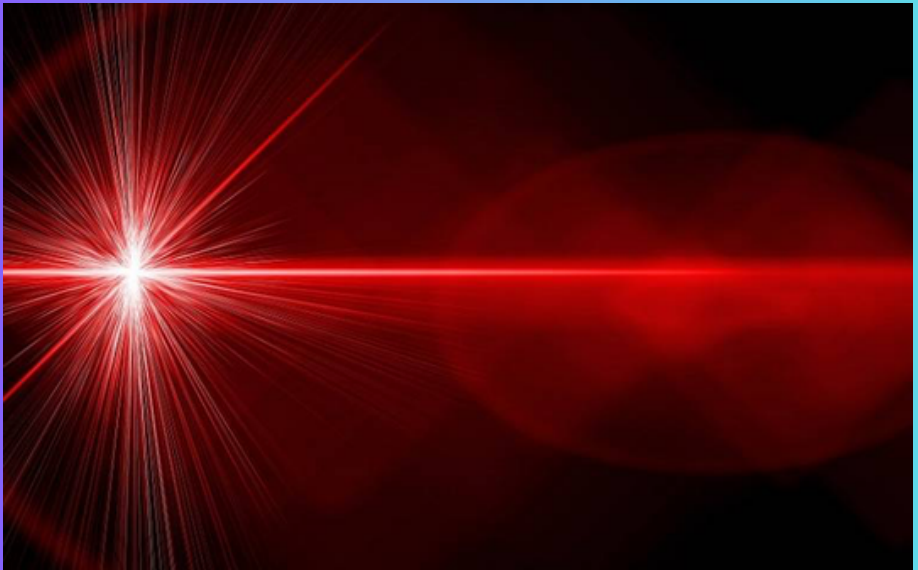


Laser/IPL Plume

A serious hazard



Mike Murphy
Lisa McMahon

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What is plume?

The smoke we sometimes smell, or see, after laser/IPL treatments is called 'plume'. It has been found to consist of:

tiny fragments of burnt cells or tissues
vaporised tissue including hair and skin
toxic substances
viable viral particles
carbonised blood cells
carcinogenic cells/tissues
benzene
hydrogen cyanide.

All of these are potentially hazardous to our health, particularly the lungs. There are reported cases of laser operators contracting viruses, and even cancer, after years of laser treatments.

References:

1. Hallmo P, Naess O. Laryngeal papillomatosis with human papillomavirus DNA contracted by a laser surgeon. *Eur Arch Otorhinolaryngol*.1991;248(7):425-427
2. Hoyer R.C., Ketcham A.S., Riggle G.C. The air-borne dissemination of viable tumour by high-energy neodymium laser. *Life Sci*. 1967; 6:119-125
3. Jerome M. Garden, MD; M. Kerry O'Banion, MD, PhD; Lori S. Shelnitz, MD; et al. Papillomavirus in the Vapor of Carbon Dioxide Laser-Treated Verrucae. *JAMA* 1988;259:1199-1202
4. Özcan İlçe, İlçe A., et al. The examination of problems experienced by nurses and doctors associated with exposure to surgical smoke and the necessary precautions, *Journal of Clinical Nursing* 26(11) June 2016.

Who is at risk?

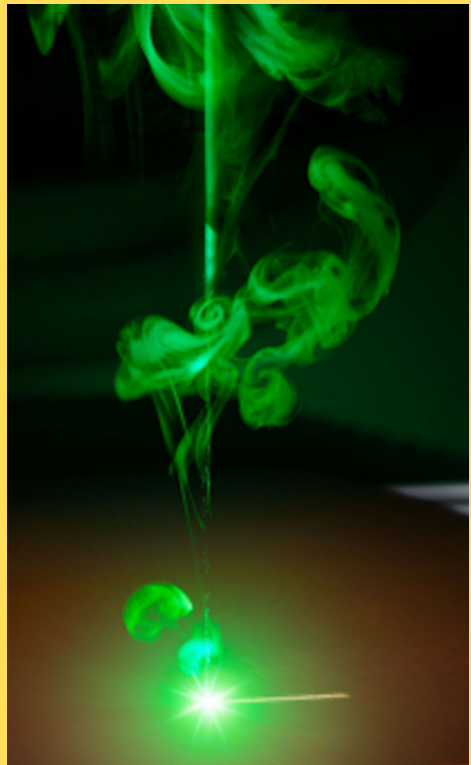
The people most at risk are the laser operators (techs). If performing laser/IPL treatments routinely over days and weeks, their risk of contracting an unwanted infection increases.

The patients/clients also run a risk, although it is much smaller than that of the equipment operators.

Which are the 'riskiest' treatments?

Ablative laser procedures generate the most hazardous plume since they actively boil tissues which often enter the environmental air.

At the time of writing these include CO2 laser resurfacing and ablation, laser/IPL hair removal and laser tattoo removal.



Recommendations to help reduce the risk

Face masks

We recommend you wear one of the following face masks to minimise your inhalation of plume:

**K95/K99 or
FFP2/FFP3 or
KN95/KN99**

Extraction device

Use an extraction device to suck the plume from the treatment site during procedures.

Air filtration unit

Use an air filtration unit to constantly clean the air in your laser/IPL room. Use HEPA filters to catch most of the particles.

Windows

If possible, open your windows between treatment sessions, and at the end of the working day.

Gel

Gel can help to trap some of the plume particles!

Finally...

Wash any exposed skin frequently to remove any nasty particles.

The Law

At present, there is no direct law in the UK which covers this issue. But, all employers are legally bound by the Health and Safety Act, 1974.

This Act informs us that we **MUST** ensure the health and safety of all employees and customers involved in our business, clinic or healthcare centre.

The fact is that we can take steps to reduce the risks and hazards associated with plume. Having identified it as a problem, we are legally, and ethically, bound to act on it as soon as we can.

If the proper steps are not taken by employers and service providers, then there is a real risk of legal action in the future, when the public become more aware of this particular hazard.

Don't get caught out - the precautions are not expensive to implement - the legal liabilities might be!



Masks

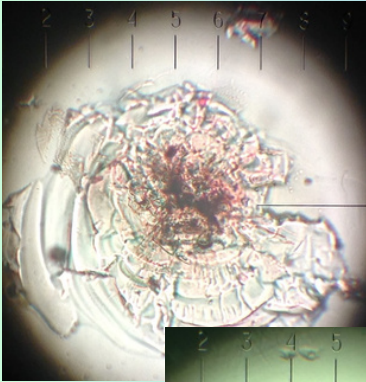
We all remember the Covid days when everyone started to wear masks. Most people chose 'surgical masks', not realising that these offer very little protection against external viruses or bacteria. Surgical masks are designed to protect patients from the surgeons and theatre staff - not the other way round!



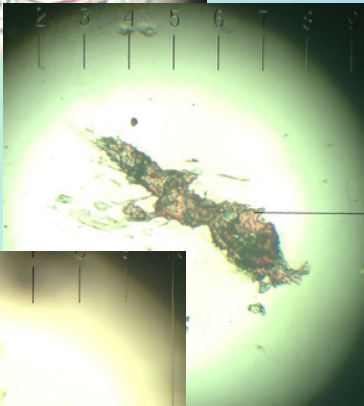
They should have been wearing those masks which protect against viruses etc - these are properly known as 'respirators'. These include the one in the photo above, plus the FFP2 or 3 and KN95/99 variety too.

These are designed to reduce the risk in inhaling unwanted particles. We published an article on this in 'Aesthetics' in July 2020 (scan QR code above). These are the correct PPE you need to minimise the risk with plume.

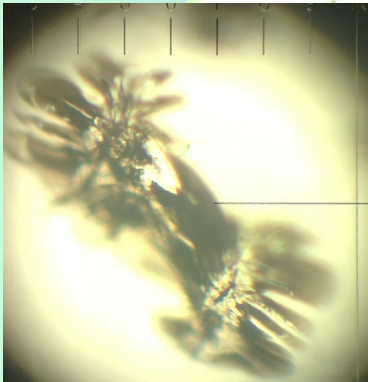
Finally...



Laser/IPL plume is a real hazard - especially to the operators. We must take the appropriate steps to minimise the risks associated with this hazard.



It takes just a few simple actions to significantly reduce this risk. And this will reduce the chance of any unwanted and expensive legal problems in the future!



Listen to our discussions on this and more topics in our podcast - '***Lasers in Skin***' - available on wherever you find your podcasts.

Our new podcast...



Mike Murphy has been investigating laser-tissue processes and treatments since 1986. He has published many peer-reviewed papers, articles and books on various topics including the removal of hair, tattoos, blood vessels, pigmentation using lasers and IPL systems.

He continues to research all of these areas and still presents his work at international medical laser conferences.

He has published three books on this subject:

An Introduction to Medical/Aesthetic Lasers and IPL Systems

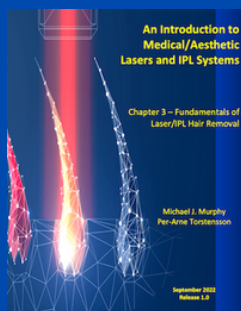
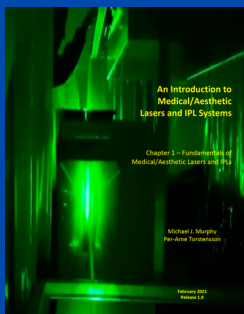
An Introduction to Laser Tattoo Removal

An Introduction to Laser/IPL Hair Removal



Download all our booklets from
'Scribblings.info'

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