The proportion of males increased as severity increased. The percentage of males who had no, mild, moderate or severe OSA was 64.6%, 72.0%, 86.0 and 87.0%, respectively.

Mean age was significantly lower (P<0.001) in the no OSA compared to all 3 OSA categories. Those with moderate OSA were also significantly older (P<0.05) than those with mild OSA.

Those with severe OSA had a significantly higher average BMI compared to all other categories (P<0.05).

Average neck circumference significantly increased with severity of OSA.

There was no significant difference in average ESS between groups.

Conclusion Seventy-five percent of pre-operative patients with a STOP-BANG score ≥3 had some degree of OSA. The severity of OSA was dependent on gender, age, BMI and neck circumference. ESS was not helpful in predicting presence or severity of OSA.

<table>
<thead>
<tr>
<th>P021</th>
<th>NON-INVASIVE VENTILATION FOR OBESE PATIENTS WITH OSA FAILING REGULAR CPAP: A PROSPECTIVE OBSERVATIONAL COHORT STUDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1^2</td>
<td>Athanasia Iskak, 2Michelle Ramsay, 2Nicholas Hart, 2Joerg Steier. 2King's College London Faculty of Life Sciences and Medicine, Centre for Human and Applied Physiological Science (CHAPS), London, UK; 2Guy’s and St Thomas’ NHS Foundation Trust Lane Fox Respiratory Unit, London, UK</td>
</tr>
</tbody>
</table>

10.1136/bmjresp-2019-bssconf.21

Introduction Continuous positive airway pressure (CPAP) therapy is the standard treatment for obstructive sleep apnoea (OSA), however, patients frequently have sub-optimal long-term adherence. We hypothesised that bilevel positive airway pressure (BPAP) therapy may improve adherence and outcomes in patients who cannot tolerate CPAP.

Methods Patients with OSA who had sub-optimal CPAP usage (<4 hours/day) and were referred to our sleep centre between 2014–2017 for BPAP were included. Age, gender, body-mass-index (BMI), co-morbidities, CPAP use and reasons for failure, Epworth Sleepiness Score (ESS), sleep study data, spirometry data and average maximum nightly compliance were recorded.

Results We included 52 patients with OSA who required CPAP>15cmH20 (71% male, age 58 (15) years, BMI 42.6 (10.1) kg/m2, AH1 51.1 (30.4)/hour); 62% had respiratory co-morbidities affecting nocturnal breathing (COPD, OHS). CPAP was used for 199 (106–477) days prior to referral. Reasons for CPAP failure were intolerance of pressures (23%), uncontrolled symptoms (23%), mask problems (21%), adverse effects (13%), claustrophobia (8%), co-morbidities (8%), and other issues (4%). Lower expiratory positive airway pressures (EPAP) were needed to control nocturnal breathing compared to CPAP (10 (8–12) vs 16.8 (15.7–19.2) cmH20, p=0.001) and patients achieved better adherence (7.0 (4.0–8.5) vs 2.5 (1.6–6.7) hours/night, p=0.028) and better symptom control (ESS 4.0 (1.0–7.0) vs 10.0 (6.0–17.0) points, p=0.039) on BPAP.

Discussion In patients with OSA with limited success on CPAP therapy, BPAP is better tolerated and achieves sufficient respiratory and symptom control.

**Abstract P022 Figure 1** Dot plot showing reaction times in incongruent Stroop test, measured before and after a 20 minute nap-opportunity in individuals who slept for <8hrs the night before the test (n=18) and ≥8hrs the night before the test (n=11). Data presented as mean ±95% CI. Paired t-test was used to compare reaction times before and after nap-opportunity. Unpaired t-tests were used to compare baselines and endpoints of the two groups. Significant change in reaction time was observed following nap-opportunity in individuals who slept<8 hours before the test (p=0.01275) *=P<0.05, **=P<0.01, ***=P<0.001