Literature Search Terms

sleep apnea, sleep apnoea, OSA, sleep apnea syndromes, ambulatory, monitoring, polysomnography, snoring, otorhinolaryngologic surgical procedures, surgical procedures, surgery, snoring, obstructive sleep apnea, diagnosis, diagnostic, sleep-related breathing disorders, sleep-disordered breathing, portable, home, limited, unattended, non-laboratory, in-home, out of center, monitor, care service, test, testing, sleep study, screening, recording, device, diagnosed, diagnoses, PSG, polysomnogram, respiratory polygraphy, repeat, retest, retesting, home diagnostic test, multichannel recorder, multi-night, split-night, follow-up, two-night, multiple-night

MeSH Terms

sleep apnea syndromes, sleep apnea obstructive, diagnosis, mass screening, probability, predictive value of tests, adult, ambulatory monitoring, polysomnography, follow-up studies, humans, snoring, otorhinolaryngologic surgical procedures, snoring/surgery, tongue/surgery, diagnostic techniques and procedures

Literature Search Limits

January 1, 2005 to June 29, 2016; Human studies, RCTs or observational studies, adults, English language

Inclusion Criteria

Diagnosis of OSA with PSG, HSAT, oximetry, or clinical prediction algorithm; address one of nine PICO questions, adults, outcomes related to accuracy, inconclusive results, complications, quality of life, medical outcomes, adherence, efficiency of diagnosis or access to care

Exclusion Criteria

Treatment paper, no OSA, pediatric subjects, initial sample size > 25 per condition, 50 total for PICO 2, initial sample size > 10 per condition, 20 total for all other PICOs, wrong publication type (review, editorial, methodological, non-RCT or non-observational study), other sleep comorbidities besides OSA, hospitalized or general surgery, diagnostic test not in PICO question, time between HSAT and PSG > 4 weeks, HSAT used in-lab, HSAT used simultaneously with PSG in-lab, MSLT, MWT, and other nap tests performed

Table S1—Summary of Downstream Consequences of OSA Diagnostic Outcomes

True Positive (TP)

- Effective treatment and improved QOL
- Ineffective treatment and worsening of symptoms
- Increased costs due to treatment
- Time for treatment and follow-up
- Psychological distress
- Side-effects of therapy
- Improvement in comorbid conditions (e.g., hypertension)
- Reduced risk of CV events
- Reduced risk of post-CV events
- Reduced risk of motor vehicle accident (MVA)
- Reduced overall health costs

True Negative (TN)

- Confirmation of absence of OSA
- Possible repeat testing if patient deemed at high risk for OSA
- Psychological relief
- Consideration of alternative causes for symptoms
- Saves time and resources
- Focused treatment on true cause of symptoms

False Positive (FP)

- Unnecessary treatment and utilization of resources
- Increased costs due to treatment
- Time for treatment and follow-up
- Psychological distress
- Delay in diagnosis of true condition
- Side-effects of therapy

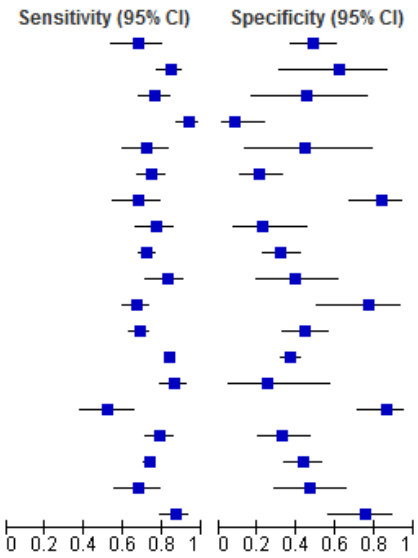
False Negative (FN)

- Absence of necessary treatment
- Reduced QOL
- Psychological distress
- Possible repeat testing if patient deemed at high risk for OSA
- Risk of motor vehicle accident (MVA)
- Risk of hypertension
- Risk of CV events
- Post-MI events
- Post-stroke events
- Death
- Increased costs and utilization of resources due to other condition(s)

Diagnosis of obstructive sleep apnea in adults using clinical tools, questionnaires and predication algorithms

Figure S1—Berlin Questionnaire vs. PSG (AHI ≥ 5)

Study	TP	FP	FN	TN	Sensitivity (95% CI)	Specificity (95% CI)
Ahmadi 2008	38	38	18	36	0.68 [0.54, 0.80]	0.49 [0.37, 0.61]
Amra 2013	121	5	23	8	0.84 [0.77, 0.90]	0.62 [0.32, 0.86]
Bouloukaki 2013	90	6	28	5	0.76 [0.68, 0.84]	0.45 [0.17, 0.77]
Cowan 2014	89	31	6	3	0.94 [0.87, 0.98]	0.09 [0.02, 0.24]
Danzi-Soares 2012	44	5	17	4	0.72 [0.59, 0.83]	0.44 [0.14, 0.79]
Friedman 2010	120	49	41	13	0.75 [0.67, 0.81]	0.21 [0.12, 0.33]
Kang 2013	44	6	21	30	0.68 [0.55, 0.79]	0.83 [0.67, 0.94]
Khaledi-Paveh 2016	60	17	18	5	0.77 [0.66, 0.86]	0.23 [0.08, 0.45]
Kim 2015	356	66	139	31	0.72 [0.68, 0.76]	0.32 [0.23, 0.42]
Laporta 2012	56	14	12	9	0.82 [0.71, 0.91]	0.39 [0.20, 0.61]
Luo 2014	130	4	65	13	0.67 [0.60, 0.73]	0.76 [0.50, 0.93]
Margallo 2014	236	42	110	34	0.68 [0.63, 0.73]	0.45 [0.33, 0.57]
Pataka 2014	1260	222	241	130	0.84 [0.82, 0.86]	0.37 [0.32, 0.42]
Pereira 2013	100	9	16	3	0.86 [0.79, 0.92]	0.25 [0.05, 0.57]
Popevic 2016	30	6	28	36	0.52 [0.38, 0.65]	0.86 [0.71, 0.95]
Rofail 2010	105	35	28	17	0.79 [0.71, 0.86]	0.33 [0.20, 0.47]
Sarinc Ulasi 2013	986	58	362	44	0.73 [0.71, 0.75]	0.43 [0.33, 0.53]
Sert Kuniyoshi 2011	47	16	22	14	0.68 [0.56, 0.79]	0.47 [0.28, 0.66]
Suksakorn 2014	87	8	13	24	0.87 [0.79, 0.93]	0.75 [0.57, 0.89]



Pooled sensitivity: 0.76 [0.72, 0.80]
Pooled specificity: 0.45 [0.34, 0.56]
LR+: 1.38 [1.15, 1.66]
LR-: 0.53 [0.42, 0.65]
DOR: 2.63 [1.79, 3.86]
Accuracy: 0.70 or **70%**

Figure S2—ROC Curve for Berlin Questionnaire vs. PSG (AHI ≥ 5)

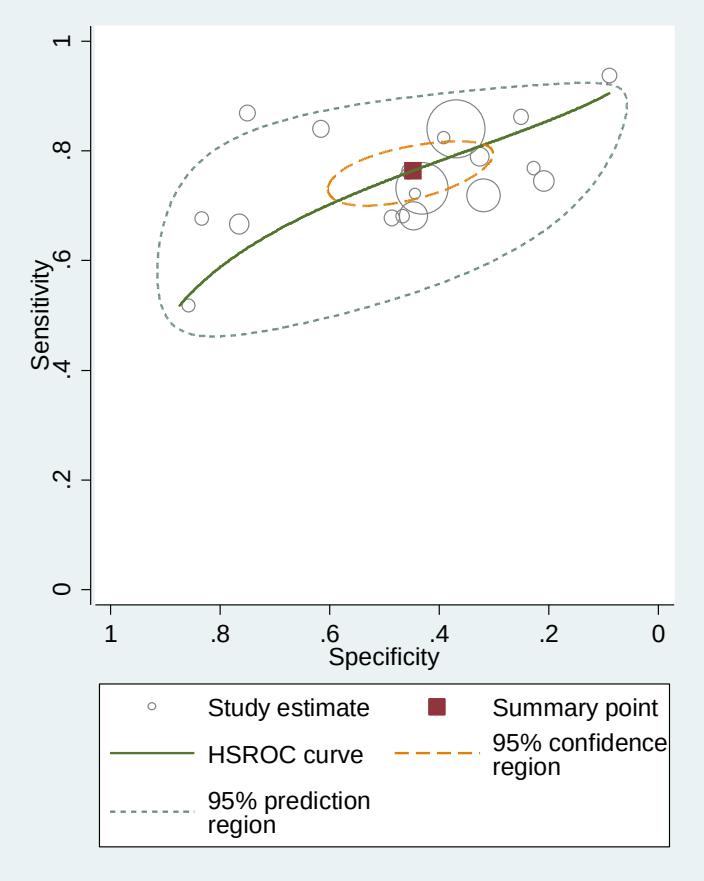


Table S2—Summary of Findings table for Berlin Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Ahmadi 2008 (A); Amra 2013 (B); Bouloukaki 2013 (C); Danzi-Soares 2012 (D); Friedman 2010 (E); Kang 2013 (F); Laporta 2012 (G); Pereira 2013 (H); Rofail 2010 (I); Sarinc Ulasi 2013 (J); Sert Kuniyoshi 2011 (K); Cowan 2014 (L); Khaledi-Paveh 2016 (M); Kim 2015 (N); Luo 2014 (O); Margallo 2014 (P); Pataka 2014 (Q); Popevic 2016 R; Suksakorn 2014 (S)

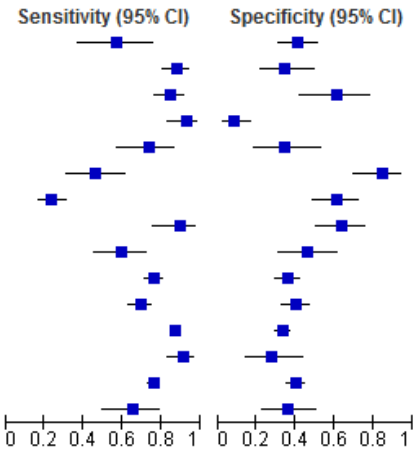
Pooled sensitivity Berlin Questionnaire: 0.76 (95% CI: 0.72 to 0.80) | **Pooled specificity Berlin Questionnaire**: 0.45 (95% CI: 0.34 to 0.56) **Pooled sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Pooled specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 72% (95% CI: 70 to 74%) **Accuracy (low risk):** 62% (95% CI: 60 to 64%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Berlin Questionnaire	Attended PSG	Berlin Questionnaire	Attended PSG	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	661 (626 to 696)	870 (870 to 870)	418 (396 to 440)	550 (550 to 550)	6303 (19) [A-S]
		209 fewer TP in Berlin Questionnaire		**132 fewer TP in Berlin Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		209 (174 to 244)	0 (0 to 0)	132 (110 to 154)	0 (0 to 0)	
		209 more FN in Berlin Questionnaire		**132 more FN in Berlin Questionnaire**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	59 (44 to 73)	130 (130 to 130)	202 (153 to 252)	450 (450 to 450)	6303 (19) [A-S]
		71 fewer TN in Berlin Questionnaire		**248 fewer TN in Berlin Questionnaire**		
False positives (patients incorrectly classified as having OSA)		71 (57 to 86)	0 (0 to 0)	248 (198 to 297)	0 (0 to 0)	
		71 more FP in Berlin Questionnaire		**248 more FP in Berlin Questionnaire**		

[1]Broad range of specificity across studies
[2]Wide confidence intervals

Figure S3—Berlin Questionnaire vs. PSG (AHI ≥ 15)

Study	TP	FP	FN	TN	Sensitivity (95% CI)	Specificity (95% CI)
Ahmadi 2008	16	60	12	42	0.57 [0.37, 0.76]	0.41 [0.32, 0.51]
Amra 2013	95	32	13	17	0.88 [0.80, 0.93]	0.35 [0.22, 0.50]
Bouloukaki 2013	83	12	15	19	0.85 [0.76, 0.91]	0.61 [0.42, 0.78]
Cowan 2014	53	66	4	6	0.93 [0.83, 0.98]	0.08 [0.03, 0.17]
Danzi-Soares 2012	28	21	10	11	0.74 [0.57, 0.87]	0.34 [0.19, 0.53]
Firat 2012	21	6	25	33	0.46 [0.31, 0.61]	0.85 [0.69, 0.94]
Friedman 2010	35	29	114	45	0.23 [0.17, 0.31]	0.61 [0.49, 0.72]
Kang 2013	34	23	4	40	0.89 [0.75, 0.97]	0.63 [0.50, 0.75]
Khaledi-Paveh 2016	32	25	22	21	0.59 [0.45, 0.72]	0.46 [0.31, 0.61]
Kim 2015	260	160	83	89	0.76 [0.71, 0.80]	0.36 [0.30, 0.42]
Margallo 2014	160	114	72	76	0.69 [0.63, 0.75]	0.40 [0.33, 0.47]
Pataka 2014	1093	408	168	204	0.87 [0.85, 0.89]	0.33 [0.30, 0.37]
Pereira 2013	80	29	8	11	0.91 [0.83, 0.96]	0.28 [0.15, 0.44]
Sarinc Ulasi 2013	769	261	246	174	0.76 [0.73, 0.78]	0.40 [0.35, 0.45]
Sert Kuniyoshi 2011	30	34	16	19	0.65 [0.50, 0.79]	0.36 [0.23, 0.50]



Pooled sensitivity: 0.75 [0.64, 0.83]
Pooled specificity: 0.42 [0.32, 0.52]
LR+: 1.29 [1.12, 1.48]
LR-: 0.60 [0.44, 0.81]
DOR: 2.16 [1.42, 3.27]
Accuracy: 0.63 or **63%**

Figure S4—ROC Curve for Berlin Questionnaire vs. PSG (AHI ≥ 15)

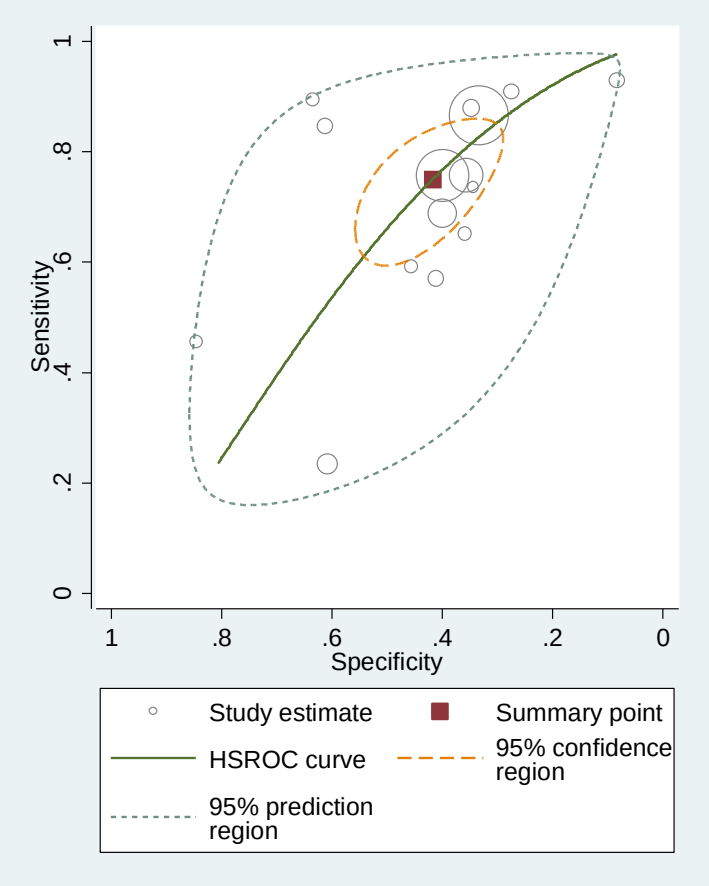


Table S3—Summary of Findings table for Berlin Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Ahmadi 2008 (A); Amra 2013 (B); Bouloukaki 2013 (C); Danzi-Soares 2012 (D); Friedman 2010 (E); Kang 2013 (F); Pereira 2013 (G); Sarinc Ulasi 2013 (H); Sert Kuniyoshi 2011 (I); Cowan 2014 (J); Khaledi-Paveh 2016 (K); Kim 2015 (L); Margallo 2014 (M); Pataka 2014 (N); Firat 2012 (O)

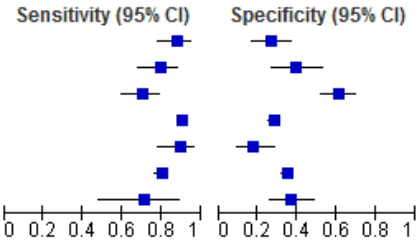
Pooled sensitivity Berlin Questionnaire: 0.75 (95% CI: 0.64 to 0.83) | **Pooled specificity Berlin Questionnaire**: 0.42 (95% CI: 0.32 to 0.52) **Pooled sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Pooled specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 63% (95% CI: 61 to 65%) **Accuracy (low risk):** 50% (95% CI: 50 to 50%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		Berlin Questionnaire	Attended PSG	Berlin Questionnaire	Attended PSG	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	480 (410 to 531)	640 (640 to 640)	188 (160 to 208)	250 (250 to 250)	5668 (15) [A-O]
		160 fewer TP in Berlin Questionnaire		**62 fewer TP in Berlin Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		160 (109 to 230)	0 (0 to 0)	62 (42 to 90)	0 (0 to 0)	
		209 more FN in Berlin Questionnaire		**62 more FN in Berlin Questionnaire**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	151 (115 to 187)	360 (360 to 360)	315 (240 to 390)	750 (750 to 750)	5668 (15) [A-O]
		209 fewer TN in Berlin Questionnaire		**435 fewer TN in Berlin Questionnaire**		
False positives (patients incorrectly classified as having OSA)		209 (173 to 245)	0 (0 to 0)	435 (360 to 510)	0 (0 to 0)	
		209 more FP in Berlin Questionnaire		**435 more FP in Berlin Questionnaire**		

[1]Broad range of specificity across studies
[2]Wide confidence intervals

Figure S5—Berlin Questionnaire vs. PSG (AHI ≥ 30)

Study	TP	FP	FN	TN	Sensitivity (95% CI)	Specificity (95% CI)
Amra 2013	65	61	9	22	0.88 [0.78, 0.94]	0.27 [0.17, 0.37]
Bouloukaki 2013	54	37	14	24	0.79 [0.68, 0.88]	0.39 [0.27, 0.53]
Friedman 2010	67	49	29	78	0.70 [0.60, 0.79]	0.61 [0.52, 0.70]
Pataka 2014	811	681	88	273	0.90 [0.88, 0.92]	0.29 [0.26, 0.32]
Pereira 2013	50	59	6	13	0.89 [0.78, 0.96]	0.18 [0.10, 0.29]
Sarinc Ulasi 2013	487	547	122	294	0.80 [0.77, 0.83]	0.35 [0.32, 0.38]
Sert Kuniyoshi 2011	15	49	6	29	0.71 [0.48, 0.89]	0.37 [0.26, 0.49]



Pooled sensitivity: 0.84 [0.77, 0.89]
Pooled specificity: 0.35 [0.26, 0.44]
DOR: 2.73 [2.11, 3.52]
LR+: 1.28 [1.17, 1.41]
LR-: 0.47 [0.38, 0.58]
Accuracy: 0.56 or **56%**

Figure S6—ROC Curve for Berlin Questionnaire vs. PSG (AHI ≥ 30)

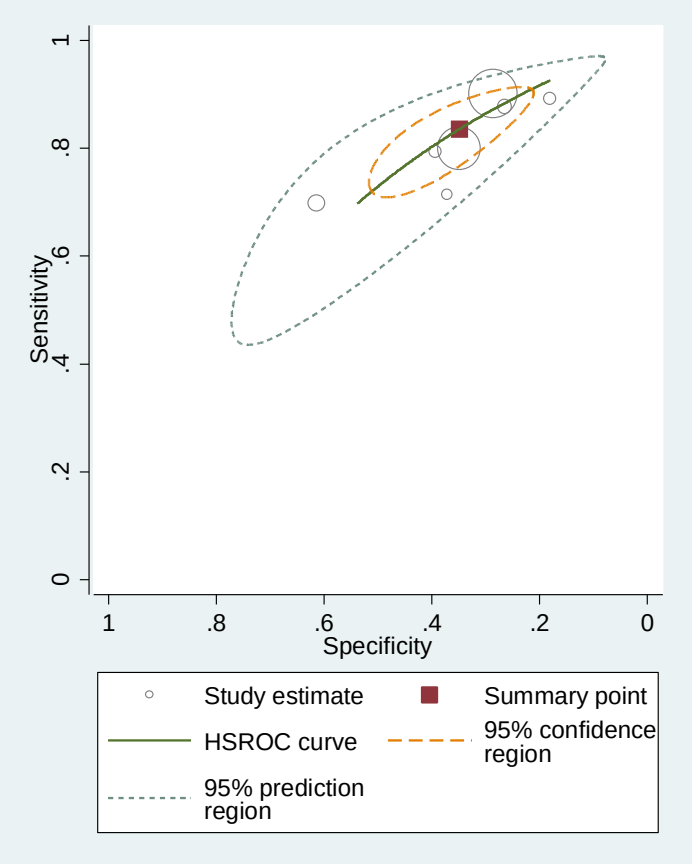


Table S4—Summary of Findings table for Berlin Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Amra 2013 (A); Bouloukaki 2013 (B); Friedman 2010 (C); Pereira 2013 (D); Sarinc Ulasi 2013 (E); Sert Kuniyoshi 2011 (F); Pataka 2014 (G)

Pooled sensitivity Berlin Questionnaire: 0.84 (95% CI: 0.77 to 0.89) | **Pooled specificity Berlin Questionnaire**: 0.35 (95% CI: 0.26 to 0.44) **Pooled sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Pooled specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 53% (95% CI: 52 to 53%) **Accuracy (low risk):** 40% (95% CI: 38 to 42%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		Berlin Questionnaire	Attended PSG	Berlin Questionnaire	Attended PSG	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	302 (277 to 320)	360 (360 to 360)	84 (77 to 89)	100 (100 to 100)	4039 (7) [A-G]
		58 fewer TP in Berlin Questionnaire		**16 fewer TP in Berlin Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		58 (40 to 83)	0 (0 to 0)	16 (11 to 23)	0 (0 to 0)	
		58 more FN in Berlin Questionnaire		**16 more FN in Berlin Questionnaire**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	224 (166 to 282)	640 (640 to 640)	315 (234 to 396)	900 (900 to 900)	4039 (7) [A-G]
		416 fewer TN in Berlin Questionnaire		**585 fewer TN in Berlin Questionnaire**		
False positives (patients incorrectly classified as having OSA)		416 (358 to 474)	0 (0 to 0)	585 (504 to 666)	0 (0 to 0)	
		416 more FP in Berlin Questionnaire		**585 more FP in Berlin Questionnaire**		

[1]Broad range of specificity across studies
[2]Wide confidence intervals

Table S5—Summary of Findings table for Berlin Questionnaire vs. Home Sleep Apnea Test (HSAT) to diagnose OSA in Suspected Adults (AHI ≥ 5)

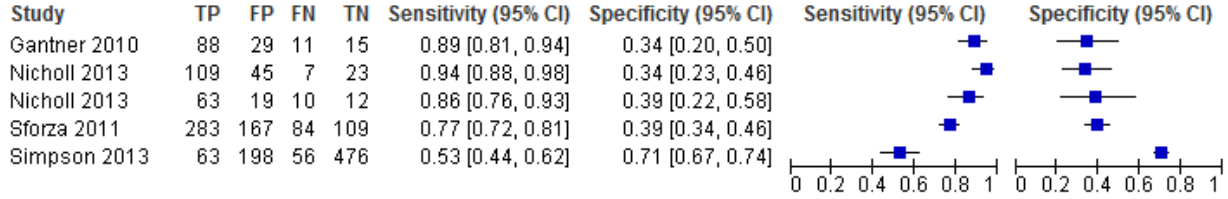
References: Facco 2012 (A)

Single study sensitivity Berlin Questionnaire: 0.39 (95% CI: 0.22 to 0.59) | **Single study specificity Berlin Questionnaire**: 0.68 (95% CI: 0.56 to 0.78) |**Single study sensitivity HSAT**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity HSAT**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy high risk**: 43% (95% CI: 26 to 61%) **Accuracy low risk:** 52% (95% CI: 37 to 68%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Berlin Questionnaire	HSAT	Berlin Questionnaire	HSAT	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	339 (191 to 513)	870 (870 to 870)	215 (121 to 325)	550 (550 to 550)	100 (1) [A]
		531 fewer TP in Berlin Questionnaire		**335 fewer TP in Berlin Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		531 (679 to 357)	0 (0 to 0)	335 (429 to 225)	0 (0 to 0)	
		531 more FN in Berlin Questionnaire		**335 more FN in Berlin Questionnaire**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	88 (73 to 101)	130 (130 to 130)	306 (252 to 351)	450 (450 to 450)	100 (1) [A]
		42 fewer TN in Berlin Questionnaire		**144 fewer TN in Berlin Questionnaire**		
False positives (patients incorrectly classified as having OSA)		42 (57 to 29)	0 (0 to 0)	144 (198 to 99)	0 (0 to 0)	
		42 more FP in Berlin Questionnaire		**144 more FP in Berlin Questionnaire**		

[1]Study consisted of pregnant women only
[2]Wide confidence interval for sensitivity and specificity

Figure S7—Berlin Questionnaire vs. HSAT (AHI ≥ 15)



Pooled sensitivity: 0.76 [0.64, 0.85]
Pooled specificity: 0.44 [0.30, 0.58]
LR+: 1.36 [0.91, 2.02]
LR-: 0.54 [0.26, 1.20]
DOR: 2.31 [1.68, 2.42]
Accuracy: 0.67 or **67%**

Table S6—Summary of Findings table for Berlin Questionnaire vs. HSAT to diagnose OSA in Suspected Adult (AHI ≥ 15)

References: Gantner 2010 (A); Nicholl 2013 (B); Sforza 2011 (C); Simpson 2013 (D)

Pooled sensitivity Berlin Questionnaire: 0.76 (95% CI: 0.44 to 0.85) | **Pooled specificity Berlin Questionnaire**: 0.44 (95% CI: 0.30 to 0.58) **Pooled sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Pooled specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 53% (95% CI: 52 to 53%) **Accuracy (low risk):** 40% (95% CI: 38 to 42%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		Berlin Questionnaire	HSAT	Berlin Questionnaire	HSAT	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	486 (282 to 544)	640 (640 to 640)	190 (110 to 213)	250 (250 to 250)	1751 (4) [A-D]
		154 fewer TP in Berlin Questionnaire		**60 fewer TP in Berlin Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		154 (96 to 358)	0 (0 to 0)	60 (37 to 140)	0 (0 to 0)	
		154 more FN in Berlin Questionnaire		**60 more FN in Berlin Questionnaire**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	158 (108 to 209)	360 (360 to 360)	330 (225 to 435)	750 (750 to 750)	1751 (4) [A-D]
		202 fewer TN in Berlin Questionnaire		**420 fewer TN in Berlin Questionnaire**		
False positives (patients incorrectly classified as having OSA)		202 (151 to 252)	0 (0 to 0)	420 (315 to 525)	0 (0 to 0)	
		202 more FP in Berlin Questionnaire		**420 more FP in Berlin Questionnaire**		

[1]Broad range of specificity and sensitivity across studies
[2]Wide confidence intervals

Table S7—Berlin Questionnaire vs. HSAT to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Gantner 2010 (A); Nicoll 2013 (B)

Range of sensitivities Berlin Questionnaire: 0.76 to 0.92 | **Range of specificities Berlin Questionnaire**: 0.26 to 0.42
Range of sensitivities HSAT: 1.00 to 1.00 | **Range of specificities HSAT**: 1.00 to 1.00 **Accuracy (high risk)**: 44% to 60%
Accuracy (low risk): 31% to 47%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		Berlin Questionnaire	HSAT	Berlin Questionnaire	HSAT	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	274 to 331	360 to 360	76 to 92	100 to 100	315 (2) [A,B]
		29 to 86 fewer TP in Berlin Questionnaire		**8 to 24 fewer TP in Berlin Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		86 to 29	0 to 0	24 to 8	0 to 0	
		29 to 86 more FN in Berlin Questionnaire		**8 to 24 more FN in Berlin Questionnaire**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	166 to 269	640 to 640	234 to 378	900 to 900	315 (2) [A,B]
		371 to 474 fewer TN in Berlin Questionnaire		**666 fewer to 522 fewer TN in Berlin Questionnaire**		
False positives (patients incorrectly classified as having OSA)		371 to 474	0 to 0	522 to 666	0 to 0	
		371 to 474 fewer TP in Berlin Questionnaire		**522 to 666 fewer TP in Berlin Questionnaire**		

[1]Indirect evidence as Berlin Questionnaire was not compared against HSAT in any of the PICO questions
[2]Wide range of sensitivity and specificity across studies

Table S8—Summary of Findings table for ESS vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Chen 2011 (A); Danzi-Soares (B); Zou 2013 (C); Sarinc Ulasli 2013 (D); Pataka 2014 (E); Luo 2014 (F)

Range of sensitivities Epworth Sleepiness Scale: 0.27 to 0.72 | Range of specificities Epworth Sleepiness Scale: 0.50 to 0.76 | Range of sensitivities Attended PSG: 1.00 to 1.00 | Range of specificities Attended PSG: 1.00 to 1.00 | **Accuracy (high risk)**: (51% to 52%) **Accuracy (low risk):** (54% to 59%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		ESS	Attended PSG	ESS	Attended PSG	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	235 to 626	870 to 870	149 to 396	550 to 550	4724 (6) [A-F]
		244 to 635 fewer TP in ESS		**154 to 401 fewer TP in ESS**		
False negatives (patients incorrectly classified as not having OSA)		244 to 635	0 to 0	154 to 401	0 to 0	
		244 to 635 more FN in ESS		**154 to 401 more FN in ESS**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	65 to 99	130 to 130	225 to 342	450 to 450	4724 (6) [A-F]
		31 to 65 fewer TN in ESS		**108 to 225 fewer TN in ESS**		
False positives (patients incorrectly classified as having OSA)		31 to 65	0 to 0	108 to 225	0 to 0	
		31 to 65 more FP in ESS		**108 to 225 more FP in ESS**		

[1]Wide range of values for sensitivity and specificity across studies
[2]Wide confidence intervals for sensitivity and specificity

Table S9—Summary of Findings table for ESS vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Danzi-Soares (A); Subramanian 2011 (B); Ulasli 2014 (C); Pataka 2014 (D); Luo 2014 (E)

Range of sensitivities ESS: 0.21 to 0.58 | **Range of specificities ESS**: 0.50 to 0.72 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 46% to 48% **Accuracy (low risk):** 54% to 58%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		ESS	Attended PSG	ESS	Attended PSG	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	134 to 371	640 to 640	53 to 143	250 to 250	4093 (5)[A-E]
		269 to 506 fewer TP in ESS		**105 to 197 fewer TP in ESS**		
False negatives (patients incorrectly classified as not having OSA)		269 to 506	0 to 0	105 to 197	0 to 0	
		269 to 506 more FN in ESS		**105 to 197 more FN in ESS**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	180 to 259	360 to 360	375 to 540	750 to 750	4093 (5)[A-E]
		101 to 180 fewer TN in ESS		**210 to 375 fewer TN in ESS**		
False positives (patients incorrectly classified as having OSA)		101 to180	0 to 0	201 to 375	0 to 0	
		101 to 180 more FP in ESS		**201 to 375 more FP in ESS**		

[1]Wide range of values for sensitivity and specificity
[2]Confidence interval for studies is wide

Table S10—Summary of Findings table for ESS vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Ulasli 2014 (A); Pataka 2014 (B); Luo 2014 (C)

Range of sensitivities ESS: 0.53 to 0.63 | **Range of specificities ESS**: 0.54 to 0.62 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 46% to 48% **Accuracy (low risk):** 54% to 58%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		ESS	Attended PSG	ESS	Attended PSG	
True positives (patients with OSA)	⨁⨁⨁⨁ HIGH	191 to 227	360 to 360	53 to 63	100 to 100	3515 (3) [A-C]
		133 to 169 fewer TP in ESS		**37 to 47 fewer TP in ESS**		
False negatives (patients incorrectly classified as not having OSA)		133 to 169	0 to 0	37 to 47	0 to 0	
		133 to 169 more FN in ESS		**105 to 197 more FN in ESS**		
True negatives (patients without OSA)	⨁⨁⨁⨁ HIGH	346 to 397	640 to 640	486 to 558	900 to 900	3515 (3) [A-C]
		243 to 294 fewer TN in ESS		**342 to 414 fewer TN in ESS**		
False positives (patients incorrectly classified as having OSA)		243 to 294	0 to 0	342 to 414	0 to 0	
		243 to 294 more FP in ESS		**342 to 414 more FP in ESS**		

Table S11—Summary of Findings table for ESS vs. HSAT to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Facco 2012 (A)

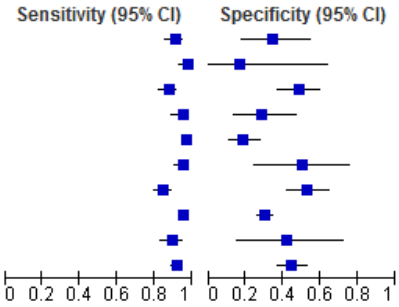
Single study sensitivity ESS: 0.36 (95% CI: 0.19 to 0.57) | **Single study specificity ESS**: 0.77 (95% CI: 0.66 to 0.86) **Single study sensitivity HSAT**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity HSAT**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 41% (95% CI: 25 to 61%) **Accuracy (low risk):** 54% (95% CI: 40 to 70%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		ESS	HSAT	ESS	HSAT	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	313 (165 to 496)	870 (870 to 870)	198 (105 to 314)	550 (550 to 550)	100 (1) [A]
		557 fewer TP in ESS		**352 fewer TP in ESS**		
False negatives (patients incorrectly classified as not having OSA)		557 (374 to 705)	0 (0 to 0)	352 (236 to 445)	0 (0 to 0)	
		557 more FN in ESS		**352 more FN in ESS**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	100 (86 to 112)	130 (130 to 130)	347 (297 to 387)	450 (450 to 450)	100 (1) [A]
		30 fewer TN in ESS		**103 fewer TN in ESS**		
False positives (patients incorrectly classified as having OSA)		30 (18 to 44)	0 (0 to 0)	103 (63 to 153)	0 (0 to 0)	
		30 more FP in ESS		**103 more FP in ESS**		

[1]Study consisted of pregnant women
[2]Wide confidence interval for sensitivity and specificity

Figure S8—STOP-BANG Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

Study	TP	FP	FN	TN	Sensitivity (95% CI)	Specificity (95% CI)
Alhouqani 2015	149	19	15	10	0.91 [0.85, 0.95]	0.34 [0.18, 0.54]
BaMammam 2015	92	5	2	1	0.98 [0.93, 1.00]	0.17 [0.00, 0.64]
Banhiran 2014	194	42	28	39	0.87 [0.82, 0.91]	0.48 [0.37, 0.60]
Cowan 2014	92	23	5	9	0.95 [0.88, 0.98]	0.28 [0.14, 0.47]
Kim 2015	480	77	17	18	0.97 [0.95, 0.98]	0.19 [0.12, 0.28]
Luo 2014	186	8	10	8	0.95 [0.91, 0.98]	0.50 [0.25, 0.75]
Ong 2010	201	38	37	43	0.84 [0.79, 0.89]	0.53 [0.42, 0.64]
Pataka 2014	1311	329	70	143	0.95 [0.94, 0.96]	0.30 [0.26, 0.35]
Pereira 2013	104	7	12	5	0.90 [0.83, 0.95]	0.42 [0.15, 0.72]
Sadeghniiat-Haghighi 2015	404	90	36	73	0.92 [0.89, 0.94]	0.45 [0.37, 0.53]



Pooled sensitivity: 0.93 [0.90, 0.95]
Pooled specificity: 0.36 [0.29, 0.44]
LR+: 1.46 [1.32, 1.62]
LR-: 0.19 [0.16, 0.23]
DOR: 7.72 [6.35, 9.39]
Accuracy: 0.80 or **80%**

Figure S9—ROC Curve for STOP-BANG Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

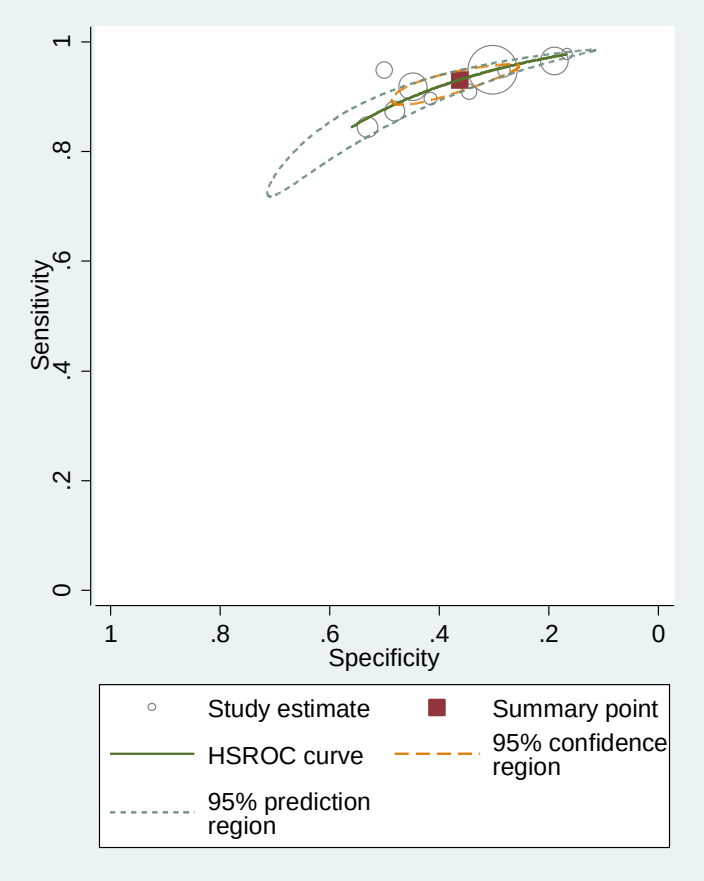


Table S12—Summary of Findings table for STOP-BANG Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Alouqani 2015 (A); BaHammam 2015 (B); Banhiran 2014 (C); Cowan 2014 (D); Kim 2015 (E); Luo 2014 (F); Ong 2010 (G); Pataka 2014 (H); Pereira 2013 (I); Sadeghniiat-Highighi 2015 (J)

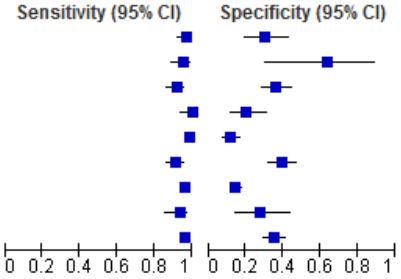
Pooled sensitivity STOP-BANG Questionnaire: 0.93 (95% CI: 0.90 to 0.95) | **Pooled specificity STOP-BANG Questionnaire**: 0.36 (95% CI: 0.29 to 0.44) **Pooled sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Pooled specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 53% (95% CI: 52 to 53%) **Accuracy (low risk):** 40% (95% CI: 38 to 42%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		STOP- BANG Questionnaire	Attended PSG	STOP- BANG Questionnaire	Attended PSG	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	809 (783 to 827)	870 (870 to 870)	512 (495 to 523)	550 (550 to 550)	4432 (10) [A-J]
		61 fewer TP in STOP-BANG Questionnaire		**38 fewer TP in STOP-BANG Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		61 (43 to 87)	0 (0 to 0)	38 (27 to 55)	0 (0 to 0)	
		61 more FN in STOP-BANG Questionnaire		**38 more FN in STOP-BANG Questionnaire**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	47 (38 to 57)	130 (130 to 130)	162 (130 to 198)	450 (450 to 450)	4432 (10) [A-J]
		83 fewer TN in STOP-BANG Questionnaire		**288 fewer TN in STOP-BANG Questionnaire**		
False positives (patients incorrectly classified as having OSA)		83 (73 to 92)	0 (0 to 0)	288 (252 to 320)	0 (0 to 0)	
		83 more FP in STOP-BANG Questionnaire		**288 more FP in STOP-BANG Questionnaire**		

[1]Broad range of specificity across studies
[2]Wide confidence intervals for specificity

Figure S10—STOP-BANG Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

Study	TP	FP	FN	TN	Sensitivity (95% CI)	Specificity (95% CI)
Alhouqani 2015	120	48	4	21	0.97 [0.92, 0.99]	0.30 [0.20, 0.43]
BaHammam 2015	85	4	4	7	0.96 [0.89, 0.99]	0.64 [0.31, 0.89]
Banhiran 2014	139	97	12	55	0.92 [0.87, 0.96]	0.36 [0.29, 0.44]
Cowan 2014	56	58	0	15	1.00 [0.94, 1.00]	0.21 [0.12, 0.32]
Kim 2015	337	219	6	30	0.98 [0.96, 0.99]	0.12 [0.08, 0.17]
Ong 2010	148	97	14	63	0.91 [0.86, 0.95]	0.39 [0.32, 0.47]
Pataka 2014	1200	514	51	88	0.96 [0.95, 0.97]	0.15 [0.12, 0.18]
Pereira 2013	82	29	6	11	0.93 [0.86, 0.97]	0.28 [0.15, 0.44]
Sadeghniiat-Haghighi 2015	306	185	12	100	0.96 [0.94, 0.98]	0.35 [0.30, 0.41]



Pooled sensitivity: 0.95 [0.94, 0.97]
Pooled specificity: 0.27 [0.20, 0.36]
LR+: 1.31 [1.18, 1.45]
LR-: 0.17 [0.12, 0.23]
DOR: 7.86 [5.37, 11.49]
Accuracy: 0.68 or **68%**

Figure S11—STOP-BANG Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

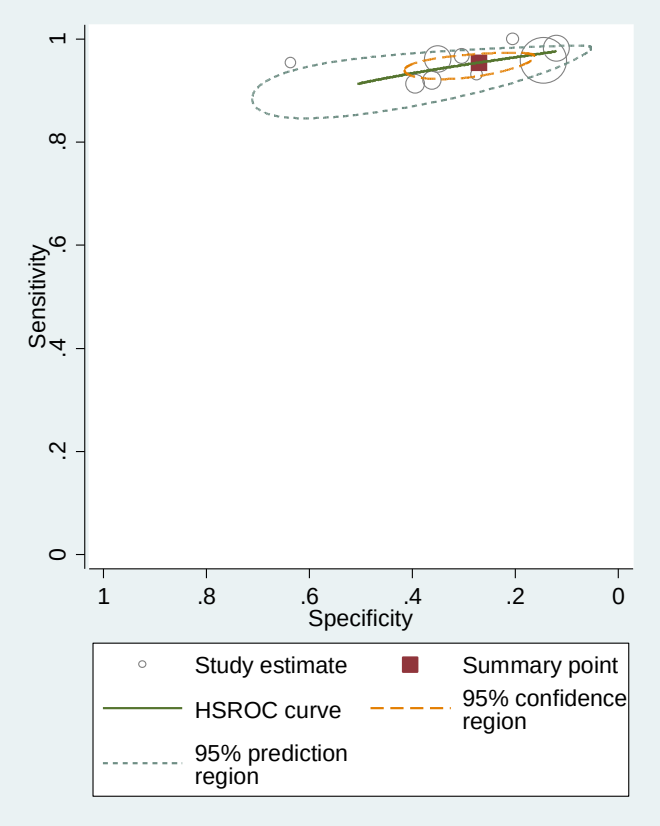


Table S13—Summary of Findings table for STOP-BANG Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Alouqani 2015 (A); BaHammam 2015 (B); Banhiran 2014 (C); Cowan 2014 (D); Kim 2015 (E); Ong 2010 (F); Pataka 2014 (G); Pereira 2013 (H); Sadeghniiat-Highighi 2015 (I)

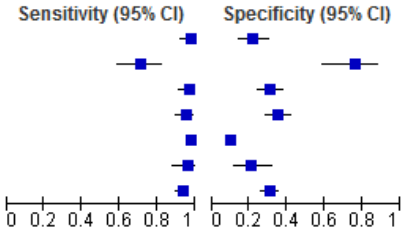
Pooled sensitivity STOP-BANG Questionnaire: 0.95 (95% CI: 0.94 to 0.97) | **Pooled specificity STOP-BANG Questionnaire**: 0.27 (95% CI: 0.20 to 0.36) **Pooled sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Pooled specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 70% (95% CI: 69 to 72%) **Accuracy (low risk):** 43% (95% CI: 42 to 44%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		STOP- BANG Questionnaire	Attended PSG	STOP- BANG Questionnaire	Attended PSG	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	614 (602 to 621)	640 (640 to 640)	240 (235 to 243)	250 (250 to 250)	4223 (9) [A-I]
		26 fewer TP in STOP-BANG Questionnaire		**10 fewer TP in STOP-BANG Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		26 (19 to 38)	0 (0 to 0)	10 (7 to 15)	0 (0 to 0)	
		26 more FN in STOP-BANG Questionnaire		**10 more FN in STOP-BANG Questionnaire**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	90 (65 to 122)	360 (360 to 360)	188 (135 to 255)	750 (750 to 750)	4223 (9) [A-I]
		270 fewer TN in STOP-BANG Questionnaire		**562 fewer TN in STOP-BANG Questionnaire**		
False positives (patients incorrectly classified as having OSA)		270 (238 to 295)	0 (0 to 0)	562 (495 to 615)	0 (0 to 0)	
		270 more FP in STOP-BANG Questionnaire		**562 more FP in STOP-BANG Questionnaire**		

[1]Broad range of specificity across studies
[2]Wide confidence intervals for specificity

Figure S12—STOP-BANG Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

Study	TP	FP	FN	TN	Sensitivity (95% CI)	Specificity (95% CI)
Alhouqani 2015	85	83	2	23	0.98 [0.92, 1.00]	0.22 [0.14, 0.31]
BaHammam 2015	45	9	18	28	0.71 [0.59, 0.82]	0.76 [0.59, 0.88]
Banhiran 2014	94	142	3	64	0.97 [0.91, 0.99]	0.31 [0.25, 0.38]
Ong 2010	106	135	5	73	0.95 [0.90, 0.99]	0.35 [0.29, 0.42]
Pataka 2014	890	852	18	93	0.98 [0.97, 0.99]	0.10 [0.08, 0.12]
Pereira 2013	54	57	2	15	0.96 [0.88, 1.00]	0.21 [0.12, 0.32]
Sadeghniiat-Haghighi 2015	189	278	13	123	0.94 [0.89, 0.97]	0.31 [0.26, 0.35]



Pooled sensitivity: 0.94 [0.90, 0.97]
Pooled specificity: 0.30 [0.17, 0.46]
LR+: 1.34 [1.12, 1.61]
LR-: 0.18 [0.14, 0.24]
DOR: 7.37 [5.37, 10.1]
Accuracy: 0.54 or **54%**

Figure S13—ROC Curve for STOP-BANG Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

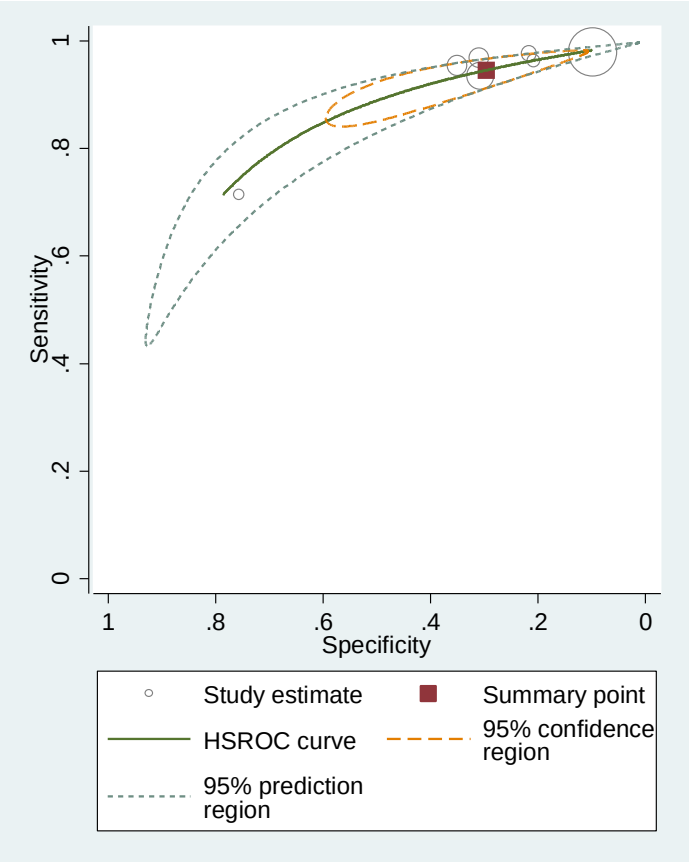


Table S14—Summary of Findings table for STOP-BANG Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Alouqani 2015 (A); BaHammam 2015 (B); Banhiran 2014 (C); Ong 2010 (D); Pataka 2014 (E); Pereira 2013 (F); Sadeghniiat-Highighi 2015 (G)

Pooled sensitivity STOP-BANG Questionnaire: 0.94 (95% CI: 0.90 to 0.97) | **Pooled specificity STOP-BANG Questionnaire**: 0.30 (95% CI: 0.17 to 0.46) **Pooled sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Pooled specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 53% (95% CI: 53 to 55%) **Accuracy (low risk):** 36% (95% CI: 33 to 40%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		STOP- BANG Questionnaire	Attended PSG	STOP- BANG Questionnaire	Attended PSG	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	338 (324 to 349)	360 (360 to 360)	94 (90 to 97)	100 (100 to 100)	3449 (7) [A-G]
		22 fewer TP in STOP-BANG Questionnaire		**6 fewer TP in STOP-BANG Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		22 (11 to 36)	0 (0 to 0)	6 (3 to 10)	0 (0 to 0)	
		22 more FN in STOP-BANG Questionnaire		**6 more FN in STOP-BANG Questionnaire**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	192 (109 to 294)	640 (640 to 640)	270 (153 to 414)	900 (900 to 900)	3449 (7) [A-G]
		448 fewer TN in STOP-BANG Questionnaire		**630 fewer TN in STOP-BANG Questionnaire**		
False positives (patients incorrectly classified as having OSA)		448 (346 to 531)	0 (0 to 0)	630 (486 to 747)	0 (0 to 0)	
		270 more FP in STOP-BANG Questionnaire		**630 more FP in STOP-BANG Questionnaire**		

[1]Broad range of specificity across studies
[2]Wide confidence intervals for specificity

Table S15—Summary of Findings table for STOP-BANG Questionnaire vs. HSAT to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Chung 2013 (A)

Single study sensitivity STOP- BANG Questionnaire: 0.87 (95% CI: 0.80 to 0.92) | **Single study specificity STOP- BANG Questionnaire**: 0.33 (95% CI: 0.21 to 0.48) **Single study sensitivity HSAT**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity HSAT**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 80% (95% CI: 72 to 86%) **Accuracy (low risk):** 63% (95% CI: 53 to 72%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		STOP- BANG Questionnaire	HSAT	STOP- BANG Questionnaire	HSAT	
True positives (patients with OSA)	⊕⊕⊕⊕ HIGH	757 (696 to 800)	870 (870 to 870)	479 (440 to 506)	550 (550 to 550)	192 (1) [A]
		113 fewer TP in STOP- BANG Questionnaire		**71 fewer TP in STOP- BANG Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		113 (174 to 70)	0 (0 to 0)	71 (44 to 110)	0 (0 to 0)	
		113 more FN in STOP- BANG Questionnaire		**71 more FN in STOP- BANG Questionnaire**		
True negatives (patients without OSA)	⊕⊕⊕⊕ HIGH	43 (27 to 62)	130 (130 to 130)	149 (94 to 216)	450 (450 to 450)	192 (1) [A]
		87 fewer TN in STOP- BANG Questionnaire		**301 fewer TN in STOP- BANG Questionnaire**		
False positives (patients incorrectly classified as having OSA)		87 (68 to 103)	0 (0 to 0)	301 (234 to 356)	0 (0 to 0)	
		87 more FP in STOP- BANG Questionnaire		**301 more FP in STOP- BANG Questionnaire**		

Table S16—Summary of Findings table for STOP-BANG Questionnaire vs. HSAT to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Chung 2013 (A); Nicholl 2013 (B)

Range of sensitivities STOP-BANG Questionnaire: 0.88 to 0.94 | **Range of specificities STOP-BANG Questionnaire**: 0.24 to 0.31
Range of sensitivities HSAT: 1.00 to 1.00 | **Range of specificities HSAT**: 1.00 to 1.00 **Accuracy (high risk)**: 65% to 71% **Accuracy (low risk):** 40% to 47%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		STOP- BANG Questionnaire	HSAT	STOP- BANG Questionnaire	HSAT	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	563 to 602	640 to 640	220 to 235	250 to 250	364 (2) [A,B]
		38 to 77 fewer TP in STOP-BANG Questionnaire		**15 to 30 fewer TP in STOP-BANG Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		38 to 77	0 to 0	15 to 30	0 to 0	
		38 to 77 more FN in STOP-BANG Questionnaire		**15 to 30 more FN in STOP- BANG Questionnaire**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	86 to 112	360 to 360	180 to 232	750 to 750	364 (2) [A,B]
		248 to 274 fewer TN in STOP-BANG Questionnaire		**570 to 518 fewer TN in STOP-BANG Questionnaire**		
False positives (patients incorrectly classified as having OSA)		248 to 274	0 to 0	518 to 570	0 to 0	
		248 to 274 more FP in STOP-BANG Questionnaire		**518 to 570 more FP in STOP-BANG Questionnaire**		

[1]Indirect evidence as one of the two studies consisted of chronic kidney disease and end-stage renal disease patients.

Table S17—Summary of Findings table for STOP-BANG Questionnaire vs. HSAT to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Chung 2013 (A); Nicholl 2013 (B)

Range of sensitivities STOP- BANG Questionnaire: 0.88 to 1.00 | **Range of specificities STOP- BANG Questionnaire**: 0.20 to 0.53 **Range of sensitivities HSAT**: 1.00 to 1.00 | **Range of specificities HSAT**: 1.00 to 1.00 **Accuracy (high risk)**: 44% to 70% **Accuracy (low risk):** 27% to 58%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		STOP- BANG Questionnaire	HSAT	STOP- BANG Questionnaire	HSAT	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	317 to 360	360 to 360	88 to 100	100 to 100	364 (2) [A,B]
		0 to 43 fewer TP in STOP-BANG Questionnaire		**0 to 12 fewer TP in STOP-BANG Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		0 to 43	0 to 0	0 to 12	0 to 0	
		0 to 43 more FN in STOP-BANG Questionnaire		**0 more to 12 fewer FN in STOP- BANG Questionnaire**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	128 to 339	640 to 640	180 to 477	900 to 900	364 (2) [A,B]
		301 to 512 fewer TN in STOP- BANG Questionnaire		**423 to 720 fewer TN in STOP- BANG Questionnaire**		
False positives (patients incorrectly classified as having OSA)		301 to 512	0 to 0	423 to 720	0 to 0	
		301 to 512 more FP in STOP- BANG Questionnaire		**423 to 720 more FP in STOP-BANG Questionnaire**		

[1]Indirect evidence as one study consisted of pregnant women, and the other study consisted of chronic kidney disease and end-stage renal disease patients
[2]Braod range of specificity across studies

Table S18—Summary of Findings table for STOP-BANG Questionnaire vs. PSG or HSAT to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Chung 2013 (A); Nicholl 2013 (B)

Range of sensitivities STOP- BANG Questionnaire: 0.18 to 0.90 | **Range of specificities STOP- BANG Questionnaire**: 0.28 to 0.88 **Range of sensitivities PSG or HSAT**: 1.00 to 1.00 | **Range of specificities PSG or HSAT**: 1.00 to 1.00 **Accuracy (high risk)**: 19% to 90% **Accuracy (low risk):** 22% to 89%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		STOP- BANG Questionnaire	PSG or HSAT	STOP- BANG Questionnaire	PSG or HSAT	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	157 to 783	870 to 870	99 to 495	550 to 550	364 (2) [A,B]
		87 to 713 fewer TP in STOP-BANG Questionnaire		**55 to 451 fewer TP in STOP-BANG Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		87 to 713	0 to 0	55 to 451	0 to 0	
		87 to 713 more FN in STOP-BANG Questionnaire		**55 to 451 more FN in STOP-BANG Questionnaire**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	36 to 114	130 to 130	126 to 396	450 to 450	364 (2) [A,B]
		16 to 94 fewer TN in STOP-BANG Questionnaire		**54 to 324 fewer TN in STOP-BANG Questionnaire**		
False positives (patients incorrectly classified as having OSA)		16 to 94	0 to 0	54 to 324	0 to 0	
		16 to 94 more FP in STOP-BANG Questionnaire		**54 to 324 more FP in STOP-BANG Questionnaire**		

[1]Indirect evidence as one study consisted of pregnant women, and the other study consisted of chronic kidney disease and end-stage renal disease patients
[2]Broad range of specificity across studies

Table S19—Summary of Findings table for STOP-BANG Questionnaire vs. PSG or HSAT to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Chung 2012 (A); Chung 2013 (B)

Range of sensitivities STOP- BANG Questionnaire: 0.10 to 0.95 | **Range of specificities STOP- BANG Questionnaire**: 0.11 to 0.88
Range of sensitivities PSG or HSAT: 1.00 to 1.00 | **Range of specificities PSG or HSAT**: 1.00 to 1.00 **Accuracy (high risk)**: 10% to 92% **Accuracy (low risk):** 11% to 90%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		STOP- BANG Questionnaire	PSG or HSAT	STOP- BANG Questionnaire	PSG or HSAT	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	64 to 608	640 to 640	25 to 238	250 to 250	1056 (2) [A,B]
		32 to 576 fewer TP in STOP-BANG Questionnaire		**12 to 225 fewer TP in STOP-BANG Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		32 to 576	0 to 0	12 to 225	0 to 0	
		32 to 576 more FN in STOP-BANG Questionnaire		**12 to 225 more FN in STOP-BANG Questionnaire**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	40 to 317	360 to 360	83 to 660	750 to 750	1056 (2) [A,B]
		43 to 320 fewer TN in STOP-BANG Questionnaire		**90 to 667 fewer TN in STOP-BANG Questionnaire**		
False positives (patients incorrectly classified as having OSA)		43 to 320	0 to 0	90 to 667	0 to 0	
		43 to 320 more FP in STOP-BANG Questionnaire		**90 to 667 more FP in STOP-BANG Questionnaire**		

[1]Indirect evidence as one study consisted of pregnant women
[2]Wide range of specificity and sensitivity

Table S20—Summary of Findings table for STOP-BANG Questionnaire vs. PSG or HSAT to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Chung 2012 (A); Chung 2013 (B)

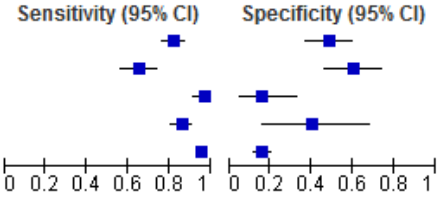
Range of sensitivities STOP- BANG Questionnaire: 0.28 to 1.00 | **Range of specificities STOP- BANG Questionnaire**: 0.17 to 0.88 **Range of sensitivities PSG or HSAT**: 1.00 to 1.00 | **Range of specificities PSG or HSAT**: 1.00 to 1.00 **Accuracy (high risk)**: 21% to 92% **Accuracy (low risk):** 18% to 89%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		STOP- BANG Questionnaire	PSG or HSAT	STOP- BANG Questionnaire	PSG or HSAT	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	101 to 360	360 to 360	28 to 100	100 to 100	1056 (2) [A,B]
		0 to 259 fewer TP in STOP-BANG Questionnaire		**0 to 72 fewer TP in STOP-Bang Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		0 to 259	0 to 0	0 to 72	0 to 0	
		0 to 259 more FN in STOP-BANG Questionnaire		**0 to 72 more FN in STOP-Bang Questionnaire**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	109 to 563	640 to 640	153 to 792	900 to 900	1056 (2) [A,B]
		77 to 531 fewer TN in STOP-BANG Questionnaire		**108 to 747 fewer TN in STOP-BANG Questionnaire**		
False positives (patients incorrectly classified as having OSA)		77 to 531	0 to 0	108 to 747	0 to 0	
		77 to 531 more FP in STOP-BANG Questionnaire		**108 to 747 more FP in STOP-BANG Questionnaire**		

[1]Indirect evidence as one study consisted of pregnant women
[2]Wide range of specificity and sensitivity

Figure S14—STOP Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

Study	TP	FP	FN	TN	Sensitivity (95% CI)	Specificity (95% CI)
Banhiran 2014	182	42	40	39	0.82 [0.76, 0.87]	0.48 [0.37, 0.60]
Chung 2008	81	21	43	32	0.65 [0.56, 0.74]	0.60 [0.46, 0.74]
Cowan 2014	94	27	3	5	0.97 [0.91, 0.99]	0.16 [0.05, 0.33]
Luo 2014	170	9	27	6	0.86 [0.81, 0.91]	0.40 [0.16, 0.68]
Pataka 2014	1427	296	74	56	0.95 [0.94, 0.96]	0.16 [0.12, 0.20]



Pooled sensitivity: 0.88 [0.77, 0.94]
Pooled specificity: 0.33 [0.18, 0.52]
LR+: 1.31 [1.10, 1.57]
LR-: 0.36 [0.27, 0.47]
DOR: 3.68 [2.80, 4.83]
Accuracy: 0.78 or **78%**

Figure S15—ROC Curve for STOP Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

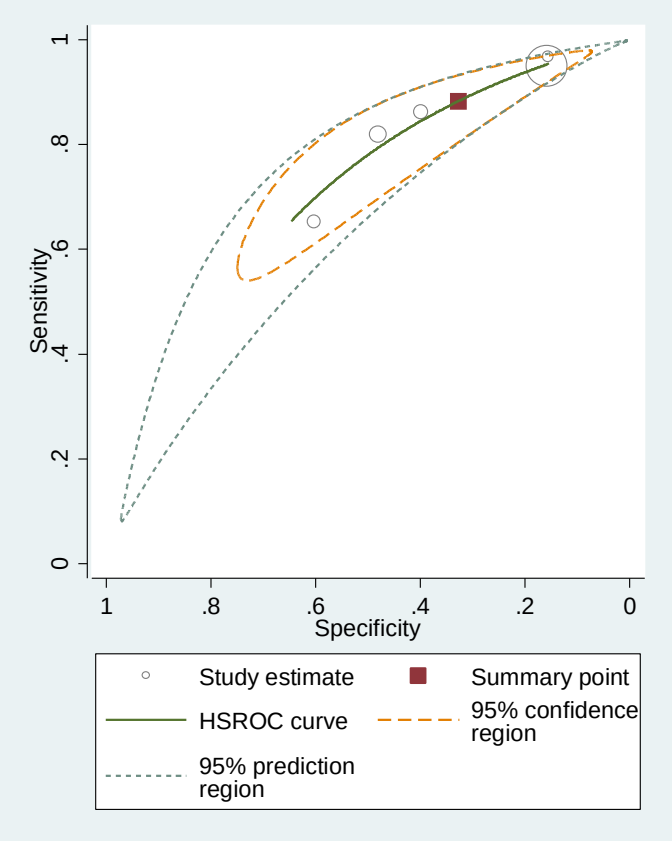


Table S21—Summary of Findings table for STOP Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Chung 2008 (A); Cowan 2014 (B); Pataka 2014 (C); Luo 2014 (D); Banhiran 2014 (E)

Pooled sensitivity STOP Questionnaire: 0.88 (95% CI: 0.77 to 0.94) | **Pooled specificity STOP Questionnaire**: 0.33 (95% CI: 0.18 to 0.52) **Pooled sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Pooled specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 81% (95% CI: 74 to 86%) **Accuracy (low risk):** 63% (95% CI: 60 to 67%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		STOP Questionnaire	Attended PSG	STOP Questionnaire	Attended PSG	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	766 (670 to 818)	870 (870 to 870)	484 (424 to 517)	550 (550 to 550)	2674 (5) [A-E]
		104 fewer TP in STOP Questionnaire		**66 fewer TP in STOP Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		104 (52 to 200)	0 (0 to 0)	66 (33 to 126)	0 (0 to 0)	
		104 more FN in STOP Questionnaire		**66 more FN in STOP Questionnaire**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	43 (23 to 68)	130 (130 to 130)	149 (81 to 234)	450 (450 to 450)	2674 (5) [A-E]
		87 fewer TN in STOP Questionnaire		**301 fewer TN in STOP Questionnaire**		
False positives (patients incorrectly classified as having OSA)		87 (62 to 107)	0 (0 to 0)	301 (216 to 369)	0 (0 to 0)	
		87 more FP in STOP Questionnaire		**301 more FP in STOP Questionnaire**		

[1]Broad range of specificity across studies
[2]Wide confidence intervals for specificity

Table S22—Summary of Findings table for STOP Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Chung 2008 (A); Pataka 2014 (B); Banhiran 2014 (C); Luo 2014 (D); Cowan (E)

Range of sensitivities STOP Questionnaire: 0.62 to 0.98 | Range of specificities STOP Questionnaire: 0.10 to 0.63 | Range of sensitivities Attended PSG: 1.00 to 1.00 | Range of specificities Attended PSG: 1.00 to 1.00 | **Accuracy (high risk)**: 60% to 79% | **Accuracy (low risk):** 45% to 48%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		STOP Questionnaire	Attended PSG	STOP Questionnaire	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	397 to 627	640 to 640	155 to 245	250 to 250	2674 (5) [A-E]
		13 to 243 fewer TP in STOP Questionnaire		**5 to 95 fewer TP in STOP Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		13 to 243	0 to 0	5 to 95	0 to 0	
		13 to 243 more FN in STOP Questionnaire		**5 to 95 more FN in STOP Questionnaire**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	36 to 227	360 to 360	75 to 473	750 to 750	2674 (5) [A-E]
		133 to 324 fewer TN in STOP Questionnaire		**277 to 675 fewer TN in STOP Questionnaire**		
False positives (patients incorrectly classified as having OSA)		103 to 324	0 to 0	277 to 675	0 to 0	
		133 to 324 more FP in STOP Questionnaire		**277 to 675 more FP in STOP Questionnaire**		

[1]Wide range of values for sensitivity and specificity

Table S23—Summary of Findings table for STOP Questionnaire vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Pataka 2014 (A); Banhiran 2014 (B); Luo 2014 (C)

Range of sensitivities STOP Questionnaire: 0.91 to 0.97 | Range of specificities STOP Questionnaire: 0.11 to 0.36 | Range of sensitivities Attended PSG: 1.00 to 1.00 | Range of specificities Attended PSG: 1.00 to 1.00 | **Accuracy (high risk)**: 48% to 49% | **Accuracy (low risk):** 25% to 34%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		STOP Questionnaire	Attended PSG	STOP Questionnaire	Attended PSG	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	328 to 349	360 to 360	91 to 97	100 to 100	2368 (3) [A-C]
		11 to 32 fewer TP in STOP Questionnaire		**3 to 9 fewer TP in STOP Questionnaire**		
False negatives (patients incorrectly classified as not having OSA)		11 to 32	0 to 0	3 to 9	0 to 0	
		11 to 32 more FN in STOP Questionnaire		**3 to 9 more FN in STOP Questionnaire**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	70 to 230	640 to 640	99 to 324	900 to 900	2368 (3) [A-C]
		410 to 570 fewer TN in STOP Questionnaire		**576 to 801 fewer TN in STOP Questionnaire**		
False positives (patients incorrectly classified as having OSA)		410 to 570	0 to 0	576 to 801	0 to 0	
		410 to 570 more FP in STOP Questionnaire		**576 to 801 more FP in STOP Questionnaire**		

[1]Wide range of values for specificity

Table S24—Summary of Findings table for Morphometric Model vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Gurubhagavatula 2013 (A); Kushida 1997 (B)

Range of sensitivities Morphometric Model: 0.88 to 0.98 | **Range of specificities Morphometric Model**: 0.11 to 0.31
Range of sensitivities Attended PSG: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Morphometric Model	Attended PSG	Morphometric Model	Attended PSG	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	766 to 853	870 to 870	484 to 539	550 to 550	350 (2) [A,B]
		17 to 104 fewer TP in Morphometric Model		**11 to 66 fewer TP in Morphometric Model**		
False negatives (patients incorrectly classified as not having OSA)		17 to 104	0 to 0	11 to 66	0 to 0	
		17 to 104 more FN in Morphometric Model		**11 to 66 more FN in Morphometric Model**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	14 to 40	130 to 130	49 to 139	450 to 450	350 (2) [A,B]
		90 to 116 fewer TN in Morphometric Model		**311 to 401 fewer TN in Morphometric Model**		
False positives (patients incorrectly classified as having OSA)		90 to 116	0 to 0	311 to 401	0 to 0	
		90 to 116 more FP in Morphometric Model		**311 to 401 more FP in Morphometric Model**		

[1]Wide range of values for specificity

Table S25—Summary of Findings table for Adjusted Neck Circumference vs. HSAT to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Nicholl 2013 (A)

Range of sensitivities Adjusted Neck Circumference: 0.34 to 0.93 | **Range of specificities Adjusted Neck Circumference**: 0.37 to 0.94 **Range of sensitivities HSAT**: 1.00 to 1.00 | **Range of specificities HSAT**: 1.00 to 1.00 **Accuracy (high risk)**: 35% to 93% **Accuracy (low risk):** 36% to 94%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		Adjusted Neck Circumference	HSAT	Adjusted Neck Circumference	HSAT	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	218 to 595	640 to 640	85 to 233	250 to 250	172 (1) [A]
		45 to 422 fewer TP in Adjusted Neck Circumference		**17 to 165 fewer TP in Adjusted Neck Circumference**		
False negatives (patients incorrectly classified as not having OSA)		45 to 422	0 to 0	17 to 165	0 to 0	
		45 to 422 more FN in Adjusted Neck Circumference		**17 to 165 more FN in Adjusted Neck Circumference**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	133 to 338	360 to 360	277 to 705	750 to 750	172 (1) [A]
		22 to 227 fewer TN in Adjusted Neck Circumference		**45 to 473 fewer TN in Adjusted Neck Circumference**		
False positives (patients incorrectly classified as having OSA)		22 to 227	0 to 0	45 to 473	0 to 0	
		22 to 227 more FP in Adjusted Neck Circumference		**45 to 473 more FP in Adjusted Neck Circumference**		

[1]Wide range of values for specificity and sensitivity

Table S26—Summary of Findings table for Adjusted Neck Circumference vs. HSAT to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Nicholl 2013 (A); Gurubhagavatula 2013 (B)

Range of sensitivities Adjusted Neck Circumference: 0.40 to 0.96 | **Range of specificities Adjusted Neck Circumference**: 0.32 to 0.92 **Range of sensitivities HSAT**: 1.00 to 1.00 | **Range of specificities HSAT**: 1.00 to 1.00 **Accuracy (high risk)**: 35% to 94% **Accuracy (low risk):** 33% to 92%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		Adjusted Neck Circumference	HSAT	Adjusted Neck Circumference	HSAT	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1,2]	144 to 346	360 to 360	40 to 96	100 to 100	422 (2) [A,B]
		14 to 216 fewer TP in Adjusted Neck Circumference		**4 to 60 fewer TP in Adjusted Neck Circumference**		
False negatives (patients incorrectly classified as not having OSA)		14 to 216	0 to 0	4 to 60	0 to 0	
		14 to 216 more FN in Adjusted Neck Circumference		**4 to 60 more FN in Adjusted Neck Circumference**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	205 to 589	640 to 640	288 to 828	900 to 900	422 (2) [A,B]
		51 to 435 fewer TN in Adjusted Neck Circumference		**72 to 612 fewer TN in Adjusted Neck Circumference**		
False positives (patients incorrectly classified as having OSA)		51 to 435	0 to 0	72 to 612	0 to 0	
		51 to 435 more FP in Adjusted Neck Circumference		**72 to 612 more FP in Adjusted Neck Circumference**		

[1]Wide range of values for specificity and sensitivity

Table S27—Summary of Findings table for Multivariable Apnea Prediction (MAP) vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Gurubhagavatula 2001 (A); Gurubhagavatula 2013 (B); Rofail 2010 (C); Wilson 2014 (D)

Range of sensitivities MAP: 0.68 to 0.85 | **Range of specificities MAP**: 0.56 to 0.92 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 66% to 81% **Accuracy (low risk):** 63% to 79%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		MAP	Attended PSG	MAP	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	592 to 739	870 to 870	374 to 468	550 to 550	683 (4) [A-D]
		131 to 278 fewer TP in MAP		**82 to 176 fewer TP in MAP**		
False negatives (patients incorrectly classified as not having OSA)		131 to 278	0 to 0	82 to 170	0 to 0	
		131 to 278 more FN in MAP		**82 to 176 more FN in MAP**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	73 to 120	130 to 130	252 to 414	450 to 450	683 (4) [A-D]
		10 to 57 fewer TN in MAP		**36 to 198 fewer TN in MAP**		
False positives (patients incorrectly classified as having OSA)		10 to 57	0 to 0	36 to 198	0 to 0	
		10 to 57 more FP in MAP		**36 to 198 more FP in MAP**		

[1]Wide range of values for specificity and sensitivity

Table S28—MAP vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Gurubhagavatula 2001 (A); Gurubhagavatula 2013 (B); Morales 2012 (C); Wilson 2014 (D)

Range of sensitivities MAP: 0.80 to 0.90 | **Range of specificities MAP**: 0.44 to 0.72 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 58% to 70% **Accuracy (low risk):** 50% to 50%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		MAP	Attended PSG	MAP	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	288 to 360	360 to 360	80 to 100	100 to 100	436 (4) [A-D]
		0 to 72 fewer TP in MAP		**10 to 20 fewer TP in MAP**		
False negatives (patients incorrectly classified as not having OSA)		0 to 72	0 to 0	0 to 20	0 to 0	
		36 to 72 more FN in MAP		**0 to 20 more FN in MAP**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	122 to 461	640 to 640	171 to 648	900 to 900	436 (4) [A-D]
		179 to 518 fewer TN in MAP		**252 to 729 fewer TN in MAP**		
False positives (patients incorrectly classified as having OSA)		179 to 518	0 to 0	252 to 729	0 to 0	
		179 to 518 more FP in MAP		**252 to 729 more FP in MAP**		

[1]Wide range of values for specificity

Table S29—Summary of Findings table for Prediction Models vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Chang 2014 (A); Zou 2013 (B)

Range of sensitivities Prediction Models: 0.33 to 0.90 | **Range of specificities Prediction Models**: 0.50 to 1.00 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 58% to 80% **Accuracy (low risk):** 61% to 88%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Prediction Models	Attended PSG	Prediction Models	Attended PSG	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	287 to 783	870 to 870	182 to 495	550 to 550	1089 (2) [A,B]
		87 to 583 fewer TP in Prediction Models		**55 to 368 fewer TP in Prediction Models**		
False negatives (patients incorrectly classified as not having OSA)		87 to 583	0 to 0	55 to 368	0 to 0	
		87 to 583 more FN in Prediction Models		**55 to 368 more FN in Prediction Models**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	65 to 130	130 to 130	225 to 450	450 to 450	1089 (2) [A,B]
		0 to 65 fewer TN in Prediction Models		**0 to 225 fewer TN in Prediction Models**		
False positives (patients incorrectly classified as having OSA)		0 to 65	0 to 0	0 to 225	0 to 0	
		0 to 65 more FP in Prediction Models		**0 to 225 more FP in Prediction Models**		

[1]Wide values of sensitivity and specificity

Table S30—Summary of Findings table for Prediction Models vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Sharma 2006 (A); Zerah-Lancner 2000 (B)

Range of sensitivities Prediction Models: 0.82 to 1.00 | **Range of specificities Prediction Models**: 0.84 to 0.91 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 85% to 96% **Accuracy (low risk):** 85% to 92%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		Prediction Models	Attended PSG	Prediction Models	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕⊕ HIGH	525 to 640	640 to 640	205 to 250	250 to 250	287 (2) [A,B]
		0 to 115 fewer TP in Prediction Models		**0 to 45 fewer TP in Prediction Models**		
False negatives (patients incorrectly classified as not having OSA)		0 to 115	0 to 0	0 to 45	0 to 0	
		0 to 115 more FN in Prediction Models		**0 to 45 more FN in Prediction Models**		
True negatives (patients without OSA)	⊕⊕⊕⊕ HIGH	302 to 328	360 to 360	630 to 683	750 to 750	287 (2) [A,B]
		32 to 58 fewer TN in Prediction Models		**67 to 120 fewer TN in Prediction Models**		
False positives (patients incorrectly classified as having OSA)		32 to 58	0 to 0	67 to 120	0 to 0	
		32 to 58 more FP in Prediction Models		**67 to 120 more FP in Prediction Models**		

Table S31—Summary of Findings table for Prediction Models vs. HSAT to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Platt 2013 (A); Morales 2012 (B); Kolotkin 2011 (C)

Range of sensitivities Prediction Models: 0.76 to 0.97 | **Range of specificities Prediction Models**: 0.19 to 0.75 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 58% to 70% **Accuracy (low risk):** 51% to 52%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		Prediction Models	HSAT	Prediction Models	HSAT	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	274 to 349	360 to 360	76 to 97	100 to 100	697 (3) [A-C]
		11 to 86 fewer TP in Prediction Models		**3 to 24 fewer TP in Prediction Models**		
False negatives (patients incorrectly classified as not having OSA)		11 to 86	0 to 0	3 to 24	0 to 0	
		11 to 86 more FN in Prediction Models		**3 to 24 more FN in Prediction Models**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	122 to 480	640 to 640	171 to 675	900 to 900	697 (3) [A-C]
		160 to 518 fewer TN in Prediction Models		**225 to 729 fewer TN in Prediction Models**		
False positives (patients incorrectly classified as having OSA)		160 to 518	0 to 0	225 to 729	0 to 0	
		160 to 518 more FP in Prediction Models		**225 to 729 more FP in Prediction Models**		

[1]Wide range of values for specificity

Table S32—Summary of Findings table for OSA 50 vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Firat 2012 (A)

Single study sensitivity OSA 50: 0.63 (95% CI: 0.49 to 0.77) | **Single study specificity OSA 50**: 0.82 (95% CI: 0.70 to 0.94) **Single study sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 70% (95% CI: 57 to 83%) **Accuracy (low risk):** 77% (95% CI: 65 to 90%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		OSA 50	Attended PSG	OSA 50	Attended PSG	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	403 (314 to 493)	640 (640 to 640)	158 (123 to 193)	250 (250 to 250)	85 (1) [A]
		237 fewer TP in OSA 50		**92 fewer TP in OSA 50**		
False negatives (patients incorrectly classified as not having OSA)		237 (147 to 326)	0 (0 to 0)	92 (57 to1 27)	0 (0 to 0)	
		237 more FN in OSA 50		**92 more FN in OSA 50**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	295 (252 to 338)	360 (360 to 360)	615 (525 to 705)	750 (750 to 750)	85 (1) [A]
		65 fewer TN in OSA 50		**135 fewer TN in OSA 50**		
False positives (patients incorrectly classified as having OSA)		65 (22 to 108)	0 (0 to 0)	135 (45 to 225)	0 (0 to 0)	
		65 more FP in OSA 50		**135 more FP in OSA 50**		

[1]Indirect evidence as study only included highway bus drivers
[2]Wide confidence intervals for sensitivity and specificity

Table S33—Summary of Findings table for OSA 50 vs. HSAT to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Chai-Coetzer 2011 (A)

Single study sensitivity OSA 50: 0.88 (95% CI: 0.60 to 0.98) | **Single study specificity OSA 50**: 0.82 (95% CI: 0.70 to 0.90)
Single study sensitivity HSAT: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity HSAT**: 1.00 (95% CI: 1.00 to 1.00)
Accuracy (high risk): 84% (95% CI: 66 to 93%) **Accuracy (low risk):83% (95% CI:** 69 to 91%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		OSA 50	HSAT	OSA 50	HSAT	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	317 (216 to 353)	360 (360 to 360)	88 (60 to 98)	100 (100 to 100)	78 (1) [A]
		43 fewer TP in OSA 50		**12 fewer TP in OSA 50**		
False negatives (patients incorrectly classified as not having OSA)		43 (7 to144)	0 (0 to 0)	12 (2 to 40)	0 (0 to 0)	
		43 more FN in OSA 50		**12 more FN in OSA 50**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	525 (448 to 576)	640 (640 to 640)	738 (630 to 810)	900 (900 to 900)	78 (1) [A]
		115 fewer TN in OSA 50		**162 fewer TN in OSA 50**		
False positives (patients incorrectly classified as having OSA)		115 (64 to192)	0 (0 to 0)	162 (90 to 270)	0 (0 to 0)	
		115 more FP in OSA 50		**162 more FP in OSA 50**		

[1]Wide confidence intervals for sensitivity and specificity

Table S34—Summary of Findings table for Clinical Decision Support System vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: LaPorta 2012 (A)

Single study sensitivity Clinical Decision Support System: 0.98 (95% CI: 0.92 to 1.00) | **Single study specificity Clinical Decision Support System**: 0.87 (95% CI: 0.66 to 0.97) **Single study sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 97% (95% CI: 89 to 100%) **Accuracy (low risk):** 93% (95% CI: 80 to 99%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Clinical Decision Support System	Attended PSG	Clinical Decision Support System	Attended PSG	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	853 (800 to 870)	870 (870 to 870)	539 (506 to 550)	550 (550 to 550)	91 (1) [A]
		17 fewer TP in Clinical Decision Support System		**11 fewer TP in Clinical Decision Support System**		
False negatives (patients incorrectly classified as not having OSA)		17 (0 to 70)	0 (0 to 0)	11 (0 to44)	0 (0 to 0)	
		17 more FN in Clinical Decision Support System		**11 more FN in Clinical Decision Support System**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	113 (86 to 126)	130 (130 to 130)	391 (297 to 436)	450 (450 to 450)	91 (1) [A]
		17 fewer TN in Clinical Decision Support System		**59 fewer TN in Clinical Decision Support System**		
False positives (patients incorrectly classified as having OSA)		17 (4 to 44)	0 (0 to 0)	59 (14 to 153)	0 (0 to 0)	
		17 more FP in Clinical Decision Support System		**59 more FP in Clinical Decision Support System**		

[1]Indirect evidence as study only included patients with ischemic heart disease
[2]Wide confidence intervals for specificity

Table S35—Summary of Findings table for (Obstructive Sleep Apnea Hypopnea Syndrome) OSAHS Score vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Friedman 2010 (A)

Single study sensitivity OSAHS Score: 0.86 (95% CI: 0.80 to 0.91) | **Single study specificity OSAHS Score**: 0.47 (95% CI: 0.34 to 0.56) |**Single study sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 81% (95% CI: 74 to 86%) **Accuracy (low risk):** 68% (95% CI: 59 to 75%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		OSAHS Score	Attended PSG	OSAHS Score	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	748 (696 to 792)	870 (870 to 870)	473 (440 to 501)	550 (550 to 550)	223 (1) [A]
		122 fewer TP in OSAHS Score		**77 fewer TP in OSAHS Score**		
False negatives (patients incorrectly classified as not having OSA)		122 (78 to174)	0 (0 to 0)	77 (49 to110)	0 (0 to 0)	
		122 more FN in OSAHS Score		**77 more FN in OSAHS Score**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	61 (44 to 73)	130 (130 to 130)	211 (153 to 252)	450 (450 to 450)	223 (1) [A]
		69 fewer TN in OSAHS Score		**239 fewer TN in OSAHS Score**		
False positives (patients incorrectly classified as having OSA)		69 (57 to 86)	0 (0 to 0)	239 (198 to 297)	0 (0 to 0)	
		69 more FP in OSAHS Score		**239 more FP in OSAHS Score**		

[1]Wide confidence intervals for specificity

Table S36—Summary of Findings table for Kushida Index vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Kushida 1997 (A)

Single study sensitivity Kushida Index: 0.98 (95% CI: 0.95 to 0.99) | **Single study specificity Kushida Index**: 1.00 (95% CI: 0.92 to 1.00) | **Single study sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 98% (95% CI: 95 to 99%) **Accuracy (low risk):** 99% (95% CI: 94 to 100%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Kushida Index	Attended PSG	Kushida Index	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕⊕ HIGH	853 (827 to 861)	870 (870 to 870)	539 (523 to 545)	550 (550 to 550)	301 (1) [A]
		17 fewer TP in Kushida Index		**11 fewer TP in Kushida Index**		
False negatives (patients incorrectly classified as not having OSA)		17 (9 to43)	0 (0 to 0)	11 (5 to 27)	0 (0 to 0)	
		17 more FN in Kushida Index		**11 more FN in Kushida Index**		
True negatives (patients without OSA)	⊕⊕⊕⊕ HIGH	130 (120 to 130)	130 (130 to 130)	450 (414 to 450)	450 (450 to 450)	301 (1) [A]
		0 fewer TN in Kushida Index		**0 fewer TN in Kushida Index**		
False positives (patients incorrectly classified as having OSA)		0 (0 to10)	0 (0 to 0)	0 (0 to 36)	0 (0 to 0)	
		0 fewer FP in Kushida Index		**0 fewer FP in Kushida Index**		

Home sleep apnea testing for the diagnosis of obstructive sleep apnea in adults

Table S37—Summary of Findings table for Type 2 HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Campbell 2011 (A); Banhiran 2014 (B)

Range of sensitivities Type 2 HSAT: 0.88 to 0.97 | **Range of specificities Type 2 HSAT**: 0.50 to 0.56
Range of sensitivities Attended: 1.00 to 1.00 | **Range of specificities Attended**: 1.00 to 1.00 **Accuracy (high risk)**: 84% to 91% **Accuracy (low risk):** 73% to 77%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Type 2 HSAT	Attended	Type 2 HSAT	Attended	
True positives (patients with OSA)	⊕⊕⊕⊕ HIGH	766 to 844	870 to 870	484 to 534	550 to 550	116 (2) [A,B]
		26 to 104 fewer TP in Type 2 HSAT		**16 to 66 fewer TP in Type 2 HSAT**		
False negatives (patients incorrectly classified as not having OSA)		26 to 104	0 to 0	16 to 66	0 to 0	
		26 to 104 more FN in Type 2 HSAT		**16 to 66 more FN in Type 2 HSAT**		
True negatives (patients without OSA)	⊕⊕⊕⊕ HIGH	65 to 73	130 to 130	225 to 252	450 to 450	116 (2) [A,B]
		57 to 65 fewer TN in Type 2 HSAT		**198 to 225 fewer TN in Type 2 HSAT**		
False positives (patients incorrectly classified as having OSA)		57 to 65	0 to 0	198 to 225	0 to 0	
		57 to 65 more FP in Type 2 HSAT		**198 to 225 more FP in Type 2 HSAT**		

Table S38—Summary of Findings table for Type 2 HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Campbell 2011 (A); Banhiran 2014 (B)

Range of sensitivities Type 2 HSAT: 0.94 to 0.95 | **Range of specificities Type 2 HSAT**: 0.76 to 0.77
Range of sensitivities Attended: 1.00 to 1.00 | **Range of specificities Attended**: 1.00 to 1.00 **Accuracy (high risk)**: 88% to 88% **Accuracy (low risk):** 81% to 81%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		Type 2 HSAT	Attended	Type 2 HSAT	Attended	
True positives (patients with OSA)	⊕⊕⊕⊕ HIGH	602 to 608	640 to 640	235 to 238	250 to 250	116 (2) [A,B]
		32 to 38 fewer TP in Type 2 HSAT		**12 to 15 fewer TP in Type 2 HSAT**		
False negatives (patients incorrectly classified as not having OSA)		32 to 38	0 to 0	12 to 15	0 to 0	
		32 to 38 more FN in Type 2 HSAT		**12 to 15 more FN in Type 2 HSAT**		
True negatives (patients without OSA)	⊕⊕⊕⊕ HIGH	274 to 277	360 to 360	570 to 578	250 to 250	116 (2) [A,B]
		83 to 86 fewer TN in Type 2 HSAT		**172 to 180 fewer TN in Type 2 HSAT**		
False positives (patients incorrectly classified as having OSA)		83 to 86	0 to 0	172 to 180	0 to 0	
		83 to 86 more FP in Type 2 HSAT		**172 to 180 more FP in Type 2 HSAT**		

Table S39—Summary of Findings table for Type 3 HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Gjevre 2011 (A); Masa 2011 Thorax (B); Polese 2012 (C); Santos-Silva 2009 (D); Yin 2006 (E); Planes 2010 (F); Masa 2013 (G)

Range of sensitivities Type 3 HSAT: 0.90 to 1 | **Range of specificities Type 3 HSAT**: 0.30 to 0.67
Range of sensitivities Attended: 1.00 to 1.00 | **Range of specificities Attended**: 1.00 to 1.00 **Accuracy (high risk)**: 84% to 91% **Accuracy (low risk):** 70% to 78%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Type 3 HSAT	Attended	Type 3 HSAT	Attended	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	783 to 870	870 to 870	495 to 550	550 to 550	1001 (7) [A-G]
		0 to 87 fewer TP in Type 3 HSAT		**0 to 55 fewer TP in Type 3 HSAT**		
False negatives (patients incorrectly classified as not having OSA)		0 to 87	0 to 0	0 to 55	0 to 0	
		0 to 87 more FN in Type 3 HSAT		**0 to 55 more FN in Type 3 HSAT**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	39 to 87	130 to 130	135 to 302	450 to 450	1001 (7) [A-G]
		43 to 91 fewer TN in Type 3 HSAT		**148 to 315 fewer TN in Type 3 HSAT**		
False positives (patients incorrectly classified as having OSA)		43 to 91	0 to 0	180 to 315	0 to 0	
		43 to 91 more FP in Type 3 HSAT		**148 to 315 more FP in Type 3 HSAT**		

[1]Wide range of values for specificity

Table S40—Summary of Findings table for Type 3 HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

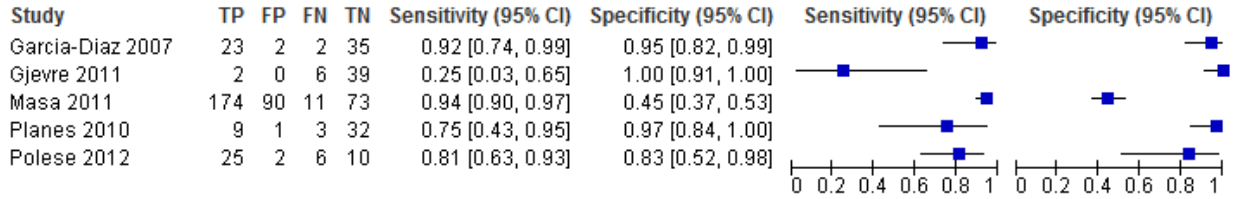
References: Garcia-Diaz 2007 (A); Gjevre 2011 (B); Polese 2012 (C); Santo Silva 2009 (D); Yin 2006 (E); Planes 2010 (F)

Range of sensitivities Type 3 HSAT: 0.62 to 0.94 | **Range of specificities Type 3 HSAT**: 0.25 to 0.97
Range of sensitivities Attended PSG: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 65% to 91% **Accuracy (low risk):** 59% to 90%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		Type 3 HSAT	Attended PSG	Type 3 HSAT	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	397 to 602	640 to 640	155 to 235	250 to 250	457 (6) [A-F]
		38 to 243 fewer TP in Type 3 HSAT		**15 to 95 fewer TP in Type 3 HSAT**		
False negatives (patients incorrectly classified as not having OSA)		38 to 243	0 to 0	15 to 95	0 to 0	
		38 to 243 more FN in Type 3 HSAT		**15 to 95 more FN in Type 3 HSAT**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	90 to 349	360 to 360	188 to 728	750 to 750	457 (6) [A-F]
		11 to 270 fewer TN in Type 3 HSAT		**22 to 562 fewer TN in Type 3 HSAT**		
False positives (patients incorrectly classified as having OSA)		11 to 270	0 to 0	22 to 562	0 to 0	
		11 to 270 more FP in Type 3 HSAT		**22 to 562 more FP in Type 3 HSAT**		

[1]Wide range of values for specificity and sensitivity

Figure S16—Type 3 HSAT vs. PSG (AHI ≥ 30)



Pooled sensitivity: 0.87 [0.77, 0.93]
Pooled specificity: 0.88 [0.59, 0.97]
DOR: 49.0 [13.9, 172.2]
LR+: 7.06 [1.88, 26.6]
LR-: 0.14 [0.08, 0.25]
Accuracy: 0.77 or **77%**

Figure S17—ROC Curve for Type 3 HSAT vs. PSG (AHI ≥ 30)

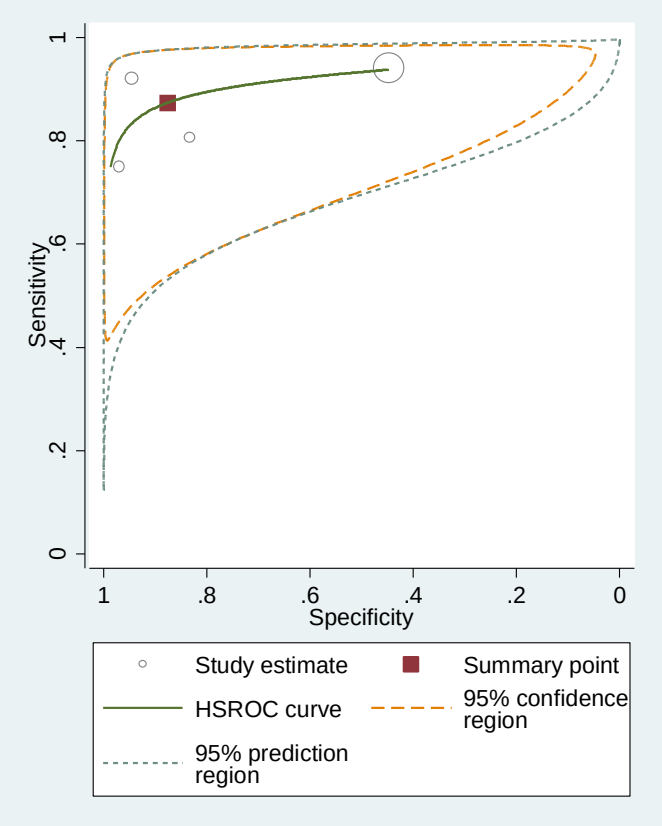


Table S41—Summary of Findings table for Type 3 HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Garcia-Diaz 2007 (A); Gjevre 2011 (B); Masa 2011 (C); Planes 2010 (D); Polese 2012 (E)

Pooled sensitivity Type 3 HSAT: 0.87 (95% CI: 0.77 to 0.93) | **Pooled specificity Type 3 HSAT**: 0.88 (95% CI: 0.59 to 0.97)
Pooled sensitivity Attended PSG: 1.00 (95% CI: 1.00 to 1.00) | **Pooled specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00)
Accuracy (high risk): 88% (95% CI: 81 to 94%) **Accuracy (low risk):** 88% (95% CI: 71 to 95%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		Type 3 HSAT	Attended PSG	Type 3 HSAT	Attended PSG	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	313 (277 to 335)	360 (360 to 360)	87 (77 to 93)	100 (100 to 100)	545 (5) [A-E]
		47 fewer TP in Type 3 HSAT		**13 fewer TP in Type 3 HSAT**		
False negatives (patients incorrectly classified as not having OSA)		47 (25 to 83)	0 (0 to 0)	13 (7 to 23)	0 (0 to 0)	
		47 more FN in Type 3 HSAT		**13 more FN in Type 3 HSAT**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	563 (378 to 621)	640 (640 to 640)	792 (531 to 873)	900 (900 to 900)	545 (5) [A-E]
		77 fewer TN in Type 3 HSAT		**108 fewer TN in Type 3 HSAT**		
False positives (patients incorrectly classified as having OSA)		77 (19 to 262)	0 (0 to 0)	108 (27 to 369)	0 (0 to 0)	
		77 more FP in Type 3 HSAT		**108 more FP in Type 3 HSAT**		

[1]Wide confidence intervals for sensitivity and specificity
[2]Wide range of values for sensitivity and specificity

Table S42—Summary of Findings table for 2-3 Channel HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Ayappa 2008 (A); Tonelli de Oliveria 2009 (B); Ward 2015 (C)

Range of sensitivities 2-3 Channel HSAT: 0.80 to 0.96 | **Range of specificities 2-3 Channel HSAT**: 0.65 to 0.83 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 81% to 93% **Accuracy (low risk):** 77% to 88%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		2-3 Channel HSAT	Attended PSG	2-3 Channel HSAT	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	696 to 835	870 to 870	440 to 528	550 to 550	292 (3) [A-C]
		35 to 174 fewer TP in 2-3 Channel HSAT		**22 to 110 fewer TP in 2-3 Channel HSAT**		
False negatives (patients incorrectly classified as not having OSA)		35 to 174	0 to 0	22 to 110	0 to 0	
		35 to 174 more FN in 2-3 Channel HSAT		**22 to 110 more FN in 2-3 Channel HSAT**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	85 to 108	130 to 130	293 to 373	450 to 450	292 (3) [A-C]
		22 to 45 fewer TN in 2-3 Channel HSAT		**77 to 157 fewer TN in 2-3 Channel HSAT**		
False positives (patients incorrectly classified as having OSA)		22 to 45	0 to 0	77 to 157	0 to 0	
		22 to 45 more FP in 2-3 Channel HSAT		**77 to 157 more FP in 2-3 Channel HSAT**		

[1]Wide range of sensitivity

Table S43—Summary of Findings table for 2-3 Channel HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Ayappa 2008 (A); Baltzan 2000 (B); Masdeu 2010 (C); Tonelli de Oliveria 2009 (D); Ward 2015 (E)

Range of sensitivities 2-3 Channel HSAT: 0.66 to 0.88 | **Range of specificities 2-3 Channel HSAT**: 0.62 to 1.00 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 72% to 87% **Accuracy (low risk):** 68% to 95%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		2-3 Channel HSAT	Attended PSG	2-3 Channel HSAT	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	422 to 563	640 to 640	165 to 220	250 to 250	443 (5) [A-E]
		77 to 218 fewer TP in 2-3 Channel HSAT		**30 to 85 fewer TP in 2-3 Channel HSAT**		
False negatives (patients incorrectly classified as not having OSA)		77 to 218	0 to 0	30 to 85	0 to 0	
		77 to 218 more FN in 2-3 Channel HSAT		**30 to 85 more FN in 2-3 Channel HSAT**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	223 to 360	360 to 360	465 to 750	750 to 750	443 (5) [A-E]
		0 to 137 fewer TN in 2-3 Channel HSAT		**0 to 285 fewer TN in 2-3 Channel HSAT**		
False positives (patients incorrectly classified as having OSA)		22 to 137	0 to 0	0 to 285	0 to 0	
		0 to 137 more FP in 2-3 Channel HSAT		**0 to 285 more FP in 2-3 Channel HSAT**		

[1]Wide range of sensitivity and specificity

Table S44—Summary of Findings table for 2-3 Channel HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Tonelli de Oliveria 2009 (A); Ward 2015 (B)

Range of sensitivities 2-3 Channel HSAT: 0.78 to 0.90 | **Range of specificities 2-3 Channel HSAT**: 0.92 to 0.98 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 71% to 90% **Accuracy (low risk):** 88% to 91%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		2-3 Channel HSAT	Attended PSG	2-3 Channel HSAT	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕⊕ HIGH	155 to 288	360 to 360	43 to 80	100 to 100	225 (2) [A-B]
		72 to 205 fewer TP in 2-3 Channel HSAT		**20 to 57 fewer TP in 2-3 Channel HSAT**		
False negatives (patients incorrectly classified as not having OSA)		72 to 205	0 to 0	20 to 57	0 to 0	
		72 to 205 more FN in 2-3 Channel HSAT		**20 to 57 more FN in 2-3 Channel HSAT**		
True negatives (patients without OSA)	⊕⊕⊕⊕ HIGH	589 to 627	640 to 640	828 to 882	900 to 900	225 (2) [A-B]
		13 to 51 fewer TN in 2-3 Channel HSAT		**18 to 72 fewer TN in 2-3 Channel HSAT**		
False positives (patients incorrectly classified as having OSA)		13 to 51	0 to 0	18 to 72	0 to 0	
		13 to 51 more FP in 2-3 Channel HSAT		**18 to 72 more FP in 2-3 Channel HSAT**		

Table S45—Summary of Findings table for 2-3 Channel HSAT vs. In-home PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Gantner 2010 (A)

Single study sensitivity 2-3 Channel HSAT: 0.88 (95% CI: 0.80 to 0.93) | **Single study specificity 2-3 Channel HSAT**: 0.84 (95% CI: 0.69 to 0.93) **Single study sensitivity In-home PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity In-home PSG**: 1.00 (95% CI: 1.00 to 1.00) 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 86% (95% CI: 76 to 93%) **Accuracy (low risk):** 85% (95% CI: 72 to 93%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		2-3 Channel HSAT	In-home PSG	2-3 Channel HSAT	In-home PSG	
True positives (patients with OSA)	⊕⊕◯◯ LOW[1,2]	563 (512 to 595)	640 (640 to 640)	220 (200 to 233)	250 (250 to 250)	143 (1) [A]
		77 fewer TP in 2-3 Channel HSAT		**30 fewer TP in 2-3 Channel HSAT**		
False negatives (patients incorrectly classified as not having OSA)		77 (45 to128)	0 (0 to 0)	30 (50 to 17)	0 (0 to 0)	
		77 more FN in 2-3 Channel HSAT		**30 more FN in 2-3 Channel HSAT**		
True negatives (patients without OSA)	⊕⊕◯◯ LOW[1,2]	302 (248 to 335)	360 (360 to 360)	630 (518 to 698)	750 (750 to 750)	143 (1) [A]
		58 fewer TN in 2-3 Channel HSAT		**120 fewer TN in 2-3 Channel HSAT**		
False positives (patients incorrectly classified as having OSA)		58 (25 to 112)	0 (0 to 0)	120 (52 to 232)	0 (0 to 0)	
		58 more FP in 2-3 Channel HSAT		**120 more FP in 2-3 Channel HSAT**		

[1]Indirect evidence as study only included Chinese population at high cardiovascular risk
[2]Wide confidence interval for specificity

Table S46—Summary of Findings table for 2-3 Channel HSAT vs. in-home PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Chai-Coetzer 2010 (A); Gantner 2010 (B)

Range of sensitivities 2-3 Channel HSAT: 0.84 to 0.97 | **Range of specificities 2-3 Channel HSAT**: 0.82 to 0.87 **Range of sensitivities In-home PSG**: 1.00 to 1.00 | **Range of specificities In-home PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 83% to 91% **Accuracy (low risk):** 82% to 88%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		2-3 Channel HSAT	In-home PSG	2-3 Channel HSAT	In-home PSG	
True positives (patients with OSA)	⊕⊕⊕⊕ HIGH	302 to 349	360 to 360	84 to 97	100 to 100	300 (2) [A,B]
		11 to 58 fewer TP in 2-3 Channel HSAT		**3 to 16 fewer TP in 2-3 Channel HSAT**		
False negatives (patients incorrectly classified as not having OSA)		11 to 58	0 to 0	3 to 16	0 to 0	
		11 to 58 more FN in 2-3 Channel HSAT		**3 to 16 more FN in 2-3 Channel HSAT**		
True negatives (patients without OSA)	⊕⊕⊕⊕ HIGH	525 to 557	640 to 640	738 to 783	900 to 900	300 (2) [A,B]
		83 to 115 fewer TN in 2-3 Channel HSAT		**117 to 162 fewer TN in 2-3 Channel HSAT**		
False positives (patients incorrectly classified as having OSA)		83 to 115	0 to 0	117 to 162	0 to 0	
		83 to 115 more FP in 2-3 Channel HSAT		**117 to 162 more FP in 2-3 Channel HSAT**		

Table S47—Summary of Findings table for Single Channel HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Nakano 2008 (A)

Single study sensitivity Single Channel HSAT: 0.96 (95% CI: 0.91 to 1.00) | **Single study specificity Single Channel HSAT**: 0.82 (95% CI: 0.60 to 1.00) **Single study sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 94% (95% CI: 87 to 100%) **Accuracy (low risk):** 90% (95% CI: 77 to 100%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Single Channel HSAT	Attended PSG	Single Channel HSAT	Attended PSG	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	835 (792 to 870)	870 (870 to 870)	528 (501 to 550)	550 (550 to 550)	100 (1) [A]
		35 fewer TP in Single Channel HSAT		**22 fewer TP in Single Channel HSAT**		
False negatives (patients incorrectly classified as not having OSA)		35 (0 to78)	0 (0 to 0)	22 (0 to 49)	0 (0 to 0)	
		35 more FN in Single Channel HSAT		**22 more FN in Single Channel HSAT**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	107 (78 to 130)	130 (130 to 130)	369 (270 to 450)	450 (450 to 450)	100 (1) [A]
		23 fewer TN in Single Channel HSAT		**81 fewer TN in Single Channel HSAT**		
False positives (patients incorrectly classified as having OSA)		23 (0 to 52)	0 (0 to 0)	81 (0 to180)	0 (0 to 0)	
		23 more FP in Single Channel HSAT		**81 more FP in Single Channel HSAT**		

[1]Wide confidence interval for specificity

Table S48—Summary of Findings table for Single Channel HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Nakano 2008 (A); Ozmen 2011 (B); Pang 2006 (C); Watkins 2009 (D)

Range of sensitivities Single-Channel HSAT: 0.55 to 0.91 | **Range of specificities Single-Channel HSAT**: 0.70 to 0.82 **Range of sensitivities Attended PSG**: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 60% to 88% **Accuracy (low risk):** 66% to 84%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		Single-Channel HSAT	Attended PSG	Single-Channel HSAT	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	352 to 582	640 to 640	138 to 228	250 to 250	235 (4) [A-D]
		58 to 288 fewer TP in Single-Channel HSAT		**22 to 112 fewer TP in Single-Channel HSAT**		
False negatives (patients incorrectly classified as not having OSA)		58 to 288	0 to 0	22 to 112	0 to 0	
		58 to 288 more FN in Single-Channel HSAT		**22 to 112 more FN in Single-Channel HSAT**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	252 to 295	360 to 360	525 to 615	750 to 750	235 (4) [A-D]
		65 to108 fewer TN in Single-Channel HSAT		**135 to 225 fewer TN in Single-Channel HSAT**		
False positives (patients incorrectly classified as having OSA)		65 to 108	0 to 0	135 to 225	0 to 0	
		65 to108 more FP in Single-Channel HSAT		**135 to 225 more FP in Single-Channel HSAT**		

[1]Wide range of values for sensitivity

Table S49—Summary of Findings table for Single Channel HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Nakano 2008 (A)

Single study sensitivity Single Channel HSAT: 0.89 (95% CI: 0.80 to 0.97) | **Single study specificity Single Channel HSAT**: 0.96 (95% CI: 0.90 to 1.00) **Single study sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 93% (95% CI: 86 to 99%) **Accuracy (low risk):** 95% (95% CI: 88 to 100%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		Single Channel HSAT	Attended PSG	Single Channel HSAT	Attended PSG	
True positives (patients with OSA)	⊕⊕⊕⊕ HIGH	320 (288 to 349)	360 (360 to 360)	89 (80 to 97)	100 (100 to 100)	100 (1) [A]
		40 fewer TP in Single Channel HSAT		**11 fewer TP in Single Channel HSAT**		
False negatives (patients incorrectly classified as not having OSA)		40 (11 to 72)	0 (0 to 0)	11 (3 to 20)	0 (0 to 0)	
		40 more FN in Single Channel HSAT		**11 more FN in Single Channel HSAT**		
True negatives (patients without OSA)	⊕⊕⊕⊕ HIGH	614 (576 to 640)	640 (640 to 640)	864 (810 to 900)	900 (900 to 900)	100 (1) [A]
		26 fewer TN in Single Channel HSAT		**36 fewer TN in Single Channel HSAT**		
False positives (patients incorrectly classified as having OSA)		26 (0 to 64)	0 (0 to 0)	36 (0 to 90)	0 (0 to 0)	
		26 more FP in Single Channel HSAT		**36 more FP in Single Channel HSAT**		

Table S50—Summary of Findings table for Other Single-Channel HSAT vs. PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Rofail 2010 (A)

Single study sensitivity Other Single-Channel HSAT: 0.80 (95% CI: 0.67 to 0.93) | **Single study specificity Other Single-Channel HSAT**: 0.87 (95% CI: 0.77 to 0.97) **Single study sensitivity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity Attended PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 81% (95% CI: 68 to 94%) **Accuracy (low risk):** 83% (95% CI: 72 to 95%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Other Single-Channel HSAT	Attended PSG	Other Single-Channel HSAT	Attended PSG	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	696 (583 to 809)	870 (870 to 870)	440 (369 to 512)	550 (550 to 550)	92 (1) [A]
		174 fewer TP in Other Single-Channel HSAT		**110 fewer TP in Other Single-Channel HSAT**		
False negatives (patients incorrectly classified as not having OSA)		174 (61 to 287)	0 (0 to 0)	110 (38 to 181)	0 (0 to 0)	
		174 more FN in Other Single-Channel HSAT		**110 more FN in Other Single-Channel HSAT**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	113 (100 to 126)	130 (130 to 130)	391 (347 to 436)	450 (450 to 450)	92 (1) [A]
		17 fewer TN in Other Single-Channel HSAT		**59 fewer TN in Other Single-Channel HSAT**		
False positives (patients incorrectly classified as having OSA)		17 (4 to 30)	0 (0 to 0)	59 (14 to 103)	0 (0 to 0)	
		17 more FP in Other Single-Channel HSAT		**59 more FP in Other Single-Channel HSAT**		

[1]Wide confidence intervals for specificity and sensitivity

Table S51—Summary of Findings table for Oximetry vs. In-home PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Chung 2012 (A)

Single study sensitivity Oximetry : 0.70 (95% CI: 0.66 to 0.76) | **Single study specificity Oximetry** : 0.90 (95% CI: 0.85 to 0.94)
Single study sensitivity In-home PSG: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity In-home PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 73% (95% CI: 68 to 78%) **Accuracy (low risk):** 79% (95% CI: 74 to 84%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Oximetry	In-home PSG	Oximetry	In-home PSG	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	609 (574 to 661)	870 (870 to 870)	385 (363 to 418)	550 (550 to 550)	243 (1) [A]
		261 fewer TP in Oximetry		**165 fewer TP in Oximetry**		
False negatives (patients incorrectly classified as not having OSA)		261 (209 to 296)	0 (0 to 0)	165 (132 to187)	0 (0 to 0)	
		261 more FN in Oximetry		**165 more FN in Oximetry**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	117 (111 to 122)	130 (130 to 130)	405 (382 to 423)	450 (450 to 450)	243 (1) [A]
		13 fewer TN in Oximetry		**45 fewer TN in Oximetry**		
False positives (patients incorrectly classified as having OSA)		13 (8 to19)	0 (0 to 0)	45 (27 to 68)	0 (0 to 0)	
		13 more FP in Oximetry		**45 more FP in Oximetry**		

[1]Indirect evidence as study only included patients scheduled for inpatient surgery

Table S52—Summary of Findings table for Oximetry vs. In-home PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Chung 2012 (A)

Single study sensitivity Oximetry: 0.93 (95% CI: 0.90 to 0.97) | **Single study specificity Oximetry**: 0.75 (95% CI: 0.70 to 0.80)
Single study sensitivity In-home PSG: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity In-home PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 86% (95% CI: 83 to 91%) **Accuracy (low risk):** 80% (95% CI: 75 to 84%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		Oximetry	In-home PSG	Oximetry	In-home PSG	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	595 (576 to 621)	640 (640 to 640)	233 (225 to 243)	250 (250 to 250)	243 (1) [A]
		45 fewer TP in Oximetry		**17 fewer TP in Oximetry**		
False negatives (patients incorrectly classified as not having OSA)		45 (19 to 64)	0 (0 to 0)	17 (7 to 25)	0 (0 to 0)	
		45 more FN in Oximetry		**17 more FN in Oximetry**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	270 (252 to 288)	360 (360 to 360)	563 (525 to 600)	750 (750 to 750)	243 (1) [A]
		90 fewer TN in Oximetry		**187 fewer TN in Oximetry**		
False positives (patients incorrectly classified as having OSA)		90 (72 to108)	0 (0 to 0)	187 (150 to 225)	0 (0 to 0)	
		90 more FP in Oximetry		**187 more FP in Oximetry**		

[1]Indirect evidence as study included patients scheduled for inpatient surgery

Table S53—Summary of Findings table for Oximetry vs. In-home PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Chung 2012 (A)

Single study sensitivity Oximetry: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity Oximetry**: 0.59 (95% CI: 0.54 to 0.63)
Single study sensitivity In-home PSG: 1.00 (95% CI: 1.00 to 1.00) | **Single study specificity In-home PSG**: 1.00 (95% CI: 1.00 to 1.00) **Accuracy (high risk)**: 74% (95% CI: 71 to 76%) **Accuracy (low risk):** 63% (95% CI: 59 to 67%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		Oximetry	In-home PSG	Oximetry	In-home PSG	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	360 (360 to 360)	360 (360 to 360)	100 (100 to 100)	100 (100 to 100)	243 (1) [A]
		0 fewer TP in Oximetry		**0 fewer TP in Oximetry**		
False negatives (patients incorrectly classified as not having OSA)		0 (0 to 0)	0 (0 to 0)	0 (0 to 0)	0 (0 to 0)	
		0 fewer FN in Oximetry		**0 fewer FN in Oximetry**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	378 (346 to 403)	640 (640 to 640)	531 (486 to 567)	900 (900 to 900)	243 (1) [A]
		262 fewer TN in Oximetry		**369 fewer TN in Oximetry**		
False positives (patients incorrectly classified as having OSA)		262 (237 to 294)	0 (0 to 0)	369 (333 to 414)	0 (0 to 0)	
		262 more FP in Oximetry		**369 more FP in Oximetry**		

[1]Indirect evidence as study includes patients scheduled for inpatient surgery

Table S54—Summary of Findings table for Watch-Peripheral Arterial Tone (Watch-PAT) vs. In-Home PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: O'Brien 2012 (A)

Single study sensitivity Watch-PAT: 0.88 (95% CI: 0.47 to 1.00) | **Single study specificity Watch-PAT**: 0.87 (95% CI: 0.66 to 0.97) **Accuracy (high risk)**: 88% (95% CI: 50 to 100%) **Accuracy (low risk):** 88% (95% CI: 55 to 99%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Watch-PAT	In-Home PSG	Watch-PAT	In-Home PSG	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	766 (409 to 870)	870 (870 to 870)	484 (259 to 550)	550 (550 to 550)	31 (1) [A]
		104 fewer TP in Watch-PAT		**66 fewer TP in Watch-PAT**		
False negatives (patients incorrectly classified as not having OSA)		104 (0 to 461)	0 (0 to 0)	66 (0 to 291)	0 (0 to 0)	
		104 more FN in Watch-PAT		**66 more FN in Watch-PAT**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	113 (86 to 126)	130 (130 to 130)	391 (297 to 436)	450 (450 to 450)	31 (1) [A]
		17 fewer TN in Watch-PAT		**59 fewer TN in Watch-PAT**		
False positives (patients incorrectly classified as having OSA)		17 (4 to 44)	0 (0 to 0)	59 (14 to 153)	0 (0 to 0)	
		17 more FP in Watch-PAT		**59 more FP in Watch-PAT**		

[1]Wide confidence intervals for sensitivity and specificity

Table S55—Summary of Findings table for Watch-PAT vs. In-lab PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Garg 2014 (A)

Single study sensitivity Watch-PAT: 0.96 (95% CI: 0.85 to 0.99) | **Single study specificity Watch-PAT**: 0.43 (95% CI: 0.22 to 0.66) **Accuracy (high risk)**: 89% (95% CI: 77 to 95%) **Accuracy (low risk):** 72% (95% CI: 57 to 84%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Watch-PAT	In-Home PSG	Watch-PAT	In-Home PSG	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	835 (739 to 861)	870 (870 to 870)	528 (468 to 545)	550 (550 to 550)	75 (1) [A]
		35 fewer TP in Watch-PAT		**22 fewer TP in Watch-PAT**		
False negatives (patients incorrectly classified as not having OSA)		35 (9 to 131)	0 (0 to 0)	22 (5 to 82)	0 (0 to 0)	
		35 more FN in Watch-PAT		**22 more FN in Watch-PAT**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	56 (29 to 86)	130 (130 to 130)	193 (99 to 297)	450 (450 to 450)	75 (1) [A]
		74 fewer TN in Watch-PAT		**257 fewer TN in Watch-PAT**		
False positives (patients incorrectly classified as having OSA)		74 (44 to 101)	0 (0 to 0)	257 (153 to 351)	0 (0 to 0)	
		74 more FP in Watch-PAT		**257 more FP in Watch-PAT**		

[1]Wide confidence intervals for specificity

Table S56—Summary of Findings table for Watch-PAT vs. In-lab PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Pittman 2004 (A); Garg 2014 (B)

Range of sensitivities Watch-PAT: 0.92 to 0.96 | **Range of specificities Watch-PAT**: 0.77 to 1.00 **Accuracy (high risk)**: 84% to 97% **Accuracy (low risk):** 82% to 99%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		Watch-PAT	In-Lab PSG	Watch-PAT	In-Lab PSG	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	589 to 614	640 to 640	230 to 240	250 to 250	104 (2) [A,B]
		26 to 51 fewer TP in Watch-PAT		**10 to 37 fewer TP in Watch-PAT**		
False negatives (patients incorrectly classified as not having OSA)		26 to 51	0 to 0	10 to 20	0 to 0	
		26 to 51 more FN in Watch-PAT		**10 to 20 more FN in Watch-PAT**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	277 to 360	360 to 360	578 to 750	750 to 750	104 (2) [A,B]
		0 to 83 fewer TN in Watch-PAT		**0 to 172 more TN in Watch-PAT**		
False positives (patients incorrectly classified as having OSA)		0 to 83	0 to 0	0 to 172	0 to 0	
		0 to 83 more FP in Watch-PAT		**0 to 172 more FP in Watch-PAT**		

[1]Wide range of values for specificity

Table S57—Summary of Findings table for Watch-PAT vs. In-lab PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Pittman 2004 (A)

Single study sensitivity Watch-PAT: 0.92 (95% CI: 0.62 to 1.00) | **Single study specificity Watch-PAT**: 0.82 (95% CI: 0.57 to 0.96) **Accuracy (high risk)**: 83% (95% CI: 58 to 97%) **Accuracy (low risk):** 83% (95% CI: 58 to 96%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		Watch-PAT	In-Lab PSG	Watch-PAT	In-Lab PSG	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	331 (223 to 360)	360 (360 to 360)	92 (62 to 100)	100 (100 to 100)	29 (1) [A]
		29 fewer TP in Watch-PAT		**8 fewer TP in Watch-PAT**		
False negatives (patients incorrectly classified as not having OSA)		29 (0 to 137)	0 (0 to 0)	8 (0 to 38)	0 (0 to 0)	
		29 more FN in Watch-PAT		**8 more FN in Watch-PAT**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	525 (365 to 614)	360 (360 to 360)	738 (513 to 864)	100 (100 to 100)	29 (1) [A]
		165 more TN in Watch-PAT		**638 more TN in Watch-PAT**		
False positives (patients incorrectly classified as having OSA)		115 (26 to 275)	0 (0 to)	162 (36 to 87)	0 (0 to 0)	
		115 more FP in Watch-PAT		**162 more FP in Watch-PAT**		

[1]Wide confidence intervals for sensitivity and specificity

Figure S18—HSAT vs. Attended PSG (ESS)

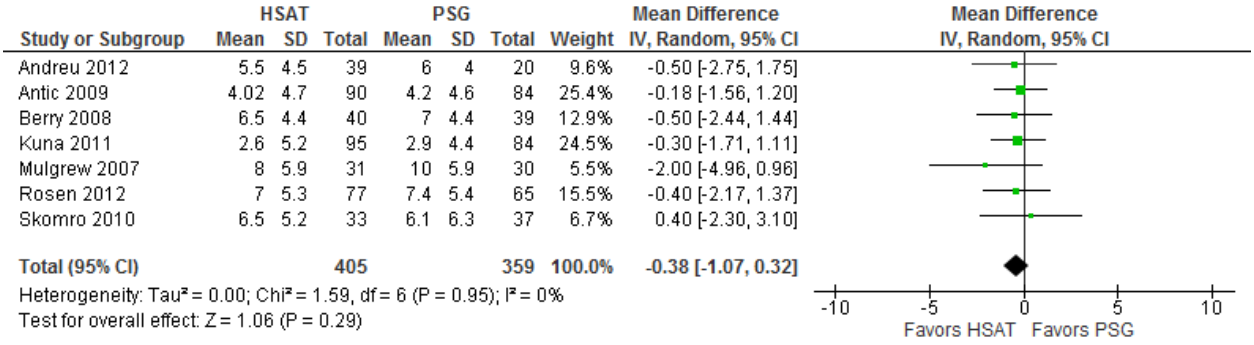


Figure S19—HSAT vs. PSG (QOL; FOSQ)

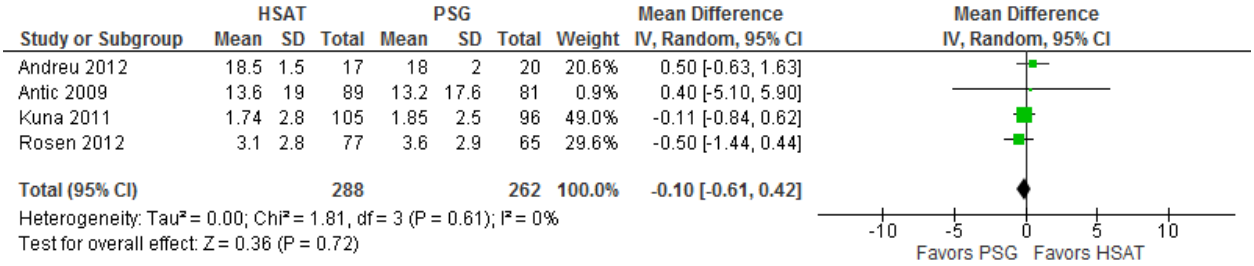


Figure S20—HSAT vs. PSG (QOL; SAQLI)

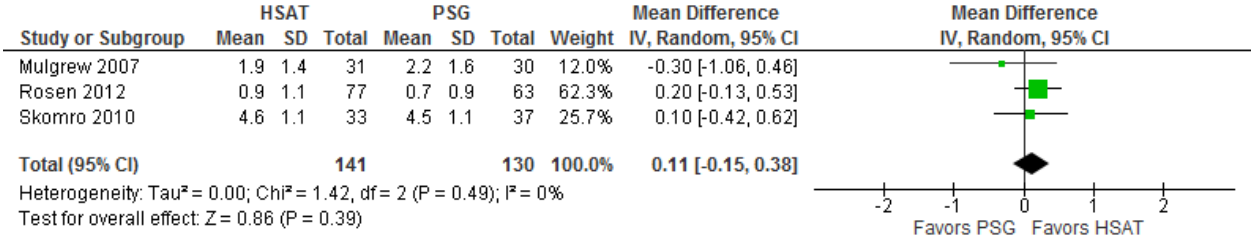


Figure S21—HSAT vs. PSG (QOL; SF-36 Vitality Score)

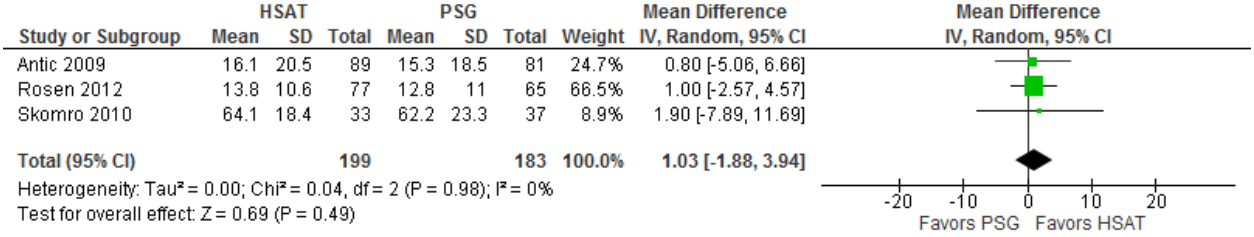


Figure S22—HSAT vs. PSG (QOL; SF-12/36 Physical Component Summary Score)

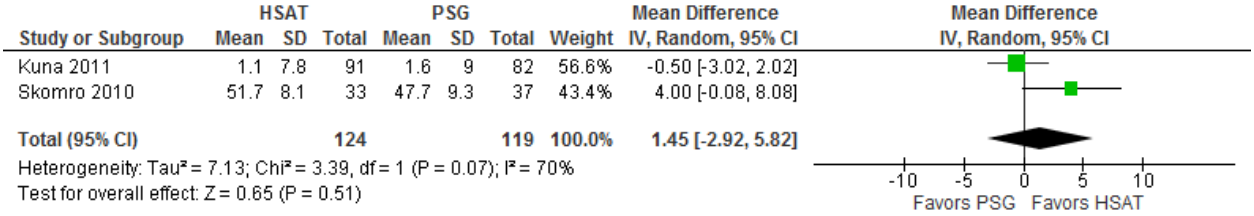


Figure S23—HSAT vs. PSG (QOL; SF-12/36 Mental Component Summary Score)

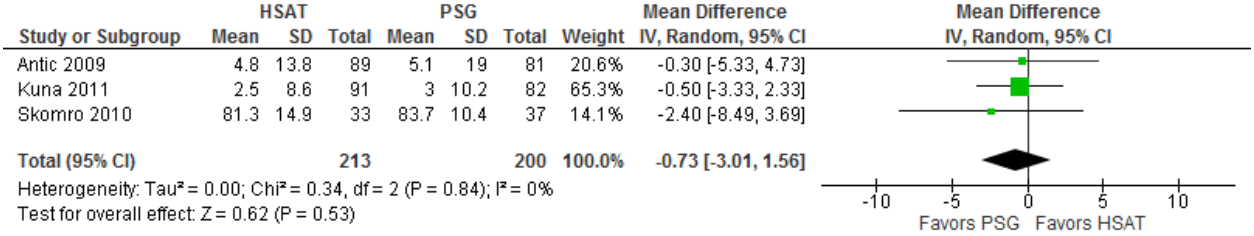


Figure S24—HSAT vs. PSG (CPAP Adherence, h/night)

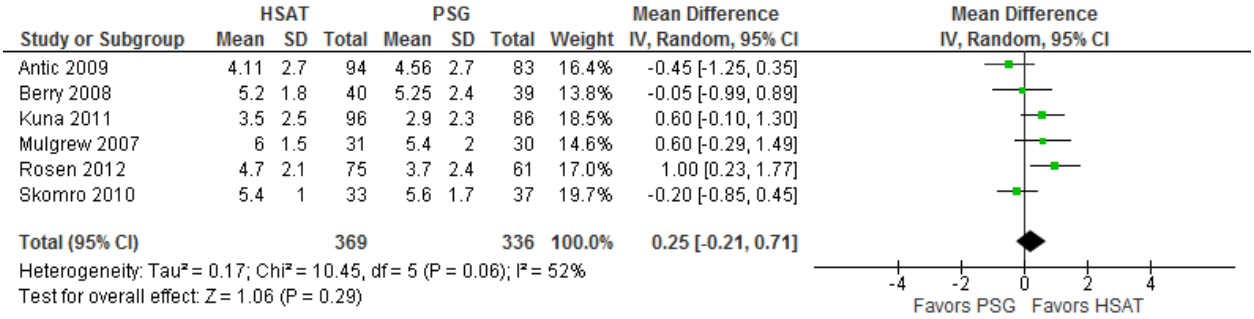


Figure S25—HSAT vs. PSG (CPAP Adherence, no. nights > 4 h)

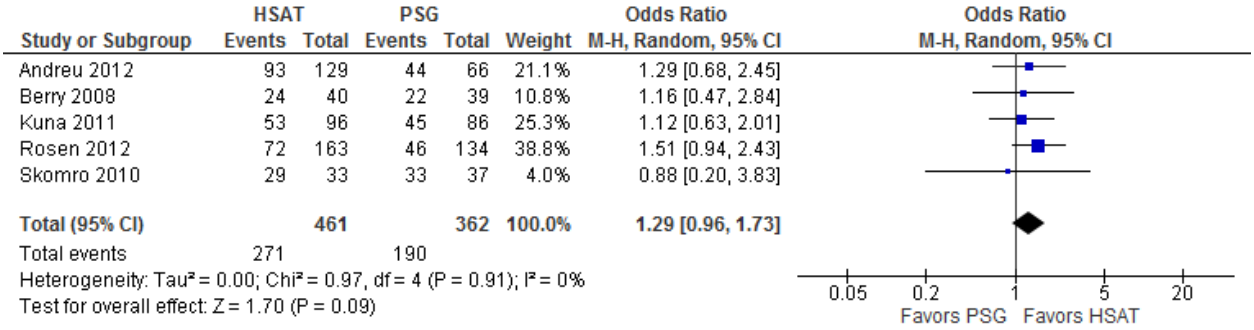


Table S58—HSAT compared to PSG for adults suspected of OSA

References: Andreu 2012 (A); Antic 2009 (B); Berry 2008 (C); Kuna 2011 (D); Mulgrew 2007 (E); Rosen 2012 (F); Skomro 2010 (G)

Patient or population: adults suspected of OSA
Setting: Home, lab
Intervention: HSAT
Comparison: Attended PSG

Outcomes	Quality of the evidence (GRADE)	Anticipated absolute effects* (95% CI) MD between HSAT and PSG	№ of participants (studies)	Comments
Sleepiness* (ESS)	⊕⊕⊕⊕ HIGH	The mean difference in sleepiness (ESS) after treatment was 0.38 less (1.07 less to 0.32 less) with HSAT	764 (7 RCTs) [A-G]	
QOL (FOSQ)*	⊕⊕⊕⊕ HIGH	The mean difference in QOL (FOSQ) after treatment was 0.10 lower (0.42 higher to 0.61 lower) with HSAT	550 (4 RCTs) [A,B,D,F]	
QOL (SAQLI)*	⊕⊕⊕⊕ HIGH	The mean difference in QOL (SAQLI) after treatment was 0.11 greater (0.15 lower to 0.38 greater) with HSAT	271 (3 RCTs) [E,F,G]	
QOL (SF-36 Vitality Score)*	⊕⊕⊕⊕ HIGH	The mean difference in QOL (SF-36 Vitality Score) after treatment was 1.03 greater (1.88 lower to 3.94 greater) with HSAT	382 (3 RCTs) [B,F,G]	
QOL (SF-12/SF-36 Physical Component Summary)*	⊕⊕⊕◯ MODERATE[1]	The mean difference in QOL (SF-12/SF-36 Physical Component Summary) after treatment was 1.45 greater (2.92 fewer to 5.82 greater) with HSAT	243 (2 RCTs) [D,G]	
QOL (SF-12/SF-36 Mental Component Summary)*	⊕⊕⊕◯ MODERATE[1]	The mean difference in QOL (SF-12/SF-36 Mental Component Summary) after treatment was 0.73 lower (1.56 greater to 3.01 lower) with HSAT	413 (3 RCTs) [B,D,G]	
CPAP Adherence (h/night)*	⊕⊕⊕◯ MODERATE[2]	The mean CPAP Adherence (h/night) in the intervention group was 0.25 h more (0.21 less to 0.71 more) with HSAT	705 (6 RCTs) [B-G]	
		Relative Effect Baseline Risk / Comparative risk		
Compliance (No. of nights > 4 h)*	⊕⊕⊕⊕ HIGH	525 per 1000 / **588 per 1000** (515 to 656) **OR 1.29** (0.96 to 1.73)	823 (5 RCTs) [A,C,D,F,G]	

*Critical Outcomes
[1]Quality of evidence for QOL as measured by the SF-36 was downgraded due to imprecision (i.e., 95% CI of mean difference crosses clinical decision threshold of 3 points for SF-36 physical and mental component summary scores and the origin of the plot)
[2]Quality of evidence for adherence was downgraded due to imprecision (i.e., 95% CI of mean difference crosses clinical decision threshold of 0.5 h/night and the origin of the plot)

Table S59—Summary of Findings table for Multiple-night HSAT vs. Single-night HSAT to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Rofail 2010 (A)

Single study sensitivity Multiple-night HSAT: 0.80 (95% CI: 0.67 to 0.93) | **Single study specificity Multiple-night HSAT**: 0.87 (95% CI: 0.77 to 0.97) **Multiple-night HSAT Accuracy (high risk)**: 81% (95% CI: 68 to 94%) **Multiple-night HSAT Accuracy (low risk):** 83% (95% CI: 72 to 95%) **Single study sensitivity Single-night HSAT**: 0.75 (95% CI: 0.63 to 0.85) | **Single study specificity Single-night HSAT**: 0.79 (95% CI: 0.61 to 0.97) **Single-night HSAT Accuracy (high risk)**: 76% (95% CI: 63 to 86%) **Single-night HSAT Accuracy (low risk):** 77% (95% CI: 62 to 90%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Multiple-night HSAT	Single-night HSAT	Multiple-night HSAT	Single-night HSAT	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	696 (583 to 809)	653 (548 to 739)	440 (369 to 512)	413 (347 to 468)	92 (1) [A]
		43 more TP in Multiple-night HSAT		**27 more TP in Multiple-night HSAT**		
False negatives (patients incorrectly classified as not having OSA)		174 (61 to 287)	217 (131 to 322)	110 (38 to 181)	137 (82 to 203)	
		43 fewer FN in Multiple-night HSAT		**27 fewer FN in Multiple-night HSAT**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	113 (100 to 126)	103 (79 to 126)	391 (347 to 436)	356 (274 to 436)	92 (1) [A]
		10 more TN in Multiple-night HSAT		**35 more TN in Multiple-night HSAT**		
False positives (patients incorrectly classified as having OSA)		17 (4 to 30)	27 (4 to 51)	59 (14 to 103)	94 (14 to 176)	
		10 fewer FP in Multiple-night HSAT		**35 fewer FP in Multiple-night HSAT**		

[1]Wide confidence intervals for sensitivity and specificity

Table S60—Summary of Findings table for Multiple-night HSAT vs. Single-night HSAT to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Rofail 2010 (A)

Single study sensitivity Multiple-night HSAT: 0.90 (95% CI: 0.83 to 0.98) | **Single study specificity Multiple-night HSAT**: 0.85 (95% CI: 0.78 to 0.89) **Multiple-night HSAT Accuracy (high risk)**: 87% (95% CI: 80 to 92%) **Multiple-night HSAT Accuracy (low risk):** 86% (95% CI: 78 to 90%) **Single study sensitivity Single-night HSAT**: 0.90 (95% CI: 0.84 to 0.98) | **Single study specificity Single-night HSAT**: 0.83 (95% CI: 0.76 to 0.87) **Single-night HSAT Accuracy (high risk)**: 86% (95% CI: 77 to 91%) **Single-night HSAT Accuracy (low risk):** 84% (95% CI: 78 to 88%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		Multiple-night HSAT	Single-night HSAT	Multiple-night HSAT	Single-night HSAT	
True positives (patients with OSA)	⊕⊕⊕⊕ HIGH	324 (299 to 353)	324 (302 to 353)	90 (83 to 98)	90 (84 to 98)	92 (1) [A]
		0 fewer TP in Multiple-night HSAT		**0 fewer TP in Multiple-night HSAT**		
False negatives (patients incorrectly classified as not having OSA)		36 (7 to 61)	36 (7 to 58)	10 (2 to17)	10 (2 to16)	
		0 fewer FN in Multiple-night HSAT		**0 fewer FN in Multiple-night HSAT**		
True negatives (patients without OSA)	⊕⊕⊕⊕ HIGH	544 (499 to 570)	531 (486 to 557)	765 (702 to 801)	747 (684 to 783)	92 (1) [A]
		13 more TN in Multiple-night HSAT		**18 more TN in Multiple-night HSAT**		
False positives (patients incorrectly classified as having OSA)		96 (70 to 141)	109 (83 to154)	135 (99 to198)	153 (117 to 216)	
		13 fewer FP in Multiple-night HSAT		**18 fewer FP in Multiple-night HSAT**		

Diagnosis of obstructive sleep apnea in adults with comorbid conditions

Table S61—Summary of Findings table for HSAT vs. PSG to diagnose OSA in Suspected Adults with comorbid conditions (AHI ≥ 15)

References: Abraham 2006 (A); Series 2005 (B); de Vries 2015 (C)

Range of sensitivities HSAT: 0.64 to 0.93 | **Range of specificities HSAT**: 0.78 to 0.95
Range of sensitivities Attended PSG: 1.00 to 1.00 | **Range of specificities Attended PSG**: 1.00 to 1.00 **Accuracy (high risk)**: 69% to 89% **Accuracy (low risk):** 74% to 92%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		HSAT	Attended PSG	HSAT	Attended PSG	
True positives (patients with OSA)	⨁⨁◯◯ LOW[1,2]	410 to 595	640 to 640	160 to 233	250 to 250	190 (3 [A-C])
		45 to 230 fewer TP in HSAT		**17 to 90 fewer TP in HSAT**		
False negatives (patients incorrectly classified as not having OSA)		45 to 230	0 to 0	17 to 90	0 to 0	
		45 to 230 more FN in HSAT		**17 to 90 more FN in HSAT**		
True negatives (patients without OSA)	⨁⨁◯◯ LOW[1,2]	281 to 342	360 to 360	585 to 712	750 to 750	190 (3) [A-C]
		18 to 79 fewer TN in HSAT		**38 to 165 fewer TN in HSAT**		
False positives (patients incorrectly classified as having OSA)		18 to 79	0 to 0	38 to 165	0 to 0	
		18 to 79 more FP in HSAT		**38 to 165 more FP in HSAT**		

[1]Wide range of values for sensitivity and specificity
[2]Indirectness as study populations not representative of all comorbid conditions typically associated with OSA

Diagnosis of obstructive sleep apnea in adults using a split-night versus a full-night polysomnography protocol

Table S62—Summary of Findings table for Split-night PSG vs. Full-night PSG to diagnose OSA in Suspected Adults (AHI ≥ 5)

References: Khawja 2010 (A)

Single study sensitivity split-night HSAT: 0.80 (95% CI: 0.67 to 0.90) | **Single study specificity split-night HSAT**: 0.93 (95% CI: 0.83 to 0.98) **Accuracy (high risk)**: 82% (95% CI: 69 to 91%) **Accuracy (low risk):** 86% (95% CI: 74 to 94%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 87%		Prevalence 55%		
		Split-night HSAT	Full-night HSAT	Split-night HSAT	Full-night HSAT	
True positives (patients with OSA)	⨁⨁⨁◯ MODERATE[1]	699 (583 to 783)	870 (870 to 870)	442 (369 to 495)	550 (550 to 550)	114 (1) [A]
		171 fewer TP in split-night HSAT		**108 fewer TP in split-night HSAT**		
False negatives (patients incorrectly classified as not having OSA)		171 (87 to 287)	0 (0 to 0)	108 (55 to 181)	0 (0 to 0)	
		171 fewer FN in split-night HSAT		**108 more FN in split-night HSAT**		
True negatives (patients without OSA)	⨁⨁⨁◯ MODERATE[1]	121 (108 to 127)	130 (130 to 130)	419 (373 to 441)	450 (450 to 450)	114 (1) [A]
		9 fewer TN in split-night HSAT		**31 fewer TN in split-night HSAT**		
False positives (patients incorrectly classified as having OSA)		9 (3 to 22)	0 (0 to 0)	31 (9 to 77)	0 (0 to 0)	
		9 more FP in split-night HSAT		**31 more FP in split-night HSAT**		

[1]Wide confidence intervals for sensitivity

Table S63—Summary of Findings table for Split-night PSG vs. Full-night PSG to diagnose OSA in Suspected Adults (AHI ≥ 15)

References: Khawja 2010 (A)

Single study sensitivity split-night HSAT: 0.77 (95% CI: 0.56 to 0.91) | **Single study specificity split-night HSAT**: 0.98 (95% CI: 0.92 to 1.00) **Accuracy (high risk)**: 85% (95% CI: 69 to 94%) **Accuracy (low risk):** 93% (95% CI: 83 to 98%)

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested (95% CI)				Number of participants (studies)
		Prevalence 64%		Prevalence 25%		
		Split-night HSAT	Full-night HSAT	Split-night HSAT	Full-night HSAT	
True positives (patients with OSA)	⊕⊕⊕◯ MODERATE[1]	493 (358 to 582)	640 (640 to 640)	193 (140 to 228)	250 (250 to 250)	114 (1) [A]
		147 fewer TP in split-night HSAT		**57 fewer TP in split-night HSAT**		
False negatives (patients incorrectly classified as not having OSA)		147 (58 to 282)	0 (0 to 0)	57 (22 to 110)	0 (0 to 0)	
		147 more FN in split-night HSAT		**57 more FN in split-night HSAT**		
True negatives (patients without OSA)	⊕⊕⊕◯ MODERATE[1]	353 (331 to 359)	360 (360 to 360)	735 (690 to 748)	750 (750 to 750)	114 (1) [A]
		7 fewer TN in split-night HSAT		**15 fewer TN in split-night HSAT**		
False positives (patients incorrectly classified as having OSA)		7 (1 to 29)	0 (0 to 0)	15 (2 to 60)	0 (0 to 0)	
		7 more FP in split-night HSAT		**15 more FP in split-night HSAT**		

[1]Wide confidence intervals for sensitivity

Table S64—Summary of Findings table for Split-night PSG vs. Full-night PSG to diagnose OSA in Suspected Adults (AHI ≥ 30)

References: Chou 2011 (A)

Single study sensitivity split-night HSAT: 0.90 (95% CI: not available) | **Single study specificity split-night HSAT**: 0.92 (95% CI: not available) **Accuracy (high risk)**: 91% **Accuracy (low risk):** 92%

Test result	Quality of the Evidence (GRADE)	Number of results per 1000 patients tested				Number of participants (studies)
		Prevalence 36%		Prevalence 10%		
		Split-night HSAT	Full-night HSAT	Split-night HSAT	Full-night HSAT	
True positives (patients with OSA)	⊕⊕⊕⊕ HIGH	324	360	90	100	198 (1) [A]
		36 fewer TP in split-night HSAT		**10 fewer TP in split-night HSAT**		
False negatives (patients incorrectly classified as not having OSA)		36	0	10	0	
		36 more FN in split-night HSAT		**10 more FN in split-night HSAT**		
True negatives (patients without OSA)	⊕⊕⊕⊕ HIGH	589	640	828	900	198 (1) [A]
		51 fewer TN in split-night HSAT		**72 fewer TN in split-night HSAT**		
False positives (patients incorrectly classified as having OSA)		51	0	72	0	
		51 more FP in split-night HSAT		**72 more FP in split-night HSAT**		

Figure S26—Split-night PSG vs. Full-night PSG (Adherence, h/night)

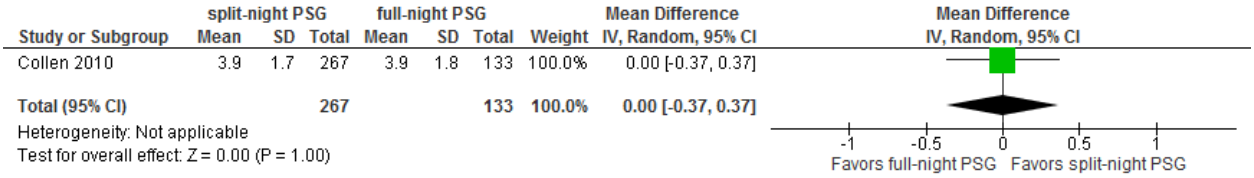


Figure S27—Split-night PSG vs. Full-night PSG (AHI after CPAP)

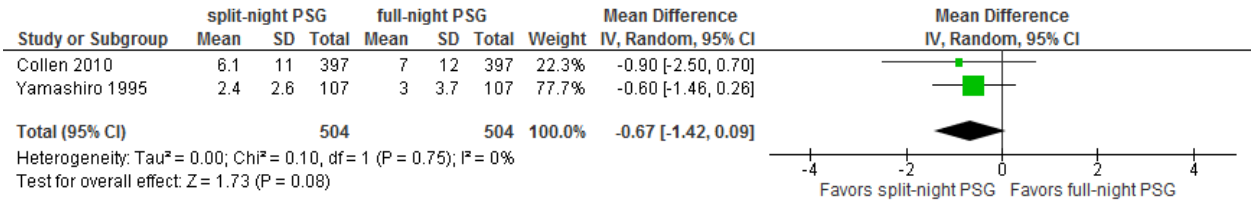


Table S65—Summary of Findings table for split-night PSG vs. full-night PSG for the improvement in clinical outcomes of Adults suspected of OSA

References: Collen 2010 (A); Yamashiro 1995 (B)

Patient or population: adults suspected of OSA
Setting: in-lab
Intervention: split-night PSG
Comparison: full-night PSG

Outcomes	Quality of the evidence (GRADE)	Anticipated absolute effects* (95% CI) MD between HSAT and PSG	№ of participants (studies)	Comments
AHI*	⨁⨁◯◯ LOW[1]	The mean difference in AHI after treatment was 0.67 lower (1.42 lower to 0.09 higher) with split-night	504 (2 RCTs) [A,B]	
CPAP Adherence (h/night) *	⨁⨁◯◯ LOW[1]	The mean CPAP Adherence (h/night) in the split-night PSG group was 0.00 greater (0.37 fewer to 0.37 greater) with split-night PSG	400 (1 RCT) [A]	

*Critical Outcomes
[1]Downgraded due to imprecision associated with a limited number of studies and small sample size

Repeat polysomnography for the diagnosis of obstructive sleep apnea in adults

Figure S28—Two-night PSG vs. Single-night PSG (night-to-night variability in AHI)

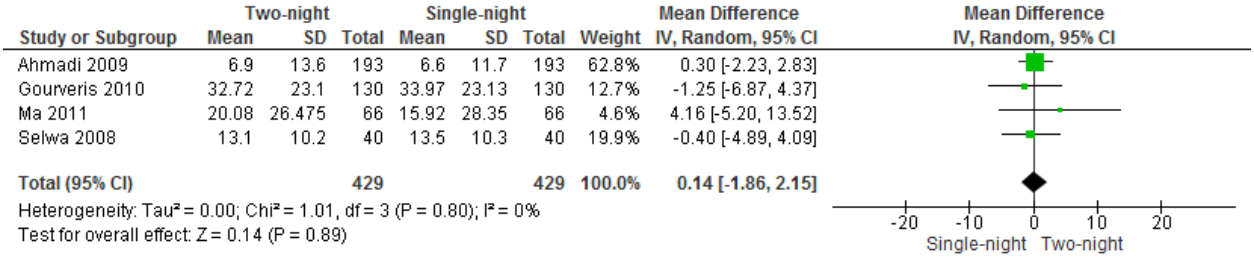


Table S66—Summary of Findings table for Two-night PSG vs. Single-night PSG for the improvement in clinical outcomes of Adults suspected of OSA

References: Ahmadi 2009 (A); Gourveris 2010 (B); Ma 2011 (C); Selwa 2008 (D)

Patient or population: Adults suspected of OSA
Setting: Attended in-lab
Intervention: Two-night PSG
Comparison: Single-night PSG

Outcomes	Quality of the evidence (GRADE)	Anticipated absolute effects* (95% CI) Single-night PSG vs. second-night PSG	№ of participants (studies)
AHI	⊕⊕⊕⊕ HIGH	The mean difference in AHI (variability) was 0.14 events/h lower (-1.86 greater to 2.15 lower) with a single-night PSG.	858 (4 RCTs) [A-D]