

Association of solid fuel use with risk of cardiovascular and all-cause mortality in rural China

Supported by the National Natural Science Foundation of China, the research team directed by Prof. Wu TangChun (邬堂春) at the Key Laboratory of Environment and Health, Ministry of Education, and State Key Laboratory of Environmental Health (Incubating), Huazhong University of Science and Technology, and Prof. Li LiMing (李立明) at Peking University found that solid fuel use for cooking and heating is associated with higher risks of cardiovascular and all-cause mortality, which was published in *JAMA* (2018, 319: 1351–1361.).

When combusted indoors, solid fuels emit a large amount of pollutants such as fine particulate matter, CO, which in ambient air is an established risk factor for cardiovascular disease. However, reliable epidemiological evidence remains scarce, especially on the association between solid fuel use and cardiovascular mortality. Furthermore, it remains unclear whether mortality risk associated with solid fuel use is lower among adults who had switched from solid to clean fuel use or used appropriate ventilation.

In this prospective cohort study of 271217 participants, about 66% of the participants reported regular cooking and 60% reported winter heating, of whom 84% and 90% still used solid fuels, respectively. The study group found that, use of solid fuels for cooking and heating was associated with greater risk of cardiovascular and all-cause mortality. Compared with persistent solid fuel users, participants who reported having previously switched from solid to clean fuels had a lower risk of cardiovascular and all-cause mortality. Additionally, among solid fuel users, use of ventilated cookstoves was also associated with lower risk of cardiovascular mortality and all-cause mortality.

These findings emphasize the importance of reducing solid fuel use and also highlight that when substitution with clean fuel is not feasible, the use of ventilation might serve as an alternative strategy to lessen mortality risk, which could be of particular public health significance in less-developed areas.

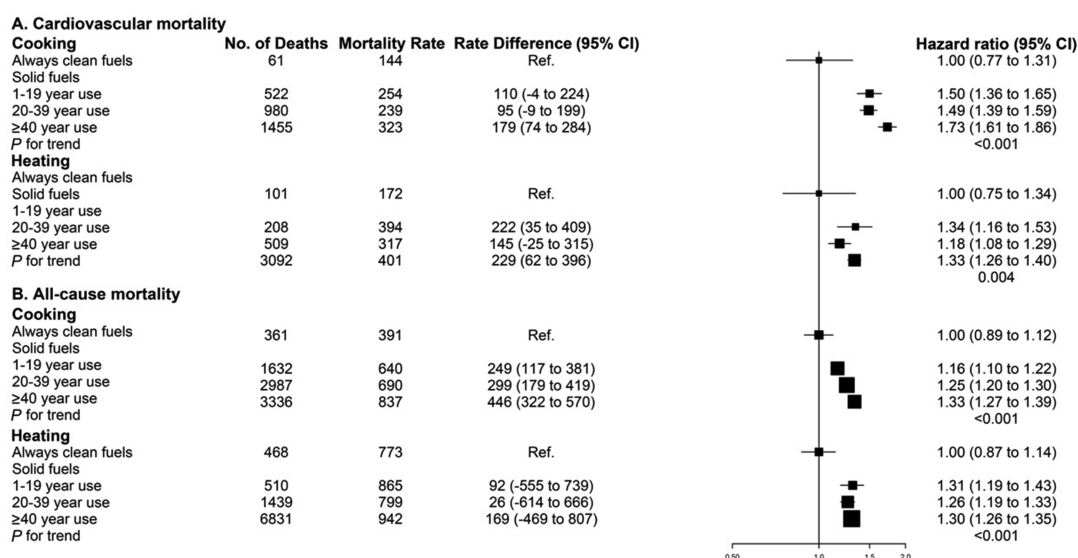


Figure Solid fuel use for cooking and heating was associated with higher risks of cardiovascular and all-cause mortality, and the associations showed a clear duration-response relationship.