

Healthy Indoor Air Series

Smoke Detectors

Why do I need a smoke detector?

In a typical home fire, people have only about two minutes to get outside safely. Having a smoke detector cuts the chance of dying in a home fire by nearly 50 percent.

The National Fire Prevention Association estimates that 93 percent of U.S. homes have at least one smoke detector. But, there are more homes with smoke detectors or alarms that **don't** work than homes without them. Smoke detectors save lives, reduce injuries, and decrease property damages.

How do the different types of detectors work?

Smoke detectors sense rising smoke and sound a piercing alarm. There are several different types:

- An *ionization alarm* uses an extremely small quantity of radioactive material to make the air in the alarm chamber conduct electricity. Smoke, which can be invisible, interferes with the electric current and triggers the alarm. Smoke detectors generally react well to fast-flaming fires, but are slower to detect smoldering fires like electrical or upholstery.
- A *photoelectric alarm* sounds when visible smoke particles interfere with the beam of light. These react faster to smoke than flames.
- A *dual detection* alarm, which has both ionization and photoelectric features, provides the best coverage.



What features should a smoke detector have?

- **Dual detection**
- **Hardwired**—operates on household electric current to trigger alarms through a home's wiring system; vulnerable to power outages.
- **Battery Backup**—hard-wired units should have a rechargeable battery backup.
- **Test Button**—to test the unit, press button; alarm should sound.
- **Big Hush Button**—a large button that can be pressed with broomstick (when unit is mounted on the ceiling) to stop false alarms.
- **Combination models**—may have strobe lights for the hearing-impaired; smoke and carbon monoxide units.
- **UL** (Underwriters Laboratory) seal of approval.
- **Hinged or removable cover** for easy cleaning and changing batteries.

How do I maintain my detector?

- **Testing**—test at least once a month or when the alarm chirps.
- **Replacing Batteries**—change batteries at least once a year or when the alarm chirps. A good way to remember to change the batteries is when the time changes. “Change the clock, change the battery.”
- **Cleaning**—dust, cobwebs, and insects can interfere with proper operation. Check manufacturer's instructions for cleaning.
- **Replacement**—smoke alarms last about 10 years. At age 10, the entire alarm should be replaced, even if it seems to be working. Newer models have a date stamp.

Where should smoke detectors be placed?

- Put a dual-sensor alarm *or* both a photoelectric and ionization type unit on each floor of a multi-level dwelling.

- Install alarms on the ceiling at least 4 inches from the nearest wall—or high on the wall but at least 4 inches down from the ceiling. Hard-wired units must connect to household current and should be installed by an electrician.
- **AVOID** room corners, areas adjacent to windows, outside doors, air or heating vents, or inside kitchens (smoke from cooking), bathrooms (humidity), and garages (exhaust fumes).

For more information

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