

Melanoma: Are you missing the subtle clues in your skin exams?

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Melanoma remains a formidable challenge in oncology, but its prognosis is dramatically improved with early detection. General practitioners are often the first point of contact for patients, placing them in a critical position to identify suspicious lesions before they progress to advanced stages. Understanding the nuances of melanoma presentation and risk stratification is not merely academic; it directly translates to lives saved.

KEY TAKEAWAYS

- **The Pivot:** Melanoma detection relies heavily on primary care vigilance, moving beyond obvious lesions to subtle, evolving changes.
- **The Data:** Early diagnosis of melanoma, particularly at the in situ or thin invasive stage, correlates with significantly higher survival rates.
- **The Action:** Implement systematic skin checks for high-risk patients and educate all patients on self-monitoring for the 'ugly duckling' sign.

Melanoma, a malignancy of melanocytes, represents a small percentage of all skin cancers but accounts for the vast majority of skin cancer-related deaths. Its incidence continues to rise globally, making heightened awareness among primary care providers more important than ever to save lives. While advanced melanoma presents with clear, often aggressive features, the early signs can be subtle, easily overlooked amidst the myriad of benign dermatological conditions encountered in routine practice. The challenge for clinicians lies in distinguishing the potentially deadly from the merely bothersome, often with limited time and resources.

The pathogenesis of melanoma is complex, involving a combination of genetic predisposition and environmental factors, primarily ultraviolet (UV) radiation exposure. Intermittent, intense UV exposure, such as from recreational sunbathing or tanning bed use, is particularly implicated in the development of superficial spreading melanoma, the most common subtype. Patients with a personal or family history of melanoma, numerous atypical nevi, or fair skin types that burn easily are at significantly elevated risk. These demographic and historical factors should prompt a higher index of suspicion during routine examinations.

Recognizing the ABCDEs and Beyond

The classic ABCDE mnemonic (Asymmetry, Border irregularity, Color variation, Diameter >6mm, Evolving) serves as a foundational tool for melanoma screening. Asymmetry refers to one half of the lesion not matching the other. Border irregularity describes edges that are ragged, notched, or blurred. Color variation includes shades of tan, brown, black, white, red, or blue within the same lesion. A diameter greater than 6 millimeters, roughly the size of a pencil

eraser, is a common threshold, though smaller melanomas can and do occur. The 'E' for Evolving is arguably the most critical criterion, encompassing any change in size, shape, color, elevation, or any new symptom like bleeding, itching, or crusting. A lesion that is changing should always raise a red flag, regardless of its initial appearance.

But relying solely on the ABCDEs can be insufficient. Amelanotic melanomas, for instance, lack pigment and may present as pink, red, or skin-colored lesions, making color variation an unreliable sign. Nodular melanomas can grow rapidly and deeply, often skipping the radial growth phase, appearing as a firm, dome-shaped lesion that may ulcerate or bleed. Lentigo maligna melanoma, common on sun-damaged skin of the elderly, often presents as a large, irregularly shaped macule with varying shades of brown, growing slowly over years. These variations show the need for a broader diagnostic perspective.

The 'Ugly Duckling' Sign

Beyond specific criteria, the 'ugly duckling' sign is an invaluable concept for primary care. This principle suggests that a melanoma often looks different from the surrounding nevi on a patient's skin. If one lesion stands out as distinct or unusual compared to the patient's other moles, it warrants closer inspection. This comparative approach can be particularly helpful for patients with many moles, where applying the ABCDE criteria to every lesion becomes impractical. Training the eye to spot the outlier, the mole that doesn't fit the pattern, can be more effective than meticulously measuring every single lesion.

Patient education plays a vital role here. Encouraging patients to perform regular self-skin exams and to report any new, changing, or unusual moles is paramount. Providing clear instructions on what to look for, perhaps with visual aids, empowers patients to be active participants in their own surveillance. This is especially true for individuals with a high nevus count or a personal history of atypical nevi, who may benefit from periodic photographic mapping of their skin to track changes over time. The Oxford Handbook of Medical Dermatology offers a concise guide to these diagnostic approaches.

Risk Factors and Screening Strategies

Identifying patients at higher risk allows for targeted screening efforts. Individuals with a personal history of melanoma have a significantly increased risk of developing another primary melanoma. A family history of melanoma, particularly in first-degree relatives, also elevates risk. Other factors include the presence of numerous common nevi (typically >50), atypical nevi (dysplastic nevi), congenital nevi, immunosuppression, and a history of severe, blistering sunburns, especially during childhood. Genetic syndromes, such as familial atypical multiple mole melanoma (FAMMM) syndrome, are rare but confer an extremely high lifetime risk.

For these high-risk groups, a more proactive screening strategy is warranted. This might involve more frequent full-body skin examinations by a clinician, perhaps annually or biannually, depending on the individual's risk profile. The use of dermoscopy, a non-invasive technique that allows for magnified visualization of subsurface structures of skin lesions, can significantly improve diagnostic accuracy, particularly for subtle melanomas. While dermoscopy is typically employed by dermatologists, primary care providers with appropriate training can also utilize this tool to enhance their diagnostic capabilities and reduce unnecessary excisions of benign lesions.

When to Refer and What to Expect

The decision to refer a patient to a dermatologist for further evaluation or biopsy is a critical one. Any lesion that meets one or more of the ABCDE criteria, exhibits the ugly duckling sign, or is symptomatic (itching, bleeding, pain) should prompt an urgent referral. The goal is to achieve definitive diagnosis through excisional biopsy with narrow margins. Incisional or punch biopsies may be appropriate for very large lesions or those in cosmetically sensitive areas, but a full excisional biopsy is preferred to allow for complete histopathological assessment, including Breslow thickness, mitotic rate, and ulceration status, which are essential for staging and prognosis.

The Breslow thickness, measured in millimeters from the granular layer of the epidermis to the deepest point of tumor invasion, is the most important prognostic factor for localized melanoma. Thin melanomas (≤ 1.0 mm) generally have an excellent prognosis, while thicker lesions carry a higher risk of regional and distant metastasis. Understanding these prognostic indicators helps guide subsequent management, including sentinel lymph node biopsy for intermediate to thick melanomas, and adjuvant therapy decisions for high-risk resected disease. Primary care providers do not need to be experts in melanoma staging, but they must understand the urgency of referral to ensure timely diagnosis and appropriate specialist management.

Challenges and Limitations in Primary Care

Despite the clear guidelines and diagnostic tools, several challenges persist for primary care physicians. Time constraints during routine appointments often limit the ability to perform thorough full-body skin examinations. The sheer volume of benign nevi and other skin lesions can lead to 'mole fatigue,' where distinguishing a suspicious lesion becomes more difficult. Access to dermatological specialists can also be a barrier in some regions, leading to delays in definitive diagnosis and treatment. These systemic limitations show the importance of ongoing education and the development of efficient screening protocols within primary care settings.

The role of artificial intelligence and teledermatology in supporting primary care melanoma detection is an evolving area. While these technologies hold promise for improving access and diagnostic accuracy, they are not yet a substitute for a thorough clinical examination by an experienced clinician. The human element, including the ability to take a comprehensive history, assess risk factors, and apply clinical judgment, remains indispensable. Primary care providers are the frontline defense against melanoma, and their vigilance is the cornerstone of improved patient outcomes.

CLINICAL IMPLICATIONS

The persistent rise in melanoma incidence means primary care physicians cannot afford to be complacent. Every routine physical exam should include a quick but deliberate scan for suspicious skin lesions, especially in high-risk populations. The 'ugly duckling' sign is often more intuitive and effective than a rigid adherence to the ABCDEs, particularly for busy clinicians. It is the outlier, not necessarily the textbook example, that demands attention.

We need to move beyond simply telling patients to 'watch their moles.' Specific, actionable advice on self-examination, coupled with a clear understanding of when to seek professional help, empowers patients. This partnership is vital for early detection, as many early melanomas are first noticed by the patient themselves. A simple visual guide or a brief discussion during an annual check-up can make a significant difference.

The referral pathway for suspicious lesions must be streamlined. Delays in specialist assessment can have

dire consequences, turning a curable early melanoma into a life-threatening advanced disease. Primary care should advocate for rapid access to dermatology, ensuring that any lesion raising even a modicum of concern is evaluated promptly. The Oxford Handbook of Oncology provides a good overview of the urgency required in these cases.

The burden of early melanoma detection largely rests on the shoulders of general practice. This requires ongoing education, a high index of suspicion, and a commitment to thorough skin examinations, even when time is short. The difference between a good and an excellent prognosis often comes down to a PCP's keen eye and timely action.

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REFERENCES

1. Marghoob NG, Liopyris K, Jaimes N. Dermoscopy: A Review of the Structures That Facilitate Melanoma Detection. J Am Osteopath Assoc. 2019;119(6):380-390. doi:10.7556/jaoa.2019.067
2. Kim SH, Tsao H. Acral Melanoma: A Review of Its Pathogenesis, Progression, and Management. Biomolecules. 2025;15(1). doi:10.3390/biom15010120
3. Bobos M. Histopathologic classification and prognostic factors of melanoma: a 2021 update. Ital J Dermatol Venerol. 2021;156(3):300-321. doi:10.23736/S2784-8671.21.06958-3
4. Teixeira C, Castillo P, Martinez-Vila C, Arance A, Alos L. Molecular Markers and Targets in Melanoma. Cells. 2021;10(9). doi:10.3390/cells10092320
5. Orloff M, Seedor R, Sato T. Review of bi-specific therapies in uveal melanoma. Cancer Gene Ther. 2022;29(12):1814-1818. doi:10.1038/s41417-022-00442-9
6. Dzwierzynski WW. Melanoma Risk Factors and Prevention. Clin Plast Surg. 2021;48(4):543-550. doi:10.1016/j.cps.2021.05.001

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