

# User's exposure to indoor air contaminants in European swimming pools

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## Introduction

- Potential exposure to harmful contaminants in indoor swimming pools is a common concern.
- The indoor air quality (IAQ) of swimming pools is rarely studied, and a summary of the potential for exposure to indoor air contaminants and the means of reducing such exposure at pools is needed.

## Aim

- We aimed to summarise user's exposure to indoor air contaminants and the means of reducing these contaminants in European swimming pools.

## Methods

- Google Scholar and PubMed were searched using 15 search terms and their combinations to identify publications in scientific journals.
- The search was limited to articles published between 2013 and 2023.

## Results and discussion

- We found 26 scientific publications related to IAQ in European swimming pools.
- The primary contaminants of concern in indoor chlorinated swimming pools are disinfection byproducts (DBP) such as chloroform ( $\text{CHCl}_3$ ) and trichloramine ( $\text{NCl}_3$ ).

## Conclusions

- Due to sensitive user groups at the pools, as well as the increased respiratory rate and airflow velocity among all active people at pools, strict air-quality guidelines are required for DBPs.
- The means of reducing human exposure to indoor contaminants in indoor swimming pools include carefully regulating chlorine and temperature levels in pools, properly ventilated pool and changing room areas, and good personal hygiene of the people using the pools.

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