

Guidance on (S)MART [(Single-inhaler) Maintenance and Reliever Therapy] in asthma, with combination inhalers containing ICS (inhaled corticosteroid) + formoterol for: adults, young people and children 5 years and older.

Maintenance and reliever therapy (MART) is a form of combined ICS and LABA treatment in which a single inhaler, containing both ICS and a fast-acting LABA, is used for both daily maintenance therapy and the relief of symptoms as required. MART is only available for ICS and LABA combinations in which the LABA has a fast-acting component (for example, formoterol).

General considerations

- Current NICE and BTS guidance on the management of asthma emphasises the importance of regular maintenance inhaled steroids, which should be commenced at asthma diagnosis for the majority
- This guidance refers to **maintenance** and reliever therapy. Guidance on use of ICS + formoterol inhalers for reliever therapy / PRN use (without a maintenance dose) is outside of this guidance.
- The use of a separate short acting beta 2 agonist reliever inhaler (SABA) should not be required BUT patients **MUST** be advised to have their MART inhaler available for rescue use and have additional supply available. If patients require SABA the suitability of that patient for MART regimen should be reviewed
- MART is **not** appropriate for patients with diagnoses of conditions other than asthma e.g. COPD
- Combination inhalers containing salmeterol (e.g. Seretide) are not licensed for MART and are not suitable for use of relief of symptoms because of salmeterol's slow onset of bronchodilation.

MART's place in therapy

MART is suitable for patients who despite good adherence to regular maintenance doses of a combination ICS/LABA inhaler, have:

- Inadequate asthma control and are in frequent need of reliever medication
- Asthma exacerbations in the past requiring medical intervention

For all patients prescribed MART, the average frequency of as-needed use of ICS–formoterol over the previous 4 weeks should be reviewed at each visit as part of the assessment of their treatment needs, especially when considering the need for maintenance treatment.

Adverse effects

Maintenance therapy should be adjusted to minimise additional prn doses. There is a dose-related risk of systemic corticosteroid effects for patients on a regular daily dose greater than 800 micrograms conventional beclomethasone (or equivalent). The higher maintenance dose MART regimes deliver a corticosteroid maintenance dose of 800mcg conventional beclomethasone equivalent; patients not adequately controlled (see **Asthma Self-Management Plan** below) on this dose, may not be suitable for MART and may benefit from referral to a secondary care specialist. See also **Children and Young People** below

Asthma Self-Management Plan

All patients using MART should have a personalised asthma self-management plan (e.g. <https://www.nottsapc.nhs.uk/media/1050/asthma-self-management-plan.pdf>) that sets out the maintenance dose, use of reliever doses and when to seek medical attention.

An essential element of the personalised self-management plan is the action required in a severe acute attack. Additional medication may be required.

Patients taking regular (more than 3 rescue doses a week or once at night), rescue doses of their combination inhaler should have their treatment reviewed. Their asthma should be reassessed, and their maintenance therapy should be reconsidered. Refer to **Table 1** (below) for maximum daily doses

Inhaler Device

The clinical studies on which the MART license is based were carried out with DPIs (Dry powder inhalers), Symbicort Turbohalers. So DPIs are entirely appropriate for MART. In the absence of overriding clinical reasons DPIs are the recommended choice because of their lower global warming potential compared to MDIs.

Children and Young People

Prescribing of MART should generally be within license. There is currently no licensed MART dose and inhaler for children 11 years and younger. However NICE does suggest MART as an option children and young people aged 5 to 16. [Pharmacological treatment of chronic asthma in children and young people aged 5 to 16](#)

In children 5-11 years, where a MART regime is considered appropriate, Symbicort Turbohaler 100/6 may be the most appropriate choice, as 1 dose bd is low / child dose of inhaled steroid. A maximum daily maintenance dose of 2 puffs bd (400mcg conventional beclomethasone equivalent) is advisable to minimise the risk of **adverse effects**, and if adequate asthma control is not achieved referral to a secondary care specialist should be considered. MART is not appropriate for children 4 years old and younger

Licenses and MART Doses for ICS + formoterol combination inhalers

For full prescribing information for MART, refer to the [SmPC](#) of the inhaler to be prescribed. Table 1 below provides a summary

Table 1

Inhaler	MART License	Dose	Max daily dose	Age	Inhaler type	Cost
Fobumix Easyhaler 80/4.5 Budesonide/ formoterol	Yes	1 dose bd Or 2 doses od + 1 dose prn	No more than 6 doses on any single occasion Normally not more than 8 doses / day Max 12 doses / day for limited period	18 years and older	DPI	£21.50 / 30 days (based on 4 doses / day)
Fobumix Easyhaler 160/4.5 Budesonide/ formoterol	Yes	1 dose bd Or 2 doses od Or 2 doses bd + 1 dose prn	No more than 6 doses on any single occasion Normally not more than 8 doses / day Max 12 doses / day for limited period	18 years and older	DPI	£21.50 / 30 days (based on 4 doses / day)
Fobumix Easyhaler 320/9	No					
Wockair 160/4.5 Budesonide/ formoterol <i>Not included in APC Formulary</i>	Yes	1 dose bd Or 2 doses od Or 2 doses bd + 1 dose prn	No more than 6 doses on any single occasion Normally not more than 8 doses / day Max 12 doses / day for limited period	12 years and older	DPI	£19.00 / 30 days (based on 4 doses / day)
Wockair 320/9 <i>Not included in APC Formulary</i>	No					
Luforbec Inhaler 100/6 Beclometasone and formoterol	Yes	1 dose bd + 1 dose prn	8 doses	18 years and older	MDI	£20.52 / 30 days (based on 4 doses / day)
Luforbec Inhaler 200/6	No					
Fostair Nexthaler 100/6 Beclometasone and formoterol	Yes	1 dose bd + 1 dose prn	8 doses	18 years and older	DPI	£29.32 / 30 days (based on 4 doses / day)
Fostair Inhaler 100/6 Beclometasone and formoterol	Yes	1 dose bd + 1 dose prn	8 doses	18 years and older	MDI	£29.32 / 30 days (based on 4 doses / day)
Fostair Nexthaler 200/6	No					
Fostair Inhaler 200/6	No					

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V1.0 Last reviewed: 11/04/2023 Review date: 11/04/2026

Nottinghamshire Area Prescribing Committee

Symbicort Inhaler 100/3 Budesonide/ formoterol	Yes	2 doses bd Or 4 doses od Or up to 4 doses bd + 2 doses prn	No more than 12 doses on any single occasion Normally not more than 16 doses / day Max 24 doses / day for limited period	12 years and older	MDI	£14.00 / 30 days (based on 4 doses / day)
Symbicort Inhaler 200/6	No					
Symbicort Turbohaler 100/6 Budesonide/ formoterol	Yes	1 dose bd Or 2 doses od + 1 dose prn	No more than 6 doses on any single occasion Normally not more than 8 doses / day Max 12 doses / day for limited period	12 years and older	DPI	£28.00 / 30 days (based on 4 puffs / day)
Symbicort Turbohaler 200/6 Budesonide/ formoterol	Yes	1 dose bd Or 2 doses od Or 2 doses bd + 1 dose prn	No more than 6 doses on any single occasion Normally not more than 8 doses / day Max 12 doses / day for limited period	12 years and older	DPI	£28.00 / 30 days (based on 4 puffs / day)
Symbicort Turbohaler 400/12	No					
DuoResp Spiromax 160/4.5 Budesonide/ formoterol	Yes	1 dose bd Or 2 doses od Or 2 doses bd + 1 dose prn	No more than 6 doses on any single occasion Normally not more than 8 doses / day Max 12 doses / day for limited period	12 years and older	DPI	£27.97 / 30 days (based on 4 doses / day)
DuoResp Spiromax 320/9	No					
Flutiform Inhaler 50/5, 125/5 and 250/5	No					

Patient Information

<https://www.asthma.org.uk/advice/inhalers-medicines-treatments/inhalers-and-spacers/mart/>

Further Reading

NICE NG80 Asthma: diagnosis, monitoring and chronic asthma management

<https://www.nice.org.uk/guidance/ng80>

SIGN158 British guideline on the management of asthma <https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/>

RightBreathe Find an inhaler <https://www.rightbreathe.com/?s=>

Electronic Medicines Compendium <https://www.medicines.org.uk/emc/>

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Version	Author(s)	Date	Changes
1.0	Peter Richards. Snr Prescribing Advisor Nottingham and Nottinghamshire ICB	11.04.2023	New document