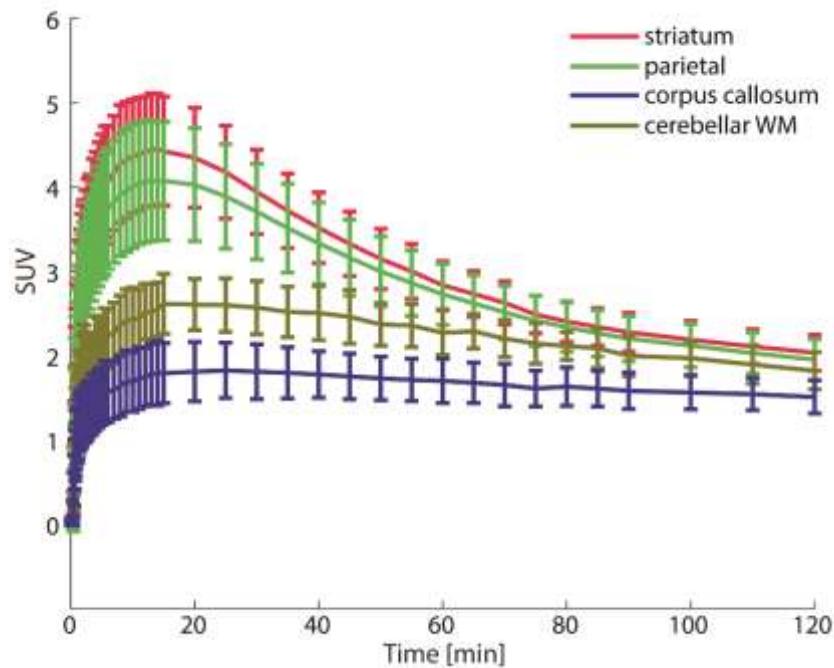
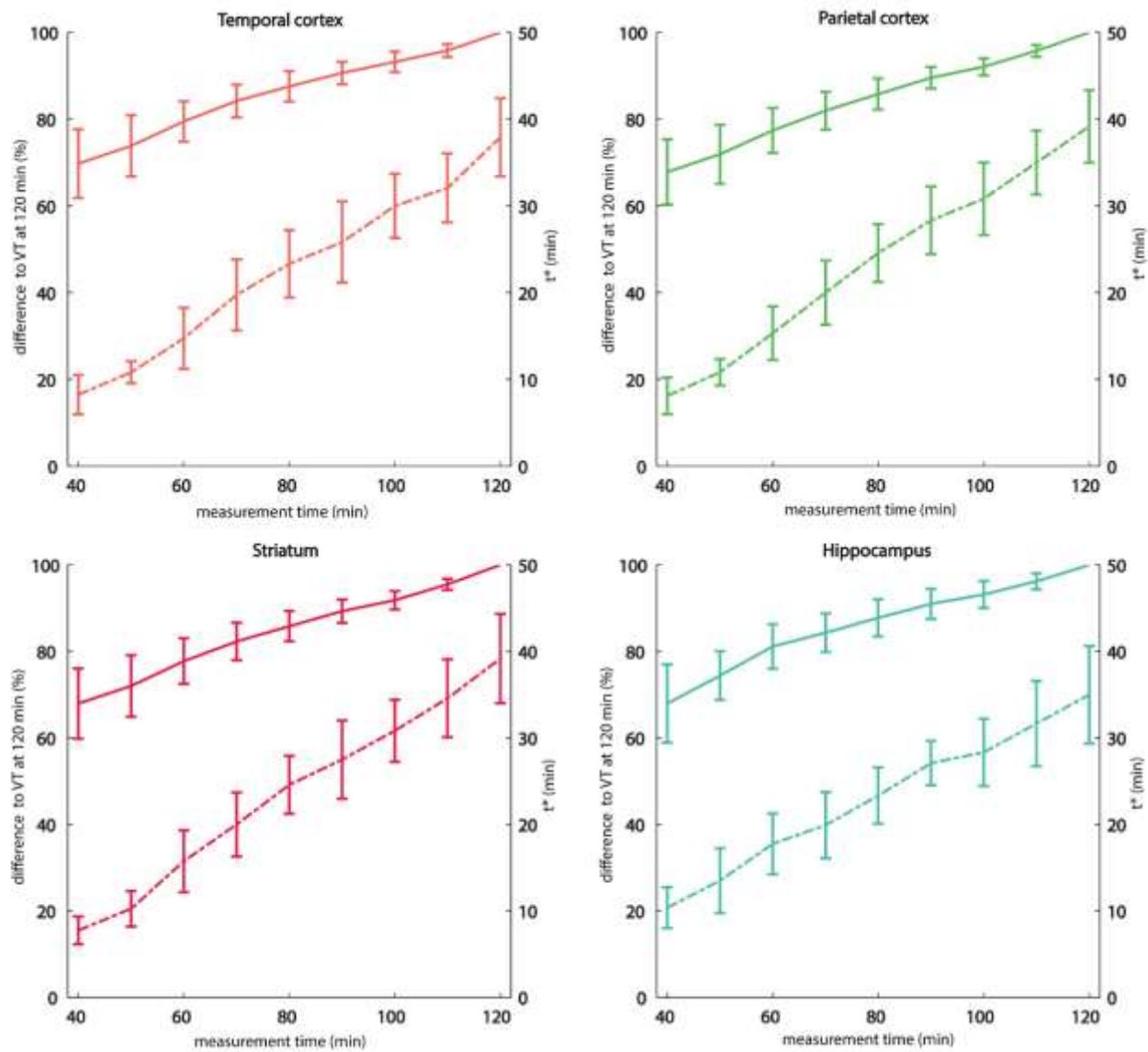


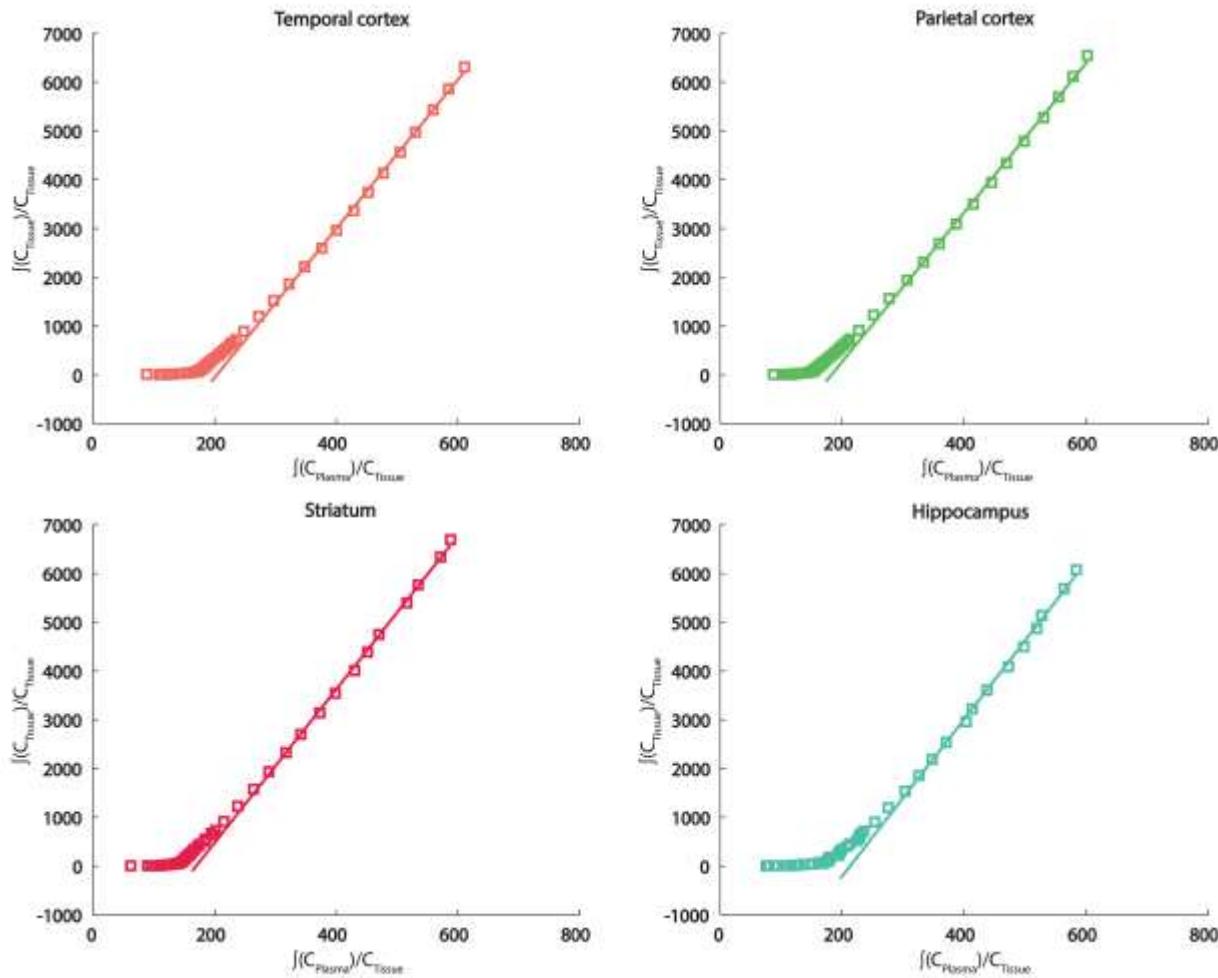
Supplemental Figure 1: Metabolite data. A) (*R*)-[¹¹C]-Me-NB1 was quickly metabolized with ~30% of the parent compound left after 20 minutes. B) and C) The radioactive metabolites shown for 5 and 40 min were well separated from the parent compound yielding an accurate parent fraction. Injection volume of plasma is increased over time up to 5 mL. Therefore, retention times (R_t) using this column switching method are delayed with later blood sampling time points. Corrected R_{ts} based on the column switching time are 1.3 and 5.1 min for the second metabolite and the parent compound, respectively.



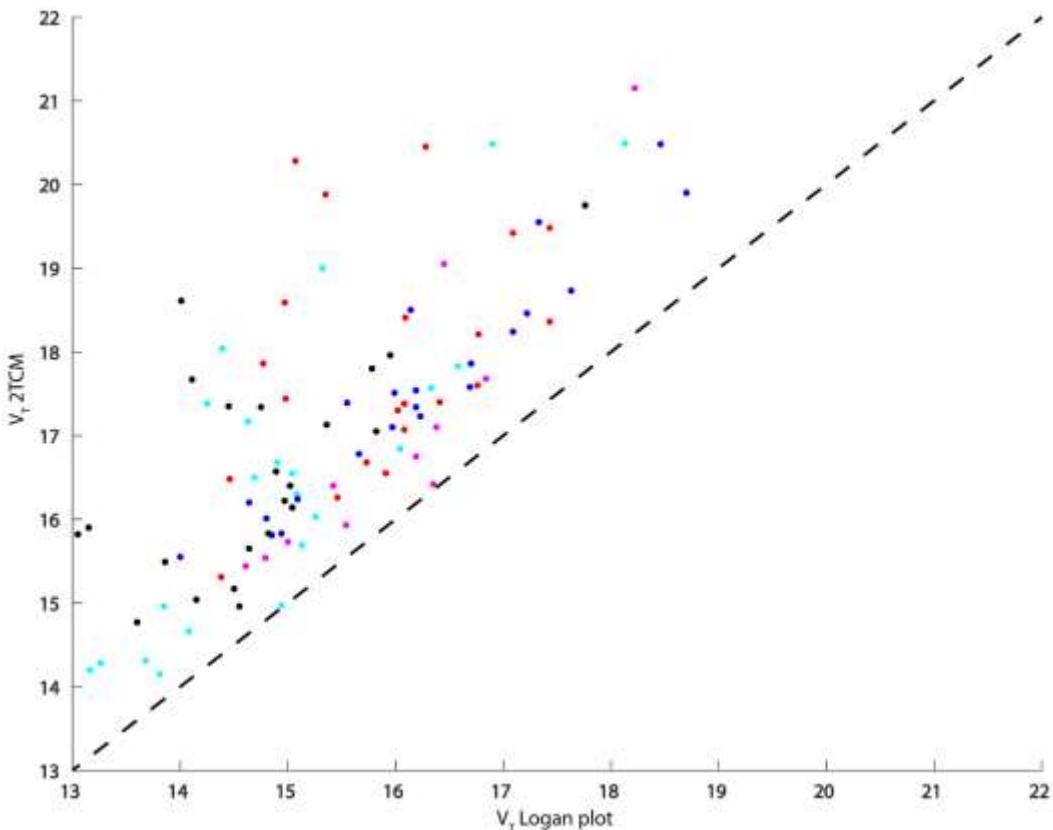
Supplemental Figure 2: Mean SUV TACs with standard deviation of representative regions.



Supplemental Figure 3: Time-stability analysis of Logan plot V_T and t^* . The time-stability analysis exhibits an underestimation of V_T of around 10% for Logan plot 90 min in comparison to 120 min (solid line). The t^* for 90 min was around 25 min (dashed line).



Supplemental Figure 4: *Logan plots of four regions with varying uptake.* Logan plots of one representative subject are shown, demonstrating that linearity is reached and thus, Logan plot for a 90 min measurement is a feasible method to quantify V_T .



Supplemental Figure 5: Comparison of V_T Logan plot and 2TCM. For 2TCM, V_T was slightly higher than with Logan plot. The dashed line represents the line of identity. Subjects are identified by the same color, including both measurements and all grey matter regions. One subject had to be excluded due to unreasonable results in 2TCM.

		frontal	temporal	parietal	occipital	cingulate	somatosensory	thalamus	striatum
SUV	M1	3.8±0.5	3.5±0.5	3.9±0.6	3.6±0.6	4.0±0.6	3.6±0.5	4.0±0.6	4.2±0.6
5-30 min	M2	3.9±0.7	3.6±0.7	4.0±0.8	3.8±0.8	4.1±0.8	3.7±0.8	4.1±0.9	4.3±0.8
SUV	M1	2.8±0.2	2.9±0.3	2.9±0.3	2.7±0.3	3.1±0.3	2.7±0.2	3.2±0.2	3.0±0.2
40-60 min	M2	2.9±0.4	3.0±0.5	3.0±0.5	2.8±0.5	3.2±0.5	2.8±0.5	3.3±0.5	3.1±0.5
SUV	M1	2.2±0.2	2.3±0.2	2.3±0.2	2.2±0.2	2.5±0.2	2.2±0.2	2.5±0.2	2.3±0.2
70-90 min	M2	2.3±0.3	2.4±0.4	2.3±0.3	2.2±0.3	2.5±0.4	2.2±0.3	2.5±0.3	2.4±0.3
SUV	M1	1.9±0.2	2.0±0.2	2.0±0.2	1.9±0.2	2.1±0.2	1.9±0.2	2.1±0.2	2.1±0.2
100-120 min	M2	2.0±0.2	2.0±0.3	2.0±0.3	1.9±0.3	2.2±0.3	1.9±0.2	2.1±0.2	2.1±0.2

		amygdala	hippocampus	cerebellar GM	c. semiovale	corpus callosum	cerebellar WM	mean
SUV	M1	3.1±0.4	3.3±0.5	4.0±0.5	1.6±0.3	1.7±0.3	2.4±0.3	3.3±0.9
5-30 min	M2	3.2±0.6	3.4±0.7	4.1±0.7	1.6±0.4	1.7±0.4	2.5±0.4	3.4±0.9
SUV	M1	3.0±0.2	2.9±0.3	3.1±0.2	1.7±0.2	1.7±0.2	2.3±0.2	2.7±0.5
40-60 min	M2	3.1±0.5	3.0±0.5	3.1±0.4	1.8±0.4	1.7±0.3	2.4±0.3	2.8±0.5
SUV	M1	2.5±0.2	2.4±0.2	2.3±0.2	1.7±0.2	1.6±0.2	2.1±0.2	2.2±0.3
70-90 min	M2	2.6±0.4	2.4±0.4	2.3±0.3	1.7±0.3	1.6±0.3	2.1±0.3	2.3±0.3
SUV	M1	2.3±0.2	2.1±0.2	2±0.2	1.6±0.2	1.5±0.2	1.9±0.2	1.9±0.2
100-120 min	M2	2.3±0.2	2.1±0.3	2±0.2	1.7±0.3	1.5±0.2	1.8±0.2	2.0±0.2

Supplemental Table 1: Mean standardized uptake values (SUV) for various time points for measurement 1 and 2 for all investigated regions.

		frontal	temporal	parietal	occipital	cingulate	somatosensory	thalamus	striatum
Logan	M1	14.7±1.1	15.3±1.1	15.1±1.2	14.3±1.3	16.3±1.2	14.3±1.0	16.2±0.9	15.6±0.9
90 min	M2	15.1±1.5	15.8±1.9	15.6±1.5	14.9±1.5	17.0±2.4	14.7±1.6	16.8±2.2	16.2±2.1
2TCM*	M1	16.7±1.4	16.7±1.2	16.7±0.9	17.4±1.7	17.6±1.1	17.4±1.8	17.7±0.9	16.6±1.0
90 min	M2	16.0±1.1	16.2±0.7	16.2±1.0	16.2±1.4	17.1±0.9	16.4±1.8	17.0±0.6	16.0±0.6

		amygdala	hippocampus	cerebellar GM	c. semiovale	corpus callosum	cerebellar WM	mean
Logan	M1	17.4±1.0	15.9±0.9	15.3±1	15.5±2.1	12.8±1.3	14.5±1.3	15.2±1.1
90 min	M2	19.0±2.9	16.6±2.1	15.6±2.2	15.4±1.8	13.7±1.4	15.6±2.6	15.9±1.3
2TCM*	M1	19.2±1.4	18.8±1.4	16.4±1.0	-	-	-	17.4±1.3
90 min	M2	20.2±0.7	18.2±0.7	15.5±0.9	-	-	-	16.8±1.0

Supplemental Table 2: Mean total volume of distribution (V_T) computed with Logan and 2TCM for all investigated regions. Of note, 2TCM only converged for grey matter regions. One subject had to be excluded from the 2TCM analyses due to unreasonable results (indicated by the *).

		frontal	temporal	parietal	occipital	cingulate	somatosensory	thalamus	striatum
SUV	APD	6.8±3.3	7.1±2.9	6.6±3.6	6.8±3.6	6.7±3.0	7.1±3.6	7.7±3.2	6.5±3.2
	COV	4.8±3.3	5.0±2.9	4.7±3.6	4.8±3.6	4.7±3.0	5.0±3.6	5.4±3.2	4.6±3.2
	ICC	0.83	0.88	0.86	0.87	0.87	0.85	0.84	0.84
SUV	APD	7.7±4.3	7.1±4.4	7.3±4.4	7.6±4.1	7.5±4.2	7.3±4.5	8.3±3.9	8.2±4.0
	COV	5.4±4.3	5.0±4.4	5.2±4.4	5.4±4.1	5.3±4.2	5.2±4.5	5.9±3.9	5.8±4.0
	ICC	0.65	0.75	0.75	0.77	0.72	0.70	0.62	0.59
SUV	APD	8.7±4.0	8.0±3.9	8.0±3.8	8.7±3.7	8.5±3.6	8.5±3.8	8.1±3.8	8.5±3.0
	COV	6.2±4.0	5.7±3.9	5.7±3.8	6.2±3.7	6.0±3.6	6.0±3.8	5.8±3.8	6.0±3.0
	ICC	0.55	0.69	0.71	0.71	0.66	0.63	0.52	0.52
SUV	APD	9.5±4.0	9.0±3.7	9.1±4.0	8.6±3.8	9.3±4.2	8.5±4.1	8.6±2.8	8.5±3.5
	COV	6.7±4.0	6.4±3.7	6.4±4.0	6.1±3.8	6.6±4.2	6.0±4.1	6.0±2.8	6.0±3.5
	ICC	0.50	0.61	0.65	0.69	0.59	0.60	0.51	0.55

		amygdala	hippocampus	cerebellar GM	c. semiovale	corpus callosum	cerebellar WM	mean
SUV	APD	6.7±2.8	7.0±3.2	7.0±3.2	6.7±2.8	7.3±2.8	6.8±2.5	6.9±0.3
	COV	4.7±2.8	4.9±3.2	4.9±3.2	4.7±2.8	5.2±2.8	4.8±2.5	4.9±0.2
	ICC	0.87	0.86	0.80	0.90	0.90	0.82	0.85
SUV	APD	7.6±4.4	7.4±4.4	8.1±3.3	7.0±3.8	8.2±3.8	7.8±3.9	7.7±0.4
	COV	5.4±4.4	5.2±4.4	5.7±3.3	5.0±3.8	5.8±3.8	5.5±3.9	5.4±0.3
	ICC	0.64	0.72	0.53	0.85	0.78	0.63	0.69
SUV	APD	8.2±4.1	7.8±4.2	7.9±3.8	6.1±4.4	6.4±4.8	7.6±3.1	7.9±0.8
	COV	5.8±4.1	5.5±4.2	5.6±3.8	4.3±4.4	4.5±4.8	5.4±3.1	5.6±0.6
	ICC	0.53	0.65	0.44	0.86	0.75	0.60	0.63
SUV	APD	7.7±4.3	8.0±3.4	8.0±3.2	10.4±4.7	8.0±4.4	6.5±5.6	8.5±0.9
	COV	5.5±4.3	5.6±3.4	5.7±3.2	7.4±4.7	5.7±4.4	4.6±5.6	6.0±0.6
	ICC	0.41	0.61	0.49	0.65	0.70	0.61	0.58

Supplemental Table 3: Absolute percentage difference, coefficient of variation and intraclass correlation coefficient for each region for SUV values. See Supplemental Table 1 for detailed legend

		frontal	temporal	parietal	occipital	cingulate	somatosensory	thalamus	striatum
Logan	APD	9.6±10.3	9.6±10.8	9.3±10.3	10.2±11.6	10.7±12.8	9.5± 10.0	9.3±12.0	10.0±12.2
90 min	COV	6.8±7.3	6.8±7.6	6.6±7.3	7.2±8.2	7.6±9.1	6.7±7.1	6.6±8.5	7.1±8.6
2TCM	APD	10.9±5.1	6.9±4.0	7.8±4.6	11.4±7.7	7.7±4.5	12.6±6.5	6.3±3.6	6.9±4.4
90 min	COV	7.7±3.6	4.9±2.8	5.5±3.2	8.1±5.4	5.5±3.2	8.9±4.6	4.5±2.5	4.9±3.1

		amygdala	hippocampus	cerebellar GM	c. semiovale	corpus callosum	cerebellar WM	mean
Logan	APD	10.1±10.7	8.5±10.9	9.4±11.4	14.9± 8.2	15.1±10.4	10.1±7.1	10.5±2.0
90 min	COV	7.1±7.6	6.0±7.7	6.6±8.0	10.5±5.8	10.7±7.4	7.2±5.0	7.4±1.4
2TCM*	APD	6.0±6.8	7.2±3.2	6.8±5.1	-	-	-	8.2±5.0
90 min	COV	4.2±4.8	5.1±2.2	4.8±3.6	-	-	-	5.8±3.6

Supplemental Table 4: *Absolute percentage difference and coefficient of variation for each region for V_T values obtained from the Logan plot and 2TCM. See Supplemental Table 3 for detailed legend.*