

**P165 CARBON BLACK AND LUNG CANCER – TESTING A NOVEL EXPOSURE METRIC BY MULTI-MODEL INFERENCE**

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**Objectives** Carbon black is a powdered form of elemental carbon that is manufactured by the controlled vapour-phase pyrolysis of hydrocarbons. IARC concluded in 2006 that the human evidence for lung cancer in exposed humans was inadequate. Reanalysing a UK cohort of carbon black workers Sorahan and Harrington 2007 assessed the most recent 15 years of exposure (“lugging”) to support the new hypothesis that carbon black acts as a late stage lung carcinogen (lung cancer SMR=1.46; no trend in internal analysis applying “lagging”). We tested this metric in a German cohort of 1528 carbon black workers (lung cancer SMR=2.18, no trend in internal analysis applying “lagging”).

**Methods** We used a multi-model Cox regression approach (720 models) to explore the impact of duration and cumulative exposure to carbon black “lugged” by 0, 5, 10, 15 and 20 years. This approach covered four subcohorts, including an inception cohort, different exposure scenarios and varying combinations of confounders.

**Results** 719 models returned negative coefficients. Only one model estimated a small positive, but clearly non-significant coefficient ( $p=0.8$ ).

**Conclusions** Despite extensive searching, no exposure scenario suggested an adverse effect of “lugged” carbon black exposure on lung cancer mortality. Our analysis does not support the hypothesis of carbon black being a late stage carcinogen.