

Supplementary Files

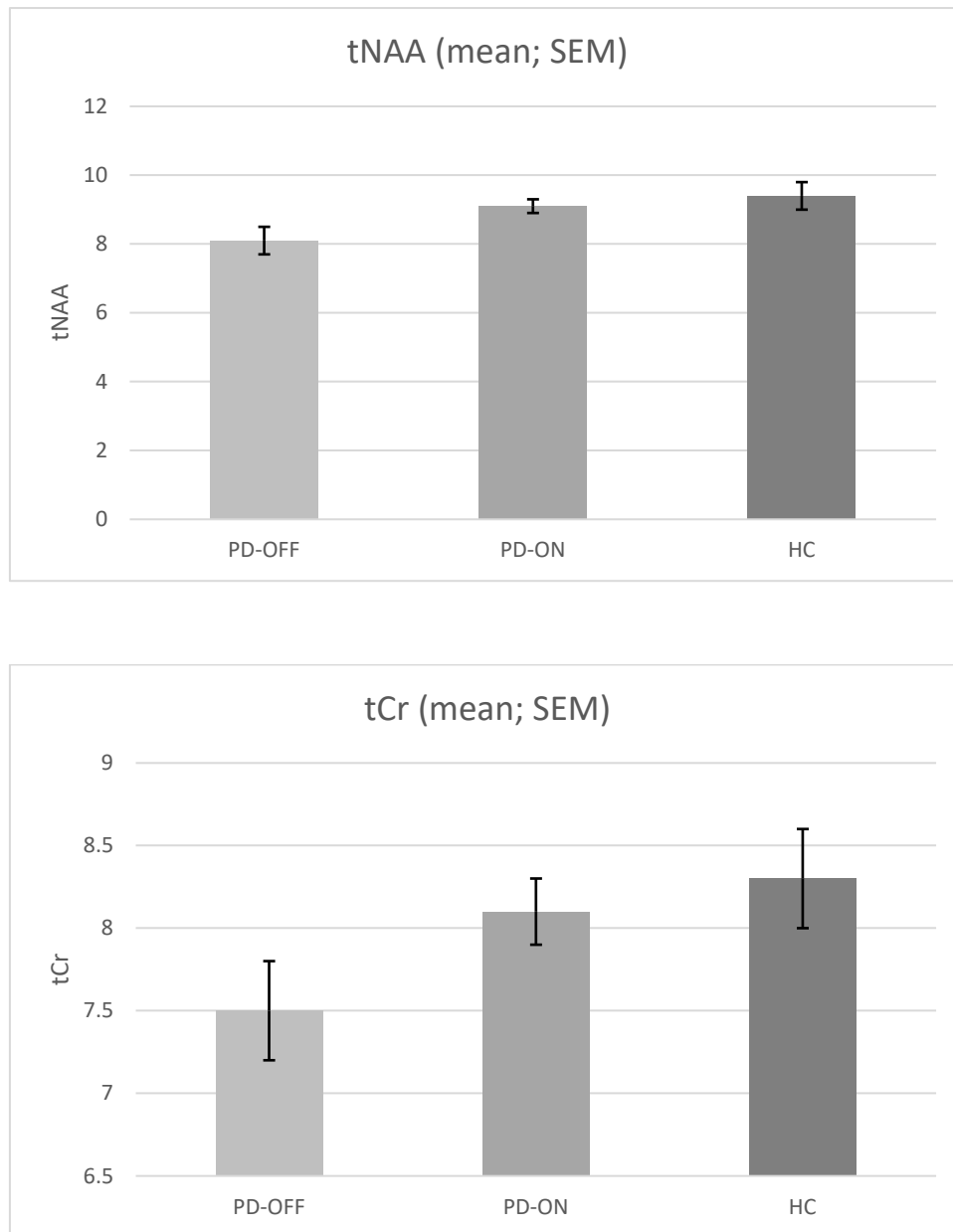
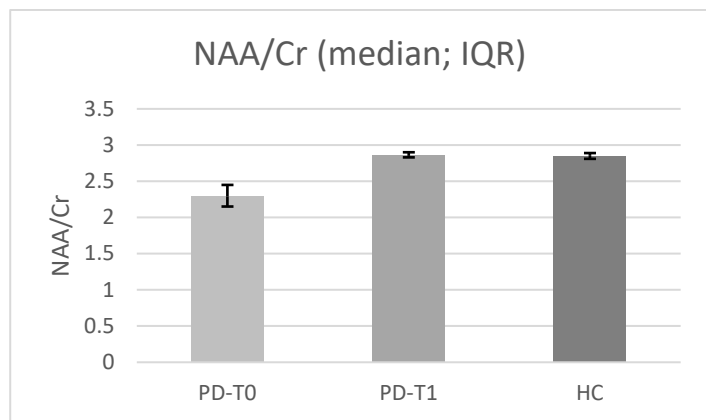
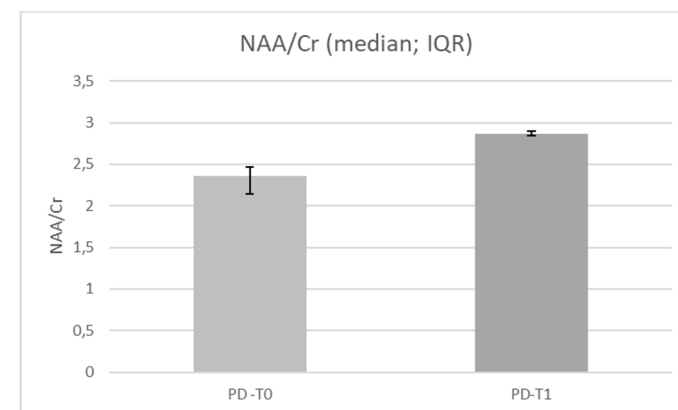
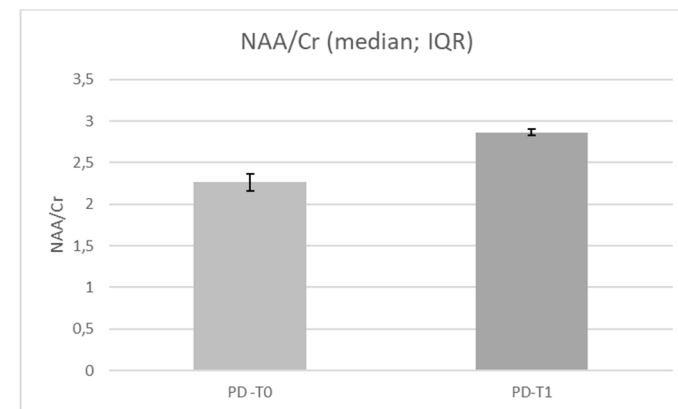


Figure S1. Putamen neurometabolites with acute levodopa (Mazuel et al., Radiology 2016). Bar plots show total N-acetylaspartate (tNAA) (top) and total creatine (tCr) (bottom) measured by single-voxel ^1H -MRS at 3 T in the putamen. Data are re-plotted from Mazuel et al.: PD patients ($n=20$) were scanned OFF medication and again ON after an acute 200 mg levodopa dose; healthy controls (HC, $n=20$) were scanned once. Bars = mean; error bars = SEM. In PD, both tNAA and tCr were reduced OFF vs HC and increased ON vs OFF, approaching HC levels (significant in the original report, $p < 0.01$). Legend: PD= Parkinson's disease; HC= healthy controls; OFF/ON, off/on dopaminergic medication.



Rasagiline Treatment

Selegiline Treatment



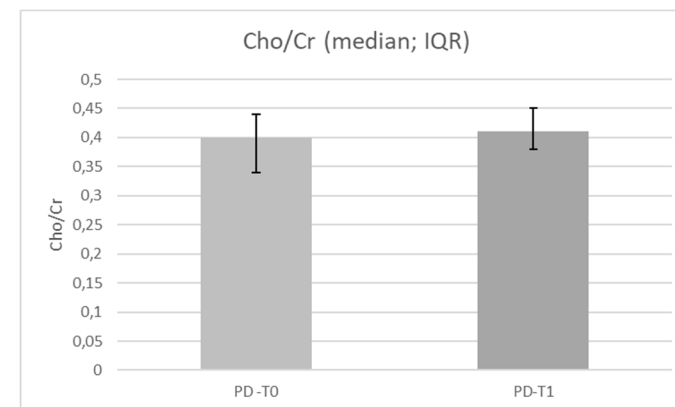
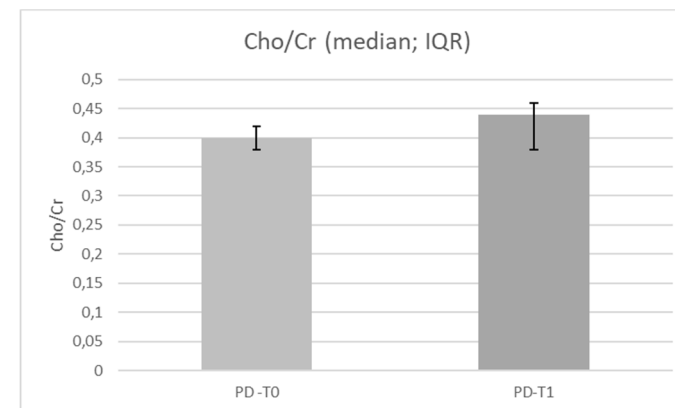
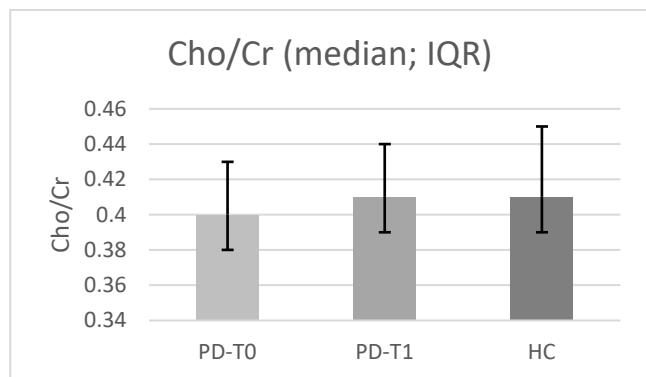


Figure S2. Motor-cortex metabolite ratios in de novo PD under MAO-B inhibitors (Bonanno et al., J Clin Med 2022). Bar plots show NAA/Cr (top) and Cho/Cr (bottom) acquired with multi-voxel ^1H -MRS (3 T) over the bilateral motor cortex. Cohorts: PD-T0 = de novo, drug-naïve PD at baseline; PD-T1 = the same patients after 12 months of rasagiline or selegiline; HC = healthy controls (PD n=40; HC n=40). Bars = median; error bars = interquartile range (IQR). In the original study, NAA/Cr was reduced at PD-T0 vs HC and increased significantly at PD-T1, approaching HC values, whereas Cho/Cr showed no significant change. Legend: PD= Parkinson's disease; HC= healthy controls; T0/T1, baseline/12-month follow-up.

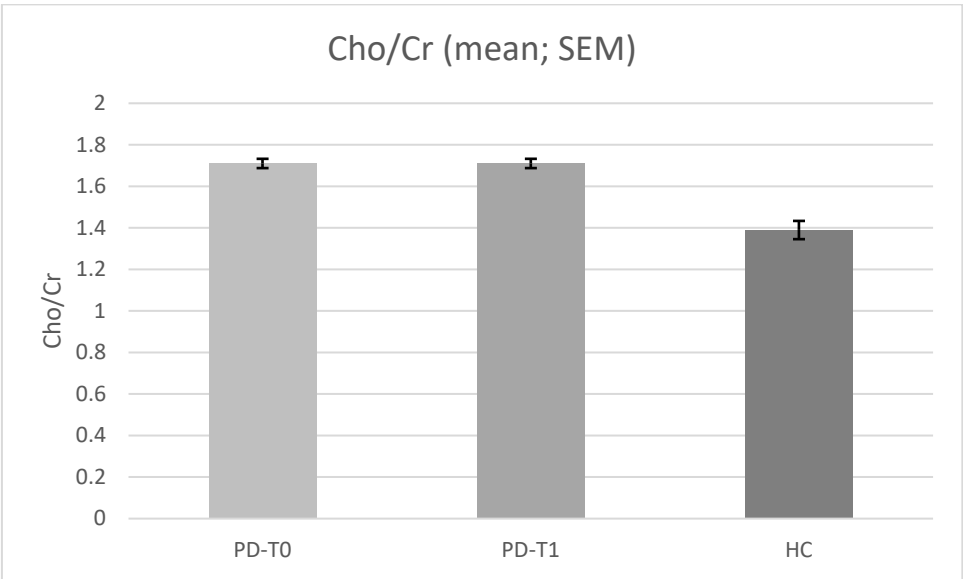
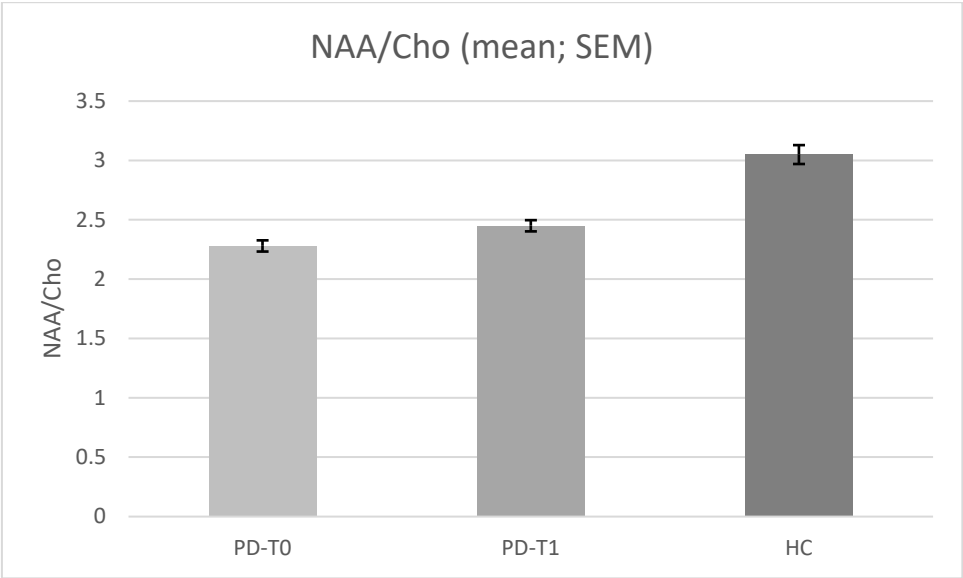
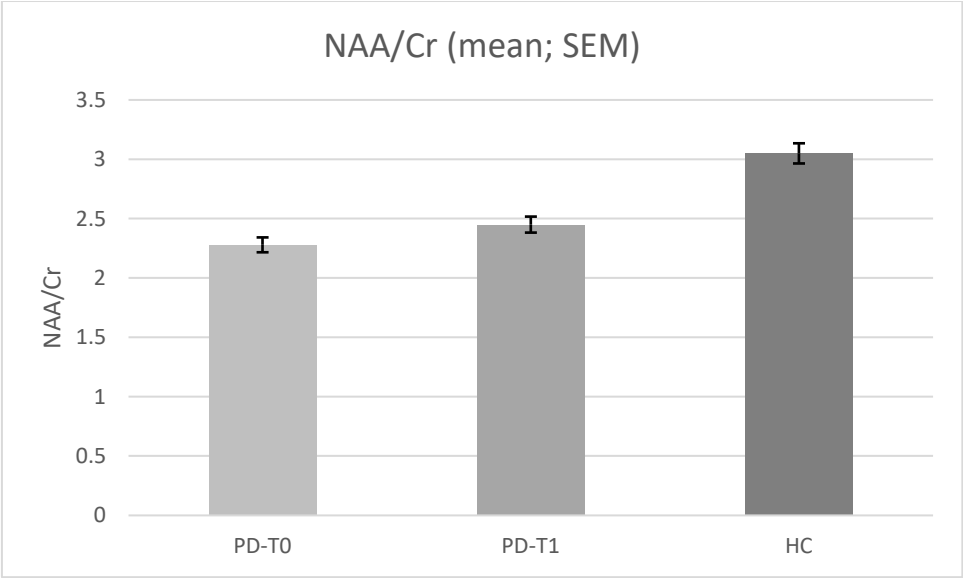


Figure S3. Motor-cortex metabolite ratios before and after ropinirole (Ciurleo et al., Neurosci Lett 2015). Bar plots display NAA/Cr (top), NAA/Cho (middle), and Cho/Cr (bottom) measured with multi-voxel ^1H -MRS (1.5 T) over the mesial motor cortex. Groups: PD-T0 = de novo, drug-naïve PD at baseline; PD-T1 = the same patients after 10 months of ropinirole (up to 6 mg/day); HC = healthy controls (PD n=20; HC n=15). Bars = mean; error bars = SEM (from the study's summary statistics). In the original report, PD-T0 showed reduced NAA/Cr and NAA/Cho and increased Cho/Cr vs HC; after treatment, NAA/Cr and NAA/Cho significantly increased toward HC values, whereas Cho/Cr did not change significantly.

Legend: PD= Parkinson's disease; HC= healthy controls; T0/T1, baseline/10-month follow-up.

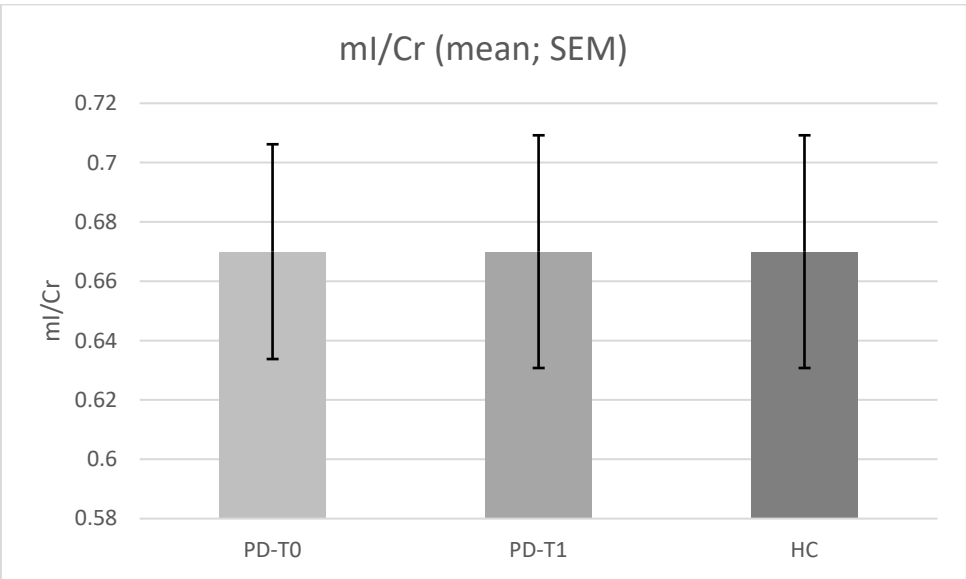
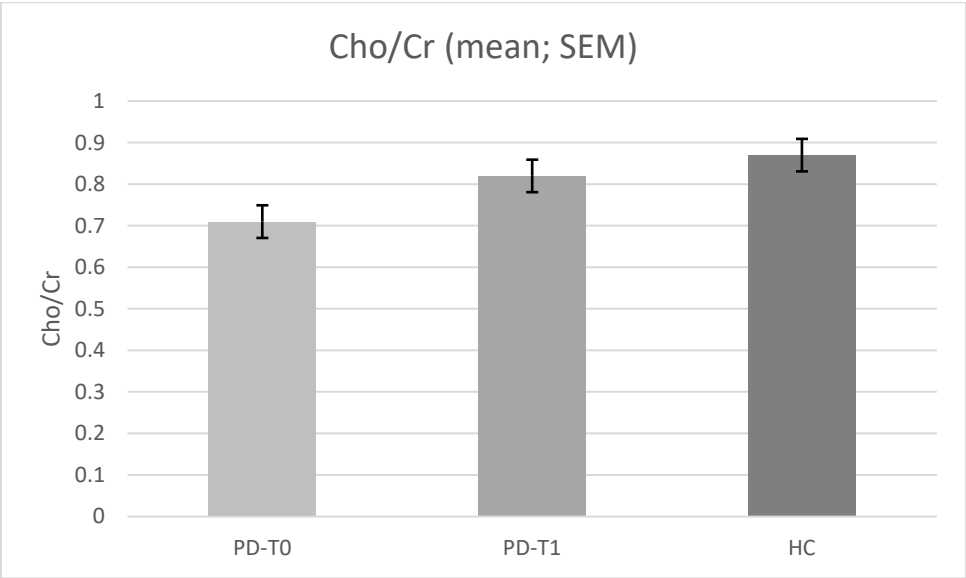
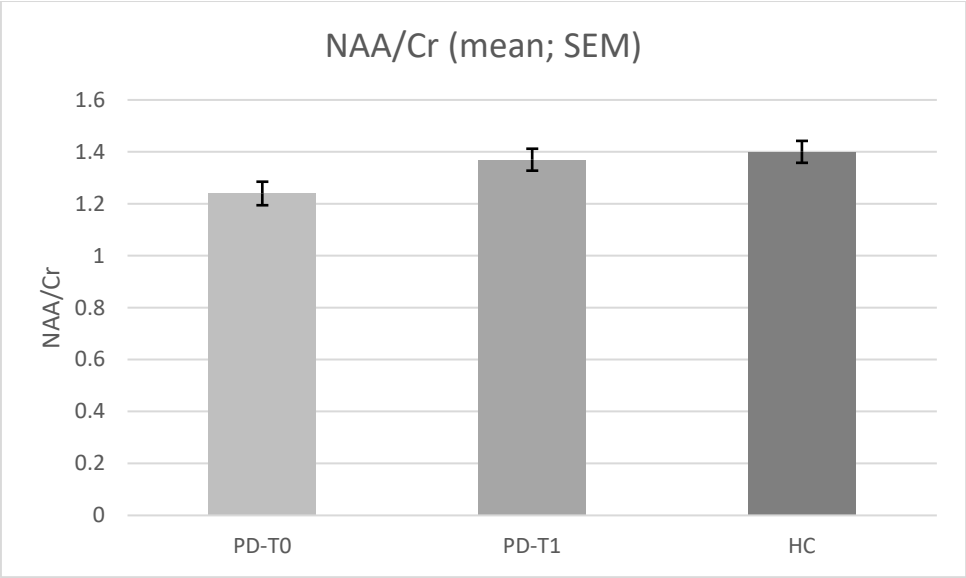


Figure S4. Motor-cortex metabolite ratios before and after pergolide (Lucetti et al., Mov Disord 2007). Bar plots show NAA/Cr (top), Cho/Cr (middle), and mI/Cr (bottom) acquired with single-voxel ^1H -MRS (1.5 T) from the medial motor cortex. Groups: PD-T0 = de novo, drug-naïve PD at baseline; PD-T1 = the same patients after 6 months of pergolide (1 mg t.i.d.); HC = healthy controls (PD n=11; HC n=11). Bars = mean; error bars = SEM; data re-plotted from the published summary statistics. In the original report, PD-T0 showed reduced NAA/Cr and Cho/Cr vs HC; after treatment, Cho/Cr increased significantly, whereas NAA/Cr showed a non-significant upward trend and mI/Cr remained unchanged. Legend: PD= Parkinson's disease; HC= healthy controls; T0/T1, baseline/6-month follow-up.