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Many Pathologists Agree Skin Cancer Is Overdiagnosed

Analysis by Dr. Joseph Mercola ✔ Fact Checked | June 10, 2022

STORY AT-A-GLANCE

- A survey of 115 dermatopathologists — doctors who specialize in diagnosing skin disease from skin samples — showed that 68% believe that overdiagnosis of atypical nevi is a public health issue
- One researcher in the study noted that while melanoma diagnoses rose, deaths from the disease did not, which would happen if there were truly an increase since there wasn't a major breakthrough in treatment during the time of the study
- The American Academy of Dermatology recommends sunscreen for everyone to reduce the risk of skin cancer, yet ingredients in many sunscreen products are toxic to humans and the environment, and some can build up to unhealthy levels in the body after one day of use
- Your body makes vitamin D with exposure to the sun, which lowers your risk of heart disease, infection, diabetes, colorectal and breast cancer, lung disease and pregnancy loss. You can take several steps to naturally protect your skin

Data published in JAMA Dermatology in April 2022 revealed that nearly two-thirds of dermatopathologists believe that skin cancer is overdiagnosed.[1] According to the American Academy of Dermatology (AAD),[2] skin cancer will affect 1 in 5 Americans in their lifetime, making it one of the most common cancers diagnosed in the U.S.

According to the AAD, exposure to UV radiation from sunlight or tanning beds can increase the risk of developing certain types of skin cancer, especially when a person

has five or more blistering sunburns at an early age, from 15 to 20 years. This can increase melanoma risk by 80% and non-melanoma by 68%.

The annual cost of treating skin cancer was $8.1 billion for 4.9 million adults from 2007 to 2011. This was an increase in cost from 2002-2006, when the average annual treatment was $3.6 billion for 3.4 million adults treated each year. This represents a 44% increase in people with skin cancer and a 125% increase in the cost of treatment.

The significant rise in treatment costs is likely not due to the annual increases in medical costs for known treatments. For example, photodynamic therapy (PDT) was commonly used to treat nonmelanoma skin cancer in 2007.[3] An evaluation of costs[4] showed a 3.2% to 4.7% rise in Medicare reimbursement for PDT from 2012 to 2017.

There have been some advances in the treatment of melanoma and other types of skin cancer,[5] which include targeted therapies and immune checkpoint inhibitors, which are immunotherapies that have been used in people with advanced, unresectable melanoma. The drugs include ipilimumab (Yervoy), pembrolizumab (Keytruda) and nivolumab (Opdivo).

The first checkpoint inhibitor was released for use in 2011, and since then five others have reached the market.[6] A review[7] of the cost and cost-effectiveness of these drugs yielded disappointing results.

One paper[8] estimated the cost at $1 million per patient with a "median progression-free survival of 11.4 months," which Dr. Leonard Salz, from Memorial Sloan-Kettering Cancer Center, called "truly remarkable, for a disease that five years ago was thought virtually untreatable."[9]

Data Show Melanoma Cancer Is Overdiagnosed

Researchers in the featured study[10] wanted to know the perception of dermatopathologists as it related to the overdiagnosis of melanoma and other skin cancers. The researchers surveyed 115 dermatopathologists to evaluate their perception of overdiagnosis of melanoma as a public health issue. These are board-

certified and/or fellowship-trained pathologists who specialize in diagnosing skin diseases from skin samples.

The researchers gave each a set of 18 skin biopsy samples and asked them to interpret the case using their own microscopes. The survey was taken from 2018 to 2019 and the analysis was finalized in September 2021. The results[11] showed that 68% of the dermatopathologists believed overdiagnosis was a public health issue for atypical nevi, which are also known as dysplastic nevi or benign acquired melanocytic neoplasms.[12]

These skin disorders look similar to melanoma but are benign lesions. The survey also showed that the dermatopathologists believe that melanoma in situ was overdiagnosed 47% of the time and invasive melanoma was overdiagnosed 35% of the time. The results also showed that a lower number of pathologists with more years of practice thought atypical nevi were overdiagnosed. The researchers concluded:[13]

> *"… about two-thirds of dermatopathologists thought that atypical nevi are overdiagnosed, half thought that melanoma in situ is overdiagnosed, and one-third thought that invasive melanoma is overdiagnosed. No statistically significant associations were found between perceptions about overdiagnosis and interpretive behavior when diagnosing skin biopsy cases."*

Kathleen Kerr, Ph.D., lead researcher from the University of Washington, talked about the importance of these findings:[14]

> *"Melanoma diagnoses have been rising in the U.S. If there were truly an epidemic of melanoma, we would expect that deaths from melanoma to show a corresponding rise, since there hasn't been a major breakthrough in treatment during this time. Yet melanoma deaths have been remarkably constant. This suggests that the rise in melanoma diagnoses is largely due to overdiagnosis."*

Data from the National Cancer Institute[15] also demonstrate that the rate of diagnosis of new cases from 1992 to 2019 rose dramatically from 14.6 cases per 100,000 persons to 23.9 per 100,000 persons. Yet, the death rate from melanoma remained steady from

1992 until 2013 at 2.7 deaths per 100,000 persons. By 2019 it had declined to 2.0 deaths per 100,000 persons.

The disparity in diagnosis and death rate suggests the epidemic of melanoma is likely from an overdiagnosis of the skin condition. Kerr[16] shared that while advanced melanoma is not difficult to diagnose, early biopsies have a distinct diagnostic variability, which raises the possibility of overdiagnosis.

The second half of their study looked at how a pathologist's perception of overdiagnosis would affect how they diagnosed a skin biopsy. What they found was that those who believed invasive melanoma was overdiagnosed by the medical community were in fact "slightly more likely to diagnose invasive melanoma compared to other dermatopathologists examining the identical cases."[17]

Overdiagnosis of melanoma is a significant problem since the diagnosis often carries consequences that affect the patient on an emotional and financial level. Kerr believes[18] it will be challenging to reduce the problem with overdiagnosis as it will require cooperation between patients, primary care physicians and pathologists.

Melanoma Linked to Linoleic Acid; Sun Isn't the Primary Cause

To prove this point there was a study from 1987,[19] during which samples of fat tissue were taken from 100 melanoma patients and 100 people without melanoma and analyzed for fatty acids.

Not only is there an increase in linoleic acid in the tissue of all the subjects, but the percentage of polyunsaturated fatty acids (PUFAs) is significantly higher in the melanoma patients' tissue. "The suggestion is made that increased consumption of dietary polyunsaturates may have a contributory effect in the etiology of melanoma," the researchers concluded.[20]

Linoleic acid is the primary fat found in omega-6 polyunsaturated fats, including vegetable/seed oils, and accounts for about 80% of the fat composition of vegetable

oils. Omega-6 fats must be balanced with omega-3 fats in order to not be harmful, but most Americans don't eat that way.

Most of the omega-6 people eat, including seed oils, has been damaged and oxidized through processing. Once oxidized, it generates oxidized linoleic acid metabolites, which are mutagenic, carcinogenic, cytotoxic and atherogenic.[21]

> *"Is it possible that increased linoleic acid consumption could be causing fragility to cell membranes and that could be leading to oxidative damage in the sun leading to DNA damage and then more melanocytic nevi precursor lesions or melanoma or could the same thing be happening with squamous and basal?*
>
> *I would say yes. It's not supported by literature yet because there haven't been any studies looking at this. We need many more studies on linoleic acid … The linoleic acid found in seed oils is most likely one of the biggest drivers of chronic disease in humans."*

Linoleic acid is found in virtually every processed food, including restaurant foods, sauces and salad dressings, as well as "healthy" foods like chicken, pork and some olive oil, so eliminating these foods in your diet is another stepping stone to good health.

Many Sunscreen Ingredients Are Toxic

The AAD's answer to a rising number of people diagnosed with melanoma and other skin cancers is sunscreen.[22] They recommend a sunscreen with broad-spectrum protection, water-resistant SPF 30 or higher. Yet, sunscreen may be one of the worst things you can do to "protect" your skin.

First, I should make it clear that I believe sunscreen is widely **overused**. There are circumstances where it's wise and appropriate, but those cases are few and far between. For the most part, you should rely on sensible sun exposure and get out of the sun or wear clothing the minute your skin starts to turn a light pink.

If you're planning a day at the beach, or will be outdoors for hours at a time, you will need some form of sun protection. However, before grabbing the first bottle of sunscreen, it's important to look at the ingredients and make a wise choice. One pharmaceutical testing company[23] found 27% of the products tested exposed users to known carcinogens.

The data were published in 2021. Researchers tested 294 sunscreen products across a range of companies. They found 78 contained at least three times the level of benzene that the FDA allows under special circumstances. Benzene is an industrial chemical recognized by the CDC, U.S. Health and Human Services and World Health Organization as a known human carcinogen.[24]

CBS News[25] reported 14 of the sunscreen products analyzed with the highest number of contaminants came from popular personal care brands, including Neutrogena, Sun Bum, CVS Health and Fruit of the Earth. While not all the products in these brands contained benzene, "the founder and CEO of Valisure believes the issue is manufacturing contamination affecting specific batches," CBS News reported.

Although the name is similar, oxybenzone is a different chemical that is approved by the FDA and found in an estimated 70% of sunscreens.[26] However, the chemical is a known endocrine disruptor and has been linked to reduced sperm count in men[27] and endometriosis[28] in women.

In the U.S., sunscreens may also contain at least eight other active ingredients that are suspected of having endocrine-disrupting effects. According to one Danish study,[29] 13 of 29 sunscreen chemicals that are allowed in the US. and/or the European Union can reduce male fertility by affecting calcium signaling in the sperm, in part by exerting a progesterone-like effect. The U.S. approves eight of these chemicals for use:[30]

Avobenzone	Homosalate
Meradimate	Octisalate (also known as octyl salicylate)

Octinoxate (octyl methoxycinnamate)	Octocrylene
Oxybenzone (also called benzophenone-3)	Padimate O

Ingredients Build Up to Unhealthy Levels

Data funded by the FDA published in JAMA in 2019[31] and 2020[32] showed that certain ingredients in sunscreen products may build up in the body at unhealthy levels. The chemicals studied were avobenzone, oxybenzone, octocrylene, homosalate, octisalate and octinoxate. After the 2019 study, the researchers concluded the:[33]

> *"... conditions resulted in plasma concentrations that exceeded the threshold established by the FDA for potentially waiving some nonclinical toxicology studies for sunscreens. The systemic absorption of sunscreen ingredients supports the need for further studies to determine the clinical significance of these findings."*

At least one — oxybenzone, found in 70% of sunscreen products — can show up in breast milk, amniotic fluid, urine and blood.[34] They also wrote that the ingredients were absorbed after only one day's exposure, and some persisted in the body after use.

Your Body Requires Vitamin D for Optimal Health

Your body needs vitamin D, which it manufactures after exposure to the sun.[35] Vitamin D is involved in the biology of most cells and tissues in your body,[36] including your immune system.[37] Currently, the U.S. The Preventive Services Task Force[38] considers 20 nanograms per milliliter (ng/mL) sufficient.

However, a compelling body of research suggests that 40 ng/mL is the low end of sufficiency[39] and 30 ng/mL is rock bottom to prevent disease.[40] The ideal level for prevention is actually between 60 ng/mL and 80 ng/mL.[41] According to a study in

Anticancer Research,[42] it requires 9,600 international units of vitamin D each day for the majority of the population (97.5%) to reach 40 ng/mL.

This is a far cry from the current recommendations of 600 IUs of vitamin D per day for adults.[43] While optimal levels lower the risk of preterm birth.[44] vitamin D deficiency puts you at risk for diabetes,[45] heart disease,[46] colorectal cancer,[47] breast cancer,[48] lung disease[49] and pregnancy loss.[50]

The only way to know if you are deficient is a blood test. However, there are some general signs and symptoms that may indicate you should get your vitamin D levels tested sooner rather than later. These include:

- Ongoing musculoskeletal pain and achy bones[51]
- Frequent infections or illnesses[52,53]
- Neurological symptoms, such as depression,[54] cognitive impairment[55] and migraines[56]
- Fatigue and daytime sleepiness[57]

Naturally Protect Your Skin From the Summer Sun

While most sunscreens contain toxic ingredients, the good news is that you can support your healthy skin and protect it from damage from the inside out. Scientists have identified several nutrients that can up UV protective activity that reduces your risk of sunburn and related skin damage.

One of those nutrients is astaxanthin. It is a potent antioxidant that acts as an internal sunscreen. Astaxanthin has strong free radical scavenging activity that protects you from oxidative damage. It is produced by the microalgae Haematococcus pluvialis[58] when the water supply dries up, to protect itself from ultraviolet radiation. Essentially, it's the algae survival mechanism.

One paper[59] examined the effect of astaxanthin on UV radiation exposure and gene expression. Researchers hypothesized it "would have a significant benefit on protecting

against UVA-induced skin photoaging such as sagging and wrinkles."[60]

A second paper,[61] noted that a combination of 6 mg of astaxanthin taken internally and 2 mg used topically led to "significant benefit" in skin wrinkling, age spots and skin elasticity, texture and moisture content by week eight of the intervention. Several other nutrients naturally play a role in photoprotection, including lycopene,[62] beta-carotene,[63] vitamin D[64] and vitamin E.[65]

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