

Optimizing Cooking Environments

The Relationship Between Cooking Practices and Indoor Air Quality

Gas cooking appliances are used nationwide in more than 40 percent of homes. Gas remains popular with home and professional chefs because of its cooking superiority and safety. **Regardless of the heat source**, cooking releases byproducts into the air. What cooks everywhere know, **there are no documented risks** to respiratory health from natural gas stoves according to the regulatory and advisory agencies and organizations responsible for protecting residential consumer health and safety.

Real science is essential, so check out the [latest report](#) on the effects of cooking on residential indoor air quality. Key findings from the report include:

- **Cooking affects Indoor air quality rather than the fuel you use to cook it**, and the most effective method to protect health is to provide proper ventilation while cooking.
- The type of appliance – natural gas or electric – used to cook food indoors is **not a significant determinant of residential indoor air quality**.
- Many **additional factors influence the nature and extent of emissions during cooking**, including the type of food, oils, cooking temperatures and time, and proper ventilation.
- Reports linking gas cooking to negative health outcomes often rely on analyses that **do not make that connection**.
- The International Study of Asthma and Allergies in Childhood (ISAAC), historically the largest collaborative worldwide epidemiologic project focused on the possible association between gas stove use and asthma ever performed, found in their 2013 Phase 3 Report that for a cohort of 512,707 primary and secondary school children from 47 countries, there was **“no evidence of an association between the use of gas as a cooking fuel and either asthma symptoms or asthma diagnosis.”**
- There is often a **mismatch between study results and media coverage**. For example, a recent headline-generating report on childhood asthma is based on a flawed study that shows no statistically significant relationship between gas stove use and asthma in North America and does not evaluate other factors, such as the use of ventilation or exposure to other pollutants released during cooking.

FTI Consulting also offers all the relevant facts about the science. Here are a few of the main points:

- The best study available, [“Cooking Fuels and Prevalence of Asthma: A Global Analysis of Phase Three of the International Study of Asthma and Allergies in Childhood \(ISAAC\).”](#) which analyzed 512,707 primary and secondary school children from 108 centers in 47 countries, there is “no evidence of an association between the use of gas as a cooking fuel and either asthma symptoms or asthma diagnosis.”
- What [you cook](#) has more to do with emissions than what type of stove you use. For example, olive oil has 17 times higher PM 2.5 emissions than gas stoves.



Optimizing Cooking Environments:

Gas ranges have less fire risk than electric

A [recent report](#) from the National Fire Protection Association (NFPA) concluded:

Households with electric ranges had a higher risk of cooking fires and associated losses than those with gas ranges. Although 64 percent of households cook with electricity, four of the five (80 percent) ranges or cooktops involved in the reported cooking fires were powered by electricity. The population-based risks are as follows:

- The reported fire rate per million households was 2.4 times higher with electric ranges.
- The civilian fire death rate per million households was 1.9 times higher with electric ranges.
- The civilian fire injury rate per million households was 3.6 times higher with electric ranges than in households using gas ranges.
- The average fire dollar loss per household was 3.2 times higher in households with electric ranges.

Cooking with any fuel source means heat, so safety involves many issues that require proper use and attention with any cooking appliance.

Safety tips for cooking

It's important to have good kitchen ventilation each time you cook. Exhaust fans remove emissions directly at the stove before they mix into the surrounding air.

- Fans also increase overall air exchange in the home to **remove pollutants from indoor air**.
- **Use a range hood or exhaust fan that vents to the outside.** If your range hood recirculates air back into the kitchen, you should open windows or use an exhaust fan in another room while cooking.
- it's also recommended to **install carbon monoxide and smoke detectors** in every household. Contact your state fire marshal's office for more information.
- **Ensure your gas range, oven or cooktop has been designcertified to the ANSI Z21.1 standard**, which includes requirements for proper operation and limits on emissions.
- [A recent study](#) of California ventilation system requirements completed by Lawrence Berkeley National Laboratory for the California Energy Commission found that **current ventilation requirements are adequate to protect consumer health and safety** from a variety of sources, including kitchen sources of airborne contaminants.
- Put, cooking safety is all about **ventilation, ventilation, ventilation!!!**



Lastly, make sure your gas kitchen [appliance is installed to local installation codes](#).