

PROGRAMMING INSTRUCTIONS APPEAR IN BLUE.

- A. During your career, how long have you worked in areas where surgical smoke was generated?
- Less than one year
  - 1-5 years
  - 6-10 years
  - 11-20 years
  - More than 20 years
- B. When was the last time you received training that addresses the hazards of surgical smoke?
- Within the past 12 months
  - More than 12 months ago
  - I never received training

**If you work for more than one employer, the following questions apply to your primary employer, i.e., the one for which you typically work the most hours. If you are self-employed, consider yourself the employer.**

- C. Does your employer have standard procedures that address potential hazards of surgical smoke?
- Yes
  - No
  - I don't know
- D. At any time in the past 7 calendar days, did you work within 5 feet of the source of surgical smoke **during LASER SURGERY?**
- Yes ➔ [SUBMODULE 1](#)
  - No
- [DISPLAY CALENDAR HIGHLIGHTING THE PAST 7 CALENDAR DAYS.](#)  
[APPLIES TO ALL QUESTIONS WITH 'IN THE PAST 7 CALENDAR DAYS'](#)

## MODULE F: Surgical Smoke

7/23/10

- E. At any time in the past 7 calendar days, did you work within 5 feet of the source of surgical smoke **during ELECTROSURGERY**?  Yes ➔ [SUBMODULE 2](#)  No

**Note: Electrosurgery includes electrocautery, diathermy, and ultrasonic devices.**

IF RESPONDENT MARKED 'YES' TO QUESTIONS D AND E, RANDOMIZE ORDER SUBMODULES ARE PRESENTED AND DISPLAY THE FOLLOWING NOTE: BECAUSE LASER SURGERY AND ELECTROSURGERY (E.G., ELECTROCAUTERY, DIATHERMY, AND ULTRASONIC DEVICES) INVOLVE DIFFERENT EQUIPMENT, SEPARATE QUESTIONS ARE BEING ASKED FOR EACH TECHNIQUE.

IF RESPONDENT MARKED 'YES' TO QUESTION D or QUESTION E ➔ GO TO APPROPRIATE SUBMODULE.

### **SUBMODULE 1: LASER SURGERY**

1. During the past 7 calendar days, on how many days did you work within 5 feet of the source of surgical smoke during **laser surgery**?
  - 1 day
  - 2 days
  - 3 days
  - 4 days
  - 5 days
  - 6 days
  - 7 days
  
2. During the past 7 calendar days, how much total time did you work within 5 feet of the source of surgical smoke during **laser surgery**?
  - Less than 1 hour
  - 1-5 hours
  - 6-20 hours
  - 21-40 hours
  - More than 40 hours
  
3. During the past 7 calendar days, the total time you worked within 5 feet of the source of surgical smoke during **laser surgery** was...
  - ...more time than usual
  - ...less time than usual
  - ...about the same amount of time as usual
  
4. During the past 7 calendar days, what was the total number of laser surgery procedures that were performed for which you were within 5 feet of the source of surgical smoke?
  - 1 procedure
  - 2-5 procedures
  - 6-10 procedures
  - 11-25 procedures
  - More than 25 procedures

## MODULE F: Surgical Smoke

7/23/10

5. During the past 7 calendar days, how often was local exhaust ventilation [e. g., portable smoke evacuator or room (wall) suction system] used while you worked within 5 feet of the source of surgical smoke during laser surgery?

- Always  
 Sometimes  
 Never ➔ [GO TO QUESTION 7](#)

Local Exhaust Ventilation (LEV) captures and removes contaminants at the point where they are being produced, such as a portable exhaust system with high efficiency particulate filters, or a flexible tube connected to a room (wall) suction system. *LEV does not include blood suction canister systems*

6. During the past 7 calendar days, what type of local exhaust ventilation was used while you worked within 5 feet of the source of surgical smoke during laser surgery?

- Portable smoke evacuator  
 Room (wall) suction system

**Please ✓ all that apply.**

[IF 'ALWAYS' MARKED IN QUESTION 5 ➔ GO TO QUESTION 9.](#)

7. What was the reason(s) local exhaust ventilation was not always used during laser surgery?

**Please ✓ all that apply.**

- General room ventilation was sufficient to dissipate smoke plume  
 Used a different system (e.g., blood suction canister) to remove the smoke  
 Exposure was minimal  
 Not part of our protocol  
 Not provided by employer  
 No one else who does this work uses them  
 Too difficult to use  
 Too bulky or noisy  
 Not readily available in work area  
 Not permitted by surgeon  
 Other (Please specify):\_
- 

[IF ONLY ONE REASON MARKED IN QUESTION 7 ➔ GO TO QUESTION 9.](#)

## MODULE F: Surgical Smoke

7/23/10

8. Of the reasons you checked above, please indicate the **most important reason** local exhaust ventilation was not always used.

LIST REASONS MARKED IN QUESTION 7 (USE RADIO BUTTONS).

9. Has exposure monitoring (e.g., air sampling) been conducted in the **past 12 months** to assess your or your co-workers' exposure to surgical smoke during laser surgery?

- Yes  
 No  
 I don't know

10. In your current job, have you taken home any clothing that came into contact with surgical smoke generated during laser surgery?

- Yes  
 No  
 I don't know

**Questions addressing work practices and use of personal protective equipment (PPE) will help us understand what is currently used and under what circumstances. Depending on your job and exposures, PPE may not be required.**

11. During the past 7 calendar days, how often did you wear **protective gloves** during laser surgery?

- Always  
 Sometimes  
 Never

12. During the past 7 calendar days, how often did you wear **eye protection** while you worked within 5 feet of the source of surgical smoke during laser surgery?

- Always ➔ [GO TO QUESTION 15](#)  
 Sometimes  
 Never

*Examples of eye protection include laser face shield, laser goggles, laser safety glasses.  
Note: Do not include personal eye glasses*

## MODULE F: Surgical Smoke

7/23/10

13. What are the reason(s) you did not always wear **eye protection** during laser surgery?

Please ✓ all that apply.

- An engineering control (e.g., local exhaust ventilation) was being used
  - Exposure was minimal
  - Not part of our protocol
  - Not provided by employer
  - No one else who does this work uses them
  - Too uncomfortable or difficult to use
  - Not readily available in work area
  - Concerned about raising the patient's anxiety
  - Other (Please specify):
- 

IF ONLY ONE REASON MARKED IN QUESTION 13, GO TO QUESTION 15.

14. Of the reasons you checked above, please indicate the **most important reason** you did not always wear **eye protection** during laser surgery.

LIST REASONS MARKED IN QUESTION 13 (USE RADIO BUTTONS).

15. During the past 7 calendar days, did you wear any of the following **during laser surgery**?

Please ✓ all that apply.

- N95 respirator (including surgical N95 respirators)



- Half-facepiece air purifying respirator with particulate cartridge(s)



## MODULE F: Surgical Smoke

7/23/10

- Powered air purifying respirator (PAPR)



- Standard surgical mask



- Laser mask



- None of above

- I don't know

DISPLAY FOLLOWING NOTE ON SEPARATE SCREEN (EXCEPT THOSE WHO MARKED 'I DON'T KNOW'): THE FOLLOWING QUESTIONS ASK ABOUT RESPIRATORS. SURGICAL MASKS AND LASER MASKS ARE NOT RESPIRATORS

IF RESPONDENT MARKED 'N95 RESPIRATOR', 'HALF-FACEPIECE AIR PURIFYING RESPIRATOR' OR 'POWERED AIR PURIFYING RESPIRATOR' IN QUESTION 15 → GO TO QUESTION 16

IF RESPONDENT MARKED ONLY 'STANDARD SURGICAL MASK', 'LASER MASK' OR 'NONE OF THE ABOVE' IN QUESTION 15 ↗ GO TO QUESTION 17.

IF RESPONDENT MARKED 'I DON'T KNOW' IN QUESTION 15 ↗ GO TO SUBMODULE 2  
IF RESPONDENT MARKED 'YES' IN QUESTION E

OTHERWISE, EXIT MODULE AND GO TO CORE MODULE IF THIS IS THE FIRST HAZARD MODULE COMPLETED. IF THIS IS THE SECOND HAZARD MODULE COMPLETED, END SURVEY. END WITH 'THANK YOU' STATEMENT.

16. How often did you wear a N95 respirator, half-facepiece air purifying respirator with particulate cartridge or powered air purifying respirator during laser surgery?

- Always ↗ GO TO QUESTION 19  
 Sometimes

## MODULE F: Surgical Smoke

7/23/10

17. What were the reason(s) you did not **always** wear a N95 respirator, a half-facepiece air purifying respirator with particulate cartridge, or a powered air purifying respirator during laser surgery?

Please ✓ all that apply.

- An engineering control (e.g. local exhaust ventilation system) was being used
  - Exposure was minimal
  - Not part of our protocol
  - Not provided by employer
  - No one else who does this work uses them
  - Too uncomfortable or difficult to use
  - Not readily available in work area
  - Concerned about raising the patient's anxiety
  - Other (Please specify):
- 

IF RESPONDENT MARKED MORE THAN ONE REASON IN QUESTION 17 ➔ GO TO QUESTION 18.

OTHERWISE ➔ GO TO INSTRUCTIONS BEFORE QUESTION 19.

18. Of the reasons you checked above, please indicate the **most important reason** you did not **always** wear a **respirator** during laser surgery.

LIST REASONS MARKED IN QUESTION 17 (USE RADIO BUTTONS).

IF R MARKED 'N95 RESPIRATOR' OR 'HALF-FACEPIECE AIR PURIFYING RESPIRATOR' IN QUESTION 15 ➔ GO TO QUESTION 19.

OTHERWISE ➔ GO TO SUBMODULE 2 IF RESPONDENT MARKED 'YES' IN QUESTION E.

OTHERWISE, EXIT MODULE AND GO TO CORE MODULE IF THIS IS THE FIRST HAZARD MODULE COMPLETED.

IF THIS IS THE SECOND HAZARD MODULE COMPLETED, END SURVEY. END WITH 'THANK YOU' STATEMENT.

## MODULE F: Surgical Smoke

7/23/10

19. Have you been fit-tested for the respirator(s) you use during laser surgery?

- Yes  
 No

ALL RESPONSES: IF RESPONDENT MARKED 'YES' IN QUESTION E →GO TO SUBMODULE 2. OTHERWISE, EXIT MODULE AND GO TO CORE MODULE IF THIS IS THE FIRST HAZARD MODULE COMPLETED. IF THIS IS THE SECOND HAZARD MODULE COMPLETED, END SURVEY. END WITH 'THANK YOU' STATEMENT.

### SUBMODULE 2: ELECTROSURGERY

20. During the past 7 calendar days, on how many days did you work within 5 feet of the source of surgical smoke **during electro-surgery**?

- 1 day  
 2 days  
 3 days  
 4 days  
 5 days  
 6 days  
 7 days

21. During the past 7 calendar days, how much total time did you work within 5 feet of the source of surgical smoke **during electro-surgery**?

- Less than 1 hour  
 1-5 hours  
 6-20 hours  
 21-40 hours  
 More than 40 hours

22. During the past 7 calendar days, the total time you worked within 5 feet of the source of surgical smoke **during electro-surgery** was...

- ...more time than usual  
 ...less time than usual  
 ...about the same amount of time as usual

23. During the past 7 calendar days, what was the total number of electro-surgery procedures that were performed for which you were within 5 feet of the source of surgical smoke?

- 1 procedure  
 2-5 procedures  
 6-10 procedures  
 11-25 procedures  
 More than 25 procedures



## MODULE F: Surgical Smoke

7/23/10

24. During the past 7 calendar days, how often was LEV used while you worked within 5 feet of the source of surgical smoke during electrosurgery?
- Always
  - Sometimes
  - Never ➔ [GO TO QUESTION 28.](#)

Local Exhaust Ventilation (LEV) captures and removes the contaminants at the point where they are being produced, such as a portable exhaust system with high efficiency particulate filters, or a flexible tube connected to a room (wall) suction system. *LEV does not include blood suction canister systems*

25. During the past 7 calendar days, what type of local exhaust ventilation was used while you worked within 5 feet of the source of surgical smoke during electrosurgery?
- Portable smoke evacuator
  - Room (wall) suction system

Please ✓ **all that apply.**

[IF 'ALWAYS' MARKED IN QUESTION 24 ➔ GO TO QUESTION 28.](#)

[IF 'SOMETIMES' MARKED IN QUESTION 24 ➔ GO TO QUESTION 26.](#)

26. What was the reason(s) local exhaust ventilation was not always used during electrosurgery?
- Please ✓ **all that apply.**
- General room ventilation was sufficient to dissipate smoke plume
  - Used a different system (e.g., blood suction canister) to remove the smoke
  - Exposure was minimal
  - Not part of our protocol
  - Not provided by employer
  - No one else who does this work uses them
  - Too difficult to use
  - Too bulky or noisy
  - Not readily available in work area
  - Not permitted by surgeon
  - Other (Please specify):\_

---

[IF ONLY ONE REASON MARKED IN QUESTION 26 ➔ GO TO QUESTION 28.](#)

27. Of the reasons you checked above, please indicate the **most important reason** local exhaust ventilation was not always used.
- [LIST REASONS IN QUESTION 26 \(USE RADIO BUTTONS\)](#)

## MODULE F: Surgical Smoke

7/23/10

28. Has exposure monitoring (e.g., air sampling) been conducted in the **past 12 months** to assess your or your co-workers' exposure to surgical smoke during electrosurgery?
- Yes  
 No  
 I don't know
29. In your current job, have you taken home any clothing that came into contact with surgical smoke during electrosurgery?
- Yes  
 No  
 I don't know

**Questions addressing work practices and use of personal protective equipment (PPE) will help us understand what is currently used and under what circumstances. Depending on your job and exposures, PPE may not be required.**

30. During the past 7 calendar days, how often did you wear **protective gloves** during electrosurgery?
- Always  
 Sometimes  
 Never
31. During the past 7 calendar days, how often did you wear **eye protection** while you worked within 5 feet of the source of surgical smoke during electrosurgery?  
*Examples of eye protection include face shield, goggles, safety glasses.*
- Always ➔ **GO TO QUESTION 34.**  
 Sometimes  
 Never

*Do not include personal eye glasses*

32. What are the reason(s) you did not always wear **eye protection** during electrosurgery?
- Please ✓ all that apply.**
- An engineering control (e.g., local exhaust ventilation) was being used  
 Exposure was minimal  
 Not part of our protocol  
 Not provided by employer  
 No one else who does this work uses them  
 Too uncomfortable or difficult to use  
 Not readily available in work area  
 Concerned about raising the patient's anxiety  
 Other (Please specify):
- 

**IF ONLY ONE REASON MARKED IN QUESTION 32 ➔ GO TO QUESTION 34.**

## MODULE F: Surgical Smoke

7/23/10

33. Of the reasons you checked above, please indicate the **most important reason** you did not always wear **eye protection** during electro-surgery.

LIST REASONS IN QUESTION 32 (USE RADIO BUTTONS)

34. During the past 7 calendar days, did you wear any of the following **during electro-surgery**?

Please ✓ all that apply.

- N95 respirator (including surgical N95 respirator)



- Half-facepiece air purifying respirator with particulate cartridge(s)



- Powered air purifying respirator (PAPR)



- Standard surgical mask



- Laser Mask



- None of the above

- I don't know

## MODULE F: Surgical Smoke

7/23/10

DISPLAY FOLLOWING NOTE ON SEPARATE SCREEN (EXCEPT THOSE WHO MARKED 'I DON'T KNOW'): THE FOLLOWING QUESTIONS ASK ABOUT RESPIRATORS. SURGICAL MASKS AND LASER MASKS ARE NOT RESPIRATORS.

IF RESPONDENT MARKED 'N95 RESPIRATOR', 'HALF-FACEPIECE AIR PURIFYING RESPIRATOR' OR 'POWERED AIR PURIFYING RESPIRATOR' IN QUESTION 34 → GO TO QUESTION 35

IF RESPONDENT MARKED ONLY 'STANDARD SURGICAL MASK', 'LASER MASK' OR 'NONE OF THE ABOVE' → GO TO QUESTION 36

IF RESPONDENT MARKED 'I DON'T KNOW' IN QUESTION 34 → GO TO SUBMODULE 1 IF RESPONDENT MARKED 'YES' IN QUESTION D.

OTHERWISE, EXIT MODULE AND GO TO CORE MODULE IF THIS IS THE FIRST HAZARD MODULE COMPLETED.

IF THIS IS THE SECOND HAZARD MODULE COMPLETED, END SURVEY. END WITH 'THANK YOU' STATEMENT.

35. How often did you wear a N95 respirator, half-facepiece air purifying respirator with particulate cartridge or powered air purifying respirator during electrosurgery?

- Always → GO TO QUESTION 38
- Sometimes

36. What were the reason(s) you did not **always** wear a N95 respirator, a half-facepiece air purifying respirator with particulate cartridge, or a powered air purifying respirator while you worked within 5 feet of the source of surgical smoke during electrosurgery?

Please ✓ all that apply.

- An engineering control (e.g. local exhaust ventilation system) was being used
  - Exposure was minimal
  - Not part of our protocol
  - Not provided by employer
  - No one else who does this work uses them
  - Too uncomfortable or difficult to use
  - Not readily available in work area
  - Concerned about raising the patient's anxiety
  - Other (Please specify): \_\_\_\_\_
- 

IF RESPONDENT MARKED MORE THAN ONE REASON IN QUESTION 36 → GO TO QUESTION 37.

OTHERWISE → GO TO INSTRUCTIONS BEFORE QUESTION 38.

## MODULE F: Surgical Smoke

7/23/10

37. Of the reasons you checked above, please indicate the **most important reason** you did not **always** wear a **respirator** while you worked within 5 feet of the source of surgical smoke during electrosurgery.

LIST REASONS IN QUESTION 36 (USE RADIO BUTTONS).

IF RESPONDENT MARKED "N95 RESPIRATOR" OR "HALF-FACEPIECE AIR PURIFYING RESPIRATOR" IN QUESTION 34 ➔ GO TO QUESTION 38.

OTHERWISE ➔ GO TO SUBMODULE 1 IF RESPONDENT MARKED 'YES' IN QUESTION D.

OTHERWISE, EXIT MODULE AND GO TO CORE MODULE IF THIS IS THE FIRST HAZARD MODULE COMPLETED.

IF THIS IS THE SECOND HAZARD MODULE COMPLETED, END SURVEY. END WITH 'THANK YOU' STATEMENT.

38. Have you been fit-tested for the respirator(s) you use during electrosurgery?

Yes

No

ALL RESPONSES: IF RESPONDENT MARKED 'YES' IN QUESTION D ➔GO TO SUBMODULE 1. OTHERWISE, EXIT MODULE AND GO TO CORE MODULE IF THIS IS THE FIRST HAZARD MODULE COMPLETED. IF THIS IS THE SECOND HAZARD MODULE COMPLETED, END SURVEY. END WITH 'THANK YOU' STATEMENT.

**Thank you for participating in the NIOSH Health and Safety Practices Survey of Healthcare Workers. Your answers have been submitted.**