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Three Scientific Studies Agree – UV Nail Lamps Are Safe!

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Three scientific studies have been performed by different laboratories, all reaching the similar conclusions – UV nail lamps are safe as used in nail salons!

Study 1 was performed by an independent laboratory, Lighting Sciences[1](July, 2010). This study measured the UV output of two widely sold fluorescent-tube style UV nail units (“UV nail lamps”). These results were presented in a paper that I co-authored [2]which concluded the following concerning UV nail lamps used in salons;

- UV-B output is less than what occurs in natural sunlight and is equal to what a person could expect from spending an extra 17 to 26 seconds in sunlight each day during the two weeks between nail salon appointments.
- UV-A exposure is equivalent to spending an extra 1.5 to 2.7 minutes in sunlight each day between salon visits, depending on the type of UV nail lamp used. A UV nail lamp with two UV bulbs corresponds to 1.5 minutes and a nail lamp with four UV bulbs corresponds to about 2.7 minutes each day between salon visits.
- These UV nail lamps emit relatively low levels of UV and these exposure levels are considered well within the safe levels when they are used to perform UV nail services in nail salons.

Study 2 report from Massachusetts General Hospital and the Alpert Medical School at Brown University[3](December, 2012) confirms the safety of UV nail lamps saying, “*Dermatologist and primary care physicians may reassure patients regarding the safety of these devices.*” Also this report states the following about the potential for developing skin cancer, “*UV nail lamps do not appear to significantly increase lifetime risks...*” Doctors often use UV medical lamps as a therapeutic skin treatment, and such treatments are considered safe. When this study compared these medical devices to UV nail lamp output the authors stated, “*...one would need over 250 years of weekly UV nail sessions to experience the same risk exposure.*”

Study 3 is the most comprehensive study of all (May, 2013) – testing six major brands of UV nail units (aka nail lamps), including three UV producing LED nail units using the appropriate International testing standards.[4] The study was authored by Dr. Dowdy and Dr. Sayre, both world renowned experts in measuring and understanding the effects of UV and skin.[5] Dr. Robert Sayre is one of the inventors of the SPF rating system for sunscreens. Tested were leading brands of UV nail lamps, both traditional fluorescent and LED type. The goal was to determine if these UV nail lamps: 1) produce excessive amounts of UV and 2) significantly increase the risks of skin cancer with normal salon use. We now know: They Do Not! These results demonstrate the safety of a wide range of top selling UV nail lamps and show exposures are well within safe limits.

- The study demonstrates that UV nail lamps are safe as used in nail salons and these scientists found they were even safer than expected, “*All of the various UV nail lamps*

submitted for evaluation were found to be significantly less hazardous than might have been anticipated based on the initial concerns raised...

- The study demonstrates- UV nail lamps are NOT like tanning beds, *“When UV nail lamps evaluated in this report are compared together with these earlier sunlamp computations, we find that the UV nail lamps are vastly less hazardous”*.
- The study demonstrates that UV exposure is so low that a worker could put their hand under a UV nail lamp from this study for 25 minutes each day without exceeding established internationally accepted safe limits or “permissible daily exposures”. Compared to nail salon exposures that are typically less than ten minutes per hand and performed only twice per month, clearly normal levels of exposure expected from salon services are safe.

The study demonstrates the low risk of developing NMSC (non-melanoma skin cancer) from using UV nail lamps, which were determined to be 11-46 times lower in risk than natural noonday sunlight. This prompted one of the authors to state publically, *“UV nail lamps are safer than natural sunlight and sunlamps.”*

They concluded it was **“highly improbable”** that anyone would ever exceed safe levels of UV exposure *“...highly improbable that even the most dedicated nail salon client or avid home user would approach this level of exposure.”*

- The scientists concluded that any risks presented by UV nail lamps are **“comparatively trivial”**, but they did express two concerns:

1. Ensure potential users are NOT taking medications that increase UV sensitivity, since they have been, *“... advised against venturing into natural sunlight without proper protection and should be cautious about using UV nail lamps.”* Of course, that is sensible advice that should be heeded!

2. Concern was expressed that the incorrect replacement bulb may be inserted into the UV nail lamp, e.g. those emitting UV-B or UV-C could be very harmful to the skin. Using the incorrect lamp or bulb can also lead to improper curing of UV gels. So, it is VERY important to use ONLY the UV nail lamp manufacturer’s recommended original equipment (OEM) bulb replacement.

Other Useful Information

- This study cited research showing the natural nail plate has a natural UV resistance equal to that of a high SPF sunscreen. The nail plate’s natural UV resistance is comparable to the UV resistance provided by an SPF 40 sunscreen. Also research demonstrated the hand’s backside is 3 1/2 times more resistant than a person’s back, making the hand THE most UV resistant part of the body.
- When sharing his opinions after testing these UV nail lamps, Dr. Sayre said that some *“Physicians are grossly exaggerating exposures.”* And of UV nail lamps he says, *“...this UV source probably belongs in the least risky of all categories.”*

I agree with these statements. These studies demonstrate the safety of UV nail lamps; now this information needs to reach physicians and media news outlets. This comprehensive set of independent evaluations should convince any reasonable person about the safety of UV nail lamps.

Informational Webinar (Free)

Want to learn more about Traditional and LED style UV nail lamps? I recently provided a free webinar entitled, “UV Gel Nails: Latest Findings & Best Practices”.

You can listen to a recorded version by clicking on the link below. <https://vimeo.com/51532960>

[1]Lighting Sciences Inc., 7826 East Evans Road, Scottsdale, Arizona 85260 U.S.A.
www.lightingsciences.com

[2]Do UV Nail Lamps Emit Unsafe Levels of Ultraviolet Light?, Three Experts Rebut Claims that UV Nail Lamps are Unsafe for Skin, D. Schoon, P. Bryson, J. McConnell

[3]Risk of Skin Cancer Associated with the Use of UV Nail Lamp, Journal of Investigative Dermatology, Advance Online Publication, 6 December 2012; doi:10.1038/jid.2012.440

[4]Dowdy, J. C. and Sayre, R. M. (2013), Photobiological Safety Evaluation of UV Nail Lamps. Photochemistry and Photobiology, 89: 961–967. doi: 10.1111/php.12075

[5]ANSI/IESNA RP-27.3-96, Recommended Practices for Photobiological Safety for Lamps- Risk Group Classification & Labeling.

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