



OPEN GROUND: Ungrounded electrical receptacle



- **What is an “Open Ground” at an electrical receptacle?**

When a grounding receptacle (three-holed type receptacle) does not actually have a grounding conductor. This may mean a missing or unconnected grounding conductor at the receptacle, or one missing at an “upstream” receptacle.

- **What is the concern about an “open ground”?**

The reason this is unsafe is that although the receptacle appears to be grounded, it is not. Thus plugging in a three-prong cord which requires a grounding conductor for safety creates a potentially unsafe condition.

Most modern homes now have three-wire receptacles that accommodate electrical cords with three-prong plugs. The third prong provides a path to ground along which the electric current travels. Most major appliances, such as stoves, refrigerators, and computers, have three-prong plugs, meaning they must be grounded through the receptacle. If, for whatever reason, there is no grounding conductor at the receptacle, there is a danger of possible shock or electrocution and damage to the equipment. A missing grounding conductor often occurs in older homes that previously had ungrounded 2-prong outlets and then was upgraded erroneously with 3-hole receptacles without the presence of grounding conductors. Or sometimes in newer homes the grounding conductor was mistakenly not connected or has come off the terminal.

Although three-prong adapters can be purchased, they are usually unsafe and **not** recommended. Also remember never to clip the third prong off a plug to make it fit a two-hole receptacle. This is not safe.



- **How are they fixed?**

The simplest fix: First check whether the ground wire was left unconnected by mistake and then you just need to connect it in the receptacle. This will not be the case if the receptacle was originally installed as an ungrounded (2-hole) receptacle back in the day before it was common to ground receptacle and there is no ground wire present. **Cost:** A couple of minutes of an electrician's time.

If you don't need a ground at this receptacle because you will only be plugging in lamps or other two-prong cords, then you can change the three-hole receptacle to a two-hole receptacle. Most things, such as lights don't need a grounded-receptacle. **Cost:** A couple bucks for the receptacle and a few minutes of an electrician's time.



If you want to plug in three-prong cords (that is, appliances that require a ground at the receptacle to be safe), but you are not concerned about protecting the equipment from damage, just with protecting people from possible shock, then you could install a ground fault circuit interrupter (GFCI) receptacle. This will protect people from possible shock, but the equipment may get damaged. **Cost:** About \$12.00 for a GFCI receptacle and a few minutes of an electrician's time.

If you want to protect people from shock and protect sensitive electronic equipment from lightning strikes or electrical surge damage, (i.e. you want a true "equipment ground"), then you must run a new green ground wire from the receptacle back to the main panel. **Cost:** The cost will depend on the distance to main panel and the difficulty of running the wire.

- **Always consult a licensed electrician to perform the work.**