

Assessment of Nail Content in the American Academy of Dermatology Patient Education Website

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PRACTICE POINTS

- Patients often utilize online resources to research skin, hair, and nail conditions.
- Nail signs and symptoms may represent a serious underlying condition, and nail content is underrepresented on the American Academy of Dermatology (AAD) Patients and Public section of the website.
- There is a need for more information on nail conditions on the AAD website, offering patients a more comprehensive online dermatology resource. Subsequently, there has been a positive trend toward new nail content being added to the site.

To the Editor:

Patients with skin, hair, or nail concerns often utilize online resources to self-diagnose or learn more about physician-diagnosed conditions. The American Academy of Dermatology (AAD) website offers the public access to informational pages categorized by disease or treatment (<https://www.aad.org/public>). We sought to evaluate the nail content by searching the Patients and Public section of the AAD website to qualitatively and quantitatively describe mentions of nail conditions. Psoriasis, psoriatic arthritis, atopic dermatitis, and ringworm content also were analyzed and compared to nail content. The analysis was performed on September 7, 2019.

Of the 73 topics listed in the Diseases and Treatments section of the site, 17 (23%) specifically mentioned nail symptoms or pathology (Table). Three additional

topics—atopic dermatitis, cellulitis, and neurodermatitis—recommended keeping nails short to prevent injury from scratching. There was 1 mention of obtaining fungal cultures, 2 of nail scraping microscopy, 2 of nail clippings, and 2 of nail-related cancers. There were no mentions of nail biopsies. The total number of unique clinical images across all sections was 300, with 12 of nails. The video library contained 84 videos, of which 6 focused on nail health.

Several sections were reviewed for overall content to understand the typical number of images and videos included for other common conditions. The general psoriasis section included 6 images and 3 videos detailing disease etiology, symptoms, and treatments, without depictions of nails. The psoriatic arthritis section included 8 images and 1 video as well as 1 image of nail pitting. The atopic dermatitis section included 6 images and 6 videos on disease etiology, symptoms, and treatment. The ringworm section, which collectively included all tinea infections, contained 11 images and 1 video on symptoms. In contrast, the only nail-specific section—nail fungus—contained only 2 images and 1 video.

Our study demonstrated that nail content is underrepresented in the public education section of the AAD website. If patients are unable to find nail disease material on the AAD website, they may seek alternative sources that are unreliable. Prior studies have shown that patient Internet resources for subungual melanoma and onychomycosis often are inadequate in quality and readability.^{1,2}

Representative photographs and key information on common nail diseases could be added to improve patient education. The atopic dermatitis section should include

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Diseases/Conditions With Nail Mentions in the Patient/Public AAD Website^a

Disease/Condition	Section of Page With Nail Mentions	No. of Relevant Images and/or Videos
Alopecia areata	Symptoms	1 image
Atopic dermatitis	Tips	None
Cellulitis	Tips	None
Contact dermatitis	Causes, tips	None
Cutaneous T-cell lymphoma	Symptoms	None
Epidermolysis bullosa	Overview, symptoms	None
Lichen planus	Overview, symptoms, tips	1 image
Melanoma	Symptoms	1 image
Moles	Symptoms	None
Nail fungus	Overview, symptoms, causes, diagnosis/treatment, tips	2 images, 1 video
Neurodermatitis	Tips	None
Pemphigus	Symptoms	1 image
Psoriasis	Symptoms, tips	None
Psoriatic arthritis	Symptoms	1 image
Ringworm	Overview, symptoms, diagnosis	2 images
Sarcoidosis	Symptoms	1 image
Scabies	Symptoms, tips	None
Squamous cell carcinoma	Symptoms	1 image
Stasis dermatitis	Symptoms	1 image
Warts	Overview, causes, treatment	None

Abbreviation: AAD, American Academy of Dermatology.

^aThe original search and analysis was performed on September 7, 2019.

text on related nail changes with accompanying images. We also recommend including paronychia information and images as either a separate topic or in the cellulitis section. The contact dermatitis section mentions nail cosmetics as causative factors, but an image of roller-coaster onycholysis may be more helpful.³ Although the alopecia areata section mentions nail changes, this information should be added to the general hair loss section of the site, as many patients may initially seek out the latter category. Herpes simplex may affect nails, and an image showing these changes would be instructive. In addition, pyogenic granulomas and paronychia occur with isotretinoin use.⁴

Many of the included images were not representative of common clinical findings. The nail lichen planus image showed pitting instead of more typical findings of nail plate atrophy and pterygium. The nail melanoma image showed thickened yellow toenails and the fifth toenail with a thin gray-brown band instead of an isolated wide black band. The nail fungus section included images of superficial onychomycosis and severe onychodystrophy instead of showing more common changes such as distal onycholysis with subungual hyperkeratosis, which is typical of the most common subtype, distal lateral subungual onychomycosis.⁵ Onychomycosis was referenced again in the ringworm section with 1 image repeated from the nail

fungus section and another image that appeared to be a subungual hematoma.

The AAD website offers important patient education resources; however, nail content is underrepresented on this platform. Dermatologists are experts on nail disease, and increased efforts are needed to educate the public about frequently encountered nail signs and symptoms that could signify a serious underlying condition.

After our original search and analysis, new nail topics, images, and videos have been added; therefore, there has been a positive trend toward new nail content being added to site, which will greatly benefit patients.

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