

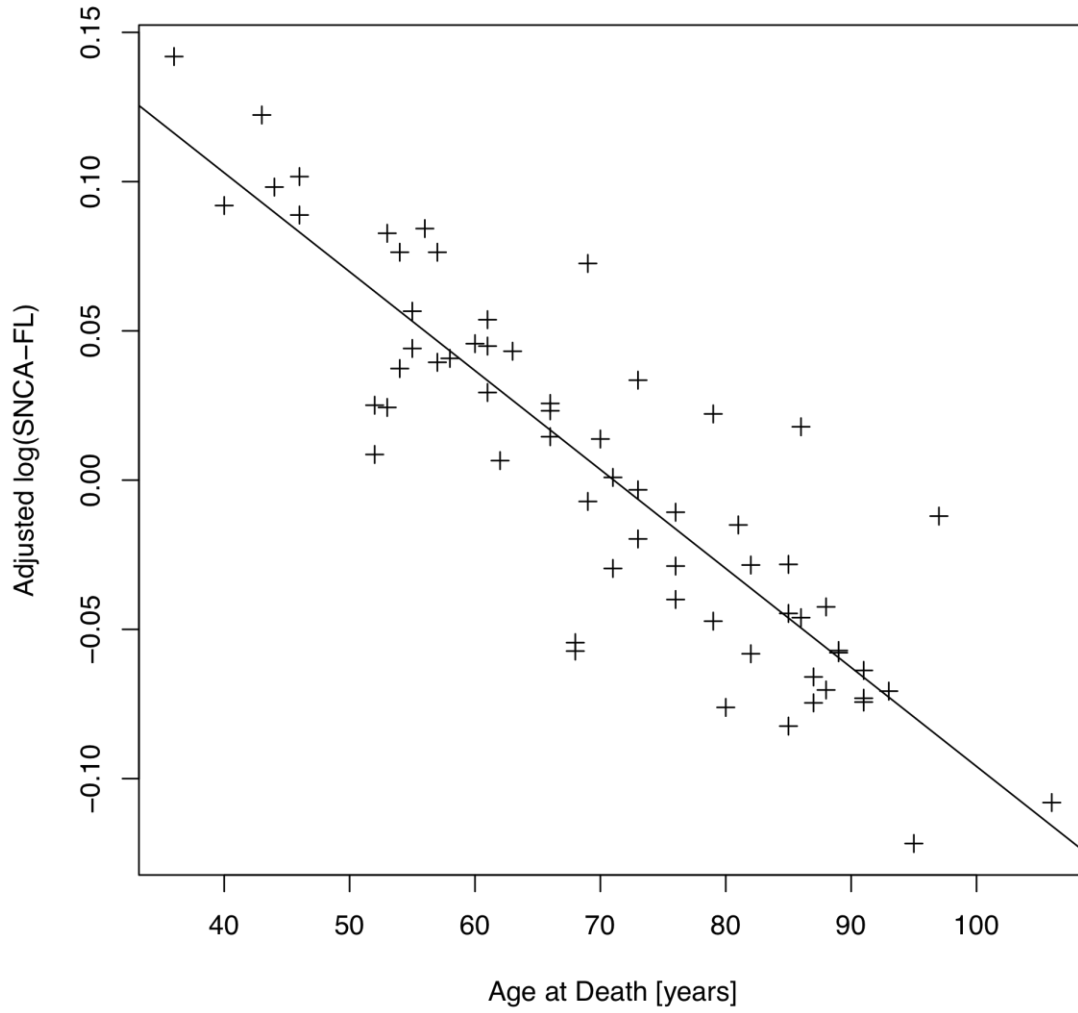
**Supplementary Material**

**Supplementary Table 1:** *Encoding of AD variable for the final sample using neuropathological information*

<b>AD Value</b>	<b>LA</b>	<b>McLean</b>	<b>Sun Health</b>
<b>2</b>	Information in the Neuropathological Diagnosis and in the Microscopic Examination sections	Abundant plaques in the hippocampus region Age and Braak stage considered	Plaque Total $\geq 4.5$ Braak $\geq 4$ or Plaque Total $\geq 10$ Braak = 3
	1 PD, 0 controls	3 PD, 0 controls	6 PD*, 0 controls
<b>1</b>	Information in the Neuropathological Diagnosis and in the Microscopic Examination sections	Moderate plaques in the hippocampus region Age and Braak stage considered	Plaque Total $\geq 4.5$ Braak = 3 or Plaque Total $\geq 8$ Braak = 2
	2 PD, 1 control	13 PD, 5 controls	9 PD, 0 controls
<b>0</b>	No evidence for plaques		
	14 PD, 1 control	19 PD, 34 controls	33 PD, 23 controls

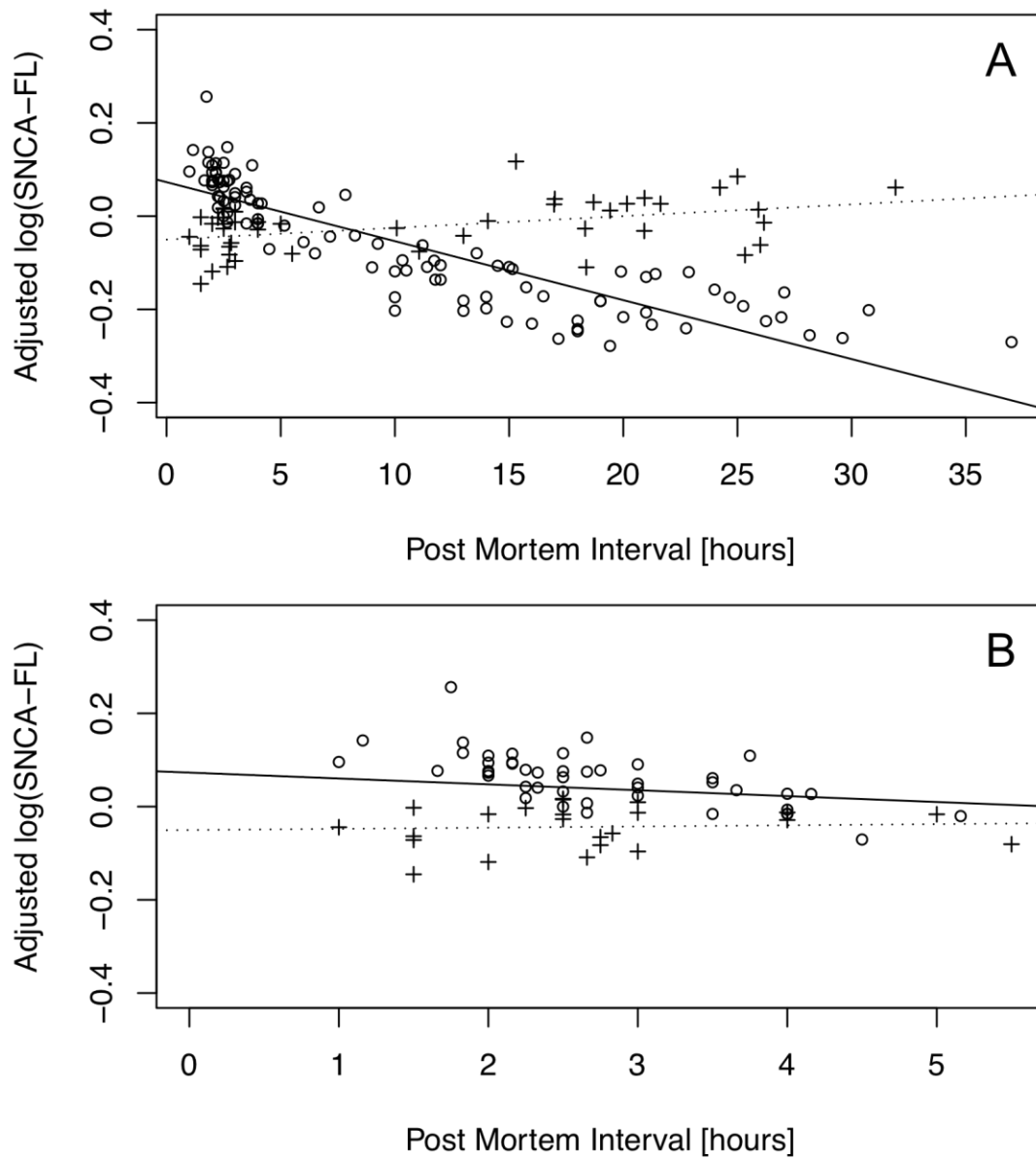
*\*all 6 brains had B Cerad Neuritic Plaque scores assigned to them*

Post-mortem Interval Influences  $\alpha$ -Synuclein Expression in Parkinson Disease Brain



**Supplementary Figure 1:** Age at death versus SNCA-FL expression values adjusted for pH, PMI, and sex in 64 controls.

Post-mortem Interval Influences  $\alpha$ -Synuclein Expression in Parkinson Disease Brain



**Supplementary Figure 2:** Adjusted SNCA-FL expression values by PMI for A) all samples and B) only samples with PMI less or equal to 5.5 hours. Controls are depicted as crosses (dotted regression line) and PD samples as circles (solid regression line).