

INJURIES CAUSED BY ELECTRIC SHOCKS

Effects of Electricity on the Body

The effect of electricity on the body is dependant on the amount of current and the length of time the body is exposed to it. The higher the current, the less time a human can survive the exposure.

The path of electricity through the body is also critical. For example, current passing through the heart or brain is more life threatening than current passing through the fingers.

It takes approximately 1000 milliamps (1 amp) of current to run a 200 watt light. Here are the effects you can expect from just a fraction of that current for just a few seconds.

Amount of Current	Effect on a Human
1 milliamp	can just be felt
5-9 milliamps	cannot let go
>20 milliamps	increasing pain and may be fatal

The figures above illustrate that a small amount of current for a few seconds or more can be fatal.

It is the current that kills or injures. But the voltage, which pushes the current through the body, also has an important effect.

When a victim is exposed to household voltages, he or she may suffer a muscle spasm and may be locked on to the electrical source until the current is turned off, or until the victim is often dragged clear by the weight of his or her body falling clear of the contact. Contact with low voltage is the cause of many electrical fatalities in the home.

At higher voltages (on power lines, for example) the victim is often blasted clear of the circuit. This results in less internal damage, such as heart failure, but terrible surface burns at the entrance and exit of the current.

The victim exposed to a large electric arc can be injured by the intense heat or by ultraviolet rays which can cause serious eye damage.

In addition to the factors outlined above, the effect of electricity on the body depends on:

1. The condition of the skin (dry or moist)
2. The area of skin exposed to the electrical source.
3. The pressure of the body against the source.

Severity of shock will be increased if the point of skin contact is moist or broken.

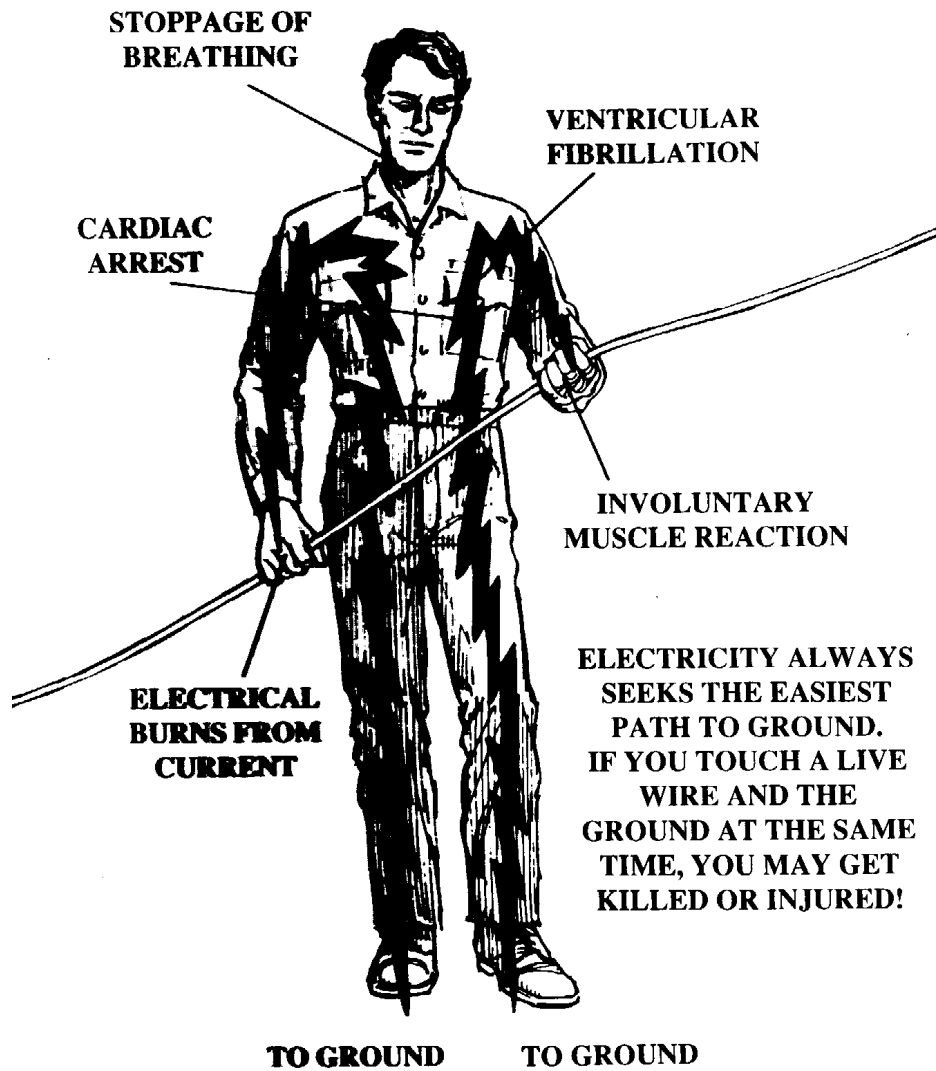
Any victim of electrical shock should be examined for the following effects on the body:

1. Contraction of chest muscles, causing breathing difficulty or unconsciousness.
2. Paralysis of the respiratory centre, causing breathing failure.
3. Ventricular fibrillation of the heart (mainly resulting from lower voltages)
4. Burns to tissue at the entrance and exit points (mainly resulting from higher voltages)
5. Fractures caused by muscle spasm.

It must be kept in mind that before any treatment can be given to a patient, the danger must be removed. In some cases the circuit can be turned off. In other cases it cannot.

Only at household voltage levels (230 volts) can the victim be removed from a live circuit with the use of common insulating materials.

At higher voltages it may be dangerous to attempt to release a victim. A rescuer must not go to aid a victim until it is certain that the electricity supply authority has switched off the circuit.



**ELECTRICITY ALWAYS
SEEKS THE EASIEST
PATH TO GROUND.
IF YOU TOUCH A LIVE
WIRE AND THE
GROUND AT THE SAME
TIME, YOU MAY GET
KILLED OR INJURED!**