LASERS

THE HAZARDS OF LASER HAIR REMOVAL ASSOCIATED PLUME AND POTENTIAL WAYS TO MINIMIZE EXPOSURE

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Introduction: Laser hair removal is one of the most commonly performed non-invasive cosmetic procedures in the U.S. and its popularity continues to grow. Several studies have shown potentially hazardous occupational exposures to ultrafine particles in the plume generated during the procedure as carcinogens and environmental toxins have been documented in the plume

Objective: To analyze and outline the potential dangers of LHR associated plume

Materials and Methods: Review of the literature was performed

Results; Cryogen spray cooling systems were found to produce 10 fold higher Ultrafine particles (UFP) counts than baseline where sapphire cooling systems had counts similar to baseline. Use of a smoke evacuator was rendered ineffective when held outside of the recommended1-2 inches from the source of plume. . Factors such as duration of procedure, anatomic location being treated, type of laser, and type of cooling system used were strong predictors of ultrafine particle concentrations. Known toxic agents such as acetamide, toluene, benzene, propene, and carbon monoxide were reported as being detected.

Conclusions: LHR –associated plume is a health hazard with potential for cardiopulmonary disease as well as other sequelae such as cancer. Ultrafine particles are the most concerning because of their small particle size. Standards of safety are imperative for the safety of workers and patients alike