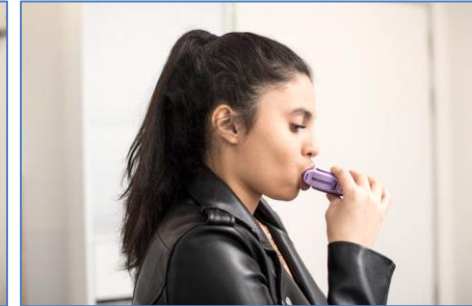




**UNIVERSITÉ
DE GENÈVE**



Hôpitaux
Universitaires
Genève

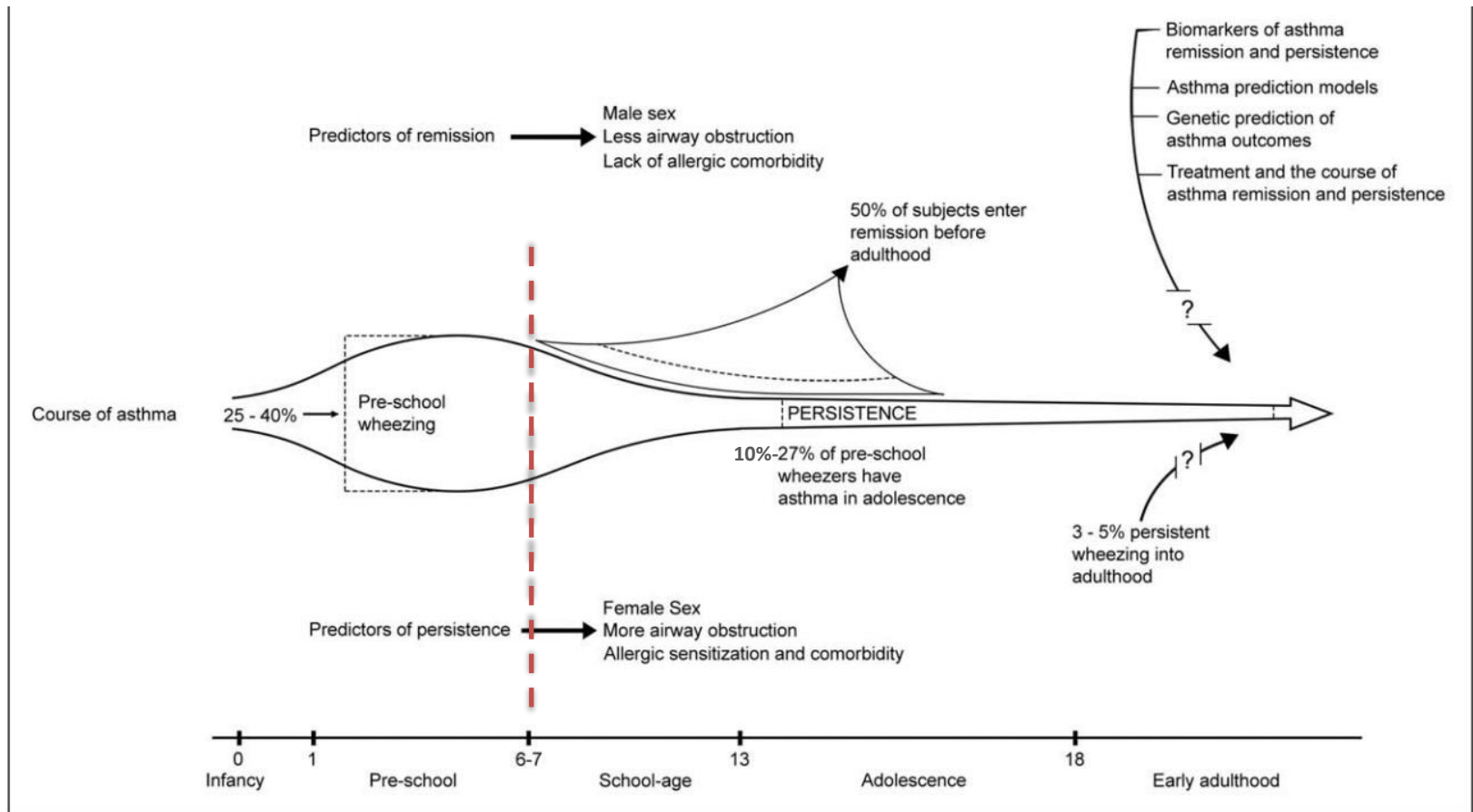


Bronchite obstructive et asthme Nouvelles prises en charge en 2023

Télémeeting du 8 février 2023

Isabelle Ruchonnet-Métraiiller
Février 2023

Quelle évolution des épisodes de sifflements de la naissance au jeune adulte ?



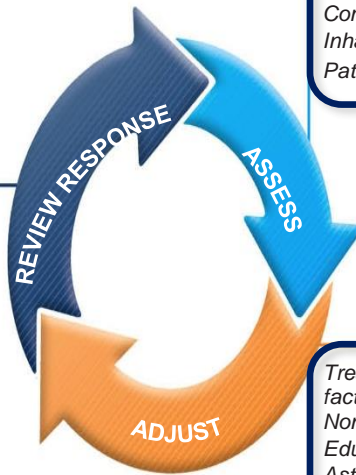
Personalized asthma management:

Assess, Adjust, Review response

Symptoms
Exacerbations
Side-effects
Lung function
Patient satisfaction

Asthma medication options:

Adjust treatment up and down for individual patient needs



Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (including lung function)
Comorbidities
Inhaler technique & adherence
Patient goals

Treatment of modifiable risk factors & comorbidities
Non-pharmacological strategies
Education & skills training
Asthma medications



< 5 ans

Asthma medication options:

Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER CHOICE

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER

CONSIDER THIS STEP FOR CHILDREN WITH:

	STEP 1	STEP 2	STEP 3	STEP 4
	Daily low dose inhaled corticosteroid (ICS) (see table of ICS dose ranges for pre-school children)	Double 'low dose' ICS	Continue controller & refer for specialist assessment	
	Consider intermittent short course ICS at onset of viral illness	Daily leukotriene receptor antagonist (LTRA), or intermittent short course of ICS at onset of respiratory illness	Low dose ICS + LTRA Consider specialist referral	Add LTRA, or increase ICS frequency, or add intermittent ICS
	As-needed short-acting beta ₂ -agonist			
	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 Before stepping up, check for alternative diagnosis, check inhaler skills, review adherence and exposures	Asthma not well-controlled on double ICS



< 5 ans

- Exclude alternative diagnoses
- Symptom control & modifiable risk factors
- Comorbidities
- Inhaler technique & adherence
- Parent preferences and goals



Asthma medication options:

Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER CHOICE

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER

CONSIDER THIS STEP FOR CHILDREN WITH:

	STEP 1	STEP 2	STEP 3	STEP 4
PREFERRED CONTROLLER CHOICE				
Other controller options (limited indications, or less evidence for efficacy or safety)	Consider intermittent short course ICS at onset of viral illness			
RELIEVER	As-needed short-acting beta ₂ -agonist			
CONSIDER THIS STEP FOR CHILDREN WITH:	Infrequent viral wheezing and no or few interval symptoms			

symptoms

Symptom pattern consistent with asthma, and asthma symptoms not well-controlled or ≥3 exacerbations per year.

Before stepping up, check for alternative diagnosis, check inhaler skills, review adherence and exposures



< 5 ans

- Exclude alternative diagnoses
- Symptom control & modifiable risk factors
- Comorbidities
- Inhaler technique & adherence
- Parent preferences and goals

Asthma medication options:

Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER CHOICE

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER

CONSIDER THIS STEP FOR CHILDREN WITH:

		STEP 3	STEP 4
STEP 1	STEP 2 Daily low dose inhaled corticosteroid (ICS) (see table of ICS dose ranges for pre-school children)		
	Daily leukotriene receptor antagonist (LTRA), or intermittent short course of ICS at onset of respiratory illness		
As-needed short-acting beta ₂ -agonist			
	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.		

symptoms

Symptom pattern consistent with asthma, and asthma symptoms not well-controlled or ≥3 exacerbations per year.

Before stepping up, check for alternative diagnosis, check inhaler skills, review adherence and exposures



< 5 ans

- Exclude alternative diagnoses
- Symptom control & modifiable risk factors
- Comorbidities
- Inhaler technique & adherence
- Parent preferences and goals

Asthma medication options:

Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER CHOICE

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER

CONSIDER THIS STEP FOR CHILDREN WITH:

	STEP 1	STEP 2	STEP 3	STEP 4
			Double 'low dose' ICS	
			Low dose ICS + LTRA Consider specialist referral	
	As-needed short-acting beta ₂ -agonist			
			Asthma diagnosis, and asthma not well-controlled on low dose ICS	
			Before stepping up, check for alternative diagnosis, check inhaler skills, review adherence and exposures	

symptoms

Symptom pattern consistent with asthma, and asthma symptoms not well-controlled or ≥3 exacerbations per year.

Before stepping up, check for alternative diagnosis, check inhaler skills, review adherence and exposures



< 5 ans

- Exclude alternative diagnoses
- Symptom control & modifiable risk factors
- Comorbidities
- Inhaler technique & adherence
- Parent preferences and goals



Asthma medication options:

Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER CHOICE

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER

CONSIDER THIS STEP FOR CHILDREN WITH:

STEP 1		STEP 2		STEP 3		STEP 4	
						Continue controller & refer for specialist assessment	
						Add LTRA, or increase ICS frequency, or add intermittent ICS	
As-needed short-acting beta ₂ -agonist							
						Asthma not well-controlled on double ICS	
						Before stepping up, check for alternative diagnosis, check inhaler skills, review adherence and exposures	

symptoms

Symptom pattern consistent with asthma, and asthma symptoms not well-controlled or ≥3 exacerbations per year.

Before stepping up, check for alternative diagnosis, check inhaler skills, review adherence and exposures



< 5 ans

Asthma medication options:

Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER CHOICE

Other controller options (limited indications, or less evidence for efficacy or safety)

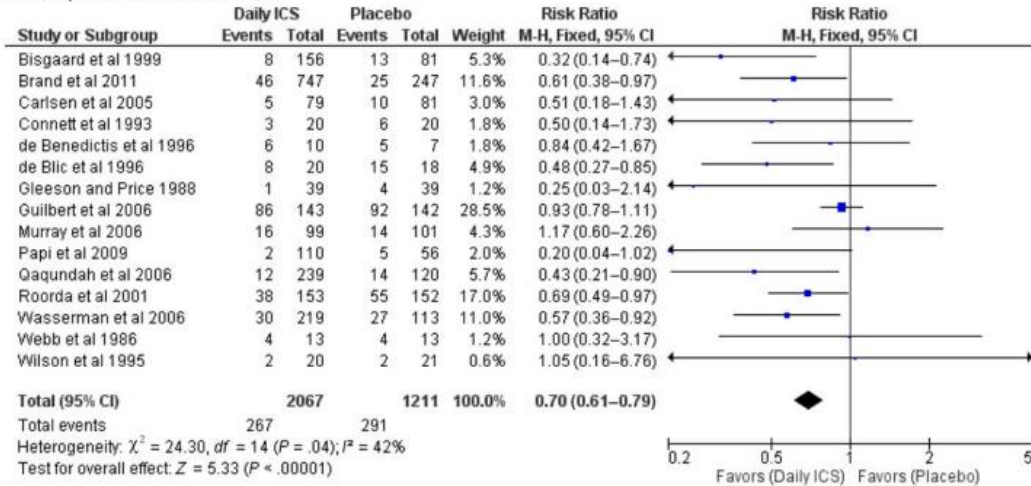
RELIEVER

CONSIDER THIS STEP FOR CHILDREN WITH:

	STEP 1	STEP 2	STEP 3	STEP 4
	Daily low dose inhaled corticosteroid (ICS)	Daily low dose inhaled corticosteroid (ICS) (see table of ICS dose ranges for pre-school children)	Double 'low dose' ICS	Continue controller & refer for specialist assessment
	Consider intermittent short course ICS at onset of viral illness	Daily leukotriene receptor antagonist (LTRA), or intermittent short course of ICS at onset of respiratory illness	Low dose ICS + LTRA Consider specialist referral	Add LTRA, or increase ICS frequency, or add intermittent ICS
	As-needed short-acting beta ₂ -agonist			
	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 Before stepping up, check for alternative diagnosis, check inhaler skills, review adherence and exposures	Asthma not well-controlled on double ICS

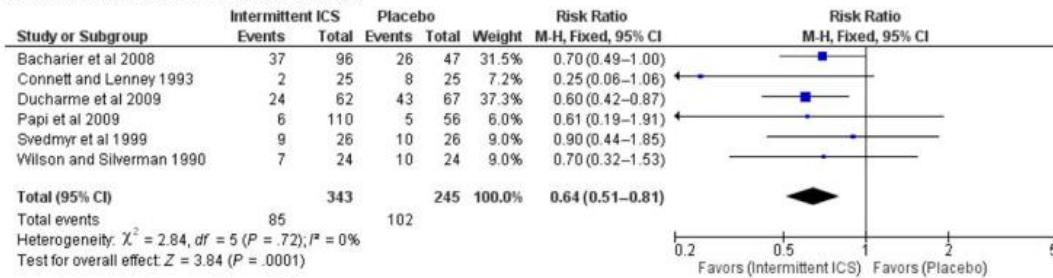
Prévention d'exacerbation sévère chez wheezer récurrent : quel traitement de Corticostéroïds inhalés?

I. Daily ICS versus Placebo



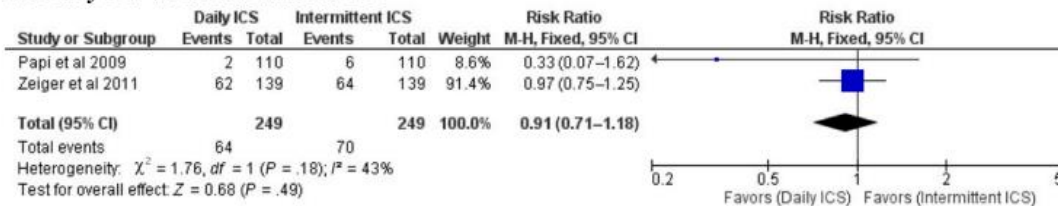
CSI: oui

II. Intermittent ICS versus Placebo



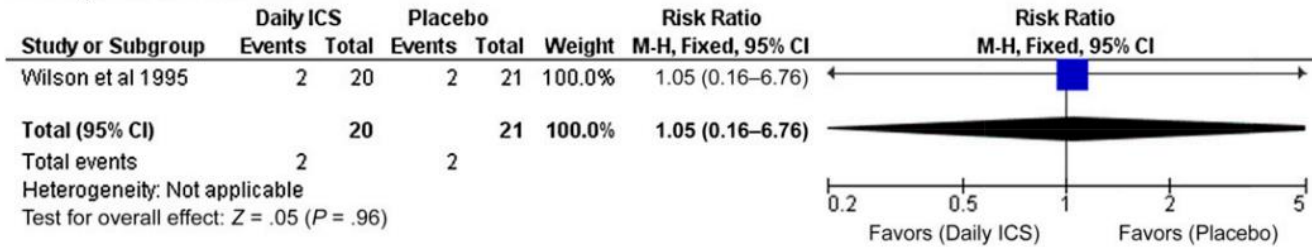
Journalier mieux qu'intermittent

III. Daily ICS versus Intermittent ICS

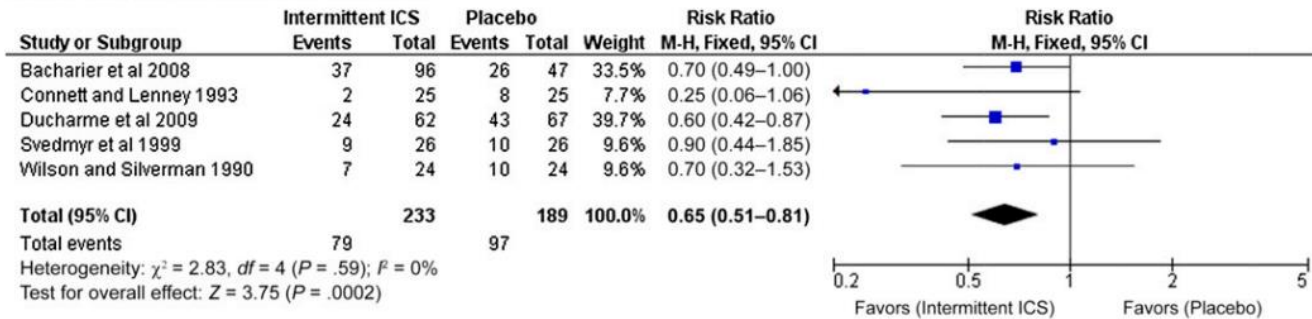


Wheezing intermittent wheezer induit par les virus: quel traitement de Cortiostéroïds inhalés?

I. Daily ICS versus Placebo

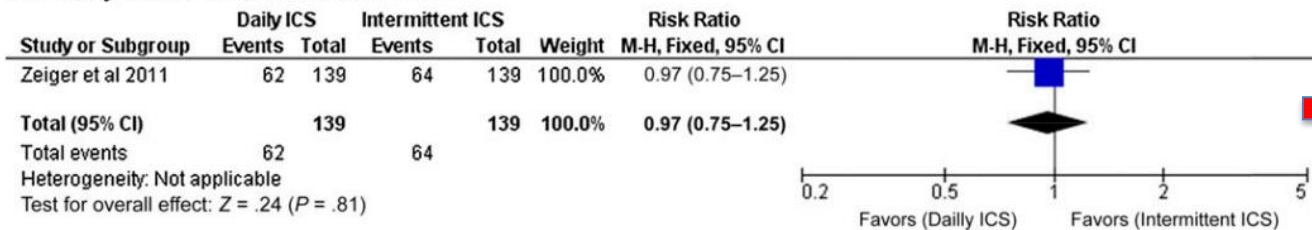


II. Intermittent ICS versus Placebo



CSI: oui

III. Daily ICS versus Intermittent ICS



Journalier mieux qu'intermittent ??

[Intervention Review]

Inhaled corticosteroids in children with persistent asthma: effects on growth

25 études analysées avec 8'471 enfants

Asthme léger persistant

- <18 ans avec au moins 3 mois de traitement avec CSI
- CSI à petites ou moyennes doses journalières

- Perte de 0.48 cm/ans dans la vitesse de croissance et 0.61 cm sur un an de croissance
- Effet maximum la première année avec possibilité rattrapage dans la majorité des cas
- Une étude avec 400 mcg de Budesonide journalier pendant 4,3 ans montre une perte à l'âge adulte de 1,2 cm (*Kelly et al, NEJM 2012*)

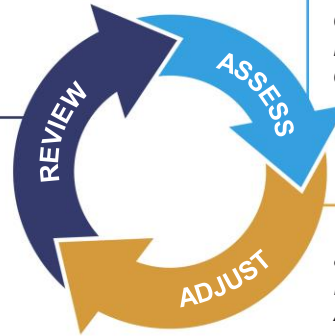


>6- 11 ans

Personalized asthma management:

Assess, Adjust, Review

Symptoms
Exacerbations
Side-effects
Lung function
Child and parent satisfaction



Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (see Box 2-2B)
Comorbidities
Inhaler technique & adherence
Child and parent preferences and goals

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

PREFERRED CONTROLLER

to prevent exacerbations and control symptoms

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER

	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
	Low dose ICS taken whenever SABA taken	Daily low dose inhaled corticosteroid (ICS) (see table of ICS dose ranges for children)	Low dose ICS-LABA, OR medium dose ICS, OR very low dose* ICS-formoterol maintenance and reliever (MART)	Medium dose ICS-LABA, OR low dose† ICS-formoterol maintenance and reliever therapy (MART). Refer for expert advice	Refer for phenotypic assessment ± higher dose ICS-LABA or add-on therapy, e.g. anti-IgE, anti-IL4R
	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, as last resort, consider add-on low dose OCS, but consider side-effects
	As-needed short-acting beta ₂ -agonist (or ICS-formoterol reliever in MART in Steps 3 and 4)				

*Very low dose: BUD-FORM 100/6 mcg

†Low dose: BUD-FORM 200/6 mcg (metered doses).



>6- 11 ans

- Confirmation of diagnosis if necessary
- Symptom control & modifiable risk factors (see Box 2-2B)
- Comorbidities
- Inhaler technique & adherence
- Child and parent preferences and goals

Asthma medication options:

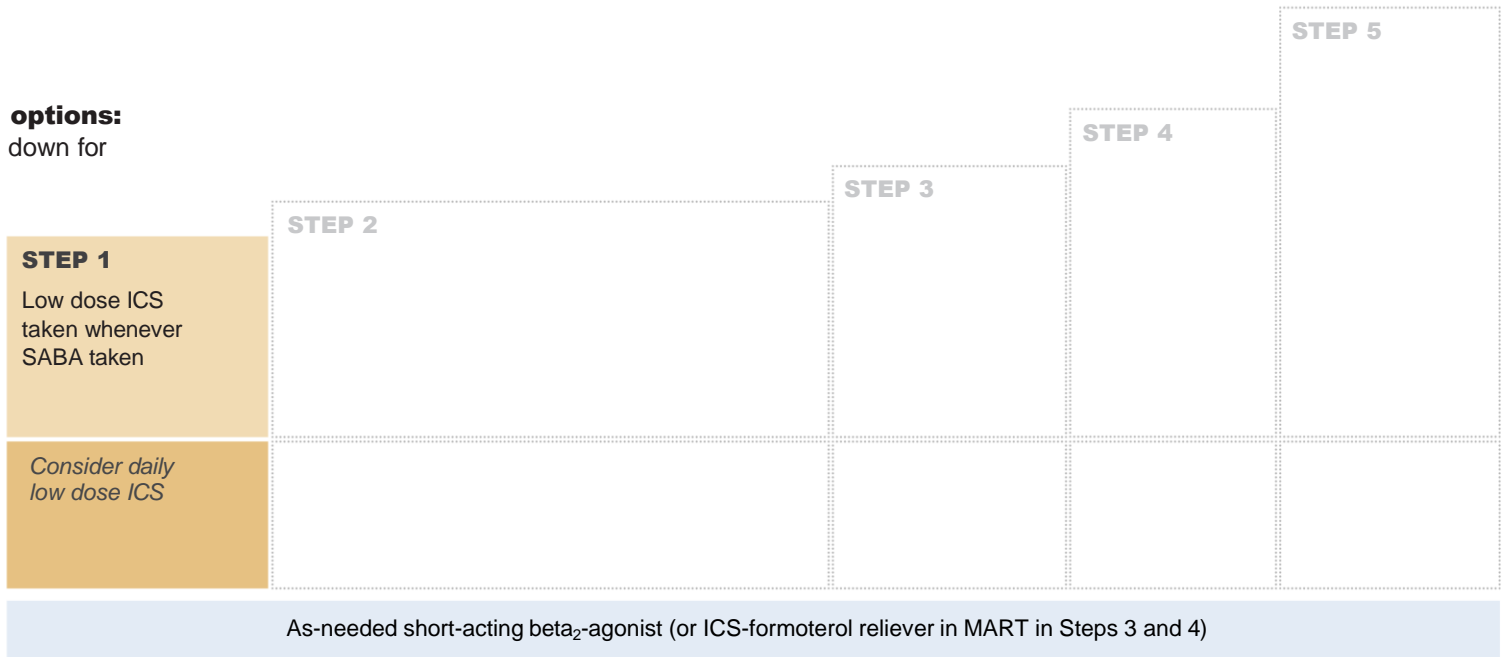
Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER

to prevent exacerbations and control symptoms

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER



*Very low dose: BUD-FORM 100/6 mcg
 †Low dose: BUD-FORM 200/6 mcg (metered doses).



>6- 11 ans

- Confirmation of diagnosis if necessary
- Symptom control & modifiable risk factors (see Box 2-2B)
- Comorbidities
- Inhaler technique & adherence
- Child and parent preferences and goals

Asthma medication options:

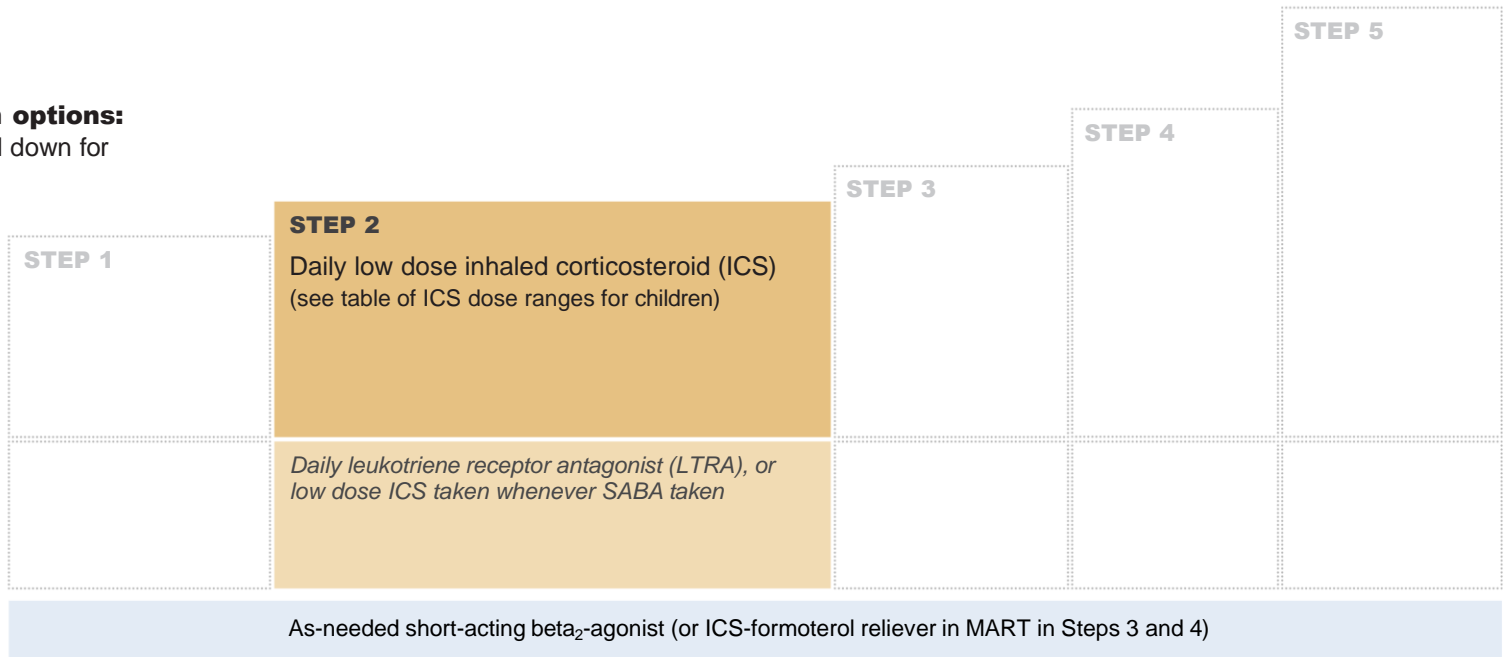
Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER

to prevent exacerbations and control symptoms

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER



*Very low dose: BUD-FORM 100/6 mcg
 †Low dose: BUD-FORM 200/6 mcg (metered doses).



>6- 11 ans

- Confirmation of diagnosis if necessary
- Symptom control & modifiable risk factors (see Box 2-2B)
- Comorbidities
- Inhaler technique & adherence
- Child and parent preferences and goals

Asthma medication options:

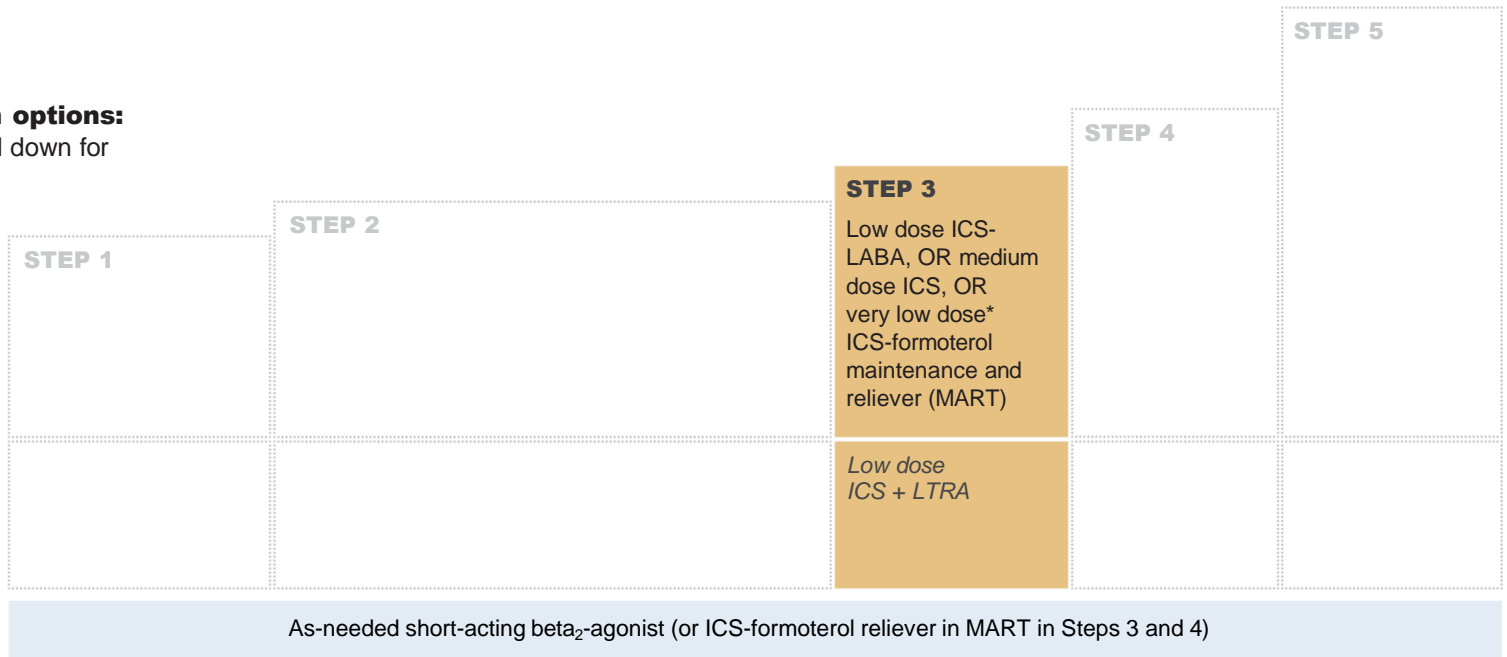
Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER

to prevent exacerbations and control symptoms

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER



*Very low dose: BUD-FORM 100/6 mcg
 †Low dose: BUD-FORM 200/6 mcg (metered doses).



>6- 11 ans

- Confirmation of diagnosis if necessary
- Symptom control & modifiable risk factors (see Box 2-2B)
- Comorbidities
- Inhaler technique & adherence
- Child and parent preferences and goals

Asthma medication options:

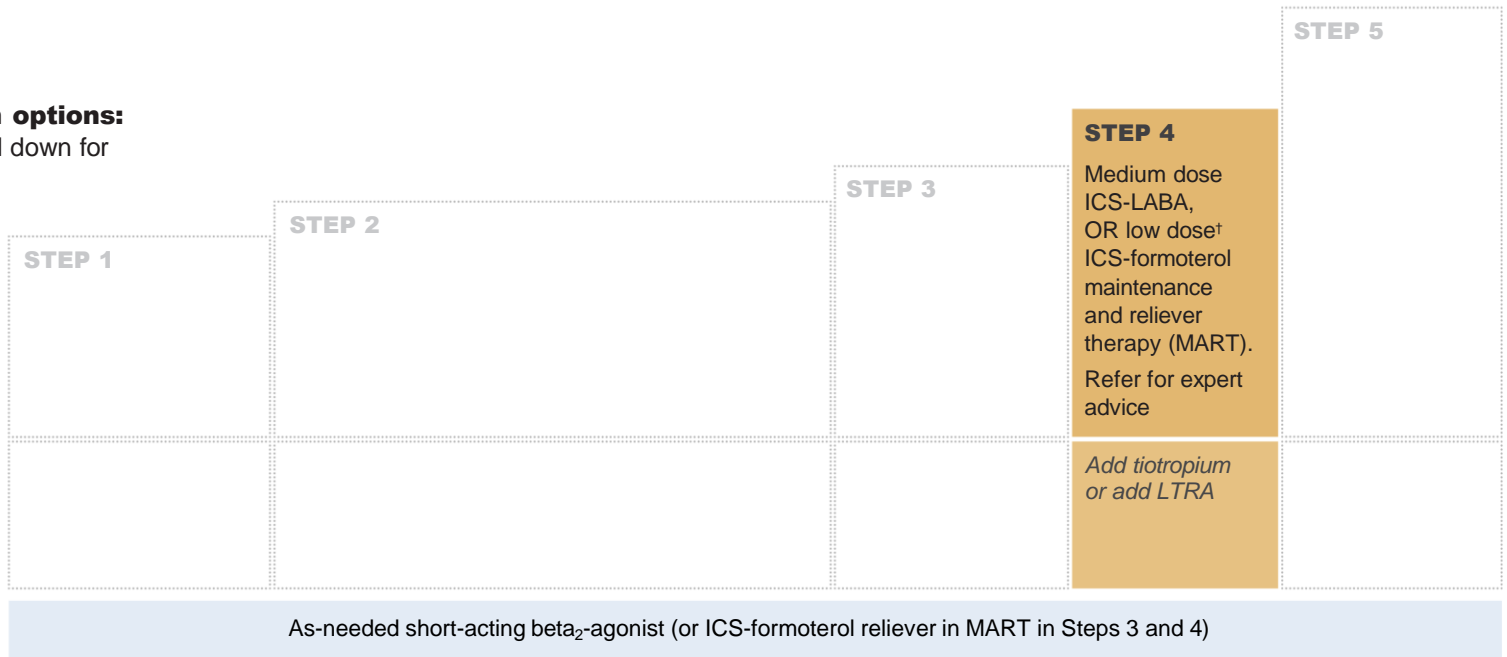
Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER

to prevent exacerbations and control symptoms

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER



*Very low dose: BUD-FORM 100/6 mcg
†Low dose: BUD-FORM 200/6 mcg (metered doses).



>6- 11 ans

- Confirmation of diagnosis if necessary
- Symptom control & modifiable risk factors (see Box 2-2B)
- Comorbidities
- Inhaler technique & adherence
- Child and parent preferences and goals

Asthma medication options:

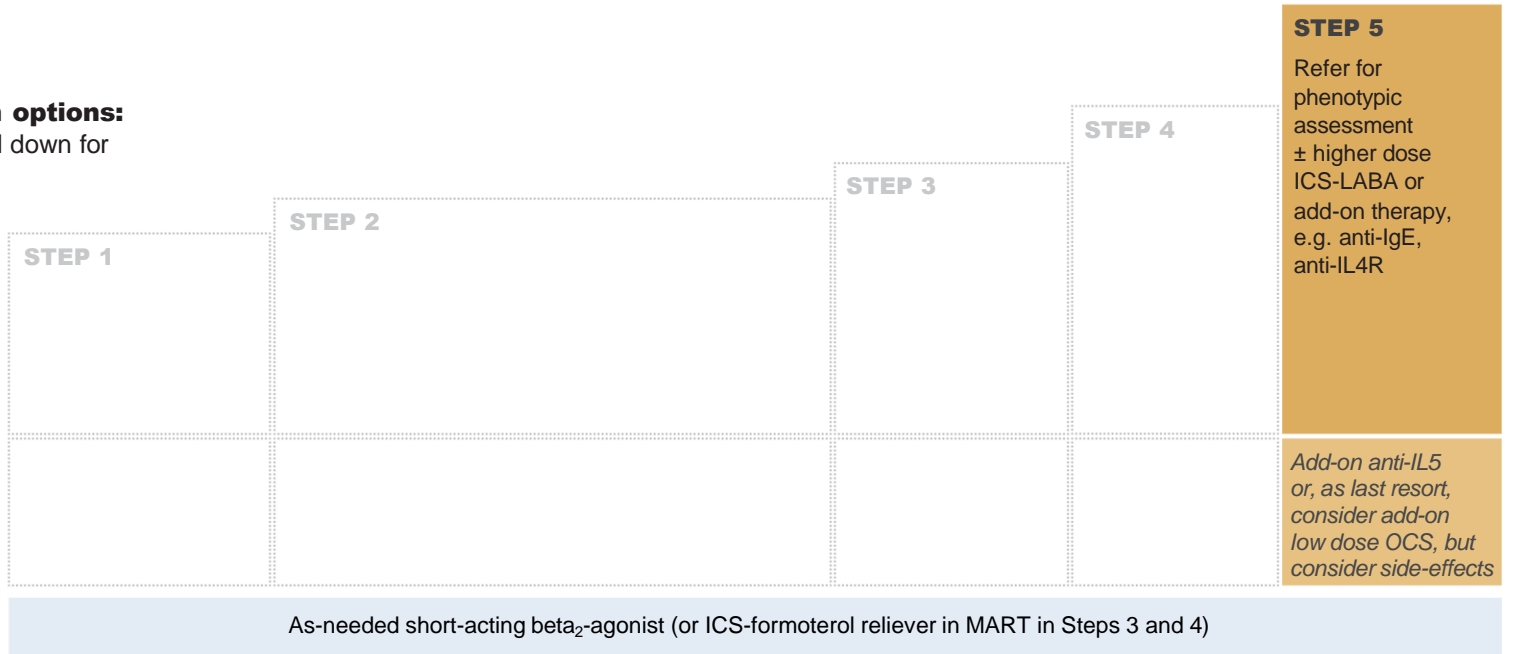
Adjust treatment up and down for individual child's needs

PREFERRED CONTROLLER

to prevent exacerbations and control symptoms

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER



*Very low dose: BUD-FORM 100/6 mcg
 †Low dose: BUD-FORM 200/6 mcg (metered doses).



>6- 11 ans

Personalized asthma management:

Assess, Adjust, Review

Symptoms
Exacerbations
Side-effects
Lung function
Child and parent satisfaction



Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (see Box 2-2B)
Comorbidities
Inhaler technique & adherence
Child and parent preferences and goals

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

PREFERRED CONTROLLER

to prevent exacerbations and control symptoms

Other controller options (limited indications, or less evidence for efficacy or safety)

RELIEVER

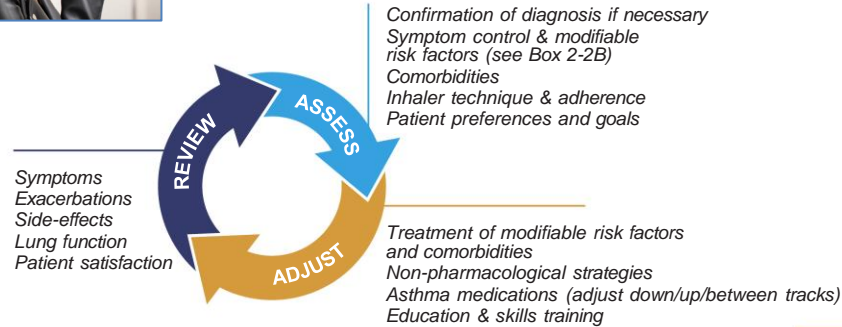
	STEP 1 Low dose ICS taken whenever SABA taken	STEP 2 Daily low dose inhaled corticosteroid (ICS) (see table of ICS dose ranges for children)	STEP 3 Low dose ICS-LABA, OR medium dose ICS, OR very low dose* ICS-formoterol maintenance and reliever (MART)	STEP 4 Medium dose ICS-LABA, OR low dose† ICS-formoterol 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, anti-IL4R
	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, as last resort, consider add-on low dose OCS, but consider side-effects
As-needed short-acting beta ₂ -agonist (or ICS-formoterol reliever in MART in Steps 3 and 4)					

*Very low dose: BUD-FORM 100/6 mcg

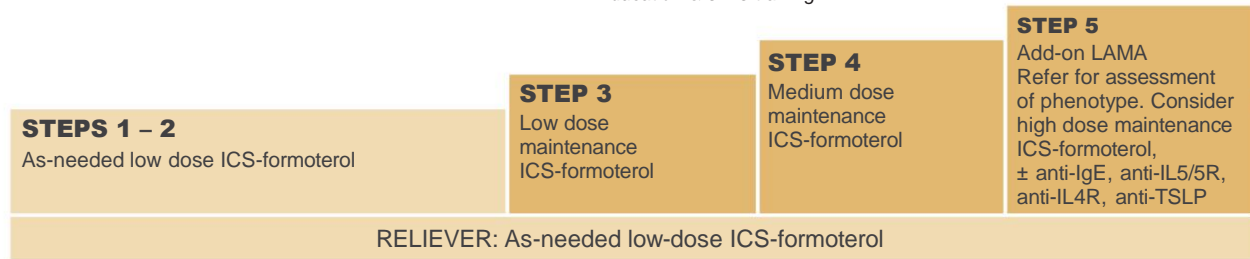
†Low dose: BUD-FORM 200/6 mcg (metered doses).



> 12 ans

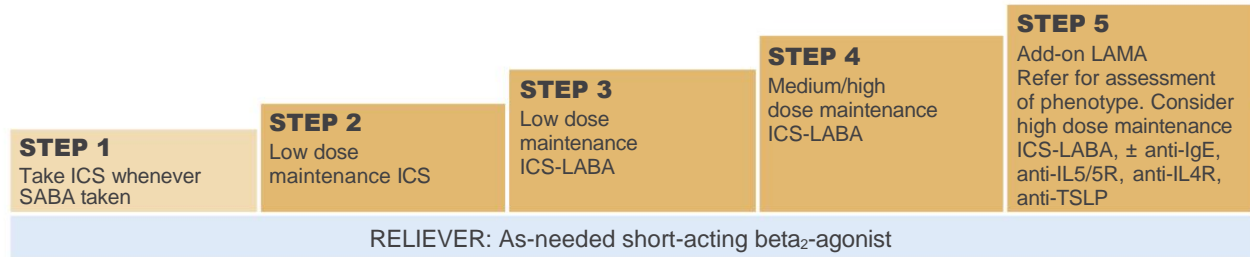


CONTROLLER and **PREFERRED RELIEVER** (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever



See GINA severe asthma guide

CONTROLLER and **ALTERNATIVE RELIEVER** (Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller



Other controller options for either track (limited indications, or less evidence for efficacy or safety)

	Low dose ICS whenever SABA taken, or daily LTRA, or add HDM SLIT	Medium dose ICS, or add LTRA, or add HDM SLIT	Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS	Add azithromycin (adults) or LTRA. As last resort consider adding low dose OCS but consider side-effects
--	--	---	--	--



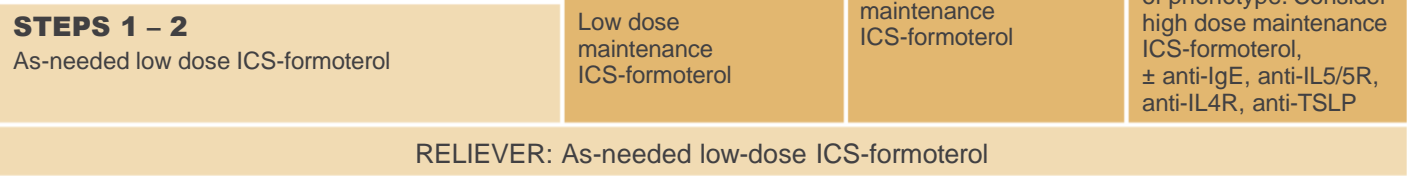
> 12 ans

Side-effects
Lung function
Patient satisfaction

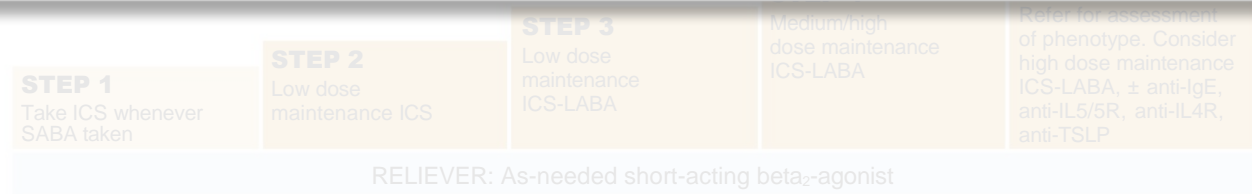


Treatment of modifiable risk factors and comorbidities
Non-pharmacological strategies
Asthma medications (adjust down/up/between tracks)

CONTROLLER and PREFERRED RELIEVER (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever

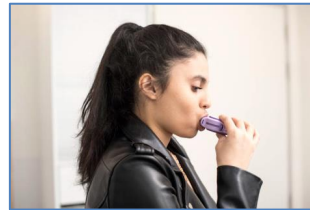


CONTROLLER and ALTERNATIVE RELIEVER (Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller



Other controller options for either track (limited indications, or less evidence for efficacy or safety)





> 12 ans

Side-effects
Lung function
Patient satisfaction



Treatment of modifiable risk factors and comorbidities
Non-pharmacological strategies
Asthma medications (adjust down/up/between tracks)
Education & skills training

CONTROLLER and **PREFERRED RELIEVER**
(Track 1). Using ICS-formoterol

STEPS 1 – 2
As-needed low dose ICS-formoterol

STEP 3
Low dose maintenance ICS-formoterol

STEP 4
Medium dose maintenance ICS-formoterol

STEP 5
Add-on LAMA
Refer for assessment of phenotype. Consider high dose maintenance ICS-formoterol, ± anti-IgE, anti-IL5/5R.

CONTROLLER and **ALTERNATIVE RELIEVER**
(Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller

STEP 1
Take ICS whenever SABA taken

STEP 2
Low dose maintenance ICS

STEP 3
Low dose maintenance ICS-LABA

STEP 4
Medium/high dose maintenance ICS-LABA

STEP 5
Add-on LAMA
Refer for assessment of phenotype. Consider high dose maintenance ICS-LABA, ± anti-IgE, anti-IL5/5R, anti-IL4R, anti-TSLP

RELIEVER: As-needed short-acting beta₂-agonist

Other controller options for either track (limited indications, or less evidence for efficacy or safety)

Low dose ICS whenever SABA taken, or daily LTRA, or add HDM SLIT

Medium dose ICS, or add LTRA, or add HDM SLIT

Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS

Add azithromycin (adults) or LTRA. As last resort consider adding low dose OCS but consider side-effects



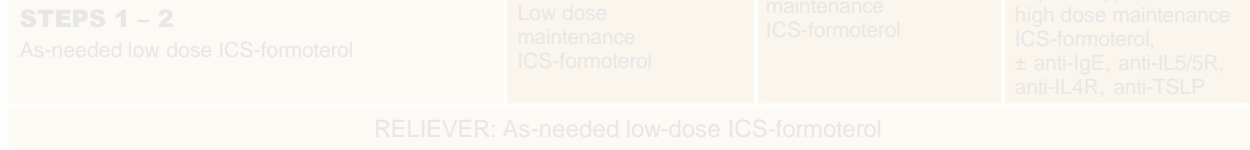
> 12 ans

Side-effects
Lung function
Patient satisfaction



Treatment of modifiable risk factors and comorbidities
Non-pharmacological strategies
Asthma medications (adjust down/up/between tracks)
Education & skills training

CONTROLLER and **PREFERRED RELIEVER** (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever



See GINA severe asthma guide

CONTROLLER and **ALTERNATIVE RELIEVER**



Other controller options for either track (limited indications, or less evidence for efficacy or safety)

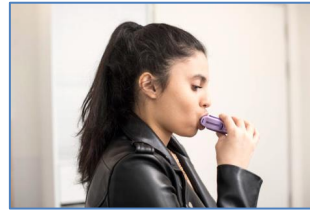
	Low dose ICS whenever SABA taken, or daily LTRA, or add HDM SLIT	Medium dose ICS, or add LTRA, or add HDM SLIT	Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS	Add azithromycin (adults) or LTRA. As last resort consider adding low dose OCS but consider side-effects
--	--	---	--	--

evidence for efficacy or safety)

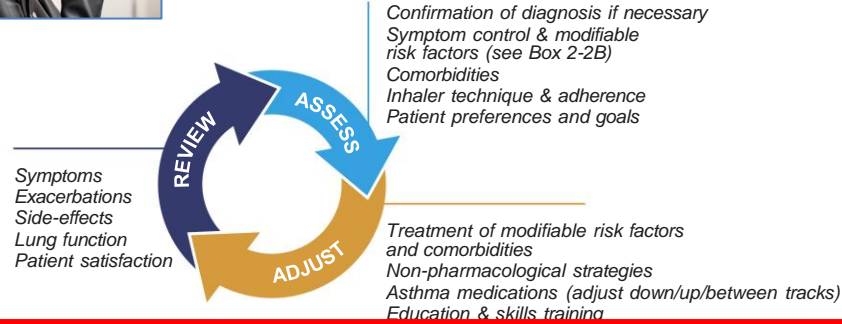
of moderate quality

high quality

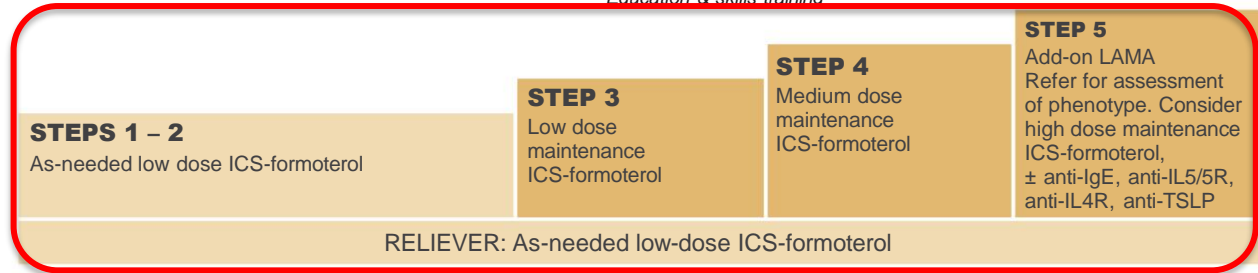
consider side-effects



> 12 ans

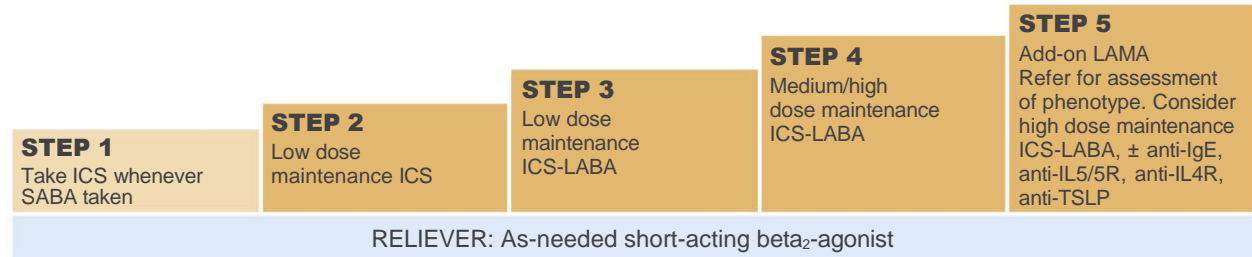


CONTROLLER and **PREFERRED RELIEVER** (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever



See GINA severe asthma guide

CONTROLLER and **ALTERNATIVE RELIEVER** (Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller



Other controller options for either track (limited indications, or less evidence for efficacy or safety)

	Low dose ICS whenever SABA taken, or daily LTRA, or add HDM SLIT	Medium dose ICS, or add LTRA, or add HDM SLIT	Add LAMA or LTRA or HDM SLIT, or switch to high dose ICS	Add azithromycin (adults) or LTRA. As last resort consider adding low dose OCS but consider side-effects
--	--	---	--	--

Et les traitements biologiques ?

TABLEAU 1		Traitements biologiques pédiatriques	
	Omalizumab	Dupilumab	Mépolizumab
Nom commercial	Xolair	Dupixent	Nucala
Cible	IgE	IL-4R α	IL-5
Âge	Dès 6 ans	Dès 6 ans	Dès 12 ans
Critères d'éligibilité	Asthme sévère avec sensibilisation aux allergènes respiratoires (prick test positif ou présence d'IgE spécifiques)	Asthme sévère avec éosinophilie $\geq 0,15$ G/l	Asthme sévère avec éosinophilie $\geq 0,15$ G/l lors de l'instauration du traitement ou $\geq 0,3$ G/l dans les 12 derniers mois
Dose, voie et fréquence d'administration	75 à 600 mg, toutes les 2 à 4 semaines, par voie sous-cutanée, en fonction du taux sérique d'IgE et du poids du patient	100 à 600 mg, toutes les 2 ou 4 semaines, par voie sous-cutanée, en fonction de l'âge, du poids et de l'association éventuelle à une dermatite atopique ou une polypose naso-sinusienne	100 mg toutes les 4 semaines
Effets attendus	Diminution du nombre d'exacerbations	Diminution du nombre d'exacerbations et amélioration de la fonction pulmonaire	Diminution du nombre d'exacerbations



QUESTIONS ?

