

# Neurocognitive and Functional Heterogeneity in Depressed Youth Sensitivity Analysis - No meds

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This is the master document containing the final analyses for the project: Neurocognitive and Functional Heterogeneity in Depressed Youth Specifically, this is a SENSITIVITY ANALYSIS, looking at youth who were not on medication

Steps:

## 1) Cognitive analysis

- Results from HYDRA revealed highest ARI (0.39) for 3 subtype solution
- CNB Factor Summary Scores (Accuracy, Speed, Efficiency) were evaluated
- Results:
- Subtype 1: Cognition Preserved
- Subtype 2: Cognition Impaired
- Subtype 3: Impulsive

## 2) Clinical bifactor analysis

- Bifactor scores were calculated (excluding measures that were used to classify depression in initial sample construction)
- Subtypes were evaluated on 5 bifactor scores (anxious-misery, psychosis, externalizing, fear, and overall psychopathology)
- Results:
- Between group differences were significant across subtypes ( $P(\text{FDR}) < 0.001$  for Anxious-misery, externalizing, fear, and overall)
- Pairwise (Tukey):
  - All subtypes had higher psychopathology than TDs ( $P < 0.005$ )
  - Subtypes 1 and 3 were indistinguishable on clinical factor scores ( $P = \text{NS}$ )
  - Subtype 2 had higher fear scores than Subtypes 1 (0.45) and 3 (0.003)

## 3) Anxious-misery analysis

- Anxious-misery factor scores were calculated separately from the State-Trait Anxiety Inventory (STAI)
- Subtypes were evaluated on state and trait factors to verify cognitive differences were not due to current or lifetime anxious-misery
- Results:
- All subtypes had significantly higher state ( $P(\text{FDR}) = 0.001$ ) and trait ( $P(\text{FDR}) < 0.001$ ) anxiety
  - State Pairwise:
  - Subtype 1 vs TD ( $P = 0.031$ )
  - Subtype 2 vs TD ( $P = 0.029$ )
  - Subtype 3 vs TD ( $P = 0.058$ , NS)
  - Trait Pairwise: All Subtypes vs TD ( $P < 0.001$ )
- Subtypes 1-3 did NOT differ on EITHER state or trait anxiety ( $P = \text{NS}$ )

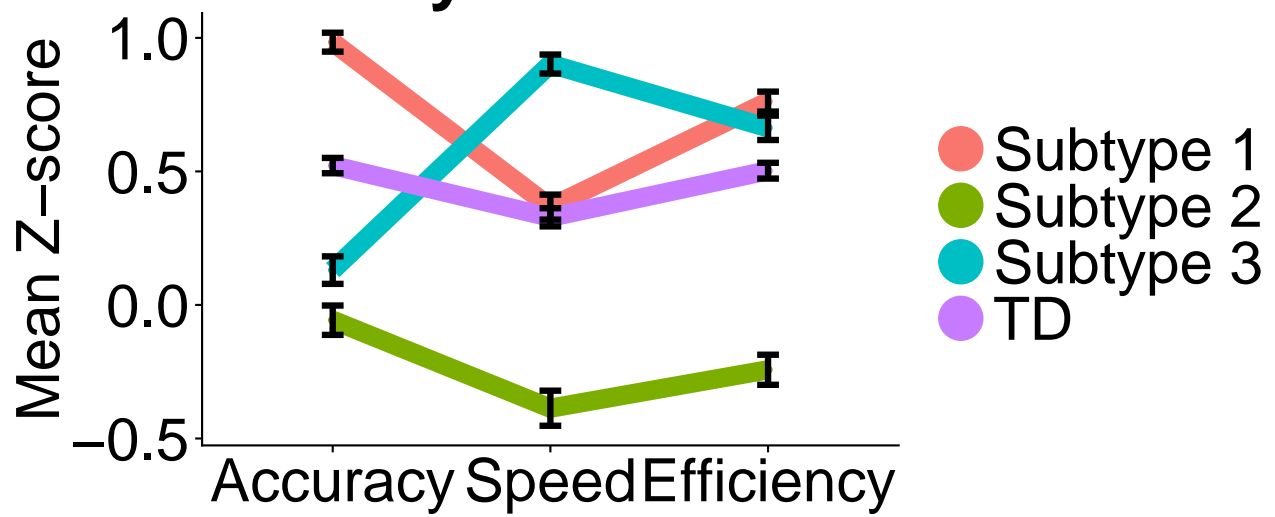
## 4) Nback

- Using 21 functionally defined regions of interest from Satterthwaite et al, 2013, percent signal change between 2bk and 0bk was evaluated by subtype
- Results:
- 8 areas showed significant differences ( $P(\text{FDR}) < 0.05$ ) by subtype including

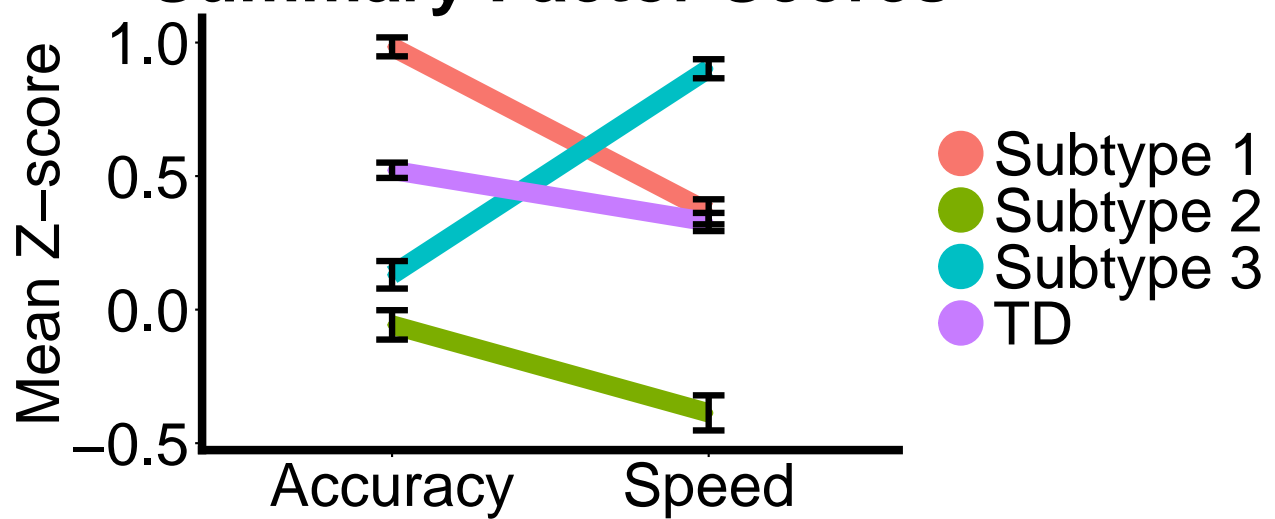
- right crus I
  - right crus II \*only significant in no meds group
  - right precuneus
  - left precuneus
  - dorsal anterior cingulate
  - left dorsal frontal/mfg
  - left dorsolateral prefrontal cortex
  - 1 parietal \*only significant in no meds group
  - Effect size analysis also present
- 5) Nback age-by-sex
- For each of the 8 regions that showed between group differences that survived FDR correction ( $P(\text{FDR}) < 0.05$ ), age by sex interactions were evaluated
  - Results: -For all areas, age by sex interactions were found to be non-significant ( $P(\text{FDR}) > 0.05$ )
- 6) Nback Age-by-group
- For each of the 8 regions that showed between group differences that survived FDR correction ( $P(\text{FDR}) < 0.05$ ), age by group interactions were evaluated
  - Results: -For all areas, age by sex interactions were found to be non-significant ( $P(\text{FDR}) > 0.05$ )
- 7) Nback movement
- For each of the 8 regions that showed between group differences that survived FDR correction ( $P(\text{FDR}) < 0.05$ ), movement by group was evaluated
  - Results: -For all areas, age by sex interactions were found to be non-significant ( $P(\text{FDR}) > 0.05$ )
- 6) Nback performance (DPrime)
- Nback performance results during the task were calculated by subtype
  - Findings mimicked cognitive and n-back findings: Subtype 1 > TD > Subtype 3 > Subtype 2

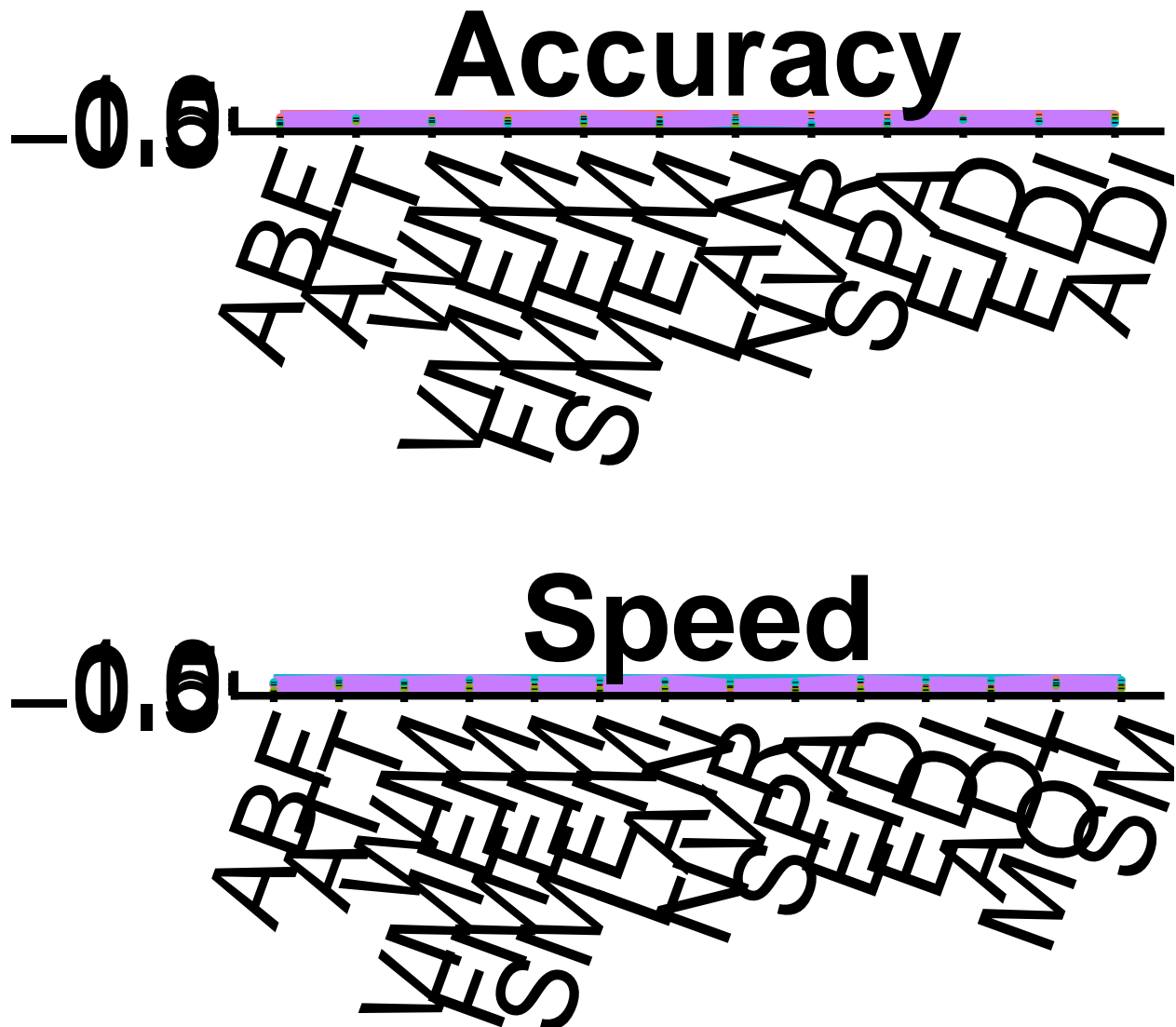
Stratified by Depression			
	level	Depressed	Non-depressed
##	n	495	621
##	Race (%)	Caucasian 237 ( 47.9)	384 ( 61.8)
##		Non-caucasian 258 ( 52.1)	237 ( 38.2)
##	Sex (%)	Female 342 ( 69.1)	419 ( 67.5)
##		Male 153 ( 30.9)	202 ( 32.5)
##	Maternal Ed (mean (sd))	13.84 (2.20)	14.93 (2.54)
##	Age (mean (sd))	16.21 (2.79)	16.06 (2.89)
##	Depression (%)	Depressed 495 (100.0)	0 ( 0.0)
##		Non-depressed 0 ( 0.0)	621 (100.0)
Stratified by Depression			
	p	test	
##	n		
##	Race (%)	<0.001	
##			
##	Sex (%)	0.608	
##			
##	Maternal Ed (mean (sd))	<0.001	
##	Age (mean (sd))	0.377	
##	Depression (%)	<0.001	
##			

## Summary Factor Scores



## Summary Factor Scores





```
## [1] "Linear model- Mean centered age that was then squared"
##      cnb_measure p_FDR_corr
## 1      abf_z      0
## 2      att_z      0.001
## 3      wm_z      0
## 4      vmem_z     0
## 5      fmem_z     0
## 6      smem_z     0
## 7      lan_z      0
## 8      nvr_z      0
## 9      spa_z      0
## 10     edi_z      0
## 11     adi_z      0
## 12     abf_s_z     0
## 13     att_s_z     0
```

```

## 14      wm_s_z      0
## 15     vmem_s_z      0
## 16     fmem_s_z      0
## 17     smem_s_z      0
## 18     lan_s_z      0
## 19     nvr_s_z      0
## 20     spa_s_z      0
## 21     eid_s_z      0
## 22     edi_s_z      0
## 23     adi_s_z      0
## 24     mot_s_z      0
## 25     sm_s_z      0

## [1] "LM pairwise contrasts with FDR corrected values, CNB scores"

##      -1 - 1 -1 - 2 -1 - 3 1 - 2 1 - 3 2 - 3 p_FDR_corr
## abf_z    0.007  0.000  0.003  0.000  0.000  0.306      0
## att_z    0.836  0.004  0.801  0.005  1.000  0.005    0.001
## wm_z     0.913  0.000  0.001  0.000  0.003  0.289      0
## vmem_z    0.001  0.995  0.001  0.005  0.000  0.012      0
## fmem_z    0.045  0.000  0.958  0.000  0.075  0.000      0
## smem_z    0.000  0.000  0.546  0.000  0.000  0.064      0
## lan_z     0.001  0.000  0.002  0.000  0.000  0.000      0
## nvr_z     0.000  0.000  0.000  0.000  0.000  0.469      0
## spa_z     0.000  0.000  0.000  0.000  0.000  0.412      0
## edi_z     0.000  0.000  0.002  0.000  0.000  0.992      0
## adi_z     0.000  0.205  0.000  0.001  0.000  0.000      0
## abf_s_z   1.000  0.000  0.017  0.000  0.077  0.000      0
## att_s_z   0.709  0.001  0.001  0.001  0.081  0.000      0
## wm_s_z    0.535  0.000  0.046  0.000  0.694  0.000      0
## vmem_s_z  0.790  0.000  0.000  0.000  0.027  0.000      0
## fmem_s_z  0.863  0.000  0.000  0.000  0.000  0.000      0
## smem_s_z  0.852  0.000  0.000  0.000  0.000  0.000      0
## lan_s_z   0.556  0.000  0.029  0.000  0.589  0.000      0
## nvr_s_z   0.000  0.336  0.000  0.000  0.000  0.000      0
## spa_s_z   0.808  0.000  0.000  0.014  0.000  0.000      0
## eid_s_z   0.390  0.000  0.000  0.000  0.007  0.000      0
## edi_s_z   0.287  0.000  0.000  0.001  0.000  0.000      0
## adi_s_z   0.254  0.000  0.000  0.003  0.000  0.000      0
## mot_s_z   0.000  0.011  1.000  0.000  0.013  0.081      0
## sm_s_z    0.584  0.000  0.000  0.002  0.000  0.000      0

## contrast      estimate      SE    df t.ratio p.value
## -1 - 1      -0.2459095 0.07641581 1112  -3.218  0.0073
## -1 - 2       0.4547935 0.07473077 1112   6.086 <.0001
## -1 - 3       0.2839463 0.08142351 1112   3.487  0.0028
## 1 - 2        0.7007030 0.09441447 1112   7.422 <.0001
## 1 - 3        0.5298559 0.09979576 1112   5.309 <.0001
## 2 - 3       -0.1708472 0.09851144 1112  -1.734  0.3063
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate      SE    df t.ratio p.value
## -1 - 1      -0.053979833 0.06443189 1112  -0.838  0.8364
## -1 - 2       0.212159882 0.06301111 1112   3.367  0.0044
## -1 - 3       -0.062343892 0.06865426 1112  -0.908  0.8005

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## 1 - 2      0.266139714 0.07960791 1112      3.343 0.0047
## 1 - 3     -0.008364059 0.08414527 1112     -0.099 0.9996
## 2 - 3     -0.274503774 0.08306238 1112     -3.305 0.0054
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.03937646 0.05978781 1112     -0.659 0.9125
## -1 - 2      0.36986674 0.05846944 1112      6.326 <.0001
## -1 - 3      0.23353265 0.06370584 1112      3.666 0.0015
## 1 - 2       0.40924320 0.07386998 1112      5.540 <.0001
## 1 - 3       0.27290911 0.07808031 1112      3.495 0.0028
## 2 - 3      -0.13633409 0.07707546 1112     -1.769 0.2890
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.27432306 0.07090371 1112     -3.869 0.0007
## -1 - 2      0.01719004 0.06934022 1112      0.248 0.9946
## -1 - 3      0.29752731 0.07555019 1112      3.938 0.0005
## 1 - 2       0.29151310 0.08760407 1112      3.328 0.0050
## 1 - 3       0.57185036 0.09259719 1112      6.176 <.0001
## 2 - 3       0.28033726 0.09140552 1112      3.067 0.0119
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.20788161 0.07948994 1112     -2.615 0.0447
## -1 - 2      0.45182994 0.07773711 1112      5.812 <.0001
## -1 - 3      0.04264789 0.08469909 1112      0.504 0.9582
## 1 - 2       0.65971155 0.09821266 1112      6.717 <.0001
## 1 - 3       0.25052950 0.10381043 1112      2.413 0.0751
## 2 - 3      -0.40918205 0.10247445 1112     -3.993 0.0004
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.3583332 0.08206581 1112     -4.366 0.0001
## -1 - 2      0.3780813 0.08025618 1112      4.711 <.0001
## -1 - 3      0.1159578 0.08744377 1112      1.326 0.5464
## 1 - 2       0.7364145 0.10139525 1112      7.263 <.0001
## 1 - 3       0.4742910 0.10717441 1112      4.425 0.0001
## 2 - 3      -0.2621235 0.10579514 1112     -2.478 0.0640
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.2387563 0.06485369 1112     -3.681 0.0014
## -1 - 2      0.6341043 0.06342361 1112      9.998 <.0001
## -1 - 3      0.2517993 0.06910370 1112      3.644 0.0016
## 1 - 2       0.8728606 0.08012906 1112     10.893 <.0001
## 1 - 3       0.4905556 0.08469613 1112      5.792 <.0001
## 2 - 3      -0.3823050 0.08360614 1112     -4.573 <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.6233194 0.07516336 1112     -8.293 <.0001
## -1 - 2      0.7051798 0.07350593 1112      9.594 <.0001
## -1 - 3      0.5648351 0.08008898 1112      7.053 <.0001

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## 1 - 2      1.3284993 0.09286702 1112 14.305 <.0001
## 1 - 3      1.1881545 0.09816010 1112 12.104 <.0001
## 2 - 3     -0.1403448 0.09689684 1112 -1.448 0.4694
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.4008489 0.07542380 1112 -5.315 <.0001
## -1 - 2      0.5317248 0.07376063 1112  7.209 <.0001
## -1 - 3      0.3817280 0.08036649 1112  4.750 <.0001
## 1 - 2       0.9325737 0.09318880 1112 10.007 <.0001
## 1 - 3       0.7825769 0.09850023 1112  7.945 <.0001
## 2 - 3     -0.1499968 0.09723259 1112 -1.543 0.4123
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.40611640 0.06680513 1112 -6.079 <.0001
## -1 - 2      0.27671982 0.06533202 1112  4.236 0.0001
## -1 - 3      0.25178388 0.07118303 1112  3.537 0.0024
## 1 - 2       0.68283622 0.08254013 1112  8.273 <.0001
## 1 - 3       0.65790027 0.08724462 1112  7.541 <.0001
## 2 - 3     -0.02493594 0.08612184 1112 -0.290 0.9915
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.4589282 0.06905558 1112 -6.646 <.0001
## -1 - 2     -0.1321655 0.06753284 1112 -1.957 0.2051
## -1 - 3      0.3543325 0.07358095 1112  4.816 <.0001
## 1 - 2       0.3267628 0.08532064 1112  3.830 0.0008
## 1 - 3       0.8132608 0.09018361 1112  9.018 <.0001
## 2 - 3       0.4864980 0.08902300 1112  5.465 <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1      2.576308e-05 0.07512547 1112  0.000 1.0000
## -1 - 2      6.287280e-01 0.07346888 1112  8.558 <.0001
## -1 - 3     -2.359332e-01 0.08004861 1112 -2.947 0.0172
## 1 - 2      6.287023e-01 0.09282021 1112  6.773 <.0001
## 1 - 3     -2.359589e-01 0.09811063 1112 -2.405 0.0767
## 2 - 3     -8.646612e-01 0.09684800 1112 -8.928 <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.06725787 0.06295665 1112 -1.068 0.7089
## -1 - 2      0.23919626 0.06156840 1112  3.885 0.0006
## -1 - 3     -0.26336415 0.06708234 1112 -3.926 0.0005
## 1 - 2       0.30645414 0.07778520 1112  3.940 0.0005
## 1 - 3     -0.19610627 0.08221867 1112 -2.385 0.0805
## 2 - 3     -0.50256041 0.08116057 1112 -6.192 <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.09427976 0.07016088 1112 -1.344 0.5352
## -1 - 2      0.34322365 0.06861376 1112  5.002 <.0001
## -1 - 3     -0.19443262 0.07475868 1112 -2.601 0.0464

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## 1 - 2      0.43750342 0.08668628 1112    5.047 <.0001
## 1 - 3     -0.10015286 0.09162708 1112   -1.093 0.6939
## 2 - 3     -0.53765628 0.09044789 1112   -5.944 <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.06106209 0.06580006 1112   -0.928 0.7898
## -1 - 2      0.53146920 0.06434911 1112    8.259 <.0001
## -1 - 3     -0.30096408 0.07011209 1112   -4.293 0.0001
## 1 - 2      0.59253129 0.08129833 1112    7.288 <.0001
## 1 - 3     -0.23990199 0.08593204 1112   -2.792 0.0273
## 2 - 3     -0.83243328 0.08482615 1112   -9.813 <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.05846168 0.07474111 1112   -0.782 0.8626
## -1 - 2      0.42708743 0.07309300 1112    5.843 <.0001
## -1 - 3     -0.52269256 0.07963906 1112   -6.563 <.0001
## 1 - 2      0.48554911 0.09234532 1112    5.258 <.0001
## 1 - 3     -0.46423088 0.09760867 1112   -4.756 <.0001
## 2 - 3     -0.94978000 0.09635250 1112   -9.857 <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.06413035 0.07970125 1112   -0.805 0.8523
## -1 - 2      0.52912593 0.07794376 1112    6.789 <.0001
## -1 - 3     -0.48799004 0.08492425 1112   -5.746 <.0001
## 1 - 2      0.59325628 0.09847374 1112    6.025 <.0001
## 1 - 3     -0.42385970 0.10408639 1112   -4.072 0.0003
## 2 - 3     -1.01711597 0.10274686 1112   -9.899 <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.08325318 0.06352016 1112   -1.311 0.5563
## -1 - 2      0.57382312 0.06211948 1112    9.237 <.0001
## -1 - 3     -0.18769747 0.06768277 1112   -2.773 0.0288
## 1 - 2      0.65707631 0.07848143 1112    8.372 <.0001
## 1 - 3     -0.10444429 0.08295458 1112   -1.259 0.5893
## 2 - 3     -0.76152059 0.08188701 1112   -9.300 <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1      0.4679940 0.08949368 1112    5.229 <.0001
## -1 - 2     -0.1467664 0.08752026 1112   -1.677 0.3364
## -1 - 3     -0.6067687 0.09535840 1112   -6.363 <.0001
## 1 - 2     -0.6147604 0.11057264 1112   -5.560 <.0001
## 1 - 3     -1.0747626 0.11687488 1112   -9.196 <.0001
## 2 - 3     -0.4600023 0.11537077 1112   -3.987 0.0004
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1      0.07280803 0.08139538 1112    0.894 0.8077
## -1 - 2      0.37524932 0.07960054 1112    4.714 <.0001
## -1 - 3     -0.40736894 0.08672941 1112   -4.697 <.0001

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## 1 - 2      0.30244128 0.10056691 1112      3.007  0.0143
## 1 - 3     -0.48017697 0.10629886 1112     -4.517  <.0001
## 2 - 3     -0.78261826 0.10493086 1112     -7.458  <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.1086178 0.06868402 1112     -1.581  0.3897
## -1 - 2      0.5950335 0.06716948 1112      8.859  <.0001
## -1 - 3     -0.3984318 0.07318504 1112     -5.444  <.0001
## 1 - 2       0.7036513 0.08486157 1112      8.292  <.0001
## 1 - 3     -0.2898141 0.08969837 1112     -3.231  0.0069
## 2 - 3     -0.9934654 0.08854401 1112    -11.220  <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1      0.1324791 0.07474805 1112      1.772  0.2873
## -1 - 2      0.4845007 0.07309978 1112      6.628  <.0001
## -1 - 3     -0.5435654 0.07964646 1112     -6.825  <.0001
## 1 - 2       0.3520216 0.09235389 1112      3.812  0.0008
## 1 - 3     -0.6760445 0.09761773 1112     -6.925  <.0001
## 2 - 3     -1.0280662 0.09636144 1112    -10.669  <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1      0.1550681 0.08413577 1112      1.843  0.2537
## -1 - 2      0.5184594 0.08228050 1112      6.301  <.0001
## -1 - 3     -0.4965525 0.08964938 1112     -5.539  <.0001
## 1 - 2       0.3633913 0.10395276 1112      3.496  0.0028
## 1 - 3     -0.6516206 0.10987769 1112     -5.930  <.0001
## 2 - 3     -1.0150119 0.10846363 1112     -9.358  <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1     -0.303413703 0.07579848 1112     -4.003  0.0004
## -1 - 2      0.229232178 0.07412705 1112      3.092  0.0109
## -1 - 3     -0.003404112 0.08076572 1112     -0.042  1.0000
## 1 - 2       0.532645880 0.09365173 1112      5.688  <.0001
## 1 - 3      0.300009590 0.09898954 1112      3.031  0.0133
## 2 - 3     -0.232636290 0.09771560 1112     -2.381  0.0814
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast      estimate          SE    df t.ratio p.value
## -1 - 1      0.08955268 0.07068291 1112      1.267  0.5842
## -1 - 2      0.40479888 0.06912429 1112      5.856  <.0001
## -1 - 3     -0.40403944 0.07531492 1112     -5.365  <.0001
## 1 - 2       0.31524621 0.08733127 1112      3.610  0.0018
## 1 - 3     -0.49359212 0.09230883 1112     -5.347  <.0001
## 2 - 3     -0.80883832 0.09112087 1112     -8.877  <.0001
##
## P value adjustment: tukey method for comparing a family of 4 estimates
##
##          abf_z      att_z      wm_z      vmem_z      fmem_z      smem_z
## contrast factor,6 factor,6 factor,6 factor,6 factor,6 factor,6
## estimate Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6

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## SE      Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## df      Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## t.ratio Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## p.value Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
##      lan_z      nvr_z      spa_z      edi_z      adi_z      abf_s_z
## contrast factor,6 factor,6 factor,6 factor,6 factor,6 factor,6
## estimate Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## SE      Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## df      Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## t.ratio Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## p.value Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
##      att_s_z      wm_s_z      vmem_s_z      fmem_s_z      smem_s_z      lan_s_z
## contrast factor,6 factor,6 factor,6 factor,6 factor,6 factor,6
## estimate Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## SE      Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## df      Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## t.ratio Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## p.value Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
##      nvr_s_z      spa_s_z      eid_s_z      edi_s_z      adi_s_z      mot_s_z
## contrast factor,6 factor,6 factor,6 factor,6 factor,6 factor,6
## estimate Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## SE      Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## df      Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## t.ratio Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
## p.value Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6 Numeric,6
##      sm_s_z
## contrast factor,6
## estimate Numeric,6
## SE      Numeric,6
## df      Numeric,6
## t.ratio Numeric,6
## p.value Numeric,6

## [1] "LM"

##      clinical_measure p_FDR_corr
## 1      AnxiousMisery_Bifactor      0
## 2      Externalizing_Bifactor      0
## 3      Fear_Bifactor      0
## 4 Overall_Psychopathology_Bifactor      0

## [1] "LM pairwise contrasts with FDR corrected values, Bifactor scores"

##      -1 - 1 -1 - 2 -1 - 3 1 - 2 1 - 3 2 - 3
## AnxiousMisery_Bifactor      0.000      0 0.000 0.097 0.895 0.440
## Externalizing_Bifactor      0.000      0 0.000 0.409 0.888 0.120
## Fear_Bifactor      0.003      0 0.179 0.045 0.764 0.003
## Overall_Psychopathology_Bifactor 0.000      0 0.000 0.229 0.954 0.568
##      p_FDR_corr
## AnxiousMisery_Bifactor      0
## Externalizing_Bifactor      0
## Fear_Bifactor      0
## Overall_Psychopathology_Bifactor      0

## contrast      estimate      SE      df t.ratio p.value
## -1 - 1      -0.38210304 0.03896237 1111 -9.807 <.0001

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## -1 - 2 -0.27108441 0.03810351 1111 -7.114 <.0001
## -1 - 3 -0.34623671 0.04151481 1111 -8.340 <.0001
## 1 - 2 0.11101863 0.04813106 1111 2.307 0.0971
## 1 - 3 0.03586633 0.05087436 1111 0.705 0.8951
## 2 - 3 -0.07515230 0.05021964 1111 -1.496 0.4399
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate SE df t.ratio p.value
## -1 - 1 -0.5751677 0.1099854 1111 -5.229 <.0001
## -1 - 2 -0.7855011 0.1075609 1111 -7.303 <.0001
## -1 - 3 -0.4713712 0.1171906 1111 -4.022 0.0004
## 1 - 2 -0.2103333 0.1358673 1111 -1.548 0.4091
## 1 - 3 0.1037966 0.1436113 1111 0.723 0.8880
## 2 - 3 0.3141299 0.1417631 1111 2.216 0.1195
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate SE df t.ratio p.value
## -1 - 1 -0.20482970 0.05967686 1111 -3.432 0.0035
## -1 - 2 -0.39740323 0.05836139 1111 -6.809 <.0001
## -1 - 3 -0.12885667 0.06358631 1111 -2.026 0.1788
## 1 - 2 -0.19257353 0.07372012 1111 -2.612 0.0450
## 1 - 3 0.07597302 0.07792190 1111 0.975 0.7637
## 2 - 3 0.26854655 0.07691909 1111 3.491 0.0028
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate SE df t.ratio p.value
## -1 - 1 -0.88556224 0.04835395 1111 -18.314 <.0001
## -1 - 2 -0.99903871 0.04728807 1111 -21.127 <.0001
## -1 - 3 -0.91848699 0.05152163 1111 -17.827 <.0001
## 1 - 2 -0.11347647 0.05973269 1111 -1.900 0.2287
## 1 - 3 -0.03292475 0.06313723 1111 -0.521 0.9539
## 2 - 3 0.08055172 0.06232469 1111 1.292 0.5679
##
## P value adjustment: tukey method for comparing a family of 4 estimates
##
## AnxiousMisery_Bifactor Externalizing_Bifactor Fear_Bifactor
## contrast factor,6 factor,6 factor,6
## estimate Numeric,6 Numeric,6 Numeric,6
## SE Numeric,6 Numeric,6 Numeric,6
## df Numeric,6 Numeric,6 Numeric,6
## t.ratio Numeric,6 Numeric,6 Numeric,6
## p.value Numeric,6 Numeric,6 Numeric,6
## Overall_Psychopathology_Bifactor
## contrast factor,6
## estimate Numeric,6
## SE Numeric,6
## df Numeric,6
## t.ratio Numeric,6
## p.value Numeric,6

##
## Stratified by Cluster
## level -1 1
## n 189 44
## Race (%) Caucasian 103 ( 54.5) 25 ( 56.8)
## Non-caucasian 86 ( 45.5) 19 ( 43.2)

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## Sex (%) Female 109 ( 57.7) 29 ( 65.9)
## Male 80 ( 42.3) 15 ( 34.1)
## Maternal Ed (mean (sd)) 14.71 (2.68) 14.43 (2.37)
## Age (mean (sd)) 16.47 (2.75) 16.63 (2.23)
## Depression (%) Depressed 0 ( 0.0) 44 (100.0)
## Non-depressed 189 (100.0) 0 ( 0.0)
## Cluster (%) -1 189 (100.0) 0 ( 0.0)
## 1 0 ( 0.0) 44 (100.0)
## 2 0 ( 0.0) 0 ( 0.0)
## 3 0 ( 0.0) 0 ( 0.0)
## Stratified by Cluster
## 2 3 p test
## n 47 36
## Race (%) 8 ( 17.0) 14 ( 38.9) <0.001
## 39 ( 83.0) 22 ( 61.1)
## Sex (%) 29 ( 61.7) 27 ( 75.0) 0.231
## 18 ( 38.3) 9 ( 25.0)
## Maternal Ed (mean (sd)) 13.15 (2.12) 13.47 (2.04) <0.001
## Age (mean (sd)) 17.24 (2.22) 17.03 (1.51) 0.224
## Depression (%) 47 (100.0) 36 (100.0) <0.001
## 0 ( 0.0) 0 ( 0.0)
## Cluster (%) 0 ( 0.0) 0 ( 0.0) <0.001
## 0 ( 0.0) 0 ( 0.0)
## 47 (100.0) 0 ( 0.0)
## 0 ( 0.0) 36 (100.0)

## [1] "LM Clinical"

## clinical_measure p_FDR_corr
## 1 staiPreState 0.001
## 2 staiPreTrait 0

## [1] "Pairwise contrasts with FDR corrected values, STAI"

## -1 - 1 -1 - 2 -1 - 3 1 - 2 1 - 3 2 - 3 p_FDR_corr
## staiPreState 0.031 0.029 0.058 1.000 1.000 1 0.001
## staiPreTrait 0.000 0.000 0.000 0.989 0.992 1 0

## contrast estimate SE df t.ratio p.value
## -1 - 1 -3.47510823 1.259978 312 -2.758 0.0312
## -1 - 2 -3.42046606 1.226926 312 -2.788 0.0287
## -1 - 3 -3.45238095 1.368836 312 -2.522 0.0585
## 1 - 2 0.05464217 1.579021 312 0.035 1.0000
## 1 - 3 0.02272727 1.691647 312 0.013 1.0000
## 2 - 3 -0.03191489 1.667175 312 -0.019 1.0000
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate SE df t.ratio p.value
## -1 - 1 -6.59126984 1.525151 312 -4.322 0.0001
## -1 - 2 -7.20297197 1.485143 312 -4.850 <.0001
## -1 - 3 -7.17460317 1.656919 312 -4.330 0.0001
## 1 - 2 -0.61170213 1.911339 312 -0.320 0.9886
## 1 - 3 -0.58333333 2.047668 312 -0.285 0.9919
## 2 - 3 0.02836879 2.018046 312 0.014 1.0000
##
## P value adjustment: tukey method for comparing a family of 4 estimates

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##          staiPreState staiPreTrait
## contrast factor,6      factor,6
## estimate Numeric,6     Numeric,6
## SE         Numeric,6    Numeric,6
## df         Numeric,6    Numeric,6
## t.ratio    Numeric,6    Numeric,6
## p.value    Numeric,6    Numeric,6

##          Stratified by Cluster
##          level          -1          1
## n          174          47
## Race (%)    Caucasian    102 ( 58.6)    27 ( 57.4)
##            Non-caucasian 72 ( 41.4)    20 ( 42.6)
## Sex (%)     Female      100 ( 57.5)    31 ( 66.0)
##            Male        74 ( 42.5)    16 ( 34.0)
## Maternal Ed (mean (sd)) 14.86 (2.64)    14.49 (2.39)
## Age (mean (sd))        16.44 (2.74)    16.79 (2.22)
## Depression (%) Depressed 0 ( 0.0)      47 (100.0)
##            Non-depressed 174 (100.0)    0 ( 0.0)
## Cluster (%)  -1        174 (100.0)    0 ( 0.0)
##            1          0 ( 0.0)      47 (100.0)
##            2          0 ( 0.0)      0 ( 0.0)
##            3          0 ( 0.0)      0 ( 0.0)

##          Stratified by Cluster
##          2          3          p          test
## n          46          36
## Race (%)    8 ( 17.4)    13 ( 36.1)    <0.001
##            38 ( 82.6)    23 ( 63.9)
## Sex (%)     29 ( 63.0)    27 ( 75.0)    0.221
##            17 ( 37.0)    9 ( 25.0)
## Maternal Ed (mean (sd)) 13.20 (2.01)    13.58 (2.06)    <0.001
## Age (mean (sd))        17.08 (2.15)    17.05 (1.48)    0.287
## Depression (%) 46 (100.0)    36 (100.0)    <0.001
##            0 ( 0.0)      0 ( 0.0)
## Cluster (%)  0 ( 0.0)      0 ( 0.0)    <0.001
##            0 ( 0.0)      0 ( 0.0)
##            46 (100.0)    0 ( 0.0)
##            0 ( 0.0)      36 (100.0)

## [1] "LM N-back uncorrected"

##          p_anova
## nback_func_sc_crusI_r    0.012699870
## nback_func_sc_crusI_l    0.365640063
## nback_func_sc_crusII_r   0.011196501
## nback_func_sc_crusII_l   0.065561916
## nback_func_sc_insula_r    0.127560511
## nback_func_sc_insula_l    0.038513830
## nback_func_sc_dlpfc_ant_l 0.008787756
## nback_func_sc_dlpfc_ant_r 0.070270808
## nback_func_sc_dlpfc_post_l 0.146902811
## nback_func_sc_dlpfc_post_r 0.231716852
## nback_func_sc_dacc        0.018876527
## nback_func_sc_mfg_l       0.013131823
## nback_func_sc_mfg_r       0.032757361

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## nback_func_sc_fp_r      0.059276151
## nback_func_sc_fp_l      0.207521421
## nback_func_sc_thal_r     0.358523289
## nback_func_sc_thal_l     0.511013335
## nback_func_sc_parietal_l 0.006838680
## nback_func_sc_precun_l   0.007464294
## nback_func_sc_precun_r   0.016221134
## nback_func_sc_parietal_r 0.093342867

## [1] "FDR corrected"

##           parcellation p_FDR_corr
## 1      nback_func_sc_crusI_r      0.046
## 2      nback_func_sc_crusII_r     0.046
## 3 nback_func_sc_dlpfc_ant_l      0.046
## 4      nback_func_sc_dacc      0.0496
## 5      nback_func_sc_mfg_l      0.046
## 6 nback_func_sc_parietal_l      0.046
## 7      nback_func_sc_precun_l     0.046
## 8      nback_func_sc_precun_r    0.0487

## [1] "LM pairwise contrasts and FDR corrected values"

##           -1 - 1 -1 - 2 -1 - 3 1 - 2 1 - 3 2 - 3
## nback_func_sc_crusI_r      0.893  0.053  0.222  0.047  0.152  0.988
## nback_func_sc_crusII_r     0.982  0.204  0.030  0.246  0.052  0.845
## nback_func_sc_dlpfc_ant_l  0.945  0.093  0.061  0.101  0.065  0.988
## nback_func_sc_dacc        1.000  0.069  0.117  0.178  0.225  1.000
## nback_func_sc_mfg_l       0.751  0.369  0.053  0.161  0.024  0.806
## nback_func_sc_parietal_l  0.882  0.164  0.035  0.115  0.029  0.902
## nback_func_sc_precun_l    0.998  0.012  0.178  0.095  0.407  0.925
## nback_func_sc_precun_r    1.000  0.068  0.085  0.216  0.219  0.999

##           p_FDR_corr
## nback_func_sc_crusI_r      0.046
## nback_func_sc_crusII_r     0.046
## nback_func_sc_dlpfc_ant_l  0.046
## nback_func_sc_dacc      0.0496
## nback_func_sc_mfg_l      0.046
## nback_func_sc_parietal_l  0.046
## nback_func_sc_precun_l    0.046
## nback_func_sc_precun_r    0.0487

## contrast estimate      SE df t.ratio p.value
## -1 - 1      -2.110381 2.968794 298 -0.711  0.8928
## -1 - 2       7.659245 2.989694 298  2.562  0.0529
## -1 - 3       6.335443 3.300695 298  1.919  0.2221
## 1 - 2       9.769626 3.748182 298  2.606  0.0471
## 1 - 3       8.445824 3.998606 298  2.112  0.1516
## 2 - 3      -1.323801 4.011352 298 -0.330  0.9876
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate      SE df t.ratio p.value
## -1 - 1      -1.475865 3.935527 298 -0.375  0.9820
## -1 - 2       7.783852 3.963233 298  1.964  0.2041
## -1 - 3      12.146138 4.375506 298  2.776  0.0297
## 1 - 2       9.259717 4.968709 298  1.864  0.2461

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## 1 - 3    13.622002 5.300679 298    2.570  0.0518
## 2 - 3     4.362286 5.317575 298     0.820  0.8448
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate      SE df t.ratio p.value
## -1 - 1    -3.909071 7.051919 298   -0.554  0.9453
## -1 - 2    16.556923 7.101565 298    2.331  0.0933
## -1 - 3    19.631673 7.840301 298    2.504  0.0613
## 1 - 2     20.465994 8.903239 298    2.299  0.1006
## 1 - 3     23.540744 9.498083 298    2.478  0.0654
## 2 - 3      3.074750 9.528359 298    0.323  0.9884
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate      SE df t.ratio p.value
## -1 - 1    -0.50353340 5.480019 298   -0.092  0.9997
## -1 - 2    13.56823837 5.518599 298    2.459  0.0687
## -1 - 3    13.60770295 6.092668 298    2.233  0.1166
## 1 - 2     14.07177177 6.918672 298    2.034  0.1779
## 1 - 3     14.11123635 7.380923 298    1.912  0.2252
## 2 - 3      0.03946457 7.404451 298    0.005  1.0000
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate      SE df t.ratio p.value
## -1 - 1    -6.165579 6.177528 298   -0.998  0.7506
## -1 - 2    10.074897 6.221018 298    1.619  0.3692
## -1 - 3    17.574788 6.868155 298    2.559  0.0533
## 1 - 2     16.240476 7.799296 298    2.082  0.1613
## 1 - 3     23.740366 8.320383 298    2.853  0.0238
## 2 - 3      7.499890 8.346905 298    0.899  0.8056
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate      SE df t.ratio p.value
## -1 - 1    -3.399798 4.608400 298   -0.738  0.8818
## -1 - 2      9.620827 4.640843 298    2.073  0.1643
## -1 - 3    13.900925 5.123605 298    2.713  0.0354
## 1 - 2     13.020625 5.818230 298    2.238  0.1155
## 1 - 3     17.300722 6.206958 298    2.787  0.0288
## 2 - 3      4.280098 6.226743 298    0.687  0.9019
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate      SE df t.ratio p.value
## -1 - 1      1.111593 6.582123 298    0.169  0.9983
## -1 - 2    20.425204 6.628461 298    3.081  0.0120
## -1 - 3    14.882890 7.317983 298    2.034  0.1780
## 1 - 2     19.313611 8.310108 298    2.324  0.0949
## 1 - 3     13.771297 8.865323 298    1.553  0.4071
## 2 - 3    -5.542313 8.893583 298   -0.623  0.9246
##
## P value adjustment: tukey method for comparing a family of 4 estimates
## contrast estimate      SE df t.ratio p.value
## -1 - 1      0.2861585 7.404438 298    0.039  1.0000
## -1 - 2    18.3574515 7.456565 298    2.462  0.0681
## -1 - 3    19.5110857 8.232230 298    2.370  0.0851
## 1 - 2     18.0712929 9.348302 298    1.933  0.2164

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## 1 - 3    19.2249272  9.972882 298    1.928  0.2186
## 2 - 3     1.1536342 10.004672 298    0.115  0.9995
##
## P value adjustment: tukey method for comparing a family of 4 estimates

##          nback_func_sc_crusI_r nback_func_sc_crusII_r
## contrast factor,6              factor,6
## estimate Numeric,6              Numeric,6
## SE        Numeric,6              Numeric,6
## df         Numeric,6              Numeric,6
## t.ratio    Numeric,6              Numeric,6
## p.value    Numeric,6              Numeric,6
##          nback_func_sc_dlpfc_ant_l nback_func_sc_dacc nback_func_sc_mfg_l
## contrast factor,6              factor,6              factor,6
## estimate Numeric,6              Numeric,6              Numeric,6
## SE        Numeric,6              Numeric,6              Numeric,6
## df         Numeric,6              Numeric,6              Numeric,6
## t.ratio    Numeric,6              Numeric,6              Numeric,6
## p.value    Numeric,6              Numeric,6              Numeric,6
##          nback_func_sc_parietal_l nback_func_sc_precun_l
## contrast factor,6              factor,6
## estimate Numeric,6              Numeric,6
## SE        Numeric,6              Numeric,6
## df         Numeric,6              Numeric,6
## t.ratio    Numeric,6              Numeric,6
## p.value    Numeric,6              Numeric,6
##          nback_func_sc_precun_r
## contrast factor,6
## estimate Numeric,6
## SE        Numeric,6
## df         Numeric,6
## t.ratio    Numeric,6
## p.value    Numeric,6

## $nback_func_sc_crusI_r
##          -1 - 1    -1 - 2    -1 - 3    1 - 2    1 - 3
## cohen_d_est -0.1386594 0.42139153 0.33674088 0.6628777 0.54503107
## cohen_d_low -0.4629068 0.09224542 -0.02567558 0.2397368 0.09638489
## cohen_d_upp  0.1855881 0.75053765 0.69915734 1.0860186 0.99367725
## cohen_magn   1.0000000 2.00000000 2.00000000 3.0000000 3.00000000
## hedges_est  -0.1381840 0.41994013 0.33552521 0.6573993 0.53996886
## hedges_low  -0.4613180 0.09194402 -0.02557249 0.2379353 0.09563432
## hedges_upp   0.1849500 0.74793624 0.69662291 1.0768634 0.98430340
## hedges_mag   1.0000000 2.00000000 2.00000000 3.0000000 3.00000000
##          2 - 3
## cohen_d_est -0.09688765
## cohen_d_low -0.53998030
## cohen_d_upp  0.34620499
## cohen_magn   1.00000000
## hedges_est  -0.09597648
## hedges_low  -0.53489737
## hedges_upp   0.34294440
## hedges_mag   1.00000000
##
## $nback_func_sc_crusII_r

```



```

##          -1 - 1          -1 - 2          -1 - 3          1 - 2          1 - 3
## cohen_d_est -0.06644644 0.3290671847 0.4937011 0.43485354 0.5826373
## cohen_d_low -0.39049313 0.0008515724 0.1296243 0.01803427 0.1328654
## cohen_d_upp 0.25760025 0.6572827970 0.8577778 0.85167281 1.0324092
## cohen_magn 1.00000000 2.0000000000 2.0000000 2.00000000 3.0000000
## hedges_est -0.06621862 0.3279337730 0.4919187 0.43125971 0.5772258
## hedges_low -0.38915389 0.0008586198 0.1291786 0.01796378 0.1317962
## hedges_upp 0.25671664 0.6550089263 0.8546589 0.84455563 1.0226553
## hedges_mag 1.00000000 2.0000000000 2.0000000 2.00000000 3.0000000
##          2 - 3
## cohen_d_est 0.2098407
## cohen_d_low -0.2341950
## cohen_d_upp 0.6538765
## cohen_magn 2.0000000
## hedges_est 0.2078673
## hedges_low -0.2319704
## hedges_upp 0.6477049
## hedges_mag 2.0000000
##
## $nback_func_sc_dlpfc_ant_1
##          -1 - 1          -1 - 2          -1 - 3          1 - 2          1 - 3
## cohen_d_est -0.1173149 0.38256853 0.45483201 0.5276310 0.6423649
## cohen_d_low -0.4414883 0.05384127 0.09122411 0.1085456 0.1906574
## cohen_d_upp 0.2068585 0.71129580 0.81843990 0.9467165 1.0940724
## cohen_magn 1.0000000 2.00000000 2.00000000 3.0000000 3.0000000
## hedges_est -0.1169127 0.38125085 0.45319001 0.5232705 0.6363987
## hedges_low -0.4399734 0.05366929 0.09091368 0.1077636 0.1890862
## hedges_upp 0.2061480 0.70883240 0.81546634 0.9387773 1.0837112
## hedges_mag 1.0000000 2.00000000 2.00000000 3.0000000 3.0000000
##          2 - 3
## cohen_d_est 0.06672098
## cohen_d_low -0.37623715
## cohen_d_upp 0.50967911
## cohen_magn 1.0000000
## hedges_est 0.06609351
## hedges_low -0.37269662
## hedges_upp 0.50488364
## hedges_mag 1.0000000
##
## $nback_func_sc_dacc
##          -1 - 1          -1 - 2          -1 - 3          1 - 2          1 - 3
## cohen_d_est -0.04674011 0.40743764 0.41515420 0.45105901 0.48800155
## cohen_d_low -0.37075656 0.07844667 0.05198582 0.03387457 0.04092393
## cohen_d_upp 0.27727633 0.73642862 0.77832258 0.86824346 0.93507918
## cohen_magn 1.0000000 2.00000000 2.00000000 2.00000000 2.0000000
## hedges_est -0.04657986 0.40603430 0.41365545 0.44733125 0.48346903
## hedges_low -0.36948519 0.07819174 0.05181391 0.03367907 0.04066019
## hedges_upp 0.27632547 0.73387686 0.77549699 0.86098344 0.92627787
## hedges_mag 1.0000000 2.00000000 2.00000000 2.00000000 2.0000000
##          2 - 3
## cohen_d_est -0.006497091
## cohen_d_low -0.449335015
## cohen_d_upp 0.436340833
## cohen_magn 1.000000000

```

```

## hedges_est -0.006435990
## hedges_low -0.445109272
## hedges_upp 0.432237293
## hedges_mag 1.000000000
##
## $nback_func_sc_mfg_l
##      -1 - 1      -1 - 2      -1 - 3      1 - 2      1 - 3
## cohen_d_est -0.1984825 0.27585468 0.4812580 0.44704340 0.6851395
## cohen_d_low -0.5230031 -0.05192773 0.1173355 0.02995066 0.2319355
## cohen_d_upp 0.1260382 0.60363710 0.8451805 0.86413614 1.1383435
## cohen_magn 1.0000000 2.00000000 2.0000000 2.00000000 3.0000000
## hedges_est -0.1978020 0.27490455 0.4795206 0.44334883 0.6787760
## hedges_low -0.5212064 -0.05174185 0.1169330 0.02978611 0.2300076
## hedges_upp 0.1256024 0.60155096 0.8421082 0.85691155 1.1275443
## hedges_mag 1.0000000 2.00000000 2.0000000 2.00000000 3.0000000
##      2 - 3
## cohen_d_est 0.1756101
## cohen_d_low -0.2680667
## cohen_d_upp 0.6192869
## cohen_magn 1.0000000
## hedges_est 0.1739586
## hedges_low -0.2655302
## hedges_upp 0.6134473
## hedges_mag 1.0000000
##
## $nback_func_sc_parietal_l
##      -1 - 1      -1 - 2      -1 - 3      1 - 2      1 - 3
## cohen_d_est -0.1478285 0.34563585 0.4993250 0.49768413 0.6888289
## cohen_d_low -0.4721115 0.01726993 0.1351773 0.07937654 0.2354916
## cohen_d_upp 0.1764546 0.67400178 0.8634727 0.91599172 1.1421663
## cohen_magn 1.0000000 2.00000000 2.0000000 2.00000000 3.0000000
## hedges_est -0.1473216 0.34444538 0.4975224 0.49357104 0.6824311
## hedges_low -0.4704908 0.01722145 0.1347120 0.07882307 0.2335330
## hedges_upp 0.1758476 0.67166930 0.8603327 0.90831900 1.1313292
## hedges_mag 1.0000000 2.00000000 2.0000000 2.00000000 3.0000000
##      2 - 3
## cohen_d_est 0.1457025
## cohen_d_low -0.2977127
## cohen_d_upp 0.5891178
## cohen_magn 1.0000000
## hedges_est 0.1443323
## hedges_low -0.2949022
## hedges_upp 0.5835668
## hedges_mag 1.0000000
##
## $nback_func_sc_precun_l
##      -1 - 1      -1 - 2      -1 - 3      1 - 2      1 - 3
## cohen_d_est -0.005450526 0.5103754 0.369830001 0.5377797 0.39687936
## cohen_d_low -0.329437745 0.1801192 0.007115183 0.1184207 -0.04804248
## cohen_d_upp 0.318536693 0.8406316 0.732544819 0.9571387 0.84180120
## cohen_magn 1.000000000 3.0000000 2.000000000 3.0000000 2.00000000
## hedges_est -0.005431839 0.5086175 0.368494875 0.5333352 0.39319317
## hedges_low -0.328308242 0.1795227 0.007102026 0.1175614 -0.04751893
## hedges_upp 0.317444564 0.8377123 0.729887723 0.9491090 0.83390528

```

```

## hedges_mag 1.00000000 3.0000000 2.00000000 3.0000000 2.00000000
##          2 - 3
## cohen_d_est -0.1666937
## cohen_d_low -0.6102874
## cohen_d_upp 0.2769001
## cohen_magn 1.0000000
## hedges_est -0.1651260
## hedges_low -0.6045340
## hedges_upp 0.2742820
## hedges_mag 1.0000000
##
## $nback_func_sc_precun_r
##          -1 - 1      -1 - 2      -1 - 3      1 - 2      1 - 3
## cohen_d_est -0.02072502 0.4105805 0.44237985 0.423798587 0.47757990
## cohen_d_low -0.34471766 0.0815550 0.07891415 0.007220934 0.03077075
## cohen_d_upp 0.30326762 0.7396059 0.80584556 0.840376240 0.92438905
## cohen_magn 1.00000000 2.00000000 2.00000000 2.000000000 2.00000000
## hedges_est -0.02065396 0.4091663 0.44078281 0.420296119 0.47314417
## hedges_low -0.34353573 0.0812896 0.07864715 0.007235916 0.03059647
## hedges_upp 0.30222781 0.7370430 0.80291848 0.833356322 0.91569188
## hedges_mag 1.00000000 2.00000000 2.00000000 2.000000000 2.00000000
##          2 - 3
## cohen_d_est 0.02026381
## cohen_d_low -0.42258415
## cohen_d_upp 0.46311178
## cohen_magn 1.00000000
## hedges_est 0.02007325
## hedges_low -0.41860980
## hedges_upp 0.45875629
## hedges_mag 1.00000000
## [1] "FDR corrected"
## [1] parcellation p_FDR_corr
## <0 rows> (or 0-length row.names)
## [1] "FDR corrected"
## [1] parcellation p_FDR_corr
## <0 rows> (or 0-length row.names)
## [1] "FDR corrected"
## [1] parcellation p_FDR_corr
## <0 rows> (or 0-length row.names)
## Hydra_k3 emmean SE df lower.CL upper.CL
## -1 2.202012 0.05384041 299 2.096058 2.307966
## 1 2.229466 0.10359388 299 2.025601 2.433332
## 2 1.784624 0.10471384 299 1.578554 1.990693
## 3 1.792557 0.11836731 299 1.559618 2.025495
##
## Confidence level used: 0.95
## contrast estimate SE df t.ratio p.value
## -1 - 1 -0.027454621 0.1167497 299 -0.235 0.9954
## -1 - 2 0.417388155 0.1177446 299 3.545 0.0026
## -1 - 3 0.409455054 0.1300370 299 3.149 0.0097
## 1 - 2 0.444842776 0.1472979 299 3.020 0.0145

```

```
## 1 - 3      0.436909675 0.1572975 299    2.778  0.0296
## 2 - 3     -0.007933101 0.1580374 299   -0.050  1.0000
##
## P value adjustment: tukey method for comparing a family of 4 estimates
##
##          -1 - 1 -1 - 2 -1 - 3 1 - 2 1 - 3 2 - 3 F value Pr(>F)
## 2back DPrime 0.995 0.003 0.01 0.015 0.03    1 6.983 1e-04
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

