

## American Thoracic Society (ATS) Criteria for Impairment Rating in a Patient with Asthma

Overview: The American Thoracic Society (ATS) has developed criteria for determining the level of impairment experienced by a patient with asthma. This can be used to monitor a patient and to evaluate the response to interventions.

- Parameters: (1) post-bronchodilator FEV1 relative to predicted value
- (2) change in FEV1 (reversibility) OR airway hyperresponsiveness
- (3) minimum medication needed

Parameter	Finding	Points
post-bronchodilator FEV1	> lower limit of normal	0
	70% to lower limit of normal	1
	60 – 69%	2
	50 – 59%	3
	< 50%	4
reversibility of FEV1 OR airway hyperresponsiveness	FEV1 change < 10% OR PC20 > 8 mg/mL	0
	FEV1 change 10 - 19% OR PC20 0.51 to 8 mg/mL	1
	FEV1 change 20 - 29% OR PC20 0.126 to 0.50 mg/mL	2
	FEV1 change $\geq$ 30% OR PC20 $\leq$ 0.125 mg/mL	3
minimum medication	none	0
	occasional bronchodilator not daily; occasional cromolyn not daily	1
	daily bronchodilator; daily cromolyn; low dose inhaled steroid	2
	bronchodilator on demand and daily high dose inhaled steroid or occasional course of systemic steroids	3
	bronchodilator on demand and daily high dose inhaled steroid and daily systemic steroids	4

where:

- Low dose inhaled steroid is < 800 µg beclomethasone or equivalent.
- High dose inhaled steroid is >= 800 µg beclomethasone or equivalent.
- Occasional course of systemic steroids involves 1 to 3 courses per year.
  - percent FEV1 change =  $100\% * (((FEV1 \text{ post-bronchodilator}) / (FEV1 \text{ prebronchodilator})) - 1)$
  - The calculation for PC20 (as a measure of airway responsiveness to methacholine or histamine) is given in the pulmonary chapter.

impairment score = SUM(points for the 3 parameters)

Interpretation:

- minimum score: 0
- maximum score: 11

Score	Impairment Class
0	0
1 2 or 3	I
4 5 or 6	II
7 8 or 9	III
10 or 11	IV
asthma not controlled despite maximal treatment	V

where:

- Asthma not controlled despite maximal treatment = FEV1 < 50% despite prednisone dosing at >= 20 mg/day.

References:

American Thoracic Society. Guidelines for the evaluation of impairment/disability in patients with asthma. Am Rev Respir Dis. 1993; 147: 1056-1061.

Demeter SL Andersson GBJ Smith GM. Disability Evaluation. Mosby. 1996. pages 348-349.