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## Electric shock

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### Summary

- The human body conducts electricity.
  - Disconnect the power supply before trying to help someone suffering from an electric shock.
  - Be especially careful in wet areas and around downed powerlines.
  - Always hire a licensed electrician for all wiring jobs around the home.
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The human body conducts electricity. If any part of the body receives an electric shock, the electricity will flow through the tissues with little obstruction.

Depending on the length and severity of the shock, injuries can include:

- Burns to the skin
- Burns to internal tissues
- Electrical interference or damage (or both) to the heart, which could cause the heart to stop or beat erratically.

Always disconnect the power supply before trying to help a victim of electric shock.

### Symptoms of electric shock

The typical symptoms of an electric shock include:

- Unconsciousness
- Difficulties in breathing or no breathing at all
- A weak, erratic pulse or no pulse at all
- Burns, particularly entrance and exit burns (where the electricity entered and left the body)
- Sudden onset of cardiac arrest.

Sometimes victims of electric shock may appear to be unhurt, but they should still be treated as a victim of electric shock. Some injuries and further complications may not yet be obvious. An examination in hospital is important after any electric shock.

### Causes of electric shock

Some of the causes of electric shock include:

- Faulty appliances
- Damaged or frayed cords or extension leads
- Electrical appliances coming in contact with water
- Incorrect or deteriorated household wiring
- Downed powerlines
- Lightning strike.

### How to help a victim of electric shock

The first thing you must do is disconnect the power supply. Don't even touch the victim until you are sure that the power supply is turned off. Be especially careful in wet areas, such as bathrooms, as water conducts electricity. It may be safer to turn off the electricity supply to the building if possible to be absolutely sure.

First aid for electrical shock includes:

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- Check for a person's response and breathing. It may be necessary to commence cardiopulmonary resuscitation (CPR).
- **Call triple zero (000) for an ambulance.** If you are unsure of resuscitation techniques, the ambulance call-taker will give you easy-to-follow instructions over the telephone, so you can increase the person's chances of survival until the ambulance arrives.
- If their breathing is steady and they are responsive, attend to their injuries. Cool the burns with cool running water for 20 minutes and cover with dressings, if available, that won't stick. Simple cling wrap found in most kitchens is very suitable to cover burns as long as it is not applied tightly. Never put ointments or oils onto burns. If the person has fallen from a height, try not to move them unnecessarily in case they have spinal injuries. Only move them if there is a chance of further danger from the environment (such as falling objects).
- Talk calmly and reassuringly to the person.

### **Downed powerlines**

Sometimes, powerlines are downed in car accidents. The powerlines may drape over the vehicles. The tyres act as insulation, so urge anyone inside the car to stay there where they will be safe from electric shock. Do not approach the scene until it has been declared safe by the proper authorities. Stand well back and try to encourage any bystanders to keep a distance of at least six metres.

Even if the lines or wires are not moving, they may still be live. All wires should be treated as if they are live. If a person is forced to get out of the vehicle because of a hazard such as fire, instruct them to keep their feet close together and to jump away, not walk. This can reduce the chance of an electric shock if wires are on the ground. Only advise this action if the person is definitely unable to remain in the vehicle.

### **Safety tips around the home**

You can reduce the risk of electric shock in your home by taking a few precautions, including:

- Always hire a licensed electrician for all wiring jobs.
- Don't use extension leads or appliances if the cords are damaged or frayed.
- Don't remove a plug from a power point by pulling on the cord – pull the plug instead.
- Keep electrical appliances away from wet areas.
- Have safety switches installed by an electrician.
- Buy portable power boards with built-in safety switches.
- Insert safety plugs into power points not in use to stop children from inserting objects into them.

### **How a safety switch works**

A safety switch, or residual current device, is designed to save lives by monitoring power flow and making sure the flow is even. This is different to a circuit breaker, which is designed to protect household wiring from power surges.

A safety switch is intended to trip out an electricity supply in the event of a current flow to earth. It can provide protection from harmful electric shocks in situations where a person comes into contact with a live electrical circuit and provides a path to earth. Typical examples of this occurring are with the use of faulty electrical leads and faulty appliances. These switches operate in one thirty-thousandth of a second.

### **Where to get help**

- In an emergency, call triple zero (000)

### **Things to remember**

- The human body conducts electricity.
- Disconnect the power supply before trying to help someone suffering from an electric shock.
- Be especially careful in wet areas and around downed powerlines.
- Always hire a licensed electrician for all wiring jobs around the home.

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