Correlations between X-ray abnormalities and pulmonary function tests

Table 36 lists three pulmonary function results according to the X-ray reading of the individuals. Two criteria were utilized for X-ray abnormality, a 1/0 or greater parenchymal reading and/or any pleural change, including the presence of diaphragmatic plaques, and a 1/1 or greater parenchymal reading and/or pleural thickening or calcification. (The presence only of a diaphramatic plaque was not considered abnormal in the latter criterion.) The results show that in general those with abnormal X-rays have lower pulmonary function than those with normal X-rays. This is evident for smokers and ex-smokers. The pulmonary function means for the nonsmokers, however, are the same for those with abnormal X-rays as for those with normal X-rays. This is to be expected as minimal asbestos effects can be seen on X-ray before significant deficits in FVC occur. However, even minimal asbestos effects can be exacerbated by smoking, leading to the deficits seen in Table 36. The data of Table 36 are consistent with the previous discussed data suggesting a greater percentage of X-ray abnormalities among current and previous smokers compared to nonsmokers. Also, as expected, the pulmonary deficits in those with abnormal X-rays are greater when the criteria for abnormality is more stringent.

Comparisons with other populations

Table 37 provides a comparison between pulmonary function results measured in this study and those determined in a study of the general population of Michigan (Miller et al., 1980). For this comparison, the non-mechanic garage workers are excluded because of factors that may be unique to that group. The studies overlapped considerably in time and the same technical personnel were used in each. (The field dates for the Michigan survey were February 1978 through December 1979 and for this study, May 1978 through February 1980.) The purpose of the Michigan survey was to measure levels of polybrominated biphenyls in blood and adipose tissue and to evaluate other health indicators. The group was chosen by a random selection process using Michigan phone numbers. Predicted values utilized the regression equations for the data of