**Dermoscopy Curriculum**

*For Family Medicine Residencies*

Introduction:

This curriculum is intended as a resource for family medicine residency programs which currently have no formal training in dermoscopy. It may also be useful in other primary care residency programs, i.e., internal medicine and pediatrics. The curriculum can be best used if at least one residency faculty member trains in dermoscopy. However, two systems for basic dermoscopy are available for use when there is no faculty expert. A group of family medicine dermoscopy experts in Australia has made a YouTube teaching series, “Dermoscopy Made Simple”, which can be used, with the introductory session in this curriculum, as a basic, but “stand-alone” training. The videos teach the Australian system, “Chaos and Clues”. Even more basic is the 3-point checklist: it looks at 3 features of a pigmented lesion under dermoscopy, which differentiate benign from malignant lesions well enough to direct the decision to biopsy. A more complex system, the 2-Step Algorithm, goes through a series of steps which identify the most common pigmented lesions, many unpigmented lesions, and also helps direct which lesions should be biopsied. Training in this system is easily obtained through the annual American Dermoscopy Society meetings. All authors of this curriculum trained at the ADS meetings. The developers of the 2-Step Algorithm have also written a simpler system, TADA, which uses an easier pattern-recognition algorithm to determine which lesions to biopsy or refer, and which to treat as benign. TADA requires knowledge of a few of the easier-to-recognize lesions from the 2-Step Algorithm, and therefore can be used after a brief initial training.

Goals:

This resource will serve:

 To disseminate knowledge of dermoscopy widely among family physicians; and

 To provide a free dermoscopy curriculum to interested programs.

Objectives:

This resource will also attempt:

To present the 3-point checklist as a means to determine which suspicious pigmented lesions to biopsy;

To introduce the Chaos and Clues method to decide which lesions to biopsy;

To touch on the use of the 2-Step Algorithm and TADA to select possibly malignant skin lesions for biopsy;

To use each system to recognize benign lesions, and avoid biopsy; and

To mention other uses of dermoscopy.

Why Should Family Medicine Residencies Teach Dermoscopy?

Patients often present to their family doctor with skin lesions, and more often than not, their concern is that the lesion may be a skin cancer. Dermoscopy both magnifies the lesion, and facilitates penetration of light more deeply into the lesion. With training, dermoscopy can help family physicians distinguish melanoma from benign lesions (1-4). The more detailed systems for training in dermoscopy, such as the 2-Step Algorithm, and Chaos and Clues, also assist in diagnosis of other skin cancers, and of many benign lesions (1, 4). As noted below, the different systems used for interpretation of dermoscopic images vary in the duration and intensity of time needed. Accordingly, introducing dermoscopy into the FM residency curriculum can benefit residents, even if little time and few resources are available for the training in dermoscopy.

What Does the Evidence Show?

In addition to the more general benefits as noted above, dermoscopy:

1. Improved PCP’s sensitivity in diagnosis of melanoma from 56% to 76% (3).
2. In a meta-analysis of 13 studies (mostly dermatologists), improved sensitivity of detecting melanoma from 70% to 83%, and specificity of detection from 75% to 86% (5).
3. Improved the triage of PCP’s in detecting all skin cancers by 25% (4).

Basic “Stand-Alone” Options:

1. The 3-point checklist is a simple, and fairly quick, basic dermoscopy training, using pattern recognition of 3 dermoscopic characteristics of malignant melanoma. Using the booklet *Dermoscopy: The Essentials*, residents can learn to recognize dermoscopic asymmetry of color and structure, atypical pigment networks, and blue-white structures. Suspicious pigmented lesions which show 2 of these 3 abnormalities should be biopsied.

*To introduce dermoscopy using the 3-point checklist:*

Present “Dermoscopy Curriculum: Introduction” from the attached materials;

Reference “Options for introducing Dermoscopy Training into Family Medicine Residency Programs”—slides 17 through 25; and

Cover the booklet *Dermoscopy: The Essentials.*

1. Since the most accessible and succinct online training modules are found in the “Dermoscopy Made Simple” YouTube series, which uses the terminology and techniques of the Australian family physician experts, this is an option for FM residency training programs. The logical starting point is the “Dermoscopy Curriculum: Introduction” power point in this curriculum; subsequently, have the residents view the “Dermoscopy Made Simple” videos. Begin the YouTube videos with “Dermoscopy Made Simple: Introduction” and “Dermoscopy Made Simple: Kittlerian Terminology”. Terms used in the Australian “Chaos and Clues” system are purely descriptive, and distinct from the terms used in the 2-Step Algorithm. Subsequently, the “Dermoscopy Made Simple” series covers the common skin lesions for which dermoscopy is helpful. Start with melanoma, “Dermoscopy Made Simple: Melanoma”, and proceed through the videos describing basal cell carcinoma, squamous cell carcinoma, benign nevus , seborrheic keratosis, lentigo, and abnormal blood vessels. These are the basic lesions for which dermoscopy is most helpful.

Present “Dermoscopy Curriculum: Introduction” from the attached materials;

Reference “Options for introducing Dermoscopy Training into Family Medicine Residency Programs”—slides 63 and 64; and

Present the various “Dermoscopy Made Simple” YouTube videos. Search YouTube for “Dermoscopy Made Simple”, and the entire series will come up. At minimum, view these videos:

Dermoscopy Made Simple-Introduction

Dermoscopy Made Simple-Kittlerian Terminology

Dermoscopy Made Simple-Clods

Dermoscopy Made Simple-Dots

Dermoscopy Made Simple-Circles

Dermoscopy Made Simple-Lines Series: Branched and Curved, Parallel, Reticular

Dermoscopy Made Simple-Benign Nevi

Dermoscopy Made Simple-Clues to Melanoma

Dermoscopy Made Simple-BCC

Dermoscopy Made Simple-SCC in Situ and Pigmented Bowen’s Disease

Derrmoscopy Made Simple-Vessels

 Dermoscopy Made Simple-Amelanotic Melanoma

Dermoscopy Made Simple-Seborrheic Keratosis

Dermoscopy Made Simple-Solar Lentigo

Dermoscopy Made Simple-Dermatofibroma

These videos cover diagnosis of common lesions using dermoscopy.

2-Step Algorithm Option:

The curriculum authors strongly recommend that your program send at least one faculty member, at least once, to the American Dermoscopy Society meeting, held near various national parks, before teaching the 2-Step Algorithm. Then, that faculty member will have the adequate background to facilitate best use of the curriculum. Subsequently:

 Present “Dermoscopy Curriculum: Introduction” from the attached materials;

 Proceed to the Dermlite website: dermlite.com; click on “Resources”, & “Videos”;

 Present “Watch & Learn: Dermoscopy with Richard P. Usatine, MD”;

Reference “Options for introducing Dermoscopy Training into Family Medicine Residency Programs”—slides 27 through 58, and 66

 Present Maui Derm videos, either 2015 Parts 1-2, or 2012 Parts 1-4.

Triage Amalgamated Dermoscopy Algorithm (TADA):

This system uses pattern recognition to determine which skin lesions can be treated as benign, and which lesions should be either biopsied, or referred to someone who can biopsy them. TADA is a simplification of the 2-Step Algorithm; to use TADA, recognition of 3 lesions is needed: dermatofibroma, hemangioma, and seborrheic keratosis. Accordingly, this system is ideal when a faculty member with limited training in the 2-Step Algorithm is available to teach characteristics of those 3 lesions, and to guide the pattern recognition steps which follow. To use:

 Present Dermoscopy Curriculum: Introduction” from the attached materials;

Reference “Options for introducing Dermoscopy Training into Family Medicine Residency Programs”—slide 26

 Proceed to the Dermlite website: dermlite.com; click on “Resources”, & “Vidoes”;

 Present “Maui Derm 2012—Part 4 (Structures in Non-Melanocytic Lesions)”;

 Present the TADA Algorithm from the Dermlite reference cards.

References:

1. Marghoob AA, Usatine RP, and Jaimes N. “Dermoscopy for the Family Physician.” *Am Fam Physician 2013 Oct 1*;88(7):441-50
2. Herschorn A. “Dermoscopy for Melanoma Detection in Family Practice.” *Can Fam Physician 2012 July*;58(7):740-5, e372-8
3. Westerhoff K, *et al.* “Increase in the Sensitivity for Melanoma Diagnosis by Primary Care Physicians Using Skin Surface Microscopy.” *Br J Dermatol 2000 Nov*;143(5):1016-20

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