



# Bridge of Life

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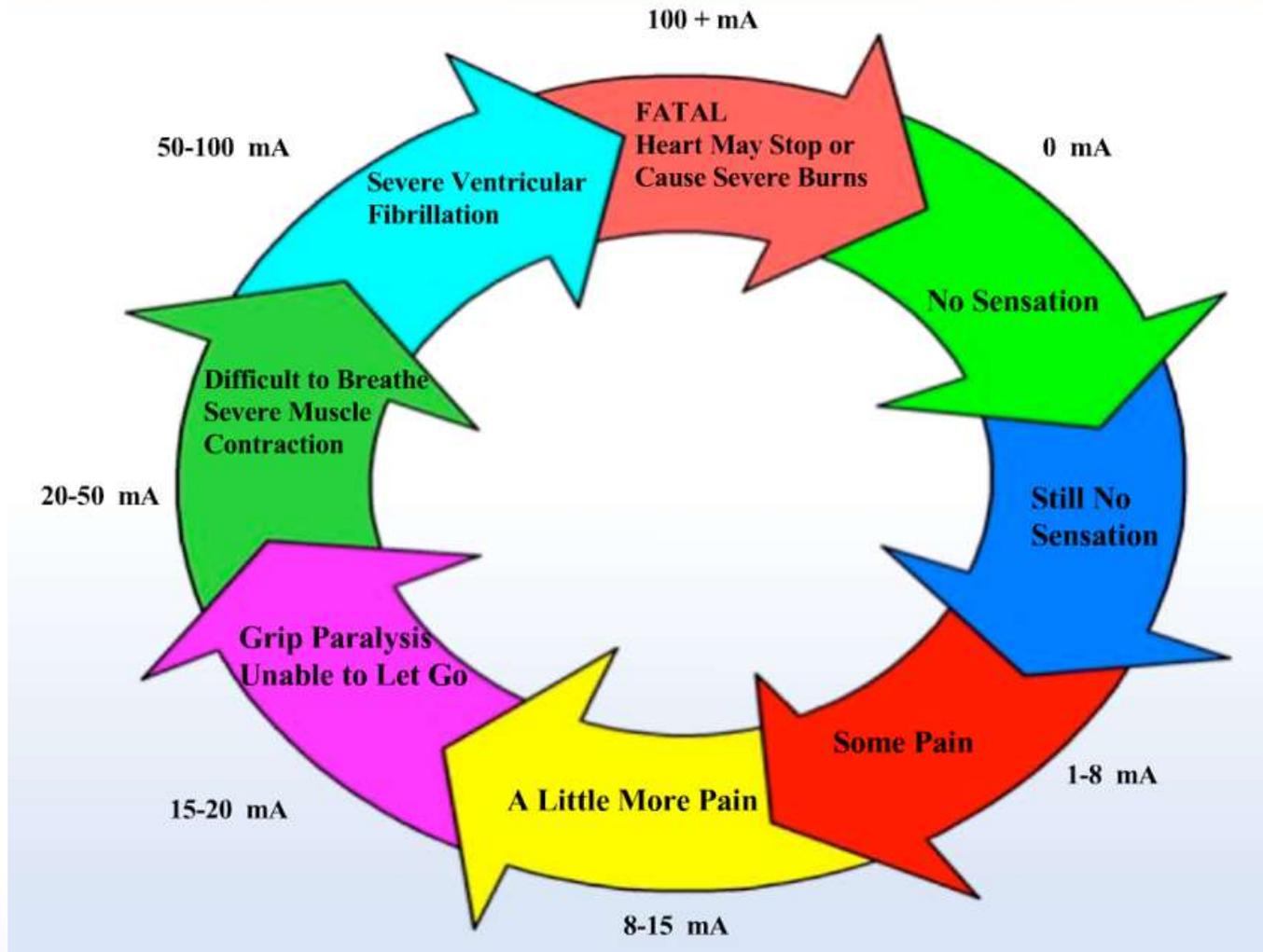
*Working together for a healthier world*

## Electrical Safety Testing and Monitoring for Hemodialysis Centers

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# Current's Affect



# Extension Cords and GFCI

**Extension Cord**



**Ground Fault Circuit Interrupt**



# Electrical Leakage Policy



All applicable incoming equipment used in the treatment area will have an electrical safety check performed prior to being placed in service.



The electrical safety checks must meet the International Organization of Standardization (ISO)/Association for the Advancement of Medical Instrumentation (AAMI)/American National Standards Institution (ANSI).



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# ELECTRICAL SAFETY TEST ON INCOMING EQUIPMENT AND ROUTINE TESTING

**PURPOSE:** To provide guidance for performing electrical safety test on incoming and routine testing of equipment to be used in the facility meets the safety standards of the manufacturer and the International Organization of Standardization (ISO)/Association for the Advancement of Medical Instrumentation (AAMI)/American National Standards Institution (ANSI).

**POLICY:**

1. All applicable incoming equipment used in the treatment area will have an electrical safety check performed prior to being placed in service.
2. Patient owned equipment (Non-DaVita owned) review policies:
  - [Patient Owned \(Non-DaVita Furnished\) Medical Equipment](#)
  - [Patient Owned Non-Medical Electrical Devices](#)
3. The electrical safety checks must meet the International Organization of Standardization (ISO)/Association for the Advancement of Medical Instrumentation (AAMI)/American National Standards Institution (ANSI).
4. Electrical leakage should be performed by a trained Biomed teammate.
5. Electrical leakage should be performed at least annually and the highest result from the tests performed will be documented on a service ticket and an Electrical Safety sticker.
6. Ground pin resistance will be checked annually with a maximum resistance of 0.2 ohms or as recommended by the manufacturer.
7. Electrical Standard with a maximum leakage current of < 100 microamps for patient contact equipment and < 300 microamps for non-patient contact equipment with a open ground, unless specified by the manufacturer.
  - If the manufacturer requires other standards, such as applied patient lead testing, those standards provided by the manufacturer should be followed.
  - A minimum of 12 electrical leakage current tests should be performed and the highest leakage result of the 12 tests will be documented electrical leakage form and a service ticket and highest grounded and ungrounded on an electrical safety sticker. Tests include:
    - 2 tests device/machine off, neutral open, ground closed (normal and reverse polarity)



# ELECTRICAL SAFETY TEST ON INCOMING EQUIPMENT AND ROUTINE TESTING

- 2 tests device/machine off, neutral open, ground open (normal and reverse polarity) ↵
- 2 test device/machine off, neutral closed, ground closed (normal and reverse polarity) ↵
- 2 tests device/machine off, neutral closed, ground open (normal and reverse polarity) ↵
- 2 tests device/machine on, neutral closed, ground closed (normal and reverse polarity) ↵
- 2 tests device/machine on, neutral closed, ground open (normal and reverse polarity) ↵

8. Any piece of equipment not meeting the above standards cannot be placed into service or returned to use. ↵
9. The results of the testing must be posted on the equipment by means of an adhesive “Electrical Safety sticker”. ↵
10. Each patient contact device will be connected to an electrical outlet that is dedicated to the device, e.g., dialysis delivery system when performing electrical safety checks. ↵
  - At least annually, electrical safety checks for patient contact equipment should be performed in the patient treatment area during non-dialysis times with the device in a normal configuration as it would be used for patient treatment; ↵
  - New equipment electrical safety checks for patient contact equipment should be performed in the patient treatment area during non dialysis times with the device in a normal configuration as it would be used for patient treatment; and ↵
  - After an electrical repair (such as power supply exchange or repair, heater rod replacement or component associated with the primary power source), an electrical safety check is to be performed and if any results from the electrical safety check exceed the acceptable limits, troubleshoot the device in a normal configuration. ↵

**NOTE:** Normal configuration is defined as the device equipped with any other devices connected to the primary device during treatment, e.g., digi connect. ↵

**NOTE:** Double insulated equipment has two layers of protection. The basic protection is defined as the first layer of insulation. If the basic protection fails then supplementary protection is provided by a second layer of insulation preventing contact with live parts. ↵

- Double insulated equipment will have an appropriate label indicating that it is double insulated. See below. ↵
- Electrical safety checks are not required to be performed on double insulated equipment. Equipment used at the patient station must be either grounded or double insulated.





# Questions

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