

# Fire Risk Assessment Tool: Instructions for Use

**Purpose of the Fire Risk Assessment Tool:** To assist the perioperative team in determining and communicating the potential fire risk for each individual patient. **Please note:** The “Fire Risk Assessment Tool” is provided as a separate document in the AORN Fire Safety Tool Kit, whereas this document provides information for how to use the tool.

## Instructions for Use

- How to use the fire risk assessment tool:
  - Print it out.
  - Laminate it.
  - Place one in every OR.
- The RN circulator will complete the risk assessment to determine the risk level designation (see levels below).
- The risk-level designation of **A, B, C, D, or E** is determined by the code assigned to each of the critical questions below having an affirmative response. The procedure may be any one letter or any combination of the letters.
- Each letter has corresponding interventions, which should be completed by the perioperative team before and/or during the surgical procedure to decrease the potential risk of a fire occurring.
- Report affirmative responses to the surgical team during the “time out” as “A, B, C, D, E” or any combinations of these letters.

## Risk-Assessment Designations and Interventions

The following interventions for fire prevention are excerpted with permission from AORN’s *Policy and Procedure Templates [CD-ROM]*, Third Edition

- **A: Is an alcohol-based skin antiseptic or other flammable solution being used preoperatively?**
  - Actions:
    - Use reusable or disposable sterile towels to absorb drips and excess solution during application.
    - Remove materials that are saturated with the skin antiseptic agent before draping the patient.
    - Wick excess solution with a sterile towel to help dry the surgical prep area completely.
    - Allow flammable skin antiseptics to dry completely and fumes to dissipate before surgical drapes are applied or using a potential ignition source (eg, electrosurgical unit [ESU], laser).

- Conduct a skin prep time out to validate that the skin antiseptic is dry before draping the patient.
- Allow flammable solutions (eg, alcohol, collodion, tinctures) to dry completely and fumes to dissipate before using a potential ignition source.
- **B: Is the operative or other invasive procedure being performed above the xiphoid process or in the oropharynx?**
  - Actions:
    - Cover the head and facial hair near the surgical site with water-soluble gel.
    - Use an adhesive incise drape between the surgical site and the oxygen source.
    - Use a laryngeal mask airway or an endotracheal tube when the patient requires supplementary oxygen greater than 30% unless using the tube is contraindicated by the procedure.
    - Inflate the endotracheal tube cuff with tinted solutions (eg, methylene blue).
    - Pack wet sponges around the back of the throat during surgical procedures involving the airway.
    - Evacuate accumulated anesthetic gas using a metal suction cannula before an ignition source is used in or near an oxygen-enriched environment.
    - Evacuate surgical smoke in small or enclosed spaces (eg, back of throat) when using electrosurgery or a laser near the endotracheal tube.
    - Suction the oropharynx deeply before using an ignition source if oxygen is used.
    - Check the anesthesia circuits for possible leaks.
- **C: Is open oxygen or nitrous oxide being administered?**
  - Actions:
    - Place drapes, including warming blankets with attached head drapes, over the patient's head in a manner that allows the oxygen to flow freely and not accumulate under the drapes.
    - Deliver 5 to 10 L/min of medical air under the drapes to flush out excess oxygen via a second delivery system.
    - Use the lowest possible concentration of oxygen that provides adequate patient oxygen saturation.
    - Stop supplemental oxygen or nitrous oxide for one minute before using electrosurgery, battery-powered, hand-held cautery units, or lasers for head, neck, or upper chest procedures.
    - Turn off the flow of oxygen at the end of each procedure.
- **D: Is an ESU, laser, or fiber-optic light being used?**
  - Actions—ESU use:
    - Place the ESU in a location that does not put stress on the electrical cord.
    - Keep the electrical cord dry, and free of kinks, knots, and bends.
    - Inspect the ESU cord before use and do not use it if there is any evidence of breaks, nicks, or cracks in the outer insulation coating.
    - Keep the active electrode cord free of kinks and coils during use.
    - Only the person controlling the active electrode activates the ESU.
    - Use the lowest possible power setting for the ESU.

- Store the active electrode in a clean, dry, non-conductive safety holster when it is not in use.
- Keep surgical drapes or linens away from the activated ESU.
- Moisten drapes (if absorbent), towels, and sponges used near the active electrode tip.
- Do not use an ignition source to enter the bowel or the trachea.
- Keep the ESU active electrode away from oxygen, nitrous oxide, or combustible anesthetic gas sources if possible.
- Do not activate the active electrode in the presence of flammable agents until the agents are dry and vapors have dissipated (eg, alcohol-based skin antiseptics, tinctures, de-fatting agents, collodion, petroleum-based lubricants, phenol, aerosol adhesives, uncured methyl methacrylate).
- Keep the active electrode tip clean.
- Use active electrode tips according to the manufacturer's instructions.
- Use only active electrodes or return electrodes that are compatible with the ESU.
- Seat the active electrode tip securely into the electrosurgical hand piece.
- Do not alter the active electrode tip (eg, bending, using insulation sheaths made from flammable materials such as rubber catheters).
- Activate the active electrode only when it is in close proximity to the target tissue and away from other metal objects that could conduct heat or cause arcing.
- Inspect minimally invasive electrosurgical instruments for impaired insulation and remove them from service if the insulation is not intact.
- Use cut or blend settings instead of coagulation when possible.
- Remove the active electrode tip from the electrosurgical hand piece before discarding it.
- Remove the batteries or disable the cautery tip before disposing of battery-powered, hand-held cautery units.
- Actions—laser use:
  - Place the laser in a location that does not put stress on the electrical cord.
  - Keep the electrical cord dry and free of kinks, knots, and bends.
  - Inspect the laser cord before use and do not use it if there is any evidence of breaks, nicks, or cracks in the outer insulation coating.
  - Only the person controlling the laser beam activates the laser.
  - Do not activate the laser in the presence of flammable agents until the solutions are dry and vapors have dissipated (eg, alcohol-based skin prep antiseptics, tinctures, de-fatting agents, collodion, petroleum-based lubricants, phenol, aerosol adhesives, uncured methyl methacrylate).
  - Place the laser in standby mode when not in active use.
  - Use a laser-resistant endotracheal tube during upper airway procedures.
  - Place wet sponges around the endotracheal tube cuff if the laser is being operated in close proximity to the endotracheal tube.
  - Fill endotracheal tube cuff with tinted solutions (eg, methylene blue) during laser procedures involving the patient's airway or aerodigestive tract.

- Keep moist sponges, towels, and drapes around the surgical site for all laser procedures.
- Keep wet towels and saline on the sterile field during all laser procedures.
- Verify that water or saline and the appropriate type of fire extinguisher are immediately available before using the laser.
- During perineal surgery, use moistened radiopaque sponges to cover or pack the anus.
- Actions—fiber-optic light use:
  - Place the light source in standby mode or turn it off when the cable is not in use.
  - Inspect light cables before use and remove them from service if broken light bundles are visible.
  - Connect all fiber-optic light cables before activating the light source.
  - Place the light source on standby when disconnecting fiber-optic light cables.
  - Secure the working end (ie, the end that is inserted into the body) of the endoscope or cord on a moist towel or away from any drapes, sponges, or other flammable materials.
- **E: Are there other possible contributors?**
  - Actions:
    - Select defibrillator paddles that are the appropriate size for the patient.
    - Use only manufacturer-recommended lubricants for defibrillator paddles and pads.
    - Use appropriate defibrillator paddle placement to allow optimal skin contact.
    - Slowly drip saline on a moving drill, burr, or saw blade.
    - Place drills or saws on the Mayo stand or back table when they are not in use.

## Intervention Examples

The following are some examples for determining the reportable code (A, B, C, D, E) for the Fire Risk Assessment.

### **An example for a patient having a carotid endarterectomy:**

- The surgical site is above the xiphoid process.
- Chlorhexidine gluconate with alcohol is used for the prep solution.
- An ESU is used.

>> The fire risk assessment for this situation would be reported as “A, B, D.”

### **An example for a patient having a total knee arthroplasty:**

- Chlorhexidine gluconate with alcohol is used for the prep solution.
- An ESU is used.
- A moving drill burr or saw blade is used.

>> The fire risk assessment for this situation would be reported as “A, D, E.”

### **An example for a patient having a vaginal hysterectomy with spinal anesthesia:**

- Supplemental oxygen is at 35% to maintain the patient’s oxygen saturation > 95%.

- Povidone iodine solution is used for the prep.
- An ESU is used.

>> The fire risk assessment for this situation would be reported as "C, D."