"UV Nail Lamps Tested and Found Safe by Two Leading UV Experts"

Dr. John Dowdy and Dr. Robert Sayre

By Doug Schoon

July, 2013 – A comprehensive scientific study concerning the safety of UV nail units (aka UV nail lamps) has just been published and it is VERY important for several reasons:

1. This is the first study to compare six major brands of UV nail units, including three that use UV producing LEDs as the UV source.

2. It is also the first study to adhere to the official internationally accepted standard for UV source testing (ANSI RP-27) which is determined to the superior method for evaluating UV nail units.

3. This independent study was performed by two world leading UV/Skin researchers Dr. John Dowdy and Dr. Robert Sayre. Dr. Sayre is the inventor of the SPF rating system for sun screens and both are considered world-class experts and scientific leaders in the field of research related to UV and skin exposure.

4. The results demonstrate the safety of a wide range of top selling UV nail units (lamps) and show they are well within accepted safe levels.

Analysis and Quotations:

- This study is superior to any previously performed testing on UV curing nail units, because it follows the correct scientific protocols and uses the proper testing equipment necessary to comprehensively evaluate the safety of UV nail lamps. Very few will read this highly technical paper (see link below), so I've provided my analysis and commentary, along with pertinent quotations from the study. To be clear, only the *italicized text*s in quotation are found in the *Dowdy/Sayer paper* and everything else is my commentary about the reported results from this important study.

- Not only does this study provide strong evidence that that UV nail lamps are safe as used in nail salons, the researchers found the UV nail lamps were even safer than they 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 paper cited important research demonstrating the natural nail plate is a very efficient blocker of UV, protecting the nail bed, "*… the UV exposure risks to the nail bed is comparable to that of skin protected by high SPF topical sunscreen.*" Research studies indicate the nail plate's natural UV resistance is comparable to the UV resistance provided by an SPF 40 sunscreen.

- Also cited was additional research to demonstrate that the backside of the hand is 4 times more resistant to UV than the forehead or cheek. It is 3 1/2 times more resistant than the a person's back, making the backside of the hand THE most UV resistant part of the body, "*The dorsum [backside] of the hand is the most UV acclimatized, photo adapted, and UV-resistant body site."*

- The study provided conclusive evidence to demonstrate that 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"*.

- Because the measured UV exposure was so low, a person could go to their workplace and <u>once every day</u> put their hand under a UV nail lamp for 25 minutes and this would STILL be within the "*permissible daily occupational exposure limits*" for workers, according to the applicable international standard (ANSI RP-27). Obviously, salon client exposure is much, much lower and just a tiny fraction in comparison and it must be consider also that client exposure is only twice per month. This scientific paper provides powerful evidence to further support the safety of UV nail lamps; either traditional tube or LED-style.

- This study also demonstrates that risks for development of non-melanoma skin cancer (NMSC) are <u>very low</u> when compared to normal noon sunlight. Of the types of UV that can cause NMSC, this study found that UV nail lamp expose skin to somewhere between 11-46 times <u>less</u> NMSC related exposure expected from spending equal time in natural noon sun light, "*…the UV nail lamps had 11-46 times less NMSC effective irradiance than an overhead 1 atmosphere solar spectrum [normal noon sunlight]."*

- These researchers put things into perspective when they concluded that it is very unlikely that anyone could become overexposed to UV through normal use of the nail lamps tested since they considered it, *"…highly improbable that even the most dedicated nail salon client or avid home user would approach this level of exposure."*

- The researchers noted this *"Notwithstanding the comparatively **trivial UV risks** associated with UV nail lamps there are some reasonable and potentially serious concerns involving these devices that should be discussed."* Special care should be taken in cases where potential users are taking medications that increase UV sensitivity. These individual 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!

- What was the MOST significant risk these scientists identified? Concern that the incorrect replacement lamp/bulb may be inserted into the UV nail unit, e.g. those emitting UV-B or UV-C could be harmful to the skin if accidently inserted. Also, the incorrect lamp/bulb can lead to improper curing of the UV gel. For several reasons, it is VERY important that UV lamps/bulbs are replaced with the exactly the same UV lamp/bulb that was supplied with the UV nail unit when it was purchased. In other words, use ONLY the UV nail unit manufacturer's recommended original equipment (OEM) lamp/bulb replacement.

- When sharing his opinions based on this nail lamps testing Dr. Sayre has 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."* And, *"UV nail lamps are safer than natural sunlight or sunlamps."*

I wholeheartedly agree with these statements and the results of this study. There are several other studies also demonstrating the safety of UV nail lamps. Now this information needs to get into the hands of physicians so they can make proper recommendations based on science, not misinformation. The same goes for the media news outlets. You can do your part, by sharing this Educational Update with everyone you know, including your clients. If you see unfair misinformation being propagated, please share this information. The Dowdy/Sayre study should convince any reasonable person about the safety of UV nail lamps.

If you're curious and want to learn more about UV nail lamps, go to my website "DougSchoon.com". There you can view free webinars, articles, safety-related brochures, links to other UV nail unit (lamp) studies, and other recent Education Updates about both types of UV nail lamps, traditional and LED.

Dr. Dowdy and Sayre's full text scientific paper is available (and worth readying) from this link to the publisher's website http://onlinelibrary.wiley.com/doi/10.1111/php.12075/abstract.

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

7/9/2013