[F-18]-L-DOPA PET scan shows loss of dopaminergic neurons

- red shows early blood flow
- green shows blood volume
- blue indicates concentration of dopaminergic neurons

Putamen shows little dopaminergic activity compared to normal

Elderly Parkinson’s

Elderly Normal

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[F-18]-L-DOPA PET scan shows loss of dopaminergic neurons

Elderly Parkinson’s  Elderly Normal
Functional Striatal Volumes indicated by [F-18]-L-DOPA PET

PET slices

Healthy

Parkinsonian

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Loss of metabolic activity in striatum for Parkinson’s disease.

PET scan using 18F-L-DOPA shows **functional** deficit in Parkinson’s.
[\textsuperscript{18}F]-FMT shows dopamine synthesis

[\textsuperscript{18}F]-FMT in rat
control
(courtesy Dr. Zhang)

[\textsuperscript{18}F]-FMT in rhesus
pre-MPTP
unilateral MPTP lesion
(courtesy of Dr. Terasawa)
Imaging the Dopaminergic system

$^{18}$F-fluoro-L-DOPA in normal elderly human

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Extracting Data from Images

ROI time series: examining how data in a ROI changes over time.

[F-18]-F-L-DOPA uptake

- putamen
- occ. cortex