

Hill D, O'Neil J, Powell R, Oliver D (2012). "Surgical smoke – a health hazard in the operating theatre. A study to quantify exposure and a survey of the use of extractor systems in the UK plastic surgery units". *Journal of Plastic, Reconstructive & Aesthetic Surgery*; 65 (7), 911-916.

LINK - <http://www.sciencedirect.com/science/article/pii/S1748681512000939>

Summary

Surgeons and operating theatre personnel are routinely exposed to the surgical smoke plume generated through thermal tissue destruction. This represents a significant chemical and biological hazard and has been shown to be as mutagenic as cigarette smoke. It has previously been reported that ablation of 1 g of tissue produces a smoke plume with an equivalent mutagenicity to six unfiltered cigarettes. We studied six human and 78 porcine tissue samples to find the mass of tissue ablated during 5 min of monopolar diathermy. The total daily duration of diathermy use in a plastic surgery theatre was electronically recorded over a two-month period. On average the smoke produced daily was equivalent to 27–30 cigarettes. Our survey of smoke extractor use in UK plastic surgery units revealed that only 66% of units had these devices available. The Health and Safety Executive recommend specialist smoke extractor use, however they are not universally utilised. Surgical smoke inhalation is an occupational hazard in the operating department. Our study provides data to quantify this exposure. We hope this evidence can be used together with current legislation to make the use of surgical smoke extractors mandatory to protect all personnel in the operating theatre.