

The major limitations of this study are our reliance on historical personnel and chloracne as measures of exposure, potential confounding from other chemical exposures, use of prevalence rather than incidence as our predominant measure of disease frequency, and low power in the subgroup analyses. While direct bioassay of PCDDs and PCDFs in adipose or serum is the most reliable index of exposure, this was not technically or logistically feasible in the present study. Fingerhut et al found that serum levels of 2,3,7,8-TCDD were related to duration of employment in workers engaged in the production of 2,4,5-trichlorophenol and 2,4,5-trichlorophenoxyacetic acid^{Fingerhut}. Neuberger found higher serum levels of 2,3,7,8-TCDD in production workers with chloracne compared to unexposed referents, while Beck et al found little correlation between adipose PCDD or PCDF concentrations and incidence of chloracne in exposed workers^{Neuberger, Beck}. Chloracne may be a marker of both exposure and susceptibility in exposed workers.

A limitation inherent in the cross-sectional design is the use of prevalence rather than incidence as a measure of disease frequency. If exposure affects survival or ability to participate in the examination due to illness, then this could bias the results towards the null hypothesis. The long lag times between last exposure and time of medical examination limit our ability to study past incident events. Finally, the small numbers of individuals in our highest exposure groups (Ever and Only PCP chloracne) limit our ability to detect significant differences due to low study power, and negative results should be interpreted with a consideration of the potential for beta error.

Despite these limitations, this is the largest morbidity study of pentachlorophenol production workers conducted to date and provides important information on the health status of workers with past exposure to PCP and its CDD and CDF contaminants. Overall, the general health status of these PCP exposed workers was similar to unexposed workers. The major clinical effect which we observed in PCP exposed workers was