

Medications* can be classified as:

- **Relievers:** medications used on an as-needed basis to act quickly to reverse bronchoconstr. and its accompanying acute symptoms; Medications of choice for relief of bronchospasm during acute exacerbations of asthma and for pretreatment of exercise-induced bronchoconstrict
- **Controllers:** medications taken daily on a long-term basis to keep asthma under clinical control

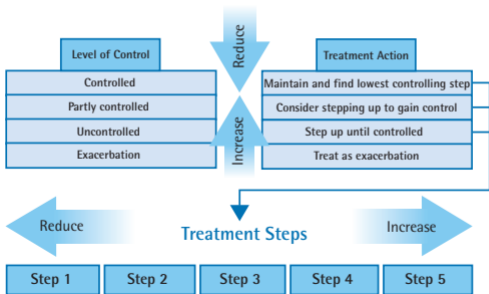
Inhaled medications are preferred and available as:

- Pressurized metered-dose inhalers (pMDIs)
- Breath-actuated metered-dose inhalers
- Dry powder inhalers (DPI)
- Nebulizers

* Global Initiative for Asthma (GINA), revised 2006

30 Treatment, Adults

(for children older than 5 years, adolescents and adults)



Management Approach Based on Control

Step 1	Step 2	Step 3	Step 4	Step 5
Asthma education/Environmental control				
As needed rapid-acting beta-2 agonist				
Controller options (preferred controller options are shown in shaded boxes)	Select one	Select one	Add one or more	Add one or both
	Low-dose inhaled ICS*	Low-dose ICS plus long-acting beta 2-agonist	Medium- or high-dose ICS plus long-acting beta-2-agonist	Oral glucocorticosteroids (lowest dose)
	Leukotriene modifier	Medium- or high-dose ICS	Leukotriene modifier	Anti-IgE treatment
		Low-dose ICS plus leukotriene modifier	Sustained release theophylline	
		Low-dose ICS plus sustained release theophylline		
* ICS = inhaled glucocorticosteroids				

32 Treatment, Adults

Step 1

As needed reliever medication

- Patients for occasional daytime symptoms (short duration)
- Rapid-acting inhaled beta-2 agonists is the recommended reliever medication
- When symptoms are more frequent, and/or worse - patients require step 2 or higher (controller treatment)

Step 2

Reliever medication *plus* a single controller

- Low dose inhaled glucocorticosteroid (recommended as initial controller for patients of all ages)
- Alternative controller medications include leukotriene modifiers (for patients unable/unwilling to use inhaled glucocorticosteroids)

Global Initiative for Asthma (GINA), revised 2006

Step 3**Reliever medication *plus* one or two controllers**

- Combine a low-dose inhaled glucocorticosteroid with an inhaled long-acting beta 2-agonist
- Inhaled long acting beta 2-agonist must not be used as monotherapy
- For children, increase to a medium-dose inhaled glucocorticosteroid

Additional Step 3 options (adults and adolescents)

- Increase to medium-dose inhaled glucocorticosteroid
- Low-dose inhaled glucocorticosteroid combined with leukotriene modifiers
- Low-dose sustained-release theophylline

Global Initiative for Asthma (GINA), revised 2006