

Current activities on model development and validation

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Introduction

There are a small number of European research groups involved in developing generic occupational exposure models for regulatory purposes. This presentation overviews recent developments and tries to draw some conclusions about the future direction of this type of work.

Methods

The paper summaries recent developments from the ART Consortium and other related initiatives. This is not a systematic review of model development activity.

Results

The Advanced REACH Tool (ART) has been shown to have good precision and has had careful calibration. However, an extensive validation, as has been undertaken for Tier 1 tools through the eteam Project, and further efforts to minimize between user variability are needed. Further development of dermal exposure model tools, based on the DREAM (Dermal Exposure Assessment Method) model, are now being undertaken by the ART Consortium. New Tier 1 models are being developed for nanoparticles, but these urgently need to be validated. A screening tool has also been developed for inadvertent ingestion (IEAT).

Conclusions

Validation of exposure models is needed to give tools credibility. The best approach to validation is using exposure measurements, but to do this measurement data must be collected with appropriate contextual data linked to model input variables.