

Frampton and Shepherd: Appendix A

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Appendix A: Symptom assessment instruments reported in randomised controlled trials of inhaled asthma drugs

Data below correspond to those summarised in manuscript Table 2. Study numbers (*in brackets*) refer to the studies as numbered in Table 1. All data tables use the following format, with supporting text provided to clarify similarities or differences between assessment instruments:

<i>Column 1:</i> A list of studies that used the assessment instrument as characterised in columns 2 and 3	<i>Column 2:</i> The numeric scale	<i>Column 3:</i> Descriptions of the response categories on the numeric scale
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Table A1. Asthma severity (day): 11 studies, 2-3 different instruments

2-3 different measurement instruments may have been used (due to differences in wording and in the number of response categories reported it is unclear whether study 14 shared the same instrument as studies 20, 45, 46, 57, 58, 78, 85).

Connolly et al. (14)	0	No symptoms
	3	Symptoms most of the time
Aubier et al. (31) Tal et al. (52) Bateman et al. (64)	0	No symptoms
	5	Severe symptoms
Basran et al. (20) Zetterström et al. (45)	0	None
	1	Mild
de Benedictis et al. (46) Lalloo et al. (57) Buhl et al. (58) Kuna et al. (78) Rabe et al. (85)	2	Moderate
	3	Severe

Table A2. Asthma severity (night): 9 studies, 2-3 different instruments

2-3 different measurement instruments may have been used (due to differences in wording and in the number of response categories reported it is unclear whether study 14 shared the same instrument as studies 20, 45, 46, 57, 58, 78, 85).

Connolly et al. (14)	0	No symptoms
	3	Symptoms most of the time
Tal et al. (52)	0	No symptoms
	5	Severe symptoms
Basran et al. (20) Zetterström et al. (45)	0	None
	1	Mild
de Benedictis et al. (46) Lalloo et al. (57) Buhl et al. (58) Kuna et al. (78) Rabe et al. (85)	2	Moderate
	3	Severe

Table A3. Asthma severity (AM): 3 studies, 2-3 different instruments

2-3 different measurement instruments may have been used (due to differences in wording of response category 3, it is unclear whether the instruments used in studies 54 and 56 were equivalent).

Kuna et al. (54)	0	No symptoms
	3	Incapacitating symptoms
Bateman et al.	0	No symptoms

(56)	3	Severe symptoms
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Molimard et al. (68)	<i>Individual symptom question from Asthma Control Questionnaire (Juniper et al. European Respiratory Journal, 1999; 14: 902-907)</i>	
	On average, during the past week, how bad were your asthma symptoms when you woke up in the morning?	
	0	No symptoms
	1	Very mild symptoms
	2	Mild symptoms
	3	Moderate symptoms
	4	Quite severe symptoms
	5	Severe symptoms
6	Very severe symptoms	

Table A4. Asthma severity (PM): 2 studies, 1-2 different instruments

1-2 different measurement instruments may have been used (due to differences in wording of response category 3, it is unclear whether the instruments used in studies 54 and 56 were equivalent).

Kuna et al. (54)	0	No symptoms
	3	Incapacitating symptoms

Bateman et al. (56)	0	No symptoms
	3	Severe symptoms

Table A5. Asthma severity ('daily'): 3 studies, 2 different instruments

Langdon & Thompson (11)	0	<i>No description provided</i>
	9	<i>No description provided</i>

Busse et al. (55) Jarjour et al. (86)	0	No symptoms
	5	Severe symptoms

Table A6. Asthma severity (timing not reported): 2 studies, 1-2 different instruments

1-2 different measurement instruments may have been used (due to incomplete reporting, it is unclear whether the instruments used in studies 1 and 26 were equivalent).

Rafferty et al. (1) (visual analogue scale)	<i>Scale not reported</i>	No symptoms
		Severe symptoms

Raphael et al. (26)	0	No asthma symptoms
	3	Severe asthma symptoms

Table A7. Asthma severity + activity (day): 16 studies, 3-14 different scales

3-14 different measurement instruments may have been used (due to differences in wording the response categories and in the number of items reported it is unclear whether studies 8, 9, 17, 21, 22, 23, 48, 63, 82, 87 shared the same instrument and whether studies 38, 73, 80 shared the same instrument).

Fabbri et al. (6) Pauwels et al. (23)	0	Very well, no symptoms
	1	A few symptoms (not troublesome)
	2	Asthma troublesome
	3	Asthma bad, not able to carry out daily activities as normal

Agertoft & Pedersen (21)	0	None (very good day, activities not restricted)
	1	Mild wheezing or breathlessness (e.g., when exercising or in a hurry but activities not restricted)
	2	Moderate (some discomfort but able to carry out most of daily activities)
	3	Severe or incapacitating (inability to attend school or do usual activities)

Ige et al. (48)	0	No asthmatic symptoms
	1	Mild asthmatic symptoms
	2	Moderate asthmatic symptoms which interfered with some activities
	3	Severe asthmatic symptoms which interfered with most activities

Schiccitano et al. (63)	0	No symptoms
	1	Aware of asthma symptoms but can easily tolerate them
	2	Asthma causing enough discomfort to cause problems with normal activities/sleep
	3	Unable to do normal activities/sleep because of asthma

Lundback et al. (8)	0	No asthma, normal unrestricted activity
	3	Asthma bad; could not go to work or do housework or carry out usual activities at all because short of breath

Gustaffson et al. (9)	0	No symptoms
	3	Unable to carry out daily activities

Lorentzen et al. (17)	0	No asthma
	3	Unable to carry out usual activities

O'Byrne et al. (71) Pohunek et al. (87)	0	No asthma symptoms
	3	Unable to undertake normal activities [or to sleep] because of symptoms

Bateman et al. (82)	0	No symptoms
	3	Symptoms so severe that patient could not perform normal daily activities

Yiallourous et al. (22)	4-point scale	<i>Severity + activity assessed but no description provided</i>
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Zietlowski et al. (83)	0	No symptoms
	4	Asthma very bad, unable to carry out daily activities as usual

Malone et al.	0	No symptoms
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(73)	5	Severe symptoms that prevented normal daily activities
Jenkins et al. (38)	0	No symptoms
Dahl et al. (80)	5	Symptoms so severe that the patient could not (go to) work or perform normal daily activities

Table A8. Asthma severity + symptom duration + activity (day): 12 studies, 3-12 different instruments

3-12 different measurement instruments may have been used (due to differences in wording the response categories it is unclear whether studies 12, 18, 24, 32, 34, 41, 44, 49, 65, 69 shared the same instrument).

Bergmann et al. (61)	0	No symptoms
	1	Symptoms for one short period during the day
	2	Symptoms for two or more short periods, which did not affect normal activity
	3	Frequent symptoms during the day, which did not affect normal activity
	4	Symptoms for most of the day which affected normal daily activity

Boe et al. (12) Ringdal et al. (18) Bateman et al. (24) Chapman et al. (32) Van den Berg et al. (41) Johansson et al. (44)	0	No symptoms during the day
	1	Symptoms for one short period during the day
	2	Symptoms for two or more short periods during the day
	3	Symptoms for most of the day which did not affect my normal daily activities
	4	Symptoms for most of the day which did affect my normal daily activities
	5	Symptoms so severe that I could not go to work or perform normal daily activities

Ringdal et al. (49)	0	No symptoms during the day
	1	Symptoms for one short period during the day
	2	Symptoms for two or more short periods during the day
	3	Symptoms for most of the day that did not affect normal daily activity
	4	Symptoms for most of the day that did affect normal daily activity
	5	Symptoms so severe that they affected work or school and normal daily activity

Aalbers et al. (65)	0	No symptoms
	1	Symptoms for one short period
	2	Symptoms for two or more short periods
	3	Symptoms for most of the day that did not affect normal daily activities
	4	Symptoms for most of the day that did affect normal daily activities
	5	Symptoms so severe that normal daily activities could not be performed

FitzGerald et al. (69)	0	No symptoms
	1	Symptoms for one short period
	2	Symptoms for two or more short periods
	3	Symptoms for most of the 24-hour period that did not affect normal activities
	4	Symptoms for most of the 24-hour period that did affect normal activities
	5	Symptoms so severe that normal activities could not be performed

Ferguson et al. (34)	0	None
	1	1 short period
	2	2 or more short periods
	3	Most of the day, activity not affected
	4	Most of the day, activity reduced
	5	Severe, unable to go to school

Horiguchi et al. (84)	<i>Mean score calculated from 4 questions using a symptom diary scale from Santanello et al. European Respiratory Journal, 1997; 10: 646-651</i>	
	(Q1) How often did you experience asthma symptoms today?	
	0	None of the time
	6	All of the time
	(Q2) How much did your asthma symptoms bother you today?	
	0	Not at all bothered
	6	Severely bothered
	(Q3) How much activity could you do today?	
	0	More than usual activity
	6	Less than usual activity
	(Q4) How often did your asthma affect your activities today?	
	0	None of the time
	6	All of the time

Table A9. Cough (day): 4 studies, 1-3 different instruments

1-3 different measurement instruments may have been used (due to differences in coding the 3-4-point numeric scales by studies 2, 13, 35 and lack of description of the response categories in study 22 it is unclear whether these studies shared the same instrument).

Tjwa (13) Jager et al. (35)	0	No symptoms
	1	Mild
	2	Moderate
	3	Severe symptoms

Ebden et al. (2)	1	None
	2	Little
	3	Moderately bad
	4	Severe

Yiallourous et al. (22)	4-point scale	<i>Cough assessed but no description provided</i>
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Table A10. Cough (night): 3 studies, 1-2 different scales

1-2 different measurement instruments may have been used (due to lack of description of the response categories in study 22 it is unclear whether this shared the same instrument as studies 13, 35).

Tjwa (13) Jager et al. (35)	0	No symptoms
	1	Mild
	2	Moderate
	3	Severe symptoms

Yiallourous et al. (22)	4-point scale	<i>Cough assessed but no description provided</i>
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Table A11. Cough (AM): 3 studies, 1 instrument

1 measurement instrument appears to have been used as there is only a minor difference between studies, in the wording of response category 2.

Bousquet et al. (37)	0	None
	1	Noticeable
O' Connor et al. (42)	2	Annoying, some interference with daily activities
	3	Very uncomfortable, interference with daily activities

Corren et al. (53)	0	None
	1	Noticeable
	2	Annoying
	3	Very uncomfortable and interfered with normal activities

Table A12. Cough (PM): 2 studies, 1 instrument

1 measurement instrument appears to have been used as there are only minor differences between studies, in the wording of response categories 2 and 3.

Bousquet et al. (37)	0	None
	1	Noticeable
	2	Annoying, some interference with daily activities
	3	Very uncomfortable, interference with daily activities

Corren et al. (53)	0	None
	1	Noticeable
	2	Annoying
	3	Very uncomfortable and interfered with normal activities

Table A13. Cough ('daily'): 2 studies, 1 instrument

Kavuru et al. (39) Shapiro et al. (40)	0	No symptoms
	5	Symptoms that severely interfered with daily activities

Table A14. Cough (24-hour period) : 2 studies, 1-2 different instruments

1-2 different measurement instruments may have been used (due to lack of description of the instrument in study 43 it is unclear whether this study shared the same instrument as study 25).

Dal Negro et al. (25)	0	None
	1	Mild
	2	Moderate
	3	Severe

Aubier et al. (43)	<i>Scale not reported</i>	<i>No description provided</i>
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Table A15. Dyspnea (day): 4 studies, 3 different instruments

Tjwa (13) Jager et al. (35)	0	No symptoms
	1	Mild
	2	Moderate
	3	Severe symptoms

Bootsma et al. (15)	0-100 visual analogue scale
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Molimard et al. (68)	<i>Individual symptom question from Asthma Control Questionnaire (Juniper et al. European Respiratory Journal, 1999; 14: 902-907)</i>	
	In general, during the past week, how much shortness of breath did you experience because of you asthma?	
	0	None
	1	A very little
	2	A little
	3	A moderate amount
	4	Quite a lot
	5	A great deal
	6	A very great deal

Table A16. Dyspnea (night) : 3 studies, 2 different instruments

Tjwa (13) Jager et al. (35)	0	No symptoms
	1	Mild
	2	Moderate
	3	Severe symptoms

Bootsma et al. (15)	0-100 visual analogue scale
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Table A17. Dyspnea (AM): 3 studies, 1 instrument

1 measurement instrument appears to have been used as there are only minor differences between studies, in the wording of response categories 2 and 3.

Bousquet et al. (37)	0	None
	1	Noticeable
O' Connor et al. (42)	2	Annoying, some interference with daily activities
	3	Very uncomfortable, interference with daily activities

Corren et al. (53)	0	None
	1	Noticeable
	2	Annoying
	3	Very uncomfortable and interfered with normal activities

Table A18. Dyspnea (PM): 2 studies, 1 instrument

1 measurement instrument appears to have been used as there are only minor differences between studies, in the wording of response categories 2 and 3.

Bousquet et al. (37)	0	None
	1	Noticeable
	2	Annoying, some interference with daily activities
	3	Very uncomfortable, interference with daily activities

Corren et al. (53)	0	None
	1	Noticeable
	2	Annoying
	3	Very uncomfortable and interfered with normal activities

Table A19. Dyspnea ('daily'): 2 studies, 1 instrument

Kavuru et al. (39) Shapiro et al. (40)	0	No symptoms
	5	Symptoms that severely interfered with daily activities

Table A20. Dyspnea (24-hour period): 2 studies, 1-2 different instruments

1-2 different measurement instruments may have been used (due to lack of description of the instrument in study 43 it is unclear whether this study shared the same instrument as study 25).

Dal Negro et al. (25)	0	None
	1	Mild
	2	Moderate
	3	Severe

Aubier et al. (43)	<i>Scale not reported</i>	<i>No description provided</i>
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Table A21. Dyspnea (timing not reported): 1 study, 1 instrument

Prasad et al. (60)	0	No dyspnea
	1	Mild dyspnea
	2	Moderate dyspnea
	3	Severe dyspnea

Table A22. Wheeze (day): 5 studies, 2-4 different instruments

2-4 different measurement instruments may have been used (due to differences in coding the 3-4-point numeric scales by studies 2, 13, 35 and lack of description of the response categories in study 22 it is unclear whether these studies shared the same instrument).

Ebden et al. (2)	1	None
	2	Little
	3	Moderately bad
	4	Severe

Tjwa (13) Jager et al. (35)	0	No symptoms
	1	Mild
	2	Moderate
	3	Severe symptoms

Molimard et al. (68)	<i>Individual symptom question from Asthma Control Questionnaire (Juniper et al. European Respiratory Journal, 1999; 14: 902-907)</i>	
	In general, during the past week, how much of the time did you wheeze?	
	0	Not at all
	1	Hardly any of the time
	2	A little of the time
	3	A moderate amount of the time
	4	A lot of the time
	5	Most of the time
6	All of the time	

Yiallourous et al. (22)	4-point scale	<i>Wheeze assessed but no description provided</i>
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Table A23. Wheeze (night): 3 studies, 1-2 different instruments

1-2 different measurement instruments may have been used (due to lack of description of the instrument in study 22 it is unclear whether this study shared the same instrument as studies 13, 35).

Tjwa (13) Jager et al. (35)	0	No symptoms
	1	Mild
	2	Moderate
	3	Severe symptoms

Yiallourous et al. (22)	4-point scale	<i>Wheeze assessed but no description provided</i>
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Table A24. Wheeze (AM): 3 studies, 1 instrument

1 measurement instrument appears to have been used as there are only minor differences between studies, in the wording of response categories 2 and 3.

Bousquet et al. (37)	0	None
	1	Noticeable
O' Connor et al. (42)	2	Annoying, some interference with daily activities
	3	Very uncomfortable, interference with daily activities

Corren et al. (53)	0	None
	1	Noticeable

	2	Annoying
	3	Very uncomfortable and interfered with normal activities

Table A25. Wheeze (PM): 2 studies, 1 instrument

1 measurement instrument appears to have been used as there are only minor differences between studies, in the wording of response categories 2 and 3.

Bousquet et al. (37)	0	None
	1	Noticeable
	2	Annoying, some interference with daily activities
	3	Very uncomfortable, interference with daily activities

Corren et al. (53)	0	None
	1	Noticeable
	2	Annoying
	3	Very uncomfortable and interfered with normal activities

Table A26. Wheeze ('daily'): 1 study, 1 instrument

Kavuru et al. (39) Shapiro et al. (40)	0	No symptoms
	5	Symptoms that severely interfered with daily activities

Table A27. Wheeze (24-hour period): 2 studies, 1-2 different instruments

1-2 different measurement instruments may have been used (due to lack of description of the instrument in study 43 it is unclear whether this study shared the same instrument as study 25).

Dal Negro et al. (25)	0	None
	1	Mild
	2	Moderate
	3	Severe

Aubier et al. (43)	<i>Scale not reported</i>	<i>No description provided</i>
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Table A28. Cough + dyspnea ('daily'): 1 study, 1 instrument

Parakh et al. (59)	<i>Scale not reported</i>	<i>No description provided</i>
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Table A29. Cough + dyspnea + wheeze ('daily'): 1 study, 1 instrument

Nathan et al. (80) (stated that used the same instrument as studies 39, 40)	0	No symptoms
	5	Symptoms so severe they interfered with daily activities

Table A30. Dyspnea + wheeze + activity (day): 2 studies, 1-2 different instruments

1-2 different measurement instruments may have been used (due to differences in wording response category 3 it is unclear whether studies 7, 16 shared the same instrument).

Barnes et al. (7)	0	None
	1	Wheezing or shortness of breath on strenuous exercise/hurrying, otherwise asthma not unduly troublesome
	2	Wheezing or shortness of breath most of the day, normal activities difficult
	3	Unable to carry out normal activities because of shortness of breath

Ayres et al. (16)	0	No asthma, normal unrestricted activity
	1	Wheezing or shortness of breath on strenuous exercise/hurrying, otherwise asthma not unduly troublesome
	2	Wheezing or shortness of breath most of the day, normal activities difficult
	3	Asthma bad, could not go to work or do housework or carry out usual activities because of shortness of breath

Table A31. Dyspnea + wheeze + activity (on exercise): 2 studies, 1-2 different instruments

1-2 different measurement instruments may have been used (due to differences in the wording of response categories it is unclear whether studies 9, 21 measured the same symptoms).

Gustaffson et al. (9)	0	Not breathless
	3	Very breathless, tight chested, and wheezy when walking; unable to run or play games

Agertoft & Pedersen (21)	0	None (can walk, run, or participate in sports and play with no problems)
	1	Mild (no problems when walking but a little wheezing and breathlessness when running, participating in sports/playing or when in a hurry; otherwise activities not restricted)
	2	Moderate (breathlessness and wheezing when walking, which worsens when running or participating in sports/playing)
	3	Severe or incapacitating (difficulties when walking and inability to run or participate in sports/play)

Table A32. Unspecified symptoms (day): 6 studies, 3-6 different instruments

2-5 different measurement instruments may have been used (due to lack of description of the instruments in studies 19, 66, 77 it is unclear whether these studies shared the same instrument as study 62 or study 75).

Hoekx et al. (19) Niphadkar et al. (66) Lundbäck et al. (77)	<i>Scale not reported</i>	<i>No description provided</i>
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Jenkins et al. (81)	0	<i>No description provided</i>
	3	<i>No description provided</i>

Zhong et al. (62)	0	<i>No description provided</i>
	5	<i>No description provided</i>

Buhl et al. (75)	0	No asthma-related symptoms
	4	Highest discomfort resulting from asthma-related symptoms

Table A33. Unspecified symptoms (night): 6 studies, 3-6 different scales

2-5 different measurement instruments may have been used (due to lack of description of the instruments in studies 19, 29, 75, 77 it is unclear whether these studies shared the same instrument).

Hoekx et al. (19) Lundbäck et al. (77)	<i>Scale not reported</i>	<i>No description provided</i>
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Jenkins et al. (81)	0	<i>No description provided</i>
	3	<i>No description provided</i>

Heinig et al. (29)	0	<i>No description provided</i>
	4	<i>No description provided</i>

Buhl et al. (75)	0	No asthma-related symptoms
	4	Highest discomfort resulting from asthma-related symptoms

Zhong et al. (62)	0	<i>No description provided</i>
	5	<i>No description provided</i>

Table A34. Unspecified symptoms (AM): 1 study, 1 instrument

Koopmans et al. (76)	0	<i>No description provided</i>
	4	<i>No description provided</i>

Table A35. Unspecified symptoms (PM): 1 study, 1 instrument

Koopmans et al. (76)	0	<i>No description provided</i>
	5	<i>No description provided</i>

Table A36. Unspecified symptoms ('daily'): 3 studies, 2-3 different instruments

2-3 different measurement instruments may have been used (due to lack of description of the instrument in study 47 it is unclear whether this was the same as used in study 10 or study 33).

Langdon & Capsey (10)	0	<i>No description provided</i>
	3	<i>No description provided</i>

Rao et al. (33)	0	<i>No description provided (scale = sum of 0-2 day, 0-2 night, 0-2 activity)</i>
	6	

Szeffler et al. (47)	<i>Scale not reported</i>	<i>No description provided</i>
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Table A37. Unspecified symptoms (timing not reported): 2 studies, 1-2 different instruments
 1-2 different measurement instruments may have been used (due to lack of description of the instrument in study 72 it is unclear whether this was the same as used in study 29).

Heinig et al. (29)	0	<i>No description provided</i>
	5	<i>No description provided</i>
Altintas et al. (72)	<i>Scale not reported</i>	<i>No description provided</i>

Table A38. Waking due to asthma severity (night): 15 studies, 2-15 different scales
 2-15 different measurement instruments may have been used (due to differences in wording the response categories it is unclear whether studies 21, 48, 71, 82 87 shared the same 4-point instrument and whether studies 12, 18, 24, 32, 34, 41, 44, 49, 61, 80 shared the same 5-point instrument).

Agertoft & Pedersen (21)	0	None (peaceful night, slept well)
	1	Mild (peaceful night but woke once or woke early because of asthma symptoms)
	2	Moderate (woke two or three times because of asthma symptoms)
	3	Severe (awake most of the night because of asthma symptoms)
Ige et al. (48) (Same wording used for day activity & night waking)	0	No asthmatic symptoms
	1	Mild asthmatic symptoms
	2	Moderate asthmatic symptoms which interfered with some activities
	3	Severe asthmatic symptoms which interfered with most activities
O'Byrne et al. (71) Pohunek et al. (87)	0	No asthma symptoms
	3	Unable to undertake normal activities [or to sleep] because of symptoms
Bateman et al. (82)	0	No symptoms
	3	Symptoms so severe that patient did not sleep at all
Boe et al. (12) Ringdal et al. (18) Bateman et al. (24) Chapman et al. (32) van den Berg et al. (41) Johansson et al. (44) Ringdal et al. (49)	0	No symptoms during the night
	1	Symptoms causing you/the patient to wake once or to wake early
	2	Symptoms causing you/the patient to wake twice or more (including waking early)
	3	Symptoms causing you/the patient to be awake for most of the night
	4	Symptoms so severe that you/the patient did not sleep at all

Bergmann et al. (61)		
Ferguson et al. (34)	0	None
	1	Wakened once
	2	Wakened 2 or more times
	3	Awake most of the night
	4	Severe, unable to sleep
Dahl et al. (80)	0	No symptoms
	4	Symptoms so severe that the patient was unable to sleep

Table A39. Waking due to cough or asthma (night): 2 studies, 1 instrument

Fabbri et al. (6) Pauwels et al. (23)	0	Slept through the night
	1	Slept well, woken early or once by asthma or cough
	2	Woken 2 or 3 times by cough or asthma
	3	Bad night, kept awake most of the night by asthma

Table A40. Waking due to cough, dyspnea or wheeze (night): 4 studies, 1-2 different instruments

1-2 different measurement instruments may have been used (for studies 5, 7, 16 differences in the wording of response categories appear minor, suggesting 1 instrument was used in these studies; study 8 did not report all response categories and it is unclear whether it shared the same instrument).

Fitzgerald et al. (5) Barnes et al. (7)	0	None
	1	Symptoms caused by waking once or early
	2	Woken 2 or 3 times by cough, wheeze, breathlessness or asthma
	3	Awake most of the night with cough, wheeze, breathlessness or asthma

Ayres et al. (16)	0	Good night, slept well, no asthma
	1	Good night, slept well but woke early with wheeze or cough
	2	Woken 2 or 3 times by cough, wheeze, breathlessness or asthma
	3	Bad night, awake most of the night with cough, wheeze, breathlessness or asthma

Lundback et al. (8)	0	Good night, slept well, no asthma
	3	Bad night, awake most of the night with cough, wheeze, breathlessness or asthma

Table A41. Waking due to unspecified symptoms (night): 10 studies, 4-10 different scales

4-10 different measurement instruments may have been used (due to differences in wording and lack of reporting response categories it is unclear whether studies 9, 17, 21, 31, 63 shared the same 4-point instrument, whether studies 38, 83 shared the same 5-point instrument and whether study 43 shared a 4- or 5-point instrument).

Agertoft & Pedersen (21)	0	None (peaceful night, slept well)
	1	Mild (peaceful night but woke once or early because of asthma symptoms)
	2	Moderate (woke two or three times because of asthma symptoms)
	3	Severe (awake most of the night because of asthma symptoms)

Schiccitano et al. (63)	0	No symptoms
	1	Aware of asthma symptoms but can easily tolerate them
	2	Asthma causing enough discomfort to cause problems with normal activities/sleep
	3	Unable to do normal activities/sleep because of asthma

Gustaffson et al. (9)	0	Slept through the night
	3	Awake most of the night

Lorentzen et al. (17)	0	Slept well, no asthma
	3	Awake most of the night

Aubier et al. (31)	0	No symptoms
	3	Symptoms preventing and sleep [sic]

Jenkins et al. (38)	0	No symptoms
	4	Unable to sleep at all because of asthma symptoms

Zietlowski et al. (83)	0	No symptoms
	4	Bad night, awake most of the night because of asthma

Molimard et al. (68)	<i>Individual symptom question from Asthma Control Questionnaire (Juniper et al. European Respiratory Journal, 1999; 14: 902-907)</i>	
	On average, during the past week, how often were you woken by your asthma during the night?	
	0	Never
	1	Hardly ever
	2	A few minutes
	3	Several times
	4	Many times
	5	A great many times
6	Unable to sleep because of asthma	

Horiguchi et al. (84)	<i>Symptom diary scale from Santanello et al. European Respiratory Journal, 1997; 10: 646-651.</i>	
	Did you wake up with asthma symptoms. (This can be awakening in the middle of the night or on awakening in the morning)?	
	0	No
	1	Once
	2	More than once
3	Awake "all night"	

Aubier et al. (43)	Scale not	Assessed sleep disturbance but no description provided
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**Table A42. Waking + dyspnea + wheeze + asthma severity + activity (24-hour period):
2 studies, 2 different instruments**

Vogelmeier et al. (70)	<p><i>Score calculated from symptoms section of ACQ-5 Asthma Control Questionnaire (Juniper et al. American Journal of Respiratory & Critical Care Medicine, 2000; 162: 1330-1334)</i></p>
	(Q1) On average, during the past week, how often were you woken by your asthma during the night?
	1 Hardly ever
	2 A few times
	3 Several times
	4 Many times
	5 A great many times
	6 Unable to sleep because of asthma
	(Q2) On average, during the past week, how bad were your asthma symptoms when you woke up in the morning?
	0 No symptoms
	1 Very mild symptoms
	2 Mild symptoms
	3 Moderate symptoms
	4 Quite severe symptoms
	5 Severe symptoms
	6 Very severe symptoms
	(Q3) In general, during the past week, how limited were you in your activities because of your asthma?
	0 Not limited at all
	1 Very slightly limited
	2 Slightly limited
	3 Moderately limited
	4 Very limited
	5 Extremely limited
	6 Totally limited
	(Q4) In general, during the past week, how much shortness of breath did you experience because of your asthma?
	0 None
	1 A very little
	2 A little
	3 A moderate amount
	4 Quite a lot
	5 A great deal
	6 A very great deal
	(Q5) In general, during the past week, how much of the time did you wheeze?
	0 Not at all
	1 Hardly any of the time
	2 A little of the time
	3 A moderate amount of the time
	4 A lot of the time
	5 Most of the time
	6 All the time

Rosenhall et al. (50)	<i>Score calculated from symptoms section of mini Asthma Quality of Life Questionnaire (miniAQLQ) (Juniper et al. European Respiratory Journal, 1999; 14 : 32-38)</i>
	(Q1) In general, how much of the time during the last 2 weeks did you feel short of breath as a result of your asthma?
	(Q2) In general, how much of the time during the last 2 weeks did you feel bothered by coughing?
	(Q3) In general, how much of the time during the last 2 weeks did you experience a feeling of chest tightness or chest heaviness?
	(Q4) In general, how much of the time during the last 2 weeks did you have difficulty getting a good night's sleep as a result of your asthma?
	(Q5) In general, how much of the time during the last 2 weeks did you experience a wheeze in your chest?
	0 All of the time
	1 Most of the time
	2 A good bit of the time
	3 Some of the time
	4 A little of the time
	5 Hardly any of the time
	6 None of the time
	7 All of the time