

Supplementary Table 1: List of considered behavioral scores. For each score, we report (from left to right in the table) whether it was included in the analysis or not (first column), the reason if not included (1: not available upon download, 2: considered irrelevant, 3: discarded at Principal Components construction stage, or 4: discarded at Principal Components quality control stage), the score name, the number of analyzed Principal Components containing the score (in parenthesis, total Principal Components number computed from the score, with 0 denoting single scores directly fed to the analysis), and the percentage of missing entries. Color in the background denotes scores that were jointly included in a Probabilistic PCA.

Included?	Why?	Name	P _{NAN}	n _{PC} (n _{TOT})	Domain name
X	2	Age_in_Yrs			
X	2	ZygotySR			
X	2	Mother_ID			
X	2	Father_ID			
X	4	Race	0	1 (1)	
X	4	Ethnicity	0		
✓		Handedness	0	0	
X	4	SSAGA_Employ	0	1 (1)	
X	4	SSAGA_Income	0		
X	4	SSAGA_Educ	0	1 (1)	
X	4	SSAGA_InSchool	0		
X	2	SSAGA_MOBorn			
X	2	SSAGA_Rlshp			
✓		Height	0.45	2 (2)	Body mass index
✓		Weight	0.45		
✓		BMI	0.45		
X	3	SSAGA_BMICat			
X	3	SSAGA_BMICatHeaviest			
X	2	Blood_Drawn			
✓		Hematocrit_1	6.25	1 (1)	Hematocrit
✓		Hematocrit_2	9.82		
✓		BPSystolic	0.45	1 (1)	Blood pressure
✓		BPDiastolic	0.45		
✓		ThyroidHormone	21.43	0	Thyroid hormone
✓		HbA1C	20.98	0	HbA1C
X	3	Hypothyroidism			
X	3	Hypothyroidism_Onset			
X	3	Hyperthyroidism			
X	3	Hyperthyroidism_Onset			
X	3	OtherEndocrn_Prob			
X	3	OtherEndocrine_ProbOnset			
X	2	Menstrual_RegCycles			
X	2	Menstrual_Explain			
X	2	Menstrual_AgeBegan			
X	2	Menstrual_CycleLength			
X	2	Menstrual_DaysSinceLast			
X	2	Menstrual_AgeIrreg			
X	2	Menstrual_AgeStop			
X	2	Menstrual_MonthsSinceStop			
X	2	Menstrual_UsingBirthControl			
X	2	Menstrual_BirthControlCode			

X	2	FamHist_Moth_Scz			
X	2	FamHist_Moth_Dep			
X	2	FamHist_Moth_BP			
X	2	FamHist_Moth_An timers			
X	2	FamHist_Moth_DrgAlc			
X	2	FamHist_Moth_Alz			
X	2	FamHist_Moth_PD			
X	2	FamHist_Moth_TS			
X	2	FamHist_Moth_None			
X	2	FamHist_Fath_Scz			
X	2	FamHist_Fath_Dep			
X	2	FamHist_Fath_BP			
X	2	FamHist_Fath_An timers			
X	2	FamHist_Fath_DrgAlc			
X	2	FamHist_Fath_Alz			
X	2	FamHist_Fath_PD			
X	2	FamHist_Fath_TS			
X	2	FamHist_Fath_None			
X	4	MMSE_Score			
X	3	PSQL_Score			
✓		PSQL_Comp1	0	1 (6)	Sleep
✓		PSQL_Comp2	0		
✓		PSQL_Comp3	0		
✓		PSQL_Comp4	0		
✓		PSQL_Comp5	0		
✓		PSQL_Comp6	0		
✓		PSQL_Comp7	0		
✓		PicSeq_Unadj	0	1 (1)	Episodic memory
✓		PicSeq_AgeAdj	0		
✓		CardSort_Unadj	0.45	1 (1)	Cognitive flexibility
✓		CardSort_AgeAdj	0.45		
✓		Flanker_Unadj	0	1 (1)	Inhibition
✓		Flanker_AgeAdj	0		
✓		PMAT24_A_CR	1.79	1 (2)	Fluid intelligence
✓		PMAT24_A_SI	1.79		
✓		PMAT24_A_RT CR	1.79		
✓		ReadEng_Unadj	0	1 (1)	Reading decoding
✓		ReadEng_AgeAdj	0		
✓		PicVocab_Unadj	0	1 (1)	Vocabulary comprehension
✓		PicVocab_AgeAdj	0		
✓		ProcSpeed_Unadj	0	1 (1)	Processing speed
✓		ProcSpeed_AgeAdj	0		
X	3	DDisc_SV_1mo_200			
X	3	DDisc_SV_6mo_200			
X	3	DDisc_SV_1yr_200			
X	3	DDisc_SV_3yr_200			
X	3	DDisc_SV_5yr_200			
X	3	DDisc_SV_10r_200			
X	3	DDisc_SV_1mo_40k			
X	3	DDisc_SV_6mo_40k			
X	3	DDisc_SV_1yr_40k			
X	3	DDisc_SV_3yr_40k			
X	3	DDisc_SV_5yr_40k			
X	3	DDisc_SV_10yr_40k			
✓		DDisc_AUC_200	1.79	1 (1)	Impulsivity
✓		DDisc_AUC_40k	1.79		
✓		VS PLOT_TC	1.79	2 (2)	Spatial orientation

✓		VSPLIT_CRTE	1.79				
✓		VSPLIT_TC	1.79				
✓		SCPT_TP	1.79	3 (4)	Sustained attention		
✓		SCPT_TN	1.79				
✓		SCPT_FP	1.79				
✓		SCPT_FN	1.79				
✓		SCPT_TPRT	2.32				
✓		SCPT_SEN	1.79				
✓		SCPT_SPEC	1.79				
✓		SCPT_LRNR	1.79				
✓		IWRD_TOT	1.79			1 (1)	Verbal episodic memory
✓		IWRD_RTC	1.79				
✓		ListSort_Unadj	0	1 (1)	Working memory		
✓		ListSort_AgeAdj	0				
✓		ER40_CR	1.79	1 (1)	Emotion recognition (global)		
✓		ER40_CRT	1.79				
✓		ER40ANG	1.79	1 (4)	Emotion recognition (specific)		
✓		ER40FEAR	1.79				
✓		ER40HAP	1.79				
✓		ER40NOE	1.79				
✓		ER40SAD	1.79				
✓		AngAffect_Unadj	0	1 (5)	Negative affect		
✓		AngHostil_Unadj	0				
✓		AngAggr_Unadj	0				
✓		FearAffect_Unadj	0				
✓		FearSomat_Unadj	0				
✓		Sadness_Unadj	0				
✓		LifeSatisf_Unadj	0	1 (2)	Psychological well-being		
✓		MeanPurp_Unadj	0				
✓		PosAffect_Unadj	0				
✓		Friendship_Unadj	0	1 (5)	Social relationships		
✓		Loneliness_Unadj	0				
✓		PercHostil_Unadj	0				
✓		PercReject_Unadj	0				
✓		EmotSupp_Unadj	0				
✓		IntruSupp_Unadj	0				
✓		PercStress_Unadj	0	1 (1)	Stress/Self-efficacy		
✓		SelfEff_Unadj	0				
✓		Endurance_Unadj	0.45	1 (1)	Endurance		
✓		Endurance_AgeAdj	0.45				
✓		GaitSpeed_Comp	0	0	Locomotion		
✓		Dexterity_Unadj	0	1 (1)	Dexterity		
✓		Dexterity_AgeAdj	0				
✓		Strength_Unadj	0	1 (1)	Strength		
✓		Strength_AgeAdj	0				
✓		NEOFAC_A	1.34	2 (4)	Personality		
✓		NEOFAC_O	1.34				
✓		NEOFAC_C	1.34				
✓		NEOFAC_N	1.34				
✓		NEOFAC_E	1.34				
✓		ASR_Anxd_Raw	1.34	1 (3)	Anxiety		
✓		ASR_Anxd_Pct	1.34				
✓		DSM_Anxi_Raw	1.34				
✓		DSM_Anxi_T	1.34				
✓		ASR_Witd_Raw	1.34	1 (1)	Withdrawal		
✓		ASR_Witd_Pct	1.34				
✓		ASR_Soma_Raw	1.34	1 (3)	Somatic problems		

✓		ASR_Soma_Pct	1.34		
✓		DSM_Somp_Raw	1.34		
✓		DSM_Somp_T	1.34		
✓		ASR_Thot_Raw	1.34	1 (1)	Thought problems
✓		ASR_Thot_Pct	1.34		
✓		ASR_Attn_Raw	1.34	1 (1)	Attention problems
✓		ASR_Attn_Pct	1.34		
✓		ASR_Aggr_Raw	1.34	1 (1)	Aggressive behavior
✓		ASR_Aggr_Pct	1.34		
✓		ASR_Rule_Raw	1.34	1 (1)	Rule breaking
✓		ASR_Rule_Pct	1.34		
✓		ASR_Intr_Raw	1.34	1 (1)	Intrusiveness
✓		ASR_Intr_Pct	1.34		
✗	2	ASR_Oth_Raw			
✗	2	ASR_Crit_Raw			
✓		ASR_Intn_Raw	1.34	1 (1)	Internalization
✓		ASR_Intn_T	1.34		
✓		ASR_Extn_Raw	1.34	1 (1)	Externalization
✓		ASR_Extn_T	1.34		
✗	2	ASR_TAO_Sum			
✗	2	ASR_Totp_Raw			
✗	2	ASR_Totp_T			
✗	4	DSM_Depr_Raw	1.34	1 (3)	
✗	4	DSM_Depr_T	1.34		
✗	4	SSAGA_Depressive_Ep	1.34		
✗	4	SSAGA_Depressive_Sx	1.34		
✓		DSM_Avoid_Raw	1.34	1 (1)	Avoidance
✓		DSM_Avoid_T	1.34		
✓		DSM_Adh_Raw	1.34	1 (1)	
✓		DSM_Adh_T	1.34		
✓		DSM_Inat_Raw		0	Inattention
✓		DSM_Hype_Raw		0	Hyperactivity
✓		DSM_Antis_Raw	1.34	1 (1)	Antisocial behavior
✓		DSM_Antis_T	1.34		
✗	2	SSAGA_ChildhoodConduct			
✗	2	SSAGA_PanicDisorder			
✗	2	SSAGA_Agoraphobia			
✓		Noise_Comp	0.89	0	Audition
✓		Odor_Unadj	0.45	1 (1)	Olfaction
✓		Odor_AgeAdj	0.45		
✓		PainIntens_RawScore	0	1 (1)	Pain intensity
✓		PainInterf_Tscore	0		
✓		Taste_Unadj	0.45	1 (1)	Taste
✓		Taste_AgeAdj	0.45		
✗	2	Color_Vision			
✗	2	Eye			
✗	2	EVA_Num			
✗	2	EVA_Denom			
✗	2	Correction			
✓		Mars_Log_Score	1.79	2 (2)	Contrast sensitivity
✓		Mars_Errs	2.23		
✓		Mars_Final	2.23		
✗	1	Breathalyzer_Over_05			
✗	1	Breathalyzer_Over_08			
✗	1	Cocaine			
✗	1	THC			

X	1	Opiates			
X	1	Amphetamines			
X	1	MethAmphetamine			
X	1	Oxycontin			
✓		Total_Drinks_7days	2.23	1 (6)	Alcohol consumption
✓		Num_Days_Drank_7days	0		
✓		SSAGA_Alc_D4_Dp_Sx	0		
✓		SSAGA_Alc_D4_Ab_Sx	0		
✓		SSAGA_Alc_12_Drinks_Per_Day	4.91		
✓		SSAGA_Alc_12_Frq	4.91		
✓		SSAGA_Alc_12_Frq_Drk	4.91		
X	3	Avg_Weekday_Drinks_7days			
X	3	Avg_Weekend_Drinks_7days			
X	3	Total_Beer_Wine_Cooler_7days			
X	3	Avg_Weekday_Beer_Wine_Cooler_7days			
X	3	Avg_Weekend_Beer_Wine_Cooler_7days			
X	3	Total_Malt_Liquor_7days			
X	3	Avg_Weekday_Malt_Liquor_7days			
X	3	Avg_Weekend_Malt_Liquor_7days			
X	3	Total_Wine_7days			
X	3	Avg_Weekday_Wine_7days			
X	3	Avg_Weekend_Wine_7days			
X	3	Total_Hard_Liquor_7days			
X	3	Avg_Weekday_Hard_Liquor_7days			
X	3	Avg_Weekend_Hard_Liquor_7days			
X	3	Total_Other_Alc_7days			
X	3	Avg_Weekday_Other_Alc_7days			
X	3	Avg_Weekend_Other_Alc_7days			
X	3	SSAGA_Alc_D4_Ab_Dx			
X	3	SSAGA_Alc_D4_Dp_Dx			
X	3	SSAGA_Alc_12_Frq_5plu			
X	3	SSAGA_Alc_12_Max_Drinks			
X	3	SSAGA_Alc_Age_1st_Use			
X	3	SSAGA_Alc_Hvy_Drinks_Per_Day			
X	3	SSAGA_Alc_Hvy_Frq			
X	3	SSAGA_Alc_Hvy_Frq_5plu			

X	3	SSAGA_Alc_Hvy_Frq_Dr k			
X	3	SSAGA_Alc_Hvy_Max_Dr inks			
✓		Total_Any_Tobacco_7da ys	2.23	1 (3)	Tobacco consumption
✓		Times_Used_Any_Tobac co_Today	2.23		
✓		Num_Days_Used_Any_T obacco_7days	0		
✓		SSAGA_TB_Smoking_Hi story	0		
X	3	Avg_Weekday_Any_Tob acco_7days			
X	3	Avg_Weekend_Any_Tob acco_7days			
X	3	Total_Cigarettes_7days			
X	3	Avg_Weekday_Cigarette s_7days			
X	3	Avg_Weekend_Cigarette es_7days			
X	3	Total_Cigars_7days			
X	3	Avg_Weekday_Cigars_7 days			
X	3	Avg_Weekend_Cigars_7 days			
X	3	Total_Pipes_7days			
X	3	Avg_Weekday_Pipes_7d ays			
X	3	Avg_Weekend_Pipes_7d ays			
X	3	Total_Chew_7days			
X	3	Avg_Weekday_Chew_7d ays			
X	3	Avg_Weekend_Chew_7d ays			
X	3	Total_Snuff_7days			
X	3	Avg_Weekday_Snuff_7d ays			
X	3	Avg_Weekend_Snuff_7d ays			
X	3	Total_Other_Tobacco_7 days			
X	3	Avg_Weekday_Other_T obacco_7days			
X	3	Avg_Weekend_Other_T obacco_7days			
X	2	SSAGA_FTND_Score			
X	2	SSAGA_HSI_Score			
X	2	SSAGA_TB_Age_1st_Cig			
X	2	SSAGA_TB_DSM_Difficul ty_Quitting			
X	2	SSAGA_TB_DSM_Tolera nce			
X	2	SSAGA_TB_DSM-Withdr awal			
X	2	SSAGA_TB_Hvy_CPD			
X	2	SSAGA_TB_Max_Cigs			

X	2	SSAGA_TB_Reg_CPD			
X	2	SSAGA_TB_Still_Smoking			
X	2	SSAGA_TB_Yrs_Since_Quit			
X	2	SSAGA_TB_Yrs_Smoked			
✓		SSAGA_Times_Used_Illicits	0	1 (6)	Drugs consumption
✓		SSAGA_Times_Used_Cocaine	0		
✓		SSAGA_Times_Used_Hallucinogens	0		
✓		SSAGA_Times_Used_Opiates	0		
✓		SSAGA_Times_Used_Sedatives	0		
✓		SSAGA_Times_Used_Stimulants	0		
✓		SSAGA_Mj_Times_Used	0		
X	2	SSAGA_Mj_Use			
X	2	SSAGA_Mj_Ab_Dep			
X	2	SSAGA_Mj_Age_1st_Use			
✓		Language_Task_Story_Acc	5.36	2 (5)	Language task
✓		Language_Task_Story_Median_RT	5.36		
✓		Language_Task_Story_Avg_Difficulty_Level	5.36		
✓		Language_Task_Math_Acc	5.36		
✓		Language_Task_Math_Median_RT	5.36		
✓		Language_Task_Math_Avg_Difficulty_Level	5.36		
✓		Emotion_Task_Acc	5.36	2 (5)	Emotion task
✓		Emotion_Task_Median_RT	5.36		
✓		Emotion_Task_Face_Acc	5.36		
✓		Emotion_Task_Face_Median_RT	5.36		
✓		Emotion_Task_Shape_Acc	5.36		
✓		Emotion_Task_Shape_Median_RT	5.36		
X	3	Gambling_Task_Perc_Larger			
X	3	Gambling_Task_Perc_Smaller			
X	3	Gambling_Task_Perc_NLR			
X	3	Gambling_Task_Median_RT_Larger			
X	3	Gambling_Task_Median_RT_Smaller			
✓		Gambling_Task_Reward_Perc_Larger	0.45	3 (6)	Gambling task
✓		Gambling_Task_Reward_Median_RT_Larger	1.34		

✓		Gambling_Task_Reward_Perc_Smaller	0.45		
✓		Gambling_Task_Reward_Median_RT_Smaller	2.23		
✓		Gambling_Task_Punish_Perc_Larger	0.45		
✓		Gambling_Task_Punish_Median_RT_Larger	0.45		
✓		Gambling_Task_Punish_Perc_Smaller	0.45		
✓		Gambling_Task_Punish_Median_RT_Smaller	0.89		
✗	3	Gambling_Task_Reward_Perc_NLR			
✗	3	Gambling_Task_Punish_Perc_NLR			
✗	3	Relational_Task_Acc			
✗	3	Relational_Task_Median_RT			
✓		Relational_Task_Match_Acc	6.25	2 (3)	Relational task
✓		Relational_Task_Match_Median_RT	6.25		
✓		Relational_Task_Rel_Acc	6.25		
✓		Relational_Task_Rel_Median_RT	6.25		
✗	3	Social_Task_Perc_Random			
✗	3	Social_Task_Perc_TOM			
✗	3	Social_Task_Perc_Unsure			
✗	3	Social_Task_Perc_NLR			
✗	3	Social_Task_Median_RT_Random			
✗	3	Social_Task_Median_RT_TOM			
✗	3	Social_Task_Median_RT_Unsure			
✓		Social_Task_Random_Perc_Random	5.36	1 (5)	Social task
✓		Social_Task_Random_Perc_TOM	5.36		
✓		Social_Task_Random_Median_RT_Random	5.36		
✓		Social_Task_TOM_Perc_Random	5.36		
✓		Social_Task_TOM_Perc_TOM	5.36		
✓		Social_Task_TOM_Median_RT_TOM	5.36		
✗	3	Social_Task_Random_Perc_Unsure			
✗	3	Social_Task_Random_Perc_NLR			
✗	3	Social_Task_Random_Median_RT_TOM			
✗	3	Social_Task_Random_M			

		edian_RT_Unsure			
X	3	Social_Task_TOM_Perc_Unsure			
X	3	Social_Task_TOM_Perc_NLR			
X	3	Social_Task_TOM_Median_RT_Random			
X	3	Social_Task_TOM_Median_RT_Unsure			
X	3	WM_Task_Acc			
X	3	WM_Task_Median_RT			
✓		WM_Task_2bk_Acc	1.34	1 (3)	Working memory task
✓		WM_Task_2bk_Median_RT	1.34		
✓		WM_Task_0bk_Acc	0.45		
✓		WM_Task_0bk_Median_RT	1.34		
X	3	WM_Task_0bk_Body_Acc			
X	3	WM_Task_0bk_Body_Acc_Target			
X	3	WM_Task_0bk_Body_Acc_Nontarget			
X	3	WM_Task_0bk_Face_Acc			
X	3	WM_Task_0bk_Face_Acc_Target			
X	3	WM_Task_0bk_Face_Acc_Nontarget			
X	3	WM_Task_0bk_Place_Acc			
X	3	WM_Task_0bk_Place_Acc_Target			
X	3	WM_Task_0bk_Place_Acc_Nontarget			
X	3	WM_Task_0bk_Tool_Acc			
X	3	WM_Task_0bk_Tool_Acc_Target			
X	3	WM_Task_0bk_Tool_Acc_Nontarget			
X	3	WM_Task_2bk_Body_Acc			
X	3	WM_Task_2bk_Body_Acc_Target			
X	3	WM_Task_2bk_Body_Acc_Nontarget			
X	3	WM_Task_2bk_Face_Acc			
X	3	WM_Task_2bk_Face_Acc_Target			
X	3	WM_Task_2bk_Face_Acc_Nontarget			
X	3	WM_Task_2bk_Place_Acc			
X	3	WM_Task_2bk_Place_Acc_Target			
X	3	WM_Task_2bk_Place_Acc			

		c_Nontarget			
X	3	WM_Task_2bk_Tool_Ac c			
X	3	WM_Task_2bk_Tool_Ac c_Target			
X	3	WM_Task_2bk_Tool_Ac c_Nontarget			
X	3	WM_Task_0bk_Body_M edian_RT			
X	3	WM_Task_0bk_Body_M edian_RT_Target			
X	3	WM_Task_0bk_Body_M edian_RT_Nontarget			
X	3	WM_Task_0bk_Face_Me dian_RT			
X	3	WM_Task_0bk_Face_Me dian_RT_Target			
X	3	WM_Task_0bk_Face_Me dian_RT_Nontarget			
X	3	WM_Task_0bk_Place_M edian_RT			
X	3	WM_Task_0bk_Place_M edian_RT_Target			
X	3	WM_Task_0bk_Place_M edian_RT_Nontarget			
X	3	WM_Task_0bk_Tool_Me dian_RT			
X	3	WM_Task_0bk_Tool_Me dian_RT_Target			
X	3	WM_Task_0bk_Tool_Me dian_RT_Nontarget			
X	3	WM_Task_2bk_Body_M edian_RT			
X	3	WM_Task_2bk_Body_M edian_RT_Target			
X	3	WM_Task_2bk_Body_M edian_RT_Nontarget			
X	3	WM_Task_2bk_Face_Me dian_RT			
X	3	WM_Task_2bk_Face_Me dian_RT_Target			
X	3	WM_Task_2bk_Face_Me dian_RT_Nontarget			
X	3	WM_Task_2bk_Place_M edian_RT			
X	3	WM_Task_2bk_Place_M edian_RT_Target			
X	3	WM_Task_2bk_Place_M edian_RT_Nontarget			
X	3	WM_Task_2bk_Tool_Me dian_RT			
X	3	WM_Task_2bk_Tool_Me dian_RT_Target			
X	3	WM_Task_2bk_Tool_Me dian_RT_Nontarget			