

# OSAHS

**Table 22: Clinical evidence profile: Auto-CPAP versus fixed level CPAP for improving usage of continuous positive airway pressure machines in adults with OSAHS- severe OSAHS**

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Auto-CPAP versus fixed CPAP	Control	Relative (95% CI)	Absolute		
<b>Machine usage (hours/night) (Better indicated by higher values)</b>												
31	randomised trials	serious <sup>1</sup>	no serious inconsistency	serious indirectness <sup>5</sup>	no serious imprecision	None	1075	377	-	MD 0.21 higher (0.11 to 0.31 higher)	⊕⊕○○ LOW	IMPORTANT
<b>Number of participants who used CPAP therapy &gt; 4 hours per night</b>												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	serious indirectness <sup>5</sup>	no serious imprecision	None	113/173 (65.3%)	44.8%	RR 1.06 (0.9 to 1.24)	27 more per 1000 (from 45 fewer to 108 more)	⊕⊕○○ LOW	IMPORTANT
<b>Symptoms (Epworth Sleepiness Scale) (Better indicated by lower values)</b>												

25	randomised trials	serious <sup>1</sup>	no serious inconsistency	serious indirectness <sup>5</sup>	no serious imprecision	None	957	328	-	MD 0.44 lower (0.72 to 0.16 lower)	⊕⊕⊕⊕ LOW	IMPORTANT
<b>Withdrawals (parallel group trials/first arm crossover trials)</b>												
13	randomised trials	serious <sup>1</sup>	no serious inconsistency	serious indirectness <sup>5</sup>	serious <sup>2</sup>	None	79/668 (11.8%)	8%	RR 0.91 (0.67 to 1.24)	7 fewer per 1000 (from 26 fewer to 19 more)	⊕⊕⊕⊕ VERY LOW	IMPORTANT
<b>Quality of life (Functional Outcome of Sleep Questionnaire) (Better indicated by higher values)</b>												
3	randomised trials	serious <sup>1</sup>	no serious inconsistency	serious indirectness <sup>5</sup>	no serious imprecision	none	193	159	-	MD 0.12 higher (0.21 lower to 0.46 higher)	⊕⊕⊕⊕ VERY LOW	CRITICAL
<b>Quality of life (Sleep Association Quality of Life Index) (Better indicated by higher values) (scale 1-7)</b>												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	serious indirectness <sup>5</sup>	no serious imprecision	None	67	30	-	MD 0.14 lower (0.54 lower to 0.27 higher)	⊕⊕⊕⊕ VERY LOW	CRITICAL
<b>Quality of life (SF-36 questionnaire) - Physical functioning (Better indicated by higher values)</b>												
3	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	None	30	30	-	MD 0.76 higher (3.5 lower to 5.01 higher)	⊕⊕⊕⊕ LOW	CRITICAL
<b>Quality of life (SF-36 questionnaire) - Role physical (Better indicated by higher values)</b>												

2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	None	30	30	-	MD 3.73 lower (13.46 lower to 6.01 higher)	⊕⊕⊕ LOW	CRITICAL
<b>Quality of life (SF-36 questionnaire) - Bodily pain (Better indicated by higher values)</b>												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	None	30	30	-	MD 4.21 higher (4.23 lower to 12.64 higher)	⊕⊕⊕ LOW	CRITICAL
<b>Quality of life (SF-36 questionnaire) - General health (Better indicated by higher values)</b>												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	None	30	30	-	MD 2.49 higher (4.99 lower to 9.97 higher)	⊕⊕⊕ LOW	CRITICAL
<b>Quality of life (SF-36 questionnaire) - Vitality (Better indicated by higher values)</b>												
6	randomised trials	serious <sup>1</sup>	no serious inconsistency	serious indirectness <sup>5</sup>	serious <sup>2</sup>	None	149	149	-	MD 1.32 higher (1.25 lower to 3.88 higher)	⊕⊕⊕ VERY LOW	CRITICAL
<b>Quality of life (SF-36 questionnaire) - Social functioning (Better indicated by higher values)</b>												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	None	30	30	-	MD 3.31 higher (4.29 lower to 10.92 higher)	⊕⊕⊕ LOW	CRITICAL
<b>Quality of life (SF-36 questionnaire) - Role emotional (Better indicated by higher values)</b>												

3	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	None	30	30	-	MD 0.7 higher (4.19 lower to 5.59 higher)	⊕⊕⊕⊕ LOW	CRITICAL
<b>Quality of life (SF-36 questionnaire) - Mental health (Better indicated by higher values)</b>												
3	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	30	30	-	MD 0.2 higher (1.88 lower to 2.27 higher)	⊕⊕⊕⊕ LOW	CRITICAL
<b>Apnoea Hypopnoea Index (events/hr) (Better indicated by lower values)</b>												
26	randomised trials	serious <sup>1</sup>	no serious inconsistency	serious indirectness <sup>5</sup>	no serious imprecision	None	886	370	-	MD 0.48 higher (0.16 to 0.8 higher)	⊕⊕⊕⊕ LOW	IMPORTANT
<b>Arousals (events/hr) (Better indicated by lower values)</b>												
4	randomised trials	serious <sup>1</sup>	no serious inconsistency	serious indirectness <sup>5</sup>	no serious imprecision	None	99	37	-	MD 0.66 lower (2.9 lower to 1.58 higher)	⊕⊕⊕⊕ LOW	IMPORTANT
<b>Pressure of CPAP treatment (cm H2O) (Better indicated by lower values)</b>												
24	randomised trials	serious <sup>1</sup>	very serious <sup>4</sup>	serious indirectness <sup>5</sup>	no serious imprecision	None	883	288	-	MD 1.49 lower (2.12 to 0.85 lower)	⊕⊕⊕⊕ VERY LOW	IMPORTANT
<b>Systolic blood pressure (Better indicated by lower values)</b>												

2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	176	177	-	MD 1.87 higher (1.08 lower to 4.82 higher)	⊕⊕⊕⊕ LOW	IMPORTANT
<b>Diastolic blood pressure (Better indicated by lower values)</b>												
2	randomised trials	serious <sup>1</sup>	very serious <sup>4</sup>	no serious indirectness	serious <sup>2</sup>	None	176	177	-	MD 4.01 higher (1.46 lower to 9.49 higher)	⊕⊕⊕⊕ VERY LOW	IMPORTANT
<b>24 hour mean BP (Better indicated by lower values)</b>												
2	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	None	274	256	-	MD 0.59 higher (1.05 lower to 2.22 higher)	⊕⊕⊕⊕ HIGH	IMPORTANT
<b>24 hour systolic BP (Better indicated by lower values)</b>												
2	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	None	274	256	-	MD 0.15 lower (2.21 lower to 1.91 higher)	⊕⊕⊕⊕ HIGH	IMPORTANT
<b>24 hour diastolic BP (Better indicated by lower values)</b>												
2	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	None	274	256	-	MD 0.9 higher (0.65 lower to 2.44 higher)	⊕⊕⊕⊕ HIGH	IMPORTANT
<b>Tolerability outcomes - Intolerable treatment pressure</b>												

1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	None	42/91 (46.2%)	51.3%	RR 0.9 (0.66 to 1.23)	51 fewer per 1000 (from 174 fewer to 118 more)	⊕⊕⊕⊕ MODERATE	IMPORTANT
<b>Tolerability outcomes - Mask Leak</b>												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	34/91 (37.4%)	33.8%	RR 1.11 (0.74 to 1.66)	37 more per 1000 (from 88 fewer to 223 more)	⊕⊕⊕⊕ LOW	IMPORTANT
<b>Tolerability outcomes - Dry mouth</b>												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	None	42/91 (46.2%)	56.3%	RR 0.82 (0.61 to 1.1)	101 fewer per 1000 (from 220 fewer to 56 more)	⊕⊕⊕⊕ MODERATE	IMPORTANT
<b>Tolerability outcomes - Stuffy nose</b>												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	28/91 (30.8%)	31.3%	RR 0.98 (0.63 to 1.54)	6 fewer per 1000 (from 116 fewer to 169 more)	⊕⊕⊕⊕ LOW	IMPORTANT
<b>Patient preference (auto-CPAP/not auto-CPAP)</b>												
14	randomised trials	serious <sup>1</sup>	very serious <sup>4</sup>	serious indirectness <sup>5</sup>	serious <sup>2</sup>	None	255/541 (47.1%)	47.5%	RR 0.99 (0.64 to 1.56)	5 fewer per 1000 (from 171 fewer to 266 more)	⊕⊕⊕⊕ VERY LOW	IMPORTANT
<b>Mortality</b>												
Outcome not reported												

<sup>1</sup> Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias  
<sup>2</sup> Downgraded by one increment if the confidence interval crossed one MID and downgraded by two increments if the confidence interval crossed both MIDs . Established MIDs for SF-36 physical/mental- 2/3; ESS- 2.5; EQ5D- 0.03; FOSQ- 2; GRADE default MID(0.5XSD) used for all other continuous outcomes.  
<sup>3</sup> Imprecision could not be assessed as control group SD not available  
<sup>4</sup> Downgraded by 1 or 2 increments for heterogeneity, . Random effect analysis used.

<sup>5</sup>Downgraded by 1 or 2 increments because: The majority of the evidence included an indirect population (downgrade by one increment) or a very indirect population (downgrade by two increments). The population was deemed to be indirect when the outcome included evidence from studies with different severity OSAHS populations or when the study did not report the AHI of the population included

**Table 23: Clinical evidence profile: Non-invasive ventilation (NIV) versus fixed level CPAP for improving usage of continuous positive airway pressure machines in adults with OSAHS- severe OSAHS**

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Bi-level PAP versus fixed CPAP	Control	Relative (95% CI)	Absolute		
<b>Machine usage (hours/night) (Better indicated by lower values)</b>												
4	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	137	131	-	MD 0.14 higher (0.17 lower to 0.45 higher)	⊕⊕⊕⊕ LOW	IMPORTANT
<b>Symptoms (Epworth Sleepiness Scale) (Better indicated by lower values)</b>												
4	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	121	105	-	MD 0.49 lower (1.46 lower to 0.48 higher)	⊕⊕⊕⊕ LOW	IMPORTANT
<b>Withdrawals (parallel group trials/first arm cross-over trials)</b>												

3	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	12/117 (10.3%)	13.8%	RR 0.61 (0.33 to 1.15)	54 fewer per 1000 (from 92 fewer to 21 more)	⊕○○○ VERY LOW	IMPORTANT
<b>Quality of life (Functional Outcome of Sleep Questionnaire) (Better indicated by lower values)</b>												
1	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	none	71	80	-	MD 0.8 lower (6.08 lower to 4.48 higher)	⊕⊕○○ LOW	CRITICAL
<b>Quality of life (Sleep Association Quality of Life Index) (Better indicated by higher values) scale 1-7</b>												
1	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	28	-	-	MD 0.4 higher (0.34 lower to 1.14 higher)	⊕⊕⊕○ MODERATE	CRITICAL
<b>Quality of life (SF-36 questionnaire) - Physical health (Better indicated by lower values)</b>												
1	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	71	80	-	MD 0.6 higher (2.21 lower to 3.41 higher)	⊕○○○ VERY LOW	CRITICAL
<b>Quality of life (SF-36 questionnaire) - Mental health (Better indicated by lower values)</b>												
1	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	None	71	80	-	MD 2.9 lower (7.09 lower to 1.29 higher)	⊕⊕○○ LOW	CRITICAL
<b>Apnoea Hypopnoea Index (events/hr) (Better indicated by lower values)</b>												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	99	80	-	MD 1.36 higher (6.92 lower to 9.63 higher)	⊕○○○ VERY LOW	IMPORTANT



Patient preference - BiPAP/no preference or CPAP												
2	randomised trials	serious <sup>1</sup>	Serious <sup>3</sup>	no serious indirectness	very serious <sup>2</sup>	None	21/44 (47.7%)	54.5%	RR 0.88 (0.47 to 1.65)	65 fewer per 1000 (from 289 fewer to 354 more)	⊕○○○ VERY LOW	IMPORTANT
Tolerability outcomes - Dry mouth												
1	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	3/71 (4.2%)	7.5%	RR 0.56 (0.15 to 2.17)	33 fewer per 1000 (from 64 fewer to 88 more)	⊕○○○ VERY LOW	IMPORTANT
Tolerability outcomes - Mask intolerance												
1	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	8/71 (11.3%)	10%	RR 1.13 (0.45 to 2.85)	13 more per 1000 (from 55 fewer to 185 more)	⊕○○○ VERY LOW	IMPORTANT
Treatment comfort score (Better indicated by lower values)												
1	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	serious imprecision <sup>2</sup>	None	28	-	-	MD 9 higher (3.54 lower to 21.54 higher)	⊕⊕⊕⊕ LOW	IMPORTANT
Mortality												
Outcome not reported												

<sup>1</sup> Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias

<sup>2</sup> Downgraded by one increment if the confidence interval crossed one MID and downgraded by two increments if the confidence interval crossed both MIDs . Established MIDs for SF-36 physical/mental- 2/3; ESS- 2.5; EQ5D- 0.03; FOSQ- 2;. GRADE default MID (0.5XSD) used for all other continuous outcomes..

<sup>3</sup> Downgraded by 1 or 2 increments for heterogeneity, . Random effect analysis used.

**Table 24: Clinical evidence profile: Heated humidification + fixed level CPAP versus fixed level CPAP alone for improving usage of continuous positive airway pressure machines in adults with OSAHS- severe OSAHS**

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Heated humidification + fixed pressure CPAP versus fixed pressure CPAP alone	Control	Relative (95% CI)	Absolute		
<b>Machine usage (hours/night) (Better indicated by lower values)</b>												
6	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	187	90	-	MD 0.37 higher (0.1 to 0.64 higher)	⊕⊕⊕⊕ LOW	IMPORTANT
<b>Symptoms (Epworth Sleepiness Scale) (Better indicated by lower values)</b>												
4	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	121	63	-	MD 0.34 lower (0.93 lower to 0.26 higher)	⊕⊕⊕⊕ LOW	IMPORTANT
<b>Withdrawals (parallel group trials/first arm cross-over trials)</b>												
3	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	16/102 (15.7%)	12.8%	RR 1 (0.56 to 1.79)	0 fewer per 1000 (from 56 fewer to 101 more)	⊕⊕⊕⊕ VERY LOW	IMPORTANT

Apnoea Hypopnoea Index (events/hr) (Better indicated by lower values)												
1	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	44	-	-	MD 0.3 higher (0.95 lower to 1.55 higher)	⊕000 VERY LOW	IMPORTANT
Quality of life (SF-36 questionnaire) (Better indicated by higher values)												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	61	63	-	MD 0.11 higher (6.97 lower to 7.18 higher)	⊕000 VERY LOW	CRITICAL
Nasal symptoms (parallel group trials) - Runny nose												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious <sup>2</sup>	None	4/39 (10.3%)	26.5%	RR 0.39 (0.13 to 1.15)	162 fewer per 1000 (from 231 fewer to 40 more)	⊕⊕⊕0 MODERATE	IMPORTANT
Nasal symptoms (parallel group trials) - Congested or blocked nose												
1	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision	None	9/39 (23.1%)	61.8%	RR 0.37 (0.2 to 0.7)	389 fewer per 1000 (from 185 fewer to 494 fewer)	⊕⊕⊕⊕ HIGH	IMPORTANT
Nasal symptoms (parallel group trials) - Dry nose (Better indicated by lower values)												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	47	56	-	SMD 0.38 lower (0.78 lower to 0.01 higher)	⊕⊕⊕0 MODERATE	IMPORTANT

<b>Nasal symptoms (parallel group trials) - Runny nose (Better indicated by lower values)</b>												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	47	56	-	SMD 0.3 lower (0.69 lower to 0.09 higher)	⊕⊕⊕○ MODERATE	
<b>Nasal symptoms (parallel group trials) - Blocked nose (Better indicated by lower values)</b>												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	47	56	-	SMD 0.38 lower (0.78 lower to 0.01 higher)	⊕⊕⊕○ MODERATE	IMPORTANT
<b>Nasal symptoms (parallel group trials) - Bleeding nose (Better indicated by lower values)</b>												
2	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	no serious imprecision	None	47	56	-	SMD 0.45 lower (0.99 lower to 0.1 higher)	⊕⊕⊕○ MODERATE	IMPORTANT
<b>Preference</b>												
1	randomised trials	serious <sup>1</sup>	no serious inconsistency	no serious indirectness	very serious <sup>2</sup>	None	19/37 (51.4%)	48.7%	RR 1.06 (0.67 to 1.67)	29 more per 1000 (from 161 fewer to 326 more)	⊕○○○ VERY LOW	IMPORTANT
<b>Mortality</b>												
Outcome not reported												

<sup>1</sup> Downgraded by 1 increment if the majority of the evidence was at high risk of bias, and downgraded by 2 increments if the majority of the evidence was at very high risk of bias

<sup>2</sup> Downgraded by one increment if the confidence interval crossed one MID and downgraded by two increments if the confidence interval crossed both MIDs Established MIDs for SF-36 physical/mental- 2/3; ESS- 2.5; EQ5D- 0.03; FOSQ- 2;. GRADE default MID (0.5XSD) used for all other continuous outcomes.