

1 **APPENDIX (Online Repository)****Table E1.** Intraclass correlation coefficient for ACQ between consecutive visits for stable patients.

Age 6 to 11	N	ICC
Visit		
V ₂ -V ₄	26	0.46
V ₄ -V ₅	26	0.34
V ₅ -V ₆	24	0.68
V ₆ -V ₇	24	0.66
V ₇ -V ₈	20	0.87
V ₈ -V ₉	20	0.95
Age 12 to 17		
Visit		
V ₂ -V ₄	34	0.72
V ₄ -V ₅	34	0.63
V ₅ -V ₆	30	0.70
V ₆ -V ₇	29	0.22
V ₇ -V ₈	29	0.35
V ₈ -V ₉	29	0.74

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Table E2. Correlation of ACQ to other asthma questionnaires for separate age groups.

Questionnaire	Pearson Correlation Coefficient (r)	95% CI
cACT/ACT		
6 to11	-0.57	-0.46,-0.67
12 to 17	-0.73	-0.64,-0.80
pAQLQ		
6 to11	-0.71	-0.63,-0.78
12 to 17	-0.66	-0.56,-0.74
ASUI		
6 to11	-0.74	-0.66,-0.80
12 to 17	-0.74	-0.66,-0.81

All groups were statistically significant with $P < 0.0001$.

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Table E3. Mean ACQ scores and mean differences in ACQ scores between patients with and without EPAC in prior period for separate age groups.

Ages 6-11		ACQ Mean (SD)		Difference in ACQ	
Clinical Event	#EPAC/% visits	EPAC	No EPAC	Mean (SD)	P-value
EPAC	380/46%	1.29 (0.06)	0.83 (0.05)	0.46 (0.01)	<0.0001
EPAC Components					
Decrease in PEFR	281/34%	1.30 (0.07)	0.91 (0.05)	0.39 (0.07)	<0.0001
Increase Rescue Medication Use	186/22%	1.54 (0.08)	0.89 (0.05)	0.65 (0.03)	<0.0001
Urgent Care*	58/7%	1.64 (0.12)	0.99 (0.05)	0.65 (0.07)	<0.0001
Systemic Corticosteroid	88/11%	1.55 (0.11)	0.98 (0.05)	0.57 (0.06)	<0.0001
Ages 12-17		ACQ Mean (SD)		Difference in ACQ	
Clinical Event	#EPAC/% visits	EPAC	No EPAC	Mean (SD)	P-value
EPAC	275/37%	1.33 (0.06)	1.03 (0.05)	0.30 (0.02)	<0.0001
EPAC Components					
Decrease in PEFR	177/24%	1.35 (0.08)	1.08 (0.05)	0.27 (0.04)	<0.01
Increase Rescue Medication Use	123/17%	1.50 (0.08)	1.07 (0.05)	0.43 (0.04)	<0.0001
Urgent Care*	29/4%	1.66 (0.18)	1.12 (0.05)	0.54 (0.13)	0.03
Systemic Corticosteroid	65/9%	1.43 (0.13)	1.11 (0.05)	0.32 (0.08)	0.01

* Urgent care is defined as “urgent unscheduled healthcare contact for asthma” and includes emergency department, hospital, clinic or doctor visits.

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Table E4. Mean change in ACQ scores between consecutive visits by asthma control status for separate age groups.

Status*	N	Visit Periods	Mean Change in ACQ	95% CI
Age 6 to 11				
Good Control	97	253	-0.04	-0.08, 0.01
Worsening Control	86	102	0.33	0.13, 0.53
Improved Control	91	113	-0.36	-0.51, -0.21
Continuing Poor Control	87	197	0.05	-0.02, 0.13
Age 12 to 17				
Good Control	99	294	-0.01	-0.05, 0.04
Worsening Control	69	75	0.17	0.04, 0.39
Improved Control	74	87	-0.27	-0.43, -0.12
Continuing Poor Control	61	140	0.07	-0.04, 0.18

10 *Status: Good Control= no EPAC for two consecutive visits, where EPAC is defined as $\geq 30\%$ decrease in PEF on
 11 2 consecutive days or requirement for rescue bronchodilator usage, urgent care visit, or systemic steroid therapy;
 12 Worsened Control= no EPAC prior to first visit, EPAC between first and second visit; Improved Control= EPAC
 13 prior to first visit, no EPAC between first and second visit; Continued Poor Control= EPAC before and after first
 14 visit in sequence. Differences between categories of control was significant by ANOVA ($P < 0.0001$).

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