



Take precautions during laser hair removal, researchers advise

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The smelly "burning hair" smoke released during laser hair removal could be a health hazard, especially for people with heavy exposure to it, researchers report.

The smoke contains chemicals that irritate the airways and are known to cause cancer, Dr. Gary Chuang told Reuters Health by email.

He and his colleagues collected hair samples from two volunteers, sealed the samples in glass jars, treated them with a laser, and captured 30 seconds of laser "plume" (a smoky mix of burnt hair and chemicals).

They found 377 chemical compounds in the smoke, including 20 that are known environmental toxins, such as carbon monoxide, and 13 that are known or suspected to cause cancer, like benzene and toluene, according to a report in *JAMA Dermatology*.

Chuang, of the David Geffen School of Medicine at the University of California, Los Angeles, and colleagues also measured the concentrations of very fine particles in the plume that could be easily inhaled. They found an eight-fold increase in concentrations of the particles compared with room air before the procedure, even when there was a smoke evacuator nearby.

When they turned the smoke evacuator off for just 30 seconds, the particle count increased more than 26-fold.

The researchers conclude that the burning-hair plume released during laser hair treatment should be considered a "biohazard, warranting the use of smoke evacuators, good ventilation, and respiratory protection."

"Laser hair removal performed by improperly trained personnel or in an inadequately equipped facility will put both the healthcare workers and patients at risk," Chuang told Reuters Health. The procedures should be done only in spaces with "an adequate air filtration system and a smoke evacuator," he advises.

Risks are likely greater for practitioners who may work eight hours straight, Chuang observed - but no studies have yet looked at how much exposure to the burning-hair plume is too much.

"It's similar to estimating the effect of second-hand smoke - very difficult to do," Chuang acknowledged. Nevertheless, he stressed, "it's important to minimize the risks."

Dermatologist **Dr. Delphine Lee of the John Wayne Cancer Institute** in Santa Monica, California, urges people to "keep these results in perspective."

Consider, she wrote in an email to Reuters Health, "how these levels compare to everyday exposures to other carcinogen-laden air," such as an urban environment with lots of car exhaust or a smoky restaurant.

"There has been no reported epidemic of increased lung disease or other cancer in technicians or health professionals who perform procedures with lasers, people who visit dermatology offices that use lasers, or patients who have frequent laser hair removal," Lee noted.

"However, this landmark study alerts us to consider the consequences and further studies are warranted to investigate the risk of exposure to laser hair removal plume," Lee said.

Although the actual risks aren't yet known, Lee advises both practitioners and consumers "to take some moderate precautions, such as wearing respiratory masks," during the procedure.