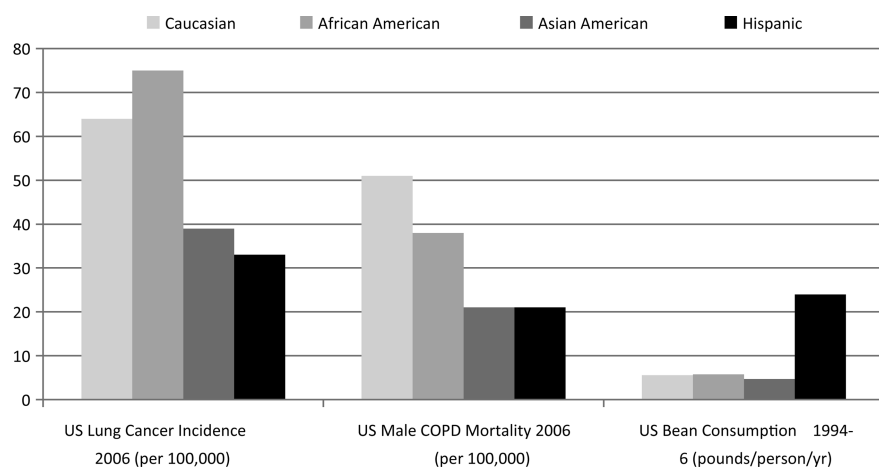


## The Hispanic paradox further unraveled?

In their cross-sectional study, Powell *et al*<sup>1</sup> found no evidence that genetic ancestry or self-reported ethnicity effected lung function among US smokers, in particular no evidence of a reduced risk of COPD in Hispanics (Hispanic paradox) previously described in a prospective study by Bruse *et al*.<sup>2</sup> This observation might be due, in part, to the definition of Hispanic and lighter smoking histories in the Powell study.

In the Powell study, only 51% of those defined as Hispanic were Mexican while the rest were predominantly of Caribbean ancestry. This is important because the Mexican Hispanics are of European and American Indian ancestry, whereas the Caribbean Hispanics also have African ancestry and a greater risk for COPD compared with Mexicans (<http://www.cdc.gov/nchs/data/databriefs/db63.pdf>)<sup>2</sup> Significantly in the study by Powell *et al*, smoking exposure was much lower than that of Bruse *et al* (16 vs 34 pack years respectively in Hispanic men).<sup>1 2</sup> Given that the smoking and lung function relationship is non-linear and the 'ancestral effects' may be subject to different smoking exposure history, we suggest a further analysis be done by Powell including only Mexican Hispanics stratified by matching pack-year exposure.

While the Bruse *et al* study suggests that American Indian genetic ancestry confers a reduced risk of COPD, potentially accounting for the Hispanic paradox, it remains a possibility that there exists a non-genetic basis to this phenomenon. Interestingly, the Hispanic paradox extends to lung cancer,<sup>3</sup> another smoking-related lung disease where pulmonary and systemic inflammation has been implicated. We suggest that it is possible that cultural differences may account for the Hispanic paradox, in particular the effect of diet. It is noteworthy that the Mexican (and American Indian) diet is



**Figure 1** Average bean consumption in the USA,<sup>4</sup> incidence of lung cancer\* and COPD mortality in men\*, according to ethnicity (\*after adjustment for smoking rates). \*Lung cancer incidence and COPD age-adjusted mortality for 2006 were sourced from the American Lung Association website (<http://www.lung.org>).

high in the consumption of legumes, primarily beans and lentils (figure 1), which are a rich source of dietary fibre.<sup>4</sup> Recent studies show that high consumption of legumes is associated with a 30–50% reduction in the systemic inflammatory markers C reactive protein and interleukin 6.<sup>5</sup> It is possible that a diet high in legumes might suppress systemic inflammation thereby partly attenuating the inflammatory effects that smoking has on the lungs. This observation may also be relevant to the ‘Asian paradox’ where a high soy bean based diet might also underlie lower rates of COPD and lung cancer.<sup>1,3</sup>

We suggest that while the (Mexican) Hispanic paradox may have a genetic basis, there may be a plausible dietary explanation for this phenomenon that requires further study.

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