**The problem with ‘suction only’ methods to reduce surgical smoke exposure**  
  
Dear Editor,  
  
I read with interest the letter to the editor by Borsetti et al. [1] which described a novel method for addressing the problem of intraoperative exposure to surgical smoke. Although I commend them for attempting to address the ongoing risk that exposure may pose in the perioperative setting, there are some limitations regarding the ‘suction only’ approach that are worth discussing.  
  
Plastic surgery entails that surgeons and other perioperative staff in the operating theatre will be routinely exposed to surgical smoke as a by-product of diathermy, laser ablation, or harmonic scalpel tissue dissection. The risk that surgical smoke poses remains undetermined but there is enough evidence available to warrant caution and to make attempts to reduce exposure [2].   
  
As noted by Borsetti et al. [1], there are now a range of surgical smoke evacuation devices available on the market. Although they have been shown to be effective, they can require significant investment and ongoing costs. In optimal conditions a modern smoke evacuation device can remove 99% of surgical smoke [3]. Nevertheless, if exposure risks harming perioperative staff—and patients—operating departments should be willing and are obligated to make investments to protect their health [4,5].  
  
Here, I briefly outline my primary concerns with the proposed novel method, which are equally applicable to other ‘suction only’ approaches. Using wall-mounted suction remains the most common means of attempting to remove surgical smoke from the operative site, despite only being designed to remove fluids and the limited evidence for its efficacy [6]. Moreover, there is a risk that the accumulation of particulate matter from the smoke can contaminate the filter, negatively affect its efficacy for removing fluid, and damage the central vacuum system. This can be partly mitigated by use of an inexpensive 0.1 micron in-line filter—where not already in use—that can be situated between the suction canister and the wall-mounted suction outlet [7]. Nevertheless, the ‘suction only’ approach—even with an in-line filter—risks compromising the wall-mounted suction and could contribute to an adverse patient outcome in a situation where strong suction is necessary. It is also worth noting that although wall-mounted suction may be effective at removing visible smoke from the immediate operative site, the limitations of the suction power generated (~40 litres/minute) still leaves the operating theatre contaminated with invisible surgical smoke. Only a purposely designed surgical smoke evacuation device will safely and adequately remove surgical smoke from the operating theatre.  
  
  
**References**  
  
[1] Borsetti M, Patanè L, Germano S. *et a*l (2021) Minimizing operating room personnel exposure to surgical smoke with an easy and costless method. *Aesth Plast Surg*. <https://doi.org/10.1007/s00266-021-02451-9>   
  
[2] Limchantra IV, Fong Y, Melstrom KA (2019) Surgical smoke exposure in operating room personnel: a review. *JAMA Surg* 154: 960–967.

[3] Seipp, HM, Steffens, T, Weigold, J, *et al* (2018) Efficiencies and noise levels of portable surgical smoke evacuation systems. *J Occup Environ Hyg* 15: 773–781.

[4] Rodger D (2021) The case for compulsory surgical smoke evacuation systems in the operating theatre. *Clinical Ethics*. <https://doi.org/10.1177%2F14777509211063589>   
  
[5] Dobrogowski M, Wesołowski W, Kucharska M. *et al* (2014) Chemical composition of surgical smoke formed in the abdominal cavity during laparoscopic cholecystectomy – assessment of the risk to the patient. *Int J Occup Med Environ Health* 27: 314–325  
  
[6] Spearman J, Tsavellas G, Nichols P (2007) Current attitudes and practices towards diathermy smoke. *Ann R Coll Surg Engl* 89: 162–165.  
  
[7] Katoch S, Mysore V (2019) Surgical Smoke in Dermatology: Its Hazards and Management. *Journal of Cutaneous and Aesthetic Surgery* 12: 1–7.