PARKINSON'S PROGRESSION MARKERS INITIATIVE

Play a Part in Parkinson's Research

Variable Definitions and Score Calculations

Summary

The following tables describe the calculation of the derived variables in the PPMI study.

Study Groups

Characteristic	Variables	Dataset
Enrolled PD Subject	PATNO, APPRDX, ENROLLDT Merge SCREEN with RANDOM and count each unique PATNO with APPRDX = '1' that is not missing ENROLLDT	RANDOM, SCREEN
Enrolled Healthy Control	PATNO, APPRDX, ENROLLDT Merge SCREEN with RANDOM and count each unique PATNO with APPRDX = '2' that is not missing ENROLLDT	RANDOM, SCREEN
Enrolled SWEDD Subject	PATNO, APPRDX, ENROLLDT Merge SCREEN with RANDOM and count each unique PATNO with APPRDX = '3' that is not missing ENROLLDT	RANDOM, SCREEN

Demographics and PD Characteristics

Age	ENROLLDT - BIRTHDT	RANDOM
Race	RAINDALS, RAASIAN, RABLACK, RAHAWOPI, RAWHITE, RANOS Other = RAINDALS, RAHAWOPI, RANOS, or more than one race specified	SCREEN
Family History	BIOMOMPD, BIODADPD, FULSIBPD, HALFSIBPD, MAGPARPD, PAGPARPD, MATAUPD, PATAUPD, KIDSPD Subject has family history of PD if any one of these variables = '1'	FAMHXPD

Duration of Disease	PDDXDT, ENROLLDT Duration = number of months between PDDXDT and ENROLLDT	PDFEAT, RANDOM
TD / PIGD Classification	First calculate Tremor and PIGD scores: Tremor score = Mean of the following variables: NP2TRMR, NP3PTRMR, NP3PTRML, NP3KTRMR, NP3KTRML, NP3RTARU, NP3RTALU, NP3RTARL, NP3RTALL, NP3RTALJ, NP3RTCON PIGD score = Mean of the following variables: NP2WALK, NP2FREZ, NP3GAIT, NP3FRZGT, NP3PSTBL Then calculate ratio = Tremor score / PIGD score. If ratio >= 1.15 then subject is TD. If ratio <= 0.9 then subject is PIGD. If ratio > 0.9 and < 1.15, OR Tremor score and PIGD score = 0, then subject is Indeterminate. If PIGD score = 0 and TD score > 0 then subject is TD.	NUPDRS2P, NUPDRS3

Motor Assessments

MDS-UPDRS Part I	NP1COG, NP1HALL, NP1DPRS, NP1ANXS, NP1APAT,NP1DDS, NP1SLPN, NP1SLPD, NP1PAIN, NP1URIN, NP1CNST, NP1LTHD, NP1FATG Part I Score = sum of these 13 variables	NUPDRS1, NUPDRS1P
MDS-UPDRS Part II	NP2SPCH, NP2SALV, NP2SWAL, NP2EAT, NP2DRES, NP2HYGN, NP2HWRT, NP2HOBB, NP2TURN, NP2TRMR, NP2RISE, NP2WALK, NP2FREZ Part II Score = sum of these 13 variables	NUPDRS2P
MDS-UPDRS Part III	NP3SPCH, NP3FACXP, NP3RIGN, NP3RIGRU, NP3RIGLU, PN3RIGRL, NP3RIGLL, NP3FTAPR, NP3FTAPL, NP3HMOVR, NP3HMOVL, NP3PRSPR, NP3PRSPL, NP3TTAPR,	NUPDRS3

	NP3TTAPL, NP3LGAGR, NP3LGAGL, NP3RISNG, NP3GAIT, NP3FRZGT, NP3PSTBL, NP3POSTR, NP3BRADY, NP3PTRMR, NP3PTRML, NP3KTRMR, NP3KTRML, NP3RTARU, NP3RTALU, NP3RTARL, NP3RTALL, NP3RTALJ, NP3RTCON Part III Score = sum of these 33 variables	
MDS-UPDRS Total Score	Sum of UPDRS Parts I, II, III	NUPDRS1, NUPDRS1P, NUPDRS2P, NUPDRS3

Non-Motor Assessments

Benton Judgment of Line Orientation Score	Sum of BJLOT1 – BJLOT30	LINEORNT
Epworth Sleepiness Scale	Sum of ESS1 - ESS8 Subjects with ESS < 10 are "Not Sleepy" Subjects with ESS ≥ 10 are "Sleepy"	EPWORTH
GDS Raw Score	Add 1 point for each response of "No" (0) to any of the following variables: GDSSATIS, GDSGSPIR, GDSHAPPY, GDSALIVE, GDSENRGY Add 1 point for each response of "Yes" (1) to any of the following variables: GDSDROPD, GDSEMPTY, GDSBORED, GDSAFRAD, GDSHLPLS, GDSHOME, GDSMEMRY, GDSWRTLS, GDSHOPLS, GDSBETER Subjects with GDS ≥ 5 are "Depressed" Subject with GDS < 5 are "Not Depressed"	GDSSHORT
HVLT Immediate Recall	Sum of HVLTRT1 - HVLTRT3	HVLT
HVLT Discrimination Recognition	HVLTREC - (HVLTFPRL + HVLTFPUN)	HVLT

Letter Number Sequencing (LNS)	Sum of LNS1A – LNS7C	LNSPD
MOCA Total Score	Unadjusted Score = sum of MCAALTTM, MCACUBE, MCACLCKC, MCACLCKN, MCACLCKH, MCALION, MCARHINO, MCACAMEL, MCAFDS, MCABDS, MCAVIGIL, MCASER7, MCASNTNC, MCAVF, MCAABSTR, MCAREC1, MCAREC2, MCAREC3, MCAREC4, MCAREC5, MCADATE, MCAMONTH, MCAYR, MCADAY, MCAPLACE, MCACITY If EDUCYRS ≤ 12 and Unadjusted Score < 30, add 1 more point to score. If EDUCYRS > 12, do not add any more points to score.	MOCA, SOCIOECO
QUIP	For Sections A - D, add 1 point if either question has a response of "Yes" (1): Section A: CNTRLGMB, TMGAMBLE Section B: CNTRLSEX, TMSEX Section C: CNTRLBUY, TMBUY Section D: CNTRLEAT, TMEAT For Section E, add 1 point for each response of "Yes" (1): TMTORACT, TMTMTACT, TMTRWD	QUIPCS
REM Sleep Behavior Disorder (RBD)	Add 1 point for each response of "Yes" (1) to any of the following variables: DRMVIVID, DRMAGRAC, DRMNOCTB, SLPLMBMV, SLPINJUR, DRMVERBL, DRMFIGHT, DRMUMV, DRMOBJFL, MVAWAKEN, DRMREMEM, SLPDSTRB Add 1 point if any of the following variables has a response of "Yes" (1): STROKE, HETRA, PARKISM, RLS, NARCLPSY, DEPRS, EPILEPSY, BRNINFM, CNSOTH If any of the previous variables are missing, then RBD score is missing.	REMSLEEP

	Subjects with score ≥ 5 are RBD Positive Subjects with score < 5 are RBD Negative	
SCOPA-AUT Total Score	SCAU1 - SCAU25 For questions 1-21 (SCAU1 - SCAU21), add 3 points for each response of "9." Otherwise, add the number of points in response. For questions 22-25 (SCAU22 - SCAU25), add 0 points for each response of "9." Otherwise, add the number of points in response.	SCOPA
Semantic Fluency (SFT)	Sum of VLTANIM, VLTVEG, VLTFRUIT	SFT
State Trait Anxiety Total Score (STAI)	STAIAD1 - STAIAD40 Add values for the following questions: 3, 4, 6, 7, 9, 12, 13, 14, 17, 18, 22, 24, 25, 28, 29, 31, 32, 35, 37, 38, 40 Use reverse scoring for the remaining questions and add to the first score (eg, if value = 1, add 4 points to score; if value = 2, add 3 points to score, etc).	STAI
STAI - State Subscore	STAIAD1 - STAIAD20 Add values for the following questions: 3, 4, 6, 7, 9, 12, 13, 14, 17, 18 Use reverse scoring for the values of the remaining questions through question 20 and add to the first value.	STAI
STAI - Trait Subscore	STAIAD21 - STAIAD40 Add values for the following questions: 22, 24, 25, 28, 29, 31, 32, 35, 37, 38, 40 Use reverse scoring for the values of the remaining questions and add to the first value.	STAI
UPSIT Raw Score	Sum of UPSITBK1 - UPSITBK4	UPSIT

Cognitive

MCI (Mild Cognitive Impairment)	1) Cognitive decline marked as 'yes' (COGDECLN = '1'). 2) Cognitive Impairment - any 2 or more tests are > 1 standard deviation below the standardized mean: HVLT Recognition Discrimination, Benton Judgment of Line Orientation, LNS, SFT, or SDM. 3) Functional impairment marked as 'no' (FNCDTCOG = '0').	COGCATG Standardized means to be provided in the future. COGCATG

DaTSCAN

Contralateral	For Healthy Controls use the higher of the left and right striatum values. For PD and SWEDD subjects: Use Left side if DOMSIDE = 2 Use Right side if DOMSIDE = 1 Use the higher of the left and right striatum values if DOMSIDE = 3	SBR, PDFEAT
Ipsilateral	For Healthy Controls use the lower of the left and right striatum values. For PD and SWEDD subjects: Use Right side if DOMSIDE = 2 Use Left side if DOMSIDE = 1 Use the lower of the left and right striatum values if DOMSIDE = 3	SBR, PDFEAT
Mean Caudate	(CAUDATE_R + CAUDATE_L) / 2	SBR
Mean Putamen	(PUTAMEN_R + PUTAMEN_L) / 2	SBR
Mean Striatum	(CAUDATE_R + CAUDATE_L + PUTAMEN_R + PUTAMEN_L) / 4	SBR
Count Density Ratio	Caudate / Putamen	SBR, PDFEAT
Asymmetry Index	$\left\lvert \frac{left-right}{mean(left+right)} \times 100 \right\rvert$	SBR, PDFEAT

CSF

Abeta 1-42	TESTNAME, TESTVALUE Create a subset of observations that have TESTNAME = "Abeta 42". The value of Abeta 42 is the variable TESTVALUE.	BIOSPECAN
t-tau	TESTNAME, TESTVALUE Create a subset of observations that have TESTNAME = "Total tau". The value of Total Tau is the variable TESTVALUE.	BIOSPECAN
p-tau	TESTNAME, TESTVALUE Create a subset of observations that have TESTNAME = "p-Tau 181P". The value of p-Tau 181P is the variable TESTVALUE.	BIOSPECAN
Alpha-synuclein	TESTNAME, TESTVALUE Create a subset of observations that have TESTNAME = "CSF Alpha-synuclein". The value of CSF Alpha-synuclein is the variable TESTVALUE.	BIOSPECAN
t-tau/Abeta 1-42	"Total Tau" / "Abeta 42"	BIOSPECAN
p-tau/Abeta 1-42	"p-Tau 181P" / "Abeta 42"	BIOSPECAN
p-tau/t-tau	"p-Tau 191P" / "Total tau"	BIOSPECAN

Biospecimen

Urate	LTSTNAME, LSIRES, LSIUNIT Create a subset of observations that have LTSTNAME = "Serum Uric Acid". The value of Urate is the variable LSIRES, and the units are the variable LSIUNIT.	COVANCE

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About the Authors

This document was prepared by Christopher S. Coffey, Chelsea J. Caspell, and Eric D. Foster, University of Iowa, Department of Biostatistics Clinical Trials Statistical and Data Management Center. For more information please contact Eric D. Foster at (319)384-4188 or by e-mail at eric-foster@uiowa.edu.