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## An approach to identify bias in scent detection dog testing

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### Highlights

- Dogs have been used in a variety of scent detection tasks for a long time.
- In many studies on scent detection tasks there are methodological challenges or even severe flaws.
- Sources of bias or confounding are described.
- A best practice standard for scent dog studies was developed.

### Abstract

Numerous scientific studies show the increasing importance of trained scent detection dogs in a wide field of application. Methods used for testing scent detection dogs are heterogeneous and therefore susceptible for potential bias. Nevertheless, no accepted quality standards or adequate guidelines for performing scent studies and testing dogs have been published in the peer-reviewed literature yet. Therefore the objective of this systematic review was to evaluate publications on scent dog studies including test procedures and to identify methodological issues that could potentially bias or confound the study outcome. Using the databases Pubmed ([www.pubmed.gov](http://www.pubmed.gov)) and CAB

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