

Laser-Induced Smoke in Dermatologic Practice: A Survey to Explore Hazard Perceptions, Safety Measures and Unmet Needs

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Supplementary File 1. Survey Questions for examining current perceptions of the health hazard of laser-induced smoke and its management among members of the ESLD

Survey: Surgical smoke-hazard perceptions and protective measures

Respondent Characteristics

Personal Characteristics

1. Indicate in which country you currently practice.
- free text
2. Gender
- female
- male
3. Years of experience with the use of lasers
- < 5 years
- 5-10 years
- 10-15 year

- > 15 years

4. Professional status

- dermatologist
- plastic surgeon
- other, please specify

5. Number of procedures with the use of lasers or electrosurgery that you perform or supervise during a working week:

	not applicable	Occasionally: < 5 per week	Regular: 5-15 per week	Frequently: > 15 per week
Surgical laser				
Electrosurgery				
Hair removal laser				
Laser for pigmented lesions				
Laser for vascular lesions				
Fractional laser				

Facility characteristics

6. Indicate where you practice most frequently

- hospital
- private clinic
- both

Perceptions: Is Surgical Smoke a Health Hazard?

Personal awareness

7. In your opinion would you agree with the statement that surgical smoke is a health hazard?

- strongly agree
- agree
- neutral
- disagree
- strongly disagree

Awareness in the team

8. Health hazards of surgical smoke are already a topic in the work area/team:

- strongly agree
- agree
- neutral
- disagree
- strongly disagree

Availability and use of protective measures in the workplace:

Technical protection measures/personal protection measures

9. Which of the following safety measures did your office generally use before the COVID-19 outbreak?

	Surgical mask	FFP1 mask	FFP2 mask	FFP3 mask	Smoke evacuation system	None	None applicable
Ablative laser							
Electrosurgery							
Hair removal laser							
Pigment laser							
Vascular laser							
Ablative fractional laser							
Non-ablative fractional laser							

10. Which of the following safety measures does your office generally use before the COVID-19 outbreak?

	Surgical mask	FFP1 mask	FFP2 mask	FFP3 mask	Smoke evacuation system	None	None applicable
Ablative laser							
Electrosurgery							
Hair removal laser							
Pigment laser							
Vascular laser							
Ablative fractional laser							

Non-ablative fractional laser							
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Explanation of protective face masks:

- There are two different types of disposable masks available:

- Surgical masks: exact filtration characteristics of surgical masks are rather variable and depend on the layers used.
- High filtration masks:
 - FFP1 (filtering face piece level 1) mask
 - FFP2 (filtering face piece level 2) mask = N95, P95, R95
 - FFP3 (filtering face piece level 3) mask = N100, P100, R100, P99, R99

Filtration efficiency for particles of 0.3 µm	European standard (EN 149:2001)	US Standard (National Institute for Occupational Safety and Health (NIOSH))
80%	FFP1	–
95%	FFP2	N95
99%	FFP3	N99
99.97%	–	N100

Obstacles to the Use of Preventive Measures in Practice, and Requests

11. Do you feel that you make sufficient use of safety measures concerning laser smoke?

-Yes

-no

If no please give reasons:

- I do not regard surgical smoke as a health hazard
- The safety measures are distracting me during the procedure
- The procedure time is too short/the smoke development is too low
- Taking safety measures takes too much time
- The safety measures are too unwieldy/complex
- Safety measures are not incorporated in our process yet

- Other: Free text

12. Would you like to have more or better protective measures (evacuation systems, PPE)?

- yes

- no

If yes:

- What protective measures would you like? Free text

13. Some smoke evacuation systems make noise. I experience this noise as annoying/disturbing:

- strongly agree

- agree

- neutral

- disagree

- strongly disagree

14. I am concerned about hearing damage from continued exposure to noisy devices (smoke evacuation systems, some lasers):

- strongly agree

- agree

- neutral

- disagree

- strongly disagree

15. I am disturbed by the increased room temperature caused by laser devices or smoke evacuation systems:

- strongly agree

- agree

- neutral

- disagree

- strongly disagree

16. Do you have requests from manufacturers of protective equipment to improve their products?

- yes

- no

If yes: please give your suggestion