

- Title** Measurement of nitric oxide (NO) in exhaled air
- Agency** HAS (French National Authority for Health - Haute Autorité de santé)  
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- Reference** ISBN number: 978-2-11-139068-3, link to full report in French: [http://www.has-sante.fr/portail/jcms/c\\_2019796/fr/avis-n20150023/ac/seap-du-4-mars-2015-du-college-de-la-has-relatif-a-linscription-sur-la-lap-mentionnee-a-larticle-l-162-1-7-du-css-de-la-mesure-du-monoxyde-dazote-no-dans-lair-expire?cid=r\\_1437833](http://www.has-sante.fr/portail/jcms/c_2019796/fr/avis-n20150023/ac/seap-du-4-mars-2015-du-college-de-la-has-relatif-a-linscription-sur-la-lap-mentionnee-a-larticle-l-162-1-7-du-css-de-la-mesure-du-monoxyde-dazote-no-dans-lair-expire?cid=r_1437833)

## Aim

The aim of this report is to evaluate the clinical utility of FeNO (fractional exhaled nitric oxide) measurement in the strategy for asthma management (diagnosis and monitoring) in adults and children.

## Conclusions and results

In summary, on the basis of the NICE technology appraisal report and four recommendations made to evaluate the role of FeNO measurement in the diagnostic strategy:

- there is no validated FeNO threshold used for the diagnosis of asthma. The optimal FeNO threshold for the diagnosis of asthma varied between the studies;
- according to the NICE technological appraisal report, FeNO measurement is however considered an option to help diagnose asthma in adults and children;
- in terms of the four recommendations for good practice analysed, in the current state of knowledge, it is not possible to conclude with certainty whether exhaled NO measurement is clinically useful for diagnosing asthma compared with the standard assessment.

On the basis of the NICE technology appraisal report, meta-analyses, good practice recommendations and two RCTs used to evaluate the benefit of FeNO measurement for monitoring asthma:

- the meta-analyses have not concluded that there is a significant improvement in the rate of asthma exacerbations or in symptom scores when treatment was guided by FeNO measurement. Making an adjustment to treatment with corticosteroids depending on FeNO levels did not show any effectiveness for monitoring asthma in adults and children;
- for their part, NICE concluded that management of asthma guided by FeNO measurement caused a reduction in the rate of exacerbation in adults; (FeNO) measurement is envisaged in this recommendation as

an option that can reinforce therapeutic decisions in the symptomatic management of asthma;

- the results of the analysis of clinical trials from the additional literature search do not provide any conclusions as to the role of NO measurement in the management of asthma;
- in terms of the six recommendations analysed, in the current state of knowledge, FeNO measurement cannot be recommended in deciding whether to initiate or discontinue treatment with inhaled corticosteroids in asthmatic patients. The favourable recommendations are not graded and are all based on expert opinion.

Data from the synthetic literature available all point to the following:

- they do not provide any conclusions on the clinical added value of performing this diagnostic test in the management strategy for asthmatic patients;
- and do not provide any determination of the benefit of NO measurement in monitoring asthma in children and adults.

The current published data are not sufficiently conclusive to advocate the use of FeNO measurement for diagnosing or monitoring asthma in the community.

## Methods

The evaluation method used to respond to this request is based on an analysis of the consistency between data from the synthetic literature including the meta-analyses, the international good practice recommendations, the systematic literature reviews as well as the reports from technology appraisal agencies on technique. The aim being to verify that the results of this analysis support the request.

## Written by

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