# Suplementary data to the research article

# Health preference measures in patients with obstructive sleep apnea syndrome undergoing CPAP therapy. Data from a randomized trial.

Fabienne L Huber1, Michael Furian1, Malcolm Kohler1, Tsogyal D Latshang2, Yvonne Nussbaumer-Ochsner 3, Alexander Turk4, Otto D Schoch5, Irene Laube6, Robert Thurnheer7, Konrad E Bloch1

1University Hospital Zurich, Dept. of Respiratory Medicine, Sleep Disorders Center, Zurich, Switzerland.

2 Cantonal Hospital Chur, Dept. of Respiratory Medicine, Sleep Disorders Center, Chur, Switzerland.

3 Cantonal Hospital Schaffhausen, Dept. of Internal Medicine, Schaffhausen, Switzerland.

4 See-Spital, Dept. of Internal Medicine, Horgen, Switzerland.

5 Cantonal Hospital St. Gallen, Dept. of Respiratory Medicine, Center for Sleep Medicine, St. Gallen, Switzerland

6 Triemli Hospital, Dept. of Respiratory Medicine, Sleep Disorders Center, Zurich

7 Cantonal Hospital Münsterlingen, Dept. of Respiratory Medicine, Sleep Disorders Center, Münsterlingen, Switzerland

**Corresponding Author**

Prof. Konrad E. Bloch, MD

Universitätsspital Zürich, Dept. of Respiratory Medicine and Sleep Disorders Center

Rämistrasse 100, CH-8091 Zürich, Switzerland

Email: konrad.bloch@usz.ch; Phone: +41 44 255 3828

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| **Supplementary table S1. Multivariable regression analysis of the effect of the treatment modes (AutoCPAP and fixed CPAP) on utility indices over the course of the study, adjusted for baseline values, Epworth sleepiness score and apnea/hypopnea index** |
| **Predictors** | **Coefficient** | **SE** | **95% confidence interval** | **P-value** |
| **Euro-Qol 5-dimensions utility index (EQ-5D)** |
| EQ-5D baseline | 0.675 | 0.043 | 0.591 | to 0.758 | <0.001 |
| ESS baseline | 0.002 | 0.002 | -0.001 | to 0.006 | 0.235 |
| AHI baseline, 1/h | 0.000 | 0.000 | 0.000 | to 0.001 | 0.460 |
| Time, months |  |  |  |  |  |
| 3 | 0.018 | 0.015 | -0.011 | to 0.046 | 0.224 |
| 12 | 0.018 | 0.015 | -0.011 | to 0.048 | 0.217 |
| 24 | 0.015 | 0.015 | -0.015 | to 0.044 | 0.335 |
| Treatment mode | 0.001 | 0.038 | -0.073 | to 0.075 | 0.982 |
| Treatment mode \* Time interactions, months |  |  |  |
| AutoCPAP \*3 | -0.015 | 0.040 | -0.094 | to 0.064 | 0.706 |
| AutoCPAP\*12 | -0.017 | 0.041 | -0.097 | to 0.063 | 0.681 |
| AutoCPAP\*24 | 0.020 | 0.041 | -0.060 | to 0.101 | 0.619 |
| Constant | 0.215 | 0.047 | 0.124 | to 0.306 | <0.001 |
| **Short-form 6 dimensions utility index (SF-6D)** |
| SF-6D baseline | 0.003 | 0.000 | 0.002 | to 0.004 | <0.001 |
| ESS baseline | 0.004 | 0.002 | 0.000 | to 0.008 | 0.061 |
| AHI baseline, 1/h | 0.000 | 0.000 | 0.000 | to 0.001 | 0.122 |
| Time, months |  |  |  |  |  |
| 3 | 0.044 | 0.011 | 0.023 | to 0.066 | <0.001 |
| 12 | 0.053 | 0.011 | 0.031 | to 0.075 | <0.001 |
| 24 | 0.052 | 0.011 | 0.030 | to 0.074 | <0.001 |
| Treatment mode | 0.010 | 0.029 | -0.046 | to 0.066 | 0.715 |
| Treatment mode \* Time interactions, months |  |  |  |
| AutoCPAP \*3 | 0.000 | 0.030 | -0.060 | to 0.059 | 0.992 |
| AutoCPAP\*12 | -0.003 | 0.031 | -0.063 | to 0.058 | 0.935 |
| AutoCPAP\*24 | 0.007 | 0.031 | -0.053 | to 0.068 | 0.813 |
| Constant | 0.521 | 0.037 | 0.448 | to 0.593 | <0.001 |
| **Euro-thermometer visual analog scale utility index (VAS)** |
| VAS baseline | 0.478 | 0.036 | 0.408 | to 0.549 | <0.001 |
| ESS baseline | 0.082 | 0.197 | -0.304 | to 0.467 | 0.679 |
| AHI baseline, 1/h | -0.002 | 0.027 | -0.054 | to 0.050 | 0.945 |
| Time, months |  |  |  |  |  |
| 3 | 7.297 | 1.423 | 4.508 | to 10.086 | <0.001 |
| 12 | 8.560 | 1.472 | 5.675 | to 11.446 | <0.001 |
| 24 | 7.154 | 1.487 | 4.239 | to 10.069 | <0.001 |
| Treatment mode | 2.013 | 3.720 | -5.278 | to 9.303 | 0.588 |
| Treatment mode \* Time interactions, months |  |  |  |
| AutoCPAP \*3 | -0.217 | 3.978 | -8.014 | to 7.581 | 0.957 |
| AutoCPAP\*12 | -1.711 | 4.041 | -9.632 | to 6.210 | 0.672 |
| AutoCPAP\*24 | 1.700 | 4.054 | -6.245 | to 9.646 | 0.675 |
| Constant | 35.684 | 4.258 | 27.339 | to 44.028 | <0.001 |
| **Standard Gamble utility index (SG)** |
| SG baseline | 0.442 | 0.034 | 0.374 | to 0.509 | <0.001 |
| ESS baseline | -0.003 | 0.002 | -0.007 | to 0.002 | 0.224 |
| AHI baseline, 1/h | 0.001 | 0.000 | 0.000 | to 0.001 | 0.011 |
| Time, months  |  |  |  |  |  |
| 3 | 0.035 | 0.016 | 0.004 | to 0.065 | 0.026 |
| 12 | 0.042 | 0.016 | 0.011 | to 0.073 | 0.008 |
| 24 | -0.003 | 0.016 | -0.035 | to 0.029 | 0.848 |
| Treatment mode | 0.056 | 0.040 | -0.024 | to 0.135 | 0.169 |
| Treatment mode \* Time interactions, months |  |  |  |
| AutoCPAP \*3 | -0.073 | 0.043 | -0.158 | to 0.011 | 0.089 |
| AutoCPAP\*12 | -0.071 | 0.044 | -0.157 | to 0.015 | 0.108 |
| AutoCPAP\*24 | -0.039 | 0.044 | -0.125 | to 0.048 | 0.380 |
| Constant | 0.448 | 0.044 | 0.361 | to 0.534 | <0.001 |
| **Time trade-off utility index (TTO)** |
| TTO baseline | 0.320 | 0.031 | 0.259 | to 0.381 | <0.001 |
| ESS baseline | -0.003 | 0.002 | -0.007 | to 0.001 | 0.164 |
| AHI baseline, 1/h | 0.001 | 0.000 | 0.001 | to 0.002 | <0.001 |
| Time, months |  |  |  |  |  |
| 3 | 0.062 | 0.015 | 0.032 | to 0.092 | <0.001 |
| 12 | 0.062 | 0.016 | 0.031 | to 0.092 | <0.001 |
| 24 | 0.063 | 0.016 | 0.032 | to 0.094 | <0.001 |
| Treatment mode | 0.038 | 0.039 | -0.039 | to 0.114 | 0.333 |
| Treatment mode \* Time interactions, months |  |  |  |
| AutoCPAP \*3 | -0.058 | 0.042 | -0.140 | to 0.024 | 0.163 |
| AutoCPAP\*12 | -0.055 | 0.042 | -0.138 | to 0.028 | 0.193 |
| AutoCPAP\*24 | -0.067 | 0.043 | -0.150 | to 0.016 | 0.115 |
| Constant | 0.541 | 0.042 | 0.458 | to 0.623 | <0.001 |
| Intention to treat population, n=206. Treatment modes were computer-adjusted and fixed continuous positive airway pressure (AutoCPAP and fixed CPAP); ESS=Epworth sleepiness scale score; AHI=apnea/hyponea index |

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| **Supplementary table S2. Multivariable regression analysis of the effect of CPAP treatment use on utility indices over the course of the study, adjusted for baseline values, Epworth sleepiness score and apnea/hypopnea index** |
| **Predictors** | **Coefficient** | **SE** | **95% confidence interval** | **P-value** |
| **Euro-Qol 5-dimensions utility index (EQ-5D)** |
| EQ-5D baseline | 0.607 | 0.051 | 0.507 | to 0.707 | <0.001 |
| ESS baseline | 0.003 | 0.002 | -0.002 | to 0.007 | 0.248 |
| AHI baseline, 1/h | 0.000 | 0.000 | 0.000 | to 0.001 | 0.718 |
| Time, months |  |  |  |  |  |
| 3 | 0.078 | 0.252 | -0.416 | to 0.572 | 0.757 |
| 12 | 0.018 | 0.253 | -0.478 | to 0.514 | 0.943 |
| 24 | 0.106 | 0.253 | -0.390 | to 0.602 | 0.675 |
| CPAP use, h/night | 0.018 | 0.054 | -0.089 | to 0.125 | 0.744 |
| CPAP use \* Time interactions, h/night \* months |  |  |
| CPAP use \*3 | -0.013 | 0.055 | -0.120 | to 0.094 | 0.815 |
| CPAP use\*12 | -0.002 | 0.055 | -0.109 | to 0.105 | 0.971 |
| CPAP use\*24 | -0.016 | 0.055 | -0.123 | to 0.091 | 0.771 |
| Constant | 0.175 | 0.256 | -0.327 | to 0.677 | 0.495 |
| **Short-form 6 dimensions utility index (SF-6D)** |
| SF-6D baseline | 0.003 | 0.000 | 0.002 | to 0.003 | <0.001 |
| ESS baseline | 0.004 | 0.002 | -0.001 | to 0.008 | 0.088 |
| AHI baseline, 1/h | 0.000 | 0.000 | 0.000 | to 0.001 | 0.103 |
| Time, months |  |  |  |  |  |
| 3 | -0.130 | 0.192 | -0.507 | to 0.248 | 0.500 |
| 12 | -0.131 | 0.194 | -0.511 | to 0.249 | 0.498 |
| 24 | -0.083 | 0.194 | -0.463 | to 0.297 | 0.669 |
| CPAP use, h/night | -0.016 | 0.041 | -0.097 | to 0.065 | 0.697 |
| CPAP use \* Time interactions, h/night \* months |  |  |
| CPAP use \*3 | 0.017 | 0.041 | -0.063 | to 0.098 | 0.675 |
| CPAP use\*12 | 0.019 | 0.041 | -0.062 | to 0.100 | 0.645 |
| CPAP use\*24 | 0.011 | 0.041 | -0.070 | to 0.092 | 0.791 |
| Constant | 0.699 | 0.195 | 0.317 | to 1.080 | <0.001 |
| **Euro-thermometer visual analog scale utility index (VAS)** |
| EQ-5D baseline | 0.382 | 0.043 | 0.298 | to 0.466 | <0.001 |
| ESS baseline | 0.084 | 0.235 | -0.376 | to 0.544 | 0.721 |
| AHI baseline, 1/h | -0.010 | 0.033 | -0.074 | to 0.054 | 0.758 |
| Time, months |  |  |  |  |  |
| 3 | 11.002 | 21.909 | -31.940 | to 53.943 | 0.616 |
| 12 | 9.034 | 22.059 | -34.202 | to 52.269 | 0.682 |
| 24 | 11.409 | 22.053 | -31.814 | to 54.633 | 0.605 |
| CPAP use, h/night | 1.810 | 4.691 | -7.384 | to 11.004 | 0.700 |
| CPAP use \* Time interactions, h/night \* months |  |  |
| CPAP use \*3 | -1.262 | 4.692 | -10.459 | to 7.935 | 0.788 |
| CPAP use\*12 | -0.756 | 4.711 | -9.990 | to 8.477 | 0.872 |
| CPAP use\*24 | -1.199 | 4.707 | -10.424 | to 8.026 | 0.799 |
| constant | 36.955 | 22.348 | -6.846 | to 80.756 | 0.098 |
| **Standard Gamble utility index (SG)** |
| SG baseline | 0.380 | 0.039 | 0.304 | to 0.456 | <0.001 |
| ESS baseline | -0.003 | 0.002 | -0.008 | to 0.002 | 0.243 |
| AHI baseline, 1/h | 0.001 | 0.000 | 0.000 | to 0.001 | 0.031 |
| Time, months |  |  |  |  |  |
| 3 | -0.075 | 0.260 | -0.585 | to 0.435 | 0.773 |
| 12 | -0.123 | 0.262 | -0.636 | to 0.390 | 0.638 |
| 24 | -0.102 | 0.262 | -0.615 | to 0.411 | 0.697 |
| CPAP use, h/night | -0.006 | 0.056 | -0.116 | to 0.103 | 0.910 |
| CPAP use \* Time interactions, h/night \* months |  |  |
| CPAP use \*3 | 0.006 | 0.056 | -0.104 | to 0.116 | 0.912 |
| CPAP use\*12 | 0.016 | 0.056 | -0.094 | to 0.126 | 0.778 |
| CPAP use\*24 | 0.007 | 0.056 | -0.103 | to 0.117 | 0.904 |
| Constant | 0.604 | 0.264 | 0.087 | to 1.122 | 0.022 |
| **Time trade-off utility index (TTO)** |
| TTO baseline | 0.276 | 0.034 | 0.209 | to 0.343 | <0.001 |
| ESS baseline | -0.002 | 0.002 | -0.007 | to 0.003 | 0.355 |
| AHI baseline, 1/h | 0.001 | 0.000 | 0.000 | to 0.002 | 0.003 |
| Time, months |  |  |  |  |  |
| 3 | -0.087 | 0.255 | -0.587 | to 0.413 | 0.732 |
| 12 | -0.132 | 0.257 | -0.635 | to 0.371 | 0.607 |
| 24 | -0.124 | 0.257 | -0.627 | to 0.379 | 0.629 |
| CPAP use, h/night | -0.020 | 0.055 | -0.128 | to 0.088 | 0.715 |
| CPAP use \* Time interactions, h/night \* months |  |  |
| CPAP use \*3 | 0.018 | 0.055 | -0.089 | to 0.126 | 0.741 |
| CPAP use\*12 | 0.026 | 0.055 | -0.082 | to 0.134 | 0.636 |
| CPAP use\*24 | 0.024 | 0.055 | -0.084 | to 0.132 | 0.667 |
| constant | 0.719 | 0.258 | 0.212 | to 1.225 | 0.005 |
| Intention to treat population, n=206. AHI=apnea/hypopnea index; CPAP=continuous positive airway pressure; ESS=Epworth sleepiness scale score |

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| **Supplementary table S3. Multivariable regression analysis of sleep apnea severity on utility indices over the course of the study, adjusted for baseline values and Epworth sleepiness scale score** |
| **Predictors** | **Coefficient** | **SE** | **95% confidence interval** | **P-value** |
| **Euro-Qol 5-dimensions utility index (EQ-5D)** |
| EQ-5D baseline | 0.621 | 0.039 | 0.543 | to 0.698 | <0.001 |
| ESS baseline | 0.002 | 0.002 | -0.001 | to 0.006 | 0.172 |
| Time, months |  |  |  |  |  |
| 3 | 0.019 | 0.020 | -0.020 | to 0.059 | 0.341 |
| 12 | -0.005 | 0.022 | -0.049 | to 0.039 | 0.818 |
| 24 | 0.041 | 0.024 | -0.007 | to 0.089 | 0.092 |
| AHI baseline tercile |  |  |  |  |
| 2nd | 0.000 | 0.022 | -0.043 | to 0.043 | 0.989 |
| 3rd | 0.005 | 0.022 | -0.038 | to 0.048 | 0.814 |
| AHI baseline tercile \* time interaction, months |  |  |  |
| 2nd | \*3 | -0.017 | 0.029 | -0.074 | to 0.039 | 0.554 |
| 2nd | \*12 | 0.012 | 0.031 | -0.049 | to 0.072 | 0.704 |
| 2nd | \*24 | -0.028 | 0.034 | -0.095 | to 0.039 | 0.408 |
| 3rd | \*3 | -0.014 | 0.028 | -0.070 | to 0.041 | 0.616 |
| 3rd | \*12 | 0.035 | 0.030 | -0.024 | to 0.093 | 0.247 |
| 3rd | \*24 | -0.021 | 0.032 | -0.084 | to 0.042 | 0.508 |
| Constant | 0.267 | 0.043 | 0.183 | to 0.352 | <0.001 |
| **Short-form 6 dimensions utility index (SF-6D)** |
| SF-6D baseline | 0.653 | 0.037 | 0.580 | to 0.726 | <0.001 |
| ESS baseline | 0.002 | 0.001 | -0.001 | to 0.004 | 0.221 |
| Time, months |  |  |  |  |  |
| 3 | 0.047 | 0.015 | 0.018 | to 0.076 | 0.002 |
| 12 | 0.058 | 0.016 | 0.027 | to 0.090 | <0.001 |
| 24 | 0.074 | 0.018 | 0.039 | to 0.110 | <0.001 |
| AHI baseline terciles |  |  |  |  |
| 2nd | 0.004 | 0.016 | -0.029 | to 0.036 | 0.829 |
| 3rd | 0.004 | 0.016 | -0.029 | to 0.036 | 0.828 |
| AHI baseline tercile \* time interaction, months |  |  |  |
| 2nd | \*3 | -0.013 | 0.021 | -0.055 | to 0.029 | 0.548 |
| 2nd | \*12 | -0.028 | 0.022 | -0.071 | to 0.015 | 0.196 |
| 2nd | \*24 | -0.040 | 0.026 | -0.092 | to 0.012 | 0.134 |
| 3rd | \*3 | 0.018 | 0.021 | -0.023 | to 0.059 | 0.394 |
| 3rd | \*12 | 0.012 | 0.023 | -0.032 | to 0.056 | 0.587 |
| 3rd | \*24 | -0.008 | 0.024 | -0.054 | to 0.039 | 0.746 |
| Constant | 0.225 | 0.035 | 0.157 | to 0.294 | <0.001 |
| **Euro-thermometer visual analog scale utility index (VAS)** |
| VAS baseline | 0.503 | 0.032 | 0.440 | to 0.566 | <0.001 |
| ESS baseline | 0.103 | 0.174 | -0.238 | to 0.444 | 0.553 |
| Time, months |  |  |  |  |  |
| 3 | 8.275 | 2.092 | 4.173 | to 12.377 | <0.001 |
| 12 | 7.578 | 2.173 | 3.314 | to 11.843 | 0.001 |
| 24 | 10.332 | 2.411 | 5.580 | to 15.085 | <0.001 |
| AHI baseline terciles |  |  |  |  |
| 2nd | -0.494 | 2.254 | -4.910 | to 3.923 | 0.827 |
| 3rd | -0.070 | 2.248 | -4.476 | to 4.336 | 0.975 |
| AHI baseline tercile \* time interaction, months |  |  |  |
| 2nd | \*3 | 0.369 | 2.981 | -5.476 | to 6.213 | 0.902 |
| 2nd | \*12 | 2.094 | 3.069 | -3.928 | to 8.115 | 0.495 |
| 2nd | \*24 | -2.027 | 3.436 | -8.800 | to 4.747 | 0.556 |
| 3rd | \*3 | 0.377 | 2.918 | -5.343 | to 6.098 | 0.897 |
| 3rd | \*12 | 1.902 | 3.052 | -4.085 | to 7.889 | 0.533 |
| 3rd | \*24 | -1.063 | 3.250 | -7.453 | to 5.327 | 0.744 |
| constant | 33.413 | 3.757 | 26.048 | to 40.778 | <0.001 |
| **Standard Gamble utility index (SG)** |
| SG baseline | 0.438 | 0.032 | 0.376 | to 0.500 | <0.001 |
| ESS baseline | -0.002 | 0.002 | -0.006 | to 0.002 | 0.250 |
| Time, months |  |  |  |  |  |
| 3 | -0.011 | 0.022 | -0.055 | to 0.032 | 0.608 |
| 12 | 0.009 | 0.023 | -0.036 | to 0.053 | 0.701 |
| 24 | -0.047 | 0.024 | -0.094 | to 0.000 | 0.048 |
| AHI baseline terciles |  |  |  |  |
| 2nd | -0.015 | 0.025 | -0.063 | to 0.033 | 0.536 |
| 3rd | 0.008 | 0.025 | -0.040 | to 0.057 | 0.738 |
| AHI baseline tercile \* time interaction, months |  |  |  |
| 2nd | \*3 | 0.047 | 0.032 | -0.015 | to 0.109 | 0.135 |
| 2nd | \*12 | 0.037 | 0.032 | -0.026 | to 0.101 | 0.245 |
| 2nd | \*24 | 0.073 | 0.033 | 0.008 | to 0.138 | 0.027 |
| 3rd | \*3 | 0.040 | 0.031 | -0.020 | to 0.101 | 0.189 |
| 3rd | \*12 | 0.009 | 0.032 | -0.053 | to 0.071 | 0.783 |
| 3rd | \*24 | 0.065 | 0.032 | 0.003 | to 0.128 | 0.042 |
| constant | 0.498 | 0.040 | 0.419 | to 0.577 | <0.001 |
| **Time trade-off utility index (TTO)** |
| TTO baseline | 0.302 | 0.028 | 0.247 | to 0.358 | <0.001 |
| ESS baseline | -0.002 | 0.002 | -0.006 | to 0.001 | 0.198 |
| Time, months |  |  |  |  |  |
| 3 | 0.057 | 0.021 | 0.015 | to 0.099 | 0.008 |
| 12 | 0.067 | 0.023 | 0.022 | to 0.112 | 0.003 |
| 24 | 0.058 | 0.024 | 0.010 | to 0.105 | 0.018 |
| AHI baseline terciles |  |  |  |  |
| 2nd | 0.019 | 0.024 | -0.028 | to 0.067 | 0.431 |
| 3rd | 0.076 | 0.025 | 0.027 | to 0.124 | 0.002 |
| AHI tercile baseline \* time interaction, months |  |  |  |
| 2nd | \*3 | -0.017 | 0.030 | -0.077 | to 0.042 | 0.569 |
| 2nd | \*12 | -0.016 | 0.031 | -0.077 | to 0.045 | 0.612 |
| 2nd | \*24 | -0.012 | 0.034 | -0.078 | to 0.055 | 0.733 |
| 3rd | \*3 | -0.015 | 0.030 | -0.075 | to 0.045 | 0.625 |
| 3rd | \*12 | -0.035 | 0.032 | -0.098 | to 0.029 | 0.284 |
| 3rd | \*24 | -0.020 | 0.033 | -0.085 | to 0.044 | 0.535 |
| constant | 0.579 | 0.037 | 0.506 | To 0.652 | <0.001 |
| Intention to treat population, n=206. Sleep apnea severity was graded according to terciles of the apnea/hypopnea index at baseline (AHI baseline, 1st tercile: >10 to 37/h; 2nd tercile: >37 to 62.8/h; 3rd tercile: 63 to 136/h). ESS=Epworth sleepiness scale score |