

Supplementary Table 1: Results of the meta-analysis of the vestibular stimulation studies at $p < 0.05$.

Description		Local peaks and breakdown			Heterogeneity		Meta-bias	
	Hemisphere	MNI (x, y, z)	SDM-Z	p (TFCE corr)	I ²	Egger's test	Brain region	No. of voxels
Insula	left	-32,2,12	8.467	0.001	2.07 %	1.83, p= 0.39	Anterior insula	1500
		-30,8,8	7.545	0.001			Anterior insula	
		-42,4,2	6.319	0.001			Anterior insula	
		-34,-18,12	7.776	0.001		2.49, p= 0.29	Posterior insula, area lg2	
		-36,6,-12	7.700	0.001			Posterior insula	
		-40,-8,6	6.935	0.001			Posterior insula	
		-36,-2,-8	6.470	0.001			Posterior insula	
	right	36,10,8	8.858	0.001	2.84 %	1.23, p= 0.61	Anterior insula	1550
		46,10,-2	7.800	0.001			Anterior insula, area 44	
		38,22,2	7.513	0.001			Anterior insula	
		44,20,-8	6.698	0.001			Anterior insula	
		42,6,-8	8.701	0.001			Anterior insula	
		34,12,4	8.701	0.001			Anterior insula	
		40,2,-14	9.338	0.0000000001		3.17, p= 0.13	Posterior insula	
		40,-18,2	7.338	0.001			Posterior insula, area lg2	
		40,-16,-2	7.220	0.001			Posterior insula, area lg2	

Heschl's gyrus (A1)	right	60, -4, 6	7.539	0.001	43.06 %	3.93, p= 0.01	Heschl's gyrus	180
Temporal	left	-48, -32, 16	8.326	0.001	38.3%	3.79, p= 0.04	Superior temporal gyrus	1493
		-56, -38, 18	8.422	0.001			Superior temporal gyrus	
		-40, -16, -6	6.321	0.001			Superior temporal gyrus	
		-42, -12, -10	6.210	0.001			Superior temporal gyrus	
		-52, -54, 10	5.014	0.001	9.72%	-0.72, p= 0.81	Middle temporal gyrus	848
		-64, -50, -2	2.725	0.023			Middle temporal gyrus	
		-52, -60, 6	4.701	0.001			Middle temporal gyrus	
		-50, -64, 6	4.272	0.001			Middle temporal gyrus	
		-60, -60, -2	2.568	0.007			Middle temporal gyrus	
		-44, -52, -26	2.532	0.023			Inferior temporal gyrus, area FG4	
		-60, -60, -6	2.227	0.038			Inferior temporal gyrus	
	right	62, -34, 18	7.946	0.001	39.09 %	3.78, p= 0.08	Superior temporal gyrus, area PFcm	1223
		48, -32, 14	5.944	0.001			Superior temporal gyrus	
		50, -24, 16	6.518	0.001			Superior temporal gyrus, area OP1	
		24, 6, -22	3.328	0.003	57.20 %	2.59, p= 0.39	Temporal pole, superior temporal gyrus	317
		42, 20, -20	3.301	0.003			Temporal pole, superior temporal gyrus	
		64, -52, -4	2.416	0.023			Middle temporal gyrus	438
		56, -40, 8	3.891	0.001			Middle temporal gyrus	
Inferior parietal lobule/ intraparietal sulcus	left	-56,-36,44	7.249	0.001	3.6 %	1.74, p= 0.42	Inferior parietal gyrus, area PFt	1433
		-52, -36, 40	7.222	0.001			Inferior parietal gyrus, area PFt	
		-36, -48, 42	6.293	0.001			Inferior parietal gyrus, area hIP1	
		-38, -48, 46	6.110	0.001			Inferior parietal gyrus, area hIP3	
		-50, -42, 52	5.898	0.001			Inferior parietal gyrus, area hIP2	
		-46, -42, 44	5.875	0.001			Inferior parietal gyrus, Area hIP2	
		-44, -44, 48	5.866	0.001			Inferior parietal gyrus, BA 2	
		-60, -44, 38	5.060	0.001			Inferior parietal gyrus, area PFm	

Cingulate cortex	right	-48, -36, 24	7.322	0.001	53.0 %	4.83, p= 0.04	Supramarginal gyrus, area PFcm	855
		-60, -22, 16	5.551	0.001			Supramarginal gyrus, area OP1	
		40, -48, 50	6.274	0.001	0.02 %	0.15, p= 0.95	Inferior parietal lobule, area hIP3	858
		58, -28, 42	8.485	0.001	10.4 %	3.19, p= 0.04	Supramarginal gyrus, area PFt	1230
		56, -32, 46	8.028	0.001			Supramarginal gyrus, area PFt	
	left	-2,16,24	3.748	0.001	2.07 %	1.83, p= 0.39	Anterior cingulate	288
		-4,8,28	3.748	0.001			Anterior cingulate, BA 30	
		0,20,24	3.748	0.001			Anterior cingulate	
		-6,-22,40	7.480	0.001	0.80 %	-3.4, p= 0.37	Median cingulate	1143
		-6,-24,44	7.277	0.001			Median cingulate	
		-10,-26,46	7.000	0.001			Median cingulate	
		-10,2,44	4.190	0.001			Median cingulate	
		-2,24,34	6.606	0.001			Median cingulate	
		0,-2,34	4.693	0.001			Median cingulate	
		-10,10,34	5.615	0.001			Median cingulate	
	right	8,-30,50	7.182	0.001	5.85 %	-0.02, p= 0.99	Median cingulate	1192
		4,-20,46	5.730	0.001			Median cingulate	
		8,-16,38	6.052	0.001			Median cingulate	
		4,24,36	6.131	0.001			Median cingulate	
Dorsolateral PFC	left	-40, 42, 22	7.358	0.001	0.83 %	1.32, p= 0.54	Middle frontal gyrus	916
	right	44, 48, 14	6.469	0.001	9.49 %	1.62, p= 0.50	Middle frontal gyrus	1827
		40, 42, 28	6.356	0.001			Middle frontal gyrus	
Ventrolateral PFC	left	-38, 8 10	7.409	0.001	19.72 %	2.00, p= 0.45	Inferior frontal gyrus, opercular part	601

		-54, 12, 14	5.539	0.001		Inferior frontal gyrus, opercular part, BA 44	
		-54, 12, 2	5.486	0.001		Inferior frontal gyrus, opercular part, BA 44	
		-52, 12, 10	5.427	0.001		Inferior frontal gyrus, opercular part, BA 44	
		-56, 8, 22	6.915	0.001		Inferior frontal gyrus, opercular part, BA 44	
		-46, 44, 4	4.943	0.002	42.88 % 3.64, p= 0.11	Inferior frontal gyrus, triangular part	1124
		-32, 30, 0	3.705	0.001		Inferior frontal gyrus, triangular part	
	right	48, 10, 2	7.444	0.001	52.15 % 4.21, p= 0.01	Inferior frontal gyrus, opercular part	912
		42, 8, 26	7.080	0.001		Inferior frontal gyrus, opercular part	
		50, 8, 16	7.074	0.001		Inferior frontal gyrus, opercular part, BA 44	
		56, 10, 26	6.005	0.001		Inferior frontal gyrus, opercular part, BA 44	
		52, 14, 4	7.410	0.001		Inferior frontal gyrus, opercular part	
		48, 38, 2	7.705	0.001	7.74 % 1.51, p= 0.54	Inferior frontal gyrus, triangular part	1138
		52, 22,30	5.955	0.001		Inferior frontal gyrus, triangular part	
		50, 38, 16	6.827	0.001		Inferior frontal gyrus, triangular part	
		52, 26, 22	4.554	0.001		Inferior frontal gyrus, triangular part	
Orbitofrontal cortex	left	-44, 16, -6	6.626	0.001	42.73 % 4.04, p= 0.04	Inferior frontal gyrus, orbital part	253
		-38, 18, -14	5.277	0.001		Inferior frontal gyrus, orbital part	
		-42, 18, -12	5.159	0.001		Inferior frontal gyrus, orbital part	
Pre-/ postcentral	left	-60, 4, 14	6.436	0.001	28.92 % 3.02, p= 0.16	Postcentral gyrus	1009
		-26, -40, 72	4.381	0.002		Postcentral gyrus, BA 1	
		-24,-32,62	5.829	0.001		Postcentral gyrus, BA 4	
		-40, -8, 48	8.230	0.001	2.35 % 0.99, p= 0.66	Precentral gyrus	1374
		-48, 6, 20	7.705	0.001		Precentral gyrus	
		-50, 8, 38	6.166	0.001		Precentral gyrus	
		-44, -8, 52	7.592	0.001		Precentral gyrus	
		-44, 4, 36	6.832	0.001		Precentral gyrus	
Operculum	left	-42, -30, 14	8.448	0.001	21.27 % 3.25, p= 0.06	Rolandic operculum	687

		-54, -10, 12	7.529	0.001		Rolandic operculum	
		-54, 0, 8	6.525	0.001		Rolandic operculum	
		-48, 4, 16	7.736	0.001		Rolandic operculum	
SMA	left	2, 20, 44	7.438	0.001	0.02 % 0.47, p= 0.83	Supplementary motor area	1235
		-4, -4, 62	7.103	0.001		Supplementary motor area	
		-10, 0, 70	5.127	0.001		Supplementary motor area	
Pre-/postcentral	right	24, -38, 60	4.384	0.001	35.19 % 1.78, p= 0.55	Postcentral gyrus, BA 3	733
		26, -38, 72	3.006	0.001		Postcentral gyrus, BA 3	
		24, -32, 64	3.552	0.001		Postcentral gyrus, BA 4	
		50, 6, 42	7.590	0.001	22.27 % 2.98, p= 0.16	Precentral gyrus	1014
		46, 0, 48	7.477	0.001		Precentral gyrus	
		46, -8, 52	6.353	0.001		Precentral gyrus	
Operculum	right	40, -26, 18	7.278	0.001	30.17 % 2.95, p= 0.19	Rolandic operculum, area OP1	936
		64, -18, 16	6.207	0.001		Rolandic operculum, area OP1	
		52, -4, 10	7.023	0.001		Rolandic operculum, area OP4	
		46, -10, 10	6.622	0.001		Rolandic operculum, area OP4	
SMA	right	4, -6, 62	7.464	0.001	8.0 % -0.14, p=0.97	Supplementary motor area	1287
		4, 2, 64	7.354	0.001		Supplementary motor area, BA 6	
		8, -8, 64	7.096	0.001		Supplementary motor area, BA 6	
		12, -30, 50	7.116	0.001	0.71 % -1.08, p= 0.70	Paracentral lobule	126
Basal ganglia	left	-26, 12, 0	5.874	0.001	11.67 % 2.46, p= 0.27	Left putamen	264
	right	32, -2, 10	8.070	0.001	2.24 % 2.89, p= 0.10	Right putamen	350
		20, 10, 0	4.133	0.001		Right putamen	
		16, 4, 0	4.522	0.001		Right pallidum	
Amygdala/parahippocampus	right	26, 0, -12	6.702	0.001	1.62 % 2.24, p= 0.25	Right amygdala	115
		24, 4, -26	3.351	0.003	51.27 % 2.54, p= 0.37	Right parahippocampal gyrus	76
Thalamus	left	-4, -8, 8	7.186	0.001	1.55 % 2.26, p= 0.22	Left thalamus temporal	408
		-4, -24, 0	6.279	0.001		Left thalamus prefrontal	
	right	8, -18, 4	8.489	0.001	0.26 % 2.84, p= 0.06	Right thalamus prefrontal	369
Cerebellum		4, -76, -18	6.651	0.001	1.47 % 0.16, p= 0.95	Cerebellum, vermic lobule VI	987
		0, -50, -10	3.114	0.004		Cerebellum, vermic lobule IV / V	
		-2, -70, -16	6.232	0.001		Cerebellum, vermic lobule VI	
	left	-8, -80, -20	5.903	0.001	5.74 % -0.85, p= 0.76	Cerebellum, crus I	453

		-40,-56,-34	2.529	0.009		Cerebellum, crus I	
		-38,-74,-22	2.545	0.038		Cerebellum, crus I	
		-36,-54,-32	2.760	0.007		Cerebellum, crus I	
		-6,-44,-12	3.112	0.004		Left cerebellum, hemispheric lobule IV / V	1250
		-10,-74,-20	6.350	0.001	7.38 %	1.76, p= 0.46	Left cerebellum, hemispheric lobule VI
		-20,-70,-22	5.693	0.001			Left cerebellum, hemispheric lobule VI
		-22,-66,-24	5.611	0.001			Left cerebellum, hemispheric lobule VI
		-24,-60,-28	4.415	0.002			Left cerebellum, hemispheric lobule VI
		-28,-60,-26	4.230	0.002			Left cerebellum, hemispheric lobule VI
		-32,-50,-30	2.882	0.007			Left cerebellum, hemispheric lobule VI
	right	12,-72,-28	4.033	0.003	1.76 %	3.43. p= 0.19	Right cerebellum, crus I
							234
		44,-52,-28	2.851	0.009			Right cerebellum, crus I
		44,-60,-26	2.793	0.009			Right cerebellum, crus I
		24,-64,-28	4.197	0.003	54.61 %	4.25, p= 0.07	Right cerebellum, hemispheric lobule VI
							1052
		20,-66,-26	4.117	0.003			Right cerebellum, hemispheric lobule VI
		28,-62,-26	4.099	0.003			Right cerebellum, hemispheric lobule VI
		32,-68,-24	3.950	0.003			Right cerebellum, hemispheric lobule VI
		40,-66,-24	2.662	0.007			Right cerebellum, hemispheric lobule VI
Pons*	left	-10, -24, -28	2.625	0.009	17.93 %	3.53, p= 0.07	Left pons
							101

* half of the studies did not scan the brainstem