Asthma: diagnosis and chronic management in children ≤11 years

Key Facts

- Asthma in children can be challenging to diagnose and requires careful history of previous treatments for respiratory symptoms.
- Children who are usually well and ONLY wheeze when they have a viral illness should NOT be diagnosed with asthma. They have viral wheeze. Inhaled short acting beta-agonists (salbutamol) may help.

Clinical presentation	**Diagnosis and investigations**
Breathlessness, wheeze, chest tightness, or cough that is: ✓ Worse at night and early morning ✓ Comes with/after exercise ✓ Come with allergen exposure or cold air ✓ Come on after taking aspirin/beta-blockers	✓ A good history is more important than any test. Focus on the features above (Xrays and blood tests only helpful if another condition suspected) ✓ Spirometry is the gold standard for diagnosis, but rarely necessary and currently not available in Kijabe ✓ Trial of treatment with SABA (as needed) and 8 weeks of inhaled steroids can be used to confirm the diagnosis

Management

Any features of acute asthma?
Progressive worsening of symptoms of asthma such as SOB, DIB, cough, wheeze, tight chest, use of accessory muscles, abnormal vital signs

→ See separate guideline: **'Asthma – acute exacerbation in primary care'** Transfer to casualty (or acute care facility) if unstable

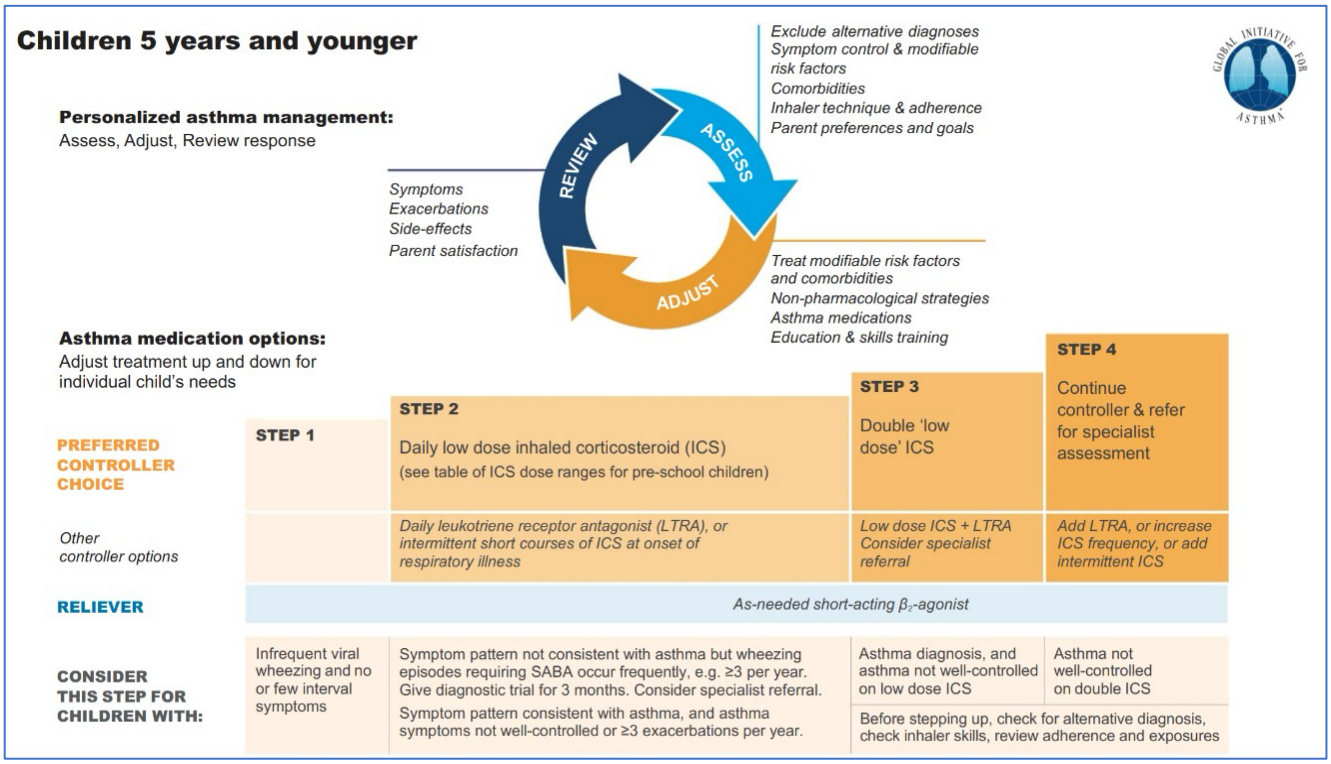
↓

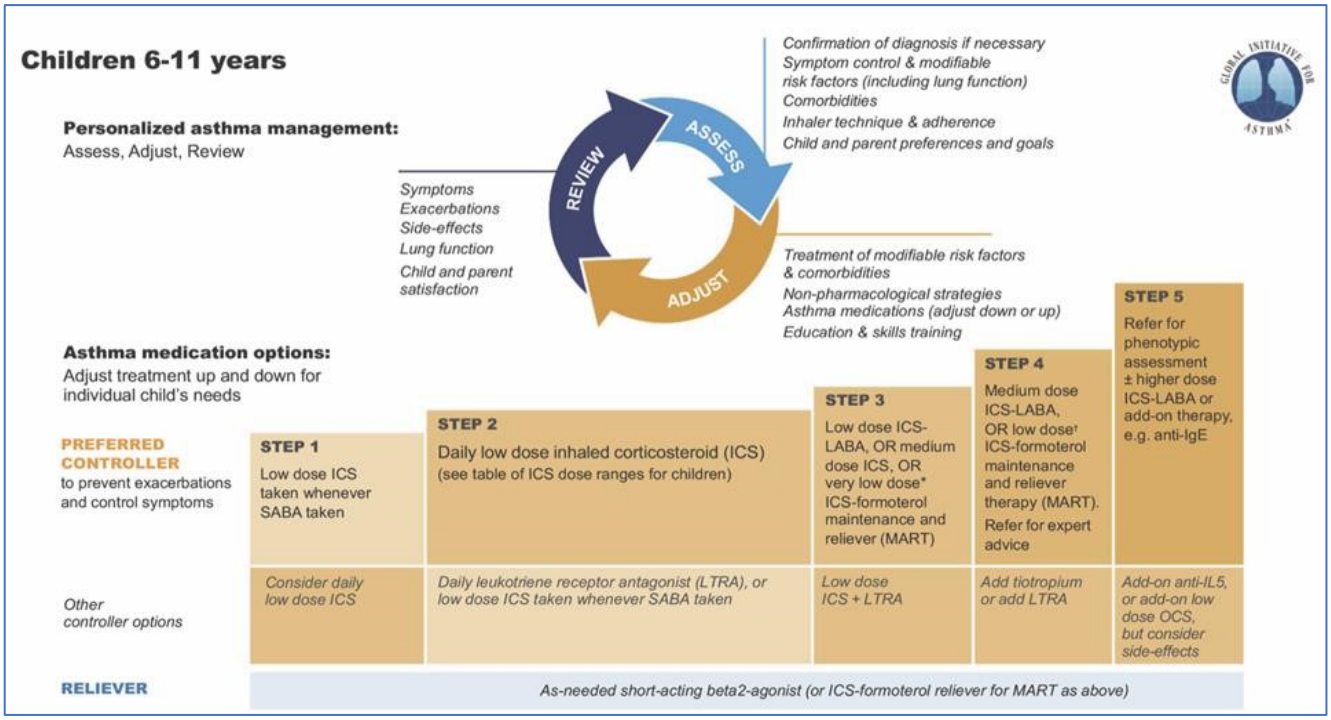
Management of chronic stable asthma
- ✓ See GINA 2021 stepwise management for children of different ages, page 2
- ✓ See information regarding medication and inhalers on page 3
- ✓ Seek OPD consultant advice before escalating to step 3

↓

- ✓ A spacer device should **always** be used with an aerosol/MDI inhaler. Children under 10 years cannot coordinate their breathing well enough to use any other device. Use a bottle if they can't afford spacer.
- ✓ If a patient requires more than one inhaler, **they should be prescribed <u>the same type of device</u> whenever possible**
- ✓ Always check inhaler/spacer technique before escalating to the next step – see guideline **'Inhalers – types & techique'**
- ✓ Prescribe inhaler doses in mcg, NOT in puffs only

Discuss with consultant if:
- ✓ Needing to escalate to step 3
- ✓ Other CV comorbidities
- ✓ Abnormal vital signs
- ✓ Asthma not responding to reliever medication


Children 5 years and younger
Personalized asthma management:
Assess, Adjust, Review response
Exclude alternative diagnoses
Symptom control & modifiable risk factors
Comorbidities
Inhaler technique & adherence
Parent preferences and goals
REVIEW
ASSESS
ADJUST
Symptoms
Exacerbations
Side-effects
Parent satisfaction
Treat modifiable risk factors and comorbidities
Non-pharmacological strategies
Asthma medications
Education & skills training
Asthma medication options:
Adjust treatment up and down for individual child's needs
STEP 1
STEP 2
Daily low dose inhaled corticosteroid (ICS)
(see table of ICS dose ranges for pre-school children)
STEP 3
Double 'low dose' ICS
STEP 4
Continue controller & refer for specialist assessment
PREFERRED CONTROLLER CHOICE
Other controller options
Daily leukotriene receptor antagonist (LTRA), or intermittent short courses of ICS at onset of respiratory illness
Low dose ICS + LTRA
Consider specialist referral
Add LTRA, or increase ICS frequency, or add intermittent ICS
RELIEVER
As-needed short-acting β2-agonist
CONSIDER THIS STEP FOR CHILDREN WITH:
Infrequent viral wheezing and no or few interval symptoms
Symptom pattern not consistent with asthma but wheezing episodes requiring SABA occur frequently, e.g. ≥3 per year. Give diagnostic trial for 3 months. Consider specialist referral.
Symptom pattern consistent with asthma, and asthma symptoms not well-controlled or ≥3 exacerbations per year.
Asthma diagnosis, and asthma not well-controlled on low dose ICS
Asthma not well-controlled on double ICS
Before stepping up, check for alternative diagnosis, check inhaler skills, review adherence and exposures


Children 6-11 years
Personalized asthma management:
Assess, Adjust, Review
Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (including lung function)
Comorbidities
Inhaler technique & adherence
Child and parent preferences and goals
REVIEW
ASSESS
ADJUST
Symptoms
Exacerbations
Side-effects
Lung function
Child and parent satisfaction
Treatment of modifiable risk factors & comorbidities
Non-pharmacological strategies
Asthma medications (adjust down or up)
Education & skills training
Asthma medication options:
Adjust treatment up and down for individual child's needs
STEP 1
Low dose ICS taken whenever SABA taken
STEP 2
Daily low dose inhaled corticosteroid (ICS)
(see table of ICS dose ranges for children)
STEP 3
Low dose ICS-LABA, OR medium dose ICS, OR very low dose* ICS-formoterol maintenance and reliever (MART)
STEP 4
Medium dose ICS-LABA, OR low dose† ICS-formoterol maintenance and reliever therapy (MART).
Refer for expert advice
STEP 5
Refer for phenotypic assessment ± higher dose ICS-LABA or add-on therapy, e.g. anti-IgE
PREFERRED CONTROLLER
to prevent exacerbations and control symptoms
Other controller options
Consider daily low dose ICS
Daily leukotriene receptor antagonist (LTRA), or low dose ICS taken whenever SABA taken
Low dose ICS + LTRA
Add tiotropium or add LTRA
Add-on anti-IL5, or add-on low dose OCS, but consider side-effects
RELIEVER
As-needed short-acting beta2-agonist (or ICS-formoterol reliever for MART as above)

Inhalers and asthma medication available in Kijabe pharmacy			
Class	**Drug**	**Type of inhaler**	**Dose**
SABA (Short acting beta-agonist)	Salbutamol 100mcg	aerosol, metred dose inhaler	200mcg as needed
SAMA (short acting muscarinic antagonist)	Ipatropium 20mcg	aerosol, metred dose inhaler	40mcg as needed
ICS (Inhaled corticosteroid)	Beclomethasone 100mcg	aerosol, metred dose inhaler	Low dose: 200-500mcg/day Medium dose: 500-1000mcg/d High dose: >1000mcg/day
ICS+LABA (Inhaled corticosteroid and long-acting beta-agonist)	Budesonide + Formoterol 200+6 or 400+6 Budesonide + Formoterol 160/4.5mcg	aerosol, metered dose inhaler dry powder, Turbohaler	Low dose: 200-400mcg/day Medium dose: 400-800mcg/day High dose: >800mcg/day
LTRA (leukotriene receptor antagonist)	Montelukast 10mg tablet		Age 6m-6y: 4mg once daily in evening Age 6-15y: 5mg once daily in evening >15y: 10mg once daily in evening

References:
NCD Clinical Guide 2021 Asthma Primary Care International *(adapted for this context and location. PCI have not been involved in, nor hold responsibility for any adaptations. Original can be found by contacting PCI: https://pci-360.com*)
GINA 2021 asthma guideline https://ginasthma.org