Skin Cancer

What you absolutely need to know if you work outside

James R. Nitzkorski, MD, FACS
Surgical Oncologist
Director, Cutaneous and Gastrointestinal Oncology
Attending Surgeon, Vassar Brothers Medical Center
Poughkeepsie, NY
Where is the danger?
• 1 in 5 people will get skin cancer
• More skin cancer than
  – Breast cancer
  – Prostate cancer
  – Lung cancer
  – Colon cancer

COMBINED
Basal cell cancer

- Most common form
- Rarely fatal, rarely spread
- Highly disfiguring
Squamous cell cancer

- 2nd most common cancer
- 200% increase last 30 years
- 2% die from disease
Melanoma

• **SERIOUS**
• 1 person dies from melanoma EVERY HOUR
• Incidence is increasing
• Survival
  – 98% early
  – 62% lymph node spread
  – 16% distant

HEALTHQUEST
Cancer Care
• Melanoma increasing ~1.8%/year
• 24% increase among women 1970-2009
• 1 indoor tanning session increases melanoma risk by 20%

Survival at 5 years:
98% early
62% lymph node spread
16% distant

1. Avoid Risk
2. Detect EARLY
Avoid Risk

• **Genes**
  – Red/blonde hair, fair skin
  – tendency to burn

• **Sun Exposure**

• **Environment**
  – ? Pesticide use
Avoid Risk

- UVR = proven carcinogen
  - Cigarettes
  - Arsenic
  - Plutonium

- More people develop skin cancer from tanning than lung cancer from cigarettes
Avoid Risk

- Stay in the shade, especially between 10-4
- Broad spectrum sunblock
- SPF 15 daily reduced risk of melanoma by 50%
- Avoid tanning
• **Clothing**
  – Light colored long sleeve/long pants
  – Hat with 4 inch brim- better than baseball hat

• **Sun Guard**

• Can “wash” SPF 30 into your clothes
Pesticide use

• Melanoma risk is high among farmers
• High arsenic levels measured in toenails associated with melanoma
• Association does not mean causation

Blair A, et al., Environ Health Perspect 1995
Spiewak, R. Ann Egri Environ Med 2001
Pesticide use

• National Cancer Institute
• ~60,000 licensed pesticide applicators recruited 1993-1997 Iowa, North Carolina
• Use of 50 pesticides
• **Additional Information:**
  – Crops/livestock used, protective equipment, application methods used, nonfarm exposure- alcohol/smoking, etc, cooking practices, vitamin use, sun exposure, hair color ......
10 year follow-up

- 271 cases of melanoma
- Dose – response data analysis
  - Total years mixing/applying, days per year of use
  - Cumulative exposure estimate
Results

• Red Hair – Strongest association melanoma
• Tended to be a little older and heavier
• Strongest association:
  – Maneb/mancozeb (dithiocarbamate fungicide)
  – Parathion (ethyl/methyl insecticide)
• Also associated:
  – Benomyl
  – Lead arsenate

Dennis, et al. Environ Health Perspect 2010
Bottom Line

• Farmers are at high risk for skin cancer
• Squamous and basal cell cancer need excision but are typically easy to treat and not life threatening
• Melanoma is deadly, especially when not caught early
Early Detection
For the cure:
Skin Cancer???
Early Detection

• Regular skin checks
• Dermatologist every year
• Report abnormality ASAP
• Melanoma prevention easy as ABC
Melanoma ABCDE

<table>
<thead>
<tr>
<th>NORMAL</th>
<th>CANCEROUS</th>
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<tbody>
<tr>
<td><strong>“A” IS FOR ASYMMETRY</strong></td>
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<td>● If you draw a line through the middle of the mole, the halves of a melanoma won’t match in size.</td>
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<td><strong>“B” IS FOR BORDER</strong></td>
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<td>● The edges of an early melanoma tend to be uneven, crusty or notched.</td>
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<td><strong>“C” IS FOR COLOR</strong></td>
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<td>● Healthy moles are uniform in color. A variety of colors, especially white and/or blue, is bad.</td>
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<tr>
<td><strong>“D” IS FOR DIAMETER</strong></td>
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<td>● Melanomas are usually larger in diameter than a pencil eraser, although they can be smaller.</td>
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<td><strong>“E” IS FOR EVOLVING</strong></td>
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<td>● When a mole changes in size, shape or color, or begins to bleed or scab, this points to danger.</td>
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Treatment

- Wide Excision
- Sentinel lymph node biopsy
- Lymph node removal
- Advanced therapy
  - Isolated limb infusion
  - Removal metastatic melanoma
  - Chemotherapy
Isolated Limb infusion
Chemotherapy

- **1970s**
  - 1 drug
  - Extremely toxic
- **1990s**
  - 1 drug
  - Toxic, very marginal improvement
- **2011**
  - Rebirth chemotherapy
  - 1st new drug in 13 years
- **7 new drugs in 3 years**
Advanced Melanoma

• Vemurafenib BRAF inhibitor

PET – widespread disease
Repeat PET 2 weeks after therapy

Future:
New drugs as adjuvant therapy
Combination regimens

Cutaneous Oncology Health Quest

- Surgical Oncology
- Plastic Surgery
- Medical Oncology
- Radiation Oncology
- Nurse Navigation
- Radiology
- Perfusionists
- Pharmacists

- Case Management
- Thoracic Oncology
- Dermatology
- Survivorship Planning
- Nuclear Medicine
- Lymphedema Support
- Anesthesiology
- Administrators
Questions?