

# SWL Guideline for the Management of Asthma in Adults and Children

Adapted from NICE NG80 November 2017 (updated March 21) and BTS/SIGN July 2019

*Note: NICE and BTS/SIGN Guidelines differ on some aspects of the management of asthma.*

Disclaimer: The recommendations in these guidelines do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

**(Guideline updated (V1.1) to include high dose Trimbrow inhaler 172/5/9 micrograms – September 2023)**

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**Key to abbreviations:**

<b>SABA</b>	Short-Acting Beta <sub>2</sub> Agonist	<b>LABA</b>	Long-Acting Beta <sub>2</sub> Agonist	<b>ICS</b>	Inhaled Corticosteroid
<b>LAMA</b>	Long-Acting Muscarinic Antagonist	<b>LTRA</b>	Leukotriene Receptor Antagonist	<b>MART</b>	Maintenance and Reliever Therapy
<b>DPI</b>	Dry Powder Inhaler	<b>pMDI</b>	Pressurised Metered Dose Inhaler	<b>SMI</b>	Soft Mist Inhaler
<b>PRN</b>	When Required	<b>OD</b>	Once Daily	<b>BD</b>	Twice Daily

# Summary: Management of Asthma - Adults Aged 17+

All patients should have a **diagnosis** of asthma, based on a structured clinical history and confirmed by objective tests e.g. spirometry, peak expiratory flow (PEF) variability or where available, fractional exhaled nitric oxide (FeNo).

All patients with asthma (and/or carers) should be offered self-management education which should include a written personalised asthma action plan (PAAP) and be supported by regular (at least annual) professional review which should:

- Offer annual influenza vaccine administration. Offer pneumococcal vaccine administration according to [national guidance](#).
- Offer smoking cessation advice to all asthmatic patients who smoke. Parents of children with asthma should be advised of the dangers of second-hand tobacco smoke exposure and be offered support to stop smoking.

### Symptoms indicating uncontrolled asthma:

- Using SABA 3 times a week or more
- Waking up one night a week
- Symptomatic for 3 times a week or more

### Consider the possible reasons for uncontrolled asthma, before starting or adjusting medicines for asthma:

- These may include:
- alternative diagnoses
  - lack of adherence
  - suboptimal inhaler technique
  - smoking (active or passive)
  - occupational exposures
  - psychosocial factors
  - seasonal or environmental factors

### Treatment and self-management plans should be revisited at every review.

#### For ALL inhaled therapies:

- Train patients in correct inhaler technique
- Review medication, assess inhaler technique & adherence regularly
- Before initiating a new drug therapy, recheck adherence and inhaler technique and eliminate trigger factors.
- Maintain patients at the lowest possible dose of ICS.

After starting or adjusting medicines, review response to treatment in 4-8 weeks (**NICE**).

For infrequent symptoms (short-lived wheeze & normal lung function) consider offering a SABA alone as reliever therapy (**NICE**).

## NEW DIAGNOSIS OF ASTHMA OR ASTHMA THAT IS UNCONTROLLED ON CURRENT TREATMENT

Offer low dose\* ICS

If symptoms remain uncontrolled after 4-8 weeks, consider either:

### Low dose\* ICS + LTRA (**NICE**)

LTRA may benefit patients with exercise-induced asthma & concomitant seasonal allergic rhinitis. Review response after 4-8 week trial. If no response, consider stopping LTRA

If asthma uncontrolled on low dose ICS and LTRA, offer LABA in combination with ICS (consider **MART**) and review LTRA treatment

OR

### Low dose\* ICS + LABA (**BTS/SIGN**)

As a Fixed dose combination inhaler

Or

Offer **MART** regimen if uncontrolled (LABA acts as reliever therapy)

If symptoms remain uncontrolled after 4-8 weeks

Moderate dose\* ICS + LABA within **MART** regimen OR fixed dose ICS + LABA (**NICE & BTS/SIGN**) (+/- LTRA)

If symptoms remain uncontrolled after 4-8 weeks, seek advice or refer to respiratory specialist

### On advice of secondary care specialist

High dose\* ICS + LABA (**NICE**)

as fixed dose regimen only (+/- LTRA)

Be aware of an increased risk of side effects (inc. pneumonia) in patients who take high-dose ICS

OR

### On advice of primary/secondary care specialist

Moderate dose\* ICS + LABA (**NICE**)

as **MART** or fixed dose regimen (+/- LTRA)

plus additional drug: LAMA or

Theophylline – secondary care initiation only

(Triple therapy inhaler – on initiation/recommendation of secondary care specialist only)

If patient has persistent poor control, recurrent asthma attacks (2 or more courses of oral corticosteroids/year) or a poor response to treatment, consider an alternative diagnosis, assess treatment adherence and seek a specialist opinion

\*FOR INHALER OPTIONS WITHIN EACH DOSE RANGE SEE [PAGE 3](#)

Consider decreasing maintenance therapy when asthma has been controlled with current maintenance therapy for at least 3 months

SABA as required for symptom relief

## Preferred Inhaler Options - Adults Aged 17+

- The choice of inhaler should take into account the patient's response to a trial of the drug, the drug's side effects, potential to reduce asthma attacks and cost.
- ALWAYS** select a device based on the patient's preference and ability to use; ensure patients are trained and have shown satisfactory technique and where possible minimise the number of different inhaler device types used by each person.
- Before initiating new treatment **ALWAYS check adherence and inhaler technique**. Check again at every review.
- Prescribe a dry powder inhaler (DPI) where clinically appropriate to reduce the carbon footprint and [environmental impact](#).
- Prescribe compatible spacer devices with pressurised metered dose inhalers (pMDI).**
- Always prescribe by brand** to ensure patients receive the inhalers they have been trained to use.
- LABA should always be used with an ICS. **Combination inhalers (ICS + LABA) are recommended** to improve adherence and guarantee that LABA is not taken without ICS.

*Patients whose asthma is well controlled on their current drug/device should not have their treatment changed purely to follow this guidance*

THE INHALERS LISTED BELOW ARE THE PREFERRED INHALER OPTIONS ACROSS SOUTH WEST LONDON CCG.

*Inhalers not on this list may be initiated by respiratory specialists and should not be altered without prior discussion. The list is not ordered by choice but reflects device type and active ingredient. The cost-effectiveness and environmental impact of each device was considered where possible when creating this list. Please refer to [SWL.net.formulary](#) for all other formulary options, including for existing patients or for patients with reduced dexterity.*

BRAND NAME	GENERIC NAME	DEVICE TYPE	DOSE	LICENSED USE FROM 17+	MONTHLY COST* (28 DAYS)	DAYS USE PER INHALER
<b>SABA – PRESCRIBE GENERICALLY for SABA only</b>						
SALAMOL® 100mcg	Salbutamol CFC-Free	pMDI	1-2 doses PRN		(£1.46 per 200 dose inhaler)	
EASYHALER® SALBUTAMOL 100mcg	Salbutamol	DPI	1-2 doses PRN		(£3.31 per inhaler 200 dose inhaler)	
BRICANYL® 500mcg TURBOHALER	Terbutaline sulphate	DPI	1 dose PRN		(£8.30 per 120 dose inhaler)	
<b>LOW DOSE ICS</b>						
EASYHALER® BECLOMETASONE 200mcg	Beclometasone	DPI	1 dose BD	≥18	£4.18	100
PULMICORT® 100 TURBOHALER	Budesonide	DPI	2 doses BD	Yes	£7.98	50
SOPROBEC® 100mcg	Beclometasone	pMDI	2 doses BD	Yes	£3.12	50
<b>MODERATE DOSE ICS</b>						
EASYHALER® BECLOMETASONE 200mcg	Beclometasone	DPI	2 doses BD	≥18	£8.36	50
PULMICORT® 200 TURBOHALER	Budesonide	DPI	2 doses BD	Yes	£15.96	25
SOPROBEC® 200mcg	Beclometasone	pMDI	2 doses BD	≥18	£6.79	50
<b>HIGH DOSE ICS (Initiated or recommended by specialist - Secondary care)</b>						
EASYHALER® BUDESONIDE 400mcg	Budesonide	DPI	2 doses BD	Yes	£15.96	25
PULMICORT® 400 TURBOHALER	Budesonide	DPI	2 doses BD	Yes	£31.92	12.5
SOPROBEC® 250mcg	Beclometasone	pMDI	2 doses BD	≥18	£6.84	50
<b>LOW DOSE ICS + LABA COMBINATION INHALERS</b>						
FOSTAIR NEXThaler® 100/6	Beclometasone + formoterol	DPI	1 dose BD	≥18 (MART)	£13.68	60
SYMBICORT 200/6 TURBOHALER®	Budesonide + formoterol	DPI	1 dose BD	Yes (MART)	£13.07	60
FOSTAIR® 100/6	Beclometasone + formoterol	pMDI	1 dose BD	≥18 (MART)	£13.68	60
COMBISAL® 50/25	Fluticasone + salmeterol	pMDI	2 doses BD	Yes	£12.60	30
<b>MODERATE DOSE ICS + LABA COMBINATION INHALERS</b>						
FOSTAIR NEXThaler® 100/6	Beclometasone + formoterol	DPI	2 doses BD	≥18	£27.07	30
SYMBICORT 400/12 TURBOHALER®	Budesonide + formoterol	DPI	1 dose BD	Yes	£26.13	30
RELVAR ELLIPTA® 92/22	Fluticasone furoate + vilanterol	DPI	1 dose OD	Yes	£20.53	30
FOSTAIR® 100/6	Beclometasone + formoterol	pMDI	2 doses BD	≥18	£27.07	30
COMBISAL® 125/25	Fluticasone + salmeterol	pMDI	2 doses BD	Yes	£16.42	30
<b>HIGH DOSE ICS + LABA COMBINATION INHALERS (Secondary care specialist initiation or recommendation only)</b>						
FOSTAIR NEXThaler® 200/6	Beclometasone + formoterol	DPI	2 doses BD	≥18	£27.36	30
SYMBICORT 400/12 TURBOHALER®	Budesonide + formoterol	DPI	2 doses BD	Yes	£52.27	15
RELVAR ELLIPTA® 184/22	Fluticasone furoate + vilanterol	DPI	1 dose OD	Yes	£27.07	30
FOSTAIR® 200/6	Beclometasone + formoterol	pMDI	2 doses BD	≥18	£27.07	30
COMBISAL® 250/25	Fluticasone + salmeterol	pMDI	2 doses BD	Yes	£26.12	30
<b>LAMA (Primary or Secondary care specialist initiation only)</b>						
SPIRIVA RESPIMAT®* cartridge + device	Tiotropium bromide	SMI	2 doses OD	Yes	£21.47	30
<b>TRIPLE THERAPY (Secondary care specialist initiation or recommendation only)</b>						
TRIMBOW 87/5/9®** (Moderate dose ICS)	Beclomethasone + formoterol + glycopyrronium	pMDI	2 doses BD	≥18	£41.53	30
TRIMBOW 172/5/9®** (High dose ICS)	Beclomethasone + formoterol + glycopyrronium	pMDI	2 doses BD	≥18	£41.53	30
ENERZAIR BREEZHALER®** 114/46/136 (High dose ICS)	Mometasone + indacaterol + glycopyrronium	DPI	1 dose once daily	≥18	£41.53	30

† Prices from e-drug tariff June 2021 and BNF Online (accessed 14/06/2021) \*use with caution in patients with renal impairment and refer to individual SPCs for more information

A [reference guide](#) produced by NICE defining the ICS dose ranges is available. [NICE CKS - Asthma: Inhaled corticosteroids](#) provides information on selecting an inhaler device according to dose category (low, medium & high).

For detailed information on individual inhalers and spacer devices see [www.rightbreathe.com](http://www.rightbreathe.com)

**Not all products have UK marketing authorisation (MA) for use at all dosages or in all ages: if considering prescribing outside the terms of its MA, the prescriber takes full prescribing responsibility. Obtain and document informed consent.**

For licensing and further information on any drugs, see [Summary of Product Characteristics \(SPC\)](#) or current [BNF](#)

# Summary: Management of Asthma - Children & Young People Aged 5 to 16

All patients should have a **diagnosis** of asthma, based on a structured clinical history and confirmed by objective tests e.g. spirometry, peak expiratory flow variability, fractional exhaled nitric oxide (FeNO), where available.

If a child is unable to perform objective tests, treat based on observation and clinical judgment, repeat tests every 6-12 months until satisfactory results are obtained. Consider referral for specialist assessment if the child repeatedly cannot perform objective tests, there is a concern about diagnosis or they are not responding to treatment.

All patients with asthma (and their families or carers) should be offered self-management education which should include a written personalised asthma action plan (PAAP) and be supported by regular (at least annual) professional review which should:

- Offer annual influenza vaccine administration. Offer pneumococcal vaccine administration according to [national guidance](#)
- Offer smoking cessation advice to all asthmatic patients who smoke. Parents of children with asthma should be advised of the dangers of second-hand tobacco smoke exposure and be offered support to stop smoking.

**Symptoms indicating uncontrolled asthma:**

- Using SABA 3 times a week or more
- Waking up one night a week
- Symptomatic for 3 times a week or more

**Consider the possible reasons for uncontrolled asthma, before starting or adjusting medicines for asthma:**

- These may include:
- alternative diagnoses
  - lack of adherence
  - suboptimal inhaler technique
  - smoking (active or passive)
  - occupational exposures
  - psychosocial factors
  - seasonal or environmental factors

**Treatment and self-management plans should be revisited at every review.**

**For ALL inhaled therapies:**

- Train patients (and their families or carers) in correct inhaler technique.
- Review medication and assess inhaler technique & adherence regularly.
- Before initiating a new drug therapy, practitioners should recheck adherence and inhaler technique and eliminate trigger factors.
- Patients should be maintained at the lowest possible dose of ICS.

After starting or adjusting medicines, review response to treatment in 4-8 weeks (**NICE**)

For infrequent symptoms (short-lived wheeze & normal lung function) consider offering a SABA alone as reliever therapy (**NICE**)

**NEW DIAGNOSIS OF ASTHMA OR ASTHMA THAT IS UNCONTROLLED ON CURRENT TREATMENT**

Offer paediatric low dose\* ICS

If symptoms remain uncontrolled after 4-8 weeks, consider

Paediatric low dose\* ICS + LTRA (**NICE**)

If symptoms remain uncontrolled after 4-8 weeks, consider

Paediatric low dose\* ICS + LABA fixed dose  
Stop LTRA treatment

If symptoms remain uncontrolled after 4-8 weeks, consider

Paediatric low dose\* ICS + LABA within a **MART\*\*** regimen

If symptoms remain uncontrolled after 4-8 weeks, consider

Paediatric Moderate dose\* ICS + LABA within **MART\*\*** regimen OR as fixed dose ICS + LABA

**If symptoms remain uncontrolled after 4-8 weeks, refer to respiratory specialist for treatment options:**

**On advice of secondary care specialist**  
Paediatric High dose\* ICS + LABA as fixed dose regimen  
Be aware of an increased risk of side effects (e.g. growth suppression) in patients who take high-dose ICS

**On advice of primary/secondary care specialist**  
Paediatric Moderate dose\* ICS + LABA as **MART\*\*** or fixed dose regimen plus additional drug e.g. LAMA (6 years +) or theophylline – secondary care initiation only

OR

Consider decreasing maintenance therapy when asthma has been controlled with current maintenance therapy for at least 3 months

SABA as required for symptom relief

**\*\*MART regimes are only licensed for use in children 12 years of age and over**

If a patient has not shown a response to treatment with ICS + LABA consider seeking advice from a respiratory specialist

**\*\* MART regimes are only licensed for use in children 12 years of age and over using Symbicort® 100/6 Turbohaler. Ensure the child or young person is able to understand and comply with the MART regimen. Fixed dose regimens should be used in children under 12 unless MART has been recommended by a specialist.**

If patient has persistent poor control, recurrent asthma attacks (2 or more courses of oral corticosteroids/year) or a poor response to treatment, consider an alternative diagnosis, assess treatment adherence and seek a specialist opinion

**\*FOR INHALER OPTIONS WITHIN EACH DOSE RANGE SEE PAGE 6**

# Summary: Management of Asthma - Children Under 5

It can be difficult to confirm asthma [diagnosis](#) in young children. For children under 5 with suspected asthma, treat symptoms based on observation and clinical judgement, and review the child on a regular basis. If they still have symptoms when they reach 5 years of age, carry out objective tests.

Consider referral for specialist assessment if there is a concern about diagnosis or they are not responding to treatment.

### Asthma management in children unable to undertake spirometry:

- Watchful waiting with review if mild intermittent wheeze and symptoms that only occur with viral upper respiratory infections
  - Monitored initiation of treatment if the child is symptomatic (see below)

All patients with asthma (and their families or carers) should be offered self-management education which should include a written personalised asthma action plan (PAAP) and be supported by regular (at least annual) professional review which should:

- Offer annual influenza vaccine administration. Offer pneumococcal vaccine administration according to [national guidance](#)
- Parents of children with asthma should be advised of the dangers of second-hand tobacco smoke exposure and be offered support to stop smoking (see [appendix 2](#))

### Symptoms indicating uncontrolled asthma:

- Using SABA 3 times a week or more
- Waking up one night a week
- Symptomatic for 3 times a week or more

### Consider the possible reasons for uncontrolled asthma, before starting or adjusting medicines for asthma

- These may include:
- alternative diagnoses
  - lack of adherence
  - suboptimal inhaler technique
  - smoking (active or passive)
  - occupational exposures
  - psychosocial factors
  - seasonal or environmental factors

### Treatment and self-management plans should be revisited at every review.

#### For ALL inhaled therapies:

- Train patients (and their families or carers) in correct inhaler technique.
- Review medication and assess inhaler technique & adherence regularly.
- Before initiating a new drug therapy, practitioners should recheck adherence and inhaler technique and eliminate trigger factors.
- Patients should be maintained at the lowest possible dose of ICS.

After starting or adjusting medicines, review response to treatment in 4-8 weeks (**NICE**).

For infrequent symptoms (short-lived wheeze & normal lung function) consider offering a SABA alone as reliever therapy (**NICE**).

The evidence for treatment choice is less clear in children under 2 and the threshold for seeking an expert opinion should be lowest in these children.

**NEW DIAGNOSIS OF ASTHMA OR ASTHMA THAT IS UNCONTROLLED ON CURRENT TREATMENT**

Consider an 8-week trial of a paediatric moderate dose\* ICS

Stop ICS after 8 weeks and continue to monitor symptoms

If symptoms resolved during the trial, but reoccurred within 4 weeks of stopping ICS

If symptoms resolved during the trial but recurred beyond 4 weeks after stopping ICS, repeat 8-week trial of a paediatric moderate dose ICS

If symptoms did not resolve during the trial, review whether an alternative diagnosis is likely

Offer paediatric low dose\* ICS

*In children under five years who are unable to take ICS, leukotriene receptor antagonists may be used as an alternative preventer*

If symptoms remain uncontrolled after 4-8 weeks, consider:

Consider paediatric low dose\* ICS plus an LTRA

If symptoms remain uncontrolled after 4-8 weeks, consider

Stop LTRA but continue with paediatric low dose\* ICS

**AND**

**Refer to respiratory specialist for further investigation and management**

Consider decreasing maintenance therapy when asthma has been controlled for at least 3 months

SABA as required for symptom relief

If patient has persistent poor control, recurrent asthma attacks (2 or more courses of oral corticosteroids/year) or a poor response to treatment, consider an alternative diagnosis, assess treatment adherence and seek a specialist opinion

\* FOR INHALER OPTIONS WITHIN EACH DOSE RANGE SEE [PAGE 6](#)

# Preferred Inhaler Options - Children and Young People Aged up to and Including 16

- **ALWAYS** prescribe a compatible [spacer device](#) with pressurised metered dose inhalers (pMDI). In young children a pMDI and spacer is the preferred method of delivery of SABA and ICS. A face mask is required until the child can breathe reproducibly using the spacer mouthpiece
- The choice of inhaler should take into account the patient's response to a trial of the drug, the drug's side effects, potential to reduce asthma attacks and cost.
- **ALWAYS** select a device based on the patient's preference and ability to use; ensure patients are trained and have shown satisfactory technique and where possible minimise the number of different inhaler device types used by each person.
- Before initiating new treatment **ALWAYS check adherence and inhaler technique**. Check again at every review.
- **Always prescribe by brand** to ensure patients receive the inhalers they have been trained to use.
- LABA should always be used with an ICS. **Combination inhalers (ICS + LABA) are recommended** to improve adherence and guarantee that LABA is not taken without ICS.

*Patients whose asthma is well controlled on their current drug/device should not have their treatment changed purely to follow this guidance.*

THE INHALERS LISTED BELOW ARE THE PREFERRED INHALER OPTIONS ACROSS SOUTH WEST LONDON CCG.

*Inhalers not on this list may be initiated by respiratory specialists and should not be altered without prior discussion.*

The list is not ordered by choice but reflects device type and active ingredient. The cost-effectiveness and environmental impact of each device was considered where possible when creating this list.

*Please refer to [SWL net.formulary](#) for all other formulary options, including for existing patients or for patients with reduced dexterity.*

BRAND NAME	GENERIC NAME	DEVICE TYPE	DOSE	LICENSED AGE RANGE	MONTHLY COST † (28 DAYS)	DAYS USE PER INHALER
<b>SABA – PRESCRIBE GENERICALLY for SABA only</b>						
SALAMOL® 100mcg	Salbutamol CFC-Free	pMDI	1-2 doses PRN	(£1.46 per 200 dose inhaler)		
EASYHALER® SALBUTAMOL 100mcg	Salbutamol	DPI	1-2 doses PRN	(£3.31 per inhaler 200 dose inhaler)		
BRICANYL® 500mcg TURBOHALER	Terbutaline sulphate	DPI	1 dose PRN	(£8.30 per 120 dose inhaler)		
<b>PAEDIATRIC LOW DOSE ICS</b>						
PULMICORT® 100 TURBOHALER	Budesonide	DPI	1 dose BD	5 years and over	£3.99	100
SOPROBEC® 50mcg	Beclometasone	pMDI	2 doses BD	2 years and over (BNF)	£1.56	50
QVAR® 50mcg	Beclometasone	pMDI	1 dose BD	5 years and over	£2.20	100
<b>PAEDIATRIC MODERATE DOSE ICS</b>						
PULMICORT® 200 TURBOHALER	Budesonide	DPI	1 dose BD	5 years and over	£7.98	50
SOPROBEC® 100mcg	Beclometasone	pMDI	2 doses BD	2 years and over	£3.12	50
QVAR® 50mcg	Beclometasone	pMDI	2 doses BD	5 years and over	£4.41	50
<b>PAEDIATRIC HIGH DOSE ICS (Initiated or recommended by specialist - Secondary care)</b>						
PULMICORT® 400 TURBOHALER	Budesonide	DPI	1 dose BD	5 years and over	£15.96	25
QVAR® 100mcg	Beclometasone	pMDI	2 doses BD	12 years and over	£9.64	50
<b>PAEDIATRIC LOW DOSE ICS + LABA COMBINATION INHALERS</b>						
SYMBICORT 100/6 TURBOHALER®	Budesonide + formoterol	DPI	1 dose BD	6 years + (MART 12+)	£13.07	60
<b>PAEDIATRIC MODERATE DOSE ICS + LABA COMBINATION INHALERS</b>						
SYMBICORT 100/6 TURBOHALER®	Budesonide + formoterol	DPI	2 doses BD	6 years + (MART 12+)	£26.13	30
SYMBICORT 200/6 TURBOHALER®	Budesonide + formoterol	DPI	1 dose BD	12 years + (MART)	£13.07	60
COMBISAL® 50/25	Fluticasone + salmeterol	pMDI	2 doses BD	4 years and over	£12.60	30
<b>PAEDIATRIC HIGH DOSE ICS + LABA COMBINATION INHALERS (Initiated or recommended by specialist - Secondary care)</b>						
SYMBICORT® 200/6 TURBOHALER	Budesonide + formoterol	DPI	2 doses BD	12 years + (MART)	£26.13	30
RELVAR ELLIPTA® 92/22	Fluticasone furoate + vilanterol	DPI	1 dose OD	12 years and over	£20.53	30
COMBISAL® 125/25	Fluticasone + salmeterol	pMDI	2 doses BD	4 years and over	£16.42	30
<b>LAMA (Initiated or recommended by specialist - Secondary care)</b>						
SPIRIVA RESPIMAT® cartridge + device	Tiotropium bromide	SMI	2 doses daily	6 years and over	£21.47	30

† Prices from e-drug tariff June 2021 and BNF Online (accessed 14/06/2021)

A [reference guide](#) produced by NICE defining the ICS dose ranges in children is available. [NICE CKS - Asthma: Inhaled corticosteroids](#) provides information on selecting an inhaler device according to dose category (low, medium & high).

For detailed information on individual inhalers and spacer devices see [www.rightbreathe.com](http://www.rightbreathe.com)

**Not all products have UK marketing authorisation (MA) for use at all dosages or in all ages: if considering prescribing outside the terms of its MA, the prescriber takes full prescribing responsibility. Obtain and document informed consent.**

For licensing and further information on any drugs, see [Summary of Product Characteristics](#) or current [BNFc](#)

## Spacers

Provide patients with a spacer that is compatible with their metered-dose inhaler. Patients can be referred to their community pharmacy for further advice and support. Paediatric patients will require a face mask until the child can reproducibly breathe using the spacer mouthpiece (approx. 3-4 years old).

Refer to [RightBreathe](#) for information and guidance on selecting an appropriate spacer for the patient's pMDI.

For spacer training materials for patients, and spacer care and replacement advice see [Asthma UK](#).

## Environmental Impact of Inhalers

The NHS has [committed to reducing its carbon footprint by 51% by 2025](#) to meet the target in the Climate Change Act, including a shift to dry powdered inhalers (DPI) to deliver a reduction of 4%.

Pressurised metered dose inhalers (pMDI) use a propellant, which is a greenhouse gas that contributes to global warming. Dry powder inhalers (DPI), which use no propellant, are less harmful to the environment. However, DPIs require people to have an adequate inspiratory flow rate for effective delivery of the medicine. The NHS aims to use more dry powdered inhalers, where clinically appropriate.

**However, treatment with inhalers should only be initiated or changed when it is clinically warranted and with appropriate training.** It is important that patients have good inhaler technique and adherence to treatment in order to achieve good asthma control.

[NICE has produced an inhaler decision aid](#) to facilitate discussion about inhaler options in adult patients.

Patients should be encouraged to reduce inhaler waste by not over-ordering their inhalers, looking after their inhalers, and returning used or unwanted inhalers to their pharmacy for environmentally safe disposal.

## Nebulisers

- Patients and their families or carers are advised not to purchase a nebuliser.
- **ONLY** patients under the care of a Respiratory Specialist team should be using nebulisers for long term management of asthma.
- Medication for nebulisers should not be prescribed unless on the recommendation of a respiratory specialist – **Do not** prescribe for patients who have self-purchased a nebuliser.

# Management of Stable Asthma in Adults and Children

## Asthma Control

### Controlled Asthma

The aim of asthma management is control of the disease. Complete control of asthma is defined as:

- no daytime symptoms.
- no night-time awakening due to asthma.
- no need for rescue medication.
- no asthma attacks.
- no limitations on activity including exercise.
- normal lung function (in practical terms FEV1 and/or PEF >80% predicted or best. NB: lung function measurements are unreliable for guiding asthma management in children under 5.
- minimal side effects from medication.

#### ***If patient's asthma controlled: STEP DOWN***

- If patient's asthma has been well controlled for 3 months or more, discuss with patient and consider stepping down therapy.
- When deciding which drug to decrease first and at what rate, the severity of asthma, the side effects of the treatment, time on current dose, the beneficial effect achieved and the patient's preference should all be taken into account.
- Maintain patients at the lowest possible dose of ICS. Consider reductions every 3 months decreasing the dose by approximately 25 to 50% each time.

#### ***Step down options (dependent on current step):***

- Decrease dose of inhaled corticosteroid (either as combination ICS/LABA or ICS alone) by **25-50%**
- Stop leukotriene receptor antagonist
- To step down off combination ICS/LABA inhalers: switch to ICS alone inhaler, ensuring equivalent ICS dose is maintained. Review after 3 months and continue to reduce ICS dose as tolerated.

Ensure patient is given information on managing symptoms and action to be taken if asthma worsens. Review therapy again in 2 weeks (or sooner if clinically indicated) and regularly thereafter.

Consider further step down if patient is well controlled for 3 months.

Only consider stopping ICS treatment completely for people who are using low dose ICS alone as maintenance therapy and are symptom free.

### Uncontrolled Asthma

Asthma that has an impact on a person's lifestyle or restricts their normal activities. Symptoms such as coughing, wheezing, shortness of breath and chest tightness associated with uncontrolled asthma can significantly decrease a person's quality of life and may lead to a medical emergency.

The following pragmatic thresholds help to define uncontrolled asthma:

- 3 or more days a week with symptoms or
- 3 or more days a week with required use of a SABA for symptomatic relief or
- 1 or more nights a week with awakening due to asthma.

#### ***If patient's asthma NOT controlled: consider the following***

1. Is the patient using the treatment as directed i.e. using preventer inhaler BD?
2. Is the patient using the most suitable device for their needs and using it correctly?
3. Is the patient being exposed to exacerbating factors which can be eliminated?
4. Is the diagnosis of asthma correct?
5. Are there additional co-morbidities affecting control?

**If addressed, then consider stepping up therapy as outlined in the treatment summaries**



# Structured Annual Review

People with asthma should be followed up at least annually, to determine whether their treatment needs to be changed. More frequent review may be necessary for non-stable patients.

1. **Check asthma control** using the Asthma Control Test, available via <https://www.asthmacontroltest.com/>  
*Adults and children over 12 years*
  - a. During the past 4 weeks, how often did your asthma prevent you from getting as much done at: work, school or home?
  - b. During the past 4 weeks, how often have you had shortness of breath?
  - c. During the past 4 weeks, how often did your asthma symptoms (wheezing, coughing, chest tightness or pain, shortness of breath) wake you up at night or earlier than usual in the morning?
  - d. During the past 4 weeks, how often have you used your reliever inhaler (usually blue)?
  - e. How would you rate your asthma control during the past 4 weeks?*Children 4 – 11 years*
  - a. How is your asthma today?
  - b. How much of a problem is your asthma when you run, exercise or play sports?
  - c. Does your asthma make you cough?
  - d. Does your asthma make you wake up during the night?
  - e. Parent only - During the last 4 weeks, how many days did your child have any daytime asthma symptoms?
  - f. Parent only - During the last 4 weeks, how many days did your child wheeze during the day because of asthma?
  - g. Parent only - During the last 4 weeks, how many days did your child wake up during the night because of asthma?
2. **Confirm and document** number of asthma attacks, oral corticosteroid use, hospital admissions and time off work/school since last assessment.
3. **Check patient's understanding of their condition**, what their 'triggers' are, the aims of treatment, potential side effects and different inhaler types i.e. preventer and reliever.
4. Offer all patients self-management education that focuses on individual needs and reinforce with a written **personalised asthma action plan (PAAP)**, based on their symptoms and/or peak flows. Asthma UK action plans are available with [guidance on how to complete](#). Action plans may also be available through GP clinical systems.
  - a. [Adults and children over 12 years](#)
  - b. [Children under 12 years](#)
5. **Review inhaler technique with patient (and their families or carers) and ensure spacers are used.** Training videos are available at [www.rightbreathe.com](http://www.rightbreathe.com) to reinforce this if needed. If technique remains unsatisfactory consider trialling an alternative device
6. **Review adherence to prescribed treatment and audit patient's use of inhalers:** using 6 or more reliever inhalers per year or less than 80% uptake of repeat ICS inhalers per year indicates that a patient should be classified as high risk. The [asthma slide rule](#) can be used to review over-reliance on SABA inhalers.
7. **Assess, and document in the clinical record, patient's lung function by spirometry and/or by PEF.** Review patient's previous spirometry and peak flow readings and frequency of symptoms to assess control
8. If patient is a smoker and has not been offered or not accepted smoking cessation in the last 12 months, **refer patients who smoke to local stop smoking services** (see [Appendix 2](#)) and reinforce benefits of smoking cessation. Assess children's exposure to tobacco smoke and offer smoking cessation to parents/carers as appropriate.
9. **Offer annual influenza vaccine** administration. Offer pneumococcal vaccine administration according to national guidance.
10. **Patients on a high dose ICS should have a steroid card** (refer to the [reference guide](#) produced by NICE for ICS dose comparison information in adults and children). See [page 10](#) for further details and how to order.
11. **Refer patients on long term steroid tablets** (> 3 months) or requiring frequent courses of steroid tablets (2 per year) to a respiratory specialist.
12. **Weight loss** interventions (including dietary and exercise-based programmes) should be considered for overweight and obese adults and children with asthma to improve asthma control.
13. Consider screening for anxiety and depression. Particularly in young people with asthma, the presence of an anxiety or depressive disorder is highly associated with increased asthma symptom burden.
14. Consider referring patients who meet the criteria to **pulmonary rehab** if appropriate, as an adjuvant to pharmacological treatment to improve quality of life and reduce symptoms.

# Additional Information to Support Patient Management

## Inhaled Therapy

### Overuse of Short-Acting Beta<sub>2</sub> Agonists (SABA)

A majority of asthma sufferers want fast relief from their breathing difficulties leading to an over reliance on their reliever inhalers, not realising that SABAs do not treat their underlying condition.

SABA overuse can be associated with increased risks of asthma attacks and mortality.

If uncontrolled asthma is defined as the need to use a reliever inhaler more than three times a week, a patient with controlled asthma should require no more than two reliever inhalers per year. Even allowing for patients who like to have a reliever inhaler at a number of different sites, patients who use more than six reliever inhalers per year are likely to have poorly controlled asthma.

**Anyone prescribed more than six or more SABA inhalers/year should be identified and have their asthma assessed urgently and measures taken to improve asthma control if this is poor.**

### SABA Use in Schools

From 1<sup>st</sup> October 2014, the Human Medicines (Amendment) (No. 2) Regulations 2014 allows schools to buy salbutamol inhalers, without a prescription, for use in emergencies. Schools are not however required to hold an inhaler – this legislation provides a discretionary power enabling schools to do so if they wish.

All school aged children with asthma will need a SABA inhaler prescribed for use whilst at school. Secondary school aged children should carry this with them each day but primary and nursery aged children may require an inhaler and spacer to be kept at school together with a copy of their asthma action plan. The inhaler will need to be checked at the start/end of the school year and will need to be replaced if it has expired.

Further information can be found on the [Healthy London](#) website.

### Inhaled Corticosteroid (ICS)

- Most current ICS are slightly more effective when taken twice rather than once daily, but may be used once daily in some patients with milder disease and good or complete control of their asthma.
- Current and previous smoking reduces the effect of ICS, higher doses of inhaled corticosteroids may be needed in patients who are smokers or ex-smokers. Advise patients that smoking reduces the effectiveness of therapy.

#### **Side-Effects**

- Advise patients to rinse mouth with water after ICS use to minimise side effects.
- Moderate or high paediatric ICS doses may be associated with systemic side effects, which may include growth failure and adrenal suppression.
  - With careful ICS dose management this risk is likely to be outweighed by reducing the need for multiple short courses of oral corticosteroids for acute asthma attacks.
  - Monitor growth (height and weight centile) of children with asthma on an annual basis.

#### **MHRA/CSM Advice**

- [Licensed doses and differences in potency between different inhaled corticosteroids; advice for use with spacer device](#)
- [Corticosteroids: rare risk of central serous chorioretinopathy with local as well as systemic administration](#)
- [Pressurised metered dose inhalers \(pMDI\): risk of airway obstruction from aspiration of loose objects](#)

### Steroid Emergency Cards

- NHS Steroid Emergency Cards should be given to patients taking high dose inhaled beclomethasone >1000mcg/day or equivalent or fluticasone >500mcg/day or equivalent and for 12 months after stopping (refer to the [reference guide](#) produced by NICE for ICS dose comparison information in adults and children).
- These patients are at risk of an adrenal crisis during inter-current illness or an invasive procedure/surgery if not managed appropriately. The steroid emergency card has been designed to support early recognition and treatment of adrenal crisis in adults.
- For more information refer to the [National Patient Safety Alert](#)
- The blue Steroid Treatment Card and the [London Respiratory Network Card](#) are unaffected by the introduction of the NHS Steroid Emergency Card. Patients should keep these if advised by their specialist, whilst implementation of the new Steroid Emergency Card takes place.
- NHS Steroid Emergency Cards can be obtained from:
  - [NHS Forms at NHS Business Services Authority \(NHS BSA\)](#) or [Primary Care Support England PCSE online](#)

## Maintenance and Reliever Therapy (MART)

- Combined ICS and LABA treatment in which a single inhaler, containing both ICS and a fast-acting LABA (i.e. formoterol), is used for both daily maintenance therapy and the relief of symptoms as required.
- The use of MART as a single combination inhaler for maintenance and reliever therapy is an alternative approach to the introduction of a fixed-dose twice-daily combination inhaler which might suit some individuals.
- It relies on the rapid onset of reliever effect with formoterol and by including a dose of ICS ensures that, as the need for a reliever increases, the dose of preventer medication is also increased.
- Review patients taking rescue doses of their combination inhaler once a day or more on a regular basis.
- MART should not be used with high dose ICS treatment.
- Ensure patients are able to understand and comply with the MART regimen.
- Give patients on MART an action plan which tells them how many puffs to take each day and how many to take if presenting with symptoms. **Make patients aware of the maximum number of doses to be taken in 24 hours. Refer to individual product SPCs for details.**
- Some patients find it hard to get the dry-powder medicines in their MART inhaler deep enough into their lungs during an asthma attack. For these patients, a SABA reliever inhaler and spacer should be considered to use just for emergency asthma attacks.

## Long-Acting Muscarinic Antagonists (LAMA)

- Tiotropium is indicated as add-on maintenance bronchodilator treatment in adult patients with severe asthma who experienced one or more severe asthma attacks in the preceding year.
- Tiotropium can be initiated or recommended by a primary or secondary care clinician with expertise in respiratory disease.
- Spiriva Respimat® is currently the only licensed LAMA for use in the management of severe asthma.
- Use tiotropium and glycopyrronium with caution in patients with renal impairment and refer to individual SPCs for more information.

## Oral Therapy

### Leukotriene Receptor Antagonists (LTRA)

- May benefit patients with exercise-induced asthma & concomitant seasonal allergic rhinitis.
- They are less effective in those with severe asthma also on high doses of other drugs.
- LTRAs, e.g. montelukast, should be taken in the evening.
- Review patients and stop treatment if not effective after a trial period of 4-8 weeks (NICE)

#### **MHRA/CHM Advice**

- Be alert for [neuropsychiatric reactions](#), including speech impairment and obsessive-compulsive symptoms, in adults, adolescents and children taking montelukast.

### Modified-Release Oral Theophylline

- Theophylline should only be initiated by a respiratory specialist.
- Prescribe by brand name only
- Refer to the Specialist Pharmacy Service [drug monitoring guide](#) for full details of the recommended monitoring for theophylline.

### Oral Corticosteroids

- Prescribe under the supervision of a respiratory specialist.
- Refer patients requiring more than two courses of systemic corticosteroids (oral or injected) in the previous 12 months to a specialist asthma service.
- Maintenance use of oral corticosteroids is not normally recommended. In cases where maintenance therapy cannot be withdrawn, use the lowest possible dose. Patient response to oral corticosteroids cannot be used to predict response to inhaled corticosteroid therapy and should not be used to identify patients suitable for inhaled corticosteroids.

#### **Side-Effects**

- Patients on long term steroid tablets (> 3 months) or requiring frequent courses of steroid tablets (2 per year) will be at risk of systemic side effects.
- Monitor:
  - o bone mineral density in adults and children over 5
  - o blood pressure.

- urine or blood sugar and cholesterol; diabetes mellitus and hyperlipidaemia may occur.
- for cataracts and glaucoma, refer to local opticians for further assessment.
- growth (height & weight centile) in children.
- Calcium and Vitamin D should be considered for patients requiring frequent courses or a maintenance dose of oral corticosteroids.
- If a significant reduction in bone mineral density occurs in adults, treatment with bisphosphonates should be offered if indicated and appropriate.

#### **Steroid Emergency Cards**

- NHS Steroid Emergency Cards should be given to all patients taking:
  - prednisolone 5mg or more per day or equivalent for 4 weeks or longer
  - prednisolone 40mg per day or equivalent for longer than 1 week, or more than 3 short courses per year.
- For further details and how to order see Inhaled Corticosteroids on [page 10](#)

## **Monoclonal Antibodies – Hospital Only (not to be prescribed in primary care)**

Patients with severe eosinophilic asthma or severe persistent allergic asthma with a high oral corticosteroid burden may be eligible for monoclonal antibody therapy. Eligible patients will be under the care of a respiratory specialist, who will prescribe and administer treatment.

## **Acute asthma – Follow-Up after Treatment or Discharge from Hospital**

- If the patient attended A&E or was admitted to hospital, a follow up within 48 hours after being discharged should be arranged at the patient’s GP Practice. This is particularly important for children. It is essential that the patient’s primary care practice is informed within 24 hours of discharge following an asthma attack.
- If a complex hospital admission or ITU admission occurs, patients should also be reviewed by a respiratory specialist within 1 month of the exacerbation.
- Refer patients who have required more than two courses of systemic corticosteroids (oral or injected) or have experienced 2 asthma attacks in the previous 12 months to a respiratory specialist.
- At asthma review:
  - Monitor symptoms and PEF
  - Check inhaler technique and regular medication
  - Review overall asthma control and consider need to step up treatment
  - Review/provide written asthma action plan
  - Address potentially preventable contributors to admission

## **References**

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National Institute for Health and Clinical Excellence. Asthma. Quality Standard QS25. February 2013, updated September 2018. See [link](#) (Accessed 14/06/2021)

Asthma UK. Asthma action plans. See [link](#) (Accessed 18/05/2021)

## Appendix 1: Tips on Completing a Personalised Asthma Action Plan (PAAP)

<https://www.asthma.org.uk/for-professionals/professionals/filling-patients-action-plans/>

- Use the PAAP as an educational tool, to explain how medication works etc.
- PAAP can be as simple contacting the surgery if asthma symptoms return or requiring reliever 3 times a week or more.
- Identify patient specific triggers and symptoms.
- Not all patients will be able to record peak expiratory flow (PEF) reliably, and therefore a symptom based PAAP will be more appropriate.  
PEF should be based on a recent best recorded PEF.
- To calculate percentage of PEF, divide recording by 10, then times by 8 to get 80%, 6 to get 60% and 5 to get 50%.  
For example: Best PEF = 500l/min, divide by 10= 50 x 8 = 400 (80%); 50 x 6 = 300(60%) 50 x 5 = 250 (50%)
- When appropriate, prescribe short course prednisolone (40mg for 5/7). All patients should be encouraged to inform HCP they have commenced prednisolone and arrange a review.
- Review (and update if required) PAAP after an asthma attack and at their annual review.
- Encourage patients to keep the PAAP in a safe place, suggest taking a photo of PAAP on mobile phones.
- Encourage patients to check their peak flows every now and again even when well controlled e.g. when they pick up their repeat prescriptions.
- Approaches to minimising indoor air pollution and reducing exposure to outdoor air pollution should be included in a PAAP because pollution can trigger and exacerbate asthma. See [NICE guidelines on air pollution: outdoor air quality and health](#) and [indoor air quality at home](#) for further details.
- A copy of the PAAP should ideally be kept in the patient records for reference

## Appendix 2: Stop Smoking Services

### NHS Croydon CCG

Website: <https://www.justbecroydon.org/be-smoke-free/> Also available via DXS

Tel: 020 8604 7719

Email: [livewell@croydon.gov.uk](mailto:livewell@croydon.gov.uk)

### NHS Kingston CCG

Website: <http://www.kick-it.org.uk/>

Tel: 0203 434 2500 or text KICK IT to 07800 000 264

Email: [hello@kick-it.org.uk](mailto:hello@kick-it.org.uk)

### NHS Merton CCG

Website: <https://www.oneyoumerton.org/smoking/>

Tel: 0208 973 3545

Email: [oneyoumerton@nhs.net](mailto:oneyoumerton@nhs.net)

### NHS Richmond CCG

Website: [http://www.richmond.gov.uk/stop\\_smoking](http://www.richmond.gov.uk/stop_smoking)

Tel: 0800 011 4558

Email: [stopsmoking@richmond.gov.uk](mailto:stopsmoking@richmond.gov.uk)

### NHS Sutton CCG

Face to face support: please advise patients to drop into [one of the pharmacies listed on this map of Sutton](#)

Pan-London Helpline: Phone 0300 123 1044 for telephone support to quit smoking or visit [stop smoking London portal](#)

### NHS Wandsworth CCG

Website: <https://www.wandsworth.gov.uk/stopsmoking>

Freephone (24 hour): 0800 389 7921

Email: [StopSmokingteam@wandsworth.gov.uk](mailto:StopSmokingteam@wandsworth.gov.uk)

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Version 1.1	Minor update: Addition of Trimbow®172/5/9 inhaler (page 3) Date approved: September 2023 by SWL integrated medicines optimisation committee. Review date: September 2024 (or sooner if practice/evidence changes)