

Smoke Evacuation...Is It Necessary?

The content of surgical smoke is becoming more and more scrutinized by scientists and industry leaders. Because Valleylab is the leader in electrosurgery and electrosurgical safety, the number of calls we have received regarding surgical smoke has increased dramatically over the past few months. In this issue we will attempt to answer a few of the questions most frequently asked by our callers.

Why was a "double standard" created between laser plume and electrosurgical smoke?

Originally, laser plume was considered more dangerous because the plume was generally not subjected to high temperatures and therefore could contain "living" particulate matter. Facilities automatically purchased smoke evacuators in conjunction with their new lasers and the laser was not to be used without the evacuator. Compliance was mandatory. In contrast, electrosurgical smoke was considered annoying but "sterile" because it was subjected to high temperatures. Now it is known that both laser and electrosurgical smoke contain carbonized tissue, bloodborne pathogens and carcinogens¹.

What are the ill effects from exposure to the smoke?

At high concentrations, smoke can cause ocular and upper respiratory tract irritation².

Why can't we just use wall suction?

Wall suction is certainly better than nothing in the same way that, when going out in the sun, a hat or number 5 sunblock is better than no protection at all. We certainly encourage you to use an evacuation method appropriate to the smoke expected from the procedures in which you will participate. Please remember, if evacuating smoke with a

wall suction, inline filters are suggested to protect the suction system and trap smoke particles. NIOSH and ECRI recommend a dedicated smoke unit. Perhaps not all cases require a smoke evacuator, but all smoke should be evacuated and filtered to protect the OR staff and patient.

Is smoke evacuation mandatory?

No, but it is recommended by several organizations including NIOSH³, AORN⁴ and ECRI⁵. Changes take time and education. Laser plume evacuation was common because it was initiated with the use of the laser. Electrosurgical smoke has been around for a long time and it certainly was "part of the territory" when entering the OR. Now scientists and industry are looking at the dangers of contaminated mist coming from power drills as well as surgical smoke.

Staff education is beginning to change the assumption that you must "put up with smoke" to work in the OR. Think of smoke evacuation as part of the larger concern to evacuate dust, fog, fume, mist, gas, smoke, spray and vapor of all kinds.....and breathe easy as we go into the 21st century.

- 1 V. Paschall, "Smoke vs. The People Setting up a Smoke Safe Environment," *Surgical Services Management* (March 1997) 27-29.
- 2 National Institute for Occupational Safety and Health, Hazard Controls, Publication No. 96-128, September 1996
- 3 National Institute for Occupational Safety and Health, Hazard Controls, Publication No. 96-128, September 1996
- 4 Association of Operating Room Nurses, Inc. Standards and Recommended Practices. P. 159.
- 5 ECRI, *Health Devices*, vol. 28(9), September 1999



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Air quality should not contribute to the stress of a busy operating room. But it has become a real health concern to the surgical team since they have to breathe surgical smoke.

Surgical smoke is potentially more hazardous than other types of smoke because it may contain not only carcinogenic chemicals, but also viruses and bacteria*. That's why Valleylab has developed the OptiMumm™ Smoke Evacuation system. Our system is designed specifically for use with the Accuvac™ Smoke Evacuation Attachment to quietly and effectively remove the hazards of surgical smoke so you can breathe easy.

OPTIMUMM™ SMOKE EVACUATOR

- ☞ **Quietly** removes and filters surgical smoke
- ☞ **Easy** to setup and easy to use
- ☞ **Adjustable** airflow for a wide variety of smoke producing surgical procedures



ACCUVAC™ ATTACHMENT CAPTURES SMOKE AT THE SURGICAL SITE

- ☞ **Eliminates** an extra set of hands dedicated to smoke evacuation
- ☞ **Improves** visibility by pulling smoke away from the surgical site

SYNCHRONIZED SMOKE EVACUATION AND ELECTROSURGERY

- ☞ **Synchronizes** smoke evacuation with a Valleylab® electro-surgical generator
- ☞ **Increases** airflow automatically when the generator is keyed
- ☞ **Eliminates** the need for a footswitch

FULLY INTEGRATED SMOKE EVACUATION SYSTEM

The OptiMumm™ Smoke Evacuator is the centerpiece of a space-saving, fully integrated smoke evacuation system that will help you breathe easier.

Force FX™
Electrosurgical
Generator

OptiMumm™
Smoke Evacuator



Accuvac™
Smoke
Evacuation
Attachment

Universal
Mounting
System



*NIOSH Publication No. 96-128, *Control of Smoke from Laser/Electric Surgical Procedures*