

Current level (Milliamperes)	Probable Effect on Human Body of 120 V, 60 Hz AC for 1 second
1mA	Perception level. Slight tingling sensation. Still dangerous if wet conditions.
5mA	Slight shock felt; not painful but disturbing. Average individual can let go. However, strong involuntary reactions to shocks in this range may lead to injuries.
6mA–16mA	Painful shock, begin to lose muscular control. Commonly referred to as the freezing current or "let-go" range.
17mA–99mA	Extreme pain, respiratory arrest, severe muscular contractions. Individual cannot let go. Death is possible.
100mA– 2000mA	Ventricular fibrillation (uneven, uncoordinated pumping of the heart). Muscular contraction and nerve damage begins to occur. Death is likely.
> 2,000mA	Cardiac arrest, internal organ damage, and severe burns. Death is probable.

Source: https://www.osha.gov/SLTC/etools/construction/electrical_incidents/eleccurrent.html

Pertinent Assessment Findings

1. Identification of potential trauma concomitant with electrical injury
2. Presence of cardiac dysrhythmias

Quality Improvement

Associated NEMSIS Protocol(s) (eProtocol.01) (for additional information, go to www.nemsis.org)

- 9914095 – Injury - Electrical Injuries

Key Documentation Elements

- Characteristics of electrical current
- Downtime if found in cardiac arrest
- Positioning of the patient with respect to the electrical source
- Accurate description of external injuries
- Document presence or absence of associated trauma

Performance Measures

- Confirmation of scene safety
- Documentation of electrical source and voltage if known
- Documentation of cardiac monitoring
- Documentation of appropriate care of associated traumatic injuries
- ***National EMS Quality Alliance (NEMSQA) Performance Measures*** (for additional information, see www.nemsqa.org)
 - o *Trauma—01: Pain Assessment of Injured Patients*

References

1. Electrical Injuries. Emedicince.medscape.com.