

## PRESSRELEASE

June 2020

### Electrosurgery: individual learning with e-learning

**Electrosurgery is used in almost every OR and in every major endoscopy department. Its application is complex and therefore repeatedly raises questions or leads to misunderstandings. The reason being that the physical phenomena and explanations are not always intuitively understandable. In the worst case scenario, incorrect application on the patient can cause burns.**

To prevent these risks, the manufacturers of electrosurgical systems are considering how to better train OR staff. In addition to in-service training, classroom training, workshops and other education options, Erbe now also offers intensive e-learning courses so that electrosurgery can be used safely and effectively. Experienced authors have compiled the course on the basis of relevant international standards and have been advised by physicians who have reviewed the contents.

Courses were created following the idea "from practice - for practice" on the various technologies of the Erbe product portfolio. They are informative, factual and fully illustrated, for all those dealing with electrosurgery in and outside the OR. Biomedical engineers, for example, rate this detailed e-learning course as being "very good".

## FAQs

### From practice - for practice

#### Why must the patient not be grounded?

This is one of the classic and core questions in electrosurgery, and hence the most frequently asked question. The e-learning course provides detailed information on the topic:

Because this would cause uncontrolled leakage currents that may cause burns to the patient.

Leakage current occurs when the patient touches electrically conductive objects that have a connection to the floor – for example infusion stands or metal parts of the operating table. Depending on the current density and the activation time burns can occur at the contact points.

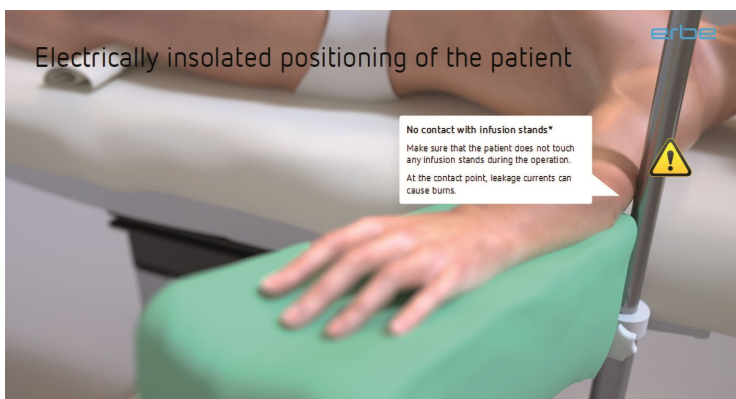


Fig.: Accidental grounding, for example via infusion stands, can cause burns

Due to the risks for the patient which might arise if this is not observed, it becomes clear how necessary it is to educate the entire surgical team.

#### Examples of other frequently asked questions include:

- Why can burns occur on other parts of the patient's body?

- What needs to be considered in patients with implants?
- How should the neutral electrode be attached?

When using electrosurgical instruments, these and other questions need to be clarified. This is the only way to ensure patient safety.

The e-learning module clears up many inconsistencies and mistakes that are made repeatedly and can cause considerable harm to the patient as well as the surgical team.

#### **Activation is too long, activation pauses are too short**

Why is this critical? Prolonged activation on the one hand and too short pause intervals on the other can cause burns.

The longer the current flows, the more the current path in the patient is heated up - particularly if there are constrictions in the current path or if additional contacts are created.

#### **The voltages are too high for the instrument used**

After training, the e-learner will have learned: too high voltage can damage instruments, cause sparking or capacitive coupling, resulting in a flow of current in nearby metal objects or cables. This can lead to burns as a consequence. Voltages of up to several thousand volts are used in electrosurgical applications. However, the various instruments are not suitable for all adjustable voltages. Bipolar instruments in particular are generally less voltage proof.

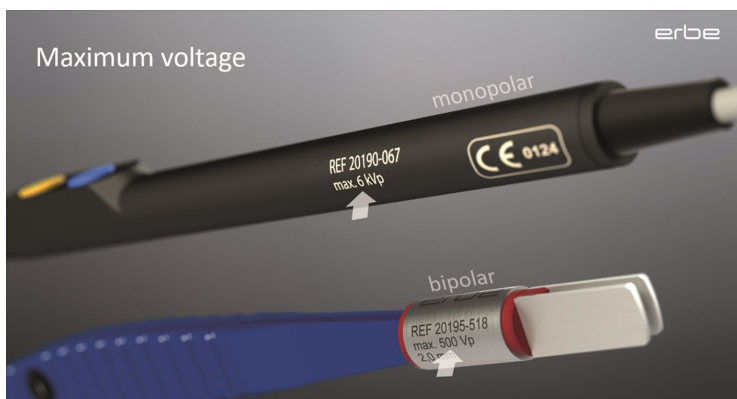


Fig. The maximum voltage to be applied is specified by the manufacturer

### **Flammable gases can cause burns to the patient**

Depending on the selected mode, electrocautery instruments generate sparks with the aid of high electrical voltage. If flammable gases have accumulated in the surgical field, this can lead to fires and deflagrations with sometimes dramatic consequences. Examples include incorrectly applied disinfectants, excessive oxygen concentration during interventional bronchoscopy, intestinal perforations caused by exploding endogenous gases, nitrous oxide or hydrogen compounds.

### **How is the neutral electrode attached correctly?**

An incorrectly attached neutral electrode can lead to high current densities at the contact point. Therefore the neutral electrode must always be completely attached across its entire surface. To prevent the neutral electrode from becoming detached during application, body hair as well as creams or liquids must be removed at the application site. The application site should not be located underneath the patient to avoid getting wet and to prevent pressure ulcers caused by the cable or the cable connection. In addition, further rules for the selection of a suitable application site

must be observed, which among other things, depend on the respective patient and the surgical site.

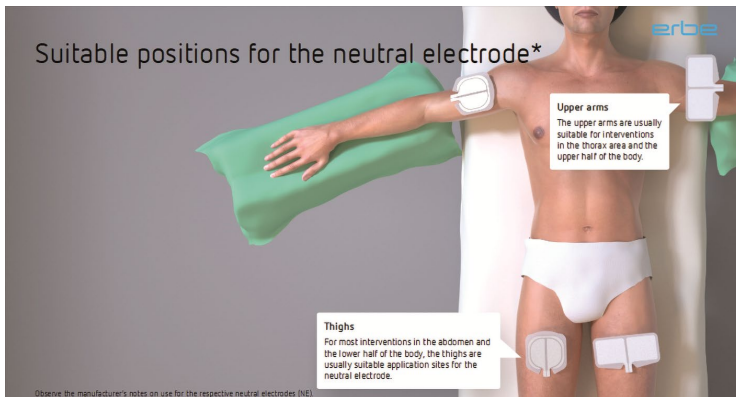


Fig. There are several correct options for the correct application of the neutral electrode

### E-learning – always available, at any time and anywhere

The entire knowledge of electrosurgery is divided into small learning units can be studied at any time and any place. Even from home, and at the comfort of your home. The learning speed can be adjusted individually. Furthermore, the more complex learning passages and sections can be repeated as often as you wish.

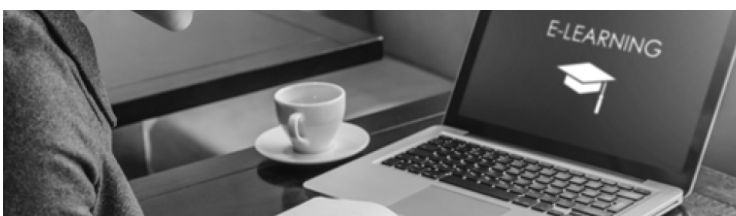


Fig.: E-learning offers a whole range of benefits and can, for example, be used individually

And at the end a certificate is issued to document successful participation. The graduate has the certainty of being competent in all relevant questions relating to electrosurgery. You find more information here:

[www.academy.erbe-med.com](http://www.academy.erbe-med.com)

### **Classroom training on site**

Are you a course instructor or do you host and organize advanced training courses? You can also book our experienced Erbe Academy full-time trainers for lectures. Simply send an appointment request to [training@erbe-med.com](mailto:training@erbe-med.com)

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Erbe Elektromedizin GmbH  
Waldhoernlestrasse 17  
72072 Tuebingen  
Germany  
[www.erbe-med.com](http://www.erbe-med.com)  
[info@erbe-med.com](mailto:info@erbe-med.com)

Contact:  
Thomas Hämmerle  
Phone +49 (0)7071 755-138  
[thomas.haemmerle@erbe-med.com](mailto:thomas.haemmerle@erbe-med.com)