

Table 1: Questions between reward imagery rt-fMRI NFT runs

Topic of question	Specific Questions
feelings and motivation	How did you feel during this round?
	Were you able to concentrate well on the neurofeedback training?
	How tired were you overall during the neurofeedback?
strategies	Which strategy(ies) did you use?
	And which strategy worked best for you?
contingency between feedback and strategy	What is your impression of how well you have managed to upregulate your brain activity
looking at the cross during	Did you think about other things while the cross was being shown?

Table 2 : Questionnaire after reward imagery rt-fMRI NFT

Topic of question	Specific Questions
liking and ability of NFT	How much did you enjoy the neurofeedback training?
	How easily did suitable strategies come to your mind?
	How difficult was it to upregulate your brain activity using your strategies?
strategies	Which strategies did you use?
	And how well did the strategies work?
substance-related or music-related strategies	Did you have to think about cocaine or other substances?
	Did you nonetheless use music as strategy?
improvement	How much has your ability to upregulate your brain activity improved because of the neurofeedback training?

Table 3: Primary, secondary, other and safety outcomes

Domaine	Measure
Primary outcomes	
Cocaine use (self-report)	Timeline Follow Back for cocaine use
Glutamate changes pre to post infusion on t1	¹ H-MRS scan
rt-fMRI NFT performance differences from t1 to t2	fMRI scan
Secondary outcomes	
Cocaine use (objective measure)	Urine analysis
Cocaine craving during the past weeks	Obsessive Compulsive Cocaine Use Scale
Severity of cocaine use disorder	Obsessive Compulsive Cocaine Use Scale
Motivation for change regarding cocaine use behavior	Visual analogue scale for change
Reward sensitivity: ability to experience pleasure	Trait Hedonic Capacity Scale
Reward sensitivity: assessment of levels of pleasure across different domains	Domains of Pleasure Scale
Emotion regulation skill	Negative Mood Regulation Expectancies scale
Depressive symptoms	Beck Depression Inventory
Stress coping	Subscale of the Stress & Coping inventory
Self-esteem	Rosenberg self-esteem scale
Self-efficacy	Questionnaire for Self-efficacy, optimism, and pessimism
Subjective effects of infusion: changes in cognition and perception	5-Dimension Altered State of Consciousness Questionnaire
Subjective effects of infusion: mystical experiences	Hood's Mysticism Scale
Vividness of mental imagery	Prospective Imagery Task
Individual imaging strategies	Neurofeedback Post Questionnaire
Individual imaging strategies	Neurofeedback in between Questionnaire
Current cocaine craving during study visits	Visual analogue scale for craving
Current affective state during study visits	Visual analogue scale for affective state

Glutamate changes during craving paradigm	¹ H-MRS scan
BDNF	Enzyme-linked assay
Cocaine use in everyday life	Ecological momentary assessment
Cocaine craving in everyday life	Ecological momentary assessment
Affective state in everyday life	Ecological momentary assessment
Reward sensitivity in everyday life	Ecological momentary assessment
Other outcomes of interest	
Cardiac electrical activity on t0 and during ketamine/placebo infusion on t1	Electrocardiogram
Psychiatry disorders	Mini-International Neuropsychiatric Interview, DSM-5
Use of psychoactive substances	Interview for Psychotropic Drug Consumption
Subjective experience of intervention	Qualitative interview
Safety outcomes	
Vital signs	Blood pressure monitor
Concomitant medication	Questionnaire for concomitant medication
Adverse events	Question about adverse events
Current Suicidality	Suicidality screening questions from Mini-International Neuropsychiatric Interview
Pregnancy	Urine pregnancy test
Drug use	Urine drug test
Routine laboratory parameters	Blood analysis