The new UK asthma guideline: meeting the challenge to change

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Effective implementation will require greater provision of tests, services and support for patients and healthcare providers

Asthma is a common inflammatory airway condition that affects around six million people in the UK.1 Despite better understanding of the underlying nature of the condition and greater availability of effective treatments,2 asthma remains a serious challenge.3 Inaccurate diagnosis and delayed access to appropriate treatment are longstanding problems that still disadvantage patients.4-6 Those problems have not been helped by inconsistencies between the guidelines from the British Thoracic Society and Scottish Intercollegiate Guidelines Network (BTS/SIGN)7 and the National Institute for Health and Care Excellence (NICE).8 Furthermore, treatments and approaches have advanced since the BTS/SIGN guidelines were last revised nearly six years ago.9 The new joint BTS/SIGN/NICE guideline’s “focused reset” of approaches to diagnosing and treating asthma is therefore welcome and long overdue.10

On diagnosis, the new guideline emphasises upfront confirmation of inflammatory traits characteristic of asthma—that is, raised levels of blood eosinophils and fractional exhaled nitric oxide (FeNO). Measures of variable airflow limitation (bronchodilator reversibility or peak flow variability) or airway hyper-responsiveness follow later in the diagnostic pathway for adults, as does skin prick testing for allergies in children.

The guideline moves away from starting treatment with inhaled short acting ß2 agonists, instead recommending early initiation of anti-inflammatory treatment based on inhaled corticosteroids. This includes inhalers containing both low dose corticosteroid and the rapid onset long acting ß2 agonist formoterol. The inhaler can be used solely for symptom relief (anti-inflammatory reliever therapy, AIR) or for regular maintenance in addition to symptom relief (maintenance and reliever therapy, MART). Early initiation of inhaled corticosteroids was a cornerstone of the successful Finnish Asthma Programme and is recommended in international guidelines.9 11 12

Other notable features of the new guideline include use of asthma action plans and annual asthma reviews, and increased awareness of how air quality affects patients and the environmental consequences of asthma treatments. The changes are likely to pose challenges to healthcare providers and patients.

How feasible is it to implement the new guideline?

The new diagnostic pathway will be difficult in areas without access to FeNO testing. After NHS England’s national FeNO programme finished in March 2023, around 53% of primary care networks had access to FeNO testing.13 This coverage will decline without investment to provide the necessary equipment, consumables, staff, and infrastructure.14 Incorporation of testing for house dust mite allergy in the diagnostic pathway for children also appears aspirational given skin prick testing is not available in primary care and provision is scarce in secondary care.15

Baseline investigations should inform personalised treatment approaches as well as diagnosis. Where testing is available, identifying patients in whom both eosinophil and FeNO levels are raised is helpful as these individuals are at greatest risk of exacerbations16 and may benefit more from MART. If FeNO and bronchodilator reversibility testing are available together (eg, at a community diagnostic centre), conducting both tests can facilitate early detection of people with partly reversible or fixed airway obstruction.17 These patients may require additional bronchodilator therapy or referral for specialist opinion if they do not respond adequately to medium dose MART.

Although the guideline advises clinicians to consider monitoring FeNO at asthma reviews, the evidence in this area is still evolving. Results of a recent meta-analysis suggest that FeNO guided strategies are more effective than symptom guided strategies at reducing risk and incidence of exacerbations.18 However, the meta-analysis included data from trials conducted in pregnant women19 and respiratory outpatient clinics20 21 rather than primary care, and the FeNO guided interventions and outcome definitions used varied considerably between studies.22 Although FeNO testing in primary care may lead to cost savings from deprescribing of unnecessary medications,13 evidence on its cost effectiveness for asthma diagnosis or management is limited.23

The shift towards use of corticosteroid-formoterol inhalers allows patients more flexibility to adjust their dose to their needs, but monitoring to ensure appropriate usage will be challenging because of variations in optimal dose requirements between individuals and within the same person over time. Overuse may occur in people with a history of high use of short acting ß2 agonists driven by anxiety and habitual behaviours,24 both of which are common even in primary care asthma populations and people with mild asthma.25 26 If not promptly recognised and addressed, inhaled corticosteroid-formoterol overuse may result in corticosteroid overexposure and adverse effects, including osteoporosis27 and impaired glycaemic control.28

Additionally, patients who have used short acting ß2 agonists for a long time may be apprehensive about changing to a new inhaler and unsure about how to adjust their dose. Provision of safe, effective monitoring and support to help patients adopt new inhalers and regimens will require easily accessible, comprehensive training and information resources, and more proactive engagement between clinicians and patients, potentially increasing primary care workload.

The guideline’s recommendation to refer patients with blood eosinophilia or raised FeNO levels to an asthma specialist if they do not respond adequately to medium dose MART regimens may also increase demand for secondary and tertiary care services. Greater availability of community based intermediate care clinics is needed to avoid overwhelming those services.

The new guideline advocates a shift towards early identification and treatment of airway inflammation in people with asthma, and this is welcome. Translating its recommendations into better clinical outcomes, however, requires sufficient investment to ensure prompt access to the right tests and services, and appropriate training and resources for clinicians, patients, and healthcare services to meet the challenge to change.

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<jrn>1 Mukherjee M, Stoddart A, Gupta RP, et al. The epidemiology, healthcare and societal burden and costs of asthma in the UK and its member nations: analyses of standalone and linked national databases. *BMC Med* 2016;14:113. [PubMed](https://pubmed.ncbi.nlm.nih.gov/27568881) [doi:10.1186/s12916-016-0657-8](https://doi.org/10.1186/s12916-016-0657-8)</jrn>

<jrn>2 Rupani H, Fong WCG, Kyyaly A, Kurukulaaratchy RJ. Recent insights into the management of inflammation in asthma. *J Inflamm Res* 2021;14:4371-97. [PubMed](https://pubmed.ncbi.nlm.nih.gov/34511973) [doi:10.2147/JIR.S295038](https://doi.org/10.2147/JIR.S295038)</jrn>

<eref>3 Kulakiewicz A, Powell T, Rough E, Baker C. Improving asthma outcomes in the UK. 2021. [https://commonslibrary.parliament.uk/research-briefings/cdp-2021-0185/#](https://commonslibrary.parliament.uk/research-briefings/cdp-2021-0185/#_ftn3)</eref>

<jrn>4 Nolte H, Nepper-Christensen S, Backer V. Unawareness and undertreatment of asthma and allergic rhinitis in a general population. *Respir Med* 2006;100:354-62. [PubMed](https://pubmed.ncbi.nlm.nih.gov/16005621) [doi:10.1016/j.rmed.2005.05.012](https://doi.org/10.1016/j.rmed.2005.05.012)</jrn>

<jrn>5 Looijmans-van den Akker I, van Luijn K, Verheij T. Overdiagnosis of asthma in children in primary care: a retrospective analysis. *Br J Gen Pract* 2016;66:e152-7. [PubMed](https://pubmed.ncbi.nlm.nih.gov/26917656) [doi:10.3399/bjgp16X683965](https://doi.org/10.3399/bjgp16X683965)</jrn>

<jrn>6 Aaron SD, Vandemheen KL, FitzGerald JM, et al; Canadian Respiratory Research Network. Reevaluation of diagnosis in adults with physician-diagnosed asthma. *JAMA* 2017;317:269-79. [PubMed](https://pubmed.ncbi.nlm.nih.gov/28114551) [doi:10.1001/jama.2016.19627](https://doi.org/10.1001/jama.2016.19627)</jrn>

<eref>7 Scottish Intercollegiate Guidelines Network. SIGN 158 British guideline on the management of asthma. A national clinical guideline. 2019. <https://www.sign.ac.uk/media/1773/sign158-updated.pdf>.</eref>

<eref>8 National Institute for Health and Care Excellence. Asthma: diagnosis, monitoring and chronic asthma management. guideline [NG80]. 2017. <https://www.nice.org.uk/guidance/NG80/>.</eref>

<eref>9 Global Initiative for Asthma. Global strategy for asthma management and prevention, 2024. 2024. [www.ginasthma.org](http://www.ginasthma.org).</eref>

<eref>10 National Institute for Health and Care Excellence, British Thoracic Society, Scottish Intercollegiate Guidelines Network. Asthma: diagnosis, monitoring and chronic asthma management (BTS, NICE, SIGN). 2024. <https://www.nice.org.uk/guidance/ng245/chapter/Recommendations></eref>

<jrn>11 Haahtela T, Tuomisto LE, Pietinalho A, et al. A 10 year asthma programme in Finland: major change for the better. *Thorax* 2006;61:663-70. [PubMed](https://pubmed.ncbi.nlm.nih.gov/16877690) [doi:10.1136/thx.2005.055699](https://doi.org/10.1136/thx.2005.055699)</jrn>

<jrn>12 Papi A, Ferreira DS, Agache I, et al. European Respiratory Society short guidelines for the use of as-needed ICS/formoterol in mild asthma. *Eur Respir J* 2023;62:2300047. [PubMed](https://pubmed.ncbi.nlm.nih.gov/37678955) [doi:10.1183/13993003.00047-2023](https://doi.org/10.1183/13993003.00047-2023)</jrn>

<eref>13 Health Innovation Wessex. National FeNO programme impact report. 2023. <https://wessexahsn.org.uk/projects/604/feno-programme-impact></eref>

<eref>14 Asthma+Lung UK. Diagnosing the problem: right test, right time. 2023. <https://www.asthmaandlung.org.uk/diagnosing-problem-right-test-right-time-report></eref>

<eref>15 Meeting the challenges of the national allergy crisis: a report from the All Party Parliamentary Group for Allergy and the National Allergy Strategy Group. 2021. <https://www.allergyuk.org/wp-content/uploads/2021/10/Meeting-the-challenges-of-the-national-allergy-crisis-2021.pdf></eref>

<jrn>16 Couillard S, Laugerud A, Jabeen M, et al. Derivation of a prototype asthma attack risk scale centred on blood eosinophils and exhaled nitric oxide. *Thorax* 2022;77:199-202. [PubMed](https://pubmed.ncbi.nlm.nih.gov/34362839) [doi:10.1136/thoraxjnl-2021-217325](https://doi.org/10.1136/thoraxjnl-2021-217325)</jrn>

<jrn>17 Shaw D, Green R, Berry M, et al. A cross-sectional study of patterns of airway dysfunction, symptoms and morbidity in primary care asthma. *Prim Care Respir J* 2012;21:283-7. [PubMed](https://pubmed.ncbi.nlm.nih.gov/22786814) [doi:10.4104/pcrj.2012.00057](https://doi.org/10.4104/pcrj.2012.00057)</jrn>

<jrn>18 Tsurumaki H, Abe Y, Oishi K, Nagasaki T, Tajiri T. Assessing the utility of fractional exhaled nitric oxide-guided management in adult patients with asthma: A systematic review and meta-analysis. *Respir Investig* 2025;63:118-26. [PubMed](https://pubmed.ncbi.nlm.nih.gov/39689589) [doi:10.1016/j.resinv.2024.12.010](https://doi.org/10.1016/j.resinv.2024.12.010)</jrn>

<jrn>19 Powell H, Murphy VE, Taylor DR, et al. Management of asthma in pregnancy guided by measurement of fraction of exhaled nitric oxide: a double-blind, randomised controlled trial. *Lancet* 2011;378:983-90. [PubMed](https://pubmed.ncbi.nlm.nih.gov/21907861) [doi:10.1016/S0140-6736(11)60971-9](https://doi.org/10.1016/S0140-6736(11)60971-9)</jrn>

<jrn>20 Smith AD, Cowan JO, Brassett KP, Herbison GP, Taylor DR. Use of exhaled nitric oxide measurements to guide treatment in chronic asthma. *N Engl J Med* 2005;352:2163-73. [PubMed](https://pubmed.ncbi.nlm.nih.gov/15914548) [doi:10.1056/NEJMoa043596](https://doi.org/10.1056/NEJMoa043596)</jrn>

<jrn>21 Garg Y, Kakria N, Katoch CDS, Bhattacharyya D. Exhaled nitric oxide as a guiding tool for bronchial asthma: A randomised controlled trial. *Med J Armed Forces India* 2020;76:17-22. [PubMed](https://pubmed.ncbi.nlm.nih.gov/32020963) [doi:10.1016/j.mjafi.2018.02.001](https://doi.org/10.1016/j.mjafi.2018.02.001)</jrn>

<jrn>22 Wang K, Stonham C, Rutherford C, Pavord ID. Fractional exhaled nitric oxide (FeNO): the future of asthma care? *Br J Gen Pract* 2023;73:565-8. [PubMed](https://pubmed.ncbi.nlm.nih.gov/38035806) [doi:10.3399/bjgp23X735813](https://doi.org/10.3399/bjgp23X735813)</jrn>

<jrn>23 Harnan SE, Tappenden P, Essat M, et al. Measurement of exhaled nitric oxide concentration in asthma: a systematic review and economic evaluation of NIOX MINO, NIOX VERO and NObreath. *Health Technol Assess* 2015;19:1-330. [PubMed](https://pubmed.ncbi.nlm.nih.gov/26484874) [doi:10.3310/hta19820](https://doi.org/10.3310/hta19820)</jrn>

<jrn>24 Visser CD, Faay MRA, Özdemir A, Guchelaar HJ, Teichert M. Short-acting β2-agonists (SABA) overuse in asthma and patients’ perceptions for this behavior. *Respir Med* 2024;231:107723. [PubMed](https://pubmed.ncbi.nlm.nih.gov/38936636) [doi:10.1016/j.rmed.2024.107723](https://doi.org/10.1016/j.rmed.2024.107723)</jrn>

<jrn>25 Naftel J, Mistry H, Mitchell FA, et al. How does mild asthma differ phenotypically from difficult-to-treat asthma? *J Asthma Allergy* 2023;16:1333-45. [PubMed](https://pubmed.ncbi.nlm.nih.gov/38144877) [doi:10.2147/JAA.S430183](https://doi.org/10.2147/JAA.S430183)</jrn>

<jrn>26 Cole S, Seale C, Griffiths C. ‘The blue one takes a battering’ why do young adults with asthma overuse bronchodilator inhalers? A qualitative study. *BMJ Open* 2013;3:e002247. [doi:10.1136/bmjopen-2012-002247](https://doi.org/10.1136/bmjopen-2012-002247)</jrn>

<jrn>27 Chee C, Sellahewa L, Pappachan JM. Inhaled corticosteroids and bone health. *Open Respir Med J* 2014;8:85-92. [PubMed](https://pubmed.ncbi.nlm.nih.gov/25674178) [doi:10.2174/1874306401408010085](https://doi.org/10.2174/1874306401408010085)</jrn>

<jrn>28 Egbuonu F, Antonio FA, Edavalath M. Effect of inhaled corticosteroids on glycemic status. *Open Respir Med J* 2014;8:101-5. [PubMed](https://pubmed.ncbi.nlm.nih.gov/25674180) [doi:10.2174/1874306401408010101](https://doi.org/10.2174/1874306401408010101)</jrn>