



Reduce fires with electrical safety

Fires are among the leading causes of unintentional death in the United States today. According to the U.S. Fire Administration, 3,380 people died in fires in 2004. During that year, 15,505,000 residential fires resulted in \$9.2 billion of property damage. The toll continues to grow every year, even with increased use of 911 emergency response systems.

More than three out of four reported structure fires occur in the home. Fires are likely to be more severe in rural areas because of the response time and limited equipment available to outlying fire departments.

People cause fires

The tragic aspect of home fires is that many could have been prevented—if someone had taken the proper safety measures ahead of time.

People's actions—and how they fail to consider fire safety—are common to all major causes of household fires. Major causes include improper use and maintenance of heating appliances; improper use and care of electrical appliances; lack of functioning smoke detectors; and careless use of smoking materials. This publication covers electrical safety, smoke detectors, and use of a family exit plan.

Check electrical cords

Two-thirds of all electrical fires begin in plugs or cords on fixed appliances such as refrigerators, air conditioners, or lamps. Frayed cords expose electrical wires that spark on contact with each other or anything that can ground the electrical current.

Electrical plugs and cords usually deteriorate gradually, making damage difficult to detect. Inspect all appliance cords and plugs for wear at least once a year. If you discover a frayed cord or loose prongs on a plug, discontinue use until repairs can be made.

Check electrical outlets

Never overload electrical outlets and circuits. Overloaded electrical outlets, or circuits that supply power to several outlets, is a major cause of residential fires. Overloaded outlets and circuits carry too much electricity, which generates heat in undetectable amounts. The heat causes wear on the internal wiring system and can ignite a fire.

All wiring systems have circuit breakers or fuses that disconnect power when circuits become overloaded. However, an improperly sized fuse or breaker can cancel this built-in safety feature.

To prevent overloading, never plug more than two appliances into an outlet at once or “piggyback” extra appliances on extension cords or wall outlets. Use only outlets designed to handle multiple plugs.

Give special consideration to appliances that use 1,000 or more watts, such as air conditioners, refrigerators, hot plates, irons, microwave ovens, dishwashers, heaters, and deep fryers. Avoid plugging them into the same outlet or circuit. To use these appliances safely, know which outlets are connected to the same electrical circuit in your home. Do not exceed 1,500 watts for each outlet or circuit. Wattage requirements are listed in appliance manufacturer's instructions.

Home fire safety

How much do you know?

Test your skill with this quick quiz.

1. How many people die in home fires in the United States each year?
a) 1,100
b) less than 600
c) about 3,300
2. A standard electrical outlet could safely handle which combination of the following items:
a) air conditioner, hair dryer, and clock radio
b) a family-sized refrigerator and microwave
c) a belt sander and 50-watt trouble light
3. Most electrical fires in the home begin in the structure's internal wiring system. True or false?
4. A battery-operated smoke detector will alert the household to danger only if you
a) test the smoke detector once a month.
b) change batteries at least once a year.
c) never remove batteries to disable the alarm because of smoke from cooking.
d) all of the above

See answers on back.

Begin a habit of regularly checking electrical cords and outlets. Fires that begin in these areas are difficult to detect, yet easy to prevent.

Check smoke alarms

Researchers estimate that smoke alarms could have prevented almost half of the annual fire fatalities. Smoke alarms alert you to potential dangers that your senses cannot detect, such as a slow, smoldering fire in an overloaded electrical outlet.

However, it is more dangerous to rely on a smoke alarm that does not work properly than it is to have no smoke alarm in your home. Check the operation of the smoke alarm every month, and replace batteries once a year.

If smoke from cooking sets off your alarm, never remove the battery to disable the alarm. You may forget to replace and reconnect the battery when cooking smoke is no longer a problem, and the disabled alarm offers a false sense of security. Consult a professional if the alarm continuously sounds from cooking smoke. The alarm may be located too close to the kitchen, or an exhaust fan may be needed in the cooking area.

Consider manufacturer's suggestions on where to locate the smoke alarm. All smoke alarms should be placed on the ceiling or a wall near the ceiling in central locations. Most manufacturers suggest at least one smoke alarm for each floor.

Some floor plans may require additional locations. Always select an alarm that has been tested and displays the seal of a testing organization.

Prepare a family exit plan

Early warning by a smoke alarm is effective only when accompanied by a prepared emergency exit plan. Emergency exit plans let you rely on automatic responses during an actual emergency.

It's a good idea to develop your own Operation EDITH, Exit Drills in The Home. A good plan is known by all members of a household and includes an outside meeting location away from danger of the fire. It also includes more than one way to get out of each area of the home. Stage Operation EDITH practice drills periodically, then discuss the plan with family members.

Safe use of electrical appliances and outlets, a working smoke alarm, and a good family emergency exit plan may be all that's needed to protect you and your family from the dangers of fire.

Prepared by Charles V. Schwab, extension safety specialist.

Home fire safety

What can you do?

Fire safety is important. A few simple actions can reduce the chance of fire in your home.

- Test your smoke alarm on a designated day each month.
- Change batteries in your smoke alarm on the day you set your clocks back in the fall.
- Meet with family members to decide an emergency escape plan for every area of your home and farm buildings. Designate a central meeting place.
- Practice your family's Operation EDITH in a mock fire drill as often as needed.
- Inspect all outlets in your home for overloading, and appliances for frayed cords.

Answers to quiz: 1-c; 2-c; 3-False; 4-d

For more information

This publication covers only some aspects of home fire safety. For more information about supplemental home heating or smoke alarms, see the following source:

■ U.S. Fire Administration
16825 S. Seton Ave.
Emmitsburg, MD 21727
301-447-1000
Also on the web at www.usfa.fema.gov.

... and justice for all

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Safe Farm is an Iowa State University Extension and Outreach project helping to make Iowa farms a safer place to work and live.

For more safety information, check the web at www.abe.iastate.edu.