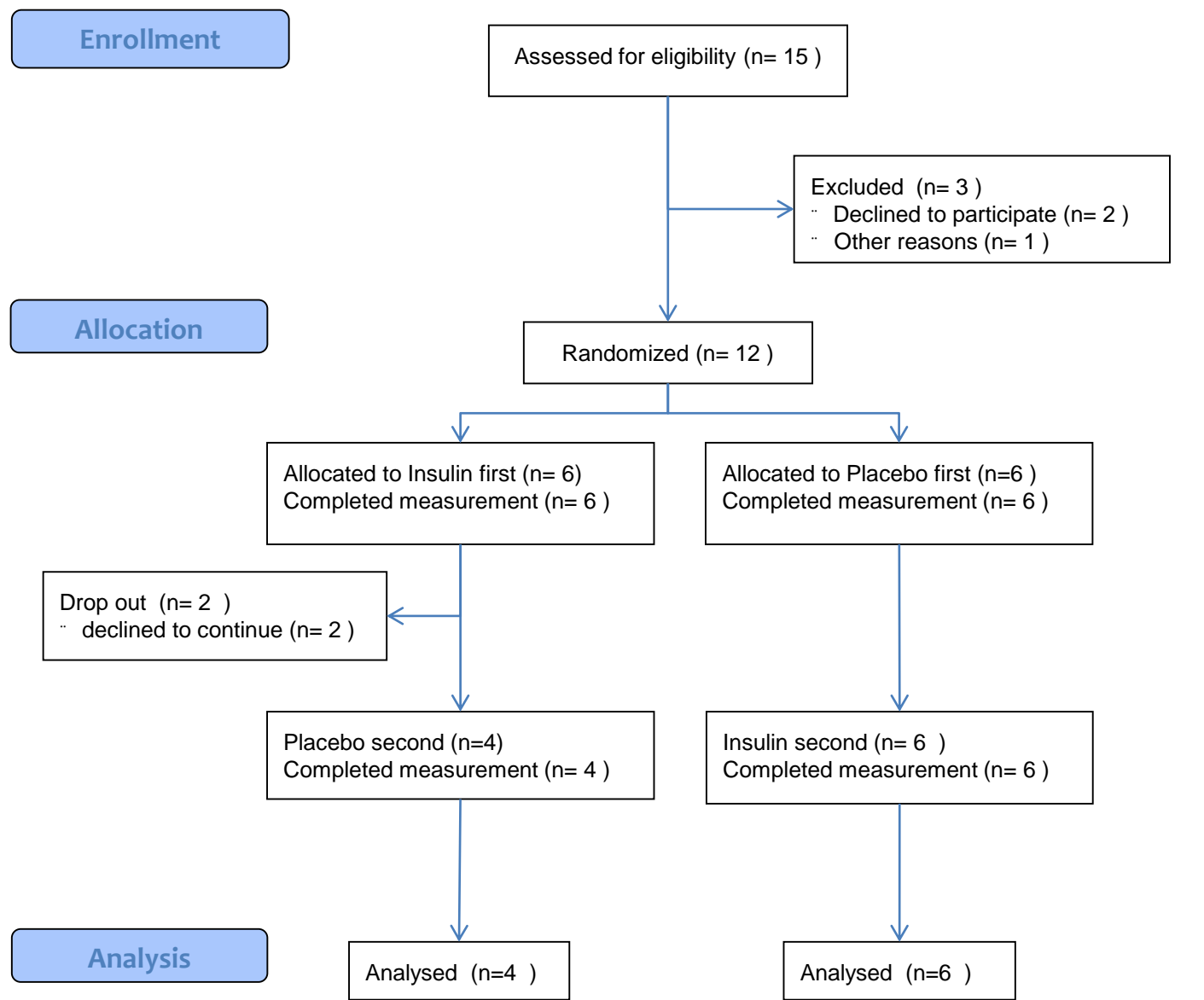


Consort Graph. Characterization of Insulin Action and Dopamine-signaling in the Human Brain of Normal Weight Subjects by [11C]-Raclopride-PET/MRT



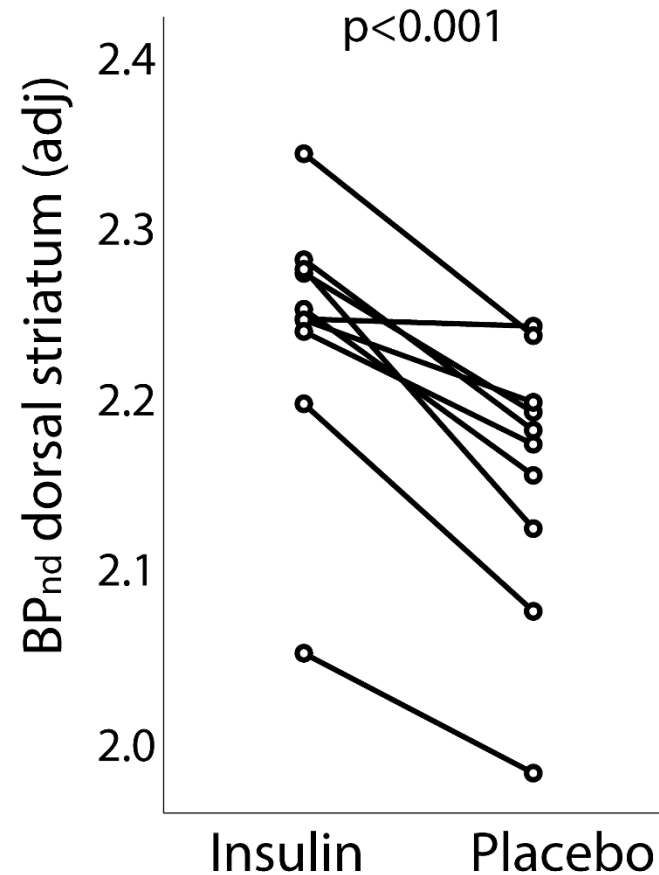
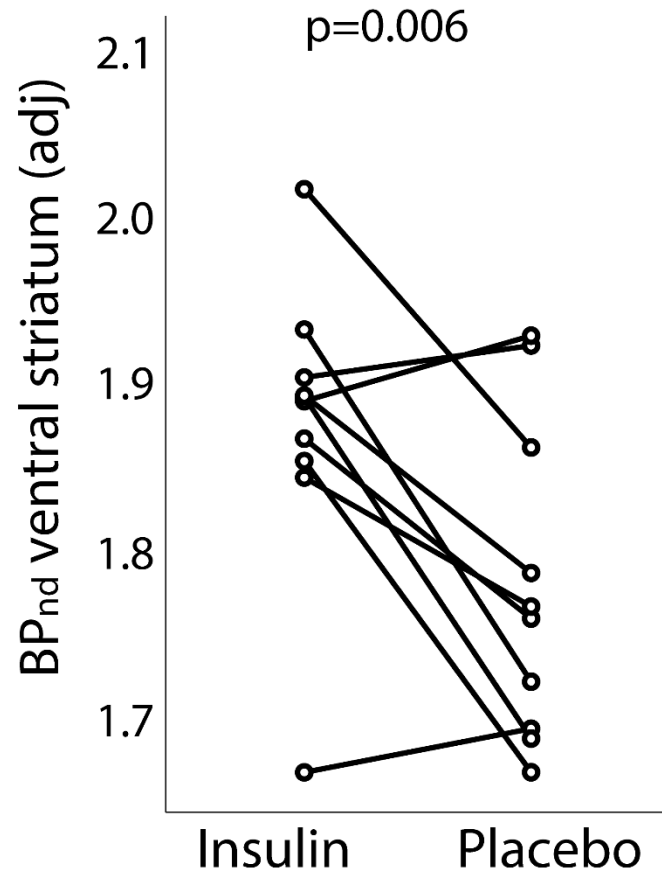
Trait Questionnaires			
Name of questionnaire	Mean	SD	SE
TFEQ - Cognitive restraint	8.00	5.385	1.795
TFEQ - Disinhibition	4.00	2.070	0.732
TFEQ - Hunger	4.00	2.693	0.898
FCQT- sum scale	77.10	23.183	7.331

TFEQ, Three Factor Eating Questionnaire; FCQT, food-craving questionnaire.

Subjective measure of well-being on each measurement day				
	Measurement day	Mean	SD	SE
WHO-5 subjective psychological well-being index	Insulin	64.00	27.260	8.620
	Placebo	62.80	16.976	5.368

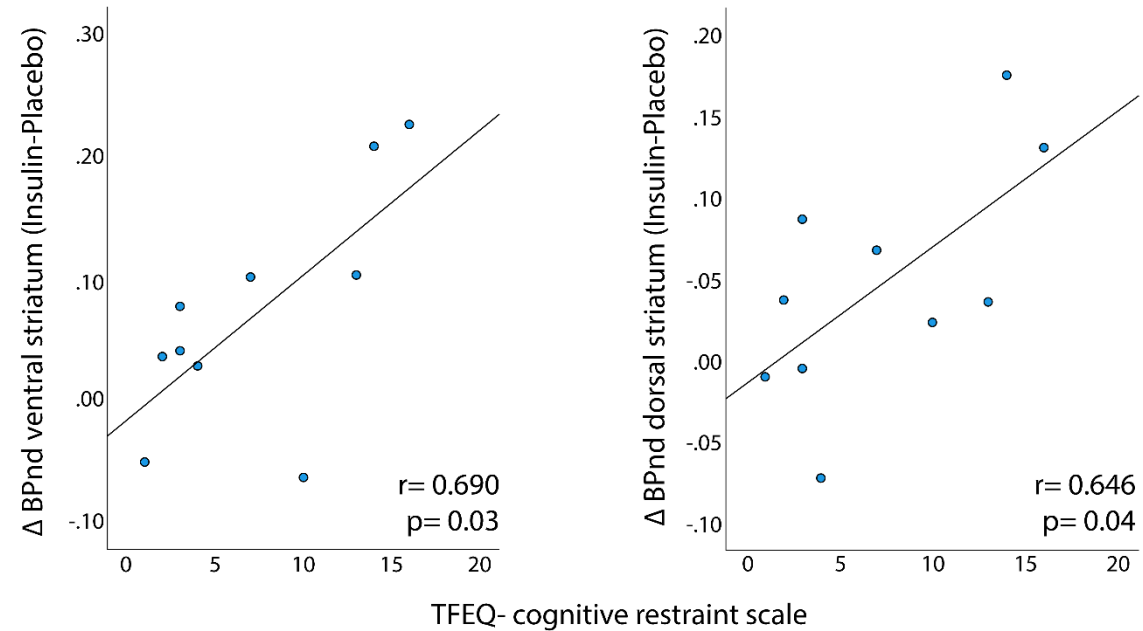
No significant differences were observed between measurement days (Paired t-test; >0.05);

Binding potentials adjusted for subjective well-being



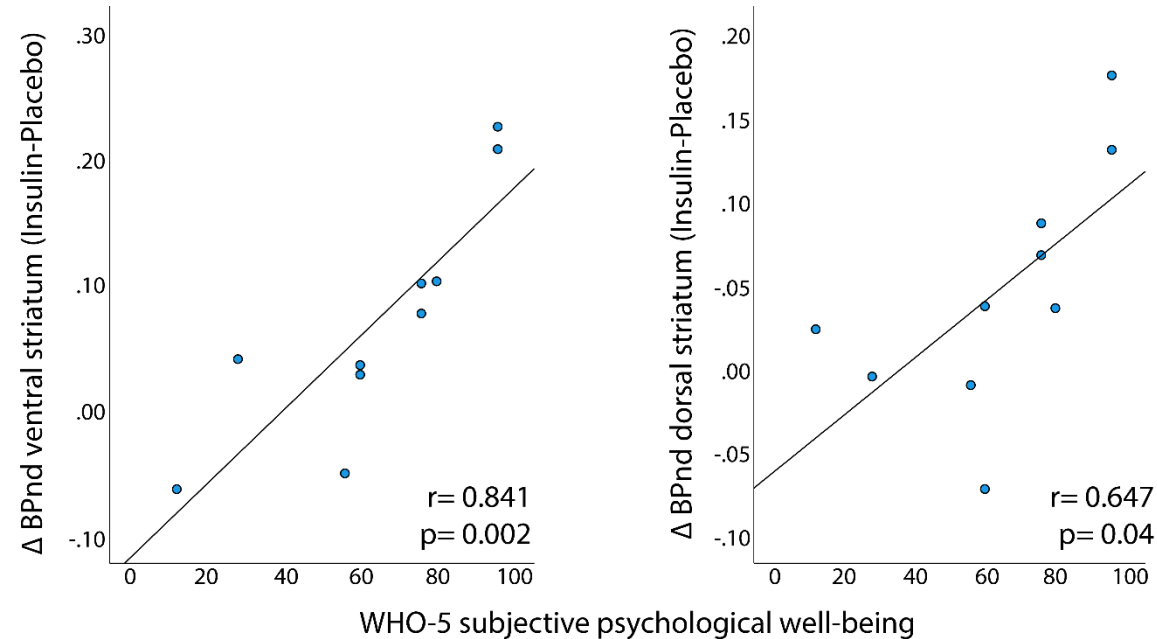
[¹¹C]raclopride binding potential (BP_{nd}) in ventral and dorsal striatum on insulin and placebo day adjusted for WHO-5 subjective psychological well-being of each measurement day. Line diagrams show significant higher BP_{nd} in ventral and dorsal striatum after insulin compared to placebo spray application.

Correlation between ΔBP_{nd} and cognitive restraint score



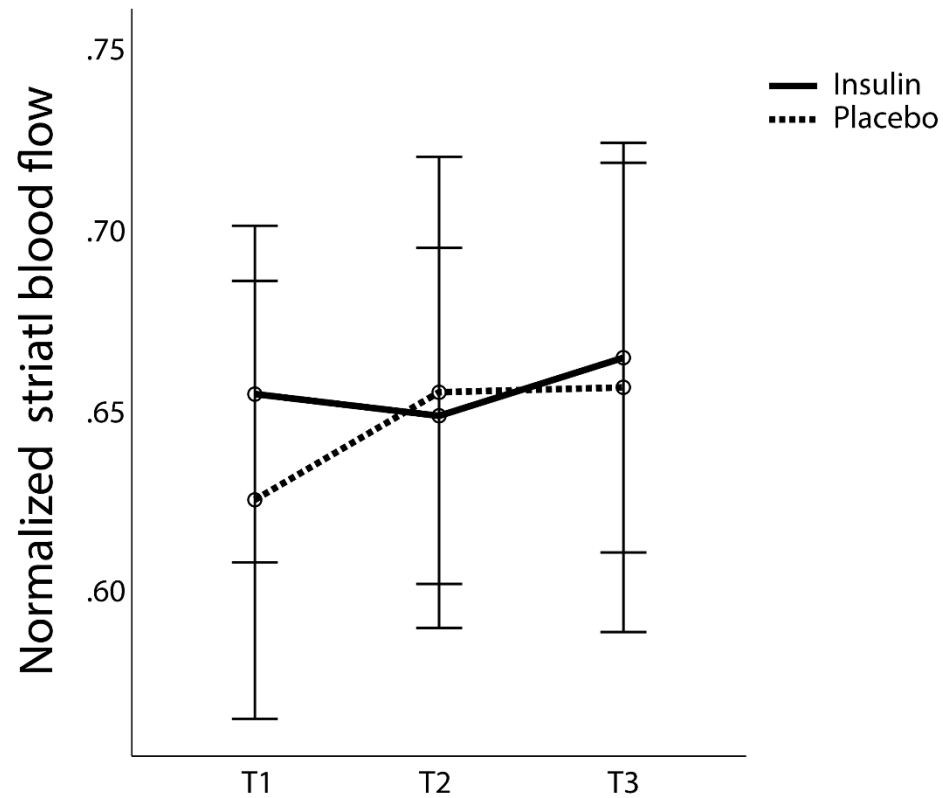
Central insulin effect on dopamine signaling in the striatum is associated with the trait cognitive restraint based on the German version of the Three Factor Eating Questionnaire. In particular, insulin-induced differences in BP_{nd} are positively correlated with cognitive restraint, such that persons with better cognitive control show a more prominent difference in BP_{nd} (Insulin minus Placebo).

Correlation between ΔBP_{nd} and subjective well-being on insulin measurement day



Central insulin effect on dopamine signaling in the striatum is associated with subjective psychological well-being based on the WHO-5 questionnaire. In particular, insulin-induced differences in BP_{nd} are positively correlated with well-being on insulin measurement day, such that persons with higher ratings for subjective well-being show a more prominent difference in BP_{nd} (Insulin minus Placebo).

Cerebral blood flow during PET measurement



Normalized striatal blood flow at each measurement time point after nasal spray application (Caudate blood flow/ global blood flow). No differences in blood flow were observed between insulin and placebo day at each time point ($p>0.05$).