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## Indoor burning of biomass and kerosene fuels is associated with higher risk of developing several types of digestive cancers

**Lyon, France, 17 June 2020** – A new study published today in the journal *Environmental Health Perspectives*<sup>1</sup> provides strong evidence that household burning of biomass and kerosene fuels, especially using stoves without a chimney, increases the risk of developing several cancers of the digestive tract.

This report is based on more than 10 years of follow-up of 50 045 participants in the Golestan Cohort Study, which was initiated in 2004 by the Digestive Disease Research Institute of the Tehran University of Medical Sciences (Islamic Republic of Iran), in collaboration with the International Agency for Research on Cancer (IARC) and the United States National Cancer Institute.

“The combustion of biomass and kerosene fuels has been shown to produce multiple carcinogenic compounds that can be absorbed through the respiratory and digestive tracts,” says Professor Reza Malekzadeh, the principal investigator of the Golestan Cohort Study and the co-senior author of this study. “Limited studies in humans have assessed the risk of cancers among individuals who use biomass fuels for household purposes. However, most of those studies are retrospective and have focused on respiratory cancers, whereas the risk among these individuals of developing other cancer types, including digestive cancers, has been largely understudied.”

According to estimates from the World Health Organization, about 3 billion people worldwide still cook and heat their homes using open fires or leaky stoves fuelled by kerosene, biomass (including wood and animal dung), or coal. The exposure to the resulting indoor air pollution is especially high among women and young children in low- and middle-income countries.

“The Golestan Cohort Study is the first population-based prospective study that provides robust evidence indicating that use of biomass fuels for household heating and for cooking is associated with higher risk of developing oesophageal, gastric, and colon cancers, and that use of kerosene for household heating and for cooking is associated with higher risk of developing oesophageal cancer,” says Dr Mahdi Sheikh, a postdoctoral scientist at IARC and the first author of the study.

Another important finding in this study is that using stoves equipped with a chimney when burning biomass or kerosene fuels is associated with lower risk of digestive cancers compared with burning the same fuels using stoves without a chimney.

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<sup>1</sup> Sheikh M, Poustchi H, Pourshams A, Khoshnia M, Gharavi A, Zahedi M, et al. (2020). Household fuel use and the risk of gastrointestinal cancers: the Golestan Cohort Study. *Environ Health Perspect*. Published online 17 June 2020. <https://doi.org/10.1289/EHP5907>

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“Given the fact that about 40% of the world’s population still burns non-clean fuels for household purposes, global initiatives are needed to reduce the long-term hazardous effects associated with indoor burning of these fuels,” says Dr Paul Brennan, Head of the Section of Genetics at IARC and the co-senior author of the study. “The results of this study indicate that when it is not feasible to replace non-clean fuels with clean fuels, replacing traditional stoves without a chimney with newer chimney-equipped stoves might be appropriate for lowering the health hazards associated with using non-clean fuels. Therefore, this study has important implications for public health.”

### Note to the editor

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