

LaboRisCh: un algoritmo per la valutazione dei rischi per la salute da agenti chimici nei laboratori di ricerca e negli ambienti di lavoro affini

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KEY WORDS

Chemical risk; risk assessment; laboratory; algorithm

SUMMARY

«*LaboRisCh: an algorithm for assessment of health risks due to chemicals in research laboratories and similar workplaces*». **Background:** *Chemical risk assessment in research laboratories is complicated by factors such as the large number of agents to be considered, each present in small quantities, and the very short and erratic periods of exposure, all of which make reliable environmental and biological monitoring particularly difficult and at times impossible. In such environments, a preliminary evaluation procedure based on algorithms would be useful to establish the hazard potential of a given situation and to guide the appropriate intervention.* **Objectives:** *The LaboRisCh model was expressly designed to assess the health risk due to chemicals in research laboratories and similar workplaces.* **Methods:** *The model is based on the calculation of the value of a synthetic single risk index for each substance and compound found in a laboratory and, subsequently, of a further synthetic single risk index for the whole laboratory or, where required, a section thereof. This makes LaboRisCh a compromise between need for information, ease of use, and resources required for the assessment. The risk index includes several items, chiefly the physical and chemical properties, intrinsic hazard potential, amount, dilution, and time of exposure to each agent; waste management; possible interactions; presence and efficiency of collective and individual protection devices, and staff training in good laboratory practices. The value of the synthetic single index corresponds to one of three areas: no risk (green), possible risk (yellow), and certain risk (red).* **Conclusions:** *Preliminary data confirm the model. LaboRisCh appears to be a reliable method for chemical risk assessment in research laboratories and similar workplaces.*