

**Fleming, L et al., Mortality in a cohort of licensed pesticide applicators in Florida, *Occupational and Environmental Medicine* 56:14-21, 1999**

**ABSTRACT:**

*Objectives* – Although the primary hazard to humans associated with pesticide exposure is acute poisoning, there has been considerable concern surrounding the possibility of cancer and other chronic health effects in humans. Given the huge volume of pesticides now used throughout the world, as well as environmental and food residue contamination leading to chronic low level exposure, the study of possible chronic human health effects is important.

*Methods* – This was a retrospective cohort study, analyzed by general standardized mortality ratio (SMR) of licenced pesticide applicators in Florida compared with the general population of Florida. A cohort of 33 658 (10% female) licenced pesticide applicators assembled through extensive data linkages yielded 1874 deaths with 320 250 person-years from 1 January 1975 to 31 December 1993.

*Results* – The pesticide applicators were consistently and significantly healthier than the general population of Florida. As with many occupational cohorts, the risks of cardiovascular disease and of diseases associated with alcohol and tobacco use were significantly lower, even in the subpopulations – for example, men, women and license subcategories. Among male applicators, prostate cancer mortality (SMR 2.38 (95% confidence interval (95% CI) 1.83 to 3.04) was significantly increased. No cases of soft tissue sarcoma were confirmed in this cohort, and non-Hodgkin's lymphoma was not increased. The number of female applicators was small, as were the number of deaths. Mortality from cervical cancer and breast cancer was not increased. Additional sub-cohort and exposure analyses were performed.

*Conclusions* – Consistent with previous publications on farmers but at odds with current theories about the protective effects of Vitamin D, prostate cancer was increased in these pesticide applicators. Female breast cancer was not increased despite theories linking risk of breast cancer with exposure to oestrogen disruptors – such as the organochlorines. The lack of cases of soft tissue sarcoma is at odds with previous publications associating the use of the phenoxy herbicides with an increased risk of these cancers.