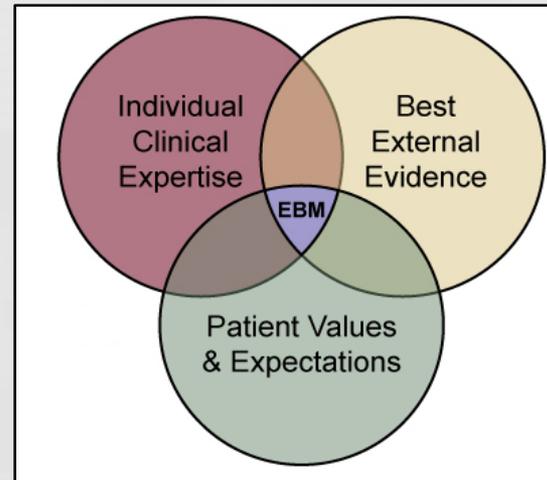


APMA National 2019

Lower Extremity Skin Cancer



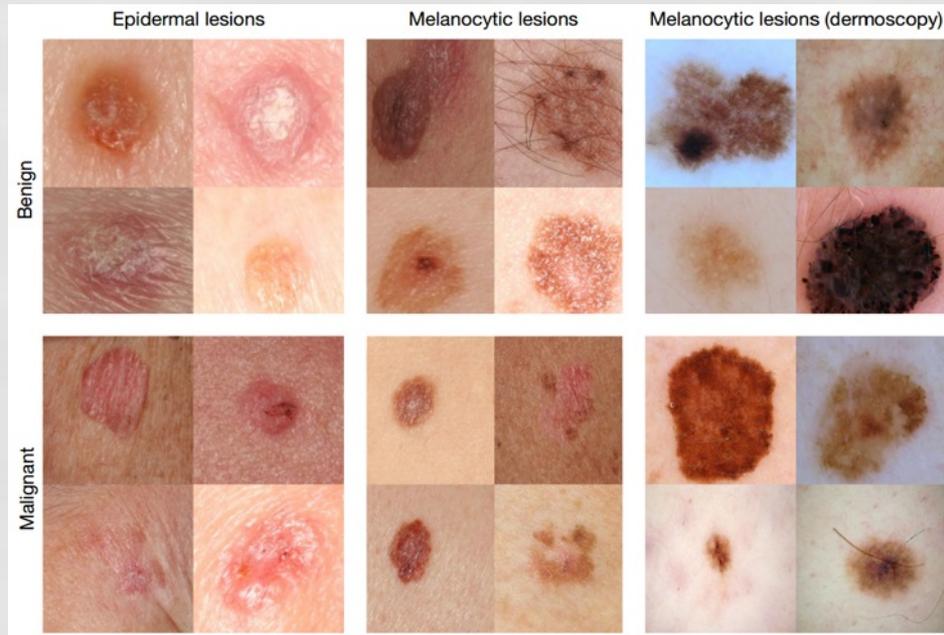
William P Scherer, DPM, MS, DABFAS
Delray Beach, Florida

Dr. William Scherer Disclosure



Senior Podiatric Medical Advisor
Clinical Consultant and Speaker
Bako Diagnostics / bakodx.com

Benign vs Malignant?



Skin cancer of the lower extremity is far more common than what you may think

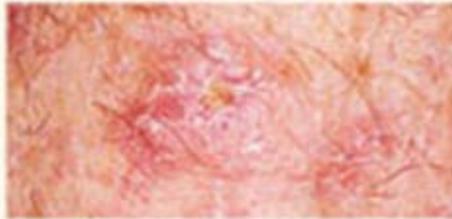
Skin Cancer Statistics

- Most common cancer in the US
 - represents 40% of all cancers
 - affects 20% of Americans by the age of 70
- 3.5 million people are diagnosed every year
 - 6 million cases and over 30,000 deaths per year
- Abnormal or uncontrolled growth of mutated cells in skin
 - DNA damage in the cells
 - invades surrounding skin
 - can metastasize to other parts of the body
- Multiple risk factors
 - UV light exposure, geography, fair skin, freckles, moles, family hx

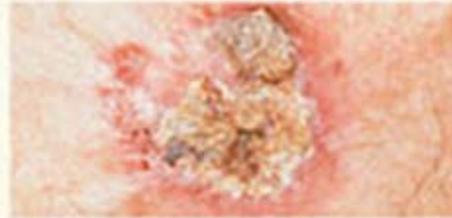
Skin Cancer Signs and Symptoms

- Changes in existing moles or nevi
 - pain is typically NOT a factor
 - recent increase in size
 - changes in elevation
 - irregular or jagged edge shape
 - presence of bleeding
 - localized itching
- Non healing foot, ankle, leg ulcer (>1 month)
 - assuming good foot care
 - perform a punch biopsy

Common Skin Lesions and Cancers



Actinic Keratosis



Squamous Cell Carcinoma



Atypical Mole



Melanoma



Basal Cell Carcinoma



Merkel Cell Carcinoma

Most Common Skin Cancers - Total Body

- Basal Cell Carcinoma
 - most common, 4.3 million cases (80%)
 - 3,000 deaths/year (1 out of 1,430)
- Squamous Cell Carcinoma
 - second most common, 1 million cases (18%)
 - 15,000 deaths/year (1 out of 67)
 - Actinic Keratosis is a pre-cancer (60 million Americans)
- Malignant Melanoma
 - half are “in situ” (noninvasive), 200,000 cases (2%)
 - 10,000 deaths/year (1 out of 20)

Monthly Malignancy Report

Partnering with our
Physician Clients

	Dec 2018	YTD 2018
Carcinoma	89	1,333
Melanoma	30	287
Sarcoma/Lymphoma	3	90
Total	122	1,710

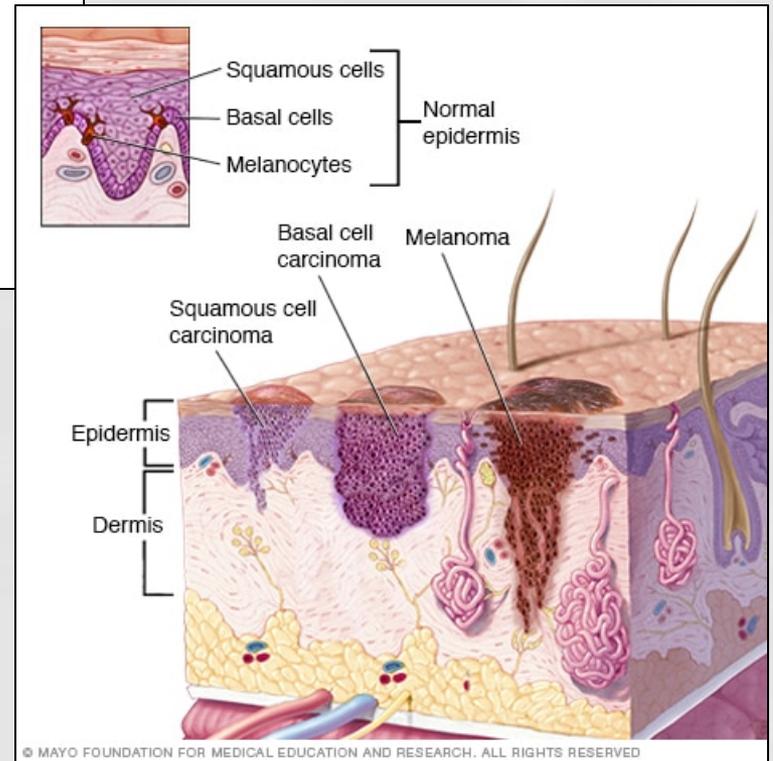
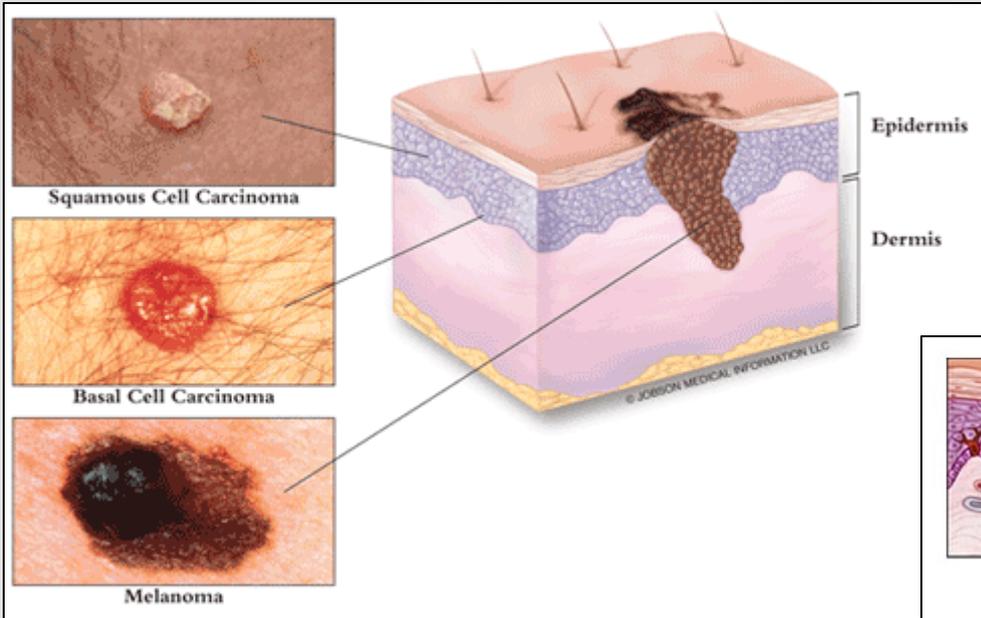
10 Year Neoplasm Research for Podiatry

Skin biopsy (+ cancer) results from 7,000 Podiatrists
13,737 skin cancers diagnosed in foot, ankle, lower leg

7,708	Squamous Cell Carcinoma	56%
2,890	Basal Cell Carcinoma	21%
2,450	Malignant Melanoma	18%
758	Kaposi Sarcoma	6%

10 Year Neoplasm Research Impressions

- Podiatrists diagnose Squamous Cell Carcinoma more frequently than all other skin cancers combined
- The average Podiatrist may be missing skin cancer
 - some diagnose cancer once every 5 years
- Top 1% of Podiatrists diagnosing neoplasms
 - average 2 per month
 - perform comprehensive lower extremity exams
 - looking for lesions to biopsy
 - most are asymptomatic and not part of the chief complaint
 - perform surgical excisions after diagnosis



Diagnosis of Skin Cancer

- Comprehensive history and physical
- Laboratory histopathological examination
 - punch biopsy
 - shave tangential biopsy
 - curettage tangential biopsy

Why Biopsy

- Provides objective, independent, and definitive laboratory histopathological “diagnosis” of a condition
 - medical-legal component of Evidence Based Medicine
 - reduces differential diagnoses and delays of treatment
- Guides precision targeted treatment options
 - pharmacological therapy (for dermatitis)
 - plastic surgical excision (for neoplasms)

Lower Extremity Biopsy Techniques



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Biopsy Standard of Care

- Dermatologists standard of care is to perform a biopsy “before” they excise a soft tissue, skin, or nail lesion
- The average Dermatologist performs
 - 10 biopsies per day
 - 2,500 biopsies per year
- Podiatrists typically do NOT perform soft tissue, skin, nail, or nerve biopsies before starting treatments
 - 4 biopsies per year average

Squamous Cell Cancer



Basal Cell Cancer



Malignant Melanoma



Acral Lentiginous Melanoma

- Fewer than 5% of all melanomas
 - most common melanoma in dark skin individuals
- Bob Marley
 - discolored toenail, initially dismissed as a soccer injury
 - later diagnosed as melanoma, refused toe amputation
 - cancer spread to his brain and lungs, died at 36 years old



Kaposi Sarcoma

- Nodular lesions or blotches, usually papular
 - slow growing red, purple, bluish-black macules and patches
 - plaque-like on the soles of the feet
 - spread and coalesce to form nodules or plaques
- Vascular in origin



Skin Cancer Treatments

- Cure rate is very high (99%) when
 - melanoma is detected in early stages (not reached lymph nodes)
 - it can easily be removed surgically (not metastasized)
- Surgical excision
- Cure rate is dependent on the surgical margins
 - narrower the margins, the higher the recurrence rate

Onychodystrophy / Onychomycosis



Not Everything is Fungus

Just because it “subjectively” ...

Looks like Onychomycosis

Smells like Onychomycosis

Feels like Onychomycosis

Tastes like Onychomycosis

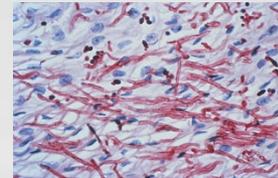


Without “objective” laboratory confirmation,
it may NOT be Onychomycosis

PAS and GMS and FM Stains

- Periodic Acid–Schiff (PAS)

- stains cell walls of living fungi magenta
- demonstrates excellent fungal morphology
- high sensitivity - few false negative tests



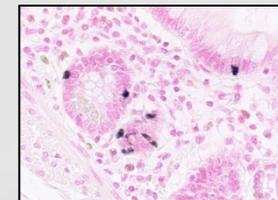
- Gomori Methenamine Silver (GMS)

- stains carbohydrates (sugars) living and dead
- excels at staining degenerated fungal organisms
- high sensitivity, but has poor morphology
- GMS, in tandem with PAS, offers Highest Sensitivity

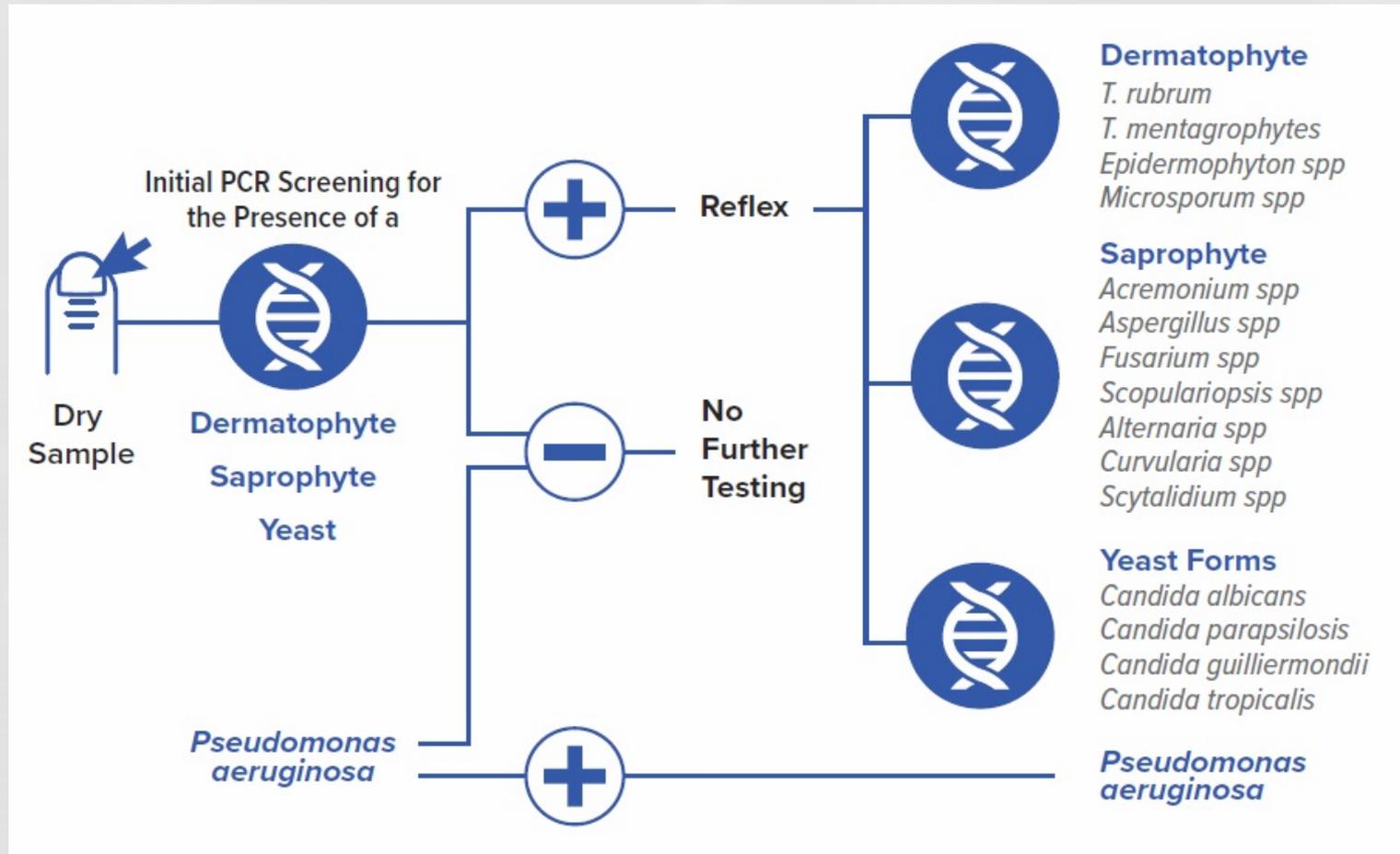


- Fontana Masson (FM)

- sensitive test for melanin pigment in fungi
- melanoma or pigmented saprophyte



Onychodystrophy DNA Test (PCR Assay)



Onychomycosis Laboratory Testing

- Proper specimen collection - proximal nail and subungual debris
- Comprehensive Nail Analysis (CNA)
 - Combination PAS+GMS+FM+PCR highest sensitivity and specificity
- Individual Laboratory Tests
 - Periodic Acid–Schiff (PAS) sensitive for living fungi
 - Gomori Methenamine Silver (GMS) sensitive for degenerated fungi
 - Fontana Masson (FM) sensitive for melanin
 - DNA Test (PCR Assay) specific for genus and species
- Not Recommended
 - Dermatophyte Test Medium (DTM)
 - Potassium Hydroxide Preparation (KOH Prep)
 - Fungal Culture



"The biopsy on your mole came back negative, which is positive, which is good."