

# Health risks beneath the painted beauty in America's nail salons

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Perfect nails, at what cost? Nick Lehr, CC BY-NC-ND

The desire for beautiful nails has fueled an entire [nail salon industry](#) that's growing rapidly, with storefronts cropping up on every major street across the nation. Yet, the recent articles from the New York Times exposed an industry that's left workers struggling both with [unlivable wages](#) and with [damaged health](#). Everyone who enters a nail salon can be affected, yet the workers are the ones left entirely unprotected.

## A chemical by any other name

Nail care products contain, in varying amounts, many toxic and potentially hazardous ingredients.

Chemical ingredients in nail care products range from cancer-causing compounds such as [formaldehyde](#) to others that [disrupt the endocrine system](#). Researchers have identified toluene, formaldehyde and dibutyl phthalate – nicknamed the "toxic trio" because of their serious health impacts – as three chemicals of high concern for salon workers.

[Toluene](#) is a commonly used solvent that creates a smooth finish across the nail and keeps the pigment from separating in the bottle, but can affect the central nervous system and cause reproductive harm. Its major use is as an additive in gasoline.

[Formaldehyde](#), a known carcinogen, is used as a nail-hardening agent and disinfectant for nail care tools.

Exposure to [dibutyl phthalate](#), added to polishes to provide flexibility, has been linked to reproductive problems. In addition to this trio, there are many other harmful chemicals used in nail care products.

Many nail salons [lack adequate exhaust ventilation](#) or multiple pathways – such as open windows and doors – to increase indoor-outdoor air

exchange. Evaporated chemicals from nail products are often trapped inside salons, meaning workers are continuously exposed. So workers' exposure is amplified: first they experience direct contact with the chemicals in the products, then they continuously breathe in these chemicals within small, poorly ventilated salons.



So colorful, so toxic? Credit: Kellie CA, CC BY-NC-ND



## Lack of regulatory oversight

Despite nail care products' heavy use, industrial chemicals in cosmetics are largely unregulated in the US.

In fact, of the [10,000 chemicals](#) used in [personal care products](#), only [about 10%](#) have been [assessed for safety](#). While the US Food and Drug Administration is responsible for the [regulation of cosmetics](#), it lacks the legal authority to require manufacturers to conduct product pre-market testing to ensure consumer safety or to require listing of ingredients in products sold for professional use.

What does that mean for the average consumer? Bottom line, that bottle of nail polish you apply to your nails or the nails of your five-year-old little girl was put on the market without ever having been tested for safety.

For workers using nail care products daily, there is no requirement for product manufacturers to disclose ingredients on their labels. And even if they do, no one is really checking to ensure that these are accurate listings. A [report](#) by the [California Department of Toxic Substances Control](#) on product testing of various nail polish brands in the San Francisco Bay Area found that some contained harmful chemicals despite misleading labels that claimed they were free of such compounds.

The rising awareness of the health hazards posed by the chemical ingredients in nail care products has pressured manufacturers to create safer alternatives in the form of nail polishes free of the toxic trio. But many products still contain them and there is no regulatory oversight.

## Health effects aren't hypothetical



A moment of luxury for a patron translates to occupational health hazards for the workers. Credit: janet lackey, CC BY-NC

Nail salon workers pay a huge price in the form of their health. Exposure to nail care products with harmful chemicals can result in a number of [health effects](#), ranging from skin irritations, eye injuries, allergic reactions, [cognitive and neurological symptoms](#), nausea, respiratory problems, cancer and uncontrollable muscle contractions to impaired [reproductive](#) and [development](#) processes.

[Research studies](#), including my research at the [Cancer Prevention Institute of California](#), have documented [acute health effects](#) in these workers, such as headaches, breathing problems and skin irritations, commonly associated with overexposure to solvents used in these products. Studies have also shown that working in salons is linked to reproductive health problems, including [spontaneous birth](#), [preterm delivery](#) and [undersized babies](#) as well as pregnancy complications. The exposures and health effects are enough to lead some governmental agencies, including the US Environmental Protection Agency (EPA), to invest in [research and outreach](#) to the salons.

As an epidemiologist, I have conducted multiple research studies to examine workplace exposures and health effects for nail salon workers. In my talks with hundreds of salon workers and owners, many have shared their personal stories of health problems, ranging from chronic headaches to tragic cases of cancer and pregnancy complications. While research doesn't always provide definitive answers on the links between their workplace exposures and health problems, it's hard to ignore the patterns in these stories.

## **What can be done?**

California has been leading the charge to create healthier environments for both workers and owners. The [California Healthy Nail Salon Collaborative](#) has worked with multiple counties to establish the Healthy Nail Salon Program. These counties provide training and formal recognition for salons that participate in the program, which means they use safer alternative nail care products that do not contain the toxic trio. Our research in partnership with the US EPA has shown that [these programs can be effective](#) in improving worker safer practices and the salon environment. Their workers wear gloves to minimize direct contact with the chemicals, and the salons have ventilation methods to improve air quality. Other local and state agencies should follow suit to encourage healthy salons for workers and customers. This program would provide healthy choices for consumers who like to frequent salons.

Consumers who regularly [buy nail care products](#) should look for nail polishes without the toxic trio – formaldehyde, toluene and phthalates. These purchasing choices will put the pressure on manufacturers to create safer alternative products.

Ultimately, the first line of defense for the workers and customers is to ensure that the chemicals never enter the salons in the first place. Customers can leverage their buying power toward this end.

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