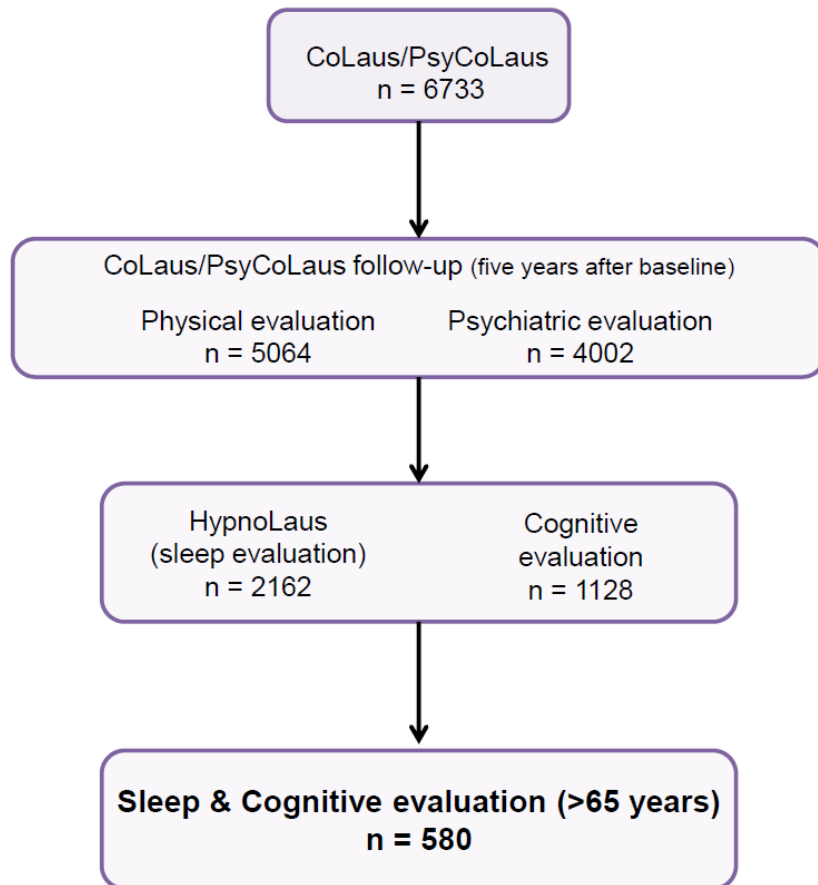


Supplementary Figure e-1. Studied population.



**Supplementary Table e-1.** Cognitive test performance of the studied population, according to CDR status.

	<b>CDR = 0 (n=289)</b>	<b>CDR &gt; 0 (n=291)</b>	<b>p value</b>
<b>Memory tasks</b>			
(Grober and Buschke)			
Immediate recall	16.36±4.46	15.85±2.74	0.120
Total free recall	33.82±4.87	26.23±6.91	<b>&lt;0.001</b>
Total cued recall	17.30±11.26	19.56±8.54	<b>0.009</b>
Identification	15.96±0.50	15.93±0.43	0.549
Recognition	45.61±8.21	44.85±9.04	0.322
Delayed free recall	12.82±1.90	10.38±2.81	<b>&lt;0.001</b>
Delayed cued recall	4.60±4.31	5.73±3.57	<b>0.001</b>
<b>Other cognitive tasks</b>			
Mini-Mental State Examination	28.91±3.03	28.45±2.30	0.201
CERAD figures	10.52±1.01	10.42±1.14	0.307
Semantic verbal fluency	31.72±8.24	27.94±7.80	<b>&lt;0.001</b>
Phonemic verbal fluency	22.73±7.65	19.23±7.63	<b>&lt;0.001</b>
Stroop dots condition	23.94±0.31	23.81±0.96	<b>0.039</b>
Stroop words condition	23.96±0.22	23.92±0.60	0.303
Stroop interference condition	23.30±1.80	23.10±1.80	0.193
DO40 naming task	39.85±0.48	39.65±1.26	<b>0.025</b>

CDR: Clinical Dementia Rating Scale. Mean ± SD.

**Supplementary Table e-2.** Objective sleep characteristics according to CDR status.

	<b>CDR = 0 (n=289)</b>	<b>CDR &gt; 0 (n=291)</b>	<b>p value</b>
Total sleep time, min <sup>1</sup>	392.2 ± 72.8	380.9 ± 77.4	0.070
Stage N1, min <sup>1</sup>	49.2 ± 28.7	55.7 ± 32.7	<b>0.011</b>
Stage N1, % <sup>1</sup>	12.9 ± 8.5	15.1 ± 9.5	<b>0.004</b>
Stage N2, min <sup>1</sup>	195.5 ± 60.3	190.4 ± 66.3	0.337
Stage N2, % <sup>1</sup>	49.5 ± 11.8	49.6 ± 12.4	0.914
Slow wave sleep (stage N3), min <sup>1</sup>	67.5 ± 32.6	61.0 ± 33.4	<b>0.018</b>
Slow wave sleep (stage N3), % <sup>1</sup>	17.4 ± 8.5	16.2 ± 8.9	0.097
REM sleep, min <sup>1</sup>	80.0 ± 31.0	73.7 ± 31.8	<b>0.016</b>
REM sleep, % <sup>1</sup>	20.2 ± 6.7	19.1 ± 7.0	0.054
Sleep onset latency, min <sup>2</sup>	12.7 [5.5-27.3]	14.3 [6.5-29.8]	0.300
Sleep efficiency, % <sup>2</sup>	85.0 [72.7-84.4]	78.5 [70.0-85.7]	<b>0.007</b>
Wake after sleep onset, min <sup>2</sup>	89.3 [55.0-141.6]	100.6 [68.3-148.0]	<b>0.018</b>
REM latency, min <sup>2</sup>	78.0 [59.5-128.0]	79.7 [58.0-123.5]	0.779
Number of stage shifts <sup>2</sup>	141 [109-172]	149 [115-190]	0.078
Apnea/hypopnea index, n/h <sup>2</sup>	12.9 [7.2-24.5]	18.0 [7.8-35.5]	<b>&lt;0.001</b>
Mean SaO <sub>2</sub> , % <sup>2</sup>	93.6 [92.5-94.5]	93.5 [92.4-94.4]	0.325
Lowest SaO <sub>2</sub> , % <sup>2</sup>	85 [82-88]	85 [80-87]	<b>0.029</b>
Oxygen desaturation index ≥ 3%, n/h <sup>2</sup>	13.5 [6.9-23.7]	17.1 [7.1-32.9]	<b>0.007</b>
Oxygen desaturation index ≥ 4%, n/h <sup>2</sup>	6.3 [2.3-13.2]	9.0 [3.2-20.2]	<b>0.001</b>
Oxygen desaturation index ≥ 6%, n/h <sup>2</sup>	1.1 [0.2-4.7]	2.2 [0.5-8.0]	<b>&lt;0.001</b>
Arousal index, n/h <sup>2</sup>	22.4 [15.8-29.0]	23.3 [16.4-34.2]	0.102
PLMS index, n/h <sup>2</sup>	10.8 [0.3-36.7]	13.4 [0.0-36.9]	0.848

CDR: Clinical Dementia Rating Scale; REM : rapid eye movement sleep ; PLMS : periodic leg

movements during sleep. <sup>1</sup>mean ± standard deviation ; <sup>2</sup> percentile 50 [percentile 25-percentile75].

**Supplementary Table e-3.** Association of polysomnographic variables with a CDR > 0, multivariate analysis.

	Odds ratio*	[95% Conf.Interval]	p value
Total sleep time, min	1.00	0.97 - 1.02	0.884
Stage N1, min	1.04	0.97 - 1.10	0.246
Stage N2, min	0.99	0.96 - 1.02	0.576
Slow wave sleep (stage N3), min	1.01	0.95 - 1.07	0.792
REM sleep, min	0.98	0.92 - 1.04	0.548
Sleep onset latency, min	0.97	0.91 - 1.04	0.466
Sleep efficiency, %	0.97	0.82 - 1.13	0.675
Wake after sleep onset, min	1.00	0.97 - 1.03	0.832
REM latency, min	0.99	0.96 - 1.01	0.309
Number of stage shifts	1.01	0.97 - 1.04	0.720
Apnea/hypopnea index, n/h	1.15	1.00 - 1.31	<b>0.043</b>
Mean SaO <sub>2</sub> , %	0.73	0.22 - 2.38	0.602
Lowest SaO <sub>2</sub> , %	0.79	0.56 - 1.12	0.184
Oxygen desaturation index ≥ 3%, n/h	1.09	0.96 - 1.22	0.173
Oxygen desaturation index ≥ 4%, n/h	1.17	1.01 - 1.36	<b>0.033</b>
Oxygen desaturation index ≥ 6%, n/h	1.33	1.03 - 1.72	<b>0.029</b>
Arousal index, n/h	1.00	0.86 - 1.16	0.993
PLMS index, n/h	1.00	0.95 - 1.06	0.885

\*Odds-ratio for an increase of 10-units. Multivariate logistic regression model adjusted for each variable for age, sex, hypertension, diabetes, metabolic syndrome, depression, lifetime depression, BMI, alcohol and tobacco consumption, drugs influencing sleep and level of education. CDR: Clinical Dementia Rating Scale; REM : rapid eye movement sleep ; AHI : apnea/hypopnea index; PLMS : periodic legs movements during sleep.