

Measurement of exhaled nitric oxide concentration in asthma: a systematic review and economic evaluation of NIOX MINO, NIOX VERO and NObreath

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Plain English summary

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High levels of nitric oxide in exhaled breath are thought to be a sign that a person might have asthma or that their asthma is poorly controlled. We aimed to assess the evidence relating to this and to estimate whether the cost of using NIOX MINO, NIOX VERO and/or NObreath to measure exhaled nitric oxide was worth the health benefits. We found that studies using exhaled nitric oxide to help diagnose asthma reported different results to one another but that, overall, exhaled nitric oxide was probably more able to indicate that a person does have asthma than to indicate that they do not. We also looked at studies that used exhaled nitric oxide levels to tailor treatment in people with asthma. These studies all reported fewer asthma attacks when exhaled nitric oxide was used, but this was not statistically significant in most studies. Most also reported less medication use, although some reported an increase in medication use. There were some differences between studies in adults and studies in children and between those with different severities of asthma. By making some assumptions about how long the benefits would last and how the test would be used in practice, it seems possible that using exhaled nitric oxide would be cost-effective in certain groups in both the management and the diagnosis of asthma. There is a lot of uncertainty over all of the conclusions drawn in the assessment, however, because not all of the evidence needed was available and some of the evidence used was not of the highest quality.

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