

Conversion factors

First Gibbs (1974) and later Liddell (1984 and 1998) evaluated the merits of converting particle to fiber counts. (Gibbs and LaChance 1974; Liddell et al. 1984; Liddell et al. 1998b) In addition to their realization that worker interviews indicated that the original dose estimates were even less accurate than thought, they again recognized that particle/fiber ratios were, "virtually independent of the level of exposure." (Liddell et al. 1998a) They then proceeded to create a single particle/fiber ratio standard for all years in all job categories and base these on the worker histories, which they ignored in calculating the actual particle counts because the histories would introduce a "systemic bias" into their analysis.

"The conversion factor should be amended because many more histories have led to more reliable estimates. We have made four other estimates: the fibre and dust slopes for pneumoconiosis and for lung cancer were in the ratios 3.67 and 3.57 (f/ml)/mpcf; while, based on mean exposures for all subjects, the ratio was 3.46 (f/ml)/mpcf in this report, and was 3.44 in a study of elderly male workers in Thetford Mines. These factors, all based on substantial groups of persons, show little variation. However, the ratios calculated for each of the 2535 non-zero pairs of exposures in this study ranged between 0.32 and 30 (f/ml)/mpcf, while the correlation of the fibre/dust ratio and its denominator, in the 2535 sets, was so small that the ratio could be thought of as **virtually independent of the level of exposure**. Nevertheless, any "average" must depend on each specific group of workers, and on the method of obtaining it. Further, all the above estimates are for workers at Asbestos and Thetford Mines in the period from 1904-66; there is no assurance that they might apply in different circumstances. We would add that there is