

Safety Talk

Surviving Electrocution

Although those in the electrical trade must be aware of and cautious while working with electricity, these warnings apply to all of us working around electricity as well. The CDC estimates that at least 700 occupational electrocutions occur each year.

Electrocution causes the heart to beat irregularly (fibrillation) or to stop beating all together. The best way to survive an electrocution is for CPR and/or an AED (Automated External Defibrillator) to be used within 4 minutes of cardiac arrest and ACLS (Advanced Cardiac Life Support) to begin within about 8 minutes of the attack. The following cases show two very different outcomes.

Case #1 - An employee was working on a fire escape of a building being renovated. A coworker handed the victim a metal pipe which he held with both hands. The pipe contacted a nearby high voltage line completing a path-to-ground. The worker collapsed immediately. Emergency services were called and about 4 minutes after the collapse the fire department rescue squad began CPR. Within 6 minutes, a paramedic unit arrived and used their AED to establish a heartbeat and pulse. The worker was released from the hospital within 2 weeks. The only follow-up care required was to treat the entrance and exit burns.

Case #2 - While performing work at a retail business, a laborer was electrocuted. He kneeled on the floor to plug a hand tool into a 100-120 V floor outlet. The victim was found convulsing on the damp floor with one hand on the plug and the other on the receptacle box. The business's assistant manager was unable to locate the appropriate circuit breaker until told by EMS on the phone to de-energize all circuits. This took between 3- 8 minutes after the contact with electricity. CPR was begun about 5 minutes after contact, with ACLS beginning 10 minutes after EMS received the phone call. The victim was dead on arrival at the local hospital.

The difference between these outcomes? Time. When CPR was begun within 4 minutes and ACLS within 8, the employee survived. Here are 3 recommendations from NIOSH to help prevent such fatalities.

Safety Talk

- **PREVENTION**

Training should include ways to be safe when working around electricity as well as appropriate medical responses including CPR and the use of AEDs.

- **SAFE WORK PRACTICES**

Working with or around electricity is dangerous business. All workers should be familiar with emergency procedures like how to de-energize the electrical system.

- **EMERGENCY MEDICAL TRAINING**

First aid and CPR should be immediately available at every workplace. Having individuals trained in CPR at the job will provide the necessary care within the 4 minute window for cardiac arrest. AEDs are now relatively inexpensive and employees can also be trained to use them. Always remember to call EMS as soon as a medical emergency occurs, in addition to any emergency medical care that fellow employees can give, to get medical professionals on the scene ASAP.

Discussion Questions

What happened to cause such different outcomes in these two situations?

If you have someone at your workplace that is trained in CPR and First Aid, is it still necessary to call EMS to the site? Why?

MEETING / TRAINING ATTENDANCE ROSTER

COMPANY: _____

_____ SAFETY MEETING

JOB/DEPT: _____

_____ SAFETY TRAINING

DATE: ___/___/___

TIME: _____

TOPICS ADDRESSED: _____

EMPLOYEE'S SIGNATURES

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

EMPLOYEE SUGGESTIONS AND RECOMMENDATIONS: _____

ACTION TAKEN: _____

Supervisor's Signature

____/____/____
Date

Safety Coordinator's Signature

____/____/____
Date