ISRP 2000 abstract

Presenter/author	Title	Abstract
Howie, Robin Robin Howie Associates, Edinburgh	**Collation and interpretation of workplace protection factor data**	In collating Workplace Protection Factor (WPF) Data it is necessary to consider the study protocols, sampling methodology and data analysis techniques adopted by the researchers as otherwise the collated data will be difficult to interpret. For example, if the collated data are for setting Assigned protection Factors (APF) it will be essential that the protocols adopted in the included studies reflect the selection and training protocols which can be reasonably be expected in the workplaces of interest: if the protocols involve more stringent selection and training procedures than likely in the workplace, the data "may overestimate the workplace protection factors which would be achieved by a general worker population that had not been so screened", Lenhart & Campbell (1984) In-mask sampling methodology is critical. Many published WPF data were generated using the Liu probe. As this probe was effectively flush with the inner surface of the mask it is likely that under-sampling of in-mask contaminants resulted in substantial over-estimation of Protection Factors (PF). For filtering facepieces such under-sampling could have been substantial as the probe was surrounded by an annulus of clean filtered air throughout inhalation. In practice, the probe only collected the exhaled contaminant, i.e. after lung deposition of some substantial fraction of the inhaled contaminant. In some studies unquantifiable PF were quantified on in-mask contaminant concentrations being at some fraction of the chemical detection limit. Such assumption can slightly increase the geometric mean PF and substantially reduce the geometric standard deviation, so substantially increasing the calculated 95%ile PF. The presented paper will describe the above effects in detail.

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