**Table e-1.** Logistic regression for the association between the four PRS sets and hallucinations, using various adjustments for confounders or known risk factors for hallucinations among 399 PD patients from the two cohorts combined (PEG and PW); 53 patients reported hallucinations (13.3%). PRS were created using a P-value threshold of 5x10-8.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Alzheimer’s disease | | | | *APOE* | | | |
|  | No hall / tot | aOR | | 95% CI | | aOR | | 95% CI | |
| **Original adjustments1** | 53 / 399 | 1.37 | 1.03 | | 1.83 | 1.92 | 1.14 | | 3.22 |
| **MMSE2** | 50 / 396 | 1.50 | 1.10 | | 2.05 | 2.11 | 1.20 | | 3.70 |
| **UPDRS3** | 52 / 396 | 1.33 | 0.98 | | 1.81 | 1.67 | 0.95 | | 2.93 |
| **Depression score4** | 53 / 399 | 1.38 | 1.03 | | 1.86 | 1.95 | 1.15 | | 3.32 |
| **Apathy score5** | 53 / 399 | 1.37 | 1.02 | | 1.83 | 1.87 | 1.10 | | 3.18 |
| **Anxiety score6** | 38 / 281 | 1.48 | 1.02 | | 2.13 | 2.15 | 1.14 | | 4.07 |
| **RBD7** | 47 / 379 | 1.34 | 0.99 | | 1.82 | 1.99 | 1.16 | | 3.43 |
| **MMSE + UPDRS8** | 49 / 390 | 1.38 | 1.01 | | 1.89 | 1.81 | 1.01 | | 3.23 |
| **MMSE + UPDRS + Depression9** | 49 / 390 | 1.39 | 1.01 | | 1.91 | 1.80 | 1.00 | | 3.25 |
| **MMSE + UPDRS + RBD10** | 47 / 370 | 1.37 | 0.98 | | 1.90 | 1.89 | 1.04 | | 3.45 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Schizophrenia | | | Parkinson’s disease | | |
|  | No hall / tot | aOR | 95% CI | | aOR | 95% CI | |
| **Original adjustments1** | 53 / 399 | 0.77 | 0.59 | 0.77 | 1.29 | 0.95 | 1.76 |
| **MMSE2** | 50 / 396 | 0.80 | 0.59 | 0.80 | 1.42 | 1.01 | 2.00 |
| **UPDRS3** | 52 / 396 | 0.83 | 0.60 | 0.83 | 1.28 | 0.92 | 1.79 |
| **Depression score4** | 53 / 399 | 0.75 | 0.56 | 0.75 | 1.33 | 0.96 | 1.83 |
| **Apathy score5** | 53 / 399 | 0.75 | 0.56 | 0.75 | 1.34 | 0.98 | 1.85 |
| **Anxiety score6** | 38 / 281 | 0.74 | 0.54 | 0.74 | 1.40 | 0.97 | 2.03 |
| **RBD7** | 47 / 379 | 0.71 | 0.53 | 0.71 | 1.38 | 0.99 | 1.94 |
| **MMSE + UPDRS8** | 49 / 390 | 0.82 | 0.60 | 0.82 | 1.32 | 0.94 | 1.87 |
| **MMSE + UPDRS + Depression9** | 49 / 390 | 0.80 | 0.59 | 0.80 | 1.35 | 0.95 | 1.92 |
| **MMSE + UPDRS + RBD10** | 47 / 370 | 0.74 | 0.54 | 0.74 | 1.45 | 1.00 | 2.11 |

1 Adjustments for sex, fractional ethnicity, age at diagnosis, disease duration, and study

2 Adjustment for MMSE as a continuous variable. In addition, also adjustment for sex, fractional ethnicity, and disease duration. No adjustment for age at diagnosis due to high correlation with mmse.

**3** Adjustment for the UPDRS motor score as a continuous variable. In addition, also adjustment for sex, fractional ethnicity, and age at diagnosis. No adjustment for disease duration due to high correlation with UPDRS motor score.

4 Depression score from the (MDS)-UPDRS questionnaire as a continuous variable. In addition, also adjustment for sex, fractional ethnicity, age at diagnosis, disease duration, and study

5 Apathy score from the (MDS)-UPDRS questionnaire as a continuous variable. In addition, also adjustment for sex, fractional ethnicity, age at diagnosis, disease duration, and study

6 Anxiety score from the MDS-UPDRS questionnaire as a continuous variable. In addition, also adjustment for sex, fractional ethnicity, age at diagnosis, disease duration, and study. Only available in the PEG study (not available in the UPDRS questionnaire)

7 REM sleep Behavior Disorder (RBD) status. In addition, also adjustment for sex, fractional ethnicity, age at diagnosis, disease duration, and study

8 Adjustment for MMSE and the UPDRS motor score as continuous variables. In addition, also adjustment for fractional ethnicity.

9 Adjustment for MMSE, the UPDRS motor score, and the depression score as continuous variables. In addition, also adjustment for fractional ethnicity.

**10** Adjustment for MMSE, the UPDRS motor score and RBD status. In addition, also adjustment for fractional ethnicity.

The *APOE-*PRS is based on rs429358 and rs7412, where each apoe4-allele increases risk (β: 1.327), while each apoe2-allele decreases risk (β:-0.598) compared to apoe3.Abbreviations: No: Number; hall: Hallucinations; tot: total; aOR: adjusted Odds Ratio; CI: Confidence Interval