SKIN

# EDITORIAL

## Skin Cancer Screenings: Why Are the Benefits in Question?

Nicholas Brownstone, MD[1], Darrell S. Rigel, MD, MS,[2]

[1] National Society for Cutaneous Medicine, New York, NY
[2] Department of Dermatology, Icahn School of Medicine at Mount Sinai, New York, NY

Agreement exists that screening to detect early cancer saves lives. Screenings for multiple cancers have been shown to result in earlier detection and better outcomes. However, a recent article in JAMA Dermatology and the associated commentaries related to screening for skin cancer have led to a renewed discussion regarding benefits versus hypothetical concerns to these programs[1,3].

Historically, the American Academy of Dermatology's national skin cancer screening programs have been a major success. From these screenings that began in 1985, thousands of melanomas have been detected with a lessening of the associated mortality and morbidity[4,5]. Melanoma morbidity and mortality is heavily dependent on tumor stage at diagnosis. Therefore, skin cancer screening should have the potential to increase the survivability from melanoma by detecting this cancer at an earlier stage thereby positively impacting prognosis. So why do the benefits of skin cancer screening still remain controversial? [2,3].

Those opposed to skin cancer screening suggest that it has led to artificial increase in melanoma diagnosis. If screening were actually impacting incidence, one would expect a short-term increase in invasive incidence as some cases would be diagnosed earlier and removed from the "pipeline," then a decrease would be seen when those cases that were diagnosed earlier would have been diagnosed without screening and then subsequently the incidence slope would return to baseline. The introduction of PSA screening in the mid-1980s demonstrated this exact pattern for invasive prostate cancer incidence. In contrast, invasive melanoma incidence continuously increased during the studied period at a constant rate and was not impacted by the introduction of screening (Figure 1).[5]

Screening doubters also contend that there is an increased level of anxiety generated by positive findings noted at a screening. In fact, the opposite appears to be true. Surveys of those attending screenings consistently show a high level of satisfaction. In addition, 87% of those screened in the AAD program that were found to have histologically confirmed melanomas did not have a dermatologist[5] suggesting that detection of these cancers would have been materially delayed had the screenings not occurred. Studies in skin of color patients demonstrate that their increased melanoma mortality is likely a consequence of a later stage diagnosis[6].

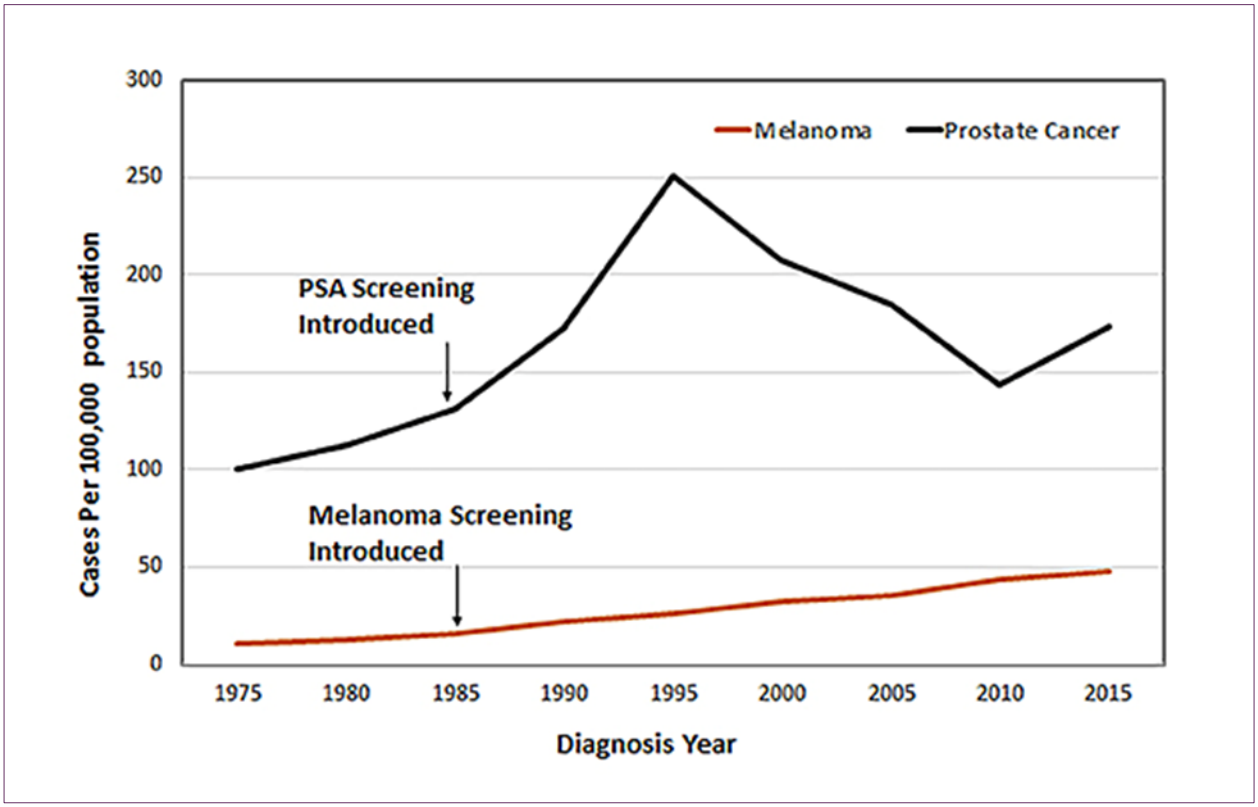


**Figure 1.** Impact of screening on incidence for prostate cancer versus melanoma. Both screening programs began in the mid-1980s. Prostate cancer showed an immediate rise upon implementation of screening as cases were identified earlier and removed from the population, then a drop occurred from as these cases would have been removed at a later date then the increasing trend slope returned to prescreening levels. In contrast, melanoma incidence trends were not impacted by national screening programs.

There are additional tangible benefits of screening that should also be recognized. The screening is a "teachable moment" where the individual can learn about the signs early skin cancer, thus adding a lifetime benefit of potential earlier detection themselves and those close to them. We have all had patients referred to us from their family or friends who recognized a spot that turned out to be melanoma. Also, these programs have had an impact on the public's and government's perception of Dermatology as a specialty evolving our image toward being serious physicians caring for patients at risk for serious disease from more than "pimple poppers and filler squirters".

Rather than abandoning skin cancer screening which has been suggested by some[3] our goal should be making screening more efficient. Risk stratification is important, but it already occurs to a large extent when the demographics of AAD screening attendees are analyzed.[5] A better way to reach this goal may be to integrate new non-invasive technologies (e.g. electronic impedance spectroscopy, gene expression profiling and confocal microscopy) into screening to more accurately pre-biopsy assess melanoma.

Those who question screening hypothesize that augmenting detection efforts leads to an overdiagnosis of melanoma. The concept of overdiagnosis remains hypothetical, with

little to no data supporting it. An equally plausible (and more supportable) hypothesis is that melanoma incidence is, in fact, rising. Given that the absolute numbers of thick melanomas in the US continues to rise, it may be more appropriate to question overdiagnosis viewpoints[7]. In addition, the absolute number of persons who die from thin melanomas is greater than for thick melanomas. If we begin to adopt this unsupported idea of "overdiagnosis" of "non-lethal" melanomas, we may miss detecting and treating some early invasive lesions which may lead to increased metastatic disease and death.

We always can make processes better and skin cancer screening is no exception. However, for all the enumerated reasons, it is clear that we should continue to keep obtaining the benefits from these important programs.

**Conflict of Interest Disclosures:** None

**Funding:** None

**Corresponding Author:**
Nicholas Brownstone, MD
Melanoma Fellow
National Society for Cutaneous Medicine
New York NY
Email: nicholas@fred.health

**References:**

1. Matsumoto M, Wack S, Weinstock MA, et al. Five-Year Outcomes of a Melanoma Screening Initiative in a Large Health Care System. JAMA Dermatol. Published online April 06, 2022. doi:10.1001/jamadermatol.2022.0253
2. Swerlick RA. Melanoma Screening—Intuition and Hope Are Not Enough. *JAMA Dermatol*. Published online April 6, 2022. doi:10.1001/jamadermatol.2022.0082
3. Kulkarni RP, Yu WY, Leachman SA. To Improve Melanoma Outcomes, Focus on Risk Stratification, Not Overdiagnosis. *JAMA Dermatol*. Published online April 6, 2022. doi:10.1001/jamadermatol.2022.0097
4. Rigel DS, Friedman RJ, Kopf AW, et al. Importance of complete cutaneous examination for the detection of malignant melanoma. J Am Acad Dermatol 1986;14:857-60.
5. Geller AG, Zi Z, Sober A, et al. The first 15 years of the American Academy of Dermatology Skin Cancer Screening Programs: 1985-1999. (J Am Acad Dermatol 2003;48:34-41.
6. Siegel R, Miller K, Fuchs H, et al. Cancer statistics, 2022. CA CANCER J CLIN 2022;72:7–33
7. Waqas R. Shaikh, Stephen W. Dusza, Martin A. Weinstock, Susan A. Oliveria, Alan C. Geller, Allan C. Halpern, Melanoma Thickness and Survival Trends in the United States, 1989–2009, JNCI: Journal of the National Cancer Institute, Volume 108, Issue 1, January 2016, djv294, https://doi.org/10.1093/jnci/djv294