

# Analysis of Nail-Related Content in the Basic Dermatology Curriculum

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## PRACTICE POINTS

- Competence in the diagnosis and treatment of nail diseases can drastically improve patient quality of life and can be lifesaving.
- Education on diagnosis and management of nail conditions is deficient in the American Academy of Dermatology (AAD) Basic Dermatology Curriculum.
- Increased efforts are needed to incorporate relevant nail education materials into the AAD Basic Dermatology Curriculum.

Nail conditions are routinely encountered in dermatology clinical practice. Nails have important aesthetic functions, and onychodystrophies may cause pain and difficulties with ambulation and performing activities of daily living. Ideally, accurate diagnosis and optimal treatment of nail disorders are taught as early as medical school and extend into dermatology residency. We sought to determine the integration and content of nail education in the American Academy of Dermatology (AAD) Basic Dermatology Curriculum. Our results showed a paucity of nail content in this medical curriculum with only 101 total mentions of nails in 12 modules. Nail examinations were not mentioned as part of the full-body skin examination, nail unit melanoma was inadequately covered, and nail biopsy techniques were completely omitted. There is a notable need to enrich this curriculum with relevant nail content to educate students about the importance of nail disease.

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Patients frequently present to dermatologists with nail disorders as their chief concern. Alternatively, nail conditions may be encountered by the examining physician as an incidental finding that may be a

clue to underlying systemic disease. Competence in the diagnosis and treatment of nail diseases can drastically improve patient quality of life and can be lifesaving,<sup>1</sup> but many dermatologists find management of nail diseases challenging.<sup>2</sup> Bridging this educational gap begins with dermatology resident and medical student education. In a collaboration with dermatology educators, the American Academy of Dermatology (AAD) prepared a free online core curriculum for medical students that covers the essential concepts of dermatology. We sought to determine the integration of nail education in the AAD Basic Dermatology Curriculum.

## Methods

A cross-sectional study of the AAD Basic Dermatology Curriculum was conducted to determine nail disease content. The curriculum modules were downloaded in June 2018,<sup>3</sup> and mentions of nails were recorded and evaluated for overall quantities and relevant content. References to nail procedures and diagnostic techniques including nail biopsies, fungal cultures, microscopy on nail scrapings, nail clippings, and nail-related cancers also were assessed in the analysis.

## Results

Of 342 patients discussed in cases and quizzes, nails were mentioned for 19 patients (89 times total) (Table 1). Additionally, there were 2 mentions each of nail clippings and nail tumors, 0 mentions of nail biopsies, and 1 mention each of fungal cultures and microscopy on nail scrapings (Table 1). Of the 40 modules, nails were mentioned in 12 modules (Table 2) and 6 introductions to the modules (Table 1). There were no mentions of the terms *nails*, *subungual*, or *onychomycosis* in the learning objectives.<sup>3</sup>

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**TABLE 1. Quantitative Analysis of Nail Mentions in Modules of the AAD Basic Dermatology Curriculum<sup>a</sup>**

Section of Module	Characteristic, n (%)
Introduction	Total modules, 40 (100)
	Introductions to modules that mention nails, 6 (15)
	Total mentions of nails in introductions, 12
Cases and quiz questions	Total patients, 342 (100)
	Patients with mentions of nails, 19 (5.6)
	Adult patients with mentions of nails, 14 (4.1)
	Pediatric patients with mentions of nails, 5 (1.5)
	Total mentions of nails in patient cases and quiz questions, 89
	Total mentions of nail biopsies, 0 (0.0)
	Total mentions of fungal cultures, 1 (0.3)
	Total mentions of microscopy on nail scrapings, 1 (0.3)
	Total mentions of nail clippings, 2 (0.6)
	Total mentions of nail-related cancers, 2 (0.6)
Introductions, cases, and quiz questions	Total mentions of nails, 101

Abbreviation: AAD, American Academy of Dermatology.

<sup>a</sup>Based on a review conducted in June 2018.

**TABLE 2. Modules With Mentions of Nails in the AAD Basic Dermatology Curriculum<sup>a</sup>**

Module Name	No. of Cases Mentioning Nails
Actinic keratosis and squamous cell carcinoma	1
Adult fungal infections	3
Contact dermatitis	1
Dermatologic therapies	1
Erythroderma	2
Genetic skin disorders	3
HIV dermatology	1
Infestations and bites	1
Melanoma	1
Psoriasis	1
Red scaly rash (the papulosquamous eruption)	3
Warts	1

Abbreviations: AAD, American Academy of Dermatology; HIV, human immunodeficiency virus.

<sup>a</sup>Based on a review conducted in June 2018.

## Comment

Our study demonstrates a paucity of content relevant to nails in the AAD Basic Dermatology Curriculum. Medical students are missing an important opportunity to learn about diagnosis and management of nail conditions and may incorrectly conclude that nail expertise is not essential to becoming a competent board-certified dermatologist.

Particularly concerning is the exclusion of nail examinations in the skin exam module addressing full-body skin examinations (0 mentions in 31 slides). This curriculum may negatively influence medical students and may then follow at the resident level, with a study reporting that 50.3% (69/137) of residents examine nails only when the patient brings it to their attention.<sup>4</sup>

Most concerning was the inadequate coverage of nail unit melanoma in the melanoma module (1 mention in 53 slides). Furthermore, the ABCDE—*asymmetry, border, color, diameter, and evolving*—mnemonic for cutaneous melanoma was covered in 6 slides in this module, and the ABCDEF—*family history added*—mnemonic for nail unit melanoma was completely excluded. Not surprisingly, resident knowledge of melanonychia diagnosis is deficient, with a prior study demonstrating that 62% (88/142) of residents were not confident diagnosing and managing patients with melanonychia, and only 88% (125/142) of residents were aware of the nail melanoma mnemonic.<sup>4</sup>

Similarly, nail biopsy for melanonychia diagnosis was excluded from the curriculum, whereas skin biopsy

was thoroughly discussed in the context of a cutaneous melanoma diagnosis. This deficient teaching may track to the dermatology resident curriculum, as a survey of third-year dermatology residents (N=240) showed that 58% performed 10 or fewer nail procedures, and one-third of residents felt incompetent in nail surgery.<sup>5</sup>

We acknowledge that the AAD Basic Dermatology Curriculum is simply an introduction to dermatology. However, given that dermatologists are among the major specialists who care for nail patients, we advocate for more content on nail diseases in this curriculum. Nails can easily be incorporated into existing modules, and a new module specifically dedicated to nail disease should be added. Moreover, we envision that our findings will positively reflect on competence in treating nail disease for dermatology residents.

## REFERENCES

1. Lipner SR. Ulcerated nodule of the fingernail. *JAMA*. 2018;319:713-714.
2. Hare AQ, Rich P. Clinical and educational gaps in diagnosis of nail disorders. *Dermatol Clin*. 2016;34:269-273.
3. American Academy of Dermatology. Basic Dermatology Curriculum. <https://www.aad.org/education/basic-derm-curriculum>. Accessed March 25, 2019.
4. Halteh P, Scher R, Artis A, et al. A survey-based study of management of longitudinal melanonychia amongst attending and resident dermatologists. *J Am Acad Dermatol*. 2017;76:994-996.
5. Lee EH, Nehal KS, Dusza SW, et al. Procedural dermatology training during dermatology residency: a survey of third-year dermatology residents. *J Am Acad Dermatol*. 2011;64:475-483, 483.e1-5.