CAUCASIANS</td>
</tr>
<tr>
<td>III</td>
<td>SOMETIMES BURNS, TANS GRADUALLY TO LIGHT BROWN</td>
<td>AVERAGE SKIN</td>
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<tr>
<td>IV</td>
<td>BURNS MINIMALLY, TANS TO MODERATE BROWN</td>
<td>MEDITERRANEAN-TYPE CAUCASIANS</td>
</tr>
<tr>
<td>V</td>
<td>RARELY BURNS, TANS WELL</td>
<td>MIDDLE EASTERN, SOME HISPANICS, SOME AFRICAN-AMERICANS</td>
</tr>
<tr>
<td>VI</td>
<td>NEVER BURNS, DEEPLY PIGMENTED</td>
<td>AFRICAN-AMERICANS</td>
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</table>
* 200-290 NM

* SHORTEST FROM THE SUN

* USUALLY ABSORBED BY THE OZONE LAYER AND DOES NOT REACH THE EARTH

* PROLONGED EXPOSURE CONSIDERED FATAL

* UVC
* 290-320 NM
* “TANNING RAY”
* STRONGEST IN NORTHERN HEMISPHERE IN SUMMER MONTHS OR WHEN EARTH’S ORBIT CLOSEST TO THE SUN
* PENETRATES EPIDERMIS

* UVB
* 320-400 NM
* MORE DAMAGE THAN UVB
* SAME STRENGTH YEAR ROUND
* PENETRATES LIGHT CLOTHING, WINDOWS
* SHOOTS THROUGH EPIDERMIS TO DERMIS
* ACCELERATE AGING PROCESS

*UVA*
* PHOTOPROTECTION

* DAMAGE FROM UV RADIATION IS CUMULATIVE
* CHILDREN SPEND MORE TIME OUTDOORS
* YOUNGER SKIN IS MORE SUSCEPTIBLE TO DAMAGE
* CHILDREN ARE ENTIRELY DEPENDENT UPON CAREGIVERS TO PRACTICE SUN PROTECTION
EXCESSIVE EXPOSURE TO SUNLIGHT CAUSES SKIN CANCER
SUNLIGHT CAUSES PHOTOAGING

*NO DOUBT ABOUT IT
* 1600 SUBJECTS GIVEN SUNSCREEN TO USE EVERY DAY FOR 4.5 YEARS
* 40% FEWER SQUAMOUS CELL CANCERS THAN CONTROL GROUP

AUSTRALIA SUNSCREEN STUDY
SNOW REFLECTS 80% OF SUN’S RAYS

SAND REFLECTS 25% OF SUN’S RAYS
NEW REGULATIONS FOR SUNSCREEN PRODUCTS

“SUNBLOCK”

“WATERPROOF

“PREVENTS SKIN CANCER”

NO LONGER PERMITTED

SUNSCREEN REGULATIONS EFFECTIVE JUNE, 2012
* BROAD SPECTRUM AND SPF 15 MAY SAY IT REDUCES RISK OF SKIN CANCER AND EARLY AGING

* PRODUCTS THAT PASS FDA’S TEST FOR PROTECTION AGAINST UVA AND UVB WILL BE LABELED BROAD SPECTRUM
SUNSCREENS WITH SPF 2-14 WILL BE LABELED WITH WARNING:

“Skin Cancer/Skin Aging Alert: Spending time in the sun increases your risk of skin cancer and early aging. This product has been shown only to help prevent sunburn, not skin cancer or early skin aging.”
SUNSCREENS WILL NO LONGER BE ABLE TO CLAIM SPF RATINGS HIGHER THAN 50

WILL NOW BE LABELED SPF 50 +
Sunscreen Labeling
According to
2011 Final Rule

If used as directed with other sun protection measures, this product reduces the risk of skin cancer and early skin aging, as well as helps prevent sunburn.

Only products labeled with both "Broad Spectrum" AND SPF15 or higher have been shown to provide all these benefits.

Drug Facts

Active Ingredients
Avobenzone 3%
Homosalate 10%
Octyl methoxycinnamate 7.5%

Uses
• helps prevent sunburn
• if used as directed with other sun protection measures (see Directions), decreases the risk of skin cancer and early skin aging caused by the sun

Warnings
For external use only
Do not use on damaged or broken skin
When using this product keep out of eyes. Rinse with water to remove.
Stop use and ask a doctor if rash occurs
Keep out of reach of children. If product is swallowed, get medical help or contact a Poison Control Center right away.

Directions
• apply liberally 15 minutes before sun exposure
• reapply:
  • after 40 minutes of swimming or sweating
  • immediately after towel drying
  • at least every 2 hours
• Sun Protection Measures. Spending time in the sun increases your risk of skin cancer and early skin aging. To decrease this risk, regularly use a sunscreen with a broad spectrum SPF of 15 or higher and other sun protection measures including:
  • limit time in the sun, especially from 10 a.m. – 2 p.m.
  • wear long-sleeve shirts, pants, hats, and sunglasses
  • children under 6 months: Ask a doctor

Inactive ingredients
aloe extract, barium sulfate, benzyl alcohol, carbomer, dimethicone, jojoba oil, methylparaben, octadecene/MA copolymer, polyglyceryl-3 distearate, phenethyl alcohol, propylparaben, sorbitan isostearate, sorbitol, stearic acid, tocopherol (vitamin E), triethanolamine, water

Other information
• protect this product from excessive heat and direct sun

Questions or comments?
Call toll free 1-800-XXX-XXXX
Does your current sunscreen meet new FDA regulations?

For several years, the FDA has reviewed all of the ingredients, terms and policies used in today’s sunscreen industry. Based on this review, and to provide the consumer with the BEST POSSIBLE SUNSCREEN, in 2012 manufacturers must comply with new FDA mandates.

The five new FDA mandates you should be aware of are:

1) BROAD SPECTRUM DESIGNATION—
   If a product is labeled BROAD SPECTRUM, the product is FDA-certified to protect against UVA radiation. SPF#: This is the level of protection against the UVB spectrum.

2) WATER RESISTANT CLAIM—
   A Sunscreen may claim to be Water Resistant, but it must be accompanied by a numerical identifier specifying either 40 or 80 minutes of protection.

3) MARKETING TERM RESTRICTIONS*—
   The following terms or claims are no longer allowed to be published:
   - Waterproof
   - All Day Protection
   - Instant Protection
   - Sweatproof
   - Sunblock

4) MANDATORY DRUG FACTS BOX—
   The Drug Facts Identification Box is now mandatory. It must include the statement that the sunscreen must be re-applied every 2 hours to insure adequate UV protection.

5) SKIN CANCER PREVENTION CLAIM—
   If the Broad Spectrum Claim is made on the front packaging the sunscreen may state within the drug facts box that: "When used as directed with other sun protection measures, this product reduces the risk of skin cancer and early skin aging."

*For the past 6 years, Rocky Mountain Sunscreen has published the Drug Facts Box on all our products anticipating the new FDA mandates.

We have NEVER claimed “Sweatproof”, “Sunblock”, or “All-day Protection” on any of our products.
*SUN SCREEN INGREDIENTS*
* Reflect UV radiation away from the skin
  * Titanium oxide
  * Zinc oxide
  * Iron oxide

**PHYSICAL SUNSCREENS**
* Absorbs UV radiation
* Not heavy or oily; elegant; applied like a moisturizer
* Known to cause irritation and allergic reactions
  * Aminobenzoic acid (PABA)
  * Avobenzone
  * Cinoxate
  * Dioxybenzone
  * Ecamsule
  * Homosalate
  * Oxybenzone
  * Padimate O

* CHEMICAL SUNSCREENS
CHILDREN AND INFANTS

* TITANIUM DIOXIDE 5% AND ZINC OXIDE 10% ARE LEAST IRRITATING TO SKIN
* MOST APPROPRIATE FOR CHILDREN AND INFANTS
* NO EVIDENCE TO SUGGEST THAT SUNSCREENS CANNOT BE USED ON EXPOSED SKIN OF INFANTS
* 2 MG/CM²
* 15 MINUTES BEFORE SUN EXPOSURE
* SHOT GLASS FULL FOR ENTIRE BODY
* ONE-HALF TEASPOON FOR FACE
* SHOULD NOT BE USED TO PROLONG SUN EXPOSURE, BUT RATHER TO PROTECT SKIN WHEN EXPOSURE IS UNAVOIDABLE

* THERE IS NO SUCH THING AS A HEALTHY TAN

APPLICATION
* ULTRAVIOLET PROTECTION FACTOR
  * 15: GOOD: CANNOT BE MARKETED AS UV-PROTECTIVE
  * 50+: EXCELLENT: ALLOWS 1/50th UV RADIATION TO PASS THROUGH
* OBAs: OPTICAL BRIGHTENING AGENTS
  * BOOST DISRUPTION OF UV RADIATION
  * MOST HOUSEHOLD DETERGENTS CONTAIN OBAs TO BRIGHTEN FABRICS
* **SLIP** on a shirt

* **SLAP** on a hat

* **SLIDE** on some shades

* **SLOP** on sunscreen

* **SLIP SLAP SLIDE SLOP**

THE FRIDAY BEFORE MEMORIAL DAY IS “DON’T FRY DAY”
SKIN CANCER
* SKIN CANCER IS THE MOST COMMON OF ALL CANCERS IN THE U.S.
* 90% OF SKIN CANCER CASES ARE SUN-RELATED
* 1 MILLION NONMELANOMA SKIN CANCERS DIAGNOSED ANNUALLY
* 48,000 DEATHS A YEAR FROM MELANOMA
* 12,000 DEATHS FROM OTHER SKIN CANCERS
* ONE BLISTERING SUNBURN IN CHILDHOOD OR ADOLESCENCE MORE THAN DOUBLES CHANCES OF DEVELOPING MELANOMA LATER IN LIFE
* REGULAR USE OF SUNSCREEN FOR THE FIRST 18 YEARS OF LIFE COULD REDUCE THE LIFETIME INCIDENCE OF NONMELANOMA SKIN CANCERS BY 78%
BASAL CELL CARCINOMA

* MOST COMMON CANCER OVERALL
* ALMOST 50% WILL HAVE ANOTHER WITHIN 5 YEARS
* INCREASED RISK OF MM
* SIGNIFICANT LOCAL INVASION AND DESTRUCTION
* SLOW GROWING, RARELY METASTASIZES
* PEARLY, TRANSLUCENT PAPULE OR NODULE
* ROLLED BORDER
* TELANGIECTASIAS
* ULCERATION
* 18 Year Old Male

* Scar in naso-labial fold for 2 years
* Cosmetically bothersome
14 Year old Female

* Acne treatment
* Bleeding papule on chest
* Present for >1 year
* SQUAMOUS CELL CARCINOMA

* SECOND MOST COMMON SKIN CANCER
* RARE IN DARKER SKINNED PERSON, BUT MORE AGGRESSIVE IN THESE INDIVIDUALS
* SCC ARISING IN AN ACTINIC KERATOSIS HAS LOW INCIDENCE OF METASTASIS
* LESIONS ON MUCOUS MEMBRANES HAVE HIGHEST RISK OF METASTASIS
* PAPULES, PLAQUES, OR NODULES THAT GROW SLOWLY
* SCALY OR ULCERATED REDDISH-BROWN NODULE
* MAY HAVE HYPERTROPHIC SURFACE
* BOWEN’S DISEASE: NON-SUN RELATED SKIN CANCER ON EXTREMITIES DE NOVO
* SCC ARISING ON MUCOUS MEMBRANE OR IMMUNOCOMPROMISED PATIENT SHOULD BE REGARDED AS METASTATIC
MALIGNANT TUMOR OF EPITHELIAL KERATINOCYTES
ARISES AS RESULT OF EXOGENOUS CARCINOGENS (SUNLIGHT, EXPOSURE TO RADIATION)

SQUAMOUS CELL CARCINOMA
MALIGNANT MELANOMA

* ONE PERSON DIES OF MELANOMA EVERY HOUR
* THE INCIDENCE OF MELANOMA HAS TRIPLED AMONG CAUCASIANS BETWEEN 1980 AND 2003
* MELANOMA IS THE MOST COMMON CANCER IN FEMALES BETWEEN AGES 25-29 YEARS
* SECOND ONLY TO BREAST CANCER IN WOMEN 30-34 YEARS
* ACCOUNTS FOR 3% OF ALL PEDIATRIC CANCERS
OLDER CAUCASIAN MEN HAVE THE HIGHEST MORTALITY RATE FROM MELANOMA

INVASIVE MELANOMA IS THE FIFTH MOST COMMON CANCER IN MEN AND THE SIXTH MOST COMMON CANCER IN WOMEN

MELANOMA
16 Year Old Female

*Brown nevus on mid-lower back*
*Recently begun to itch*
*No changes in color, border, or symmetry*
* ABCDEs

* ASYMMETRY
* BORDER IRREGULARITY
* COLOR VARIATION
* DIAMETER
* EVOLUTION
* SENSATION
* Over half of all new cancers are skin cancers
* 79% of new skin cancers are basal cell
* 15% are squamous cell
* 5% are invasive melanoma

*Skin Cancer*
Both basal cell carcinoma and squamous cell carcinoma have better than 95% cure rate if detected and treated early.

More than 1 million new cases of skin cancer will be diagnosed in the United States this year.
An estimated 10,590 people will die of skin cancer this year:

* 7770 from melanoma
* 2820 from other skin cancers
*TANNING BEDS AND SKIN CANCER*
* HIGH-PRESSURE SUNLAMPS EMIT AS MUCH AS 12 TIMES THE ANNUAL UVA COMPARED TO THE SUN
* ONE INDOOR TANNING SESSION INCREASES RISK OF MM BY 20%
* FIRST USE OF TANNING BED BEFORE AGE 35 INCREASE RISK FOR MM 75%
* 30 MILLION PEOPLE TAN INDOORS IN THE US EVERY YEAR; 2-3 MILLION ARE TEENS
* INDOOR TANNING INDUSTRY HAS ANNUAL ESTIMATED REVENUE OF $5 BILLION
* 71% OF TANNING SALON PATRONS ARE FEMALE
* ON AN AVERAGE DAY MORE THAN 1 MILLION AMERICANS USE TANNING SALONS

* INDOOR TANNING REGULATED BY FDA AS CLASS I MEDICAL DEVICE: SAME AS ELASTIC BANDAGES AND TONGUE DEPRESSORS
MINORS UNDER AGE 18 PROHIBITED FROM USING AN INDOOR UV TANNING FACILITY UNLESS THE USE IS PRESCRIBED BY A PHYSICIAN

PASSED
3/14/2014

COLORADO HB 1054
Skin cancer is the most frequently diagnosed cancer in the United States. Malignant Melanoma is increasing faster than any other cancer. Ultraviolet light exposure (including indoor tanning) has been linked to higher rates of melanoma and non-melanoma skin cancers. 55% increase in risk for young women developing MM associated with a history of 40 hours or more of tanning bed use. 2.3 million American teenagers visit tanning salons annually.

*DISCUSSION*
Frequent tanning has biologic reinforcing properties

50% of frequent tanners showed withdrawal-type symptoms

60% thought tan people were better looking

AAD has launched a public educational campaign aimed specifically at teens regarding unsafe indoor tanning
• Nearly all of the salons denied the known risks of tanning. Ninety percent of the salons stated that indoor tanning did not pose a health risk, while over half of the salons denied that indoor tanning would increase the risk of skin cancer.
• Nearly 80% of the salons asserted that indoor tanning would be beneficial to the health of a fair-skinned teenage girl. Several salons asserted that indoor tanning would prevent cancer.
• Tanning salons fail to follow FDA recommendations on tanning frequency. Three-quarters of salons allow customers to tan daily, despite FDA recommendations that indoor tanning be limited to no more than three visits in the first week.
• Salons used many approaches to downplay the health risks of indoor tanning. Salons stated that young people are not at risk for developing skin cancer; that rising rates of skin cancer are linked to increased use of sunscreen; that government regulators had certified the safety of indoor tanning; and that “it’s got to be safe, or else they wouldn’t let us do it.”

Salons also frequently referred the investigators to industry websites that downplay indoor tanning’s health risks and tout the practice’s alleged health benefits.
• Tanning salons target teenage girls in their advertisements. Print and online advertising to teenage and college-aged girls frequently offers student discounts and “prom,” “homecoming,” and “back-to-school” specials.
Hanna, Diane et al. A Practical Management of Atopic Dermatitis: Palliative Care to Contact Dermatitis. Journal of the Dermatology Nurses’ Association; 2009, Vol 1, 97-105
Clinical & Aesthetic Dermatology: April 2010, Volume 3, No. 4
Cosmetic Dermatology: April 2010, Volume 23, No. 4
Cosmetic Dermatology: February 2010, Volume 23 No. 2
Cosmetic Dermatology: March 2008, Volume 21, No. 3
Cosmetic Dermatology: April 2008, Volume 21, No. 4
* www.ncsl.org: National Conference of State Legislatures
* www.skincancer.org: Skin Cancer Foundation
* www.rmsunsreen.com: Rocky Mountain Sunscreen
* www.fda.gov: FDA for Consumers
* Journal of the Dermatology Nurses’ Association: March/April 2014
* Journal of the Dermatology Nurses’ Association: May/June 2014

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