Dear Lydia,

It's really honor for me to use SDM, and receiving your reply for several times made me encouraged. I have some questions about the use of SDM set out below:

1. **In 5.15 version**, dose "MyMean_z_p_0.005_1.000_10" represents the main results rather than "MyMean_z_QH_p_0.005_1.000_10", and the difference between them whether means heterogeneity, that is to say the brain areas both existed in the "MyMean_z_p" and "MyMean_z_QH_p" represents these areas exhibit a good reproducibility, but the areas produced in the "MyMean_z_p" did not exist in the "MyMean_z_QH_p" means these brain areas had heterogeneity?
   In 6.21 version, dose "uncorrected p=0.005" is equal to "MyMean_z_p_0.005_1.000_10", and "TFCE p=0.05" is approximately equal to "MyMean_z_QH_p_0.005_1.000_10"?
   I'm not sure I'm right about what is said above.
2. When I tried to run the data of tutorial, I found that the results I got was different from the article ***Voxel-wise meta-analysis of grey matter changes in obsessive–compulsive disorder,*** and the results from two version were diverse from each other as well.

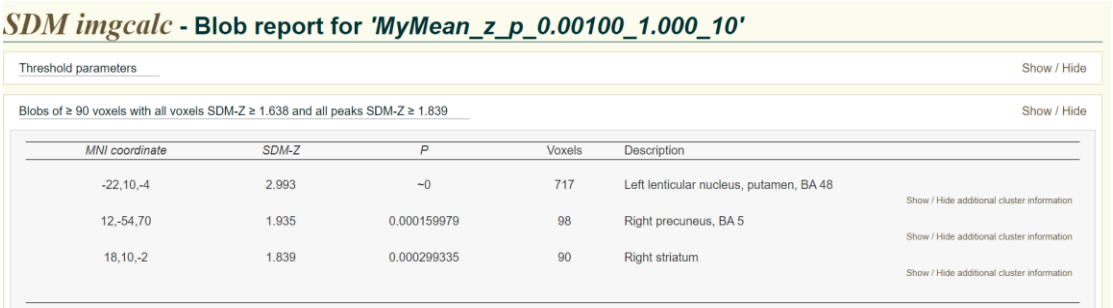
The results from the article:

Table 2 Regional differences in grey matter volume between individuals with obsessive–compulsive disorder and healthy controls

	Maximum			Cluster	
	Talairach coordinates	SDM value	Uncorrected *P*	Number of voxels	Breakdown (number of voxels)[a]
Clusters of increased grey matter					
Left lenticular nucleus (mainly anterior putamen)	−18, 8, 0	0.248	0.000005	506	Left lenticular nucleus (464) Left caudate nucleus (41) Left subcallosal gyrus (1)
Right superior parietal lobule and precuneus	14, −60, 62	0.210	0.00009	75	Right Brodmann area 7 (75)
Right lenticular nucleus (mainly anterior putamen)	14, 10, −2	0.187	0.0003	68	Right lenticular nucleus (54) Right caudate nucleus (14)
Clusters of decreased grey matter					
Right/left dorsal medial frontal gyri/anterior cingulate gyri	4, 28, 36	−0.278	0.00002	385	Right Brodmann area 8 (93) Right Brodmann area 32 (96) Right Brodmann area 6 (34) Right Brodmann area 9 (22) Left Brodmann area 8 (59) Left Brodmann area 32 (41) Left Brodmann area 6 (26) Left Brodmann area 9 (14)

SDM, signed differential mapping.
a. Brodmann area 6: supplementary motor cortex; Brodmann area 7: somatosensory association cortex; Brodmann area 8: frontal eye fields; Brodmann area 9: dorsal medial frontal gyrus; Brodmann area 32: dorsal anterior cingulate gyrus. All voxels with $P<0.001$ uncorrected (SDM value thresholds of 0.163 for increases and of −0.183 for decreases). No significant voxels were found after the false discovery rate correction.

5.15version, Uncorrected p=0.001



Blobs of ≥ 62 voxels with all voxels SDM-Z ≤ -2.034 and all peaks SDM-Z ≤ -2.164 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description	
6,36,24	-3.072	~0	1505	Right anterior cingulate / paracingulate gyri, BA 32	Show / Hide additional cluster information
0,36,-18	-2.164	0.000624478	62	Left gyrus rectus, BA 11	Show / Hide additional cluster information

SDM imgcalc - Blob report for *'MyMean_z_QH_p_0.00100_1.000_10'*

Threshold parameters — Show / Hide

Blobs of ≥ 33 voxels with all voxels SDM-Z ≥ 2.238 and all peaks SDM-Z ≥ 2.457 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description	
4,40,36	2.898	0.000139356	85	Right superior frontal gyrus, medial, BA 32	Show / Hide additional cluster information
-42,-70,-38	2.792	0.000232220	66	Left cerebellum, crus II	Show / Hide additional cluster information
-44,-12,8	2.457	0.000629604	33	Left insula, BA 48	Show / Hide additional cluster information

Blobs of ≥ ??? voxels with all voxels SDM-Z ≤ ??? and all peaks SDM-Z ≤ ??? — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description
(none)				

5.15version, Uncorrected p=0.005

SDM imgcalc - Blob report for *'MyMean_z_p_0.00500_1.000_10'*

Threshold parameters — Show / Hide

Blobs of ≥ 24 voxels with all voxels SDM-Z ≥ 1.319 and all peaks SDM-Z ≥ 1.477 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description	
-22,10,-4	2.993	~0	1066	Left lenticular nucleus, putamen, BA 48	Show / Hide additional cluster information
18,10,-2	1.839	0.000299335	436	Right striatum	Show / Hide additional cluster information
-18,-54,-12	1.547	0.001527607	337	Left lingual gyrus, BA 19	Show / Hide additional cluster information
12,-54,70	1.935	0.000159979	231	Right precuneus, BA 5	Show / Hide additional cluster information
-18,-46,70	1.477	0.002327502	24	Left postcentral gyrus, BA 5	Show / Hide additional cluster information

Blobs of ≥ 50 voxels with all voxels SDM-Z ≤ -1.626 and all peaks SDM-Z ≤ -1.841 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description	
6,36,24	-3.072	~0	2571	Right anterior cingulate / paracingulate gyri, BA 32	Show / Hide additional cluster information
0,36,-18	-2.164	0.000624478	501	Left gyrus rectus, BA 11	Show / Hide additional cluster information
-48,6,4	-1.860	0.001852751	87	Left rolandic operculum, BA 48	Show / Hide additional cluster information
-42,52,-4	-1.841	0.002028227	50	Left middle frontal gyrus, orbital part, BA 46	Show / Hide additional cluster information

SDM imgcalc - Blob report for 'MyMean_z_QH_p_0.00500_1.000_10'

Threshold parameters — Show / Hide

Blobs of ≥ 11 voxels with all voxels SDM-Z ≥ 1.322 and all peaks SDM-Z ≥ 1.605 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description	
-44,-12,8	2.457	0.000629604	410	Left insula, BA 48	Show / Hide additional cluster information
4,40,36	2.898	0.000139356	369	Right superior frontal gyrus, medial, BA 32	Show / Hide additional cluster information
-42,-70,-38	2.792	0.000232220	311	Left cerebellum, crus II	Show / Hide additional cluster information
44,38,22	2.089	0.001346946	102	Right middle frontal gyrus, BA 45	Show / Hide additional cluster information
0,0,-10	2.032	0.001465678	45	(undefined)	Show / Hide additional cluster information
-26,40,36	1.901	0.001899183	42	Left middle frontal gyrus, BA 9	Show / Hide additional cluster information
34,22,-4	1.605	0.003199697	11	Right insula, BA 47	Show / Hide additional cluster information

Blobs of ≥ ??? voxels with all voxels SDM-Z ≤ ??? and all peaks SDM-Z ≤ ??? — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description
(none)				

6.21version uncorrected p=0.005

SDM imgcalc - Blob report for 'D:/meta/SdmPsiGui-win64-v6.21/home/tutorials/analysis_MyTest/MyTest_z_uncorrected_p_0.00500_10'

Threshold parameters — Show / Hide

Blobs of ≥ 47 voxels with all voxels SDM-Z ≥ 2.576 and all peaks SDM-Z ≥ 3.482 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description	
-26,8,0	4.053	0.000025272	231	Left striatum	Show / Hide additional cluster information
18,-54,66	3.482	0.000248849	47	Right superior parietal gyrus, BA 5	Show / Hide additional cluster information

Blobs of ≥ 11 voxels with all voxels SDM-Z ≤ -2.578 and all peaks SDM-Z ≤ -2.982 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description	
2,32,30	-4.774	0.000000894	913	Right median cingulate / paracingulate gyri, BA 32	Show / Hide additional cluster information
52,26,14	-3.186	0.000720680	77	Right inferior frontal gyrus, triangular part, BA 45	Show / Hide additional cluster information
-32,38,32	-3.282	0.000514627	52	Left middle frontal gyrus, BA 46	Show / Hide additional cluster information
-48,22,22	-3.509	0.000225008	47	Left inferior frontal gyrus, triangular part, BA 48	Show / Hide additional cluster information
-48,14,10	-3.420	0.000313342	39	Left inferior frontal gyrus, opercular part, BA 48	Show / Hide additional cluster information
0,16,38	-2.982	0.001433432	11	Left median cingulate / paracingulate gyri, BA 24	Show / Hide additional cluster information

Please see http://www.sdmproject.com/manual/?show=threshold for citation information of the white matter atlas by Catani, Thiebaut de Schotten *et al.*

Tfce corrected p=0.05

SDM imgcalc - Blob report for 'D:/meta/SdmPsiGui-win64-v6.21/home/tutorials/analysis_MyTest/MyTest_z_tfceCorrected_p_0.05000_10'

Threshold parameters — Show / Hide

Blobs of ≥ 0 voxels with all voxels SDM-Z ≥ 0 and all peaks SDM-Z ≥ 0 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description
(none)				

Blobs of ≥ 389 voxels with all voxels SDM-Z ≤ -3.342 and all peaks SDM-Z ≤ -4.774 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description	
2,32,30	-4.774	0.003000021	389	Right median cingulate / paracingulate gyri, BA 32	Show / Hide additional cluster information

Please see http://www.sdmproject.com/manual/?show=threshold for citation information of the white matter atlas by Catani, Thiebaut de Schotten *et al.*

I was wondering why this would happen, I had no idea about it.

3. Similar to the situation above, diverse results from two version not only exist in the data of tutorial, but also in the data of mine. When I used 6.21 version, there were null results which were totally different from those in 5.15 results.

My results from two version:

5.15version uncorrected p=0.005

SDM imgcalc **- Blob report for *'MyMean_z_p_0.00500_1.000_10'***

Threshold parameters — Show / Hide

Blobs of ≥ 109 voxels with all voxels SDM-Z ≥ 0.796 and all peaks SDM-Z ≥ 1.039 — Show / Hide

MNI coordinate	*SDM-Z*	*P*	Voxels	Description	
-36,16,-8	1.551	0.000020623	850	Left insula, BA 47	Show / Hide additional cluster information
18,-56,16	1.384	0.000092924	179	Right calcarine fissure / surrounding cortex, BA 17	Show / Hide additional cluster information
2,60,18	1.039	0.001083791	109	Left superior frontal gyrus, medial, BA 10	Show / Hide additional cluster information

Blobs of ≥ 21 voxels with all voxels SDM-Z ≤ -0.979 and all peaks SDM-Z ≤ -1.059 — Show / Hide

MNI coordinate	*SDM-Z*	*P*	Voxels	Description	
4,6,68	-2.162	~0	386	Right supplementary motor area, BA 6	Show / Hide additional cluster information
0,-86,34	-1.474	0.000712216	165	Left cuneus cortex, BA 19	Show / Hide additional cluster information
-50,-28,40	-1.247	0.001744330	143	Left inferior parietal (excluding supramarginal and angular) gyri, BA 2	Show / Hide additional cluster information
16,-68,0	-1.258	0.001630843	76	Right inferior network, inferior longitudinal fasciculus	Show / Hide additional cluster information
-66,-24,0	-1.059	0.003648698	47	Left middle temporal gyrus, BA 21	

SDM imgcalc **- Blob report for *'MyMean_z_QH_p_0.00500_1.000_10'***

Threshold parameters — Show / Hide

Blobs of ≥ 28 voxels with all voxels SDM-Z ≥ 0.397 and all peaks SDM-Z ≥ 1.011 — Show / Hide

MNI coordinate	*SDM-Z*	*P*	Voxels	Description	
50,34,6	1.724	0.000113547	312	Right inferior frontal gyrus, triangular part, BA 45	Show / Hide additional cluster information
6,20,64	2.412	~0	141	Right supplementary motor area, BA 8	Show / Hide additional cluster information
-38,14,-8	1.774	0.000098050	128	Left insula, BA 48	Show / Hide additional cluster information
18,-56,16	1.555	0.000196099	126	Right calcarine fissure / surrounding cortex, BA 17	Show / Hide additional cluster information
18,12,-14	1.074	0.000805080	112	Right olfactory cortex, BA 11	Show / Hide additional cluster information
20,56,16	1.385	0.000299335	94	Corpus callosum	Show / Hide additional cluster information
38,0,12	1.248	0.000500619	104	Right insula, BA 48	Show / Hide additional cluster information
0,58,18	1.066	0.000830889	87	Left superior frontal gyrus, medial, BA 10	Show / Hide additional cluster information
-66,-24,0	1.317	0.000387073	63	Left middle temporal gyrus, BA 21	Show / Hide additional cluster information
-32,-10,-4	1.011	0.001011491	28	Left lenticular nucleus, putamen, BA 48	Show / Hide additional cluster information

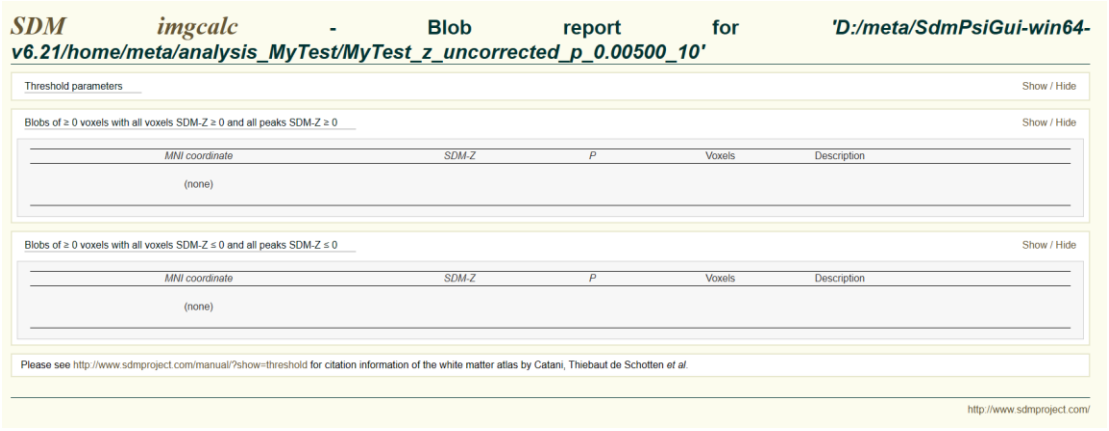
Blobs of ≥ ??? voxels with all voxels SDM-Z ≤ ??? and all peaks SDM-Z ≤ ??? — Show / Hide

MNI coordinate	*SDM-Z*	*P*	Voxels	Description
(none)				

Please see http://www.sdmproject.com/manual/?show=threshold for citation information of the white matter atlas by Catani, Thiebaut de Schotten *et al*.

6.21version

When I use uncorrected p =0.005, there was no results.



SDM imgcalc - Blob report for 'D:/meta/SdmPsiGui-win64-v6.21/home/meta/analysis_MyTest/MyTest_z_uncorrected_p_0.00500_10'

Threshold parameters — Show / Hide

Blobs of ≥ 0 voxels with all voxels SDM-Z ≥ 0 and all peaks SDM-Z ≥ 0 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description
(none)				

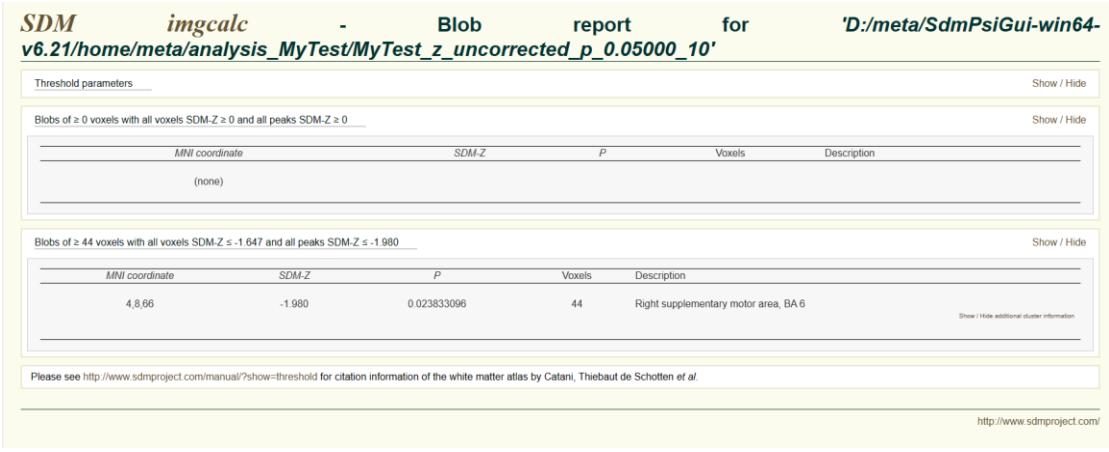
Blobs of ≥ 0 voxels with all voxels SDM-Z ≤ 0 and all peaks SDM-Z ≤ 0 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description
(none)				

Please see http://www.sdmproject.com/manual/?show=threshold for citation information of the white matter atlas by Catani, Thiebaut de Schotten *et al.*

http://www.sdmproject.com/

When I use uncorrected p=0.05, there was a result, which would be vanished in tfcecorrected p =0.05.



SDM imgcalc - Blob report for 'D:/meta/SdmPsiGui-win64-v6.21/home/meta/analysis_MyTest/MyTest_z_uncorrected_p_0.05000_10'

Threshold parameters — Show / Hide

Blobs of ≥ 0 voxels with all voxels SDM-Z ≥ 0 and all peaks SDM-Z ≥ 0 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description
(none)				

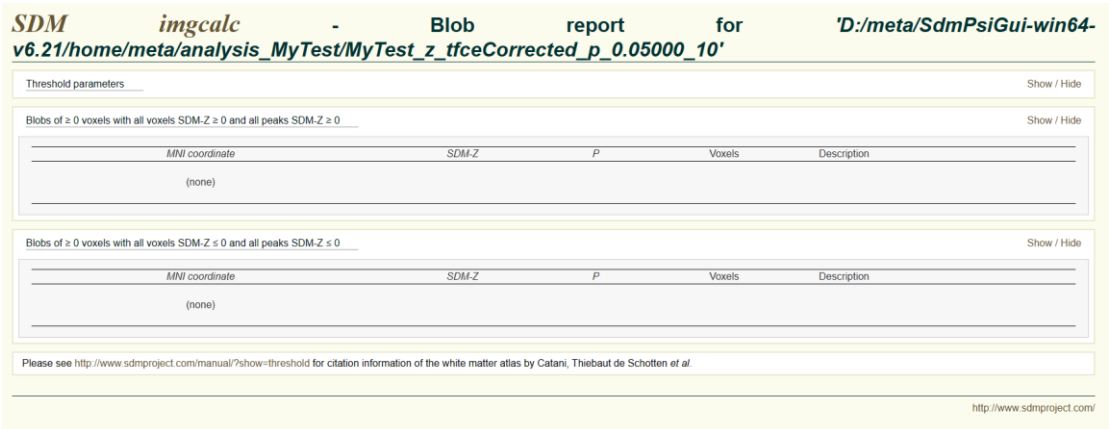
Blobs of ≥ 44 voxels with all voxels SDM-Z ≤ -1.647 and all peaks SDM-Z ≤ -1.980 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description
4,8,66	-1.980	0.023833096	44	Right supplementary motor area, BA 6

Show / Hide additional cluster information

Please see http://www.sdmproject.com/manual/?show=threshold for citation information of the white matter atlas by Catani, Thiebaut de Schotten *et al.*

http://www.sdmproject.com/



SDM imgcalc - Blob report for 'D:/meta/SdmPsiGui-win64-v6.21/home/meta/analysis_MyTest/MyTest_z_tfceCorrected_p_0.05000_10'

Threshold parameters — Show / Hide

Blobs of ≥ 0 voxels with all voxels SDM-Z ≥ 0 and all peaks SDM-Z ≥ 0 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description
(none)				

Blobs of ≥ 0 voxels with all voxels SDM-Z ≤ 0 and all peaks SDM-Z ≤ 0 — Show / Hide

MNI coordinate	SDM-Z	P	Voxels	Description
(none)				

Please see http://www.sdmproject.com/manual/?show=threshold for citation information of the white matter atlas by Catani, Thiebaut de Schotten *et al.*

http://www.sdmproject.com/

The causes of the problems described above are uncertain , thus I am really expect to receive a response so that I can determine which results are more useful.

4. **Heterogeneity**: In 5.15 version, my heterogeneity results are show as below:

Jackknife sensitivity analysis, discarded study

	Positive correlation			Negative correlation					
	Left insula (BA47)	Right calcarine fissure / surrounding cortex (BA17)	Left superior frontal gyrus, medial (BA10)	Right supplementary motor area (BA6)	Left cuneus cortex BA (19)	Left inferior parietal (excluding supramarginal and angular) gyri (BA2)	Right inferior network, inferior longitudinal fasciculus	Left middle temporal gyrus (BA21)	Right superior frontal gyrus, dorsolateral (9)
Yoon, L. 2022	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Li, J. 2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Zou，L, 2018	Yes (BA48)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yajing Pang 2015	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ikeda，2017	Yes (BA48)	Yes	No，L2R	No	No	No	No	No	No
Wei et al., 2014	Yes (BA48)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Sampaio, A. 2014	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Aghajani, M. 2014	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wei et al., 2011	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Kunisato et al.,	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kumari et al., 2004	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ruffle 2015	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

There is a highly heterogeneous article "**Ikeda 2017**", but I am not sure if the reason of high heterogeneity is the sample size. Therefore I have no idea about how to report this results.

Included studies:

Study	Sample size(F/M)	t值		Age (Mean±SD)	personality measure	Scanner Type	Imaging technique	Statistical analysis	Thresshold	Software Type	Coordinate
Yoon, L. 2022	70(34/36)	-1.667239		13.64	The 44-item Big Five Inventory	3T Siemens Trio	FC	Amygdala Seed-Based Connectivity Analysis; Whole-Brain Connectivity	FDR corrected	Conn toolbox	No connection AAL-MNI
Li, J. 2021	32(20/12)	-1.695519	p < 0.05 GRF correction	11.69 ± 1.86 years	The modified Chinese Junior Eysenck Personality Questionnaire (EPQ)	3T Siemens Trio	fALFF(at the whole-brain level.) ROI-ROI FC	Correlation	GRF correction	SPM12 DPARSF toolkits	√ MNI
Zou，L 2018	100 (50，50)	-1.660391	p < 0.05, FWE corrected	21.91±2.29	Eysenck Personality Questionnaire-Revised Short Scale for Chinese (EPQ-RSC)	3T Siemens Trio	FCD	Pearson's linear correlation multiple regression analyses	FWE corrected	SPM8 DPARSF v4.1	√ MNI
Yajing Pang 2015	71 (37/34)	-1.666914	p < .05 (the combined uncorrected individual voxel p < .01, and the minimum cluster size of the short- and long-range FCD was identified as 456 and 509 voxels, respectively	22.4±1.5	EPQ-RSC)	3T Siemens Trio	FCD Seed-based RSFC analysis	One-sample t-test Pearson correlation	AlphaSim corrected	SPM8	√ MNI
Ikeda, 2017	835 (348/487)	-1.646683	FWEcorrected p < 0.05	20.7 ± 1.8	NEO-FFI	3-T Philips Intera Achieva scanner	fALFF	Multiple regression	FWE corrected	SPM8	MNI
Wei et al., 2014	87 (39/48)	-1.662765	P < 0.05	23.5 ± NA	EPQ-RSC	3T Siemens Trio	fALFF	Multiple regression	AlphaSim corrected	SPM8	√ MNI
Sampaio, A. 2014	49 (30/19)	-1.677224	p < 0.05	25.0±5.3	NEO-FFI	Siemens Magnetom Avanto 1.5 T	ICA	Multiple regression	FWE corrected	SPM8	√ MNI
Aghajani, M. 2014	60 (32/18)	-1.676551	p < 0.05	40.51±9.45	NEO-FFI	Philips 3.0-T MRI scanners	Whole-brain analysis of amygdala RSFC	Multiple regression	cluster-corrected threshold of p < .05 with an initial cluster-forming threshold of Z > 2.3	FSL	√ MNI
Wei et al., 2011	87 (39/48)	-1.662765	p < 0.05	23.5 ± NA	EPQ-RSC	3T Siemens Trio	ReHo	Multiple regression	AlphaSim corrected	SPM8	√ MNI
Kunisato et al., 2011	24 (15/9)	-1.713872	p < 0.05	23.1 ± 1.9	NEO-FFI	GE Signa EXCITE HD 3.0T scanner	fALFF	Simple regression	Uncorrected	SPM8	√ MNI
Kumari et al., 2004	11 (0/11)	-1.812461	p < 0.05	25.4 ± 1.2	EPQ-R	1.5 T GE Signa system	signal intensity	Linear regression	Uncorrected	SPM99	√
Ruffle, 2015	33 (16/17)	-3.37	p=0.001	17.06 ± 0.73	EPQ-R	General Electric Signa Excite HDxt II 3.0 Tesla scanner	BOLD signal			XBAM version 4.1	Talairach

5. In 5.15 version, when we create the mask for the data of tutorial, why we type the coordinate as (X = -24, Y = 10, Z = -2)? Can we use another coordinate?

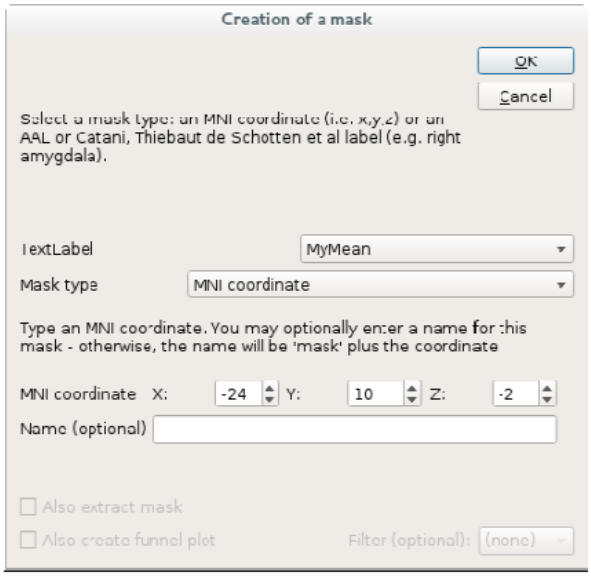
Assessment of heterogeneity and potential publication bias

We strongly recommend extracting values from relevant peaks, inspecting the corresponding I^2 statistics (or other heterogeneity estimates) and check their funnel plots. You may also use extracted values to create meta-regression plots with Microsoft Excel, R or similar software.

You should first create a mask that includes the voxel or region from where you want to extract the values, and then extract these values using the mask. Fortunately, the "Thresholding" automatically creates the masks for the peaks.

- To create the mask, click the [Create a mask] button, select [MNI coordinate], click [OK], type the coordinate (X = -24, Y = 10, Z = -2), and click [OK].

A dialog similar to the following one should appear:



This will create a file named "analysis_MyMean/masks/mask_-24_10_-2.nii.gz" which contains the mask. Note that you can copy this file to the folder of another meta-analysis in order to avoid creating it again.

Looking forward to receiving your reply.

Best Wishes!