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**Title:** Exposure to biomass, kerosene or coal fires and lung function in the BOLD study

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**Body:** Introduction: Several studies suggest that respiratory disease is associated with exposure to biomass fuels. We investigated the risks of cooking using biomass, kerosene or coal on respiratory symptoms and lung function in the BOLD study. Methods: Post-bronchodilator spirometry was recorded in representative samples of people over 40 years old in 23 sites (N= 16,259) together with a history of chronic bronchitis lasting >2 years, respiratory exacerbations and use of biomass (wood, crop residue and animal dung), kerosene or coal for cooking. Chronic bronchitis and exacerbations, presence of an FVC < Lower Limit of Normal (LLN) and a FEV1/FVC ratio < LLN (CAO) were regressed against (i) exposure) and (ii) length of exposure (<1 year vs 1 - 15 years vs >15 years) after adjustment for age, sex and smoking. Meta-analytic techniques combined site specific log odds ratios (OR) for a pooled log OR. Results: 10.2% reported exacerbations, 3.1 % chronic bronchitis and 49% cooking with biomass, kerosene or coal. Symptoms were more common in those exposed [OR (95% CI) 1.31 (1.04, 1.65) for exacerbations and 1.35 (1.03, 1.77) for chronic bronchitis]. CAO and Low FVC were not significantly associated with exposure [OR (95% CI) for CAO 1.14 (0.98, 1.32) and for low FVC 1.10 (0.93, 1.31)]. Symptoms were higher in those exposed for > 15 years compared to <1 year [OR (95% CI) 1.50 (1.15, 1.95) for exacerbations and 1.71 (1.16, 2.52) for chronic bronchitis]. Estimates for CAO and Low FVC were 1.15 (0.94, 1.40) and 1.16 (0.93, 1.46). Conclusions Symptoms were more common in those exposed to biomass, kerosene or coal fires but we found no evidence of a significant association with either CAO or low FVC.