DERMATOLOGY AND AESTHETIC MEDICINE

Cite as: Archiv EuroMedica. 2026. 16; 1. DOI 10.35630/2026/16/Iss.1.022

Received 6 January 2026;
Accepted 19 February 2026;
Published 25 February 2026

GEL MANICURE AND ASSOCIATED RISKS - NARRATIVE REVIEW

Michał Stermach[1], Nina Kubikowska[1] ✉,
Iga Poprawa[1], Zuzanna Gąsior[2],
Przemek Krukowski[2], Małgorzata Landowska[1],
Marta Kwiatkowska[1], Patryk Krawczak[1],
Artur Marcysiak

[1] Medical University of Warsaw, Poland
[2]Tytus Chałubiński District Hospital in Zakopane, Poland

download article (pdf)

✉ ***nina.kubikowska@gmail.com***

ABSTRACT

BACKGROUND

Gel manicure is widely used in professional and home settings. Concerns relate to chemical exposure from acrylate containing nail products, ultraviolet radiation emitted by nail curing lamps, occupational exposure among nail technicians, and potential microbiological implications.

AIMS

To systematize published evidence on health effects associated with gel manicure use, with emphasis on allergic reactions, ultraviolet exposure related outcomes, occupational risks, and microbiological findings, and to identify gaps in the current evidence base.

METHODS

A narrative review was conducted using PubMed, Google Scholar, and ResearchGate. Publications from January 2010 to March 2025 were considered. Only English language articles were included. Inclusion criteria comprised randomized controlled trials, cohort studies, case control studies, systematic reviews, meta analyses, and international or national guidelines reporting health effects or exposure characteristics related to gel manicure use. Exclusion criteria included single case reports, conference abstracts, non peer reviewed publications, animal studies, and articles lacking explicit data on gel manicure exposure or associated health outcomes. The initial search yielded 223 records, and 44 publications were retained for analysis.

RESULTS

Nail curing devices predominantly emit UVA radiation with peak wavelengths between 365 and 405 nm, with substantial variability across lamp types and designs. Under typical usage conditions, cumulative ultraviolet exposure during manicure sessions remains below levels associated with clinically significant dermatologic damage or increased skin cancer risk. Allergic contact dermatitis related to acrylate and methacrylate containing products is the most frequently reported adverse outcome, particularly among nail technicians and younger users. Evidence on microbial

retention and reduced hand hygiene effectiveness with gel or artificial nails is heterogeneous and context dependent.

CONCLUSIONS

Available evidence indicates that allergic sensitization to acrylate containing nail products represents the primary clinically relevant health risk of gel manicure, whereas ultraviolet radiation related carcinogenic risk appears minimal under typical use. Standardization of exposure assessment and further research on occupational and microbiological outcomes are needed.

Keywords: gel manicure, gel nails, UV nail lamp, acrylates, bacterial burden

INTRODUCTION

Gel manicure is one of the most widely used cosmetic nail procedures worldwide and is performed both in professional beauty salons and in home settings [1]. Its popularity is mainly related to long lasting aesthetic results and ease of application. At the same time, the increasing use of gel nail products has raised concerns regarding potential health effects associated with repeated contact with chemical components of nail cosmetics and exposure to ultraviolet radiation emitted by nail curing lamps. Recent dermatological publications have reported skin reactions and other adverse effects potentially linked to these exposures, indicating clinical relevance of the issue [2].

RELEVANCE AND NOVELTY

The widespread adoption of gel manicure has led to increased exposure to acrylate containing nail products and ultraviolet radiation in diverse patterns of use, including professional and home applications. Existing safety standards and recommendations do not consistently differentiate between device types, exposure duration, or frequency of procedures, while the available scientific evidence is often presented as isolated experimental studies or clinical reports rather than as an integrated body of data.

The relevance of this review is determined by the high prevalence of gel manicure use and the growing number of reported dermatological reactions, occupational sensitizations, and concerns related to cumulative ultraviolet exposure. The novelty of the present review lies in the structured integration of data on allergic reactions, ultraviolet radiation exposure, occupational health aspects, carcinogenic considerations, and microbiological findings related to gel manicure within a single narrative framework.

AIM

The aim of this narrative review is to systematize published evidence on health effects associated with gel manicure use related to chemical exposure, ultraviolet radiation exposure, and occupational factors.

OBJECTIVES

1. To document allergic reactions associated with gel manicure products as reported in the literature.
2. To summarize reported characteristics and exposure parameters of ultraviolet radiation emitted by nail curing lamps.
3. To identify occupational health issues described among nail technicians.
4. To collate reported data on carcinogenic and microbiological aspects associated with gel manicure use.
5. To identify explicitly stated gaps and limitations in the current published evidence on health risks related to gel manicure use.

METHODOLOGY

A narrative review of the literature was conducted to identify studies assessing potential health risks associated with gel manicure use, with focus on dermatological, occupational, carcinogenic, and microbiological outcomes. The literature search was performed using the PubMed, Google Scholar, and ResearchGate databases. Publications published between January 2010 and March 2025 were considered. Only articles published in the English language were included.

The search strategy combined the following terms: “gel manicure” OR “gel nails” OR “UV nail lamp” AND (“skin cancer” OR “photoaging” OR “contact dermatitis” OR “allergy” OR “acrylates” OR “toxic exposure” OR “occupational risk” OR “nail salon workers” OR “health risk”).

Inclusion criteria comprised randomized controlled trials, cohort studies, case control studies, systematic reviews, meta analyses, and international or national guidelines reporting health effects or exposure characteristics related to gel manicure use.

Exclusion criteria included single case reports, conference abstracts, non peer reviewed publications, animal studies, and articles lacking explicit data on gel manicure exposure or associated health outcomes.

The initial search identified 223 records. After removal of duplicate entries and application of the inclusion and exclusion criteria, 44 publications were retained for analysis.

The included studies were categorized according to the primary type of reported risk, including dermatological reactions, photobiological effects of ultraviolet exposure, potential carcinogenic considerations, and occupational health aspects related to nail salon work.

FINDINGS

ALLERGIES

Gel nails are very popular today, but they are associated with a significant risk of allergy to acrylic compounds (acrylates and methacrylates), especially when manicure is performed at home. The most common problem is allergic contact dermatitis (ACD)[6]. Symptoms include redness, itching, vesicles, and cracking of the skin around the nails, on the fingers and hands, and even on the face and eyelids[7]. Onycholysis (separation of the nail plate), nail dystrophy, periungual eczema, and psoriasis-like lesions may also occur [8]. In children and adolescents, cases of ACD after gel nail products have been reported, with severe eczema of the fingertips and periungual area[9].

2-Hydroxyethyl methacrylate (HEMA) has been identified as the primary allergen in nail products, eliciting a positive patch test in 97% of patients with allergic contact dermatitis (ACD) related to nail cosmetics[7, 10]. HEMA is present in approximately 60% of commercially available nail products[10]. Although allergy to nail acrylates is observed in only 1–2% of all patients undergoing patch testing, its prevalence is rising in parallel with the increasing popularity of gel nails and at-home UV manicure kits[11, 12]. The use of home kits and improperly cured gels further elevates the risk of sensitization, as the liquid monomer is more likely to come into contact with the skin and induce an allergic reaction[6, 13]. Occupational exposure is higher among professional manicurists and nail technicians[11, 14, 15].

Once sensitized, individuals may also react to acrylates present in medical products, including dental fillings, contact lenses, insulin pumps, and prostheses[4, 11]. Studies emphasize the importance of patch testing when an allergy is suspected, avoiding acrylate-containing products (particularly HEMA), ensuring professional application, thorough curing, and limiting the use of at-home manicure kits[10, 16]. Nevertheless, it should be emphasized that the current evidence is limited, as comprehensive data are lacking due to the absence of meta-analyses and the heterogeneity of available studies[17].

ULTRAVIOLET RADIATION EMISSION FROM NAIL CURING LAMPS

Exposure to ultraviolet radiation from nail curing lamps has attracted growing scientific interest due to its potential implications for photocarcinogenesis, photoaging, and photo-induced allergic and inflammatory skin conditions[18]. Nail curing lamps predominantly emit UVA radiation (320–400 nm); however, substantial variability exists between devices with respect to emitted wavelength, irradiance, uniformity of exposure, and the duration required for proper gel curing. Conventional UV fluorescent lamps typically emit within a wavelength range of approximately 300–410 nm, with a peak around 375 nm, and require curing times of 2–4 minutes per cycle, whereas UV LED lamps emit mainly between 375 and 425 nm, with peaks at approximately 385–405 nm, allowing shorter curing times of 30–60 seconds due to higher power output. In the study by Markova and Weinstock, three devices were analyzed: a 4×9 W UV lamp (peak ~368 nm; irradiance 15,523 mW/m²), a 1×9 W UV lamp (peak ~370 nm; 15,202 mW/m²), and a 6×1 W LED lamp (peak ~405 nm; 2,845 mW/m²), demonstrating that LED devices deliver lower UVA irradiance but at longer wavelengths closer to visible light[19]. Several studies evaluating commercially available salon and home-use lamps have reported several-fold differences in emitted UVA, with measured values ranging from 39 to 185 W/m² in eight home devices and marked variability across 17 salon lamps[20, 21]. Approximately 30% of tested devices were found to emit higher UVA irradiance than midday summer sunlight; nevertheless, the erythemogenic dose received during a single manicure session remained lower than that resulting from equivalent sun exposure[22]. Importantly, irradiance within individual lamps is not uniformly distributed, with higher intensities observed at the periphery than at the center, potentially resulting in greater exposure to specific fingers[20, 23]. Photobiological safety assessments of six nail lamps classified all devices as risk group 1–2 (low to moderate risk), with permissible daily skin exposure estimated at approximately 30–276 minutes of continuous irradiation, compared with typical manicure exposures lasting only a few minutes every 2–3 weeks[24]. Dose modeling by Markova and Weinstock suggested that 13,000–40,000 ten-minute sessions would be required to reach an exposure equivalent to a single full course of narrowband UVB phototherapy[19]. In contrast, Curtis et al. reported that in under 10 minutes, hand exposure could approach the daily occupational UVA limit for outdoor workers, as nail lamps emitted up to 4.2-fold higher energy than sunlight at a UV index of 6 within the 355–385 nm range[25]. Overall, despite pronounced inter-device variability, most studies and reviews conclude that under typical usage conditions the delivered UVA doses remain below established safety thresholds and confer a very low additional risk of skin cancer. Nonetheless, certain

devices may locally exceed occupational exposure limits during short, high-intensity exposure, and the received dose is strongly influenced by lamp model, number and power of bulbs or LEDs, hand position, distance from the light source, and device geometry. Consequently, the use of preventive measures such as sunscreen application, UV-protective gloves, and moderation in treatment frequency is recommended, even though the overall risk remains low.

PREVENTION OF UV EXPOSURE FROM NAIL CURING LAMPS

Mathematical modeling suggests that thousands of manicure sessions would be required for cumulative exposure to approach that of a single course of UVB phototherapy, and the associated risk of skin cancer is therefore considered very low[26]. In vitro studies have demonstrated DNA damage and reduced keratinocyte viability following prolonged UVA exposure, while the application of broad-spectrum sunscreen (SPF 50) significantly attenuates these cellular effects[27].

Despite the low overall risk, several preventive measures are recommended to minimize unnecessary UVA exposure. The application of a broad-spectrum sunscreen with SPF ≥30–50 to the hands 20–30 minutes prior to exposure has been shown to reduce UVA dose and cellular damage[28]. The use of fingerless UV-protective gloves provides near-complete shielding of the dorsal hands and represents one of the most effective protective strategies[29]. Preference for LED nail lamps over traditional UV fluorescent devices may further reduce effective carcinogenic exposure, as LED lamps typically emit longer wavelengths and lower biologically effective doses. Additionally, limiting exposure duration and reducing the frequency of manicure sessions is advised, as cumulative risk increases with total exposure time and number of procedures[20, 27].

POTENTIAL CANCER RISK

Concerns about the potential cancer risk of ultraviolet (UV) nail polish curing lamps have led to recent comprehensive reviews of the evidence. Duong et at. 2025[30] conducted an extensive review of 14 studies addressing UV nail lamp exposure and cutaneous malignancies, finding that while a small number of case reports describe squamous cell carcinoma in individuals with histories of UV nail lamp use, the majority of epidemiological and mathematical modeling studies indicate minimal to no increased skin cancer risk attributable to these devices. Their analysis also noted that only two in vitro studies directly evaluating cytotoxicity and mutagenicity demonstrated mixed results, and a national cancer registry study found no association with melanoma[30]. Based on the current evidence, the authors concluded that there is no compelling support for significant carcinogenic potential, though photoprotection is recommended for individuals anticipating long-term use [30].

Similarly, Bollard et al. (2018)[31] emphasized that although UV nail lamps emit ultraviolet radiation capable of theoretical photocarcinogenic effects, current evidence remains limited and inconclusive, with no definitive causal relationship established between lamp use and skin cancer development[31]. The authors also highlighted a general lack of public awareness of potential UV risks and suggested precautionary measures such as applying broad-spectrum sunscreen or wearing protective gloves during exposure[31]. Taken together, these reviews suggest that while mechanistic concerns and isolated case reports have been documented, robust epidemiological data linking UV nail lamp exposure to clinically significant skin cancer risk are lacking, justifying ongoing research and patient education[30, 31]. The results of the other studies included in the review are summarized in the table below.

The main characteristics and key findings of studies assessing potential skin cancer risk associated with ultraviolet nail lamp exposure are summarized in the table below.

Table 1. Summary of studies evaluating ultraviolet nail lamp exposure and reported skin cancer risk

Author, Year	Study design	Country	Sample size	Study outcome
Bollard, Beecher et al. 2018 [31]	Cross-sectional study and reserach letter	Ireland	424 people	The study shows low public and nail technican awareness of the potential cancer risk from UV nail lamps, as only 3% of users applied sunscreen despite medical recommendations.
Duong, Ceresnie et at. 2025[30]	Systematic review	USA	14 studies	Existing evidence suggests that most UV nail lamps pose a minimal risk of skin cancer to the typical user. Additional longitudinal are warranted.

Beylin, Kornhaber et al. 2025[32]	Systematic review	Israel	11 studies	Current evidence does not conclusively show that UV/ LED nail lamps cause cancer; some data suggest potential mutagenic effects, but findings are limited and inconsistent, and exposure under typical salon conditions appears to pose minimal risk.
Diffey 2012[33]	Experimental study	United Kingdom	N/A	The study indicates that the risk of developing SCC from UVA nail lamps is extremely low, with 72 709 women needing long-term exposure for one additional case to occur
Shipp, Warner et al. 2014[34]	Experimental study	USA	participants from 16 nail saloons	UV-A and UV-B exposure from nail lamps varies widely between devices and hand positions, with higher wattage and longer exposure increasing potential DNA damage
Schwartz, Ezaldein et al. 2020[35]	Systematic review	USA	participants aged under 40 years old as reported in various research studies	Review found no studies reporting melanoma or NMSC on the hands or nail matrix in patients under 40 with a history of chronic gel manicures

BACTERIAL BURDEN

Gel manicure significantly modify the nail surface, creating additional niches and microdamages that may promote the development of microorganisms and, what is especially important in healthcare workers, reduce the effectiveness of hand hygiene procedures[36, 37]. Most available evidence originates from studies conducted among healthcare workers; however, the underlying mechanisms—such as increased surface area, presence of microgaps between the artificial material and the natural nail plate, and reduced accessibility during cleaning—are applicable to the general population[38]. Multiple clinical studies have demonstrated higher rates of colonization with pathogenic bacteria and yeasts on artificial (particularly acrylic) nails compared with natural nails[39, 40]. In a 2018 U.S. study of healthcare workers, alcohol-based hand disinfection reduced bacterial counts on natural and conventionally polished nails but not on gel-polished nails. Although baseline colonization was similar, gel-polished nails were significantly less amenable to effective decontamination than nails with conventional polish[36]. Importantly, after standard handwashing or alcohol-based hand rub application, individuals with artificial nails are more likely to retain pathogenic microorganisms than those with natural nails, indicating reduced efficacy of routine hand hygiene measures. In contrast to studies demonstrating reduced decontamination efficacy with gel-polished nails, a 2021 randomized trial evaluating surgical hand scrubbing with chlorhexidine found no significant difference in the reduction of viable bacteria between gel-coated and uncoated nails at 1 and 14 days[41]. Moreover, Gram-negative bacilli, including *Pseudomonas* spp. and *Klebsiella* spp., as well as yeasts, are more frequently isolated from artificial nails, with microbial burden increasing proportionally to the duration of nail wear[42, 43]. Some studies report that nails extending more than 2 mm beyond the fingertip are associated with higher bacterial counts, regardless of the type of nail coating[44].

DISCUSSION

This narrative review integrates evidence on health risks associated with gel manicure use, allowing comparison of chemical, photobiological, occupational, carcinogenic, and microbiological aspects within a single analytical framework [1,3,16,17]. The reviewed literature demonstrates that adverse outcomes related to gel manicure are heterogeneous and differ substantially in frequency, clinical manifestation, and robustness of supporting data.

Across the analyzed sources, allergic contact dermatitis is the most consistently documented and clinically relevant

adverse effect [4,6,7,9,11]. Multiple studies identify acrylates and methacrylates, particularly 2 hydroxyethyl methacrylate, as key sensitizing agents in nail cosmetics [7,10]. Clinical manifestations range from periungual eczema and onycholysis to distal and facial dermatitis, with several reports describing severe presentations in children and adolescents using self applied gel nail products [6,9,12]. Occupational studies further indicate higher sensitization rates among nail technicians, reflecting repeated exposure and inadequate protection in salon settings [14,15]. Cross reactivity with acrylates present in medical and dental materials has been highlighted as an additional clinically relevant consequence of sensitization [4,11]. Despite consistent reporting of allergic outcomes, the evidence base remains limited by heterogeneity in diagnostic criteria, study design, and exposure assessment, precluding reliable prevalence estimates [16,17].

In contrast, the body of evidence addressing ultraviolet radiation exposure from nail curing lamps indicates a low dermatologic and carcinogenic risk under typical conditions of use [2,18,19,26,30]. Experimental studies demonstrate substantial variability in emitted wavelength and irradiance between devices, lamp types, and hand positioning [19,21,22,24]. While some devices emit higher instantaneous UVA irradiance than natural sunlight, dose modeling studies consistently show that cumulative exposure during routine manicure sessions remains below levels associated with clinically significant skin damage or malignancy [19,26,30]. Systematic and scoping reviews report no convincing epidemiological association between UV nail lamp exposure and melanoma or non melanoma skin cancer, particularly in younger populations [2,27,30,32,35]. Nonetheless, methodological limitations persist, including reliance on surrogate endpoints, short observation periods, and indirect exposure estimation [18,25,31].

Occupational exposure represents a distinct risk domain. Nail salon workers experience repeated contact with acrylate containing products, ultraviolet radiation, and volatile organic compounds [14,15,17]. Available studies consistently describe higher exposure intensity and frequency in this group compared with consumers, but longitudinal data linking exposure to long term health outcomes are scarce [14,15]. This limits causal inference and underscores the need for standardized exposure monitoring in occupational settings.

Microbiological findings suggest that gel and artificial nail coatings may impair effective hand hygiene and promote microbial persistence, particularly in healthcare environments [36,37,38]. Several studies demonstrate higher colonization rates with pathogenic bacteria and yeasts on gel or acrylic nails compared with natural nails, as well as reduced efficacy of alcohol based hand disinfection [36,39,40]. However, results are not uniform across all disinfection protocols, and some controlled studies report no significant difference following surgical hand scrubbing [41]. Nail length, duration of wear, and hygiene method appear to modify these effects [44]. The clinical relevance of these findings outside healthcare settings remains insufficiently defined [38,42].

Overall, the reviewed evidence indicates that the predominant and best documented health risk associated with gel manicure use is allergic sensitization to acrylate containing products [4,6,7,11]. Ultraviolet radiation exposure from nail curing lamps appears to contribute minimally to dermatologic or carcinogenic risk when devices are used as intended, despite pronounced inter device variability [2,19,26,30]. Occupational exposure and microbiological considerations constitute additional concerns, particularly in professional and healthcare contexts [14,36,38].

The limitations of the current evidence base are consistently noted across studies and include methodological heterogeneity, lack of standardized exposure assessment, limited longitudinal data, and frequent reliance on indirect or experimental endpoints [17,18,27]. These constraints limit precise risk quantification and justify further well designed studies using harmonized methodologies.

In summary, this review supports a differentiated risk profile for gel manicure practices, in which chemical sensitization represents the primary clinically relevant concern, while ultraviolet radiation related risks appear secondary under typical use conditions [4,19,30]. Further research is required to clarify long term outcomes, refine exposure characterization, and support evidence based safety recommendations for both consumers and nail professionals.

CONCLUSIONS

This narrative review evaluates health risks associated with gel manicure practices by integrating evidence on ultraviolet radiation exposure from nail curing lamps, chemical sensitization to nail product components, occupational exposure, and microbiological considerations. The reviewed data indicate that ultraviolet radiation emitted by nail curing devices, despite variability between lamp types and exposure conditions, results in cumulative doses that remain below thresholds associated with clinically significant dermatologic damage or increased skin cancer risk under typical patterns of use. Current experimental, modeling, and epidemiological studies do not demonstrate a consistent association between routine use of UV nail lamps and cutaneous malignancy.

In contrast, allergic contact dermatitis related to acrylate and methacrylate containing nail products is the most frequently reported and clinically relevant adverse outcome. Sensitization occurs predominantly due to direct skin contact with uncured or inadequately cured products and is observed more often among nail technicians and younger users, including adolescents using home manicure kits. Occupational exposure represents an important risk domain,

as nail technicians experience repeated and prolonged contact with sensitizing chemicals and other workplace exposures, although long term outcome data remain limited.

Evidence regarding microbiological risks suggests that gel and artificial nail coatings may reduce the effectiveness of routine hand hygiene and increase microbial retention, particularly in healthcare settings and in the presence of increased nail length. However, findings across studies are heterogeneous and context dependent, limiting definitive conclusions on their broader clinical relevance.

Overall, the available evidence supports a differentiated risk profile for gel manicure use, in which chemical sensitization constitutes the primary health concern, while ultraviolet radiation related risks appear secondary under standard usage conditions. Further research is needed to standardize exposure assessment, improve comparability between studies, and clarify long term occupational and microbiological implications to support evidence based safety recommendations.

DISCLOSURE

AUTHORS' CONTRIBUTIONS

Conceptualization: Michał Stermach, Nina Kubikowska

Methodology: Nina Kubikowska, Michał Stermach

Formal analysis: Iga Poprawa, Zuzanna Gąsior

Investigation: Przemysław Krukowski, Patryk Krawczak

Writing-rough preparation: Marta Kwiatkowska, Małgorzata Landowska

Writing-review and editing: Michał Stermach, Iga Poprawa

Supervision: Nina Kubikowska, Artur Marcysiak

All authors have read and agreed with the published version of the manuscript.

USE OF ARTIFICIAL INTELLIGENCE

The authors declare that no artificial intelligence tools were used in the generation, writing, editing, or revision of this manuscript. All content was created solely by the authors.

FUNDING

The article did not receive any funding.

CONFLICT OF INTEREST

Authors declare no conflicts of interest.

REFERENCES

1. Christel Scheers JA, Bertrand Richert. Nail Cosmetology. Hand surgery & rehabilitation. 2024. DOI: 10.1016/j.hansur.2024.101657
2. Metko D, Mehta S, McMullen E, Bednar ED, Abu-Hilal M. A systematic review of the risk of cutaneous malignancy associated with ultraviolet nail lamps: what is the price of beauty? Eur J Dermatol. 2024;34(1):26-30. DOI: 10.1684/ejd.2024.4616
3. Kiran Javaid SM, Madeline Tchack, Noah Musolff, Bassem Rafiq, Babar Rao. Dermatologic Conditions Associated With Various Types of Popular Nail Cosmetics: A Systematic Review of Existing Literature and Future Recommendations. Journal of Cosmetic Dermatology. 2025. doi: 10.1111/jocd.70519
4. Mark Wilkinson DO. Acrylate allergy: time to intervene. Contact Dermatitis. 2017. DOI: 10.1111/cod.12923
5. Carlos A. Ardila Padilla MV, Mariana P. Serrano, M. Laura Dántola. Phototoxic Effects on Skin Biomolecules Induced by a Domestic Nail Polish Dryer Device. Chemical research in toxicology. 2025. DOI: 10.1021/acs.chemrestox.4c00401
6. M. Tramontana KH, L. Bianchi, R. Marietti, L. Stingeni. Use of self-applied sculptured gel nails may increase the risk of allergy to (meth)acrylates in children and adolescents. Journal of the European Academy of Dermatology and Venereology. 2021. DOI: 10.1111/jdv.17429
7. Iemke M. Steunebrink AdG, Thomas Rustemeyer. Contact allergy to acrylate-containing nail cosmetics: A

retrospective 8-year study. Contact Dermatitis. 2023. DOI: 10.1111/cod.14475

8. Emilie Fowler JIS, Joshua D. Fox, and Gil Yosipovitch Psoriasiform Dermatitis after Initiation of Treatment with Dupilumab for Atopic Dermatitis. Dermatitis. 2019. DOI: 10.1097/DER.0000000000000481
9. Paolo Romita CF, Chiara Barlusconi, Katharina Hansel, Marta Tramontana, Luca Stingeni. Contact allergy to (meth)acrylates in gel nail polish in a child: An emerging risk for children. Contact Dermatitis. 2020. DOI: 10.1111/cod.13503
10. Iemke M. Steunebrink AdG, Thomas Rustemeyer. Presence of 2-hydroxyethyl methacrylate (HEMA) and other (meth)acrylates in nail cosmetics, and compliance with EU legislation: An online market survey. Contact Dermatitis. 2023. DOI: 10.1111/cod.14441
11. Kayria Muttardi IRW, Piu Banerjee. The burden of allergic contact dermatitis caused by acrylates. Contact Dermatitis. 2016. DOI: 10.1111/cod.12578
12. Lipner EWSR. Adverse Effects of Do-It-Yourself Nail Cosmetics: A Literature Review. Skin Appendage Disorders. 2024. DOI: 10.1159/000536381
13. Putek J, Przybyla T, Szepietowski JC, Baran W, Batycka-Baran A. Side-effects Associated with Gel Nail Polish: A Self-questionnaire Study of 2,118 Respondents. Acta Dermato-Venereologica. 2020. 10.2340/00015555-3684
14. Grace X. Ma ZW, Rosy Husni, Phuong Do, Kathy Zhou, Joanne Rhee, Yin, Tan KN, Ming-Chin Yeh. Characterizing Occupational Health Risks and Chemical Exposures Among Asian Nail Salon Workers on the East Coast of the United States. J Community Health 2019. DOI: 10.1007/s10900-019-00702-0
15. Aaron Lamplugh MH, Feng Xiang, Janice Trinh, Arsineh Hecobian, Lupita D. Montoya. Occupational exposure to volatile organic compounds and health risks in Colorado nail salons. Environmental Pollution. 2019. DOI: 10.1016/j.envpol.2019.03.086
16. Noureddine Litaiem MB, Faten Zeglaoui. Side effects of gel nail polish: a systematic review. Clinics in dermatology. 2022. DOI: 10.1016/j.clindermatol.2022.07.008
17. Emma Scott DME, Craig G. Burkhart. The Safety of Nail Products: Health Threats in the Nail Industry. International Journal of Dermatology. 2025. DOI: 10.1111/ijd.17826
18. Nahla Shihab HWL. Potential cutaneous carcinogenic risk of exposure to UV nail lamp: A review. Photodermatology. 2018. DOI: 10.1111/phpp.12398
19. Alina Markova MAW. Risk of skin cancer associated with the use of UV nail lamp. The Journal of investigative dermatology. 2013. DOI: 10.1038/jid.2012.440
20. Lyndsay R. Shipp MCAW, MD1; Frederick A. Rueggeberg, DDS, MS1, Loretta S. Davis M. Further investigation into the risk of skin cancer associated with the use of UV nail lamps. JAMA dermatology. 2014. DOI: 10.1001/jamadermatol.2013.8740
21. Helen Ford CH, David Urban, Rick Tinker, Elke Hacker. Quantifying the ultraviolet radiation emitted by nail curing devices: A descriptive study. The Australasian Journal of Dermatology. 2021. DOI: 10.1111/ajd.13539
22. David Baeza YS, Luis Alberto del Río & Rafael González Nail dryer devices: a measured spectral irradiance and labelling review. Photochemical & Photobiological Sciences. 2018. DOI: 10.1039/c7pp00388a
23. Lee S, Gaskin, S., Piccoli, B., & Pisaniello, D. . Blue light exposure in the workplace: a case study of nail salons. Archives of Environmental & Occupational Health. 2021. DOI: 10.1080/19338244.2021.1924604
24. John C. Dowdy RMS. Photobiological Safety Evaluation of UV Nail Lamps. Photochemistry and Photobiology. 2013. DOI: 10.1111/php.12075
25. Julia Curtis MPT, CCAb · Cambria Judd, MDa · Brandon Childs, BSa · Christopher Hull, MDa · Sancy Leachman, MD, PhD3. Acrylic nail curing UV lamps: high-intensity exposure warrants further research of skin cancer risk. Journal of the American Academy of Dermatology. 2013. DOI: 10.1016/j.jaad.2013.08.032
26. Diffey BL. The risk of squamous cell carcinoma in women from exposure to UVA lamps used in cosmetic nail treatment. British Journal of Dermatology. 2012. DOI: 10.1111/j.1365-2133.2012.11107.x
27. Dmitry Beylin RK, Danielle Le Lagadec, Michelle Cleary. Assessing the Health Implications of UV/LED Nail Lamp Radiation Exposure During Manicure and Pedicure Procedures: A Scoping Review. International Journal of Dermatology. 2025. DOI: 10.1111/ijd.17669
28. Stephanie Marie Bollard SMB, Nicole Moriarty, Jack L Kelly, Padraic J Regan, Shirley M Potter. Skin cancer risk and the use of UV nail lamps. Australasian Journal of Dermatology. 2018. 10.1111/ajd.12806
29. N. Dinani SG. Nail cosmetics: a dermatological perspective. Clinical and Experimental Dermatology. 2019. DOI: 10.1111/ced.13929
30. Duong JQ, Ceresnie MS, Kohli I, Lim HW. Revisiting Cutaneous Carcinogenic Risk From Ultraviolet Nail Polish Dryer Lamp Exposure. Photodermatol Photoimmunol Photomed. 2025;41(6):e70060. DOI: 10.1111/phpp.70060

31. Bollard SM, Beecher SM, Moriarty N, Kelly JL, Regan PJ, Potter SM. Skin cancer risk and the use of UV nail lamps. Australas J Dermatol. 2018;59(4):348-9. DOI: 10.1111/ajd.12806
32. Beylin D, Kornhaber R, Le Lagadec D, Cleary M. Assessing the Health Implications of UV/LED Nail Lamp Radiation Exposure During Manicure and Pedicure Procedures: A Scoping Review. Int J Dermatol. 2025;64(4):659-66. DOI: 10.1111/ijd.17669
33. 33. Diffey BL. The risk of squamous cell carcinoma in women from exposure to UVA lamps used in cosmetic nail treatment. Br J Dermatol. 2012;167(5):1175-8. DOI: 10.1111/j.1365-2133.2012.11107.x
34. Shipp LR, Warner CA, Rueggeberg FA, Davis LS. Further investigation into the risk of skin cancer associated with the use of UV nail lamps. JAMA Dermatol. 2014;150(7):775-6. DOI: 10.1001/jamadermatol.2013.8740
35. Schwartz CT, Ezaldein HH, Merati M. Ultraviolet Light Gel Manicures: Is There a Risk of Skin Cancer on the Hands and Nails of Young Adults? J Clin Aesthet Dermatol. 2020;13(7):45-6. PMCID: PMC7492020
36. Angela L. Hewlett HH, Caitlin N. Murphy, Lindsay Helget, Heidi Hausmann, Elizabeth Lyden, Paul D. Fey, Rodney Hicks,. Evaluation of the bacterial burden of gel nails, standard nail polish, and natural nails on the hands of health care workers. AJIC (American Journal of Infection Control). 2018. DOI: 10.1016/j.ajic.2018.05.022
37. Shelly A. McNeil CLF, Sara A. Hedderwick , Carol A. Kauffman. Effect of hand cleansing with antimicrobial soap or alcohol-based gel on microbial colonization of artificial fingernails worn by health care workers. Clinical Infectious Diseases. 2001. DOI: 10.1086/318488
38. Marta Wałaszek WK, Barbara Jagiencarz-Starzec, Małgorzata Kołpa, Zdzisław Wolak, Jadwiga Wójkowska-Mach, Anna Różańska. Effectiveness of hand disinfection depending on the type of nail plate coating – a study among nurses working in a specialist hospital. Medycyna pracy. 2020. DOI: 10.13075/mp.5893.01019
39. Sara A. Hedderwick SAM, Michael J. Lyons,, Kauffman CA. Pathogenic Organisms Associated with Artificial Fingernails Worn by Healthcare Workers. Cambridge University Press. 2000. DOI: 10.1086/501794
40. Toles A. Artificial Nails: Are They Putting Patients at Risk? A Review of the Research. Journal of Pediatric Oncology Nursing. 2002. DOI: 10.1016/s1043-4542(02)00009-7
41. Stacy L. Anderson LW, Stephanie L. Achilles, Kaitlyn E. Wooton, Carrie L. Shaffer, Julie A. Hunt The impact of gel fingernail polish application on the reduction of bacterial viability following a surgical hand scrub. Veterinary Surgery. 2019. DOI: 10.1111/vsu.13703
42. M. Iorizzo MCP. Bacterial and viral infections of the nail unit: tips for diagnosis and management. Hand Surgery and Rehabilitation. 2022. DOI: 10.1016/j.hansur.2022.11.006
43. A Shemer HT, B Davidovici, MH Grunwald, B Amichai. Onycomycosis due to artificial nails. Journal of the European Academy of Dermatology and Venereology. 2008. DOI: 10.1111/j.1468-3083.2008.02700.x
44. Jade M. Hardy TJO, Steven A. Martinez, Lisa P. Jones, Margaret A. Davis. The effect of nail characteristics on surface bacterial counts of surgical personnel before and after scrubbing. Veterinary Surgery. 2017. DOI: 10.1111/vsu.12685

back