

local offices of the Electrical Safety Authority

For your convenience, here are the telephone numbers of the Electrical Safety Authority offices around the province. Please call the office nearest you for an application for inspection.

- Hamilton: 1-800-278-4264
- Kitchener: 1-800-813-5482
- London: 1-800-813-5663
- Windsor: 1-800-880-9463
- Metro Toronto: 1-800-434-0172
- North Bay: 1-800-636-7107
- Belleville: 1-800-369-7536
- Ottawa: 1-800-369-7535
- Barrie: 1-800-571-7724
- Peterborough: 1-800-305-7383

what you should **know** about electrical safety

how to reach us

call: Customer Communications Centre
7:30 a.m. to 8:00 p.m. EST
1-888-664-9376
Fax: 1-888-625-4401

mail: Hydro One Networks Inc.
P.O. Box 5700, 185 Clegg Rd.
Markham, Ontario • L3R 1C8

internet:
<http://customer.HydroOneNetworks.com>

Take a moment to review these tips so that you and your family use electricity safely every day



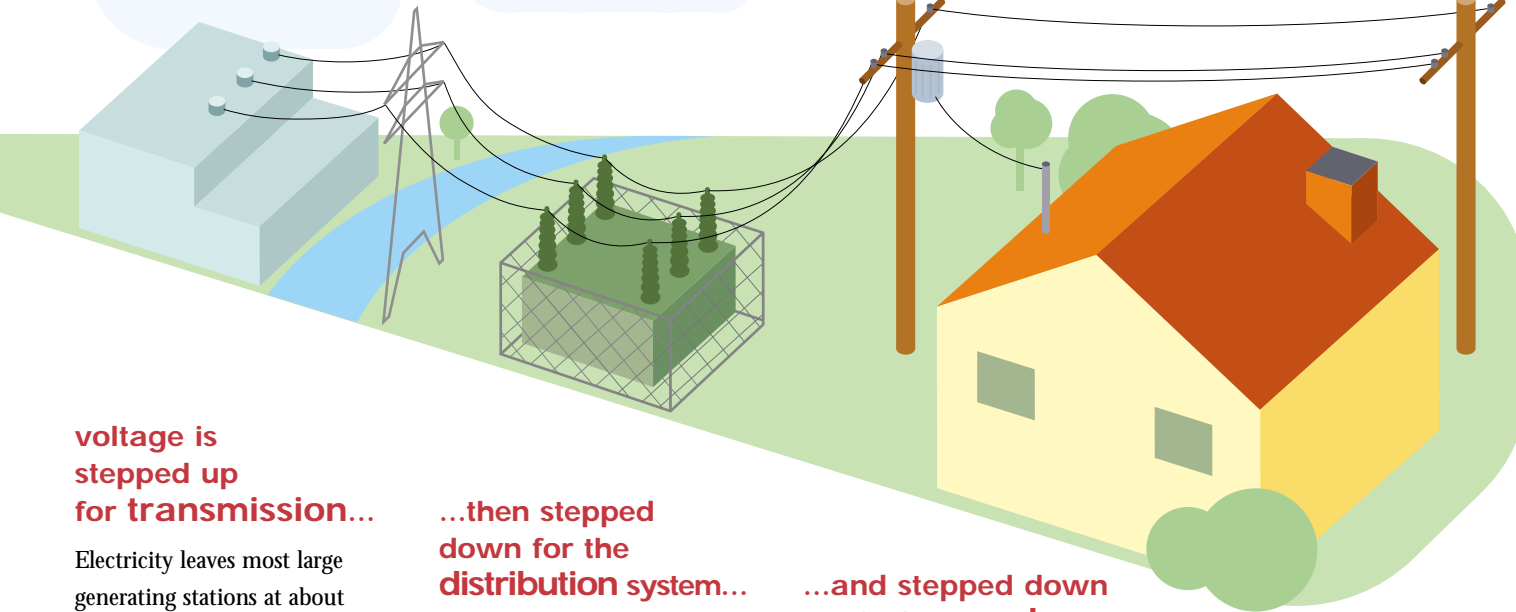
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how we deliver electricity to **your home**

Today people take electricity for granted. With the flick of a switch you light up a room, turn on a television or warm an oven. But let's take a short simplified journey behind the switch.



voltage is stepped up for transmission...

Electricity leaves most large generating stations at about 20,000 volts (v).* It then passes through a step-up transformer which increases the voltage to 115,000, 230,000 or 500,000v, depending on the amount of power to be distributed and the distance it will travel. The further electricity has to travel along transmission lines, the more power it loses along the way. Higher voltages minimize this loss. Regardless of the voltage, the amount of electricity stays the same – higher voltages just increase the pressure.

...then stepped down for the distribution system...

Hydro One Networks' transmission lines bring the electricity to main transformer stations throughout the province. Here the voltage is reduced to 44,000 or 27,600v since the distance from the stations to the cities, towns, or industries is usually shorter.

...and stepped down again for your home

The voltage is decreased when the electricity is distributed through a municipal or rural district. And finally, small transformers on street poles or mounted on ground level concrete pads reduce it again to 120 or 240v before it enters your home.

*A volt (v) is a unit which measures the pressure of an electric current. It is the "push" behind the current.

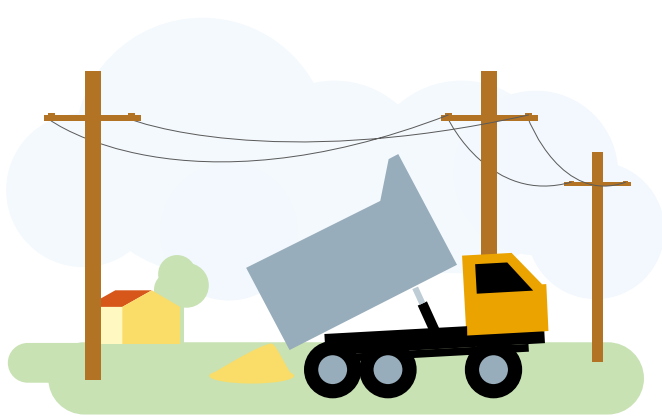
Hydro One Networks – a quick **overview**

Hydro One Networks is responsible for the delivery of electricity in Ontario. We own and maintain our province's 29,000 kilometre high-voltage electricity transmission system, a 115,000 kilometre low-voltage distribution system, and 1,184 electrical substations.

These systems carry the electricity supply from various generation points and deliver it safely to your home or business.

Hydro One Networks is also responsible for:

- The connection to your home or business
- Delivering your electricity over our power lines safely and reliably
- Restoring your power in case of outages or emergencies
- Reading your meter and issuing bills
- Looking after transmission and distribution lines, stations and equipment



here are some **important facts** about electricity

electricity seeks the easiest and shortest path to the ground

When people or objects come too close to, or touch an electrical wire, they can become a part of an electrical circuit. This can result in an instant flow of electricity through them to the ground.

the flow of electricity through the human body can kill

It doesn't take much. Less than one ampere of electricity can burn, severely injure or cause death.

electricity is fast

Electricity travels at approximately 299,330 km per second. That leaves no room for mistakes. Never put yourself into electricity's path.

"conductors" conduct electricity readily and in large amounts

All metals are conductors. Water is a good conductor. Humans, largely made of water, are good conductors. But even non-metallic materials such as lumber, tree limbs, and rope can conduct electricity, depending on moisture content and surface contamination.

look out! look up! be aware of overhead wires

High voltage transmission and distribution lines carry a lot of electricity and must be treated with respect whenever you are playing or working anywhere near them. High voltage lines have no insulation – they are insulated by the surrounding air space – so any physical contact with them could kill you.

take extra care when working near overhead power lines

Maintain a safe distance of three metres or more from overhead power lines. If you need to be closer, contact us or your local utility for safe working distances. Be careful with ladders, cranes, or diggers.

If you're installing a new antenna, it should be well away from power lines – at least the height of the antenna plus three metres.

When sailing or launching your boat, watch for power lines. A mast or antenna touching the lines can be fatal.

don't be fooled by the covering

Although the overhead service wire to your home may have a covering, don't trust it. It may have deteriorated with age or the weather, and can cause serious injury if you touch an exposed wire.

plant trees well clear of power lines

Make sure any trees you plant won't grow up into power lines. If you do have a tree growing into lines, call your electrical utility. Don't attempt to prune or fell it yourself. If it falls into a line, it could be fatal.

keep kites or other flying toys away from overhead wires

If they get tangled in the lines, they can cause a severe shock or death. Before you fly a kite be sure it won't be near any electric lines.

never climb utility poles or towers

Don't climb poles or towers for any reason. The lines can carry extremely high voltages that can kill on contact. Also, there is a very real danger of slipping and falling.

never touch a downed wire

Storms, high winds or fallen trees may cause power lines to touch the ground. But even wires that look dead could be live and very dangerous. There may be a flow of electricity into the ground that can affect a wide area and be dangerous to bystanders.

keep 10 metres away from fallen power lines

If you find a fallen wire, stay a safe distance away and warn others to keep back too. Call your local hydro and the police to report the hazard.

if a car hits a hydro pole and knocks the wire down...

...stay inside until the electrical utility can clear the wires and make the accident scene safe. If you must get out of the vehicle because of fire, jump clear of the vehicle with both feet together and without touching the car and the ground at the same time. Keep your feet touching each other, and shuffle 10 metres or more away from the car. Once you're out, stay away. Don't go back for any reason.

teach your children electrical safety

Electricity is safe provided it's used properly. Teach children to play safely away from power lines.



there may be power down below too!

underground power equipment

Out of sight, out of mind... but don't forget about them entirely. In newer subdivisions, our electrical facilities are underground, with the only visible equipment being the padmount transformers.

call before you dig

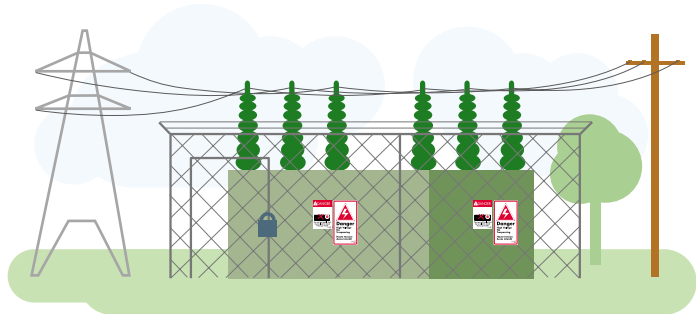
If you plan to dig deeper than 30 cm (about 1 foot), call your electrical utility to locate underground power lines.

stay away from padmount transformers

These green metal boxes are the above ground portion of an underground electrical installation. They transform high voltage to low voltage electricity which is then carried by buried insulated power lines to your home. Encourage children to stay away from these boxes.

damaged transformer? call please

If you see a padmount transformer that looks like it's been tampered with, has severe dents, or is unlocked or open, please report it to the electric utility.



a few words about our **substations**

They come in different shapes and sizes. We have large transformer stations and smaller distribution and regulating stations. To us they are all substations and are dangerous places for the public.

fences and warning signs for your protection

To protect the public we enclose these substations with tall fences, usually chain link topped with barbed wire. Never climb a fence or enter one of these stations. Warning signs are posted around the outside of each substation. Remind youngsters to stay out of these facilities.

avoid playing near them

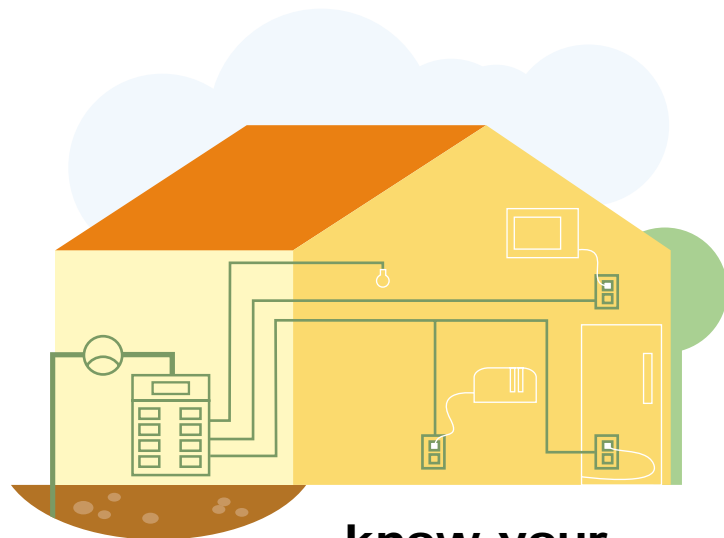
Don't play close to substations, especially with balls, flying toys, or other toys that might be accidentally thrown over the fence.

call us when you need help

If you do lose a toy or object over the fence, don't go after it. Call us, and we'll send a trained technician out to retrieve it.

if you find a substation open, let us know

This should never happen, but if you find a substation with an open gate or a break in the fence and no hydro workers in sight, please call us. This may be the work of vandals, leaving a serious hazard to young children.



know your **home wiring**

From the street, electricity is carried by power lines to the “service entrance” of your home. In many newer subdivisions, power is distributed through underground lines.

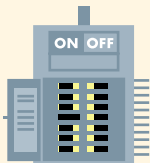
From the service entrance, electricity enters the “main switch”. It is clearly marked with “on” and “off” positions and controls all the power in the house (except where a flat-rate water heater is supplied by a separate small switch fastened to the main unit).

All lighting and general use circuits are protected by either circuit breakers or fuses. Fuses are generally found in older homes. Most newer electrical service entrance installations use circuit breaker panels.

From the main switch, the breaker panel or fusebox splits the power into circuits that go to all rooms of the house. Circuit breakers or fuses protect each circuit. If trouble occurs, such as a short circuit or an overload, the circuit breaker trips or the fuse blows, stopping the flow of power to the circuit.

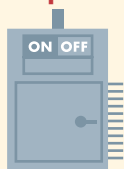
think of **breakers** and **fuses** as safety switches for the electrical wiring

check the breaker panel or fusebox



Breaker panels or fuseboxes themselves don't require much care. But if you notice breakers tripping or fuses blowing for no apparent reason, or you detect rust in the box, call an electrician. Overheating and discoloration in the box, or flickering lights are also danger signals not to be ignored.

keep the cover closed



The cover of your breaker panel or fuse box should be kept closed to protect children from injury and prevent dirt from accumulating.

the cover of the "main switch" is off limits



Never remove the cover of the main switch if you suspect trouble. If the power is off throughout the entire house, call your electrical utility or a qualified electrician. Don't tackle the job yourself.

use proper fuse sizes



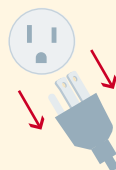
If your panelboard uses fuses, always use replacement fuses with the proper amount of amperes (amps). Lighting and general use circuits are fused at 15 amps. Never substitute a higher amp fuse where a smaller one is called for. It could pose a fire hazard. Never change a fuse in the dark or while standing on a wet floor.

no coins ever please



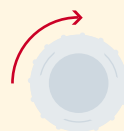
Never replace a burnt out fuse with a coin or metal object, even as a temporary measure. This eliminates the protection that a fuse is designed to give and can be a very dangerous fire hazard.

unplug before resetting or replacing



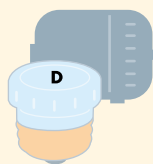
If you blow a fuse or trip a breaker by overloading a circuit, eliminate the problem and then make sure that appliances on that circuit are unplugged before you replace the fuse or reset the breaker.

keep the fuses tight



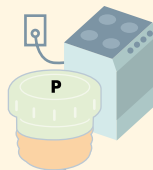
Screw in plug-type fuses as tightly as possible by hand and check them periodically. Loose fuses may overheat.

choose the right fuse for the task



There are two types of fuses, identified by the letters "D" or "P".

"D" fuses have a built-in delay to handle the power surges which occur when heavy appliances are turned on. They should be used for large motorized appliances like freezers, refrigerators, air conditioners, clothes dryers, and furnaces.

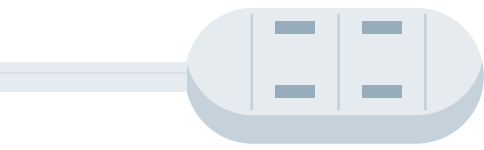


Use "P" fuses for general lighting circuits and circuits to appliances that heat, but aren't motorized. This includes water heaters, baseboard or portable heaters, and stoves.

inspections are for your own safety



When your home or cottage was built, the electrical installation was inspected to ensure that it met the Ontario Electrical Safety Code at the time. Keep your wiring safe. Any time you do anything in your home concerning electrical wiring, it must be inspected by the Electrical Safety Authority. This applies whether you have a contractor do the work, or you do it yourself.



take care of your **CORDS**

It is important to use electric cords properly and keep them well maintained. Cords are insulated to protect you from the electricity running through the wires inside. When an appliance or tool is on, these wires are “live” and could cause a shock upon contact if the wires or insulation are damaged.

pull the plug, not the cord

Pulling by the cord could wear it quickly and create a shock hazard.

inspect cords and plugs

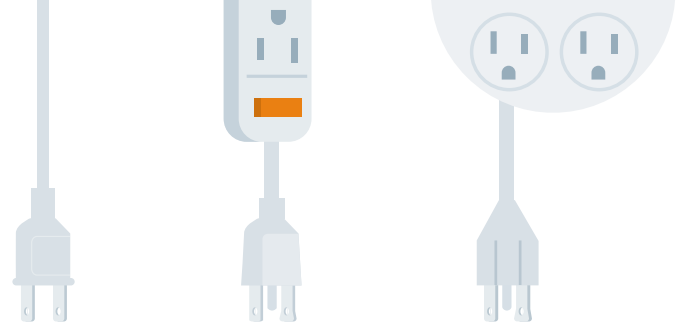
Never use a tool or appliance with a frayed cord or where the insulation is nicked and wires are exposed. If they are worn or damaged, replace them.

keep cords away from heat and water

Heat and water can damage the insulation and create a shock hazard. For that reason, you shouldn't run cords behind radiators.

don't use extension cords as permanent wiring

An extension cord is a handy way to temporarily bring power to an area in your home that doesn't have an outlet. However, it was never meant to take the place of permanent wiring. If you're using extension cords permanently, it's time to update your wiring.



avoid octopus outlets

Clusters of wires and plugs mean your electrical system can't cope with your energy needs. Octopus outlets can be a fire hazard. If you see them, it may be time to rewire and add circuits.

never break off the third prong of a plug

The third prong (the round one) is a grounding wire put there for your protection. Rather than breaking it off from an extension or appliance cord to fit an older outlet, replace a two-prong outlet with a three-prong one and make sure the third prong is properly grounded. It provides a ground path that helps prevent or minimize shocks.

not all extension cords are equal

If you need to use an extension cord, be sure it has a sufficient amperage or wattage rating.

cords under carpets are a fire hazard

Never run cords under rugs. This conceals cord damage which should be noticed and can cause the cord to overheat.

keep cords loosely wrapped

Don't wind cords tightly around an object. The stress could cause the small wires inside to snap or break.

never nail cords to walls or floors

Nails and staples can puncture the insulation and can short out the wires, causing a fire hazard. Use tape if necessary to attach cords to walls or floors.



work safely with your **appliances**

before you buy, look for the label

Not all electrical appliances on the market are safe. Electrical equipment that is poorly designed or manufactured can pose a fire or serious shock hazard. Look for the mark of an accredited certification organization such as Canadian Standards Association (CSA), Underwriters' Laboratories of Canada (ULC), or the Electrical Safety Authority. They indicate that the product has been tested and meets the requirements of the Ontario Electrical Safety Code.

electricity and water don't mix!

Never handle electrical appliances or equipment with wet hands or while standing on wet ground or in water. Beware of appliances in the bathroom or near sinks. Radios, hairdryers and other electrical appliances are hazardous to use near water. Any plugs that are near sources of water should be Ground Fault Circuit Interrupters (GFCIs).

don't pry toast from a toaster

If toast is stuck in the toaster, unplug it, hold it upside down over the sink, and shake the toast out. Avoid prying with utensils as you may damage the heating coils inside.

always unplug appliances before cleaning

Before cleaning or taking apart any appliances, be sure they're disconnected.

keep electric equipment away from pools or hot tubs

Electric radios, barbecues, TVs, clocks and other appliances should be kept away from swimming pools or hot tubs.

have defective appliances checked

If appliances spark, overheat, or stall, pull the plug immediately, and have them checked by a dealer or appliance service person.

keep appliances clean

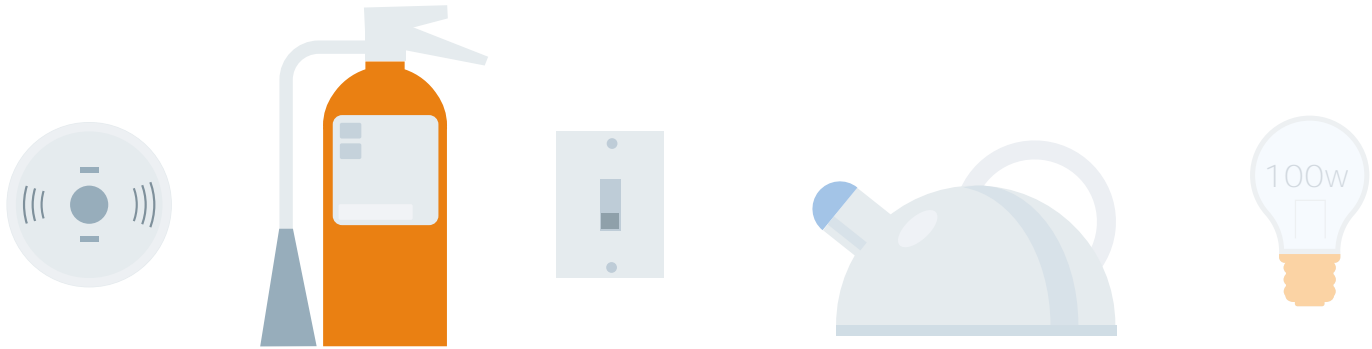
It's not just a matter of good housekeeping. Dirt, dust, or lint can make appliances unsafe to use. For example, lint and dust build-up in a clothes dryer becomes a fire hazard. The removable lint filter should be cleaned after every load.

unplug heat producing appliances

Unplug appliances like toasters, kettles, space heaters, electric frying pans, and irons when not in use. Fires can start from faulty switches.

use proper cords when working with tools

Power tools should have either a three-prong plug or double insulation. If you need an extension cord, use a three-wire, grounded cord. If your power tools aren't equipped with a three-prong plug or marked to show that they're double insulated, consider replacing them. Keep all tools and cords in good condition and never use power tools on wet grass or other wet surfaces.



general home safety tips

should you have a fire extinguisher?

Have at least one multi-purpose dry chemical fire extinguisher handy and make sure that everyone knows how to use it. Never use water on grease or electrical fires.

be sure you have enough smoke detectors

Every house and apartment should have smoke detectors located in places such as the family or recreation room, hallways and corridors leading to bedrooms. Test them regularly to ensure they're still working properly.

replace warm switches

Once or twice a year, check switches and outlets for any sign of heat coming through them. If they are warm to the touch, have them checked and replaced immediately.

be careful with portable heaters

Keep portable electric heaters away from all combustible materials including upholstery on furniture. Unplug them when not in use.

watch heat-producing appliances

Keep combustible material away from heat-producing appliances. Be especially careful with sleeves of robes or housecoats around the stove.

bulbs produce heat too

Watch out for light bulbs touching anything, including the lampshades. Don't use bare bulbs in clothes closets. A 100 watt bulb can generate a temperature of 150° C (302° F) – that's higher than some baking temperatures in an oven!

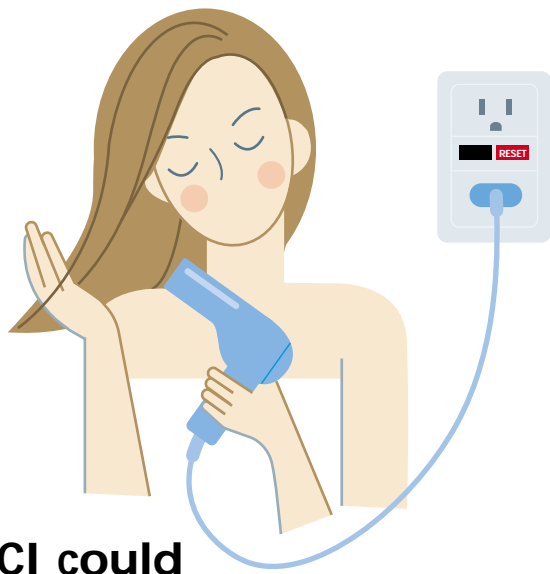
check the wattage first

Always replace bulbs with the correct wattage. An over-sized bulb may generate more heat than the fixture is designed to handle.

cover unused electrical outlets

If there are children in the house, be sure to cover all unused electrical outlets with protective caps.

how to handle an electrical emergency



a GFCI could **save** your **life**

A Ground Fault Circuit Interrupter (GFCI) is an electrical outlet that almost instantly senses an electrical ground fault and stops the flow of electrical current before someone is hurt.

Ground faults in electrical appliances and tools are potentially fatal. A ground fault permits the electrical current to flow from the live wire to the ground. A GFCI provides split-second electrical protection for you and your family. Be sure to test your GFCI monthly, especially after a power outage.

in some areas of the home, GFCIs are required by law

All outdoor and bathroom electrical outlets in new homes must be supplied from circuits equipped with GFCIs. This includes circuits serving swimming pools and hot tubs. They should also be considered for damp locations such as laundry rooms, basements, and kitchens. Specially designed portable GFCIs can be taken from place to place to protect you anywhere. For more information on GFCIs, contact your local utility or an electrical contractor.

electrical fire

Never use water to extinguish an electrical fire. Unplug equipment if possible, use baking soda or a dry chemical fire extinguisher.

rescue

If someone inside a building receives a shock from a faulty appliance and is still in contact with it, don't touch the appliance or the person before pulling the plug from the wall socket. If a person or vehicle touches an outdoor wire, don't touch either the person or vehicle. Call 911 for help.

first aid

Once the victim is free from the source of electricity, begin first aid. If the victim is unconscious, and not breathing, use artificial respiration immediately. If there is no pulse, start CPR. Don't leave the victim unattended. If the victim is in shock, keep warm, but don't apply heat. Loosen clothing about the neck, chest, and waist. Have the victim sit in a semi-reclined position.

Avoid handling burns. Do not apply lotions, or remove burned clothing. If possible, cover burns including clothing with a prepared dry sterile dressing. Where skin is blistering, bandage loosely. Don't use gauze, cotton wool, or other material that is likely to stick. Anyone who is unconscious but still breathing, should be placed in the St. John Ambulance recovery position.

medical follow-up

All victims of an electrical shock must have a medical examination to confirm that cardiac and pulmonary functions are normal and stable.