



Skin Cancer: What You Need to Know

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Esophageal Cancer



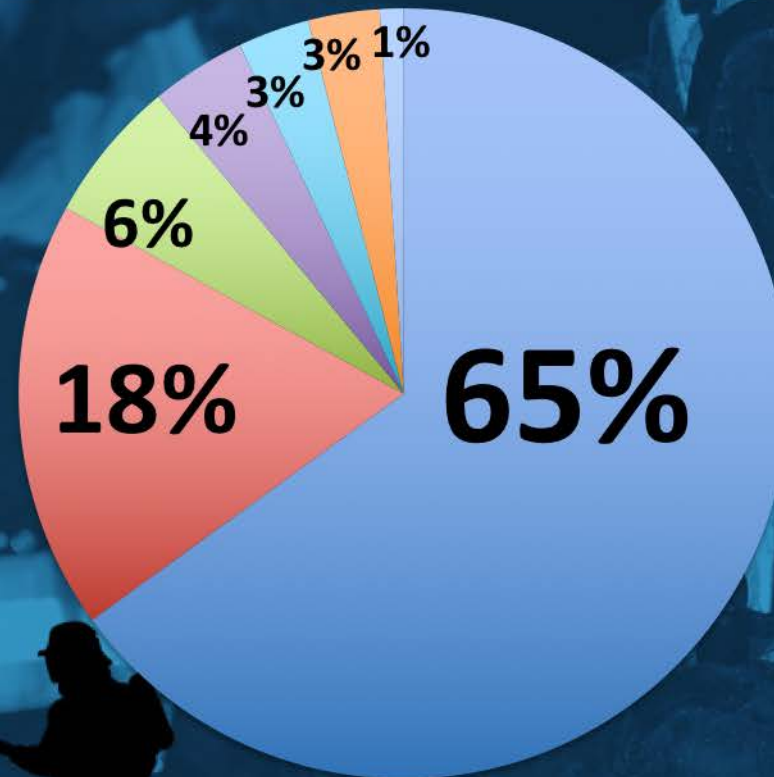


PART 1: CARDIAC VS. CANCER

IAFF LODD ANALYSIS

JANUARY 1, 2002 - DECEMBER 31, 2018

Since 2002, 65% of the firefighters on the IAFF Fallen Fire Fighter Memorial Wall of Honor have died from cancer



- Cancer 65%
- Heart disease 18%
- Trauma 6%
- Respiratory arrest 4%
- Unknown/Other 3%
- Burn 3%
- Infectious disease 1%

"Other" includes stroke, military, aneurysm, crushed, drowning, bleeding, heat stroke and electric shock.

IAFF data

Joanie Cullinan Melanoma



Skin Cancer in the US

- ▶ Most common cancer in US
- ▶ 1 in 5 people are diagnosed with skin cancer by age 70
- ▶ 40-50% of people age 65 or older have skin cancer *
- ▶ 9,500 new cases of skin cancer occur daily
- ▶ > 1 million new skin cancers / year

Skin Cancer in the Fire Service: What we know

- ▶ More
- ▶ Younger
- ▶ Meta- analysis

- ▶ Sama et al. Mass Cancer Registry Files from 1980's
 - ▶ The rate of melanoma in firefighters was higher than in the general population and in the group of police
- ▶ Pukkala et al. Nordic study with 45 years of follow up
 - ▶ The incidence of melanoma in firefighters
- ▶ LeMasters et al. Skin cancer increased risk
- ▶ Moore et al. Florida Firefighters Cancer Initiative
 - ▶ 95.8% completion of survey
 - ▶ Elevated prevalence of MM
 - ▶ Median age of MM was 42yo

Link between melanoma and the fire service has been identified in many countries

- ▶ Fincham et al. Alberta Cancer Registry Melanoma
 - ▶ The odds of getting melanoma are 3.65 times greater
- ▶ Glass et al. Australia Firefighters Health Study.
 - ▶ Standardized incidence rate of melanoma found to be 1.45 greater for firefighters.
- ▶ Ide et al. Cancer incidence and mortality in serving whole-time Scottish firefighters 1984-2005.
 - ▶ Melanoma incidence higher.

Why? How?



PART 2: FIREFIGHTER CANCER RISKS PINPOINTING OCCUPATIONAL EXPOSURES



"Pinpointing the cause of cancer is extremely difficult because firefighters are not exposed to just one agent. They are exposed to multiple cancer-causing agents. Because of the multiple exposures and the multiple routes of exposure — they inhale carcinogens and carcinogens are absorbed through the skin — it is also highly unlikely for firefighters to get only one type of cancer," - Grace LeMasters Ph.D.



PART 2: TYPES OF CANCER EXPOSURES

OCCUPATIONAL EXPOSURES

CANCER RISK AMONG FIREFIGHTERS:

A Review & Meta-Analysis of 32 Studies | Grace LeMasters, PHD 2006

Firefighters are exposed to many different carcinogens:
Benzene, diesel exhaust, chloroform, soot, styrene and formaldehyde are the leaders!

Many of these chemicals can be inhaled, ingested, and injected...
BUT even more importantly... absorbed.

SOOT

Soot contains polycyclic aromatic hydrocarbons (PAHs), many of which are **KNOWN carcinogens** in humans.

“

When firefighters sweat and their pores open up, **SOOT**, which is a GROUP-ONE carcinogen AND a TOP cancer-causing agent, gets sucked into the body through the skin on their faces, hands, and under their gear. — Dr. Grace LeMasters

”



PART 2: TYPES OF CANCER EXPOSURES

OCCUPATIONAL EXPOSURES

RELATIVE SKIN PERMEABILITY

Dr. Stuart Baxter, January 22, 2009 | UC seminar

Although no studies have been conducted specifically on toxic skin absorption during overhaul, many substances in the overhaul environment can be absorbed through skin. The groin is 300 times more permeable than the foot!

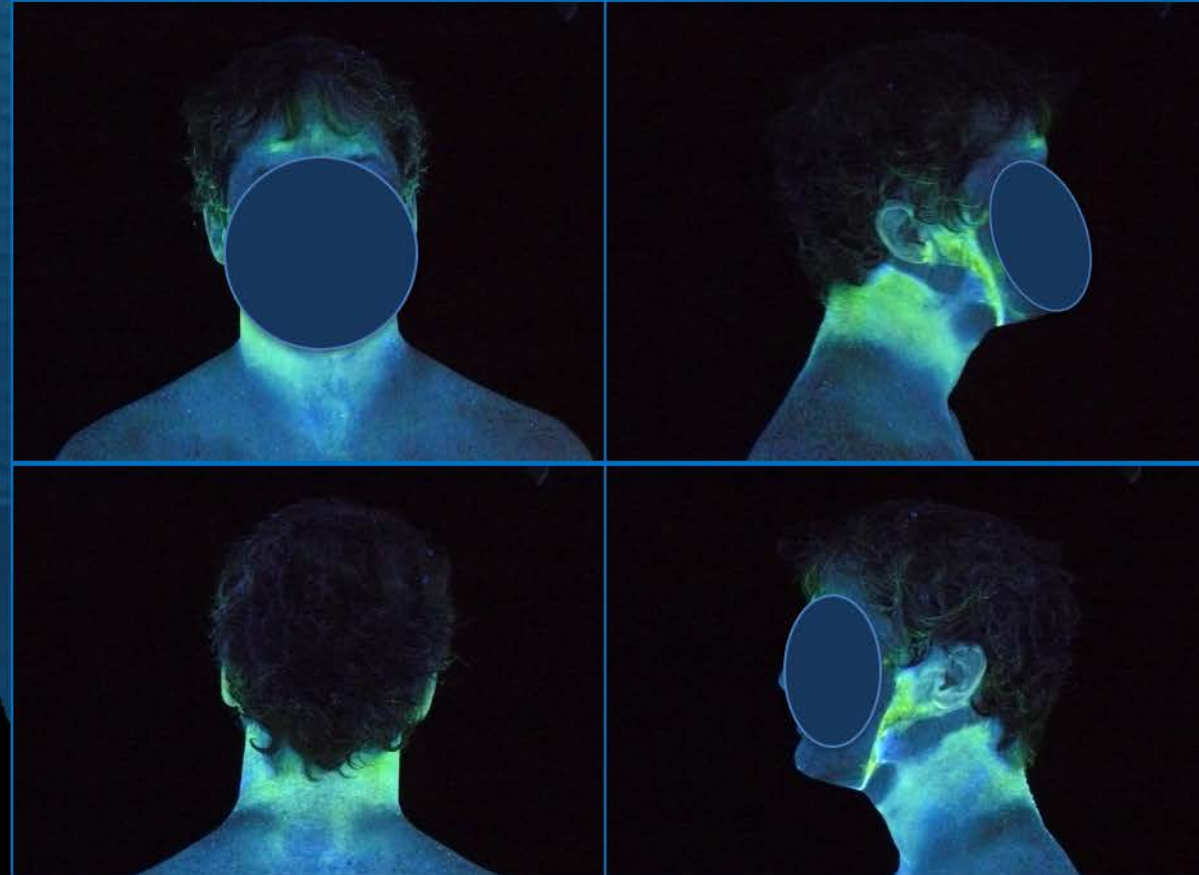
GROIN AREA	300
JAW ANGLE	93
FOREHEAD	43
SCALP	25
BACK	12
PALM	6
FOOT ARCH	1



PART 2: TYPES OF OCCUPATIONAL EXPOSURES

POTENTIAL EXPOSURE ISSUES

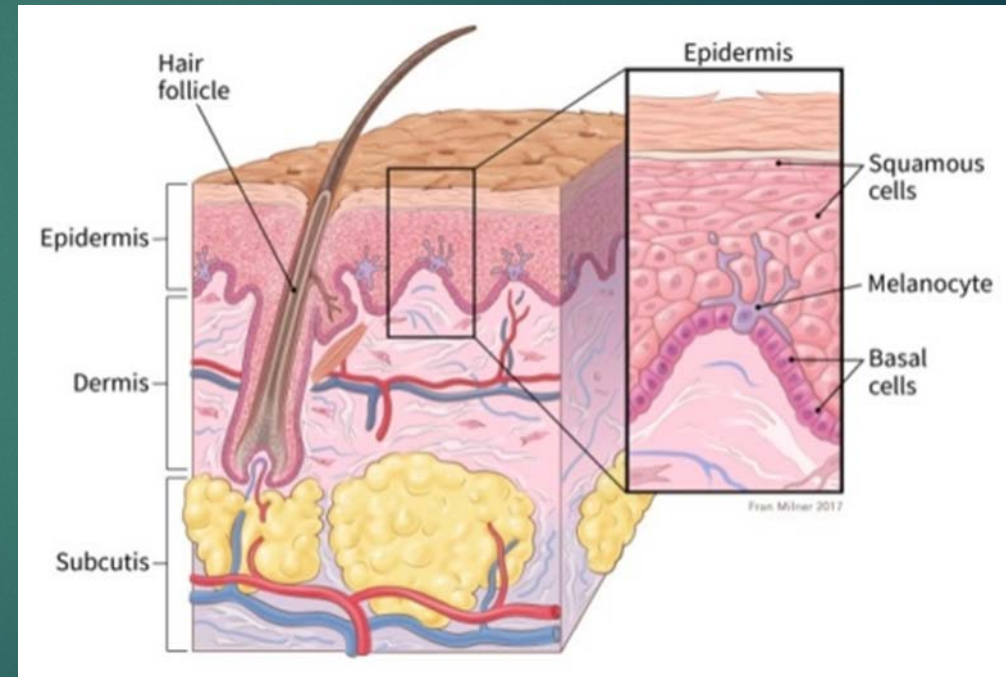
UV Photos: Head and Neck (RTI Test #2225)



There were very heavy aerosol deposits on the neck, cheeks, ears, and hair due to penetration through the hood. The dark bands below the ears were relatively clean areas that were covered by the mask straps.

What is skin cancer?

- ▶ Three major types of skin cancer
- ▶ 1. Basal Cell
- ▶ 2. Squamous Cell
- ▶ 3. Melanoma



Basal cell carcinoma- what does it look like?

- ▶ A pimple that comes and goes
- ▶ A "shaving accident" in the same place
- ▶ A "pearly or waxy" looking bump



Basal cell carcinoma in firefighters



Squamous cell carcinoma

- ▶ Second most common
- ▶ Growth speed varies
- ▶ Majority are on head and neck
- ▶ 95% cure rate if treated early



Squamous cell carcinoma- what does it look like?

- ▶ Feels gritty or like fine grade sandpaper
- ▶ Looks like dry skin
- ▶ A bump or an open abrasion
- ▶ Can be painful or bleed



Squamous cell carcinoma



Not all Squamous cell carcinomas are the same....

- ▶ Metastatic potential
 - ▶ Ear
 - ▶ Lip
 - ▶ >2cm
 - ▶ Chronic Lymphocytic Leukemia
 - ▶ Transplant
 - ▶ 5yr survival 25%



How does a squamous cell carcinoma start?

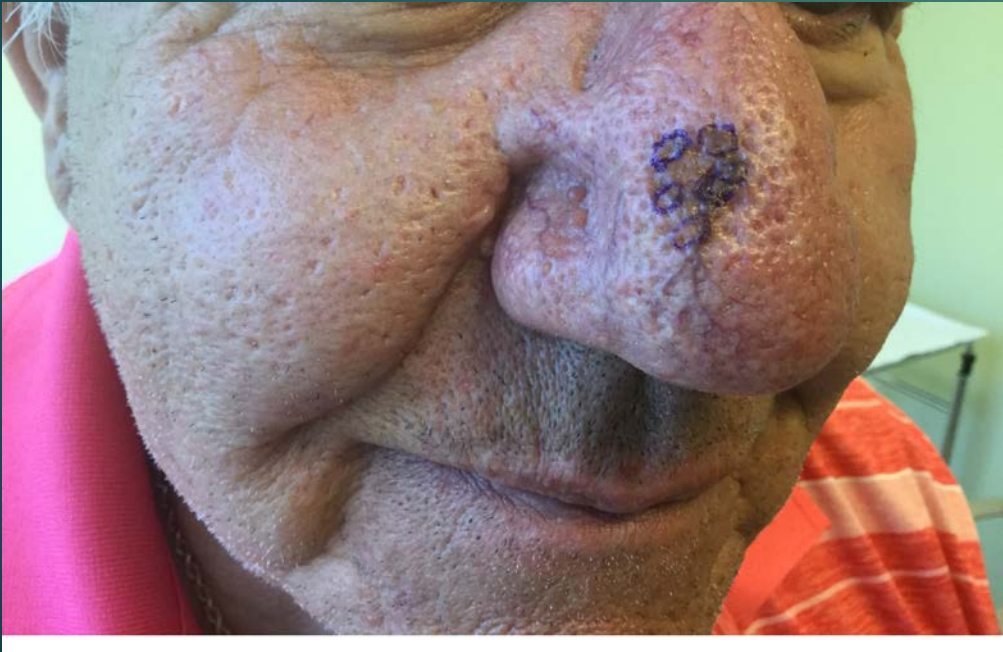
- ▶ Actinic keratosis or a "Pre-cancer"



Melanoma



Melanoma



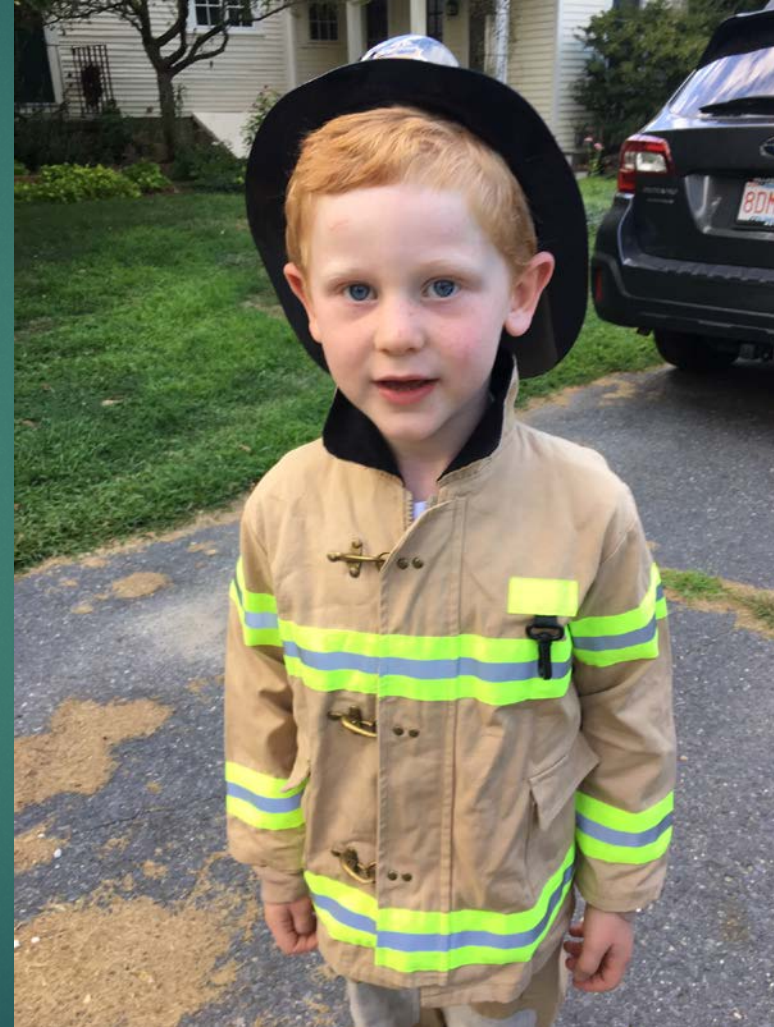
Melanoma

- ▶ Projected 2019 5th most common cancer in US
- ▶ Most common cancer in women ages 15 - 29
- ▶ Women have a higher risk of metastatic melanoma than breast cancer for ages < 39
- ▶ Lifetime risk is 1 in 55
- ▶ 1 person dies of melanoma every hour



Melanoma- Risk Factors

- ▶ Skin that burns or does not tan
- ▶ Hair that is blond or red
- ▶ Blue eyes
- ▶ Bob Marley
- ▶ Family History



Melanoma and Sunburns

- ▶ Risk of melanoma doubles if > 5 sunburns
- ▶ 80% increase in risk if there was a blistering sunburn btwn ages 15-20
- ▶ Risk of MM doubles if 1 blistering sunburn in childhood



Skin Cancer and Tanning Beds

- ▶ Increased Risk
 - ▶ One exposure is all it takes
 - ▶ 2.5 times more likely to develop SCC
 - ▶ 75% Increase risk of Melanoma




What does Melanoma look like?

BE A HERO!


CATCH SUSPICIOUS SPOTS

Use the ABCDEs of melanoma.


Melanoma is the deadliest form of skin cancer. However, when detected early, it can be effectively treated. Look for the following warning signs of melanoma when performing skin exams:

A


ASYMMETRY
One half is unlike the other half.

B


BORDER
Irregular, scalloped or poorly defined border.


C


COLOR
Varied from one area to another; has shades of tan, brown or black; sometimes white, red, or blue.

D

DIAMETER
While melanomas are typically greater than 6mm (the size of a pencil eraser) when diagnosed, they can be smaller.

E

EVOLVING
A mole or skin lesion that looks different from the rest or is changing in size, shape or color.
Example:




AMERICAN ACADEMY OF
SPOT
SKIN CANCER
DERMATOLOGY®

Pregnancy and Melanoma

- ▶ 8% of all malignancies during pregnancy
- ▶ 2.6 cases per 1000 births
- ▶ Thicker melanomas



How do I reduce my risk of skin cancer?

- ▶ Avoid sun between 10-2
- ▶ Wear sunblock all year long
- ▶ Wear sun protective clothing and hats



What is sunblock?

- ▶ Chemical vs Physical Block
- ▶ UVA and UVB
- ▶ SPF bigger is better
- ▶ Apply a shot glass amount every 2 hrs

eclipse^{Rx}™ SUNSCREEN APPLICATION TIPS



1 OZ. RULE

When you are at the beach or pool and are exposed to continuous sunlight the appropriate amount of sunscreen that should be applied to your skin is 1 oz. which equals a shot glass worth.

You should reapply this amount every 1 to 2 hours.

FINGERTIP APPLICATION GUIDE

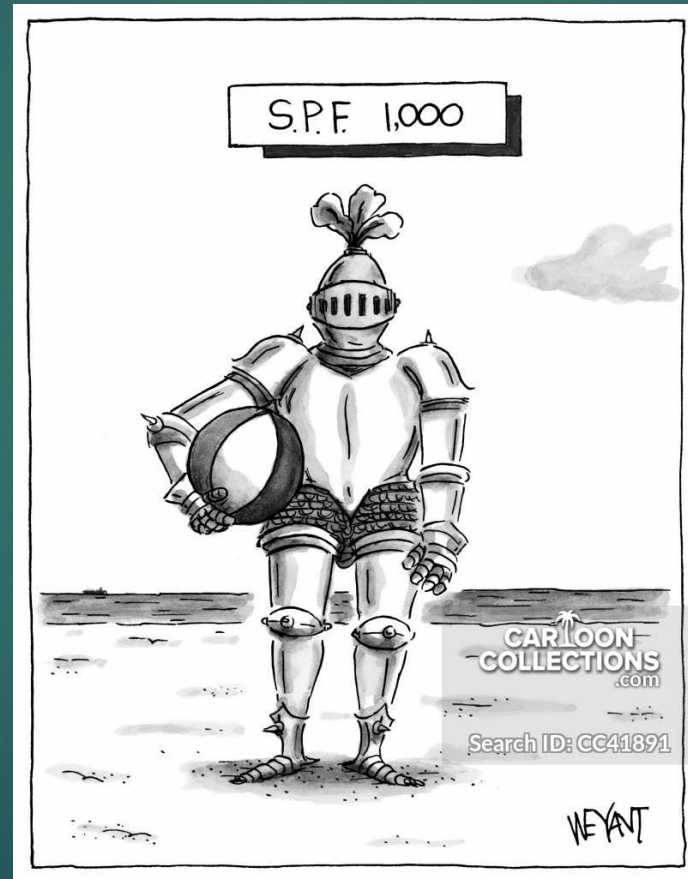


1 Finger Tip Unit (FTU) of sunscreen is equal to the amount of lotion applied from the tip to the first joint of your index finger, as illustrated in the image on the left.

DIAGRAM BELOW SHOWS NUMBER OF FTUs OF SUNSCREEN TO APPLY TO THE DIFFERENT PARTS OF YOUR BODY

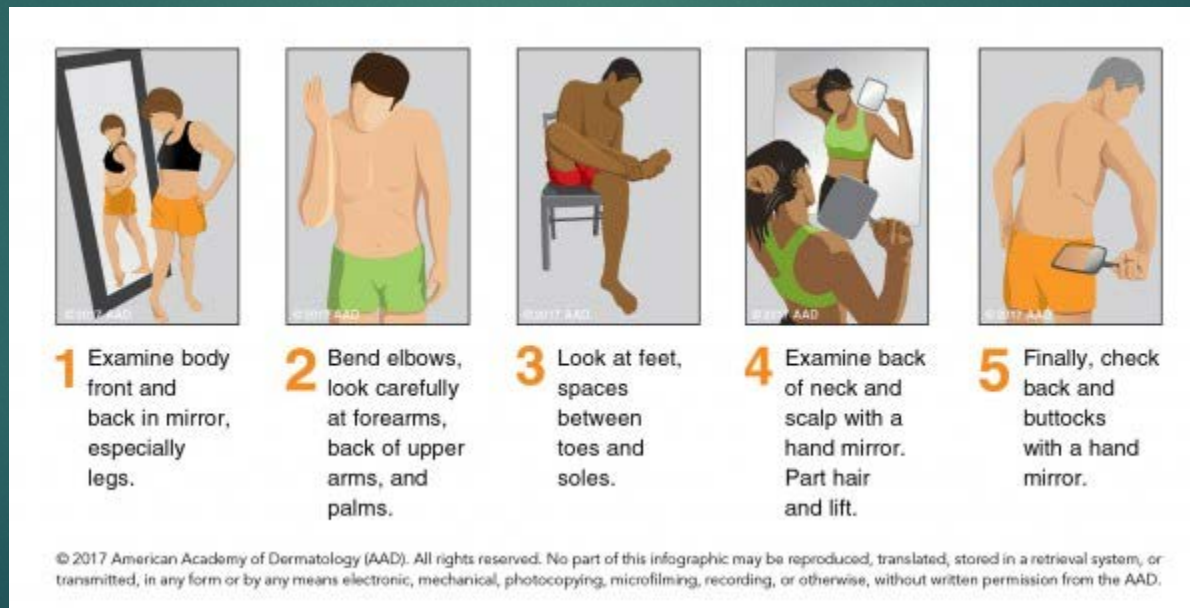


The Ultimate Sunblock



How do I “find” a skin cancer?

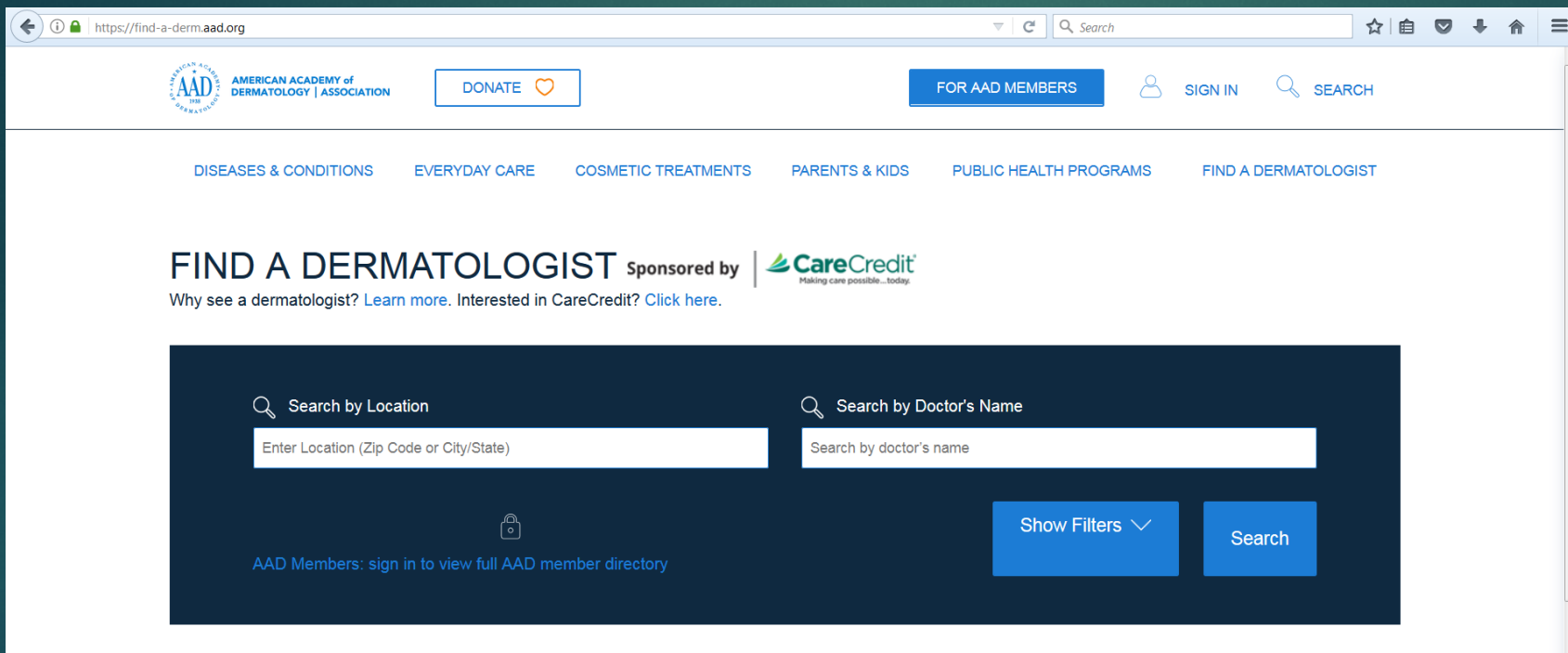
- ▶ Self skin exams
- ▶ 50% of Melanomas are found by patients



I have had skin cancers in the past...now what do I do?

- ▶ Annual photodynamic therapy
- ▶ Nicotinamide 500mg 1 tablet in AM and 1 tablet in PM
- ▶ Vitamin A supplements
- ▶ Wear hats and clothing with SPF woven into the cloth fibers
- ▶ Eat lots of fresh vegetables and fruit (blueberries)
- ▶ Take photos with your cell phones, set reminders, and take follow-up pictures of the “spots” every six months looking for changes

How do I find a dermatologist?



The screenshot shows the AAD website's 'Find a Dermatologist' page. The header includes the AAD logo, a 'DONATE' button, a 'FOR AAD MEMBERS' button, and links for 'SIGN IN' and 'SEARCH'. A navigation bar lists categories: 'DISEASES & CONDITIONS', 'EVERYDAY CARE', 'COSMETIC TREATMENTS', 'PARENTS & KIDS', 'PUBLIC HEALTH PROGRAMS', and 'FIND A DERMATOLOGIST'. The main heading is 'FIND A DERMATOLOGIST', sponsored by CareCredit. Below this, there are two search input fields: 'Search by Location' with a placeholder 'Enter Location (Zip Code or City/State)' and 'Search by Doctor's Name' with a placeholder 'Search by doctor's name'. A 'Show Filters' button with a dropdown arrow and a 'Search' button are positioned to the right of the input fields. A lock icon and a message 'AAD Members: sign in to view full AAD member directory' are located at the bottom left of the search area.

https://find-a-derm.aad.org

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DONATE

FOR AAD MEMBERS

SIGN IN

SEARCH

DISEASES & CONDITIONS


EVERYDAY CARE

COSMETIC TREATMENTS

PARENTS & KIDS

PUBLIC HEALTH PROGRAMS

FIND A DERMATOLOGIST

FIND A DERMATOLOGIST Sponsored by  CareCredit[®]
Making care possible...today.

Why see a dermatologist? [Learn more.](#) Interested in CareCredit? [Click here.](#)

Search by Location

Enter Location (Zip Code or City/State)

Search by Doctor's Name

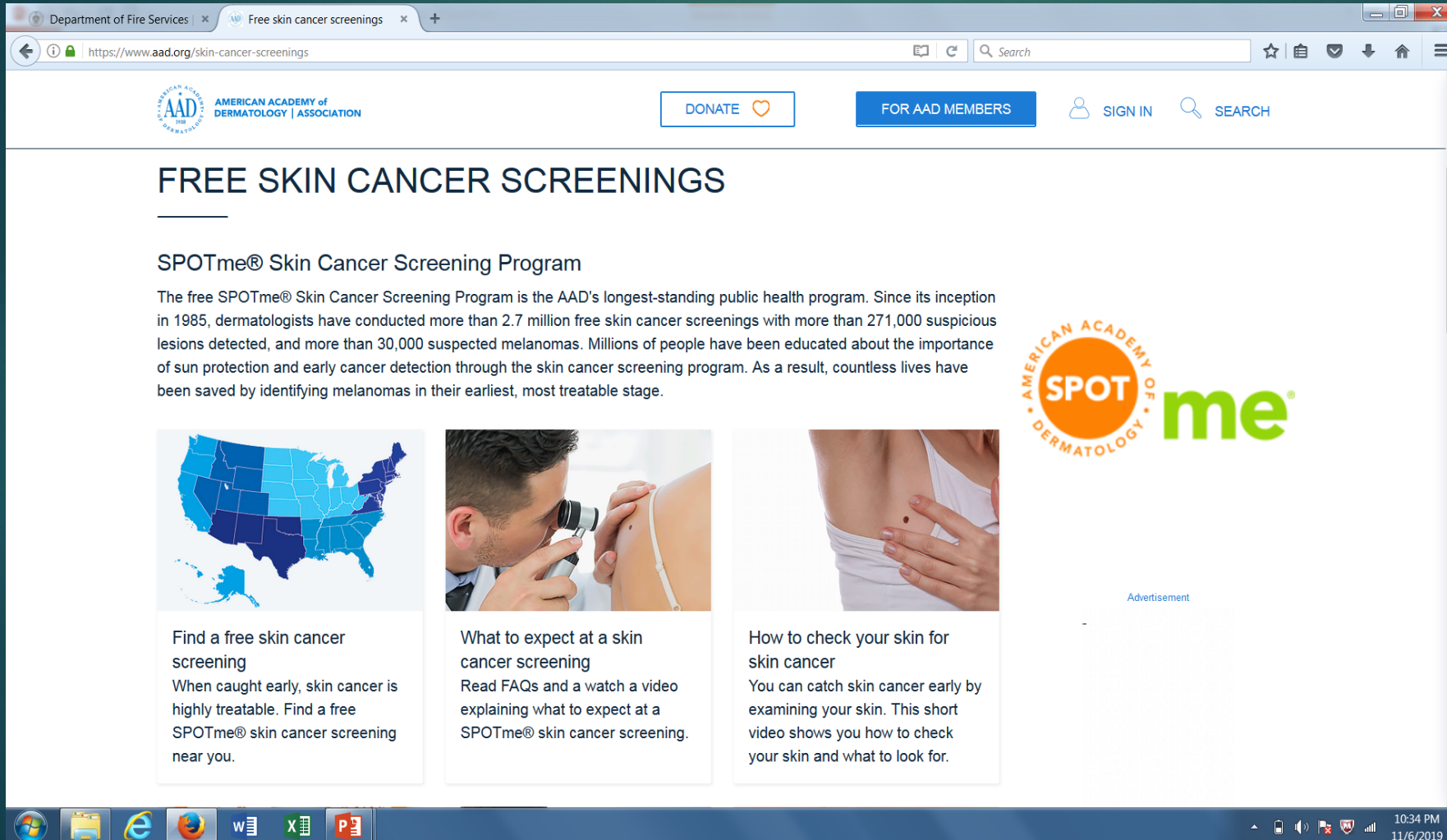
Search by doctor's name

Show Filters

Search

AAD Members: sign in to view full AAD member directory

SPOTme Skin Cancer Screenings



The screenshot shows a web browser window with the URL <https://www.aad.org/skin-cancer-screenings>. The page features the American Academy of Dermatology (AAD) logo and navigation links for "DONATE", "FOR AAD MEMBERS", "SIGN IN", and "SEARCH". The main heading is "FREE SKIN CANCER SCREENINGS". Below this is the "SPOTme® Skin Cancer Screening Program" section, which includes a paragraph about the program's history and impact. To the right of the text is the "SPOTme" logo, which consists of an orange circle with "SPOT" inside, "AMERICAN ACADEMY OF DERMATOLOGY" around it, and "me" in green. Below the text are three columns of content: a map of the United States with a link to "Find a free skin cancer screening", a photo of a dermatologist using a dermoscope with a link to "What to expect at a skin cancer screening", and a photo of a person's back with a mole with a link to "How to check your skin for skin cancer". The Windows taskbar at the bottom shows the date as 11/6/2019 and the time as 10:34 PM.

Department of Fire Services | Free skin cancer screenings | <https://www.aad.org/skin-cancer-screenings>

AMERICAN ACADEMY OF DERMATOLOGY | ASSOCIATION

DONATE

FOR AAD MEMBERS

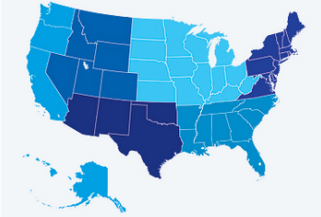
SIGN IN

SEARCH

FREE SKIN CANCER SCREENINGS

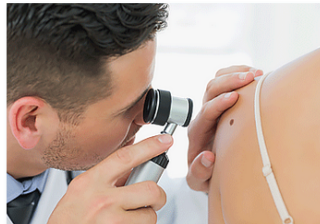
SPOTme® Skin Cancer Screening Program

The free SPOTme® Skin Cancer Screening Program is the AAD's longest-standing public health program. Since its inception in 1985, dermatologists have conducted more than 2.7 million free skin cancer screenings with more than 271,000 suspicious lesions detected, and more than 30,000 suspected melanomas. Millions of people have been educated about the importance of sun protection and early cancer detection through the skin cancer screening program. As a result, countless lives have been saved by identifying melanomas in their earliest, most treatable stage.




Find a free skin cancer screening

When caught early, skin cancer is highly treatable. Find a free SPOTme® skin cancer screening near you.



What to expect at a skin cancer screening

Read FAQs and watch a video explaining what to expect at a SPOTme® skin cancer screening.



How to check your skin for skin cancer


You can catch skin cancer early by examining your skin. This short video shows you how to check your skin and what to look for.

Advertisement

10:34 PM
11/6/2019

SPOTme Form

THIS FORM CANNOT BE REPLICATED



SPOTme
SCREENING REGISTRATION AND REPORT FORM.

PLEASE COMPLETE THIS SECTION

Screening State: MA Screening Zip Code: 01081 Screening Date: 11/08/19

American Academy of Dermatology
9500 W. Bryn Mawr Avenue, Suite 500
Rosemont, IL 60018

Use of these forms does not imply product or service endorsement by the American Academy of Dermatology.

Location of Skin Cancer Screening? ☐ Mail ☐ Private Office ☐ Clinic/Hospital ☐ Health Fair ☐ Outdoor Event (i.e., beach, state fair, etc.) ☐ Other: _____

PATIENT TO COMPLETE

THE AMERICAN ACADEMY OF DERMATOLOGY WILL NEVER SHARE OR SELL YOUR INFORMATION. THE DATA IS USED FOR CUMULATIVE TRACKING PURPOSES ONLY.

Name: _____ Date of Birth: 11 / 08 / 19

Address: _____ City: _____ State: _____ Zip: _____

Telephone: Home or Cell: () _____ Sex: ☐ Male ☐ Female

Are you? ☐ White ☐ Black ☐ Hispanic ☐ Asian ☐ Mixed race ☐ Other _____

Education completed: ☐ Elementary ☐ College
☐ High school ☐ Graduate school/more

Have you ever had skin cancer? ☐ Yes ☐ No

If yes, was it? ☐ Melanoma ☐ Squamous Cell Carcinoma
☐ Basal Cell Carcinoma ☐ Unsure

Do you have any new moles or moles that have changed recently in size, color, or shape? ☐ Yes ☐ No

Have you ever been to a skin cancer screening before? ☐ Yes ☐ No

Do you have a regular dermatologist? ☐ Yes ☐ No

I came to the screening today because (check all that apply):
☐ No insurance ☐ No dermatologist ☐ Family history of skin cancer
☐ Cannot afford ☐ I have a spot I am concerned about

Do you use sunscreen? ☐ Always ☐ Sometimes ☐ Rarely ☐ Never

Do you wear sun-protective clothing? ☐ Always ☐ Sometimes ☐ Rarely ☐ Never

How many painful and blistering (for 2 or more days) sunburns did you have prior to age 20? ☐ 0 ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ 10+

Approximately how many hours do you spend in the sun per week for work and recreation on average throughout the year?
☐ 0 ☐ less than 1 hour ☐ 1-3 ☐ 4-10 ☐ 11-20 ☐ 21-30 ☐ 30+

Does your skin tend to burn with sun exposure?
☐ Always/very sun sensitive ☐ Sometimes ☐ Rarely/Never

Have you ever used indoor tanning? ☐ Yes ☐ No *If yes, answer next 2 questions:

At what age did you begin using indoor tanning?
☐ 0-18 ☐ 19-29 ☐ 30-39 ☐ 40-49 ☐ 50+

Approximately how many times over your lifetime have you used indoor tanning equipment?
☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ 21-30 ☐ 30+

If you are found to have a presumptive diagnosis, by checking this box you are giving the Academy or its representatives permission to contact and confirm diagnosis.

Information contained in email messages may be privileged and confidential. There is some risk that any information that may be contained in such email may be disclosed to, or intercepted by, unauthorized third parties. Your use of email to receive communication from us indicates that you acknowledge and accept the possible risks associated with such communication.

☐ Yes ☐ No Email: _____

GENERAL RELEASE FORM: PATIENT READ AND SIGN BELOW.

This screening is voluntary and free of charge. I understand that the examination results will be given to me with recommendations and that I am responsible for any costs involved in following these recommendations.

I understand that this is a rapid screening and is not a complete examination for skin cancer. I understand that this screening examination is not as complete as, or a substitute for, a full skin examination by my own physician.

Signed: _____
(Patient, Parent/Guardian of minor patient, or patient's personal representative)

I understand that I am responsible for my own health. The responsibility for any follow-up examinations to check abnormalities found during this SPOTme screening examination lies solely with me and not with any participating organization, physician or other health care volunteer.

I hereby release the screening physician, all other health care volunteers and the sponsoring agencies of the SPOTme screening program from all responsibility in connection with this screening examination.

Date: _____

PATIENT AUTHORIZATION FOR USE AND DISCLOSURE OF PATIENT HEALTH INFORMATION: PATIENT READ AND SIGN BELOW.

I understand that, although the Health Insurance Portability and Accountability Act of 1996 ("HIPAA") privacy and security rules do not apply to the American Academy of Dermatology, the American Academy of Dermatology takes steps to protect the privacy of my information as can be found in its Statement of Privacy found at spotme.org/Privacy. I hereby authorize the disclosure of my health information that is created during or as a result of my examination today at the SPOTme screening to the American Academy of Dermatology for its research and data analytics purposes. These purposes will include, but may not be limited to, analyzing my health information with health information from other patients to determine the prevalence of certain types of skin cancers and other skin diseases in certain types of people.

Signed: _____
(Patient, Parent/Guardian of minor patient, or patient's personal representative)

I understand that I may cancel this authorization at any time with a written request submitted to the physician or physicians examining me today (named below), but that such a cancellation will have no effect on actions taken in reliance on this authorization prior to that time. Unless I cancel it in writing sooner, this authorization will expire if the American Academy of Dermatology no longer needs my information for purposes of its SPOTme screening program or related Academy research activities, or as otherwise required by state law.

I understand that my signing or refusing to sign this authorization will have no effect on my receiving an examination today. I also understand that this authorization may not protect or prevent further disclosures of my health information by the American Academy of Dermatology or its members, staff, volunteers, or other agents.

Date: _____

If you are not the patient, please describe your authority to act for the patient: _____

SCREENING EXAMINER: PLEASE COMPLETE ADDRESS AND SIGN FORM

EXAMINATION

A full body screen is recommended, if possible.
(except double-covered areas)

☐ Complete (except undergarments)

☐ Face & Arms ☐ Specific lesion ☐ Above waist

How many nevi are on the patient's arms, elbow to shoulder (both arms)? ☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11+

PRESUMPTIVE DIAGNOSIS

1 <input type="checkbox"/> Seborrheic keratosis (SK)	5 <input type="checkbox"/> Dysplastic nevus
2 <input type="checkbox"/> Actinic keratosis (AK)	6 <input type="checkbox"/> Congenital nevus
3 <input type="checkbox"/> Basal cell carcinoma (BCC)	7 <input type="checkbox"/> Melanoma
4 <input type="checkbox"/> Squamous cell carcinoma (SCC)	8 <input type="checkbox"/> Mole/nevus
	9 <input type="checkbox"/> No significant findings

10 ☐ Other: _____

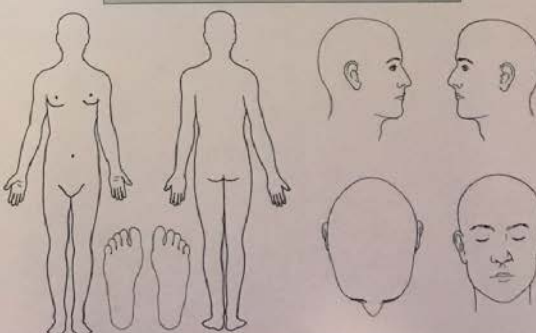
11 ☐ Other: _____

RECOMMENDATIONS (Leave blank if not)

Biopsy recommended? ☐ Yes

Referred? ☐ Yes

Mark body map using numbers which correspond to diagnosis.



*Screening examination. I also understand that it is my responsibility to arrange for a follow-up examination.

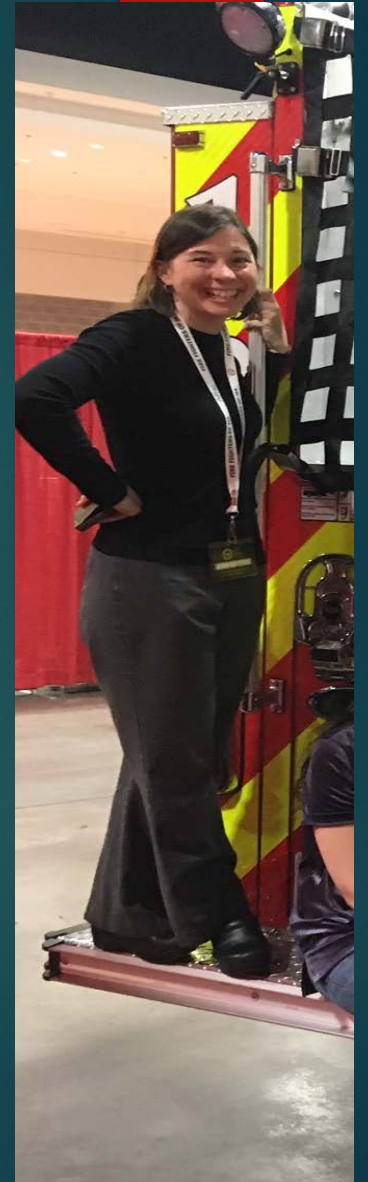
Top ten things to know

- ▶ 1. Three types of skin cancer: Melanoma, Squamous cell and Basal Cell
- ▶ 2. Schedule annual skin exams with your medical provider
- ▶ 3. Perform self skin exams - 50% of melanomas are found by patients
- ▶ 4. Avoid blistering sunburns as they increases melanoma risk
- ▶ 5. Know the ABCDEs of melanoma
- ▶ 6. Watch for an area that continuously scabs or bleeds and never heals
- ▶ 7. During pregnancy arrange for one skin exam
- ▶ 8. Avoid tanning beds !
- ▶ 9. Use sunblock daily !
- ▶ 10. Use skin wipes and shower as soon as possible after a fire

Many Thanks

- ▶ Dr. Zoe Stitt
- ▶ Dr. Megan Bernstein
- ▶ Dr. Mary Gibney
- ▶ Abby Baker
- ▶ Beth Alley, RN
- ▶ Keren Hawkes, MA
- ▶ Jessica Gaudet
- ▶ Erin Swarbrick
- ▶ Maria Strangie
- ▶ Dominique Fulse
- ▶ Firefighter Cancer Support Network

Many Thanks



Thanks

Kannler@ckmohs.com

