



CLEAN
COOKING
ALLIANCE



Air Pollution, Health, and Clean Cooking

The Problem

2.3 billion people around the world depend on food cooked over open fires and inefficient stoves, exposing them to air pollution. Exposure to household air pollution (HAP) from burning wood, charcoal, coal, and kerosene is a leading risk factor for diseases, including childhood pneumonia, chronic obstructive pulmonary disorder, ischemic heart disease, stroke, and lung cancer. When pregnant women are exposed to HAP, their infants are at increased risk for stillbirth, low birthweight, and decreased lung function. Globally, up to 3.2 million people die prematurely each year from illnesses attributable to HAP. Emerging research suggests that exposure to HAP also leads to negative cognitive impacts, such as increased risk for Alzheimer's. Annual health-related costs from relying on polluting stoves and fuels are \$1.4 trillion.

The Solution

Replacing open fires and inefficient stoves with cleaner, more modern stoves and fuels reduces emissions and personal exposure, lowering the burden of disease associated with HAP. Research evidence suggests that significant exposure reduction is required to reduce negative health impacts. Therefore, substantial improvements in health can only be achieved with intensive, near-exclusive use of the lowest-emission cookstoves and fuels.

With a successful transition to clean cookstoves and fuels, randomized control trials have shown reductions in severe pneumonia in young children, reduced duration of respiratory infections in children, lower blood pressure in pregnant women, increased birth weights, and increased gestational age at delivery. Achieving these positive health outcomes necessitates a strong supply to ensure long-term access to high-quality stoves and fuels; consumer education promoting consistent and exclusive use; as well as policies to increase availability and affordability of clean cookstoves and fuels.

Health Impacts of Cooking

- **Up to 3.2 million premature deaths** each year are attributable to household air pollution from cooking, lighting, and heating.
- The **leading environmental risk** globally is air pollution.
- **Over 16% of ambient air pollution** globally comes from household air pollution, further contributing to the burden of disease.
- **Negative birth outcomes** are linked to pregnant women who cook with inefficient stoves and fuels.
- **Over 450,000 children under 5** die each year primarily in sub-Saharan Africa and Asia, as a result of household air pollution.
- The cost of relying on polluting stoves and fuels is around **\$2.4 trillion each year**, mainly due to health costs.

Priorities for Action

The following priorities are key to reducing air pollution and improving health through the scale-up of cleaner, more modern stoves and fuels:

- 1. Incentivize clean cooking transitions** across a region or country with a conducive regulatory environment. Implement policies that encourage the use of clean stoves and fuels over other options, such as removing kerosene subsidies or reducing taxes on the highest performing products.
- 2. Change behavior** with consumer-focused campaigns that emphasize the many compelling benefits of cooking with clean cookstoves and fuels, including convenience, cleanliness, and cost-savings, in addition to health.
- 3. Develop and support** innovative and flexible distribution channels, payment models, and financing options so that high-quality, clean fuels are consistently accessible to consumers across the socioeconomic spectrum.
- 4. Mainstream clean cooking** into public health-related global campaigns. Despite the evidence of the many negative health impacts of exposure to household air pollution, clean cooking still needs a more prominent place as a public health imperative.



- 5. Fund targeted research** to strengthen the evidence base. While there are robust findings of negative impacts on cardiovascular and respiratory health, additional targeted research is needed on the impact of cooking emissions on cognitive development and other measures of a healthy childhood.

Clean Cooking and the SDGs

Clean cooking and improved air quality are integral to achieving the Sustainable Development Goals (SDGs):



Reducing health impacts from household air pollution is explicitly included as part of Goal 3, ensuring healthy lives and promoting well-being for all at all ages.



Increasing access to clean fuels and technology is stated in Goal 7, ensuring access to affordable, reliable, sustainable and modern energy for all.

Clean cooking is essential to eight other SDGs and contributes to an enabling environment for achieving the entire Agenda 2030.

Emerging Evidence on Additional Impacts to Children's Health

While cooking emissions and the resulting air pollution have a definitive relationship to childhood pneumonia and negative birth outcomes, recent research highlights that HAP may also increase the risk for anemia, childhood stunting, and impaired child cognitive development. While more evidence is needed to strengthen these connections, cooking emissions and HAP are already a significant risk to multiple aspects of children's health that require immediate and systemic solutions.

About the Clean Cooking Alliance

CCA works with a global network of partners to build an inclusive industry that makes clean cooking accessible to the 2.3 billion people who live each day without it. Established in 2010, CCA is driving consumer demand, mobilizing investment to build a pipeline of scalable businesses, and fostering an enabling environment that allows the sector to thrive. Clean cooking transforms lives by improving health, protecting the climate and the environment, empowering women, and helping consumers save time and money.

For more information, please visit CCA online at [CleanCooking.org](https://www.CleanCooking.org)

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