

Appendix A. Detailed search strategy

The following search strategy was used in OVID MEDLINE. In fact, interim searches were performed during the writing of the Technology assessment, because additional questions were added in the meanwhile. The current strategy yields all citations that were identified with the interim searches. The last search was conducted on 28 February 2007.

Appendix Table 1. Detailed search strategy for OVID MEDLINE

Number	Search Terms
1	exp Sleep apnea, Obstructive/ or exp Sleep Apnea Syndromes/
2	Airway resistance.mp.
3	exp snoring/
4	Upper airway resistance syndrome.mp.
5	Respiratory disturbance.mp.
6	or/1-5
7	exp Continuous Positive Airway Pressure/ or CPAP.mp.
8	exp Polysomnography/
9	Polysomnography.tw.
10	polysomnograph\$.tw.
11	psg.tw.
12	exp Oximetry/
13	exp Monitoring, Physiologic/
14	autoset.mp.
15	or/8-14
16	6 and 15
17	exp "sensitivity and specificity"/
18	exp Predictive Value of tests/
19	exp ROC curve/
20	exp Mass Screening/
21	exp diagnosis/
22	exp reproducibility of results/
23	exp false negative reactions/ or false positive reactions/
24	Predictive value.tw.
25	(sensitivity or specificity).tw.
26	Accuracy.tw.
27	Screen\$.tw.
28	Diagno\$.tw.
29	Roc\$.tw.
30	Reproducib\$.tw.
31	(false positive or false negative).tw.
32	Likelihood ratio.tw.
33	di.fs.
34	or/17-33
35	exp Evaluation Studies/

Number	Search Terms
36	or/34-35
37	36 and 16
38	limit 37 to (addresses or bibliography or biography or case reports or congresses or consensus development conference or consensus development conference, nih or dictionary or directory or editorial or festschrift or government publications or interview or lectures or legal cases or legislation or news or newspaper article or overall or patient education handout or periodical index)
39	37 not 38
40	limit 39 to human
41	limit 40 to english language
42	limit 41 to "all adult (19 plus years)"
43	41 not 42
44	limit 43 to "all child (0 to 18 years)"
45	41 not 44
46	remove duplicates from 45

Appendix B. Data extraction forms used in the technology assessment

The generic data extraction form and the data extraction form for studies that were assessed for errors, data loss, harms and adverse events are shown in the following pages.

Generic data extraction form

A. Study description and applicability to Medicare population

Author, Year Country (UI)	N _{tot}	Mean age (Range)	~%≥65 yr	Male (%)	Sampling population ^A	Recruitment method ^B	Eligibility criteria

^A Patients representative of the general population? Patients referred to a specialized center? [However defined] high-risk patients?

^B Consecutive patients, random sampling, case series/convenience sample

B. Participant characteristics and baseline “severity/risk”

Author, Year Country (UI)	Mean BMI (Range)	Mean PSG AHI [RDI] (Range)	PSG AHI ≥15 [RDI≥15] (%)	COPD (%)	Symptoms ^A (%)	Comorbidities

^A Day fatigue and somnolence; or other obstructive-sleep apnea (OSA)-related, as characterized by authors

AHI: Apnea-hypopnea index; PSG: Polysomnography (facility-based); RDI: respiratory distress index

C. Description of facility-based polysomnography and portable device monitoring (whatever is applicable)

	PSG	PSG	PSG	Portab le	Portable	Portable	Portab le	Portable	Portabl e
Author, Year Country (UI)	Equipment	Channels ^A	Setting	Type	Name (equipment)	Channels ^A	Setting and timing	Attended	Hookup

^A Describe Flow and Effort channels / indicate nd if not described in the study

D. Interpretation of facility-based polysomnography and portable device monitoring (whatever is applicable)

	PSG	PSG	PSG	PSG	Portable	Portable	Portable	Portable
Author, Year Country (UI)	Scoring ^A	Definition of breathing event ^B	Denominator	Rater experience	Scoring ^A	Definition of breathing event ^B	Denominator	Rater experience

^A Manual, combined manual and automated, or automated; or other description

^B Indicate primary criteria and secondary criteria if they exist

Data extraction form for studies that were assessed for errors, data loss, harms and adverse events

Author, Year Country (UI)	Sleep study (Comparison) ^A	Attended	Hookup	N total	Errors, general	Errors from unattended use	Errors from automated scoring

^A Just state if the comparators if study is a comparative one; Report details of the channels gathered as in the other form

Author, Year Country (UI)	Sleep study (Comparison) ^A	Attended	Hookup	N total	% Data loss overall	Data loss details ^B	Comment

^A Just state if the comparators if study is a comparative one; Report details of the channels gathered as in the other form

^B State in separate lines data loss in laboratory PSG and portable; if given, also in separate lines data loss per channel

Author, Year Country (UI)	Sleep study (Comparison) ^A	Attended	Hookup	N total	% Harms	Harms and complications details ^B	Comment

^A Just state if the comparators if study is a comparative one; Report details of the channels gathered as in the other form

^B State in separate lines harms in laboratory PSG and portable, and define them in the details box

REMEMBER:

NO RETROSPECTIVE STUDIES

A STUDY REPORTING NOTHING AT ALL DOES NOT QUALIFY; IF STUDY ASSESSED E.G. FOR ERRORS BUT FOUND NONE, STUDY QUALIFIES

Appendix C. Table of eligible studies

The following 95 citations have been deemed eligible after full text review. They are listed in alphabetical order (by first author's surname).

Appendix C Table. Citations of included publications

ID	Citation	PMID
1.	Adachi, H., Mikami, A., Kumano-go, T., Suganuma, N., Matsumoto, H., Shigedo, Y., Sugita, Y., and Takeda, M. Clinical significance of pulse rate rise during sleep as a screening marker for the assessment of sleep fragmentation in sleep-disordered breathing.[see comment]. <i>Sleep Medicine</i> 2003. 4 (6):537-542.	14607348
2.	Alvarez, D., Hornero, R., Abasolo, D., del Campo F., and Zamarron, C. Nonlinear characteristics of blood oxygen saturation from nocturnal oximetry for obstructive sleep apnoea detection. <i>Physiological Measurement</i> 2006. 27 (4):399-412.	16537981
3.	Ancoli-Israel, S., Mason, W., Coy, T. V., Stepnowsky, C., Clausen, J. L., and Dimsdale, J. Evaluation of sleep disordered breathing with unattended recording: the Nightwatch System. <i>Journal of Medical Engineering & Technology</i> 1997. 21 (1):10-14.	9080356
4.	Andreas, S., von, Breska B., Magnusson, K., and Kreuzer, H. Validation of automated sleep stage and apnoea analysis in suspected obstructive sleep apnoea. <i>European Respiratory Journal</i> 1993. 6 (1):48-52.	8425594
5.	Ayappa, I., Norman, R. G., Suryadevara, M., and Rapoport, D. M. Comparison of limited monitoring using a nasal-cannula flow signal to full polysomnography in sleep-disordered breathing. <i>Sleep</i> 2004. 27 (6):1171-1179.	15532212
6.	Ayas, N. T., Pittman, S., MacDonald, M., and White, D. P. Assessment of a wrist-worn device in the detection of obstructive sleep apnea. <i>Sleep Medicine</i> 2003. 4 (5):435-442.	14592285
7.	Bagnato, M. C., Nery, L. E., Moura, S. M., Bittencourt, L. R., and Tufik, S. Comparison of AutoSet and polysomnography for the detection of apnea-hypopnea events. <i>Brazilian Journal of Medical & Biological Research</i> 2000. 33 (5):515-519.	10775882
8.	Ballester, E., Solans, M., Vila, X., Hernandez, L., Quinto, L., Bolivar, I., Bardagi, S., and Montserrat, J. M. Evaluation of a portable respiratory recording device for detecting apnoeas and hypopnoeas in subjects from a general population. <i>European Respiratory Journal</i> 2000. 16 (1):123-127.	10933097
9.	Baltzan, M. A., Verschelden, P., Al-Jahdali, H., Olha, A. E., and Kimoff, R. J. Accuracy of oximetry with thermistor (OxiFlow) for diagnosis of obstructive sleep apnea and hypopnea. <i>Sleep</i> 2000. 23 (1):61-69.	10678466
10.	Bar, A., Pillar, G., Dvir, I., Sheffy, J., Schnall, R. P., and Lavie, P. Evaluation of a portable device based on peripheral arterial tone for unattended home sleep studies.[see comment]. <i>Chest</i> 2003. 123 (3):695-703.	12628865
11.	Bearpark, H., Elliott, L., Grunstein, R., Cullen, S., Schneider, H., Althaus, W., and Sullivan, C. Snoring and sleep apnea. A population study in Australian men. <i>American Journal of Respiratory & Critical Care Medicine</i> 1995. 151 (5):1459-1465.	7735600
12.	Bennett, L. S., Langford, B. A., Stradling, J. R., and Davies, R. J. Sleep fragmentation indices as predictors of daytime sleepiness and nCPAP response in obstructive sleep apnea. <i>Am J Respir.Crit Care Med.</i> 1998. 158 (3):778-786.	9731004
13.	Bonsignore, G., Marrone, O., Macaluso, C., Salvaggio, A., Stallone, A., and Bellia, V. Validation of oximetry as a screening test for obstructive sleep apnoea syndrome. <i>European Respiratory Journal - Supplement</i> 1990. 11:542s-544s.	2278624
14.	Bradley, P. A., Mortimore, I. L., and Douglas, N. J. Comparison of polysomnography with ResCare Autoset in the diagnosis of the sleep apnoea/hypopnoea syndrome. <i>Thorax</i> 1995. 50 (11):1201-1203.	8553279
15.	Calleja, J. M., Esnaola, S., Rubio, R., and Duran, J. Comparison of a cardiorespiratory device versus polysomnography for diagnosis of sleep apnoea. <i>European Respiratory Journal</i> 2002. 20 (6):1505-1510.	12503711
16.	Carrasco, O., Montserrat, J. M., Lloberes, P., Ascasco, C., Ballester, E., Fornas, C., and Rodriguez-Roisin, R. Visual and different automatic scoring profiles of respiratory variables in the diagnosis of sleep apnoea-hypopnoea syndrome. <i>European Respiratory Journal</i> 1996. 9 (1):125-130.	8834345
17.	Chiner, E., Signes-Costa, J., Arriero, J. M., Marco, J., Fuentes, I., and Sergado, A. Nocturnal	10525553

ID	Citation	PMID
	oximetry for the diagnosis of the sleep apnoea hypopnoea syndrome: a method to reduce the number of polysomnographies?[see comment]. <i>Thorax</i> 1999. 54 (11):968-971.	
18.	Claman D, Murr A, Trotter K. Clinical validation of the Bedbug in detection of obstructive sleep apnea. <i>Otolaryngol Head Neck Surg</i> 2001; 125(3):227-230.	
19.	Cooper, B. G., Veale, D., Griffiths, C. J., and Gibson, G. J. Value of nocturnal oxygen saturation as a screening test for sleep apnoea. <i>Thorax</i> 1991. 46 (8):586-588.	1926029
20.	d'Ortho, M. P., Grillier-Lanoir, V., Levy, P., Goldenberg, F., Corriger, E., Harf, A., and Lofaso, F. Constant vs. automatic continuous positive airway pressure therapy: home evaluation. <i>Chest</i> 2000. 118 (4):1010-1017.	11035671
21.	Dingli, K., Coleman, E. L., Vennelle, M., Finch, S. P., Wraith, P. K., Mackay, T. W., and Douglas, N. J. Evaluation of a portable device for diagnosing the sleep apnoea/hypopnoea syndrome. <i>European Respiratory Journal</i> 2003. 21 (2):253-259.	12608438
22.	Douglas, N. J., Thomas, S., and Jan, M. A. Clinical value of polysomnography.[see comment]. <i>Lancet</i> 1992. 339 (8789):347-350.	1346422
23.	Emsellem, H. A., Corson, W. A., Rappaport, B. A., Hackett, S., Smith, L. G., and Hausfeld, J. N. Verification of sleep apnea using a portable sleep apnea screening device. <i>Southern Medical Journal</i> 1990. 83 (7):748-752.	2371595
24.	Esnaola, S., Duran, J., Infante-Rivard, C., Rubio, R., and Fernandez, A. Diagnostic accuracy of a portable recording device (MESAM IV) in suspected obstructive sleep apnoea. <i>European Respiratory Journal</i> 1996. 9 (12):2597-2605.	8980975
25.	Ficker JH, Wiest GH, Wilpert J, Fuchs FS, Hahn EG. Evaluation of a portable recording device (Somnocheck) for use in patients with suspected obstructive sleep apnoea. <i>Respiration</i> 2001; 68(3):307-312.	11416253
26.	Fietze, I., Glos, M., Rottig, J., and Witt, C. Automated analysis of data is inferior to visual analysis of ambulatory sleep apnea monitoring. <i>Respiration</i> 2002. 69 (3):235-241.	12097767
27.	Flemons, W. W., Whitelaw, W. A., Brant, R., and Remmers, J. E. Likelihood ratios for a sleep apnea clinical prediction rule. <i>American Journal of Respiratory & Critical Care Medicine</i> 1994. 150 (5:Pt 1):t-85.	7952553
28.	Fleury, B., Rakotonanahary, D., Hausser-Hauw, C., Lebeau, B., and Guilleminault, C. A laboratory validation study of the diagnostic mode of the Autoset system for sleep-related respiratory disorders.[erratum appears in <i>Sleep</i> 1996 Sep;19(7):601]. <i>Sleep</i> 1996. 19 (6):502-505.	8865509
29.	Fry, J. M., DiPhillipo, M. A., Curran, K., Goldberg, R., and Baran, A. S. Full polysomnography in the home. <i>Sleep</i> 1998. 21 (6):635-642.	9779523
30.	Gagnadoux, F., Pelletier-Fleury, N., Philippe, C., Rakotonanahary, D., and Fleury, B. Home unattended vs hospital telemonitored polysomnography in suspected obstructive sleep apnea syndrome: a randomized crossover trial. <i>Chest</i> 2002. 121 (3):753-758.	11888956
31.	Golpe, R., Jimenez, A., and Carpizo, R. Home sleep studies in the assessment of sleep apnea/hypopnea syndrome. <i>Chest</i> 2002. 122 (4):1156-1161.	12377836
32.	Gugger, M. Comparison of ResMed AutoSet (version 3.03) with polysomnography in the diagnosis of the sleep apnoea/hypopnoea syndrome. <i>European Respiratory Journal</i> 1997. 10 (3):587-591.	9072989
33.	Gugger, M., Mathis, J., and Bassetti, C. Accuracy of an intelligent CPAP machine with in-built diagnostic abilities in detecting apnoeas: a comparison with polysomnography. <i>Thorax</i> 1995. 50 (11):1199-1201.	8553278
34.	Gurubhagavatula, I., Maislin, G., Nkwuo, J. E., and Pack, A. I. Occupational screening for obstructive sleep apnea in commercial drivers. <i>American Journal of Respiratory & Critical Care Medicine</i> 2004. 170 (4):371-376.	15142866
35.	Gyulay, S., Gould, D., Sawyer, B., Pond, D., Mant, A., and Saunders, N. Evaluation of a microprocessor-based portable home monitoring system to measure breathing during sleep. <i>Sleep</i> 1987. 10 (2):130-142.	3589326
36.	Hedner, J., Pillar, G., Pittman, S. D., Zou, D., Grote, L., and White, D. P. A novel adaptive wrist actigraphy algorithm for sleep-wake assessment in sleep apnea patients. <i>Sleep</i> 2004. 27 (8):1560-1566.	15683148
37.	Hermida, R. C., Zamarron, C., Ayala, D. E., and Calvo, C. Effect of continuous positive airway pressure on ambulatory blood pressure in patients with obstructive sleep apnoea. <i>Blood Pressure Monitoring</i> 2004. 9 (4):193-202.	15311146
38.	Iber, C., Redline, S., Kaplan Gilpin, A. M., Quan, S. F., Zhang, L., Gottlieb, D. J., Rapoport, D., Resnick, H. E., Sanders, M., and Smith, P. Polysomnography performed in the unattended home versus the attended laboratory setting--Sleep Heart Health Study methodology. <i>Sleep</i> 2004. 27 (3):536-540.	15164911

ID	Citation	PMID
39.	Ip, M. S., Lam, B., Tang, L. C., Lauder, I. J., Ip, T. Y., and Lam, W. K. A community study of sleep-disordered breathing in middle-aged Chinese women in Hong Kong: prevalence and gender differences. <i>Chest</i> 2004. 125 (1):127-134.	14718431
40.	Issa, F. G., Morrison, D., Hadjuk, E., Iyer, A., Feroah, T., and Remmers, J. E. Digital monitoring of sleep-disordered breathing using snoring sound and arterial oxygen saturation. <i>American Review of Respiratory Disease</i> 1993. 148 (4:Pt 1):t-9.	8214920
41.	Kapur, V. K., Rapoport, D. M., Sanders, M. H., Enright, P., Hill, J., Iber, C., and Romaniuk, J. Rates of sensor loss in unattended home polysomnography: the influence of age, gender, obesity, and sleep-disordered breathing. <i>Sleep</i> 2000. 23 (5):682-688.	10947036
42.	Kiely, J. L., Delahunty, C., Matthews, S., and McNicholas, W. T. Comparison of a limited computerized diagnostic system (ResCare Autoset) with polysomnography in the diagnosis of obstructive sleep apnoea syndrome. <i>European Respiratory Journal</i> 1996. 9 (11):2360-2364.	8947086
43.	Koziej, M., Cieslicki, J. K., Gorzelak, K., Sliwinski, P., and Zielinski, J. Hand-scoring of MESAM 4 recordings is more accurate than automatic analysis in screening for obstructive sleep apnoea. <i>European Respiratory Journal</i> 1994. 7 (10):1771-1775.	7828683
44.	Levy, P., Pepin, J. L., schaux-Blanc, C., Paramelle, B., and Brambilla, C. Accuracy of oximetry for detection of respiratory disturbances in sleep apnea syndrome. <i>Chest</i> 1996. 109 (2):395-399.	8620711
45.	Lloberes, P., Marti, S., Sampol, G., Roca, A., Sagales, T., Munoz, X., and Ferrer, M. Predictive factors of quality-of-life improvement and continuous positive airway pressure use in patients with sleep apnea-hypopnea syndrome: study at 1 year. <i>Chest</i> 2004. 126 (4):1241-1247.	15486388
46.	Lloberes, P., Montserrat, J. M., Ascaso, A., Parra, O., Granados, A., Alonso, P., Vilaseca, I., and Rodriguez-Roisin, R. Comparison of partially attended night time respiratory recordings and full polysomnography in patients with suspected sleep apnoea/hypopnoea syndrome. <i>Thorax</i> 1996. 51 (10):1043-1047.	8977607
47.	Man, G. C. and Kang, B. V. Validation of a portable sleep apnea monitoring device. <i>Chest</i> 1995. 108 (2):388-393.	7634872
48.	Margel, D., Cohen, M., Livne, P. M., and Pillar, G. Severe, but not mild, obstructive sleep apnea syndrome is associated with erectile dysfunction. <i>Urology</i> 2004. 63 (3):545-549.	15028455
49.	Marrone, O., Salvaggio, A., Bonsignore, M. R., Insalaco, G., and Bonsignore, G. Blood pressure responsiveness to obstructive events during sleep after chronic CPAP. <i>European Respiratory Journal</i> 2003. 21 (3):509-514.	12662010
50.	Marrone, O., Salvaggio, A., Insalaco, G., Bonsignore, M. R., and Bonsignore, G. Evaluation of the POLYMESAM system in the diagnosis of obstructive sleep apnea syndrome. <i>Monaldi Archives for Chest Disease</i> 2001. 56 (6):486-490.	11980277
51.	Masa, J. F., Rubio, M., and Findley, L. J. Habitually sleepy drivers have a high frequency of automobile crashes associated with respiratory disorders during sleep. <i>American Journal of Respiratory & Critical Care Medicine</i> 2000. 162 (4:Pt 1):t-12.	11029353
52.	Mayer, P., Meurice, J. C., Philip-Joet, F., Cornette, A., Rakotonanahary, D., Meslier, N., Pepin, J. L., Levy, P., and Veale, D. Simultaneous laboratory-based comparison of ResMed Autoset with polysomnography in the diagnosis of sleep apnoea/hypopnoea syndrome. <i>European Respiratory Journal</i> 1998. 12 (4):770-775.	9817143
53.	Mehra, R. and Strohl, K. P. Incidence of serious adverse events during nocturnal polysomnography.[see comment]. <i>Sleep</i> 2004. 27 (7):1379-1383.	15586791
54.	Michaelson, P. G., Allan, P., Chaney, J., Mair, E. A. Validations of a portable home sleep study with twelve-lead polysomnography: comparisons and insights into a variable gold standard. <i>Annals of Otolaryngology, Rhinology & Laryngology</i> 2006; 115 (11):802-809.	17165661
55.	Middelkoop, H. A., Knuistingh, Neven A., van Hilten, J. J., Ruwhof, C. W., and Kamphuisen, H. A. Wrist actigraphic assessment of sleep in 116 community based subjects suspected of obstructive sleep apnoea syndrome. <i>Thorax</i> 1995. 50 (3):284-289.	7660344
56.	Mykityn, I. J., Sajkov, D., Neill, A. M., and McEvoy, R. D. Portable computerized polysomnography in attended and unattended settings. <i>Chest</i> 1999. 115 (1):114-122.	9925071
57.	Neven, A. K., Middelkoop, H. A., Kemp, B., Kamphuisen, H. A., and Springer, M. P. The prevalence of clinically significant sleep apnoea syndrome in The Netherlands. <i>Thorax</i> 1998. 53 (8):638-642.	9828848
58.	Nosedá, A., Jann, E., Hoffmann, G., Linkowski, P., and Kerkhofs, M. Compliance with nasal continuous positive airway pressure assessed with a pressure monitor: pattern of use and influence of sleep habits. <i>Respiratory Medicine</i> 2000. 94 (1):76-81.	10714483
59.	Nosedá, A., Kempnaers, C., Kerkhofs, M., Houben, J. J., and Linkowski, P. Sleep apnea after 1 year domiciliary nasal-continuous positive airway pressure and attempted weight reduction. Potential for weaning from continuous positive airway pressure. <i>Chest</i> 1996. 109	8549176

ID	Citation	PMID
	(1):138-143.	
60.	Orr, W. C., Eiken, T., Pegram, V., Jones, R., and Rundell, O. H. A laboratory validation study of a portable system for remote recording of sleep-related respiratory disorders. <i>Chest</i> 1994. 105 (1):160-162.	8275725
61.	Overland, B., Bruskeland, G., Akre, H., and Skatvedt, O. Evaluation of a portable recording device (Reggie) with actimeter and nasopharyngeal/esophagus catheter incorporated. <i>Respiration</i> 2005. 72 (6):600-605.	15988172
62.	Pang, K. P., Dillard, T. A., Blanchard, A. R., Gourin, C. G., Podolsky, R., and Terris, D. J. A comparison of polysomnography and the SleepStrip in the diagnosis of OSA. <i>Otolaryngology - Head & Neck Surgery</i> 2006; 135 (2):265-268.	16890080
63.	Parra, O., Garcia-Escasans, N., Montserrat, J. M., Garcia, Eroles L., Ruiz, J., Lopez, J. A., Guerra, J. M., and Sopena, J. J. Should patients with sleep apnoea/hypopnoea syndrome be diagnosed and managed on the basis of home sleep studies?[see comment]. <i>European Respiratory Journal</i> 1997. 10 (8):1720-1724.	9272909
64.	Penzel, T., Kesper, K., Pinnow, I., Becker, H. F., and Vogelmeier, C. Peripheral arterial tonometry, oximetry and actigraphy for ambulatory recording of sleep apnea. <i>Physiological Measurement</i> 2004. 25 (4):1025-1036.	15382839
65.	Pepin, J. L., Levy, P., Lepaulle, B., Brambilla, C., and Guilleminault, C. Does oximetry contribute to the detection of apneic events? Mathematical processing of the SaO2 signal. <i>Chest</i> 1991. 99 (5):1151-1157.	2019170
66.	Pillar, G., Bar, A., Betito, M., Schnall, R. P., Dvir, I., Sheffy, J., and Lavie, P. An automatic ambulatory device for detection of AASM defined arousals from sleep: the WP100. <i>Sleep Medicine</i> 2003. 4 (3):207-212.	14592323
67.	Pittman, S. D., Ayas, N. T., MacDonald, M. M., Malhotra, A., Fogel, R. B., and White, D. P. Using a wrist-worn device based on peripheral arterial tonometry to diagnose obstructive sleep apnea: in-laboratory and ambulatory validation. <i>Sleep</i> 2004. 27 (5):923-933.	15453551
68.	Pittman, S. D., MacDonald, M. M., Fogel, R. B., Malhotra, A., Todros, K., Levy, B., Geva, A. B., and White, D. P. Assessment of automated scoring of polysomnographic recordings in a population with suspected sleep-disordered breathing. <i>Sleep</i> 2004. 27 (7):1394-1403.	15586793
69.	Portier, F., Portmann, A., Czernichow, P., Vascaut, L., Devin, E., Benhamou, D., Cuvelier, A., and Muir, J. F. Evaluation of home versus laboratory polysomnography in the diagnosis of sleep apnea syndrome. <i>American Journal of Respiratory & Critical Care Medicine</i> 2000. 162 (3:Pt 1):t-8.	10988088
70.	Quintana-Gallego, E., Villa-Gil, M., Carmona-Bernal, C., Botebol-Benhamou, G., Martinez-Martinez, A., Sanchez-Armengol, A., Polo-Padillo, J., and Capote, F. Home respiratory polygraphy for diagnosis of sleep-disordered breathing in heart failure. <i>European Respiratory Journal</i> 2004. 24 (3):443-448.	15358704
71.	Rauscher, H., Popp, W., and Zwick, H. Quantification of sleep disordered breathing by computerized analysis of oximetry, heart rate and snoring. <i>European Respiratory Journal</i> 1991. 4 (6):655-659.	1889491
72.	Rauscher, H., Popp, W., and Zwick, H. Model for investigating snorers with suspected sleep apnoea. <i>Thorax</i> 1993. 48 (3):275-279.	8497828
73.	Redline, S., Tosteson, T., Boucher, M. A., and Millman, R. P. Measurement of sleep-related breathing disturbances in epidemiologic studies. Assessment of the validity and reproducibility of a portable monitoring device. <i>Chest</i> 1991. 100 (5):1281-1286.	1935282
74.	Rees, K., Wraith, P. K., Berthon-Jones, M., and Douglas, N. J. Detection of apnoeas, hypopnoeas and arousals by the AutoSet in the sleep apnoea/hypopnoea syndrome. <i>European Respiratory Journal</i> 1998. 12 (4):764-769.	9817142
75.	Reichert, J. A., Bloch, D. A., Cundiff, E., and Votteri, B. A. Comparison of the NovaSom QSG, a new sleep apnea home-diagnostic system, and polysomnography. <i>Sleep Medicine</i> 2003. 4 (3):213-218.	14592324
76.	Ryan, P. J., Hilton, M. F., Boldy, D. A., Evans, A., Bradbury, S., Sapiano, S., Prowse, K., and Cayton, R. M. Validation of British Thoracic Society guidelines for the diagnosis of the sleep apnoea/hypopnoea syndrome: can polysomnography be avoided? <i>Thorax</i> 1995. 50 (9):972-975.	8539678
77.	Schafer, H., Ewig, S., Hasper, E., and Luderitz, B. Predictive diagnostic value of clinical assessment and nonlaboratory monitoring system recordings in patients with symptoms suggestive of obstructive sleep apnea syndrome. <i>Respiration</i> 1997. 64 (3):194-199.	9154670
78.	Series, F. and Marc, I. Nasal pressure recording in the diagnosis of sleep apnoea hypopnoea syndrome.[see comment]. <i>Thorax</i> 1999. 54 (6):506-510.	10335004
79.	Series, F., Marc, I., Cormier, Y., and La, Forge J. Utility of nocturnal home oximetry for case	8357109

ID	Citation	PMID
	finding in patients with suspected sleep apnea hypopnea syndrome.[see comment]. <i>Annals of Internal Medicine</i> 1993. 119 (6):449-453.	
80.	Shochat, T., Hadas, N., Kerkhofs, M., Herchuelz, A., Penzel, T., Peter, J. H., and Lavie, P. The SleepStrip: an apnoea screener for the early detection of sleep apnoea syndrome. <i>European Respiratory Journal</i> 2002. 19 (1):121-126.	11843310
81.	Stoohs, R. and Guilleminault, C. MESAM 4: an ambulatory device for the detection of patients at risk for obstructive sleep apnea syndrome (OSAS). <i>Chest</i> 1992. 101 (5):1221-1227.	1582275
82.	Su, S., Barody, F. M., Kohrman, M., and Suskind, D. A comparison of polysomnography and a portable home sleep study in the diagnosis of obstructive sleep apnea syndrome. <i>Otolaryngology - Head & Neck Surgery</i> 2004. 131 (6):844-850.	15577778
83.	Van Surell C., Lemaigre, D., Leroy, M., Foucher, A., Hagenmuller, M. P., and Raffestin, B. Evaluation of an ambulatory device, CID 102, in the diagnosis of obstructive sleep apnoea syndrome. <i>European Respiratory Journal</i> 1995. 8 (5):795-800.	7656952
84.	Vazquez, J. C., Tsai, W. H., Flemons, W. W., Masuda, A., Brant, R., Hajduk, E., Whitelaw, W. A., and Remmers, J. E. Automated analysis of digital oximetry in the diagnosis of obstructive sleep apnoea. <i>Thorax</i> 2000. 55 (4):302-307.	10722770
85.	Verse, T., Pirsig, W., Junge-Hulsing, B., and Kroker, B. Validation of the POLY-MESAM seven-channel ambulatory recording unit. <i>Chest</i> 2000. 117 (6):1613-1618.	10858392
86.	Westbrook, P. R., Levendowski, D. J., Cvetinovic, M., Zavora, T., Velimirovic, V., Henninger, D., and Nicholson, D. Description and validation of the apnea risk evaluation system: a novel method to diagnose sleep apnea-hypopnea in the home. <i>Chest</i> 2005. 128 (4):2166-2175.	16236870
87.	White, D. P., Gibb, T. J., Wall, J. M., and Westbrook, P. R. Assessment of accuracy and analysis time of a novel device to monitor sleep and breathing in the home.[see comment]. <i>Sleep</i> 1995. 18 (2):115-126.	7792491
88.	Whitelaw, W. A., Brant, R. F., and Flemons, W. W. Clinical usefulness of home oximetry compared with polysomnography for assessment of sleep apnea.[see comment]. <i>American Journal of Respiratory & Critical Care Medicine</i> 2005. 171 (2):188-193.	15486338
89.	Whittle, A. T., Finch, S. P., Mortimore, I. L., Mackay, T. W., and Douglas, N. J. Use of home sleep studies for diagnosis of the sleep apnoea/hypopnoea syndrome. <i>Thorax</i> 1997. 52 (12):1068-1073.	9516901
90.	Williams, A. J., Yu, G., Santiago, S., and Stein, M. Screening for sleep apnea using pulse oximetry and a clinical score. <i>Chest</i> 1991. 100 (3):631-635.	1889245
91.	Wiltshire, N., Kendrick, A. H., and Catterall, J. R. Home oximetry studies for diagnosis of sleep apnea/hypopnea syndrome: limitation of memory storage capabilities. <i>Chest</i> 2001. 120 (2):384-389.	11502633
92.	Yin, M., Miyazaki, S., and Ishikawa, K. Evaluation of type 3 portable monitoring in unattended home setting for suspected sleep apnea: factors that may affect its accuracy. <i>Otolaryngology - Head & Neck Surgery</i> 2006. 134 (2):204-209.	16455365
93.	Zamarron, C., Gude, F., Barcala, J., Rodriguez, J. R., and Romero, P. V. Utility of oxygen saturation and heart rate spectral analysis obtained from pulse oximetric recordings in the diagnosis of sleep apnea syndrome. <i>Chest</i> 2003. 123 (5):1567-1576.	12740275
94.	Zamarron, C., Romero, P. V., Rodriguez, J. R., and Gude, F. Oximetry spectral analysis in the diagnosis of obstructive sleep apnoea. <i>Clinical Science</i> 1999. 97 (4):467-473.	10491347
95.	Zucconi, M., Ferini-Strambi, L., Castronovo, V., Oldani, A., and Smirne, S. An unattended device for sleep-related breathing disorders: validation study in suspected obstructive sleep apnoea syndrome. <i>European Respiratory Journal</i> 1996. 9 (6):1251-1256.	8804946

Appendix D. Table of excluded studies and reasons for exclusion

The following 226 citations have been excluded after review of the full text articles. They are listed in alphabetical order (by first author's surname).

Appendix D Table. Citations of excluded publications

ID	Citation	PMID	Reason for exclusion
1	Acebo, C., Watson, R. K., Bakos, L., and Thoman, E. B. Sleep and apnea in the elderly: reliability and validity of 24-hour recordings in the home. <i>Sleep</i> 1991. 14 (1):56-64.	1811321	(Not an eligible physiologic signal)
2	Adams, N., Strauss, M., Schluchter, M., and Redline, S. Relation of measures of sleep-disordered breathing to neuropsychological functioning. <i>American Journal of Respiratory & Critical Care Medicine</i> 2001. 163 (7):1626-1631.	11401885	(No relevant data)
3	Adams, T. D., Avelar, E., Cloward, T., Crosby, R. D., Farney, R. J., Gress, R., Halverson, R. C., Hopkins, P. N., Kolotkin, R. L., Lamonte, M. J., Litwin, S., Nuttall, R. T., Pendleton, R., Rosamond, W., Simper, S. C., Smith, S. C., Strong, M., Walker, J. M., Wiebke, G., Yanowitz, F. G., and Hunt, S. C. Design and rationale of the Utah obesity study. A study to assess morbidity following gastric bypass surgery. <i>Contemporary Clinical Trials</i> 2005. 26 (5):534-551.	16046191	(No relevant data)
4	Aikens, J. E., Caruana-Montaldo, B., Venable, P. A., Tadimeti, L., and Mendelson, W. B. MMPI correlates of sleep and respiratory disturbance in obstructive sleep apnea. <i>Sleep</i> 1999. 22 (3):362-369.	10341387	(Retrospective)
5	Akre, H., Skatvedt, O., Oeverland, B., and Borgersen, A. K. Internal thermistors in differentiating between oral and nasal breathing during sleep. <i>Acta Oto-Laryngologica</i> 1999. 119 (8):934-938.	10728937	(No relevant data)
6	Alchanatis, M., Paradellis, G., Pini, H., Tourkohoriti, G., and Jordanoglou, J. Left ventricular function in patients with obstructive sleep apnoea syndrome before and after treatment with nasal continuous positive airway pressure.[see comment]. <i>Respiration</i> 2000. 67 (4):367-371.	10940788	(No relevant data)
7	Ancoli-Israel, S., Kripke, D. F., Klauber, M. R., Mason, W. J., Fell, R., and Kaplan, O. Sleep-disordered breathing in community-dwelling elderly. <i>Sleep</i> 1991. 14 (6):486-495.	1798880	(No relevant data)
8	Anderer, P., Gruber, G., Parapatics, S., Woertz, M., Miazhynskaia, T., Klosch, G., Saletu, B., Zeithofer, J., Barbanj, M. J., nker-Hopfe, H., Himanen, S. L., Kemp, B., Penzel, T., Grozinger, M., Kunz, D., Rappelsberger, P., Schlogl, A., and Dorffner, G. An E-health solution for automatic sleep classification according to Rechtschaffen and Kales: validation study of the Somnolyzer 24 x 7 utilizing the Siesta database. <i>Neuropsychobiology</i> 2005; 51(3):115-133.	15838184	(No relevant data)
9	Arzt, M., Young, T., Finn, L., Skatrud, J. B., and Bradley, T. D. Association of sleep-disordered breathing and the occurrence of stroke. <i>Am J Respir Crit Care Med</i> 2005; 172(11):1447-1451	16141444	(No relevant data)
10	Arzt, M., Young, T., Finn, L., Skatrud, J. B., Ryan, C. M., Newton, G. E., Mak, S., Parker, J. D., Floras, J. S., and Bradley, T. D. Sleepiness and sleep in patients with both systolic heart failure and obstructive sleep apnea. <i>Arch Intern Med</i> 2006. 166 (16):1716-1722.	16983049	(No relevant data)
11	Aubert-Tulkens, G., Culee, C., Harmant-Van, Rijckevorsel K., and Rodenstein, D. O. Ambulatory evaluation of sleep disturbance and therapeutic effects in sleep apnea syndrome	3662239	(No relevant data)

ID	Citation	PMID	Reason for exclusion
12	by wrist activity monitoring. American Review of Respiratory Disease 1987. 136 (4):851-856. Baldwin, C. M., Griffith, K. A., Nieto, F. J., O'Connor, G. T., Walsleben, J. A., and Redline, S. The association of sleep-disordered breathing and sleep symptoms with quality of life in the Sleep Heart Health Study. Sleep 2001. 24 (1):96-105.	11204058	(No relevant data-covered by other publication)
13	Baldwin, C. M., Kapur, V. K., Holberg, C. J., Rosen, C., Nieto, F. J., and Sleep Heart Health Study Group. Associations between gender and measures of daytime somnolence in the Sleep Heart Health Study. Sleep 2004. 27 (2):305-311.	15124727	(No relevant data)
14	Banks, S., Barnes, M., Tarquinio, N., Pierce, R. J., Lack, L. C., and McEvoy, R. D. Factors associated with maintenance of wakefulness test mean sleep latency in patients with mild to moderate obstructive sleep apnoea and normal subjects. Journal of Sleep Research 2004. 13 (1):71-78.	14996038	(No relevant data)
15	Barreiro, B., Badosa, G., Quintana, S., Esteban, L., and Heredia, J. L. Comparison between automatic and manual analysis in the diagnosis of obstructive sleep apnea-hypopnea syndrome. Arch Bronconeumol 2003; 39(12):544-548	14636490	(No relevant data)
16	Becker, H., Brandenburg, U., Peter, J. H., and Von, Wichert P. Reversal of sinus arrest and atrioventricular conduction block in patients with sleep apnea during nasal continuous positive airway pressure. American Journal of Respiratory & Critical Care Medicine 1995. 151 (1):215-218.	7812557	(No relevant data)
17	Berry, R. B., Koch, G. L., Trautz, S., and Wagner M. H. Comparison of respiratory event detection by a polyvinylidene fluoride film airflow sensor and a pneumotachograph in sleep apnea patients. Chest 2005; 128(3):1331-1338	16162726	(No relevant data)
18	Bixler, E. O., Vgontzas, A. N., Lin, H. M., Calhoun, S. L., Vela-Bueno, A., and Kales, A. Excessive daytime sleepiness in a general population sample: the role of sleep apnea, age, obesity, diabetes, and depression. Journal of Clinical Endocrinology & Metabolism 2005. 90 (8):4510-4515.	15941867	(No relevant data)
19	Bliwise, D. L., Feldman, D. E., Bliwise, N. G., Carskadon, M. A., Kraemer, H. C., North, C. S., Petta, D. E., Seidel, W. F., and Dement, W. C. Risk factors for sleep disordered breathing in heterogeneous geriatric populations. Journal of the American Geriatrics Society 1987. 35 (2):132-141.	3805555	(No relevant data)
20	Bliwise, D. L. and King, A. C. Sleepiness in clinical and nonclinical populations. Neuroepidemiology 1996. 15 (3):161-165.	8700308	(No relevant data)
21	Borgel, J., Sanner, B. M., Bittlinsky, A., Keskin, F., Bartels, N. K., Buechner, N., Huesing, A., Rump, L. C., and Mugge, A. Obstructive sleep apnoea and its therapy influence high-density lipoprotein cholesterol serum levels. European Respiratory Journal 2006. 27 (1):121-127.	16387944	(No relevant data)
22	Campos-Rodriguez, F., Pena-Grinan, N., Reyes-Nunez, N., Campos-Rodriguez, F., Pena-Grinan, N., Reyes-Nunez, N., De la Cruz-Moron, I; Perez-Ronchel, J., Dela, Vega-Gallardo, F., and Fernandez-Palacin, A. Mortality in obstructive sleep apnea-hypopnea patients treated with positive airway pressure. Chest 2005; 128(2):624-633	16100147	(No relevant data)
23	Can, M., Acikgoz, S., Mungan, G., Bayraktaroglu, T., Kocak, E., Guven, B., and Demirtas, S. Serum cardiovascular risk factors in obstructive sleep apnea. Chest 2006; 129(2):233-237.	16478836	(No relevant data)
24	Carelli, G., Krieger, J., Calvi-Gries, F., and Macher, J. P. Periodic limb movements and obstructive sleep apneas before and after continuous positive airway pressure treatment. Journal of Sleep Research 1999. 8 (3):211-216.	10476008	(No relevant data-<2wk CPAP duration for B1)
25	Carney, R. M., Howells, W. B., Freedland, K. E., Duntley, S. P., Stein, P. K., Rich, M. W., and Miller, G. E. Depression and obstructive sleep apnea in patients with coronary heart disease.	16738077	(No relevant data)

ID	Citation	PMID	Reason for exclusion
	Psychosomatic Medicine 2006. 68 (3):443-448.		
26	Chaouat, A., Weitzenblum, E., Krieger, J., Oswald, M., and Kessler, R. Pulmonary hemodynamics in the obstructive sleep apnea syndrome. Results in 220 consecutive patients.[see comment]. Chest 1996. 109 (2):380-386.	8620709	(No relevant data)
27	Chervin, R. D. and Aldrich, M. S. Effects of esophageal pressure monitoring on sleep architecture.[see comment]. American Journal of Respiratory & Critical Care Medicine 1997. 156 (3:Pt 1):t-5.	9310008	(No relevant data)
28	Chervin, R. D. and Aldrich, M. S. Characteristics of apneas and hypopneas during sleep and relation to excessive daytime sleepiness. Sleep 1998. 21 (8):799-806.	9871942	(Retrospective)
29	Chesson, A. L., Jr., Anderson, W. M., Walls, R. C., and Bairnsfather, L. E. Assessment of hypoxemia in patients with sleep disorders using saturation impairment time. American Review of Respiratory Disease 1993. 148 (6:Pt 1):t-8.	8256907	(No relevant data)
30	Chong, M. S., Ayalon, L., Marler, M., Loreda, J. S., Corey-Bloom, J., Palmer, B. W., Liu, L., and ncoli-Israel, S. Continuous positive airway pressure reduces subjective daytime sleepiness in patients with mild to moderate Alzheimer's disease with sleep disordered breathing. Journal of the American Geriatrics Society 2006. 54 (5):777-781.	16696743	(No relevant data)
31	Cirignotta, F., Mondini, S., Gerardi, R., Mostacci, B., and Sancisi, E. Unreliability of automatic scoring of MESAM 4 in assessing patients with complicated obstructive sleep apnea syndrome.[see comment]. Chest 2001. 119 (5):1387-1392.	11348943	(N<=10 for portable vs PSG)
32	Collop, N. A. Scoring variability between polysomnography technologists in different sleep laboratories. Sleep Med 2002; 3(1):43-47.	14592253	(No relevant data)
33	Coltman, R., Taylor, D. R., Whyte, K., and Harkness, M. Craniofacial form and obstructive sleep apnea in Polynesian and Caucasian men. Sleep 2000. 23 (7):943-950.	11083603	(N<=100 for errors or adverse events)
34	Cormican, L., and Williams, A. Sleep disordered breathing and its treatment in congestive heart failure. Heart 2005; 91(10):1265-1270.	14592253	(No relevant data)
35	Crumley, R. L., Stein, M., Gamsu, G., Golden, J., and Dermon, S. Determination of obstructive site in obstructive sleep apnea. Laryngoscope 1987. 97 (3:Pt 1):t-8.	3821349	(No relevant data)
36	Dancey, D. R., Hanly, P. J., Soong, C., Lee, B., and Hoffstein, V. Impact of menopause on the prevalence and severity of sleep apnea. Chest 2001. 120 (1):151-155.	11451831	(No relevant data)
37	Dancey, D. R., Hanly, P. J., Soong, C., Lee, B., Shepard, J., Jr., and Hoffstein, V. Gender differences in sleep apnea: the role of neck circumference. Chest 2003. 123 (5):1544-1550.	12740272	(No relevant data)
38	Davidson, T. M., Sedgh, J., Tran, D., and Stepnowsky, C. J., Jr. The anatomic basis for the acquisition of speech and obstructive sleep apnea: evidence from cephalometric analysis supports The Great Leap Forward hypothesis. Sleep Medicine 2005. 6 (6):497-505.	15994120	(No relevant data)
39	DelCampo, F., Hornero, R., Zamarron, C., Abasolo, D. E. and Alvarez, D. Oxygen saturation regularity analysis in the diagnosis of obstructive sleep apnea. Artificial Intelligence in Medicine 2006; 37(2):111-118.	16386411	(Covered by other publication)
40	Deldin, P. J., Phillips, L. K., Thomas, R. J. A preliminary study of sleep-disordered breathing in major depressive disorder. Sleep Med 2006; 7(2):131-139.	16260180	(No relevant data)
41	DeZee, K. J., Jackson, J. L., Hatzigeorgiou, C., and Kristo, D.. The Epworth sleepiness scale: relationship to sleep and mental disorders in a sleep clinic. Sleep Medicine 2006; 7 (4):327-332.	16564218	(No relevant data)
42	Ding, J., Nieto, F. J., Beauchamp, N. J., Jr., Harris, T. B., Robbins, J. A., Hetmanski, J. B., Fried, L. P., and Redline, S. Sleep-disordered breathing and white matter disease in the brainstem in older adults. Sleep 2004. 27 (3):474-479.	15164901	(Covered by other publication)

ID	Citation	PMID	Reason for exclusion
43	Doherty, L. S., Kiely, J. L., Swan, V., and McNicholas, W. T. Long-term effects of nasal continuous positive airway pressure therapy on cardiovascular outcomes in sleep apnea syndrome. <i>Chest</i> 2005. 127 (6):2076-2084.	15947323	(No relevant data-cannot separate retrospective and prospective cohorts)
44	Drager, L. F., Pereira, A. C., Barreto-Filho, J. A., Figueiredo, A. C., Krieger, J.E., Krieger, E. M., and Lorenzi-Filho, G. Phenotypic characteristics associated with hypertension in patients with obstructive sleep apnea. <i>Journal of Human Hypertension</i> 2006; 20 (7):523-528	16543905	(No relevant data)
45	Drake, C., Richardson, G., Roehrs, T., Scofield, H., and Roth, T. Vulnerability to stress-related sleep disturbance and hyperarousal. <i>Sleep</i> 2004. 27 (2):285-291.	15124724	(No relevant data)
46	Drake, C. L., Rice, M. F., Roehrs, T. A., Rosenthal, L., Guido, P., and Roth, T. Scoring reliability of the multiple sleep latency test in a clinical population. <i>Sleep</i> 2000. 23 (7):911-913.	11083600	(No relevant data)
47	Dreher, A., de la, Chaux R., Klemens, C., Werner, R., Baker, F., Barthlen, G., and Rasp, G. Correlation between otorhinolaryngologic evaluation and severity of obstructive sleep apnea syndrome in snorers. <i>Archives of Otolaryngology -- Head & Neck Surgery</i> 2005. 131 (2):95-98.	15723938	(No relevant data)
48	El-Solh, A. A., Mador, M. J., Ten-Brock, E., Shucard, D. W., bul-Khoudoud, M., and Grant, B. J. Validity of neural network in sleep apnea. <i>Sleep</i> 1999. 22 (1):105-111.	9989371	(Retrospective)
49	Elmasry, A., Lindberg, E., Hedner, J., Janson, C., and Boman, G. Obstructive sleep apnoea and urine catecholamines in hypertensive males: a population-based study. <i>European Respiratory Journal</i> 2002. 19 (3):511-517.	11936531	(No relevant data)
50	Epstein, L. J. and Dorlac, G. R. Cost-effectiveness analysis of nocturnal oximetry as a method of screening for sleep apnea-hypopnea syndrome. <i>Chest</i> 1998. 113 (1):97-103.	9440575	(Retrospective)
51	Fanfulla, F., Patruno, V., Bruschi, C., and Rampulla, C. Obstructive sleep apnoea syndrome: is the "half-night polysomnography" an adequate method for evaluating sleep profile and respiratory events?[see comment]. <i>European Respiratory Journal</i> 1997. 10 (8):1725-1729.	9272910	(No relevant data-not an eligible contrast)
52	Farney, R. J., Walker, L. E., Jensen, R. L., and Walker, J. M. Ear oximetry to detect apnea and differentiate rapid eye movement (REM) and non-REM (NREM) sleep. Screening for the sleep apnea syndrome. <i>Chest</i> 1986. 89 (4):533-539.	3956278	(No relevant data-event to event comparison)
53	Ferini-Strambi, L., Zucconi, M., Oldani, A., and Smirne, S. Heart rate variability during sleep in snorers with and without obstructive sleep apnea.[see comment]. <i>Chest</i> 1992. 102 (4):1023-1027.	1395737	(No relevant data)
54	Fietze, I., Rottig, J., Quispe-Bravo, S., Riedel, F., Witte, J., Baumann, G., and Witt, C. Sleep apnea syndrome in patients with cardiac pacemaker. <i>Respiration</i> 2000. 67 (3):268-271.	10867594	(No relevant data)
55	Fischer, Y., Junge-Hulsing, B., Rettinger, G., and Panis, A. The use of an ambulatory, automatic sleep recording device (QUISI version 1.0) in the evaluation of primary snoring and obstructive sleep apnoea. <i>Clinical Otolaryngology & Allied Sciences</i> 2004. 29 (1):18-23.	14961847	(No relevant data-assessed sleep staging only)
56	Fitzpatrick, M. F., Alloway, C. E., Wakeford, T. M., MacLean, A. W., Munt, P. W., and Day, A. G. Can patients with obstructive sleep apnea titrate their own continuous positive airway pressure?[see comment]. <i>American Journal of Respiratory & Critical Care Medicine</i> 2003. 167 (5):716-722.	12598214	(No relevant data)
57	Fleury, B., Rakotonanahary, D., Tehindrazanarivelo, A. D., Hausser-Hauw, C., and Lebeau, B. Long-term compliance to continuous positive airway pressure therapy (nCPAP) set up during a split-night polysomnography. <i>Sleep</i> 1994. 17 (6):512-515.	7809564	(No relevant data-<2wk CPAP duration for B1)
58	Franceschi, M., Zamproni, P., Crippa, D., and Smirne, S. Excessive daytime sleepiness: a 1-year study in an unselected inpatient population. <i>Sleep</i> 1982. 5 (3):239-247.	7134730	(N<=100 for errors or adverse events)

ID	Citation	PMID	Reason for exclusion
59	Friedman, M., Tanyeri, H., La, Rosa M., Landsberg, R., Vaidyanathan, K., Pieri, S., and Caldarelli, D. Clinical predictors of obstructive sleep apnea. <i>Laryngoscope</i> 1999. 109 (12):1901-1907.	10591345	(No relevant data)
60	Gay, P. C., Herold, D. L., and Olson, E. J. A randomized, double-blind clinical trial comparing continuous positive airway pressure with a novel bilevel pressure system for treatment of obstructive sleep apnea syndrome. <i>Sleep</i> 2003. 26 (7):864-869.	14655921	(No relevant data)
61	Gliklich, R. E. and Wang, P. C. Validation of the snore outcomes survey for patients with sleep-disordered breathing. <i>Archives of Otolaryngology -- Head & Neck Surgery</i> 2002. 128 (7):819-824.	12117343	(No relevant data)
62	Goder, R., Friege, L., Fritzer, G., Strenge, H., Aldenhoff, J. B., and Hinze-Selch, D. Morning headaches in patients with sleep disorders: a systematic polysomnographic study. <i>Sleep Medicine</i> 2003. 4 (5):385-391.	14592279	(No relevant data)
63	Golpe, R., Jimenez, A., Carpizo, R., and Cifrian, J. M. Utility of home oximetry as a screening test for patients with moderate to severe symptoms of obstructive sleep apnea. <i>Sleep</i> 1999. 22 (7):932-937.	10566911	(Retrospective)
64	Goncalves, M. A., Paiva, T., Ramos, E., and Guilleminault, C. Obstructive sleep apnea syndrome, sleepiness, and quality of life. <i>Chest</i> 2004. 125 (6):2091-2096.	15189926	(No relevant data)
65	Grote, L., Ploch, T., Heitmann, J., Knaack, L., Penzel, T., and Peter, J. H. Sleep-related breathing disorder is an independent risk factor for systemic hypertension. <i>American Journal of Respiratory & Critical Care Medicine</i> 1999. 160 (6):1875-1882.	10588600	(Retrospective)
66	Guilleminault, C., Partinen, M., Hollman, K., Powell, N., and Stoohs, R. Familial aggregates in obstructive sleep apnea syndrome. <i>Chest</i> 1995. 107 (6):1545-1551.	7781344	(No relevant data)
67	Guilleminault, C., Kirisoglu, C., and Ohayon, M. M. C-reactive protein and sleep-disordered breathing. <i>Sleep</i> 2004. 27 (8):1507-1511.	15683141	(No relevant data)
68	Gyulay, S., Gould, D., Sawyer, B., Pond, D., Mant, A., and Saunders, N. Evaluation of a microprocessor-based portable home monitoring system to measure breathing during sleep. <i>Sleep</i> 1987. 10 (2):130-142.	3589326	(No relevant data)
69	Gyulay, S., Olson, L. G., Hensley, M. J., King, M. T., Allen, K. M., and Saunders, N. A. A comparison of clinical assessment and home oximetry in the diagnosis of obstructive sleep apnea. <i>American Review of Respiratory Disease</i> 1993. 147 (1):50-53.	8420431	(Overt verification bias)
70	Hashimoto, T., Ogino, H., Koga, T., and Uchimura, N. The Koga Hospital Center for studies on sleep: status report. <i>Psychiatry & Clinical Neurosciences</i> 2000. 54 (3):301-302.	11186086	(No relevant data)
71	Herer, B., Roche, N., Carton, M., Roig, C., Poujol, V., and Huchon, G. Value of clinical, functional, and oximetric data for the prediction of obstructive sleep apnea in obese patients. <i>Chest</i> 1999. 116 (6):1537-1544.	10593773	(No relevant data)
72	Hernandez, C., Abreu, J., Abreu, P., Colino, R., and Jimenez, A. Effects of nasal positive airway pressure treatment on oxidative stress in patients with sleep apnea-hypopnea syndrome. <i>Arch Bronconeumol</i> 2006; 42(3):125-129.	16545250	(No relevant data)
73	Hida, W., Shindoh, C., Okabe, S., Miki, H., Kikuchi, Y., Taguchi, O., and Takishima, T. Prevalence of sleep apnea syndrome in Japanese industrial workers using a home sleep monitor. <i>Sleep</i> 1993. 16 (8 Suppl):S126-S127.	8178001	(No relevant data)
74	Hillerdal, G., Hetta, J., Lindholm, C. E., Hultcrantz, E., and Boman, G. Symptoms in heavy snorers with and without obstructive sleep apnea. <i>Acta Oto-Laryngologica</i> 1991. 111 (3):574-581.	1887783	(No relevant data)
75	Hoffstein, V., Rubinstein, I., Mateika, S., and Slutsky, A. S. Determinants of blood pressure in	2902495	(No relevant data)

ID	Citation	PMID	Reason for exclusion
	snorers. <i>Lancet</i> 1988. 2 (8618):992-994.		
76	Hoffstein, V. and Mateika, J. Evening-to-morning blood pressure variations in snoring patients with and without obstructive sleep apnea. <i>Chest</i> 1992. 101 (2):379-384.	1735259	(No relevant data)
77	Hoffstein, V. and Szalai, J. P. Predictive value of clinical features in diagnosing obstructive sleep apnea. <i>Sleep</i> 1993. 16 (2):118-122.	8446830	(No relevant data)
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89	Kapur, V. K., Baldwin, C. M., Resnick, H. E., Gottlieb, D. J., and Nieto, F. J. Sleepiness in patients with moderate to severe sleep-disordered breathing. <i>Sleep</i> 2005. 28 (4):472-477.	16171292	(Covered by other publication)
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93	Kessler, R., Weitzenblum, E., Chaouat, A., Iamandi, C., and Alliotte, T. Evaluation of unattended automated titration to determine therapeutic continuous positive airway pressure	12628866	(No relevant data-<2wk CPAP duration for B1)

ID	Citation	PMID	Reason for exclusion
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112	Littner, M., Hirshkowitz, M., Davila, D., Anderson, W. M., Kushida, C. A., Woodson, B. T., Johnson, S. F., Merrill, S. W., and Standards of Practice Committee of the American Academy of Sleep Medicine. Practice parameters for the use of auto-titrating continuous positive airway pressure devices for titrating pressures and treating adult patients with obstructive sleep apnea syndrome. An American Academy of Sleep Medicine report. <i>Sleep</i> 2002. 25 (2):143-147.	11902424	(No relevant data)
113	Littner, M. R. Portable monitoring in the diagnosis of the obstructive sleep apnea syndrome. [Review] [64 refs]. <i>Seminars in Respiratory & Critical Care Medicine</i> 2005. 26 (1):56-67.	16052418	(No relevant data)
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115	Lloberes, P., Sampol, G., Levy, G., Aristizabal, D., Sagales, T., De la, Calzada M., Roca, A., Canas, I., and Morell, F. Influence of setting on unattended respiratory monitoring in the sleep apnoea/hypopnoea syndrome. <i>European Respiratory Journal</i> 2001. 18 (3):530-534.	11589351	(No relevant data-not an eligible contrast)
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126	Means, M. K., Edinger, J. D., and Husain, A. M. CPAP compliance in sleep apnea patients with and without laboratory CPAP titration. <i>Sleep & Breathing</i> 2004. 8 (1):7-14.	15026934	(No relevant data)
127	Mehra, R., Storer-Isser, A., Kirchner, H. L., Johnson, N., Jenny, N., Tracy, R. P., and Redline, S. Soluble interleukin 6 receptor: A novel marker of moderate to severe sleep-related breathing disorder. <i>Archives of Internal Medicine</i> 2006; 166 (16):1725-1731.	16983050	(No relevant data)
128	Meslier, N., Gagnadoux, F., Giraud, P., Person, C., Ouksel, H., Urban, T., and Racineux, J. L. Impaired glucose-insulin metabolism in males with obstructive sleep apnoea syndrome. <i>European Respiratory Journal</i> 2003. 22 (1):156-160.	12882466	(No relevant data)
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130	Meurice, J. C., Marc, I., and Series, F. Efficacy of auto-CPAP in the treatment of obstructive sleep apnea/hypopnea syndrome. <i>American Journal of Respiratory & Critical Care Medicine</i> 1996. 153 (2):794-798.	8564134	(No relevant data)
131	Mojon, D. S., Hess, C. W., Goldblum, D., Fleischhauer, J., Koerner, F., Bassetti, C., and Mathis, J. High prevalence of glaucoma in patients with sleep apnea syndrome.[see comment]. <i>Ophthalmology</i> 1999. 106 (5):1009-1012.	10328405	(No relevant data)
132	Morse, C. A., Quan, S. F., Mays, M. Z., Green, C., Stephen, G., and Fass, R. Is there a relationship between obstructive sleep apnea and gastroesophageal reflux disease? <i>Clinical Gastroenterology & Hepatology</i> 2004. 2 (9):761-768.	15354276	(No relevant data)
133	Mulgrew, A.T., Fox, N., Ayas, N.T. and Ryan, C.F. Diagnosis and initial management of obstructive sleep apnea without polysomnography: a randomized validation study. <i>Annals of Internal Medicine</i> 2007; 146(3):157-166.	17283346	(No relevant data)
134	Munoz R, Duran-Cantolla J, Martinez-Vila E, et al. Severe sleep apnea and risk of ischemic stroke in the elderly. <i>Stroke</i> 2006; 37(9):2317-2321.	16888274	(No relevant data)
135	Nakajima, T., Hayama, T., Ohkushi, T., Nagatomo, M., Ohkawa, T., Ohta, F., Matsuwaki, Y., Asaka, D., Chiba, S., and Endo, M. Approach to obstructive sleep apnea syndrome at Tokyo Dental College, Ichikawa General Hospital. <i>Bulletin of Tokyo Dental College</i> 2004. 45 (3):181-187.	15779461	(No relevant data)
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137	Nakano, H., Ikeda, T., Hayashi, M., Ohshima, E., Itoh, M., Nishikata, N., and Shinohara, T. Effect of body mass index on overnight oximetry for the diagnosis of sleep apnea. <i>Respiratory Medicine</i> 2004. 98 (5):421-427.	15139571	(Retrospective)

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139	Nieto, F. J., Herrington, D. M., Redline, S., Benjamin, E. J., and Robbins, J. A. Sleep apnea and markers of vascular endothelial function in a large community sample of older adults.[see comment]. <i>American Journal of Respiratory & Critical Care Medicine</i> 2004. 169 (3):354-360.	14551166	(No relevant data-covered by other publication)
140	Norman RG, Pal I, Stewart C, Walsleben JA, Rapoport DM. Interobserver agreement among sleep scorers from different centers in a large dataset. <i>Sleep</i> 2000; 23(7):901-908.	16888274	(No relevant data)
141	Nosedá, A., Kempnaers, C., Kerkhofs, M., Braun, S., Linkowski, P., and Jann, E. Constant vs auto-continuous positive airway pressure in patients with sleep apnea hypopnea syndrome and a high variability in pressure requirement. <i>Chest</i> 2004. 126 (1):31-37.	15249439	(No relevant data)
142	Nuckton, T. J., Glidden, D. V., Browner, W. S., and Claman, D. M. Physical examination: Mallampati score as an independent predictor of obstructive sleep apnea. <i>Sleep</i> 2006; 29 (7):903-908.	16895257	(No relevant data)
143	Oksenberg, A., Arons, E., and Froom, P. Does the severity of obstructive sleep apnea predict patients requiring high continuous positive airway pressure? <i>Laryngoscope</i> 2006. 116 (6):951-955.	16735905	(<2wk CPAP duration for B1-retrospective)
144	Oksenberg, A., Froom, P., and Melamed, S. Dry mouth upon awakening in obstructive sleep apnea. <i>Journal of Sleep Research</i> 2006; 15 (3):317-320.	16911034	(No relevant data)
145	Olson, L. G., Ambrogetti, A., and Gyulay, S. G. Prediction of sleep-disordered breathing by unattended overnight oximetry. <i>Journal of Sleep Research</i> 1999. 8 (1):51-55.	10188136	(Retrospective)
146	Ong, K. C. and Clerk, A. A. Comparison of the severity of sleep-disordered breathing in Asian and Caucasian patients seen at a sleep disorders center. <i>Respiratory Medicine</i> 1998. 92 (6):843-848.	9850368	(No relevant data)
147	Ovesen, J., Nielsen, P. W., Clausen, J., Petri, N., and Wildschiodtz, G. Computerized apnea detection in ambulatory sleep recording with the Somnolog system. <i>Acta Oto-Laryngologica Supplement</i> 1992. 492:113-114.	1632232	(No relevant data)
148	Parra O, Arboix A, Montserrat JM, et al. Sleep-related breathing disorders: impact on mortality of cerebrovascular disease. <i>Eur Respir J</i> 2004; 24(2):267-272.	15332396	(No relevant data)
149	Peker Y, Hedner J, Kraiczl H, Loth S. Respiratory disturbance index: an independent predictor of mortality in coronary artery disease. <i>Am J Respir Crit Care Med</i> 2000; 162(1):81-86.	10903224	(No relevant data)
150	Pelletier-Fleury, N., Gagnadoux, F., Philippe, C., Rakotonanahary, D., Lanoe, J. L., and Fleury, B. A cost-minimization study of telemedicine. The case of telemonitored polysomnography to diagnose obstructive sleep apnea syndrome. <i>International Journal of Technology Assessment in Health Care</i> 2001. 17 (4):604-611.	11758304	(No relevant data)
151	Peppard, P. E., Young, T., Palta, M., and Skatrud, J. Prospective study of the association between sleep-disordered breathing and hypertension. <i>N.Engl.J Med.</i> 2000. 342 (19):1378-1384.	10805822	(No relevant data)
152	Peppard, P. E. and Young, T. Exercise and sleep-disordered breathing: an association independent of body habitus. <i>Sleep</i> 2004. 27 (3):480-484.	15164902	(No relevant data)
153	Pillar, G., Bar, A., Shlitner, A., Schnall, R., Shefy, J., and Lavie, P. Autonomic arousal index: an automated detection based on peripheral arterial tonometry. <i>Sleep</i> 2002. 25 (5):543-549.	12150321	(N<=100 for errors or adverse events)
154	Planes, C., D'Ortho, M. P., Foucher, A., Berkani, M., Leroux, K., Essalhi, M., Delclaux, C.,	12683473	(No relevant data)

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155	Polo-Kantola, P., Rauhala, E., Helenius, H., Erkkola, R., Irjala, K., and Polo, O. Breathing during sleep in menopause: a randomized, controlled, crossover trial with estrogen therapy. <i>Obstetrics & Gynecology</i> 2003. 102 (1):68-75.	12850609	(N<=100 for errors or adverse events)
156	Polo, O., Brissaud, L., Sales, B., Besset, A., and Billiard, M. The validity of the static charge sensitive bed in detecting obstructive sleep apnoeas. <i>European Respiratory Journal</i> 1988. 1 (4):330-336.	3396673	(Not an eligible physiologic signal)
157	Pradhan, P. S., Gliklich, R. E., and Winkelman, J. Screening for obstructive sleep apnea in patients presenting for snoring surgery.[erratum appears in <i>Laryngoscope</i> 1997 Jan;107(1):149]. <i>Laryngoscope</i> 1996. 106 (11):1393-1397.	8914907	(No relevant data)
158	Punjabi, N. M., O'Hearn, D. J., Neubauer, D. N., Nieto, F. J., Schwartz, A. R., Smith, P. L., and Bandeen-Roche, K. Modeling hypersomnolence in sleep-disordered breathing. A novel approach using survival analysis. <i>American Journal of Respiratory & Critical Care Medicine</i> 1999. 159 (6):1703-1709.	10351907	(Retrospective)
159	Punjabi, N. M., Shahar, E., Redline, S., Gottlieb, D. J., Givelber, R., Resnick, H. E., and Sleep Heart Health Study Investigators. Sleep-disordered breathing, glucose intolerance, and insulin resistance: the Sleep Heart Health Study. <i>American Journal of Epidemiology</i> 2004. 160 (6):521-530.	15353412	(No relevant data-covered by other publication)
160	Quan SF, Griswold ME, Iber C, et al. Short-term variability of respiration and sleep during unattended nonlaboratory polysomnography--the Sleep Heart Health Study. <i>Sleep</i> 2002; 25(8):843-849.	12489889	(No relevant data)
161	Quintana-Gallego, E., Carmona-Bernal, C., Capote, F., Sanchez-Armengol, A., Botbol-Benhamou, G., Polo-Padillo, J., and Castillo-Gomez, J. Gender differences in obstructive sleep apnea syndrome: a clinical study of 1166 patients. <i>Respiratory Medicine</i> 2004. 98 (10):984-989.	15481275	(Retrospective)
162	Raj, R. and Hirshkowitz, M. Effect of the new Medicare guideline on patient qualification for positive airway pressure therapy. <i>Sleep Medicine</i> 2003. 4 (1):29-33.	14592357	(Retrospective)
163	Rauscher, H., Formanek, D., Popp, W. and Zwick, H. Self-reported vs measured compliance with nasal CPAP for obstructive sleep apnea. <i>Chest</i> 1993 103 (6):1675-1680.	8404084	(No relevant data)
164	Redline, S., Tishler, P. V., Hans, M. G., Tosteson, T. D., Strohl, K. P., and Spry, K. Racial differences in sleep-disordered breathing in African-Americans and Caucasians.[erratum appears in <i>Am J Respir Crit Care Med</i> 1997 May;155(5):1820]. <i>American Journal of Respiratory & Critical Care Medicine</i> 1997. 155 (1):186-192.	9001310	(No relevant data)
165	Redline, S., Kirchner, H. L., Quan, S. F., Gottlieb, D. J., Kapur, V., and Newman, A. The effects of age, sex, ethnicity, and sleep-disordered breathing on sleep architecture. <i>Archives of Internal Medicine</i> 2004. 164 (4):406-418.	14980992	(No relevant data-covered by other publication)
166	Redline, S., Min, N. I., Shahar, E., Rapoport, D., and O'Connor, G. Polysomnographic predictors of blood pressure and hypertension: is one index best? <i>Sleep</i> 2005. 28 (9):1122-1130.	16268382	(No relevant data)
167	Reichmuth, K. J., Austin, D., Skatrud, J. B., and Young, T. Association of sleep apnea and type II diabetes: a population-based study. <i>American Journal of Respiratory & Critical Care Medicine</i> 2005. 172 (12):1590-1595.	16192452	(No relevant data-covered by other publication)
168	Resta, O., Foschino-Barbaro, M. P., Legari, G., Talamo, S., Bonfitto, P., Palumbo, A., Minenna, A., Giorgino, R., and De Pergola G. Sleep-related breathing disorders, loud	11360149	(No relevant data)

ID	Citation	PMID	Reason for exclusion
	snoring and excessive daytime sleepiness in obese subjects. <i>International Journal of Obesity & Related Metabolic Disorders: Journal of the International Association for the Study of Obesity</i> 2001. 25 (5):669-675.		
169	Resta, O., Caratozzolo, G., Pannacciulli, N., Stefano, A., Giliberti, T., Carpagnano, G. E., and De, Pergola G. Gender, age and menopause effects on the prevalence and the characteristics of obstructive sleep apnea in obesity. <i>European Journal of Clinical Investigation</i> 2003. 33 (12):1084-1089.	14636291	(No relevant data-probably retrospective)
170	Resta, O., Foschino Barbaro, M. P., Bonfitto, P., Giliberti, T., Depalo, A., Pannacciulli, N., and De, Pergola G. Low sleep quality and daytime sleepiness in obese patients without obstructive sleep apnoea syndrome. <i>Journal of Internal Medicine</i> 2003. 253 (5):536-543.	12702031	(No relevant data)
171	Resta, O., Bonfitto, P., Sabato, R., De, Pergola G., and Barbaro, M. P. Prevalence of obstructive sleep apnoea in a sample of obese women: effect of menopause. <i>Diabetes, Nutrition & Metabolism - Clinical & Experimental</i> 2004. 17 (5):296-303.	16295052	(No relevant data)
172	Resta, O., Carratu, P., Depalo, A., Giliberti, T., Ardito, M., Marrone, O., and Insalaco, G. Effects of fixed compared to automatic CPAP on sleep in Obstructive Sleep Apnoea Syndrome.[see comment]. <i>Monaldi Archives for Chest Disease</i> 2004. 61 (3):153-156.	15679008	(No relevant data)
173	Resta, O., Carratu, P., Carpagnano, G. E., Maniscalco, M., Di, Gioia G., Lacedonia, D., Giorgino, R., and De, Pergola G. Influence of subclinical hypothyroidism and T4 treatment on the prevalence and severity of obstructive sleep apnoea syndrome (OSAS). <i>Journal of Endocrinological Investigation</i> 2005. 28 (10):893-898.	16419491	(No relevant data)
174	Rice k, Nelson K, Rubins J, Arjes S. Unattended cardiopulmonary sleep studies to diagnose obstructive sleep apnea. <i>Federal Practitioner</i> 2006;16-30.	[does not have a PMID – not indexed]	(No relevant data)
175	Roche, F., Gaspoz, J. M., Court-Fortune, Minini, P., Pichot, V., Duverney, D., Costes, F., Lacour, J. R., and Barthelemy, J. C. Screening of obstructive sleep apnea syndrome by heart rate variability analysis. <i>Circulation</i> 1999. 100 (13):1411-1415.	10500042	(Not an eligible physiologic signal)
176	Roche, F., Duverney, D., Court-Fortune, Pichot, V., Costes, F., Lacour, J. R., Antoniadis, J. A., Gaspoz, J. M., and Barthelemy, J. C. Cardiac interbeat interval increment for the identification of obstructive sleep apnea. <i>Pacing & Clinical Electrophysiology</i> 2002. 25 (8):1192-1199.	12358169	(Not an eligible physiologic signal)
177	Roche, F., Pichot, V., Sforza, E., Court-Fortune, Duverney, D., Costes, F., Garet, M., and Barthelemy, J. C. Predicting sleep apnoea syndrome from heart period: a time-frequency wavelet analysis.[see comment]. <i>European Respiratory Journal</i> 2003. 22 (6):937-942.	14680082	(Not an eligible physiologic signal)
178	Roche, N., Herer, B., Roig, C., and Huchon, G. Prospective testing of two models based on clinical and oximetric variables for prediction of obstructive sleep apnea. <i>Chest</i> 2002. 121 (3):747-752.	11888955	(No relevant data)
179	Rodrigues RN, Abreu e Silva Rodrigues AA, Pratesi R, et al. Outcome of sleepiness and fatigue scores in obstructive sleep apnea syndrome patients with and without restless legs syndrome after nasal CPAP. <i>Arq Neuropsiquiatr</i> 2007; 65(1):54-58.	17420827	(No relevant data)
180	Rodsutti, J., Hensley, M., Thakkinstian, A., D'Este, C., and Attia, J. A clinical decision rule to prioritize polysomnography in patients with suspected sleep apnea. <i>Sleep</i> 2004. 27 (4):694-699.	15283004	(No relevant data)
181	Rollheim, J., Osnes, T., and Miljeteig, H. The sites of obstruction in OSA, identified by continuous measurements of airway pressure and flow during sleep: ambulatory versus in-hospital recordings. <i>Clinical Otolaryngology & Allied Sciences</i> 1999. 24 (6):502-506.	10606997	(No relevant data)

ID	Citation	PMID	Reason for exclusion
182	Rowley, J. A., Tarbichi, A. G., and Badr, M. S. The use of a predicted CPAP equation improves CPAP titration success. <i>Sleep & Breathing</i> 2005. 9 (1):26-32.	15785918	(No relevant data-<2wk CPAP duration for B1)
183	Saarelainen, S., Himanen, S. L., Hasan, J., Virkkala, J., and Koobi, T. Whole-body impedance recording--a practical method for the diagnosis of sleep apnoea. <i>Clinical Physiology & Functional Imaging</i> 2003. 23 (2):110-113.	12641606	(Not an eligible physiologic signal)
184	Sakakibara, H., Tong, M., Matsushita, K., Hirata, M., Konishi, Y., and Suetsugu, S. Cephalometric abnormalities in non-obese and obese patients with obstructive sleep apnoea. <i>European Respiratory Journal</i> 1999. 13 (2):403-410.	10065689	(No relevant data)
185	Salmi, T., Partinen, M., Hyypya, M., and Kronholm, E. Automatic analysis of static charge sensitive bed (SCSB) recordings in the evaluation of sleep-related apneas. <i>Acta Neurol.Scand.</i> 1986. 74 (5):360-364.	3825493	(Not an eligible physiologic signal)
186	Sampol, G., Munoz, X., Sagales, M. T., Marti, S., Roca, A., Dolors de la, Calzada M., Lloberes, P., and Morell, F. Long-term efficacy of dietary weight loss in sleep apnoea/hypopnoea syndrome. <i>European Respiratory Journal</i> 1998. 12 (5):1156-1159.	9864013	(No relevant data)
187	Sanders, M. H., Black, J., Costantino, J. P., Kern, N., Studnicki, K., and Coates, J. Diagnosis of sleep-disordered breathing by half-night polysomnography. <i>American Review of Respiratory Disease</i> 1991. 144 (6):1256-1261.	1741536	(No relevant data)
188	Sangal, R. B. and Sangal, J. M. Measurement of P300 and sleep characteristics in patients with hypersomnia: do P300 latencies, P300 amplitudes, and multiple sleep latency and maintenance of wakefulness tests measure different factors? <i>Clinical Electroencephalography</i> 1997. 28 (3):179-184.	9241473	(No relevant data)
189	Sanner, B. M., Konermann, M., Sturm, A., Muller, H. J., and Zidek, W. Right ventricular dysfunction in patients with obstructive sleep apnoea syndrome. <i>European Respiratory Journal</i> 1997. 10 (9):2079-2083.	9311506	(No relevant data)
190	Sanner, B. M., Zidek, W., Laschewski, F., Sevecke-Herbst, A., Sturm, A., and Doberauer, C. Prevalence of ventricular late potentials in patients with obstructive sleep apnea syndrome. <i>Clinical Cardiology</i> 1999. 22 (3):219-224.	10084065	(No relevant data)
191	Scharf, M. B., Brannen, D. E., McDannold, M. D., and Berkowitz, D. V. Computerized adjustable versus fixed NCPAP treatment of obstructive sleep apnea. <i>Sleep</i> 1996. 19 (6):491-496.	8865507	(No relevant data)
192	Scharf, M. B., Stover, R., McDannold, M. D., Spinner, O., Berkowitz, D. V., and Conrad, C. Outcome evaluation of long-term nasal continuous positive airway pressure therapy in obstructive sleep apnea. <i>American Journal of Therapeutics</i> 1999. 6 (6):293-297.	11329112	(No relevant data)
193	Schenck, C. H., Milner, D. M., Hurwitz, T. D., Bundlie, S. R., and Mahowald, M. W. A polysomnographic and clinical report on sleep-related injury in 100 adult patients. <i>American Journal of Psychiatry</i> 1989. 146 (9):1166-1173.	2764174	(N<=100 for errors or adverse events)
194	Schwartz, D. J. The pulse transit time arousal index in obstructive sleep apnea before and after CPAP. <i>Sleep Medicine</i> 2005. 6 (3):199-203.	15854849	(No relevant data)
195	Series, F. Accuracy of an unattended home CPAP titration in the treatment of obstructive sleep apnea. <i>American Journal of Respiratory & Critical Care Medicine</i> 2000. 162 (1):94-97.	10903226	(No relevant data)
196	Shahar, E., Whitney, C. W., Redline, S., Lee, E. T., Newman, A. B., Javier, Nieto F., O'Connor, G. T., Boland, L. L., Schwartz, J. E., and Samet, J. M. Sleep-disordered breathing and cardiovascular disease: cross-sectional results of the Sleep Heart Health Study. <i>Am J Respir.Crit Care Med.</i> 2001. 163 (1):19-25.	11208620	(No relevant data)
197	Shepard, J. W., Jr., Garrison, M. W., Grither, D. A., and Dolan, G. F. Relationship of	2411477	(N<=100 for errors or adverse

ID	Citation	PMID	Reason for exclusion
	ventricular ectopy to oxyhemoglobin desaturation in patients with obstructive sleep apnea. <i>Chest</i> 1985. 88 (3):335-340.		events)
198	Shepertycky, M. R., Banno, K., and Kryger, M. H. Differences between men and women in the clinical presentation of patients diagnosed with obstructive sleep apnea syndrome.[see comment]. <i>Sleep</i> 2005. 28 (3):309-314.	16173651	(No relevant data)
199	Sin, D. D., Fitzgerald, F., Parker, J. D., Newton, G., Floras, J. S., and Bradley, T. D. Risk factors for central and obstructive sleep apnea in 450 men and women with congestive heart failure.[see comment]. <i>American Journal of Respiratory & Critical Care Medicine</i> 1999. 160 (4):1101-1106.	10508793	(Retrospective)
200	Steiner, S., Jax, T., Evers, S., Hennersdorf, M., Schwalen, A., and Strauer, B. E. Altered blood rheology in obstructive sleep apnea as a mediator of cardiovascular risk. <i>Cardiology</i> 2005. 104 (2):92-96.	16015032	(No relevant data)
201	Stepnowsky CJ, Jr., Orr WC, Davidson TM. Nightly variability of sleep-disordered breathing measured over 3 nights. <i>Otolaryngol Head Neck Surg</i> 2004; 131(6):837-843.	15577777	(No relevant data)
202	Stoohs, R. and Guilleminault, C. Investigations of an automatic screening device (MESAM) for obstructive sleep apnoea. <i>European Respiratory Journal</i> 1990. 3 (7):823-829.	2261972	(Not an eligible physiologic signal)
203	Suzuki, T., Nakano, H., Maekawa, J., Okamoto, Y., Ohnishi, Y., Yamauchi, M., and Kimura, H. Obstructive sleep apnea and carotid-artery intima-media thickness. <i>Sleep</i> 2004. 27 (1):129-133.	14998249	(No relevant data)
204	Svanborg, E., Larsson, H., Carlsson-Nordlander, B., and Pirskanen, R. A limited diagnostic investigation for obstructive sleep apnea syndrome. Oximetry and static charge sensitive bed. <i>Chest</i> 1990. 98 (6):1341-1345.	2245672	(Not an eligible physiologic signal)
205	Svensson, M., Holmstrom, M., Broman, J. E., and Lindberg, E. Can anatomical and functional features in the upper airways predict sleep apnea? A population-based study in females. <i>Acta Oto-Laryngologica</i> 2006; 126 (6):613-620.	16720446	(No relevant data)
206	Taha, B. H., Dempsey, J. A., Weber, S. M., Badr, M. S., Skatrud, J. B., Young, T. B., Jacques, A. J., and Seow, K. C. Automated detection and classification of sleep-disordered breathing from conventional polysomnography data. <i>Sleep</i> 1997. 20 (11):991-1001.	9456464	(No relevant data-event to event comparison)
207	Tarasiuk, A., Greenberg-Dotan, S., Simon, T., Tal, A., Oksenberg, A., and Reuveni, H. Low socioeconomic status is a risk factor for cardiovascular disease among adult obstructive sleep apnea syndrome patients requiring treatment. <i>Chest</i> 2006. 130(3):766-773	16963673	(No relevant data)
208	Teichtahl, H., Cunnington, D., Cherry, G., and Wang, D. Scoring polysomnography respiratory events: the utility of nasal pressure and oro-nasal thermal sensor recordings. <i>Sleep Medicine</i> 2003. 4 (5):419-425.	14592283	(N<=100 for errors or adverse events)
209	Teschler, H., Farhat, A. A., Exner, V., Konietzko, N., and Berthon-Jones, M. AutoSet nasal CPAP titration: constancy of pressure, compliance and effectiveness at 8 month follow-up. <i>European Respiratory Journal</i> 1997. 10 (9):2073-2078.	9311505	(No relevant data)
210	Teschler, H., Wessendorf, T. E., Farhat, A. A., Konietzko, N., and Berthon-Jones, M. Two months auto-adjusting versus conventional nCPAP for obstructive sleep apnoea syndrome. <i>European Respiratory Journal</i> 2000. 15 (6):990-995.	10885414	(N<=10 for portable vs PSG)
211	Tsai, W. H., Remmers, J. E., Brant, R., Flemons, W. W., Davies, J., and Macarthur, C. A decision rule for diagnostic testing in obstructive sleep apnea.[see comment]. <i>American Journal of Respiratory & Critical Care Medicine</i> 2003. 167 (10):1427-1432.	12738600	(N<100 for errors or adverse events)
212	Tvinnereim, M., Mateika, S., Cole, P., Haight, J., and Hoffstein, V. Diagnosis of obstructive sleep apnea using a portable transducer catheter. <i>American Journal of Respiratory & Critical</i>	7633741	(N<=10 for portable vs PSG)

ID	Citation	PMID	Reason for exclusion
213	Care Medicine 1995. 152 (2):775-779. Vgontzas, A. N., Tan, T. L., Bixler, E. O., Martin, L. F., Shubert, D., and Kales, A. Sleep apnea and sleep disruption in obese patients. Archives of Internal Medicine 1994. 154 (15):1705-1711.	8042887	(No relevant data)
214	Waldhorn, R.E., Herrick, T.W., Nguyen, M.C., O'Donnell, A.E., Sodero, J., and Potalicchio, S.J. Long-term compliance with nasal continuous positive airway pressure therapy of obstructive sleep apnea. Chest 1990. 97 (1):33-38.	2403899	(Retrospective)
215	Waldhorn, R.E. and Wood, K. Attended home titration of nasal continuous positive airway pressure therapy for obstructive sleep apnea. Chest 1993. 104 (6):1707-1710.	8252947	(No relevant data)
216	White, D. P. and Gibb, T. J. Evaluation of the Healthdyne NightWatch system to titrate CPAP in the home. Sleep 1998. 21 (2):198-204.	9542803	(No relevant data)
217	Whitney, C. W., Gottlieb, D. J., Redline, S., Norman, R. G., Dodge, R. R., Shahar, E., Surovec, S., and Nieto, F. J. Reliability of scoring respiratory disturbance indices and sleep staging. Sleep 1998. 21 (7):749-757.	11286351	(Covered by other publication)
218	Williams, A., Santiago, S., and Stein, M. Screening for sleep apnea? Chest 1989. 96 (3):451-453.	2788558	(No relevant data)
219	Yaggi HK, Concato J, Kernan WN, et al. Obstructive sleep apnea as a risk factor for stroke and death. N Engl J Med 2005; 353(19):2034-2041.	16282178	(No relevant data)
220	Yamashiro, Y. and Kryger, M. H. Nocturnal oximetry: is it a screening tool for sleep disorders? Sleep 1995. 18 (3):167-171.	7610312	(Retrospective)
221	Young, T., Peppard, P., Palta, M., Hla, K. M., Finn, L., Morgan, B., and Skatrud, J. Population-based study of sleep-disordered breathing as a risk factor for hypertension. Arch.Intern.Med. 1997. 157 (15):1746-1752.	9250236	(No relevant data)
222	Young, T., Rabago, D., Zgierska, A., Austin, D., and Laurel, F. Objective and subjective sleep quality in premenopausal, perimenopausal, and postmenopausal women in the Wisconsin Sleep Cohort Study.[see comment]. Sleep 2003. 26 (6):667-672.	14572118	(No relevant data-covered by other publication)
223	Zafar, S., Ayappa, I., Norman, R. G., Krieger, A. C., Walsleben, J. A., and Rapoport, D. M. Choice of oximeter affects apnea-hypopnea index. Chest 2005. 127 (1):80-88.	15653966	(No relevant data)
224	Zamarron, C., Romero, P. V., Gude, F., Amaro, A., and Rodriguez, J. R. Screening of obstructive sleep apnoea: heart rate spectral analysis of nocturnal pulse oximetric recording. Respiratory Medicine 2001. 95 (9):759-765.	11575898	(Not an eligible physiologic signal)
225	Zamarron, C., Hornero, R., del Campo, F., Abasolo, D. and Alvarez, D. Heart rate regularity analysis obtained from pulse oximetric recordings in the diagnosis of obstructive sleep apnea. Sleep & Breathing 2006; 10(2):83-89	16450176	(Not an eligible physiologic signal; covered by another publication)
226	Zou, D., Grote, L., Peker, Y., Lindblad, U., and Hedner, J. Validation a portable monitoring device for sleep apnea diagnosis in a population based cohort using synchronized home polysomnography. Sleep 2006; 29 (3):367-374.	16553023	(Not an eligible comparison)

B1: (refers to section B1 of the technology assessment); CPAP: Continuous positive airway pressure; ID: identification number; N: number; PMID: PubMed ID; wk: week(s)

Appendix E – Information on overall methodological quality grading

The following appendix tables are provided as a quick description of methodological quality items that were used to characterize the overall methodological quality of the studies. Note that overall study quality may be penalized when improper statistical analyses are used or when data from text, figures and tables do not corroborate. We remind that:

Grade A (good methodological quality) studies fulfill most commonly held concepts of high quality, including the following: blinding of assessors to results of the other test, blinding to clinical information, enrollment of consecutive patients, random order of measurements or simultaneous measurements with the compared methods, clear description of the evaluated population, setting, and measurement methods; appropriate measurement of outcomes; appropriate statistical and analytic methods and reporting; no reporting errors; not excessive data loss (<20%); and no obvious bias.

Grade B (moderate methodological quality) studies may be susceptible to some bias, but not sufficient to invalidate the results. Such studies do not meet the criteria described in category A. They have some deficiencies but none likely to cause major bias. Study may be missing information making assessment of the limitations and potential problems difficult.

Grade C (poor methodological quality) studies are subject to significant bias that may invalidate the results. Such studies may have serious errors in design, analysis or reporting. These studies may have large amounts of missing information or discrepancies in reporting.

Table E1: Methodological quality items for studies of type I devices

Author, Year Country (PMID)	Consecutive patients	Blinding to clinical information	Blinding to other test	Random test order or simultaneous testing	Clear description of studied population	Data loss (%)	Quality
Andreas, 1993 Germany (8425594)	YES	NS	YES	NA	NO	NA	C
Pittman, 2004 USA (15586793)	NO	NS	NO ¹	NA	NO	0 (?)	C

NA: Not applicable; NS: Not stated

¹ "Only epochs scored as sleep were analyzed" (implied with Morpheus I)

Table E2: Methodological quality items for studies of type II devices

Author, Year Country (PMID)	Consecutive patients	Blinding to clinical information	Blinding to other test	Random test order or simultaneous testing	Clear description of studied population	Data loss (%)	Quality
Iber, 2004 US (15164911)	NS	YES	YES	YES	YES	~16	B
Gagnadoux, 2002 France (11888956)	NS	YES	YES	YES	NO	~18	B
Portier, 2000 France (10988088)	YES	NS	NS	YES	YES	~34	B
Mykytyn, 1999 Australia (9925071)	NS	NS	NS	YES	NO	0	C
Orr, 1993 USA (8275725)	NS	NS	NS	YES	NO	0	C

NS: Not stated

Table E3: Methodological quality items for studies of type III devices

Author, Year Country (PMID)	Consecutive patients	Blinding to clinical information	Blinding to other test	Random test order or simultaneous testing	Clear description of studied population	Data loss (%)	Quality
Ancoli-Israel, 1997 US (9080356)	NO	NS	NS	NO	NO	~6	C
Ayappa, 2004 USA (15532212)	YES	YES	YES	YES	NO	11	A
Ballester, 2000 Spain (8803460)	NO	NS	YES	YES	NO	0	B
Calleja, 2002 Spain (12503711)	NO	NO	YES ²	YES	NO	8	C
Carasco, 1996 Spain (8834345)	YES	NS	NS	YES	NO	NS	B
Claman, 2001 USA (11555758)	YES	NS	NS	YES	NO	NS	C
Dingli, 2003 UK (12608438)	YES	YES	YES	YES	YES	3 ³ , 18 ⁴	A
Emsellem, 1990 US (2371595)	YES	NS	NS ⁵	YES	NO	6	C
Ficker, 2001 Germany (11416253)	YES	YES	YES	YES	YES	NS	A

² Different analyst

³ Study 1

⁴ Study 2

⁵ Scoring was performed by 2 "independent" raters

Fietze, 2002 Germany (12097767)	NO	NS	NS	YES	YES	0	C
Lloberes, 1996 Spain (8977607)	NS	NS	NS	YES	NO	0	C
Man, 1995 Canada (7634872)	NS	NS	YES	YES	NO	0	B
Marrone, 2001 Italy (11980277)	YES	NS	YES	YES	NO	0	C
Parra, 1997 Spain (9272909)	YES	YES	YES	NO ⁶	NO	0	B
Quintana- Gallego, 2004 Spain (15358704)	NS	NS	YES	YES	YES	9	B
Redline, 1991 USA (1935282)	NS	YES	YES	YES ⁷	NO	0	B
Reichert 2003, USA (14592324)	YES	YES	YES	YES	YES	-10	B
Su, 2004 USA (15577778)	YES	NS	YES	YES	NO	0	B
White, 1995 USA (7792491)	NS	YES	YES	YES	NO	0	C
Whittle, 1997 UK (9516901) Validation trial	NO	NO	NO	NO	NO	NS	C

⁶ Random order only for the first 50, the remaining 39 were first on the portable

⁷ Simultaneous testing in the majority (20/25) of the participants

Verse, 2000 Germany (10858392)	NO	YES	YES	YES	YES(?)	0	B
Yin, 2006 Japan (16455365)	YES	NS	NS	NO	NO	6	C
Zucconi, 1996 Italy (8804946)	YES	NS	YES	YES	YES	3	A

NS: Not stated

Table E4: Methodological quality items for studies of type IV devices (all type IV devices are listed, irrespective of number of bioparameters they record)

Author, Year Country (PMID)	Consecutive patients	Blinding to clinical information	Blinding to other test	Random test order or simultaneous testing	Clear description of studied population	Data loss (%)	Quality
Adachi, 2003 Japan (14607348)	YES	NS	NS	YES	NO	6	C
Alvarez, 2006, Spain (16537981)	NS	NS	NS	YES	NO	NS	C ⁸
Ayas, 2003 US (14592285)	NO	NS	YES	YES	YES	0	B
Bagnato, 2000 Brazil (10775882)	NS	NO	NS	YES	YES	0 (?)	B
Baltzan, 2000 Canada (10678466)	NO	YES	YES	NO ⁹	NO	8-10	C
Bar, 2003 Israel (12628865)	YES	NS	YES	YES	YES	0 ¹⁰ AND 3 ¹¹	C
Bradley, 1995 England (8553279)	YES	NS	YES	YES	NO	0	C ¹²
Bonsignore, 1990 Italy (2278624)	NS	NS	NS	NO	NO	NS	C
Chiner 1999, Spain, 10525553	YES	NS	NS	YES	YES	NS	B

⁸ The most promising finding (CMT) has data driven analysis

⁹ Study mentions random but explicitly states that order was based on availability of devices.

¹⁰ Home setting

¹¹ Lab setting

¹² Numbers do not corroborate

Cooper, 1991 UK 1926029	NS	NS	YES	NO	NO	>15	C
Douglas, 1992 UK (1346422)	YES	NO	YES	YES	NO	NS	C
Esnaola, 1996 Spain (8980975)	YES	YES	YES	YES	YES	1	B
Fleury, 1996 France (8865509)	YES	NO	NO	YES	NO	>14	C
Golpe, 2002 Spain (12377836)	NO	NS	YES	NO	NO	7 ¹³ AND 33 ¹⁴	B
Gugger, 1995 Switzerland (8553278)	YES	NS	NS	YES	NO	0 (?)	C
Gugger, 1997 Switzerland (9072989)	YES	YES	YES	YES	NO	2 (?)	B
Gurubhagavat ula, 2004 USA (15142866)	YES	YES	YES	NS	YES	NS	B
Gyulay, 1987, Switzerland (3589326)	NO	NS	YES	YES	NO	0 ¹⁵	B
Issa, 1993 Canada (8214920)	NO	NS	NO	YES	YES	0	B
Kiely, 1996 Ireland (8947086)	YES	YES	YES	YES	NO	12	B
Koziej, 1994 Poland (7828683)	NO	NS	NO	YES	NO	0	C

¹³ Group 1

¹⁴ Group 2

¹⁵ For the analyses of interest

Levy 1996, France (8620711)	YES	NS	NS	YES	NO	NO	B
Mayer, 1998 France (9817143)	YES	YES	YES	YES	YES	0	B
Michaelson, 2006 USA (17165661)	YES	YES	YES	YES	YES	NS	B
Overland, 2005 Norway (15988172)	YES	NS	NS	YES	NO	NS	C
Pang, 2006 USA (16890080)	YES	YES	YES	NO	YES	18	B
Penzel, 2004 Germany (15382839)	NS	NS	NS	YES	NO	19	C
Pepin 1991, USA (2019170)	NS	NS	NS	YES	YES	NO	C
Pillar, 2003 Israel (14592323)	YES	NS	YES	YES	YES	0	B
Pittman, 2004 USA (15453551)	NO	NS	YES	YES	NO	0 ¹⁶ AND 3 ¹⁷	B
Rauscher, 1993 Austria (8497828)	YES	YES	YES	YES	NO	NS	C
Rauscher, 1991 Austria (1889491)	NS	NS	NO	YES	NO	NS	C

¹⁶ Home setting

¹⁷ Lab setting

Rees, 1998 UK (9817142)	YES	YES	NS	YES	YES(?)	0	C
Ryan, 1995 UK (8539678)	YES	YES	YES	NO	YES	31	C
Schafer, 1997 Germany 9154670	NO	NS	YES	NO	YES	0	B
Series, 1993 Canada (8357109)	YES	NS	YES	NO	YES	0	B
Shochat, 2002 Israel, Belgium, Germany (11843310)	NS	NS	NO	YES	NO	28	C
Stoohs, 1992 US (1582275)	NS	YES	YES	YES	YES	NS	C ¹⁸
Westbrook, 2005 US (16236870)	YES	NO	YES	YES	YES	~5	A
Williams, 1991, USA (1889245)	NS	NS	NS	NO	NO	10	C
Wiltshire, 2001 UK (11502633)	YES	NS	NS	NS	NO	0	C
van Surell, 1995 France (7656952)	YES	NS	YES	YES	NO	0	B ¹⁹
Vazquez, 2000 Canada (10722770)	NO	NS	YES	YES	NO	2	C ²⁰

¹⁸ Correlational analyses

¹⁹ Cannot corroborate graph data with text/tables

Zamarron, 1999 Spain (10491347)	NS	YES	YES	YES	NO	3	B ²¹
Zamarron, 2003 Spain (12740275)	NS	YES	YES	YES	YES	~5	B ²²

NS: Not stated

²⁰ They excluded all cases with difference <5 which were above and below the cutoff. Therefore, the Sens/Spec results are spuriously high

²¹ Correlational analyses

²² Correlational analyses