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LUNG ALERT

Stoves with chimneys reduce risk of COPD

▲ Chapman RS, He X, Blair AE, *et al*. Improvement in household stoves and risk of chronic obstructive pulmonary disease in Xuanwei, China: retrospective cohort study. *BMJ* 2005;**331**:1050–2

The effect of the installation of stoves with chimneys on the incidence of chronic obstructive pulmonary disease (COPD) was investigated in 20 453 farmers living in Xuanwei County, China who were lifelong users of smoky coal. 16 606 changed from unventilated stoves to stoves with chimneys during the period of data collection. Data were collected retrospectively for a period of 17 years (1976–92).

1487 subjects (7.3%) self-reported a diagnosis of COPD. The age adjusted incidence rate of COPD was lower in people with chimneys (367/100 000 person years) than in those without (767/100 000 person years). The mean age of diagnosis of COPD was 49.7 years (95% CI 48.9 to 50.4) in people with no stove improvements and 53.6 years (95% CI 52.9 to 54.3) in those with improvements. The installation of chimneys was associated with an improvement in the relative risk (RR) of COPD in both men (RR 0.58, 95% CI 0.49 to 0.70, $p < 0.001$) and women (RR 0.75, 95% CI 0.62 to 0.92, $p = 0.005$). The risk of COPD in those with chimneys installed decreased consistently with the length of time since installation. After 10 years there was a significant reduction in risk in both men (RR 0.20, 95% CI 0.16 to 0.26) and women (RR 0.26, 95% CI 0.20 to 0.34).

The installation of chimneys on formerly unventilated coal stoves reduces the risk of COPD. This intervention in developing countries would reduce the global burden of COPD.

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