The World Health Organization has estimated that exposure to toxins and smoke emitted from cookstoves leads to 4.3 million premature deaths annually. One of the primary sources of PAH exposure is indoor cookstove use. Our aim was to quantify and characterize the exposure to PAHs produced by cookstove smoke in peri-urban Rwandan households. Comprehensive exposure assessments were carried out in 180 households during July-August 2015. In each household, the primary cook’s exposure to PAHs was measured using a PUF/XAD2 sampler over a 24-h period. The concentrations of PAHs analyzed in a subset of households significantly exceeded recommended exposure levels in both breathing zones and cooking areas. PAHs analyzed were observed to be primarily in the gas phase. Cooking location (indoors or outdoors) and lighting fuel (plastic or small sticks) had no significant effect on personal or area exposures to PAHs. This research has the potential to improve the health of millions of people globally.

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