

ALSPAC DOCUMENTATION

MRI DERIVED DATA COLLECTED FROM ALSPAC NEUROIMAGING SUB-STUDIES

From 18 to 24 years

Prepared by

The ALSPAC Study Team

Last updated for version 2b of the BUILT file.

Documentation giving background and summary information on the data.

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Introduction and Background

Neuroimaging data have been obtained from a number of MRI brain imaging sub-studies with ALSPAC Young People (YPs) between the ages of 19 and 23. This documentation summarises the key variables that have been derived from the first three studies (total sample size of 930).

Collaborators and Funders:

The three studies are summarised as follows:

Study name	PI	Age at study (years)	Sample size	Funder
ALSPAC-Testosterone (B648)	Tomas Paus	20	252	National Institutes of Health (R01MH08577)
ALSPAC PE Study (B709)	Tony David	19	513, males only	MRC (G0901885)
ALSPAC SCZ-RbG Study (B1276)	David Linden	22	196	MRC (MR/K004360/1)

Data Collection Details:

A detailed description of the three MRI studies is available in the Wellcome Open Research Article “Population neuroimaging: generation of a comprehensive data resource within the ALSPAC pregnancy and birth cohort [version 1; peer review: 1 approved, 2 approved with reservations]”, Sharp TH, McBride NS, Howell AE et al. <https://wellcomeopenresearch.org/articles/5-203>

This also provides further links to the original research papers explaining each of the studies.

MRI Data Availability:

The MRI scans used to derive the data described in this documentation are available on request (subject to a cost recovery fee). Any enquiries please contact: alspac-data@bristol.ac.uk.

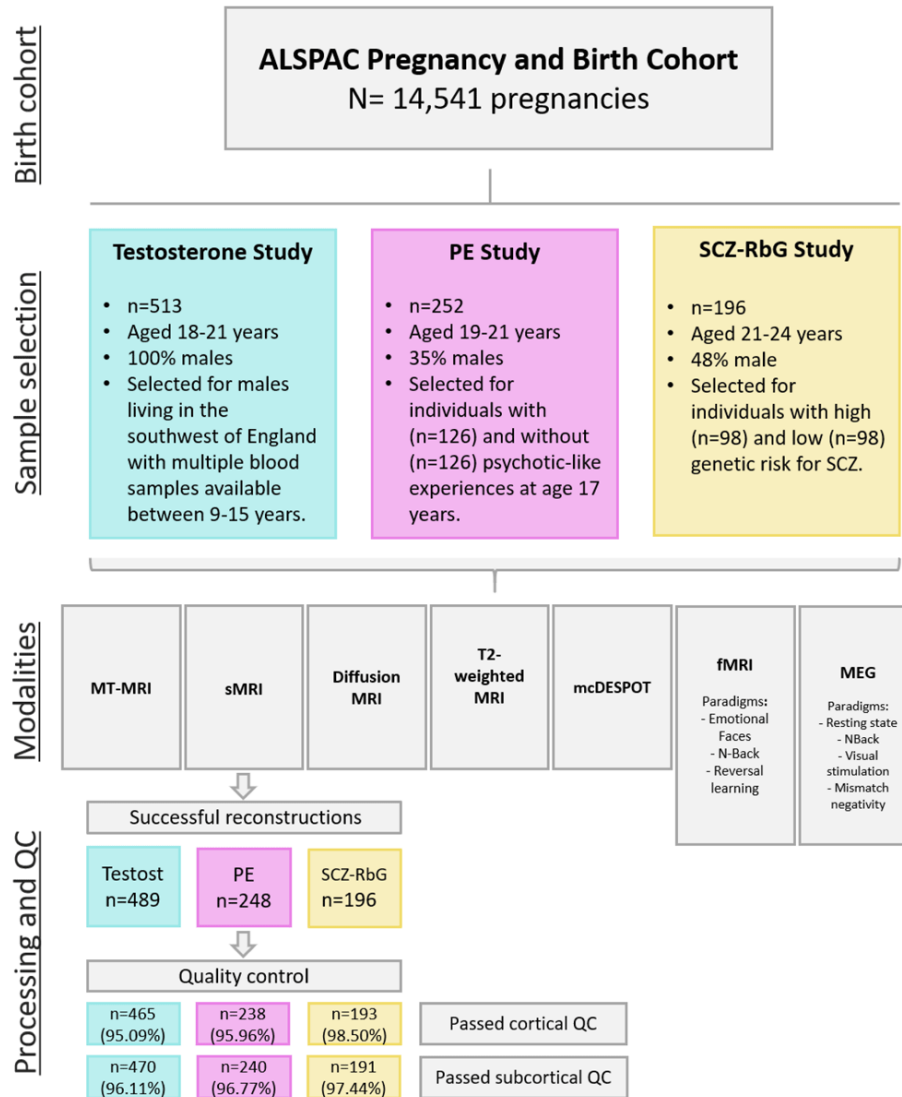
The following scan types are available:

Study name	Structural (T1)	Functional (fMRI)	Diffusion Tensor or (DTI/ DWI)	Relaxometry (mcDESPOT)
Paus (ALSPAC-Testosterone Study) (B648)	504	474	500	489
David (ALSPAC-PE Study) (B709)	252	214	249	248
Linden (ALSPAC-SCZ-RbG Study) (B1276)	196	190 / 192*	191	183

* For Linden, two different functional MRI tasks were done (N-Back and Reversal learning tasks).

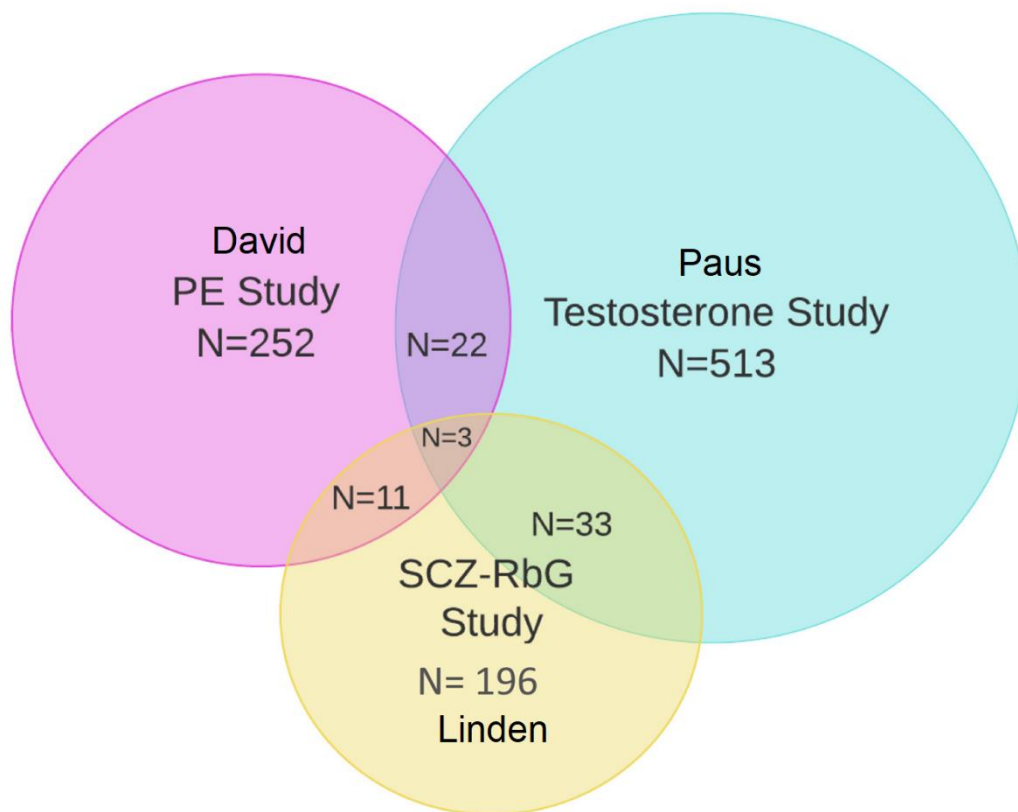
Sampling Information:

Figure 1. Flow chart depicting the sampling of each neuroimaging sub-study within ALSPAC, modalities acquired, and processing pipeline of structural MRIs.¹



¹ IDP: image-derived phenotypes, MT-MRI: magnetization transfer MRI, mcDESPOT (multi-component driven equilibrium single-pulse observation of T1 and T2). sMRI: structural MRI, DTI: diffusion tensor imaging, fMRI: functional MRI, MEG: magnetoencephalography, QC: quality control. Sharp TH, McBride NS, Howell AE, *et al.* Population neuroimaging: generation of a comprehensive data resource within the ALSPAC pregnancy and birth cohort [version 1]. *Wellcome Open Res* 2020, **5**:203 (doi: 10.12688/wellcomeopenres.16060.1)

Figure 2: Multiple Substudy Participation



Derived data extraction procedure:

The extraction procedure was followed as described on the ENIGMA website (<http://enigma.ini.usc.edu/protocols/imaging-protocols/>):

For cortical parcellation see Step 1: Extract Cortical Measures from FreeSurfer (http://enigma.ini.usc.edu/wp-content/uploads/CORTEX/01_Extract_CorticalMeasures_FS_032114.doc)

For subcortical segmentation see Subcortical volume extraction and visual inspection (http://enigma.ini.usc.edu/wp-content/uploads/2015/06/Instructions_ENIGMA_subcortical_volumes.doc)

Derived variables were constructed in the sub-sample of ALSPAC with T1-weighted MRI data. Two sets of variables were generated:

- (1) Quantitative measures of thickness, surface area, and volume of brain regions, extracted from T1-weighted MRI scans
- (2) A quality assessment score of 0 "pass", 1 "moderate" or 2 "fail" for quantitative measures, derived by visual inspection of the FreeSurfer output.

Brain regions were based on the Desikan-Killiany Atlas.

Format of this documentation and data file:

The bulk of this documentation consists of a table of the derived variables and descriptive statistics across the three studies. There are also frequencies and histograms presented of key variables.

The first part of the data file provides the basic information related to each study (indicator variables for taking part, date of visit, age at visit, case-control status etc).

The remaining variables are the derived variables acquired for each study participant.

The MRI functional task data is also available (from the Linden and David studies). Please contact alspac-data@bristol.ac.uk for further information about their preparation and protocols.

Release File Version History:

Release version 1a – May 2022; The first version of the release file.

Release version 2a – July 2022; updated to cases to vars format with the MRI data variable names MRI_YP_1000 to MRI_YP_1158 given P (Paus), D (David) or L (Linden) to signify which substudy the data is from.

For example, MRI_YP_1050 becomes MRI_YP_P1050, MRI_YP_D1050 and MRI_YP_L1050.

Release version 2b – September 2022, full cohort profile added to data file plus minor value label corrections to admin variables. Additional flag variables for participants that attended the respective substudies but do not have derived MRI scan data (MRI_YP_0001a, MRI_YP_0002a, MRI_YP_0003a). The raw data for those missing from the derived data are available.

All frequencies and histograms have been updated to reflect this. There are 861 participants in one or more substudy, with 823 participating in one substudy only, see flag variable MRI_YP_0004.

Derived Variables - Name and Label

Admin Variables

Variable Name	Label
MRI_YP_0001	Took part in Paus study
MRI_YP_0002	Took part in David study
MRI_YP_0003	Took part in Linden study
MRI_YP_0004	Participant in more than one study
MRI_YP_0005	Visit Date Paus: Month
MRI_YP_0006	Visit Date Paus: Year
MRI_YP_0007	Visit Date David: Month
MRI_YP_0008	Visit Date David: Year
MRI_YP_0009	Visit Date Linden: Month
MRI_YP_0010	Visit Date Linden: Year
MRI_YP_0020	Age at visit Paus (months)
MRI_YP_0021	Age at visit David (months)
MRI_YP_0022	Age at visit Linden (months)
MRI_YP_0040	Participant handedness
MRI_YP_0050	PLIKS category David
MRI_YP_0060	David Case-control status
MRI_YP_0061	Linden Case-Control status
MRI_YP_0062	Linden Case-Control Status by gender

MRI Variables

MRI variables have now been split into individual studies, see below for an example, along with a tag for the relevant study at the end of each variable label. i.e., ': Paus', ': David', ': Linden'.

Original	Paus	David	Linden
MRI_YP_1000	MRI_YP_P1000	MRI_YP_D1000	MRI_YP_L1000

General MRI variable names without individual study letters and flags.

Variable Name	Label
MRI_YP_1000	Cortical thickness of the left banks superior temporal sulcus
MRI_YP_1001	Cortical thickness of the left caudal anterior-cingulate cortex
MRI_YP_1002	Cortical thickness of the left caudal middle frontal gyrus
MRI_YP_1003	Cortical thickness of the left cuneus cortex
MRI_YP_1004	Cortical thickness of the left entorhinal cortex
MRI_YP_1005	Cortical thickness of the left fusiform gyrus
MRI_YP_1006	Cortical thickness of the left inferior parietal cortex
MRI_YP_1007	Cortical thickness of the left inferior temporal gyrus
MRI_YP_1008	Cortical thickness of the left isthmus – cingulate cortex
MRI_YP_1009	Cortical thickness of the left lateral occipital cortex
MRI_YP_1010	Cortical thickness of the left lateral orbital frontal cortex
MRI_YP_1011	Cortical thickness of the left lingual gyrus

MRI_YP_1012	Cortical thickness of the left medial orbital frontal cortex
MRI_YP_1013	Cortical thickness of the left middle temporal gyrus
MRI_YP_1014	Cortical thickness of the left parahippocampal gyrus
MRI_YP_1015	Cortical thickness of the left paracentral lobule
MRI_YP_1016	Cortical thickness of the left pars opercularis
MRI_YP_1017	Cortical thickness of the left pars orbitalis
MRI_YP_1018	Cortical thickness of the left pars triangularis
MRI_YP_1019	Cortical thickness of the left pericalcarine cortex
MRI_YP_1020	Cortical thickness of the left postcentral gyrus
MRI_YP_1021	Cortical thickness of the left posterior-cingulate cortex
MRI_YP_1022	Cortical thickness of the left precentral gyrus
MRI_YP_1023	Cortical thickness of the left precuneus cortex
MRI_YP_1024	Cortical thickness of the left rostral anterior cingulate cortex
MRI_YP_1025	Cortical thickness of the left rostral middle frontal gyrus
MRI_YP_1026	Cortical thickness of the left superior frontal gyrus
MRI_YP_1027	Cortical thickness of the left superior parietal cortex
MRI_YP_1028	Cortical thickness of the left superior temporal gyrus
MRI_YP_1029	Cortical thickness of the left supramarginal gyrus
MRI_YP_1030	Cortical thickness of the left frontal pole
MRI_YP_1031	Cortical thickness of the left temporal pole
MRI_YP_1032	Cortical thickness of the left transverse temporal cortex
MRI_YP_1033	Cortical thickness of the left insular cortex
MRI_YP_1034	Cortical thickness of the right banks superior temporal sulcus
MRI_YP_1035	Cortical thickness of the right caudal anterior-cingulate cortex
MRI_YP_1036	Cortical thickness of the right caudal middle frontal gyrus
MRI_YP_1037	Cortical thickness of the right cuneus cortex
MRI_YP_1038	Cortical thickness of the right entorhinal cortex
MRI_YP_1039	Cortical thickness of the right fusiform gyrus
MRI_YP_1040	Cortical thickness of the right inferior parietal cortex
MRI_YP_1041	Cortical thickness of the right inferior temporal gyrus
MRI_YP_1042	Cortical thickness of the right isthmus – cingulate cortex
MRI_YP_1043	Cortical thickness of the right lateral occipital cortex
MRI_YP_1044	Cortical thickness of the right lateral orbital frontal cortex
MRI_YP_1045	Cortical thickness of the right lingual gyrus
MRI_YP_1046	Cortical thickness of the right medial orbital frontal cortex
MRI_YP_1047	Cortical thickness of the right middle temporal gyrus
MRI_YP_1048	Cortical thickness of the right parahippocampal gyrus
MRI_YP_1049	Cortical thickness of the right paracentral lobule
MRI_YP_1050	Cortical thickness of the right pars opercularis
MRI_YP_1051	Cortical thickness of the right pars orbitalis
MRI_YP_1052	Cortical thickness of the right pars triangularis
MRI_YP_1053	Cortical thickness of the right pericalcarine cortex
MRI_YP_1054	Cortical thickness of the right postcentral gyrus
MRI_YP_1055	Cortical thickness of the right posterior-cingulate cortex
MRI_YP_1056	Cortical thickness of the right precentral gyrus
MRI_YP_1057	Cortical thickness of the right precuneus cortex
MRI_YP_1058	Cortical thickness of the right rostral anterior cingulate cortex
MRI_YP_1059	Cortical thickness of the right rostral middle frontal gyrus
MRI_YP_1060	Cortical thickness of the right superior frontal gyrus
MRI_YP_1061	Cortical thickness of the right superior parietal cortex
MRI_YP_1062	Cortical thickness of the right superior temporal gyrus
MRI_YP_1063	Cortical thickness of the right supramarginal gyrus
MRI_YP_1064	Cortical thickness of the right frontal pole
MRI_YP_1065	Cortical thickness of the right temporal pole
MRI_YP_1066	Cortical thickness of the right transverse temporal cortex

MRI_YP_1067	Cortical thickness of the right insular cortex
MRI_YP_1068	Cortical thickness of the left hemisphere
MRI_YP_1069	Cortical thickness of the right hemisphere
MRI_YP_1070	Surface area of the left hemisphere
MRI_YP_1071	Surface area of the right hemisphere
MRI_YP_1072	Total intracranial volume
MRI_YP_1073	Surface area of the left banks superior temporal sulcus
MRI_YP_1074	Surface area of the left caudal anterior-cingulate cortex
MRI_YP_1075	Surface area of the left caudal middle frontal gyrus
MRI_YP_1076	Surface area of the left cuneus cortex
MRI_YP_1077	Surface area of the left entorhinal cortex
MRI_YP_1078	Surface area of the left fusiform gyrus
MRI_YP_1079	Surface area of the left inferior parietal cortex
MRI_YP_1080	Surface area of the left inferior temporal gyrus
MRI_YP_1081	Surface area of the left isthmus – cingulate cortex
MRI_YP_1082	Surface area of the left lateral occipital cortex
MRI_YP_1083	Surface area of the left lateral orbital frontal cortex
MRI_YP_1084	Surface area of the left lingual gyrus
MRI_YP_1085	Surface area of the left medial orbital frontal cortex
MRI_YP_1086	Surface area of the left middle temporal gyrus
MRI_YP_1087	Surface area of the left parahippocampal gyrus
MRI_YP_1088	Surface area of the left paracentral lobule
MRI_YP_1089	Surface area of the left pars opercularis
MRI_YP_1090	Surface area of the left pars orbitalis
MRI_YP_1091	Surface area of the left pars triangularis
MRI_YP_1092	Surface area of the left pericalcarine cortex
MRI_YP_1093	Surface area of the left postcentral gyrus
MRI_YP_1094	Surface area of the left posterior-cingulate cortex
MRI_YP_1095	Surface area of the left precentral gyrus
MRI_YP_1096	Surface area of the left precuneus cortex
MRI_YP_1097	Surface area of the left rostral anterior cingulate cortex
MRI_YP_1098	Surface area of the left rostral middle frontal gyrus
MRI_YP_1099	Surface area of the left superior frontal gyrus
MRI_YP_1100	Surface area of the left superior parietal cortex
MRI_YP_1101	Surface area of the left superior temporal gyrus
MRI_YP_1102	Surface area of the left supramarginal gyrus
MRI_YP_1103	Surface area of the left frontal pole
MRI_YP_1104	Surface area of the left temporal pole
MRI_YP_1105	Surface area of the left transverse temporal cortex
MRI_YP_1106	Surface area of the left insular cortex
MRI_YP_1107	Surface area of the right banks superior temporal sulcus
MRI_YP_1108	Surface area of the right caudal anterior-cingulate cortex
MRI_YP_1109	Surface area of the right caudal middle frontal gyrus
MRI_YP_1110	Surface area of the right cuneus cortex
MRI_YP_1111	Surface area of the right entorhinal cortex
MRI_YP_1112	Surface area of the right fusiform gyrus
MRI_YP_1113	Surface area of the right inferior parietal cortex
MRI_YP_1114	Surface area of the right inferior temporal gyrus
MRI_YP_1115	Surface area of the right isthmus – cingulate cortex
MRI_YP_1116	Surface area of the right lateral occipital cortex
MRI_YP_1117	Surface area of the right lateral orbital frontal cortex
MRI_YP_1118	Surface area of the right lingual gyrus
MRI_YP_1119	Surface area of the right medial orbital frontal cortex
MRI_YP_1120	Surface area of the right middle temporal gyrus
MRI_YP_1121	Surface area of the right parahippocampal gyrus

MRI_YP_1122	Surface area of the right paracentral lobule
MRI_YP_1123	Surface area of the right pars opercularis
MRI_YP_1124	Surface area of the right pars orbitalis
MRI_YP_1125	Surface area of the right pars triangularis
MRI_YP_1126	Surface area of the right pericalcarine cortex
MRI_YP_1127	Surface area of the right postcentral gyrus
MRI_YP_1128	Surface area of the right posterior-cingulate cortex
MRI_YP_1129	Surface area of the right precentral gyrus
MRI_YP_1130	Surface area of the right precuneus cortex
MRI_YP_1131	Surface area of the right rostral anterior cingulate cortex
MRI_YP_1132	Surface area of the right rostral middle frontal gyrus
MRI_YP_1133	Surface area of the right superior frontal gyrus
MRI_YP_1134	Surface area of the right superior parietal cortex
MRI_YP_1135	Surface area of the right superior temporal gyrus
MRI_YP_1136	Surface area of the right supramarginal gyrus
MRI_YP_1137	Surface area of the right frontal pole
MRI_YP_1138	Surface area of the right temporal pole
MRI_YP_1139	Surface area of the right transverse temporal cortex
MRI_YP_1140	Surface area of the right insular cortex
MRI_YP_1141	Volume of the left lateral ventricle
MRI_YP_1142	Volume of the right lateral ventricle
MRI_YP_1143	Volume of the left thalamus
MRI_YP_1144	Volume of the right thalamus
MRI_YP_1145	Volume of the left caudate
MRI_YP_1146	Volume of the right caudate
MRI_YP_1147	Volume of the left putamen
MRI_YP_1148	Volume of the right putamen
MRI_YP_1149	Volume of the left pallidum
MRI_YP_1150	Volume of the right pallidum
MRI_YP_1151	Volume of the left hippocampus
MRI_YP_1152	Volume of the right hippocampus
MRI_YP_1153	Volume of the left amygdala
MRI_YP_1154	Volume of the right amygdala
MRI_YP_1155	Volume of the left accumbens
MRI_YP_1156	Volume of the right accumbens
MRI_YP_1157	Quality control rating for the cortical parcellation
MRI_YP_1158	Quality control rating for the subcortical segmentation

Frequencies and Histograms

Admin Variables

MRI_YP_0001 Took part in Paus study

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 No	378	1.8	42.4	42.4
1 Yes	513	2.5	57.6	100.0
Total	891	4.3	100.0	
Missing -10 Did not take part in MRI studies	19614	95.7		
Total	20505	100.0		

MRI_YP_0001a Paus derived scan data available

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 No (raw data only)*	24	.1	4.7	4.7
1 Yes	489	2.4	95.3	100.0
Total	513	2.5	100.0	
Missing -10 Did not take part in MRI studies	19614	95.7		
-7 Did not take part in Paus study	378	1.8		
Total	19992	97.5		
Total	20505	100.0		

MRI_YP_0002 Took part in David study

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 No	639	3.1	71.7	71.7
1 Yes	252	1.2	28.3	100.0
Total	891	4.3	100.0	
Missing -10 Did not take part in MRI studies	19614	95.7		
Total	20505	100.0		

MRI_YP_0002a David derived scan data available

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 No (raw data only)*	6	.0	2.4	2.4
1 Yes	246	1.2	97.6	100.0
Total	252	1.2	100.0	
Missing -10 Did not take part in MRI studies	19614	95.7		
-7 Did not take part in David study	639	3.1		
Total	20253	98.8		
Total	20505	100.0		

MRI_YP_0003 Took part in Linden study

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 No	694	3.4	77.9	77.9
1 Yes	197	1.0	22.1	100.0
Total	891	4.3	100.0	
Missing -10 Did not take part in MRI studies	19614	95.7		
Total	20505	100.0		

MRI_YP_0003a Linden derived scan data available

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 No (raw data only)*	2	.0	1.0	1.0
1 Yes	195	1.0	99.0	100.0
Total	197	1.0	100.0	
Missing -10 Did not take part in MRI studies	19614	95.7		
-7 Did not take part in Linden study	694	3.4		
Total	20308	99.0		
Total	20505	100.0		

MRI_YP_0004 Participant in more than one study

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 In one study only	823	4.0	92.4	92.4
1 In more than one study	68	.3	7.6	100.0
Total	891	4.3	100.0	
Missing -10 Did not take part in MRI studies	19614	95.7		
Total	20505	100.0		

* Within the three sub-studies these images failed the quality control of this project however all data is still available in its anonymized raw state. (MRI_YP_P1157, MRI_YP_P1158, MRI_YP_D1157, MRI_YP_D1158, MRI_YP_L1157, MRI_YP_L1158 contain further breakdown of quality control data).

MRI_YP_0005 Visit Date Paus: Month

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 January	36	.2	7.4	7.4
	2 February	43	.2	8.8	16.2
	3 March	34	.2	7.0	23.2
	4 April	45	.2	9.2	32.4
	5 May	34	.2	7.0	39.4
	6 June	42	.2	8.6	48.0
	7 July	52	.3	10.7	58.7
	8 August	43	.2	8.8	67.6
	9 September	45	.2	9.2	76.8
	10 October	51	.2	10.5	87.3
	11 November	45	.2	9.2	96.5
	12 December	17	.1	3.5	100.0
	Total	487	2.4	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-8 Date missing	26	.1		
	-7 Did not take part in Paus study	378	1.8		
	Total	20018	97.6		
Total	20505	100.0			

MRI_YP_0006 Visit Date Paus: Year

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2010	68	.3	14.0	14.0
	2011	243	1.2	49.9	63.9
	2012	176	.9	36.1	100.0
	Total	487	2.4	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-8 Date missing	26	.1		
	-7 Did not take part in Paus study	378	1.8		
	Total	20018	97.6		
Total	20505	100.0			

MRI_YP_0007 Visit Date David: Month

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1 January	8	.0	3.2	3.2
2 February	14	.1	5.6	8.7
3 March	21	.1	8.3	17.1
4 April	20	.1	7.9	25.0
5 May	30	.1	11.9	36.9
6 June	24	.1	9.5	46.4
7 July	17	.1	6.7	53.2
8 August	29	.1	11.5	64.7
9 September	25	.1	9.9	74.6
10 October	27	.1	10.7	85.3
11 November	17	.1	6.7	92.1
12 December	20	.1	7.9	100.0
Total	252	1.2	100.0	
Missing -10 Did not take part in MRI studies	19614	95.7		
-7 Did not take part in David study	639	3.1		
Total	20253	98.8		
Total	20505	100.0		

MRI_YP_0008 Visit Date David: Year

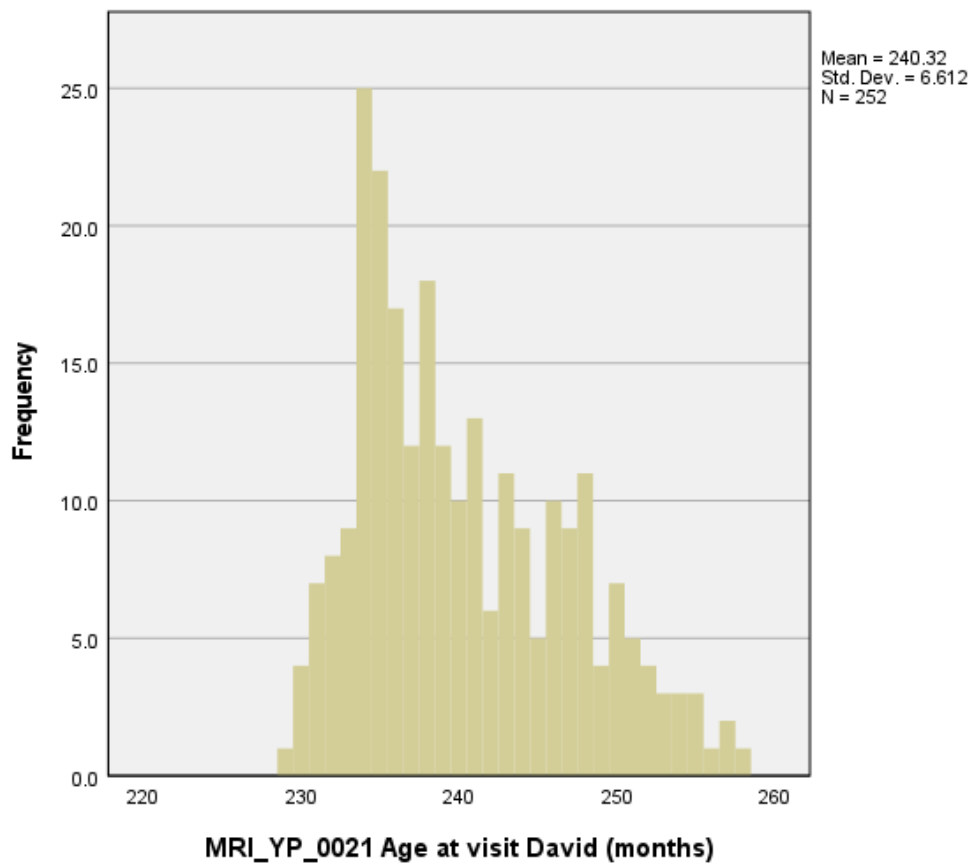
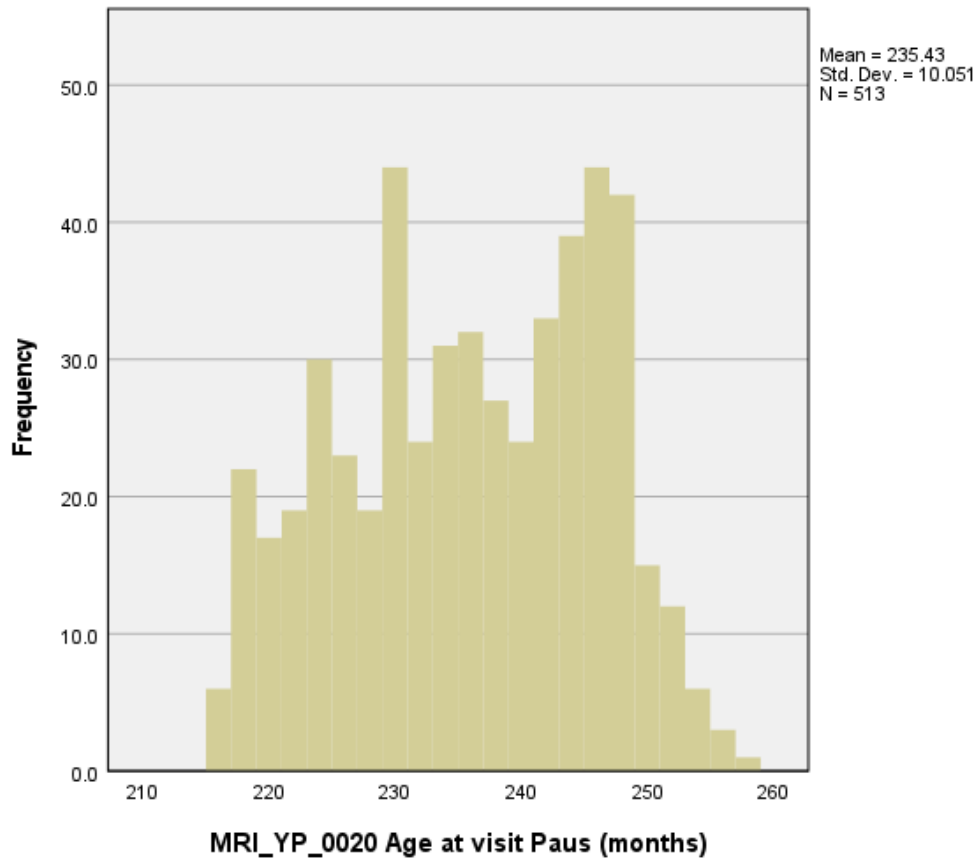
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 2010	1	.0	.4	.4
2011	96	.5	38.1	38.5
2012	155	.8	61.5	100.0
Total	252	1.2	100.0	
Missing -10 Did not take part in MRI studies	19614	95.7		
-7 Did not take part in David study	639	3.1		
Total	20253	98.8		
Total	20505	100.0		

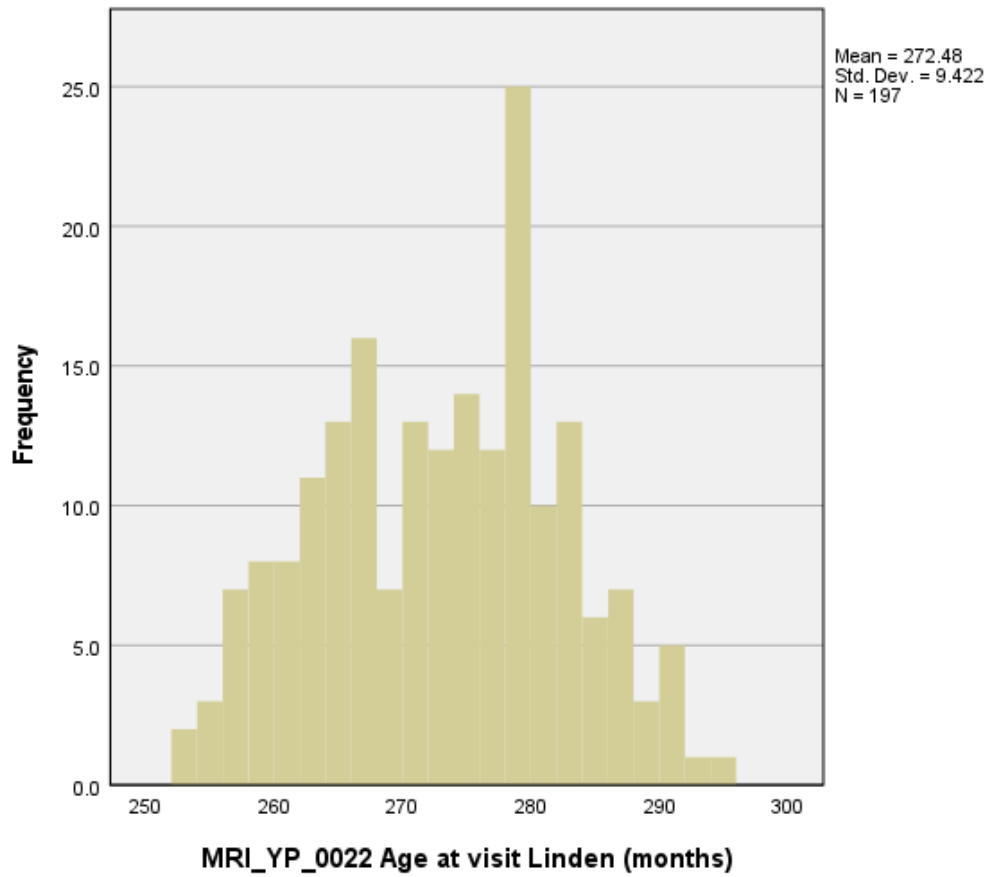
MRI_YP_0009 Visit Date Linden: Month

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 January	3	.0	1.5	1.5
	2 February	11	.1	5.6	7.1
	3 March	17	.1	8.6	15.7
	4 April	11	.1	5.6	21.3
	5 May	17	.1	8.6	29.9
	6 June	24	.1	12.2	42.1
	7 July	16	.1	8.1	50.3
	8 August	21	.1	10.7	60.9
	9 September	18	.1	9.1	70.1
	10 October	16	.1	8.1	78.2
	11 November	20	.1	10.2	88.3
	12 December	23	.1	11.7	100.0
	Total	197	1.0	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-7 Did not take part in Linden study	694	3.4		
	Total	20308	99.0		
Total	20505	100.0			

MRI_YP_0010 Visit Date Linden: Year

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2013	8	.0	4.1	4.1
	2014	115	.6	58.4	62.4
	2015	73	.4	37.1	99.5
	2016	1	.0	.5	100.0
	Total	197	1.0	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-7 Did not take part in Linden study	694	3.4		
	Total	20308	99.0		
Total	20505	100.0			





MRI_YP_0040 Participant handedness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Right	765	3.7	87.1	87.1
	2 Left	113	.6	12.9	100.0
	Total	878	4.3	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-1 NS/NK	13	.1		
	Total	19627	95.7		
Total		20505	100.0		

MRI_YP_0050 PLIKS category David

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 None	123	.6	50.0	50.0
	1 Suspected	42	.2	17.1	67.1
	2 Definite	81	.4	32.9	100.0
	Total	246	1.2	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-9 MRI data not available	6	.0		
	-7 Did not take part in David study	639	3.1		
	Total	20259	98.8		
Total		20505	100.0		

MRI_YP_0060 David Case-control status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 Control	123	.6	50.0	50.0
	1 Case	123	.6	50.0	100.0
	Total	246	1.2	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-9 MRI data not available	6	.0		
	-7 Did not take part in David study	639	3.1		
	Total	20259	98.8		
Total		20505	100.0		

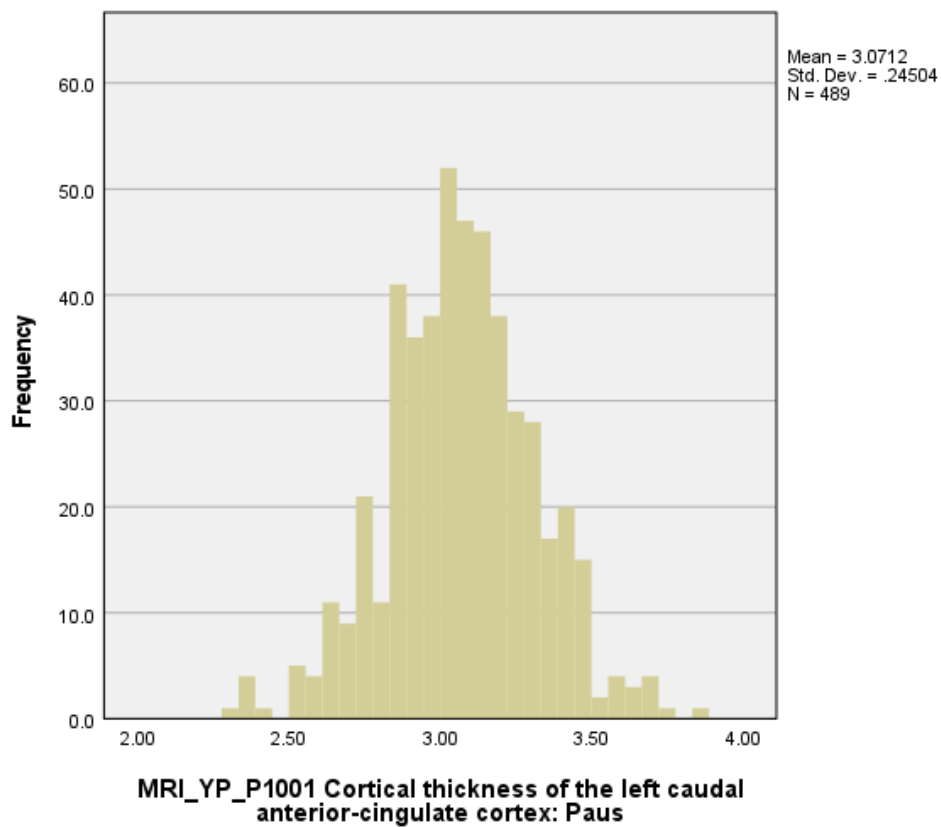
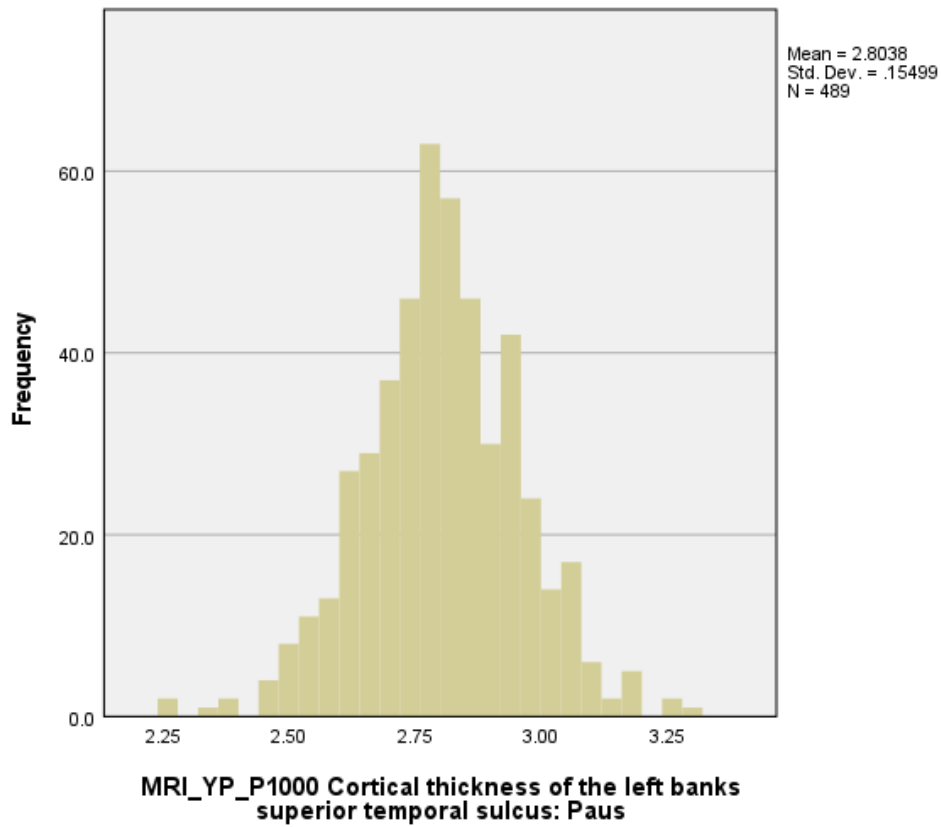
MRI_YP_0061 Linden Case-Control status

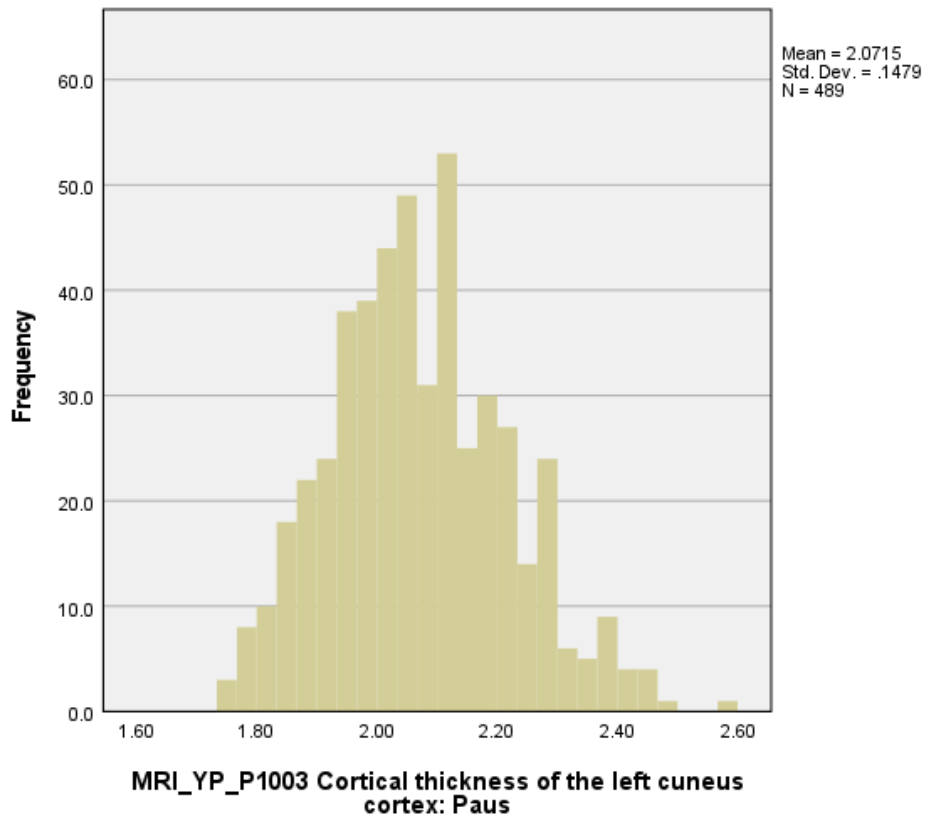
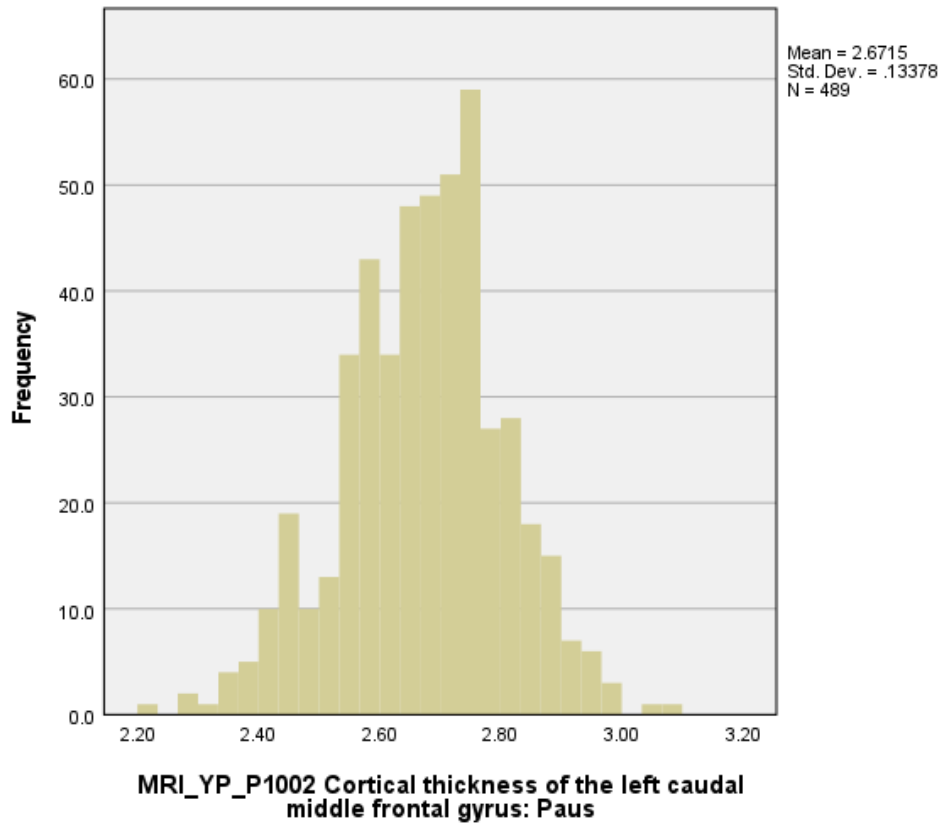
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 Control (low PRS)	98	.5	50.3	50.3
	1 Case (high PRS)	97	.5	49.7	100.0
	Total	195	1.0	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-9 MRI data not available	2	.0		
	-7 Did not take part in Linden study	694	3.4		
	Total	20310	99.0		
Total		20505	100.0		

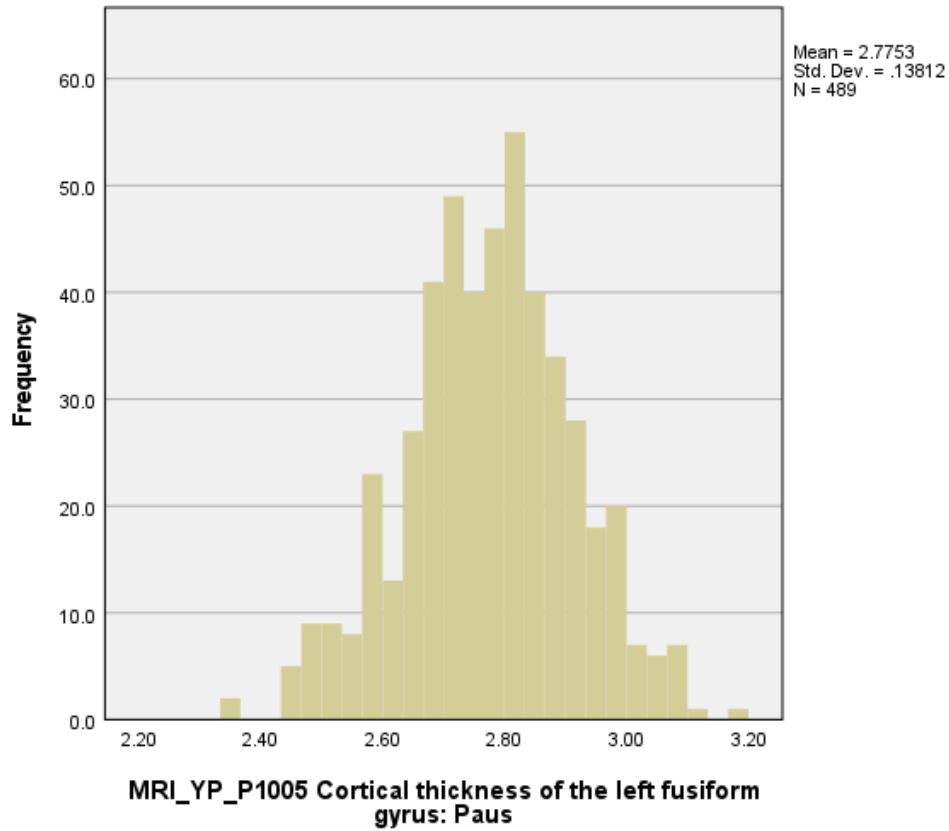
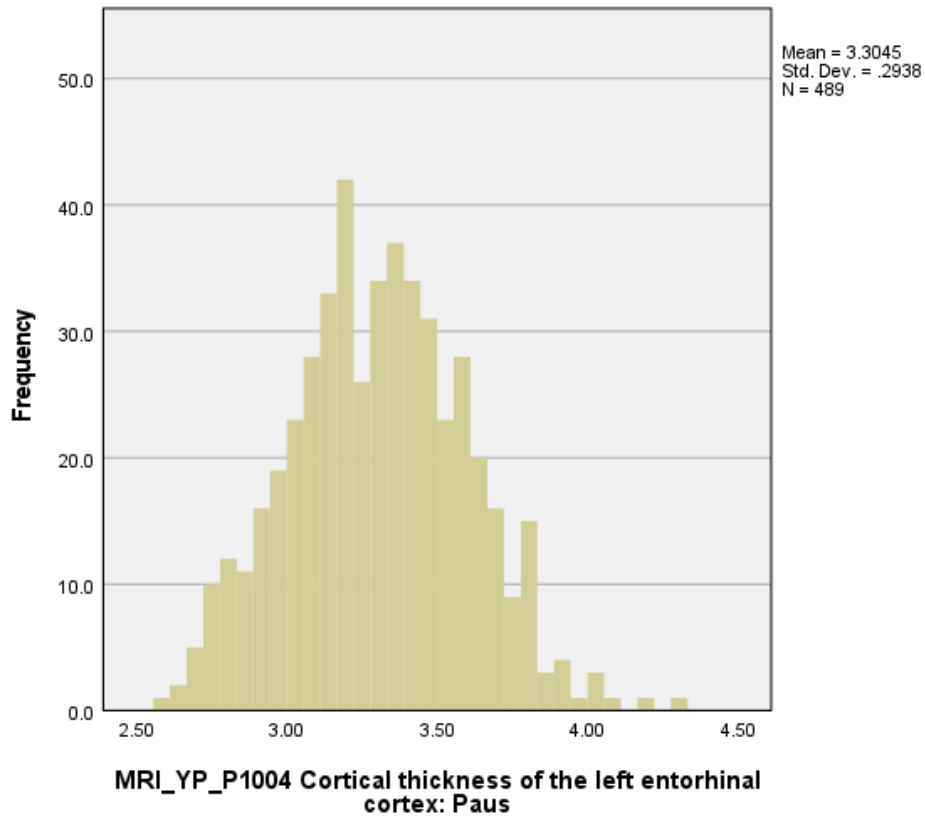
MRI_YP_0062 Linden Case-Control Status by gender

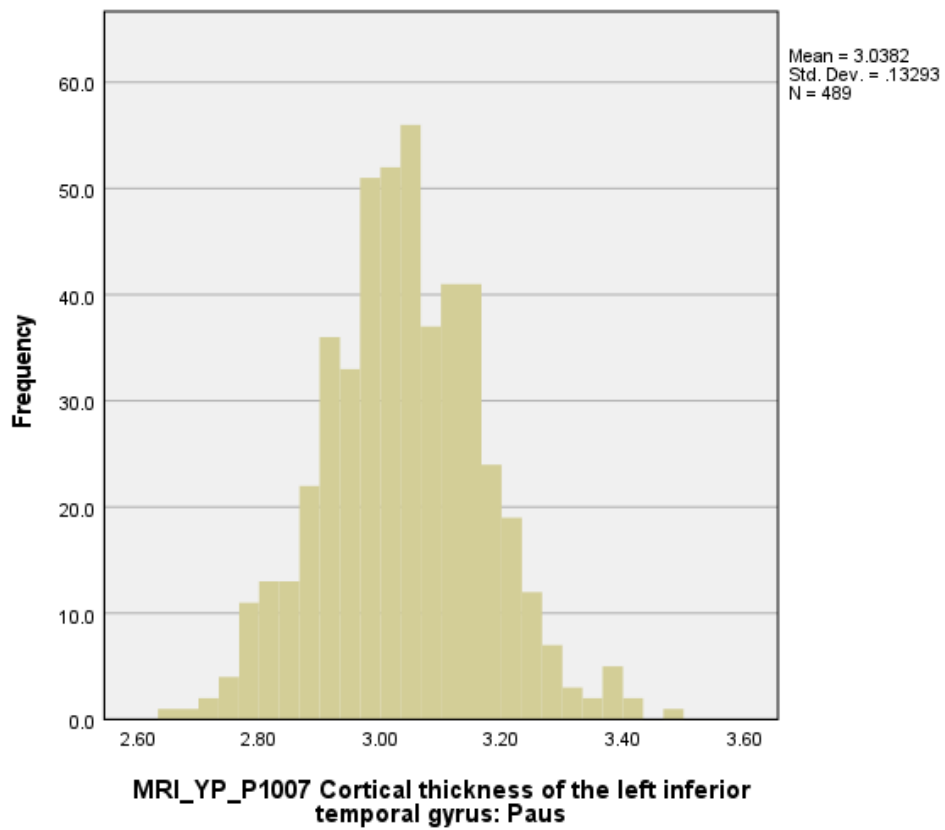
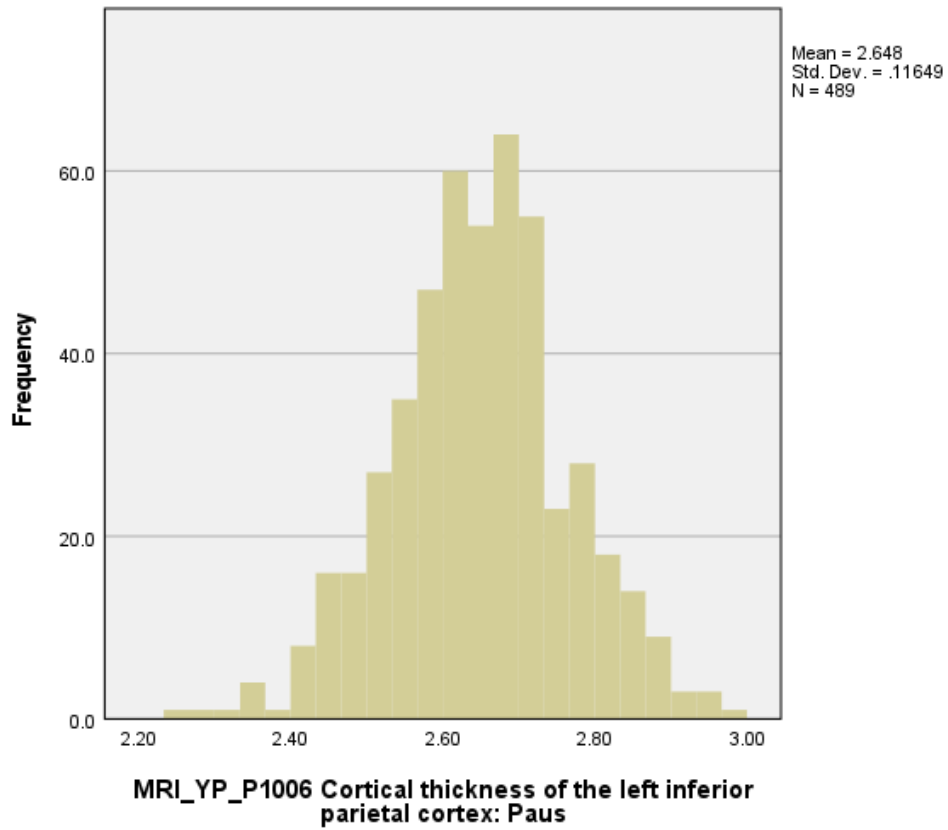
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Female control (low PRS)	51	.2	26.2	26.2
	2 Male control (low PRS)	47	.2	24.1	50.3
	3 Female case (high PRS)	51	.2	26.2	76.4
	4 Male case (high PRS)	46	.2	23.6	100.0
	Total	195	1.0	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-9 MRI data not available	2	.0		
	-7 Did not take part in Linden study	694	3.4		
	Total	20310	99.0		
Total		20505	100.0		

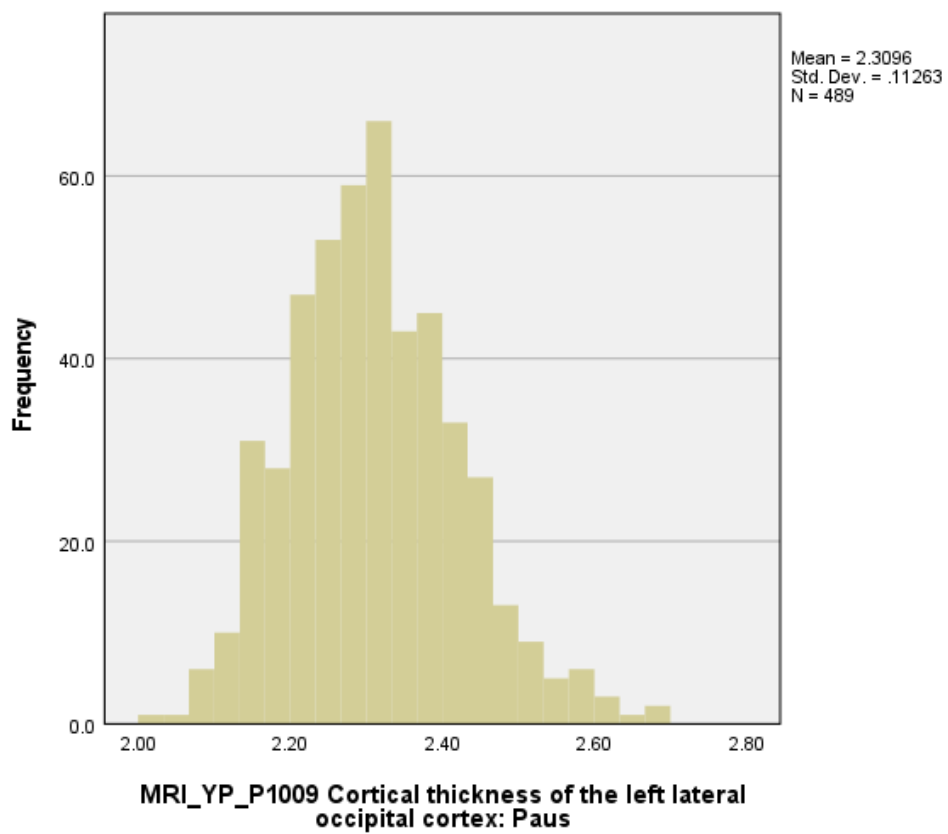
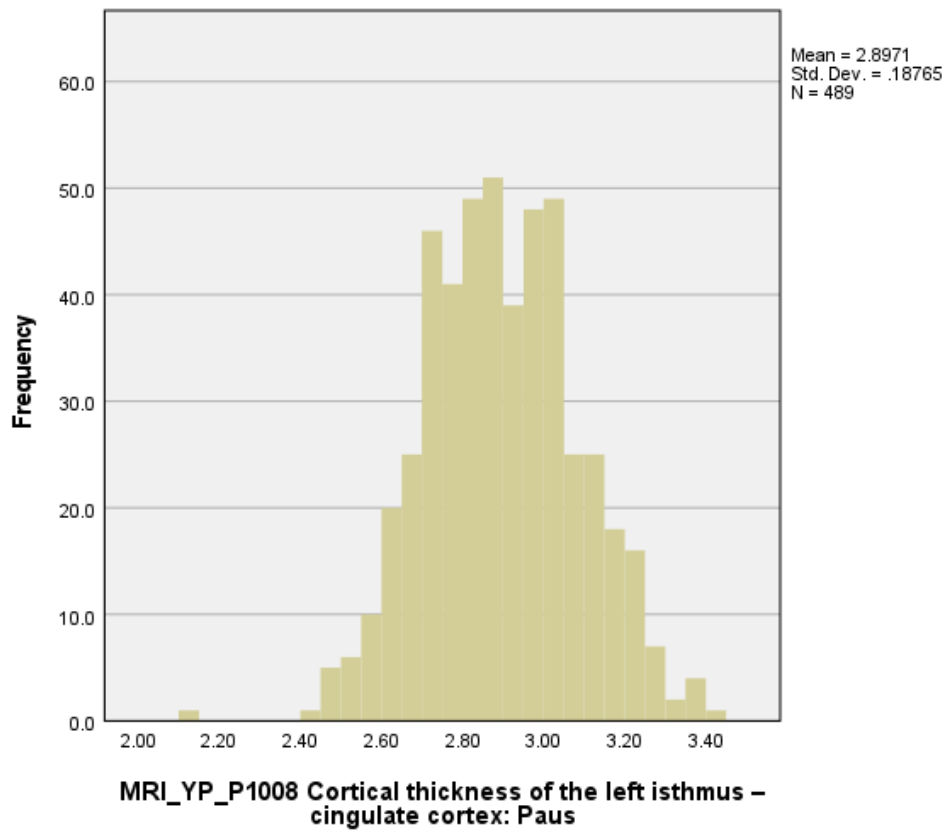
Paus (ALSPAC-Testosterone Study) MRI frequencies & histograms

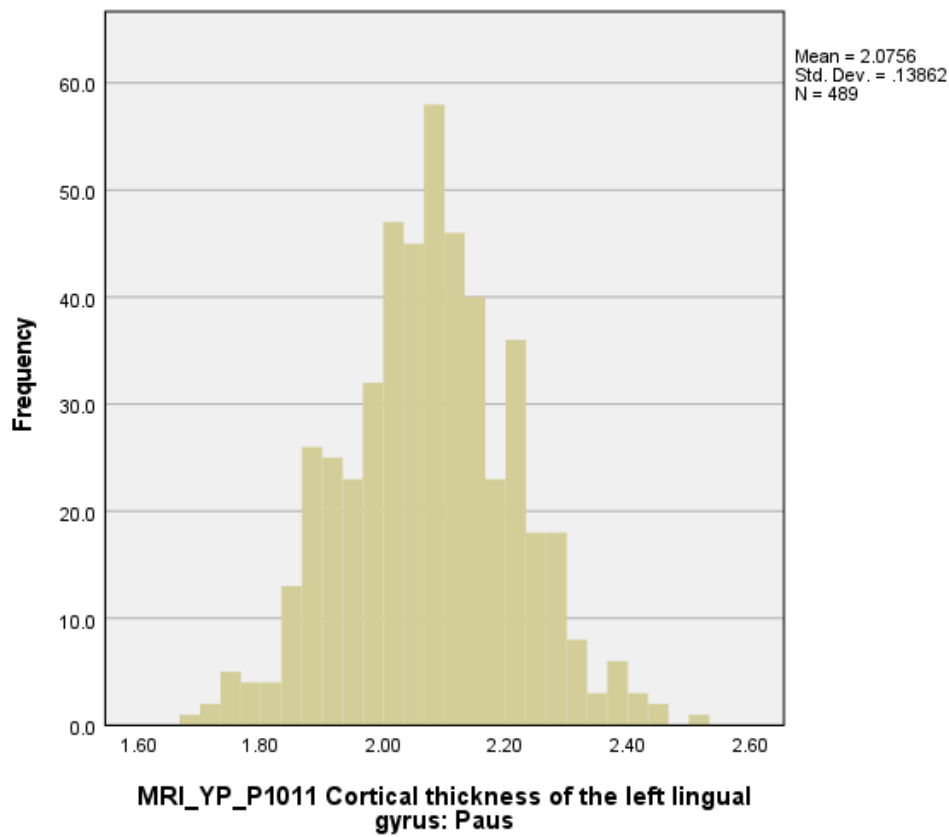
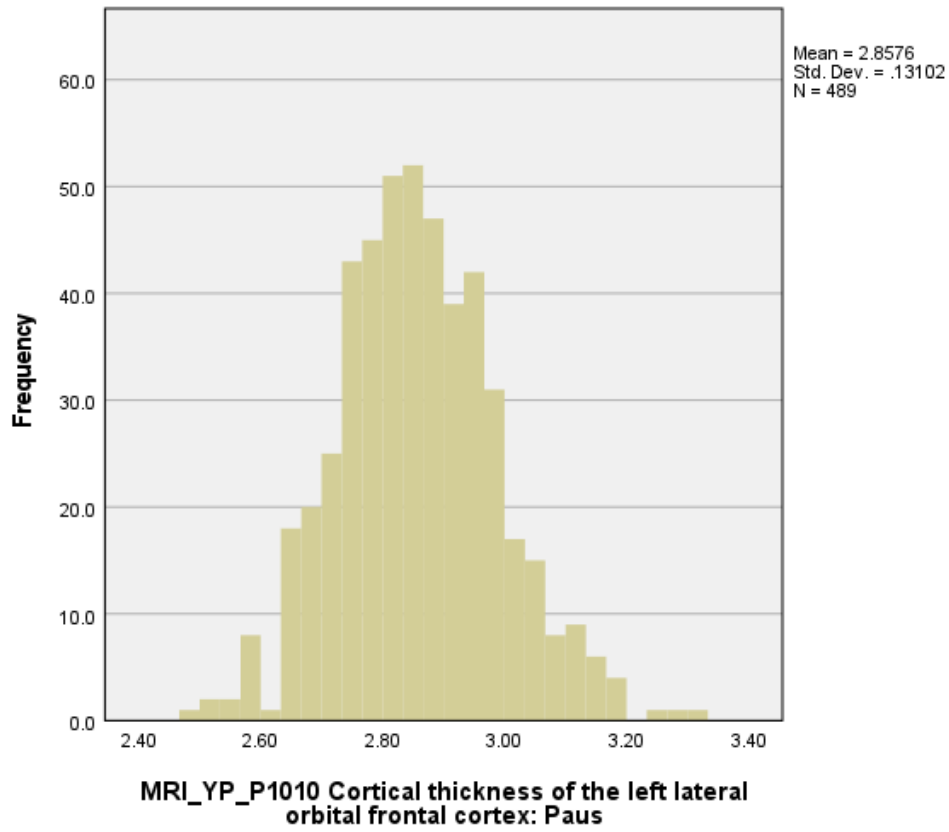


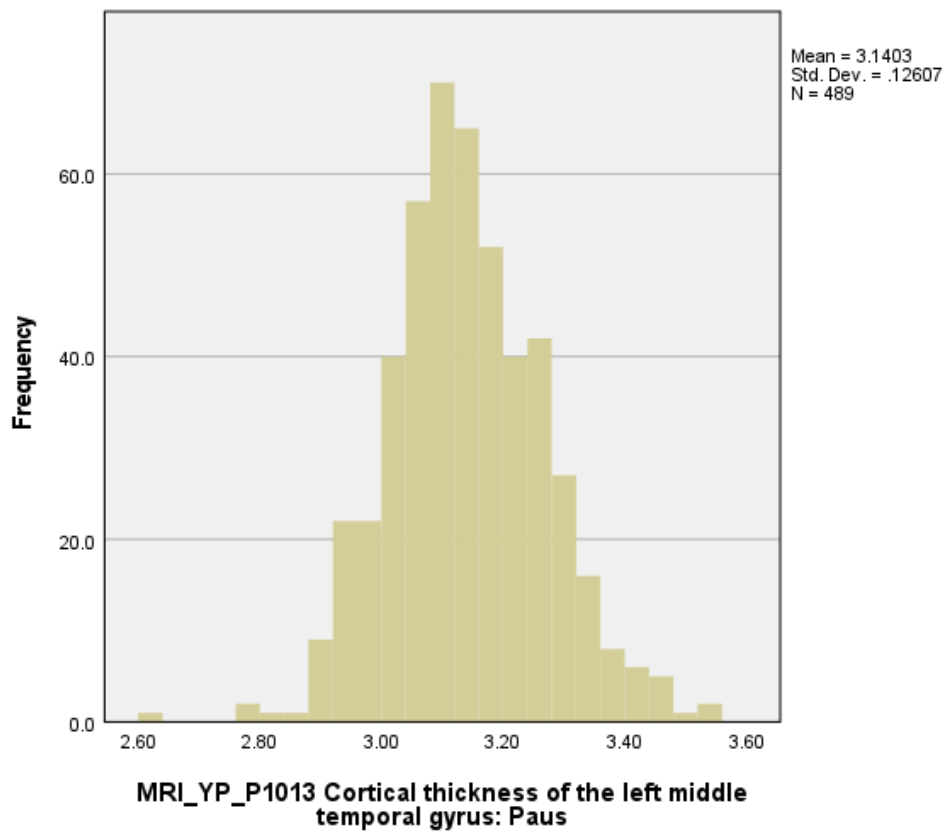
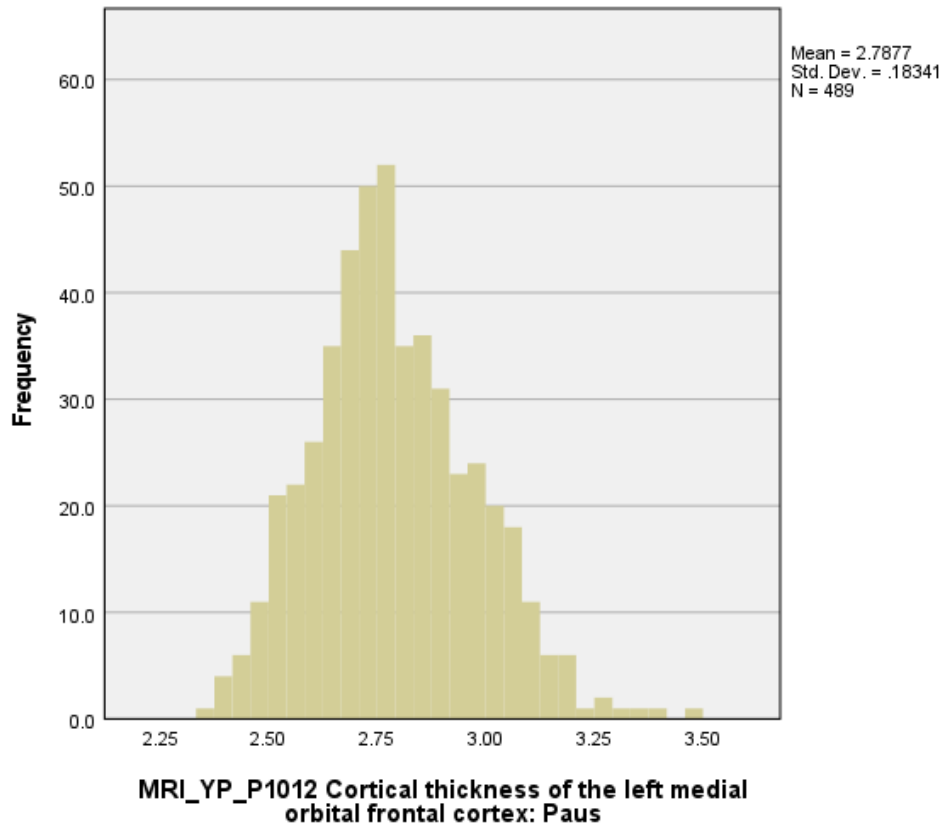


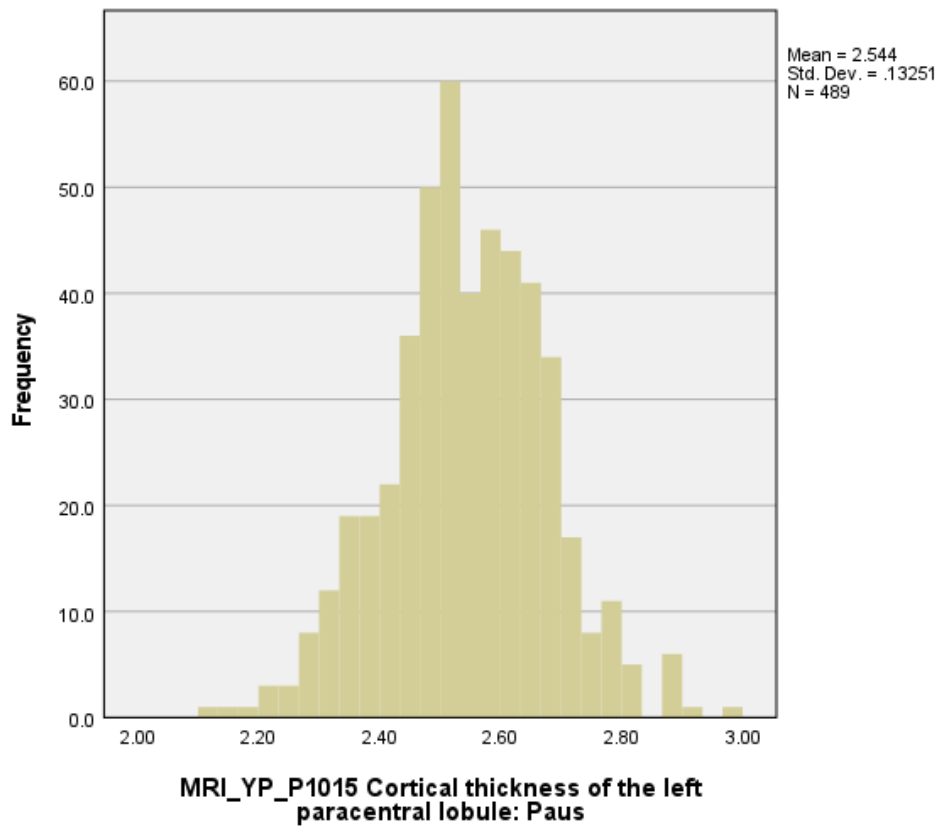
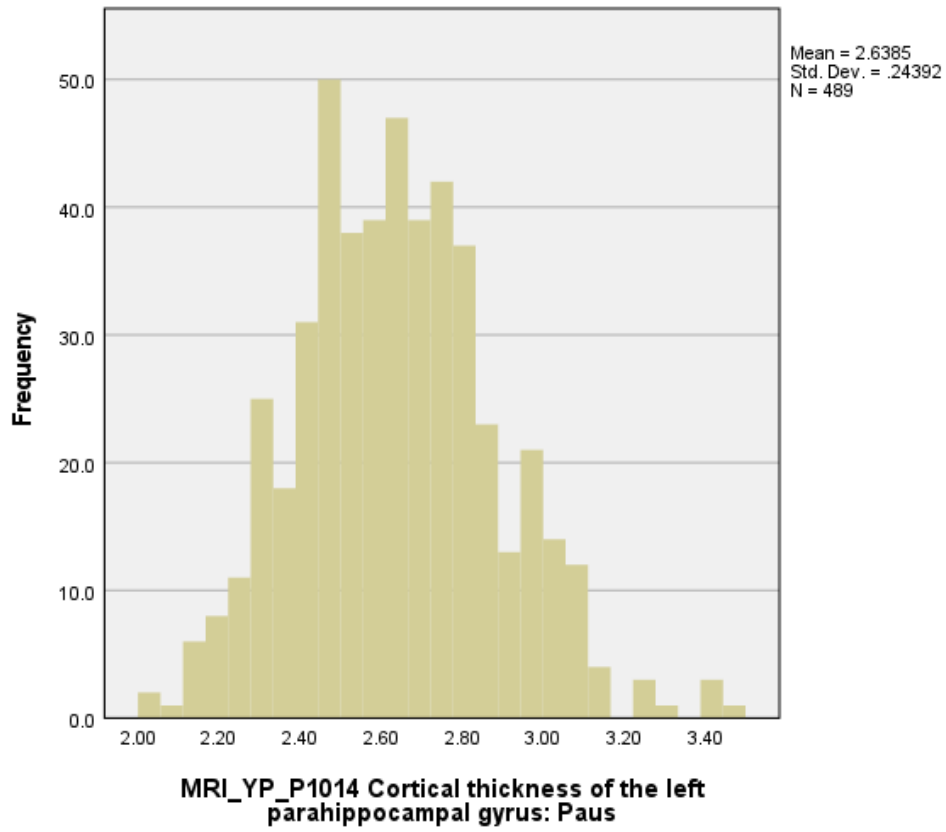


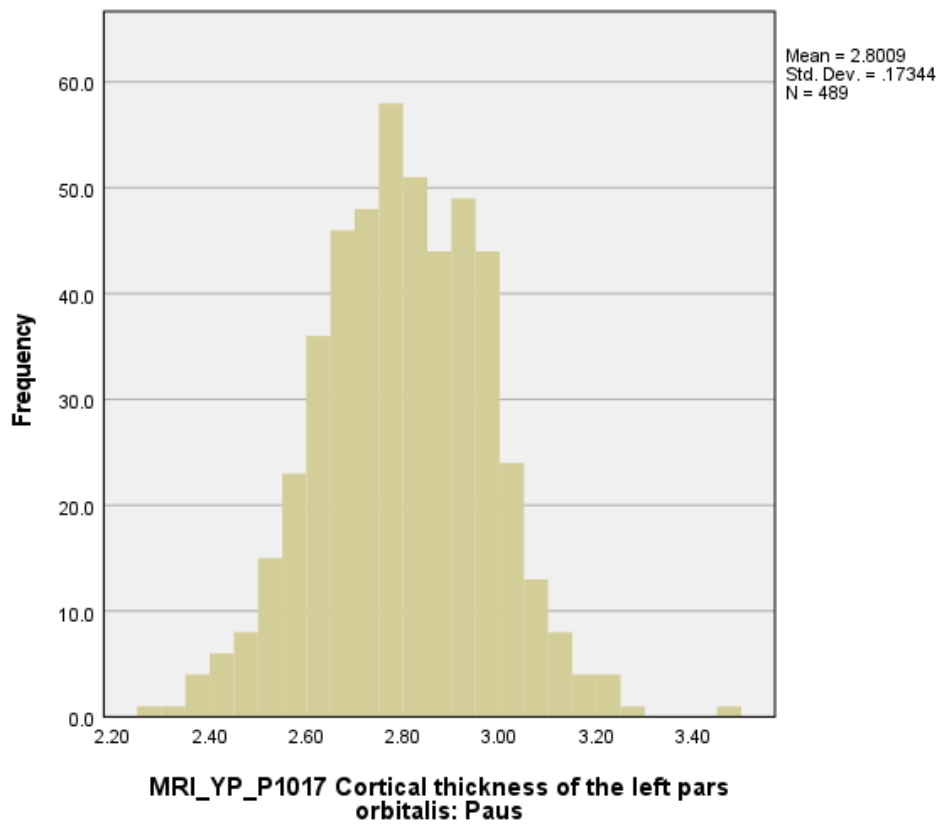
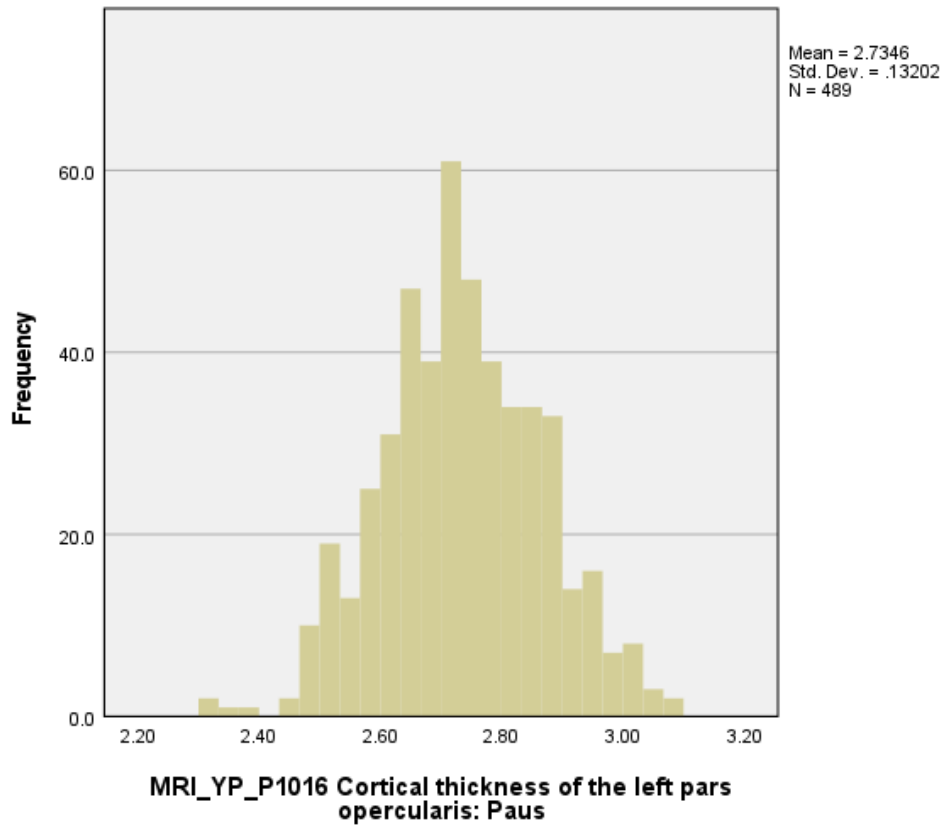


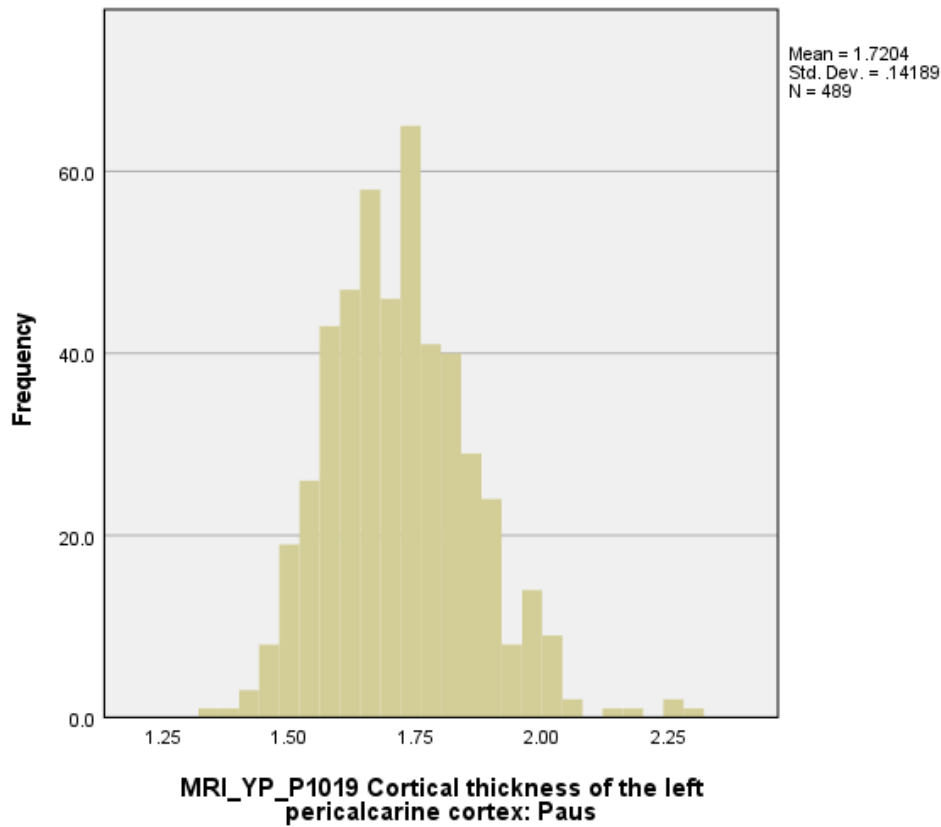
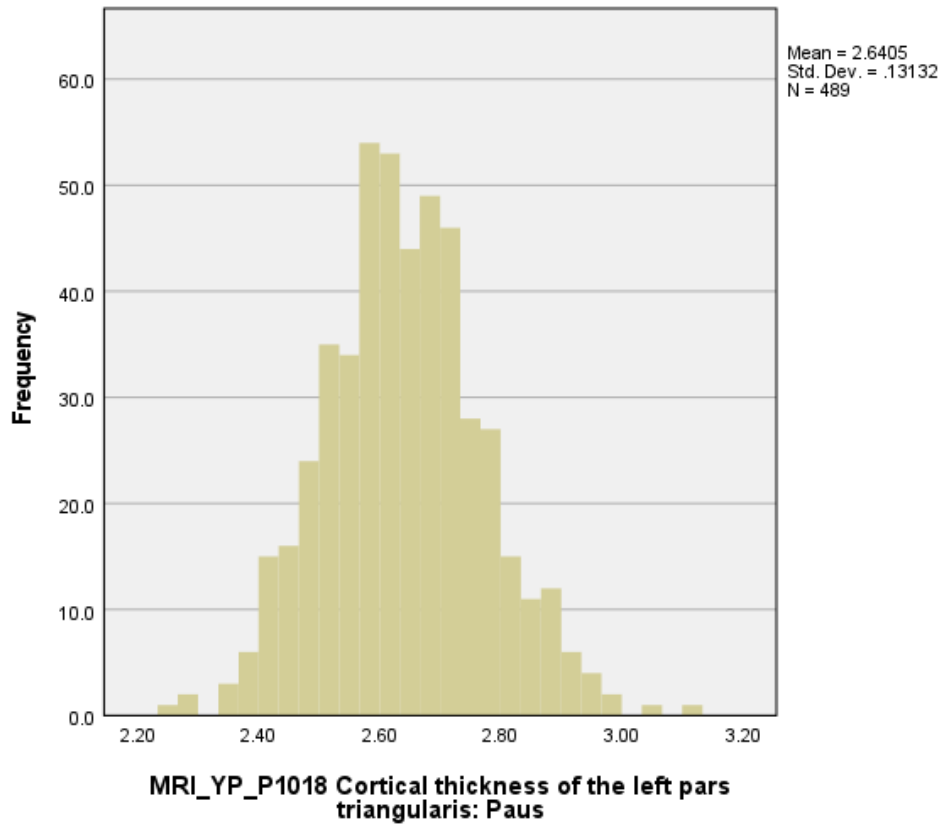


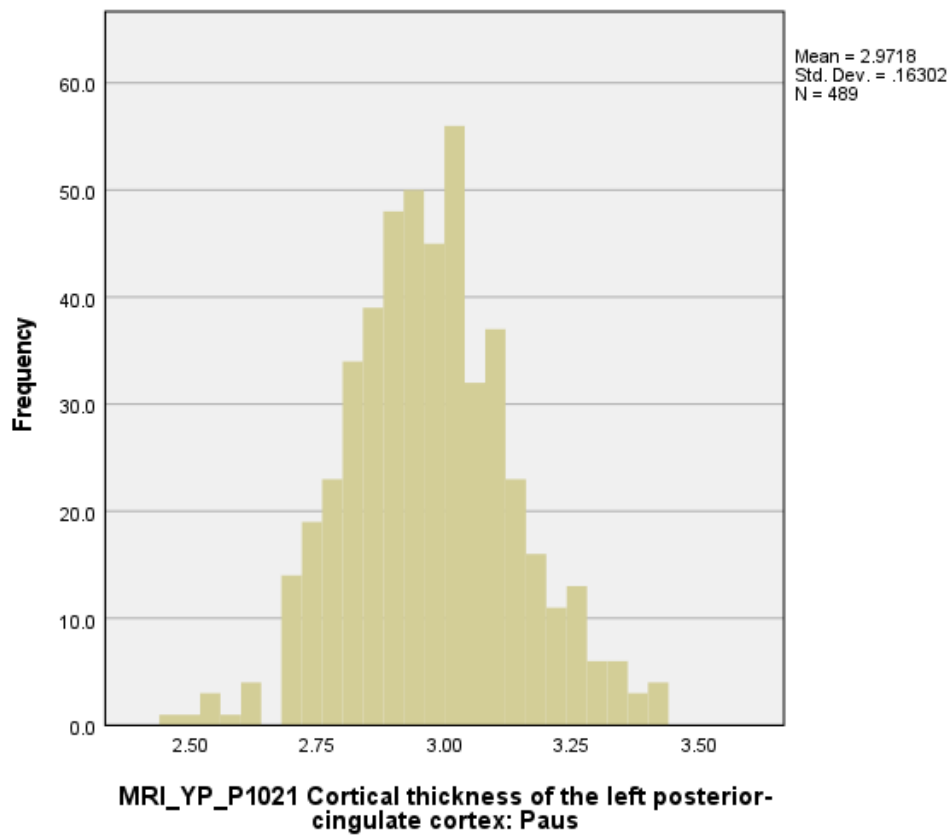
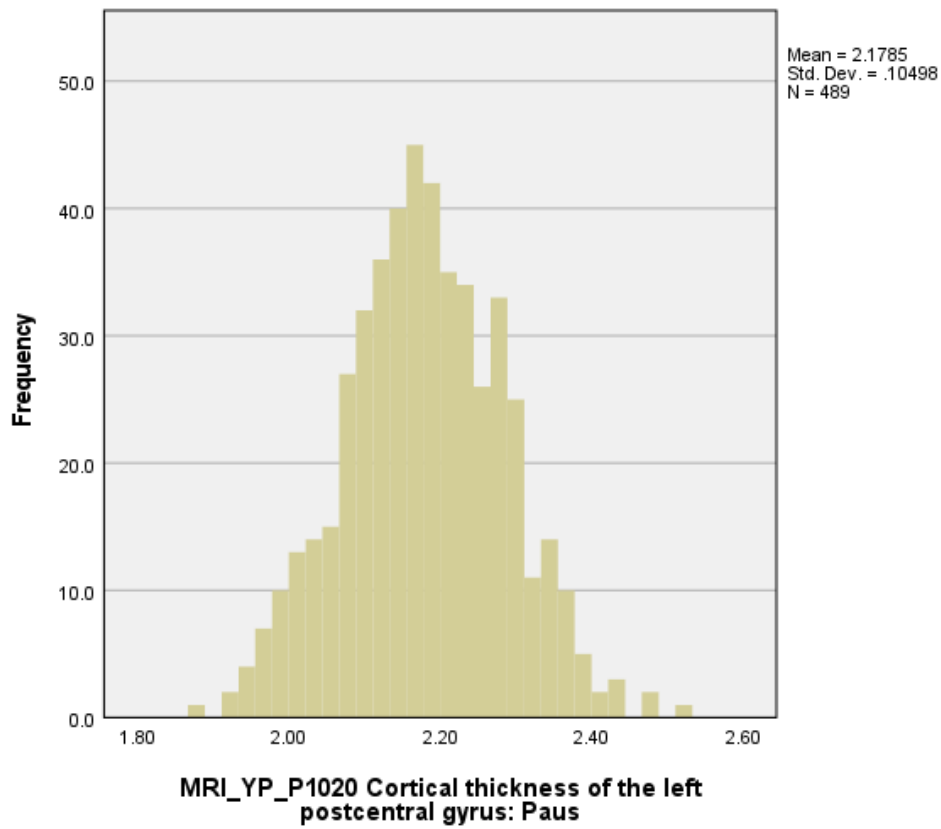


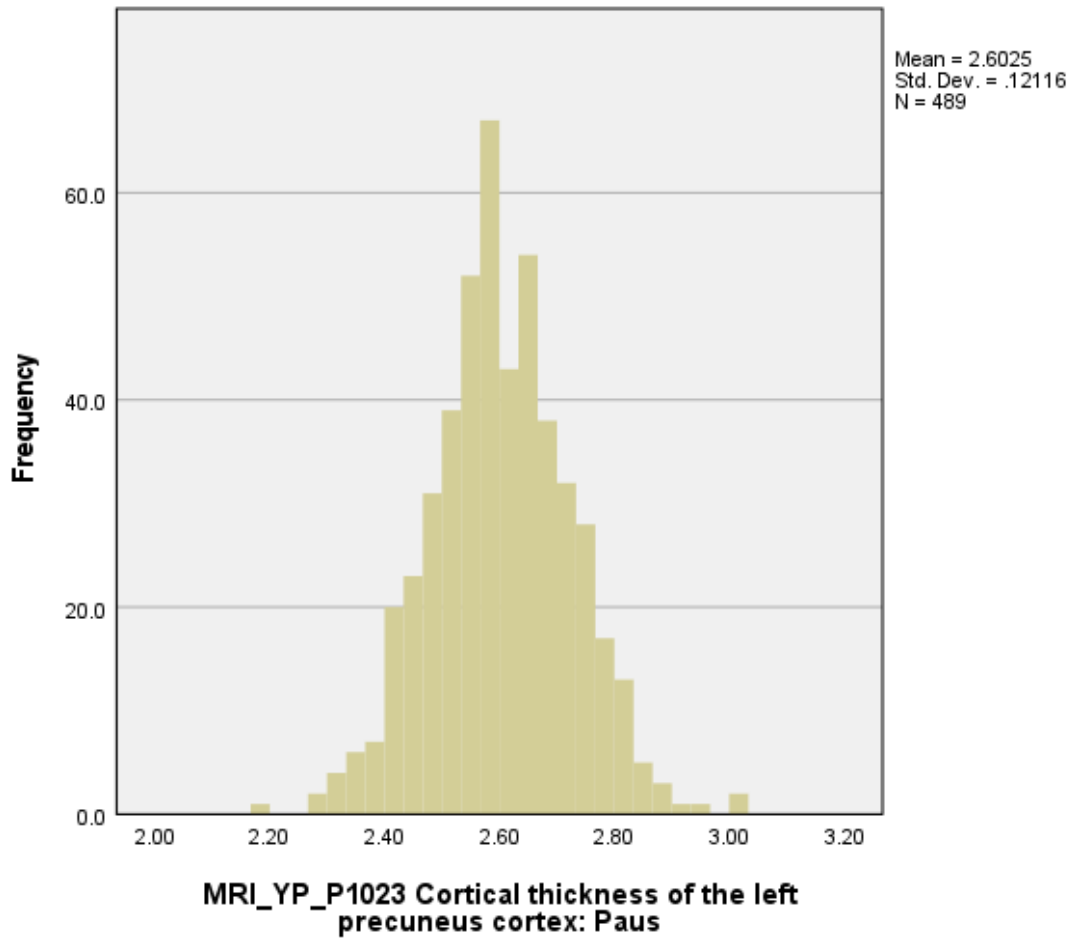


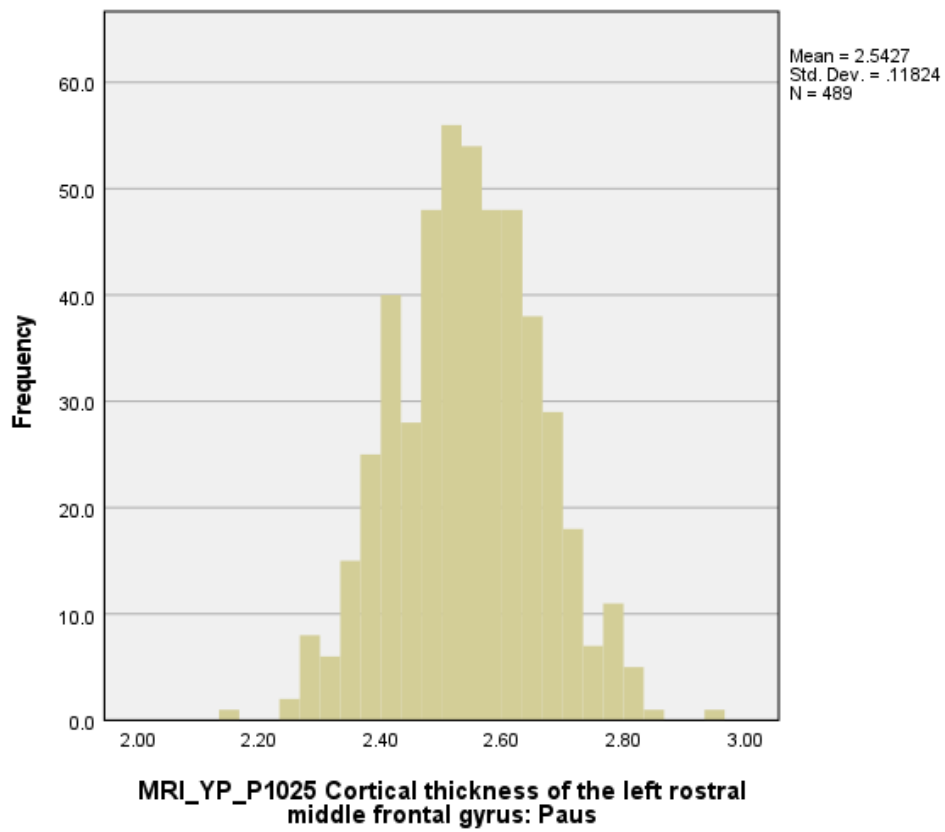
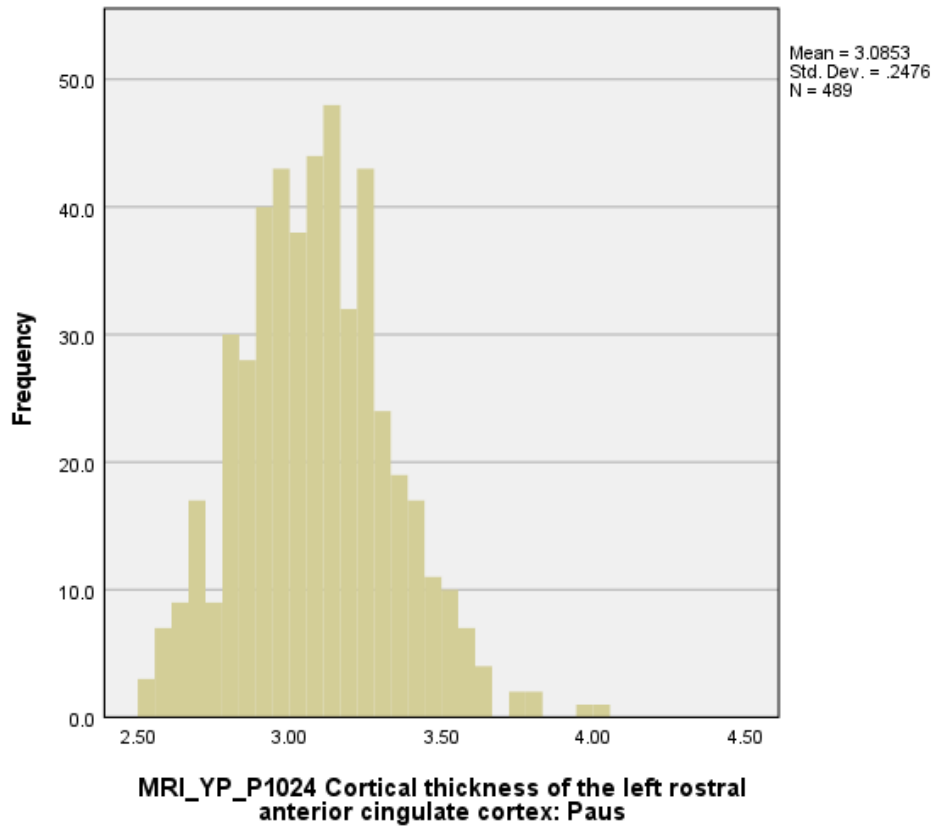


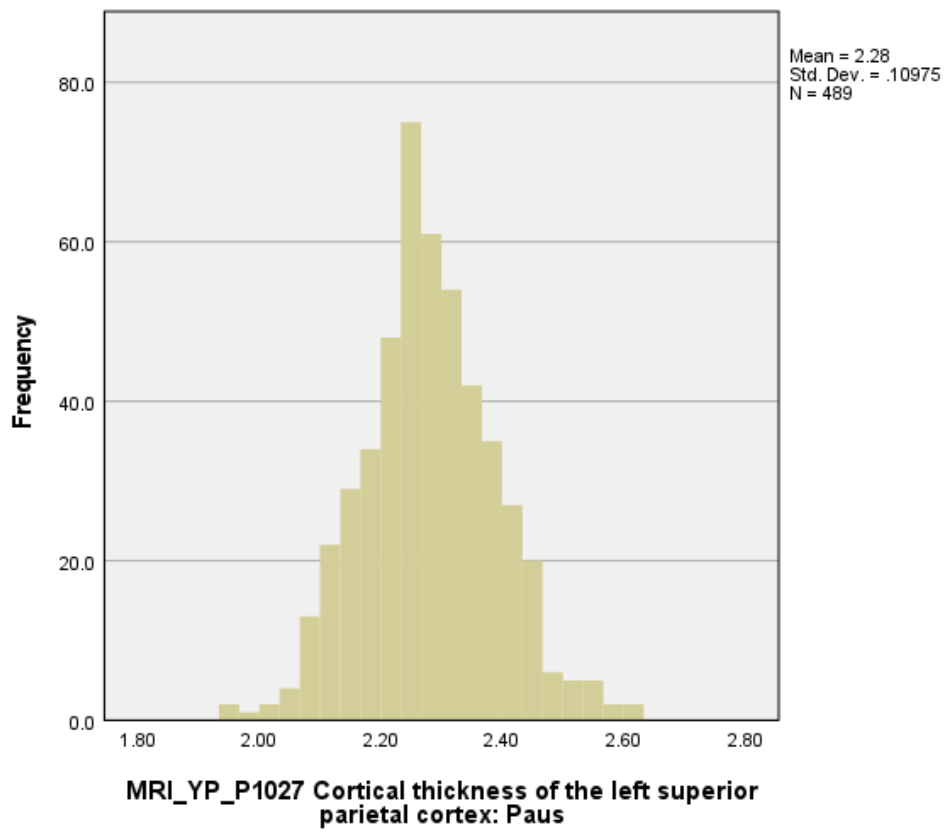
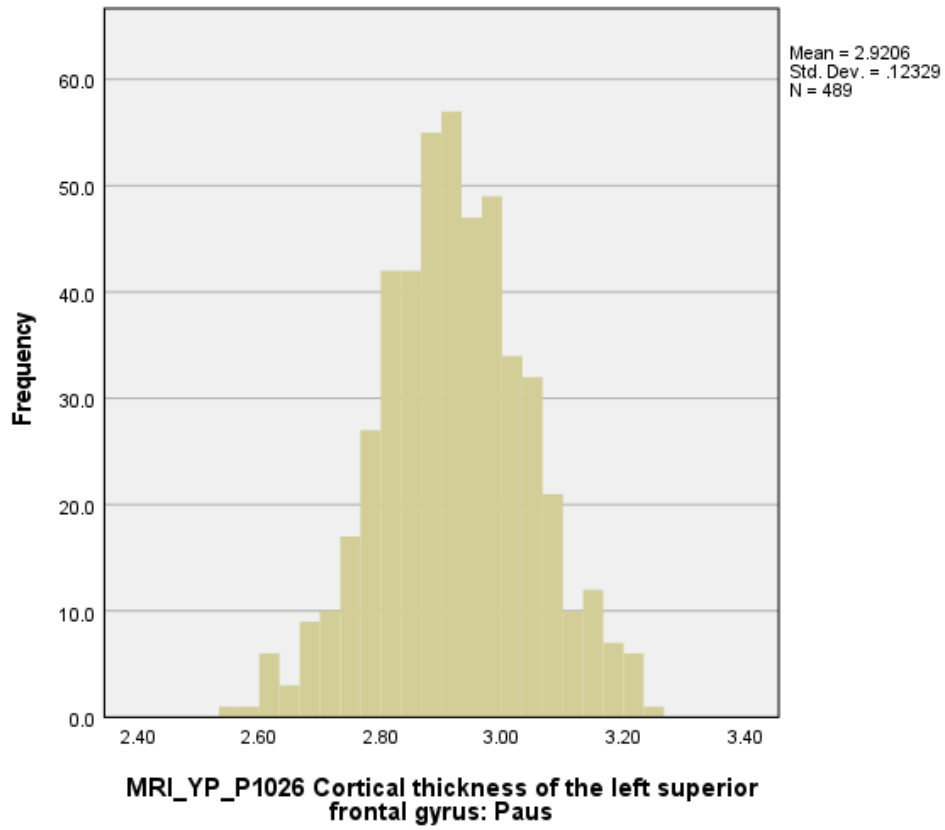


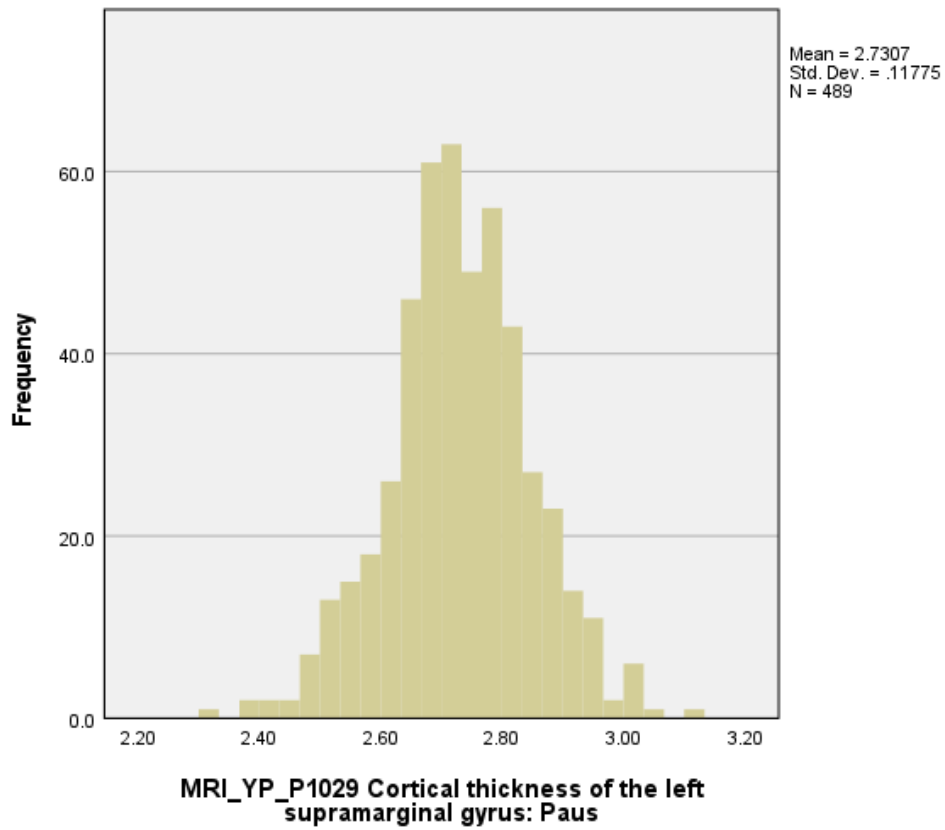
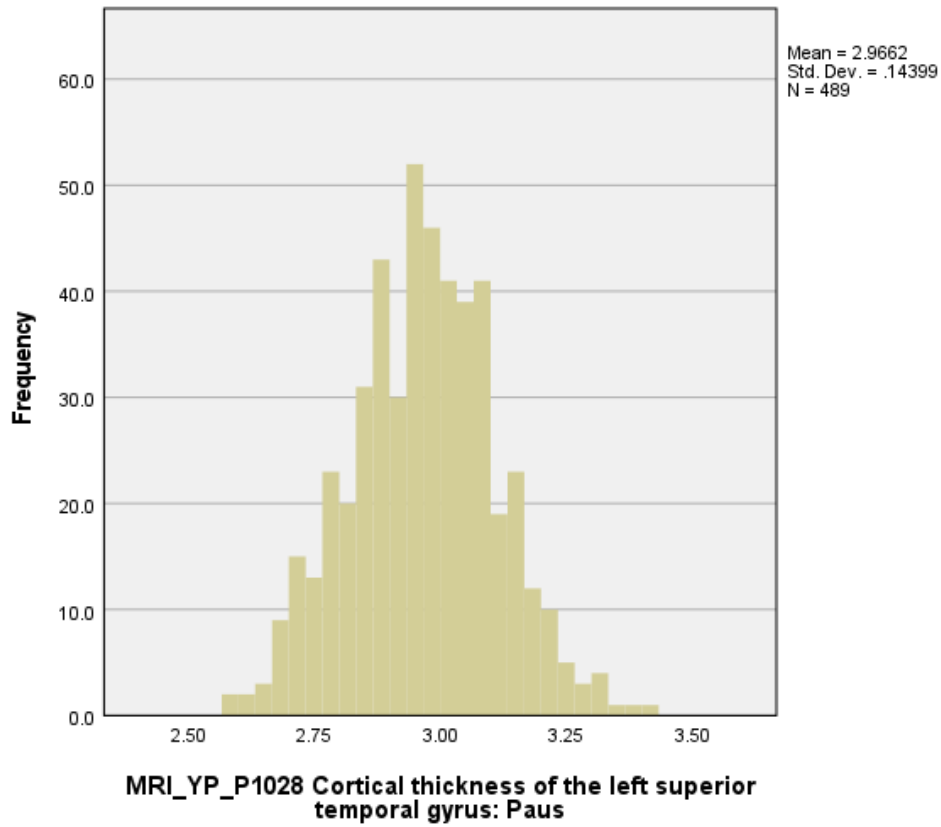


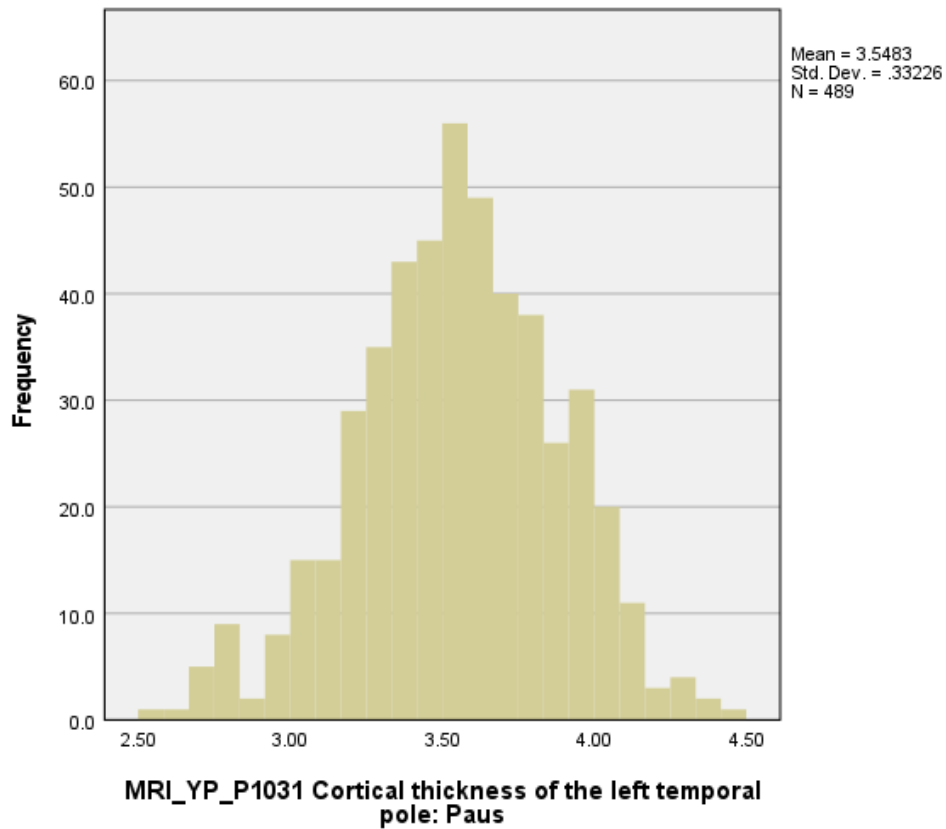
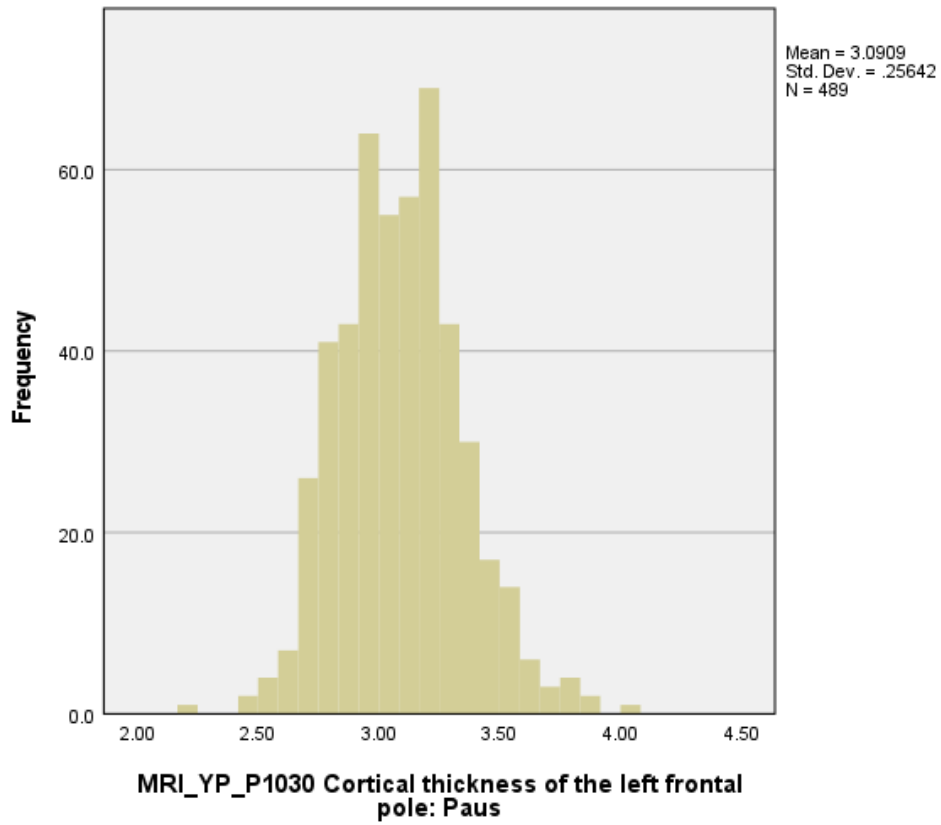


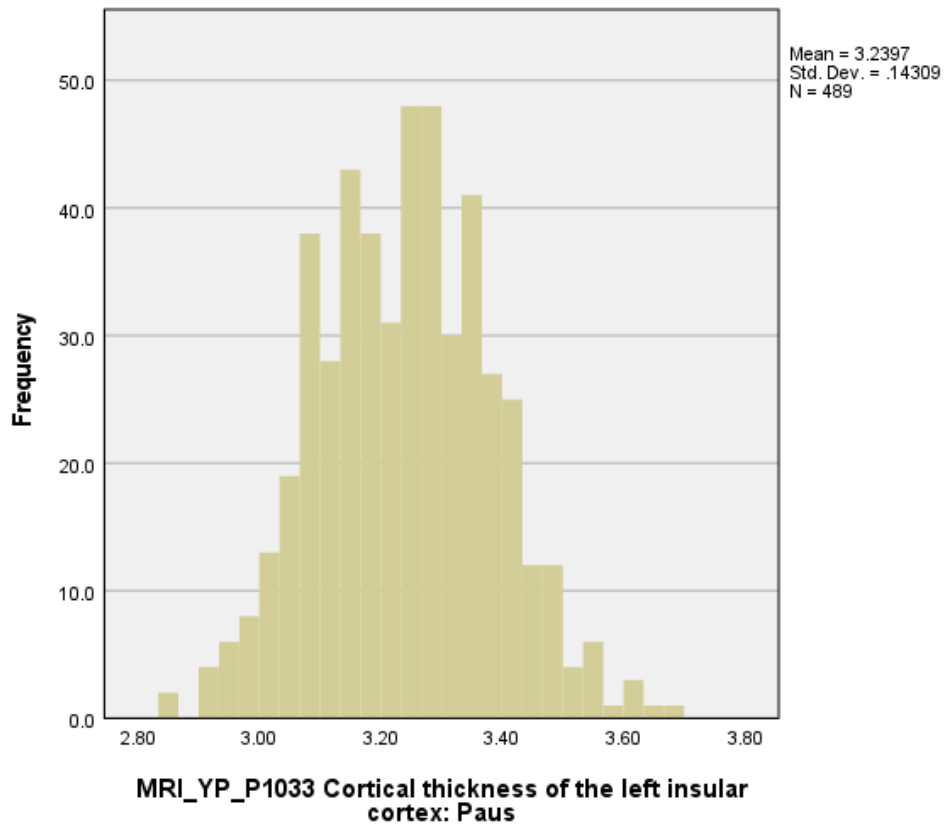
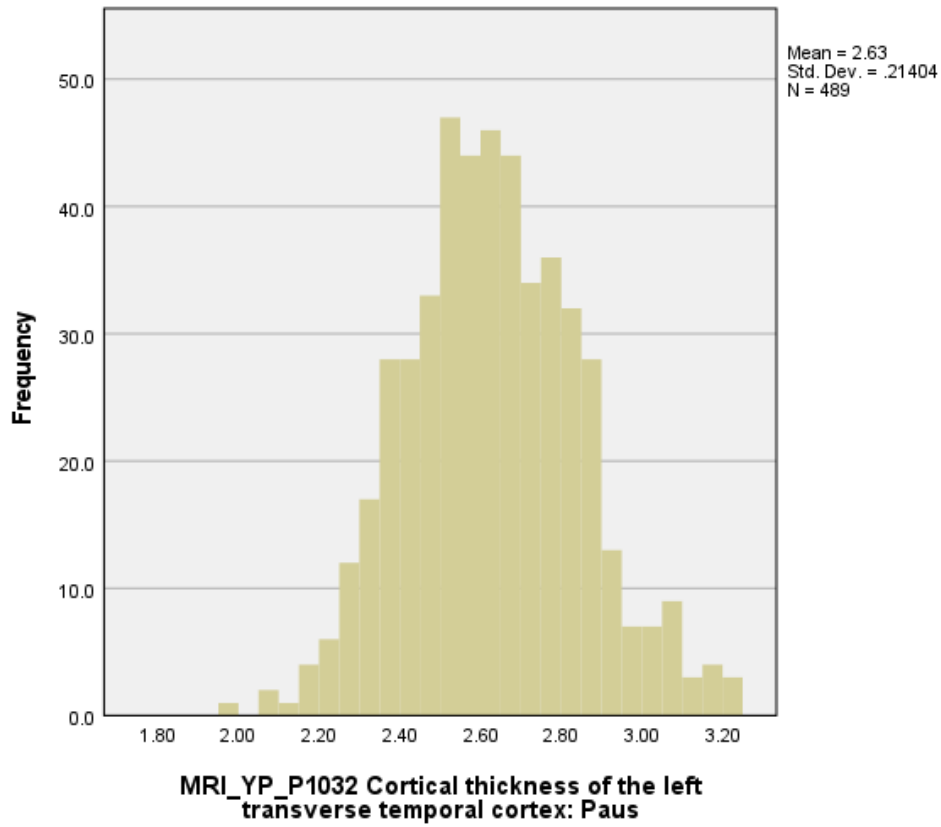


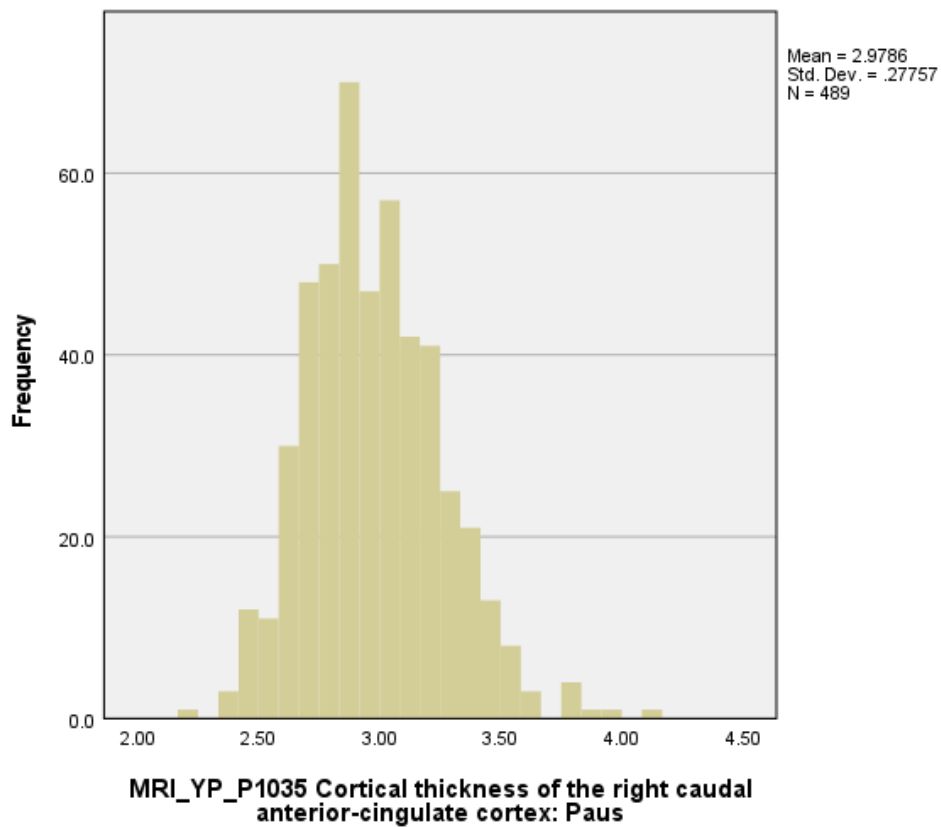
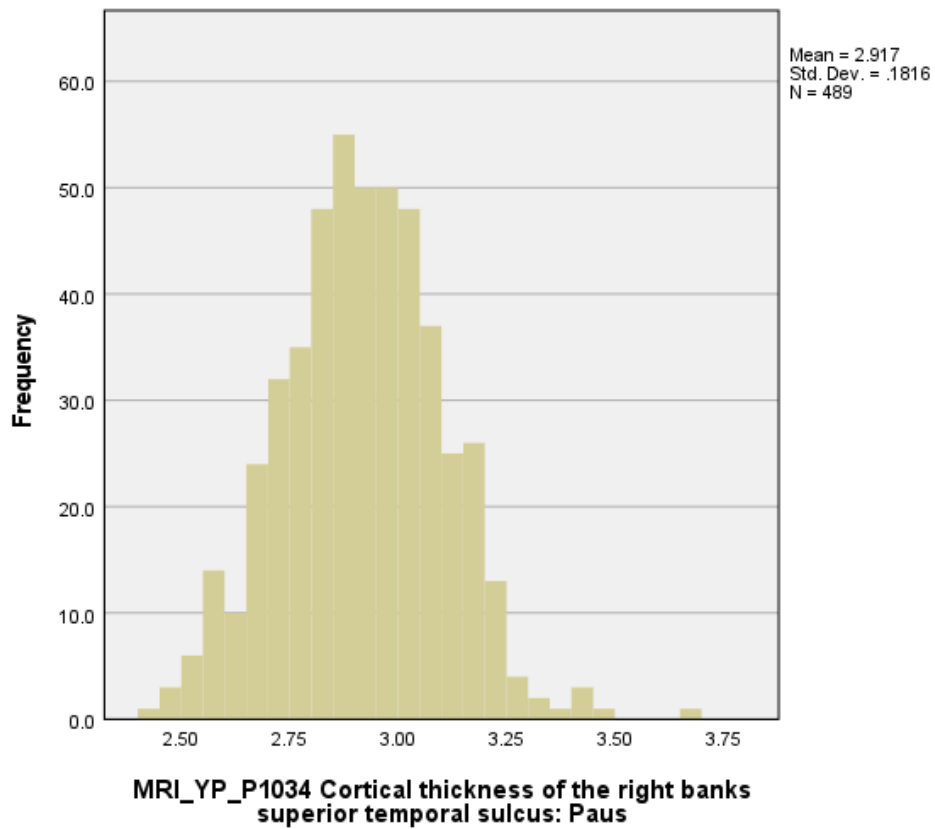


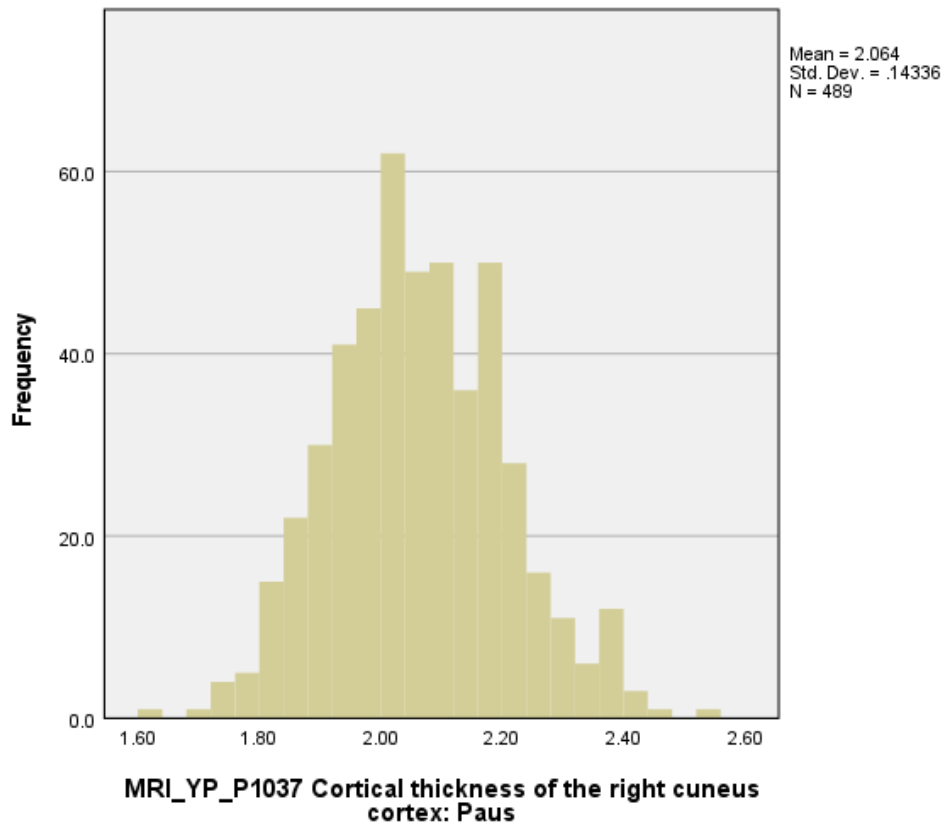
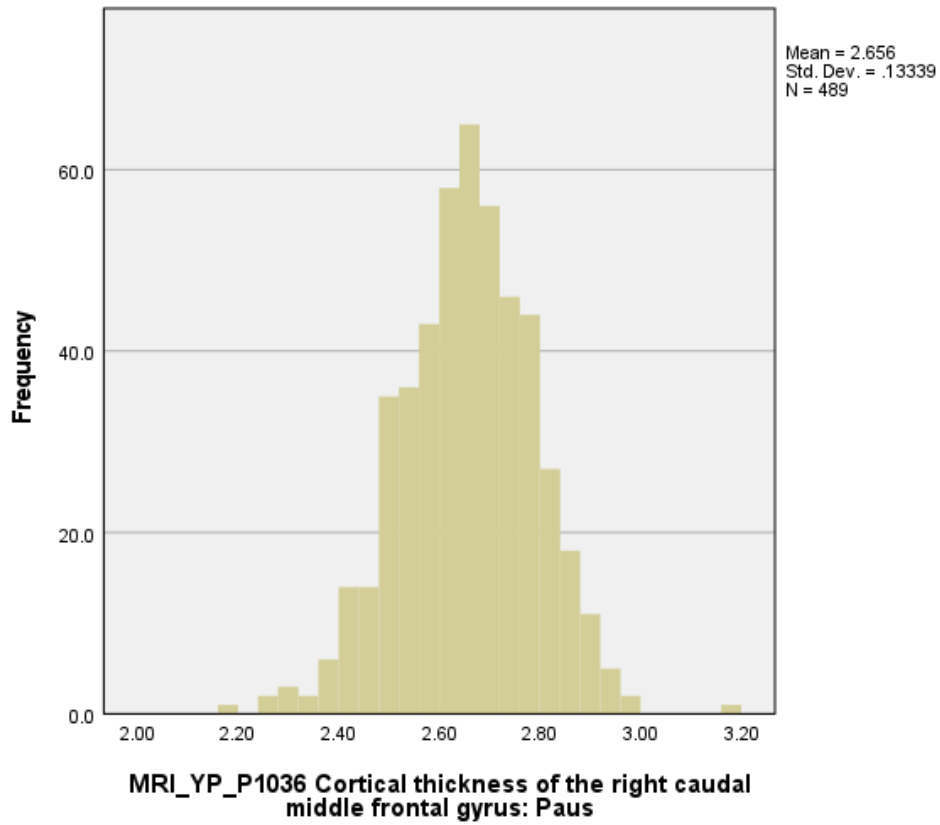


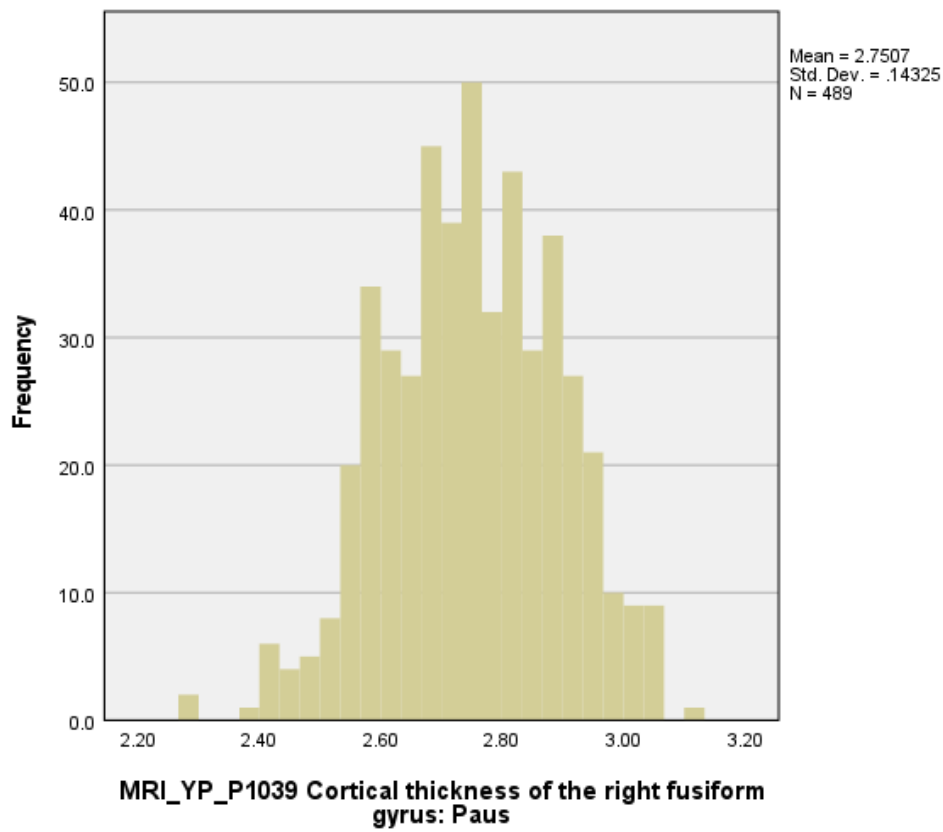
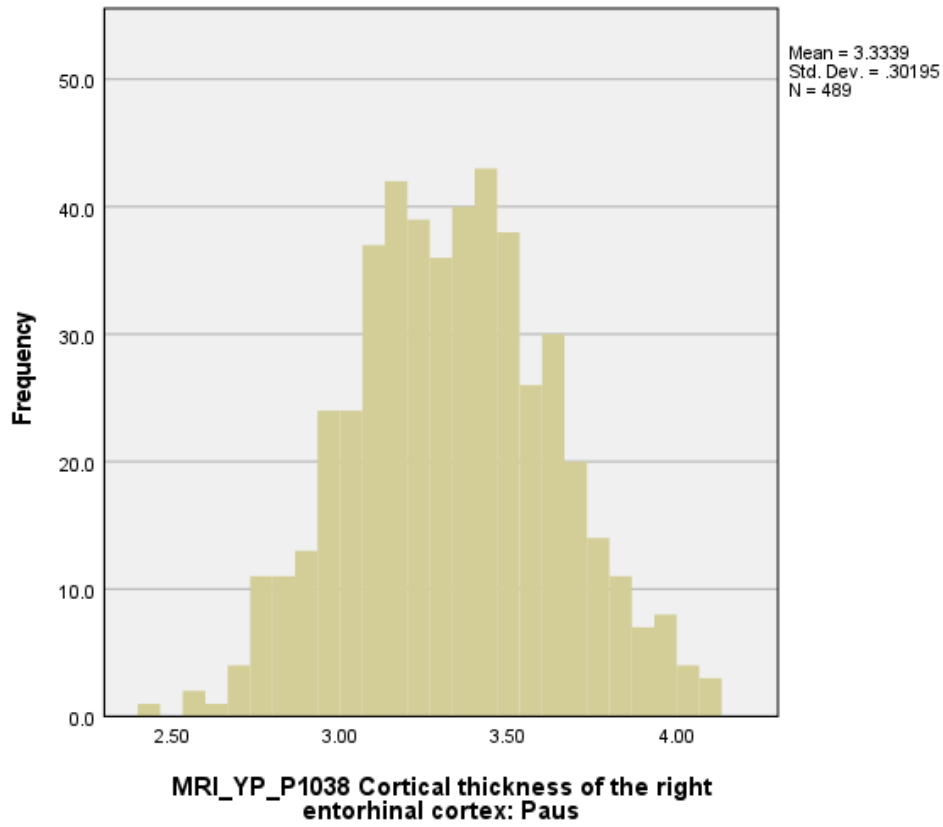


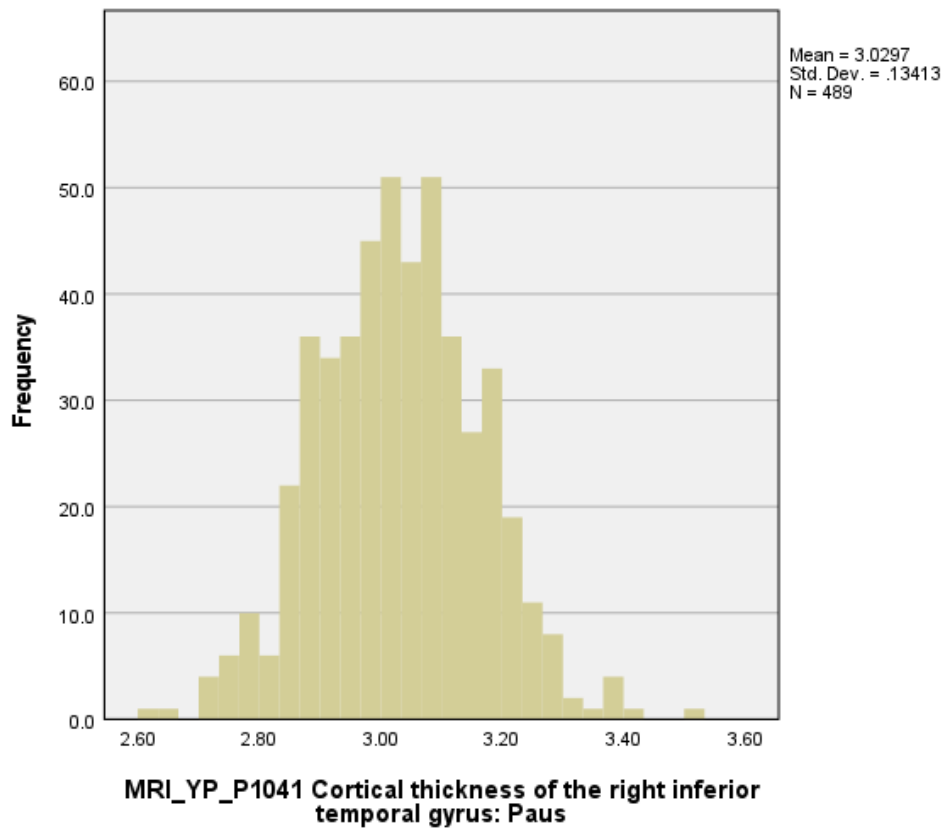
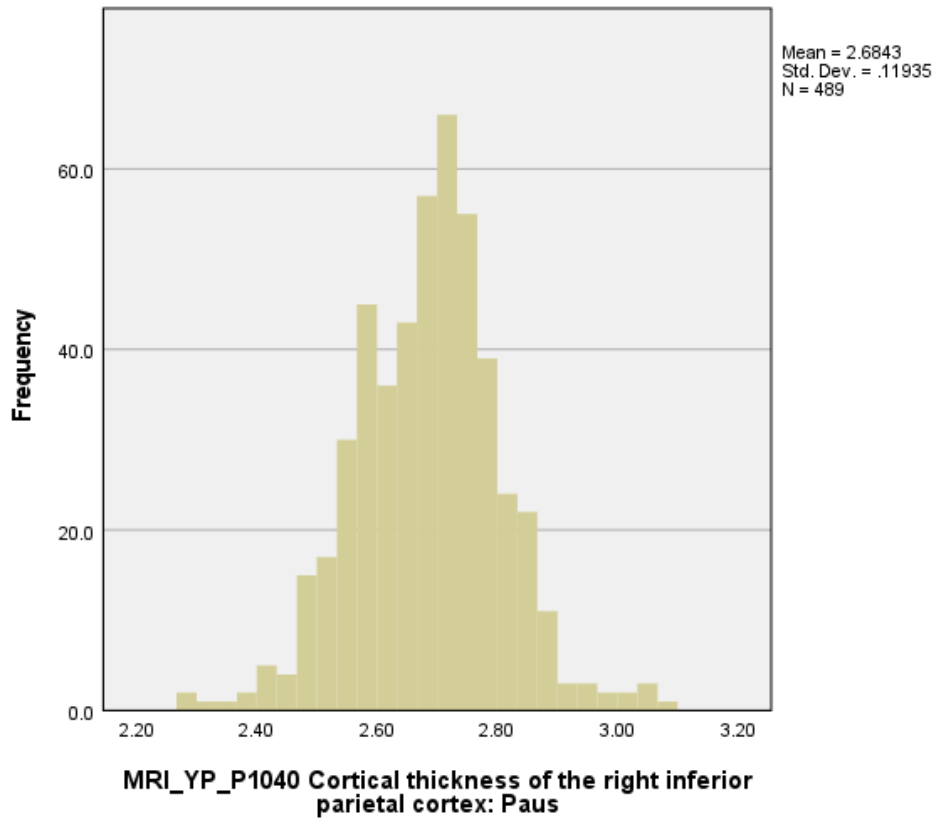


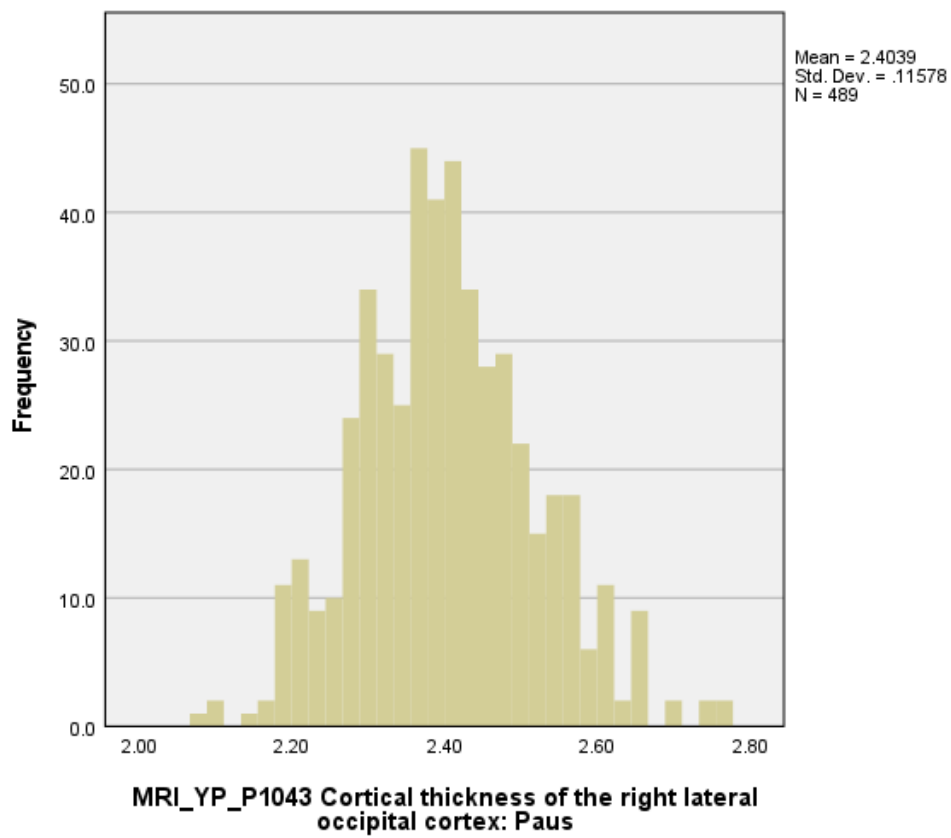
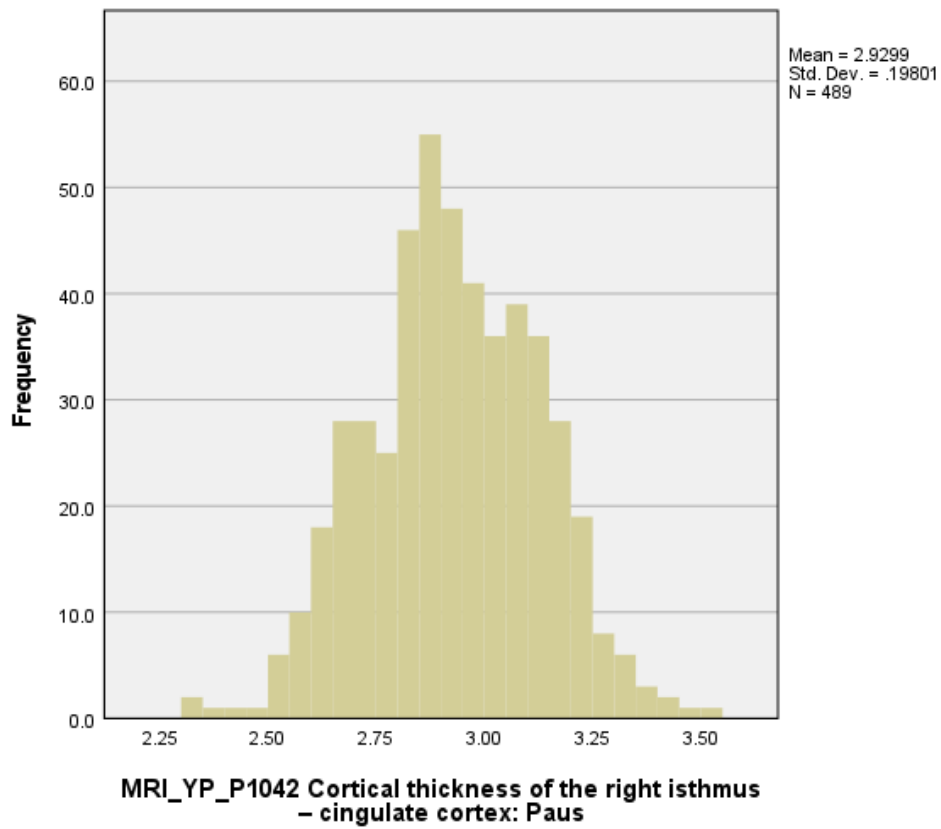


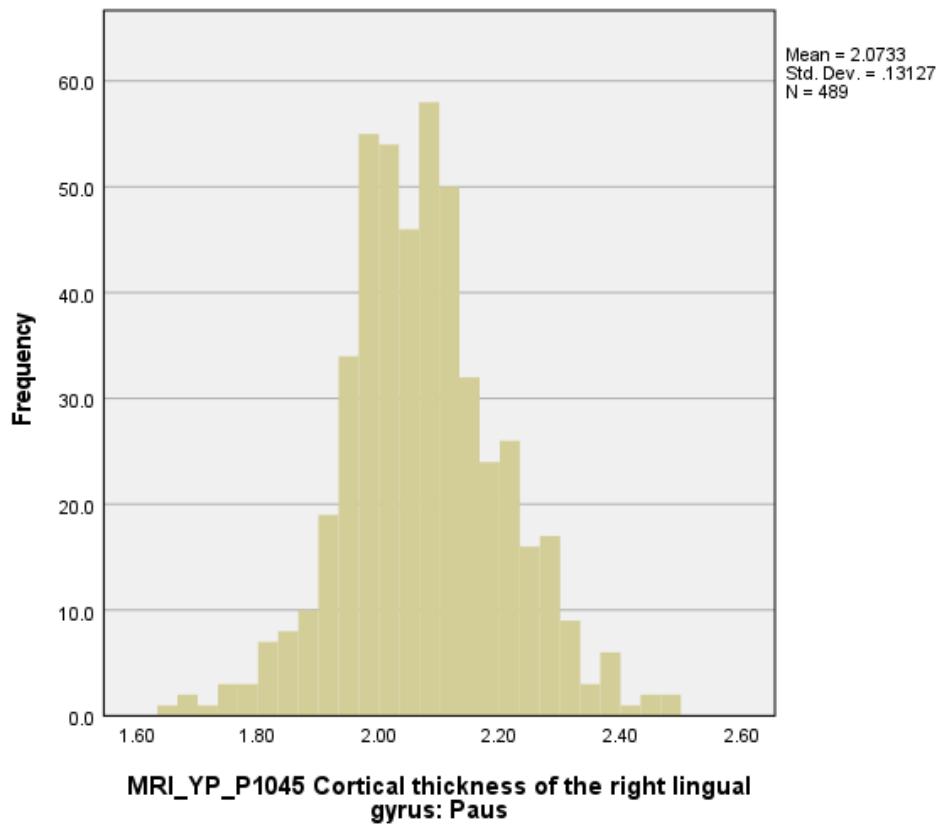
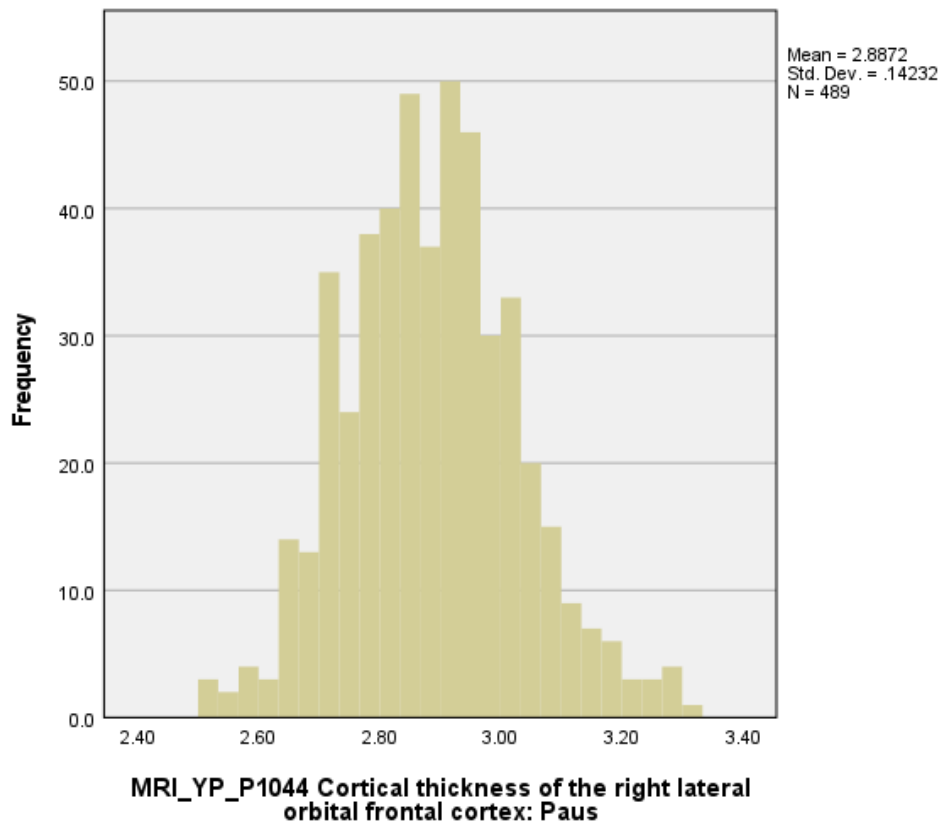


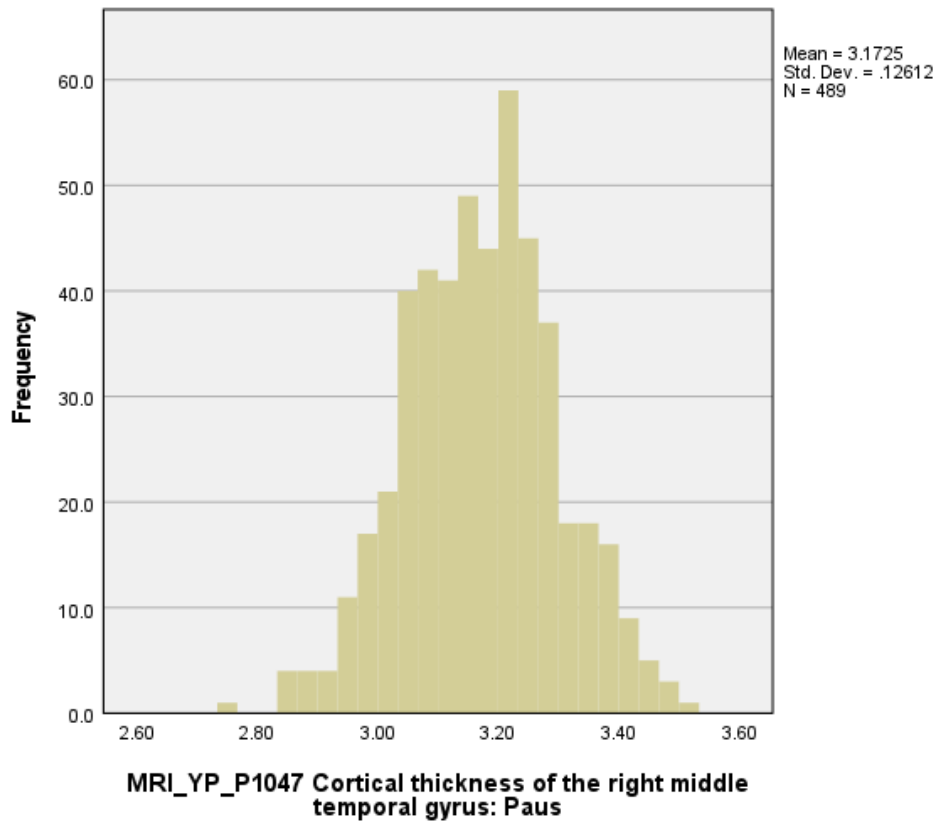
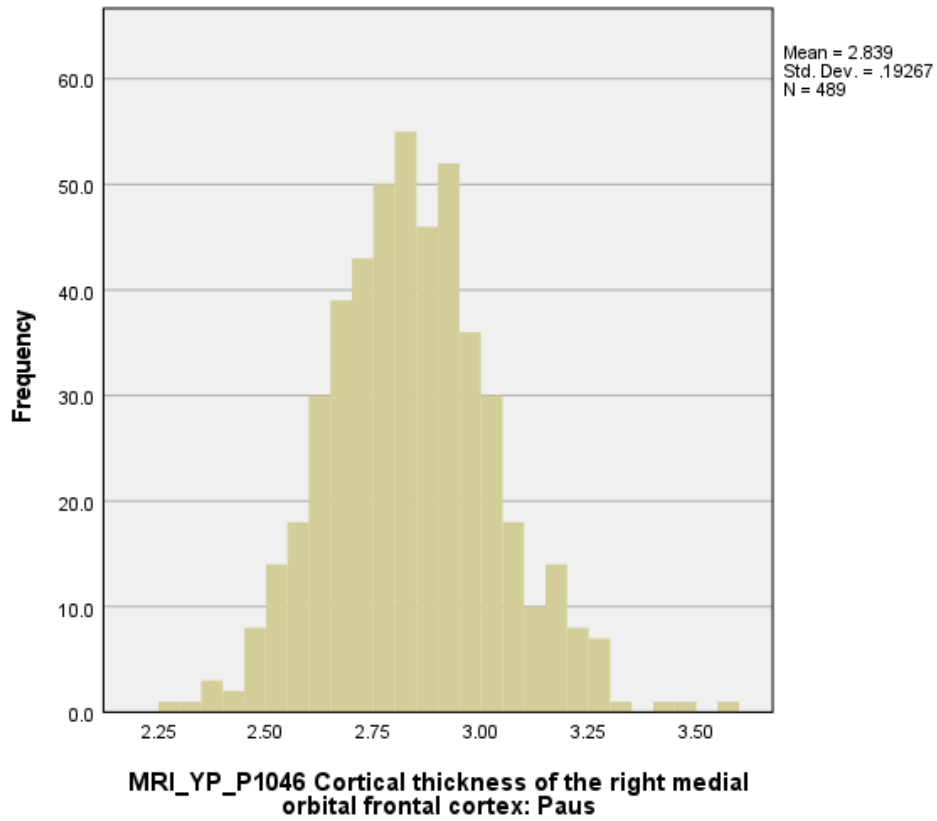


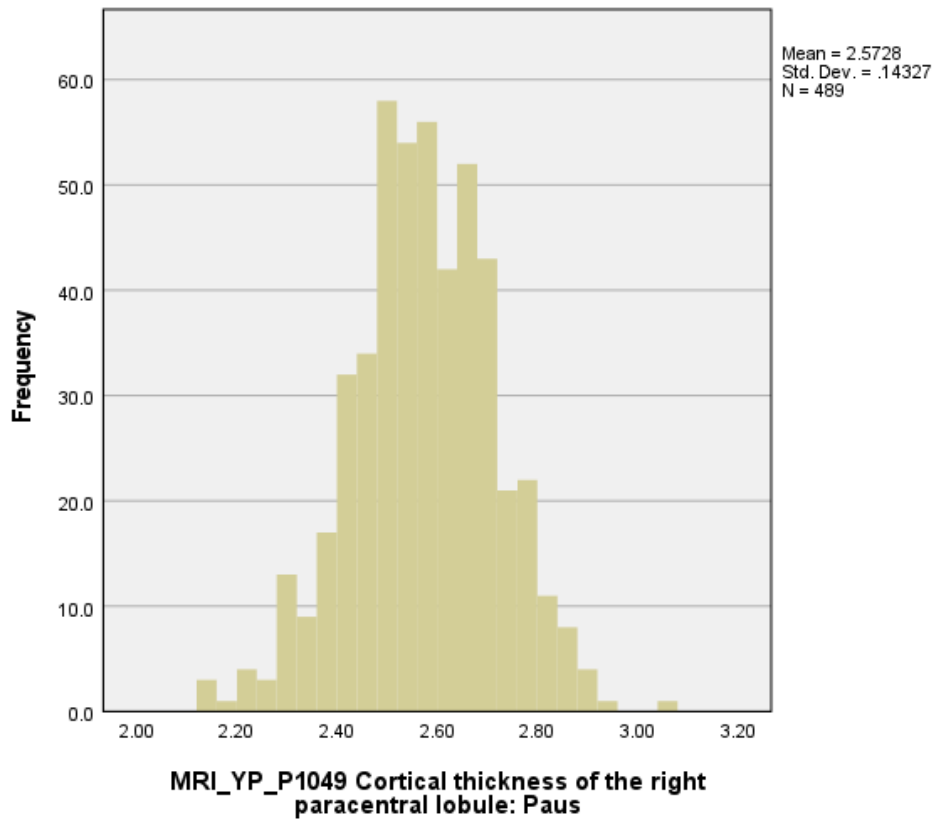
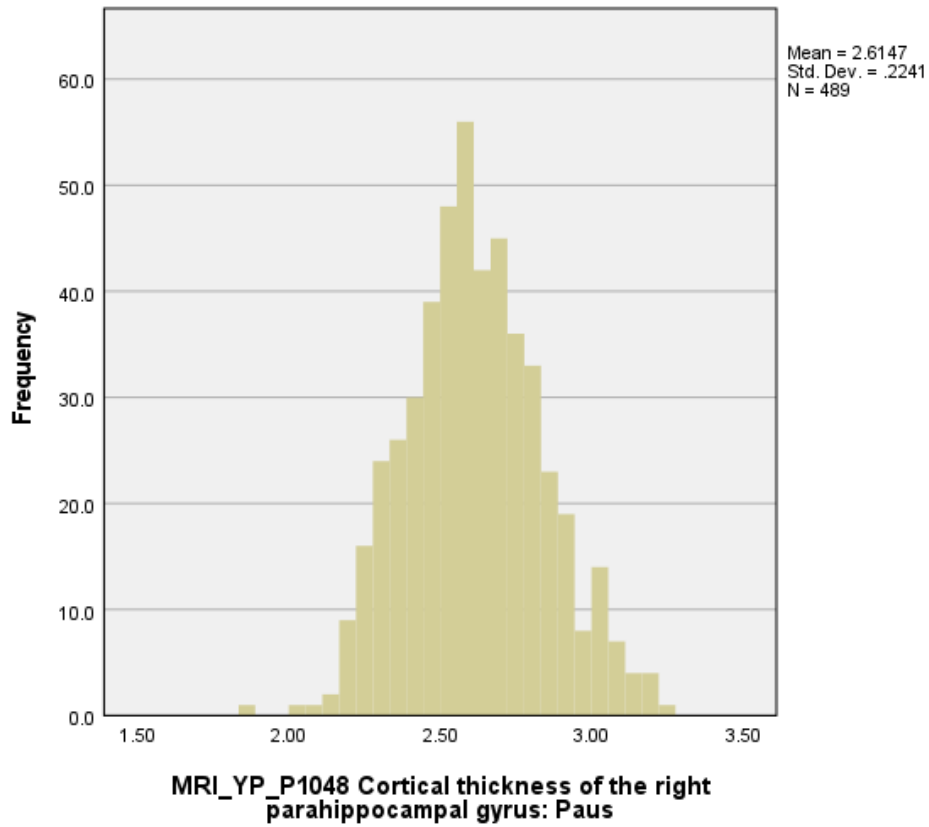


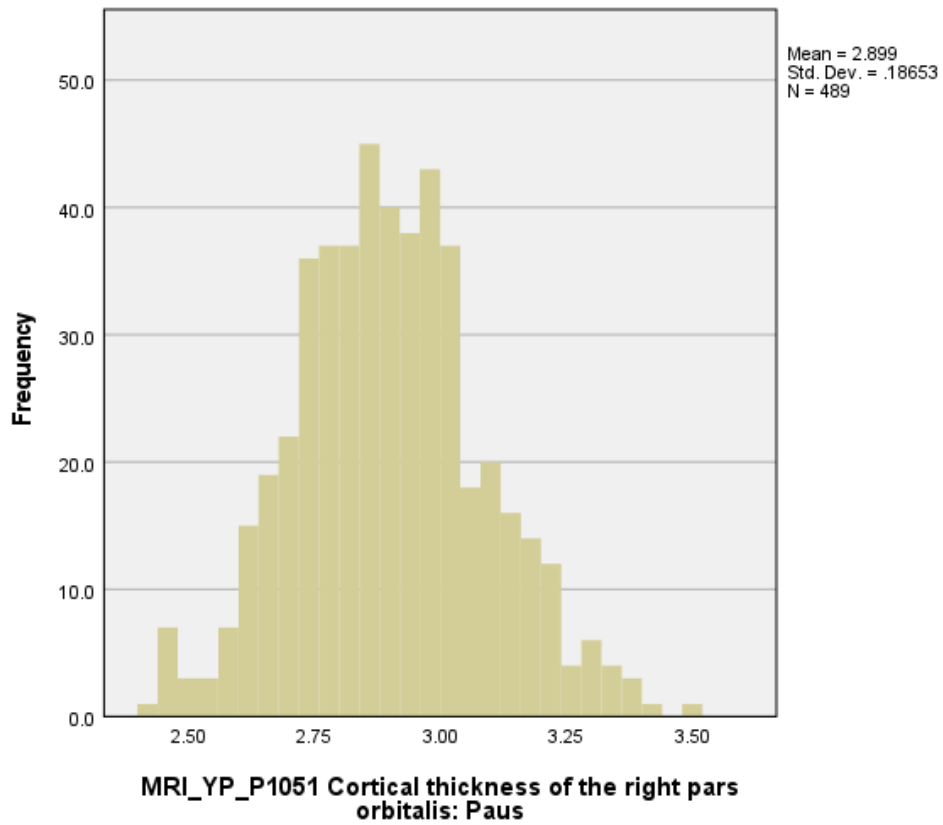
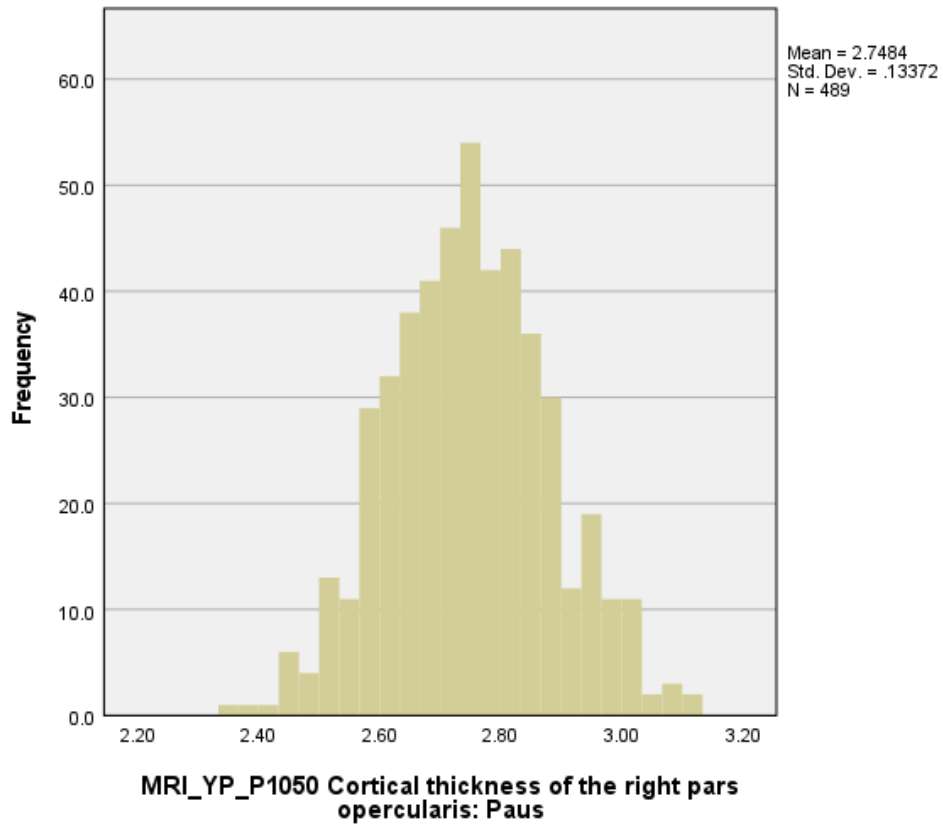


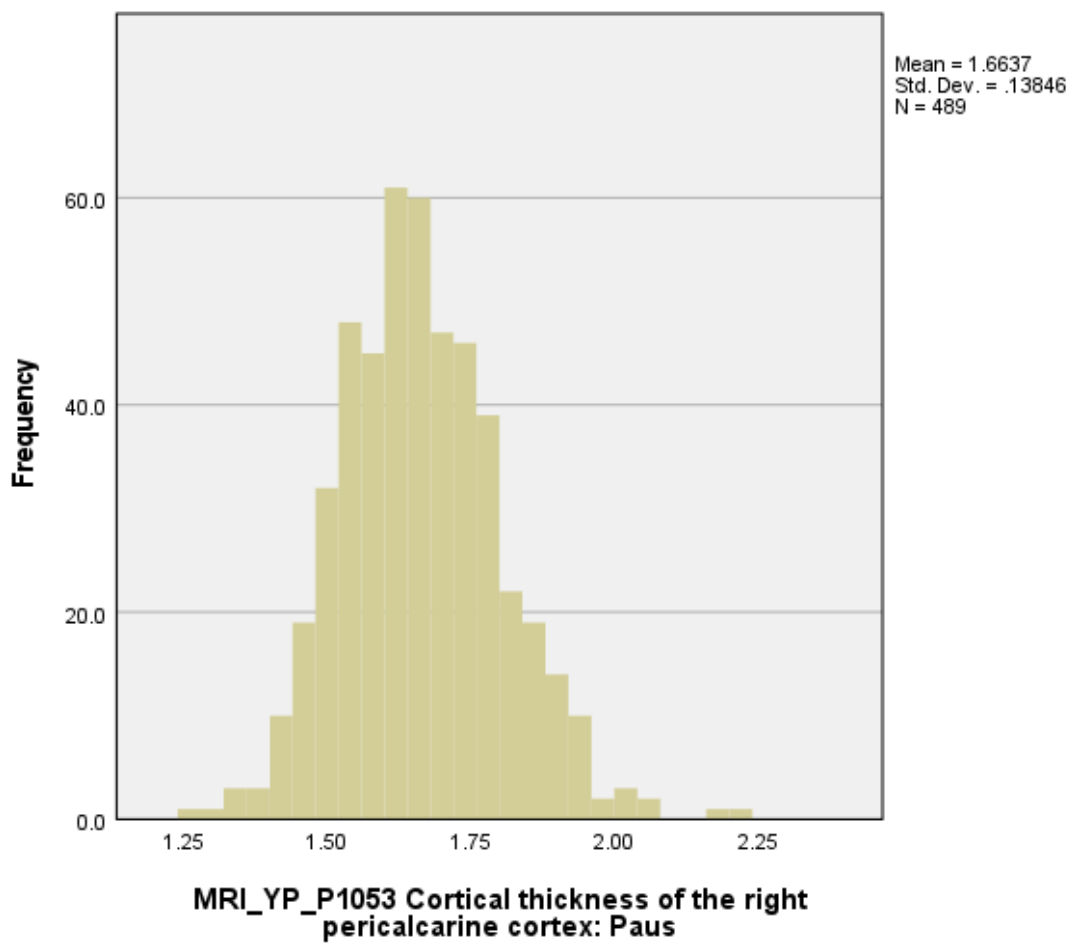


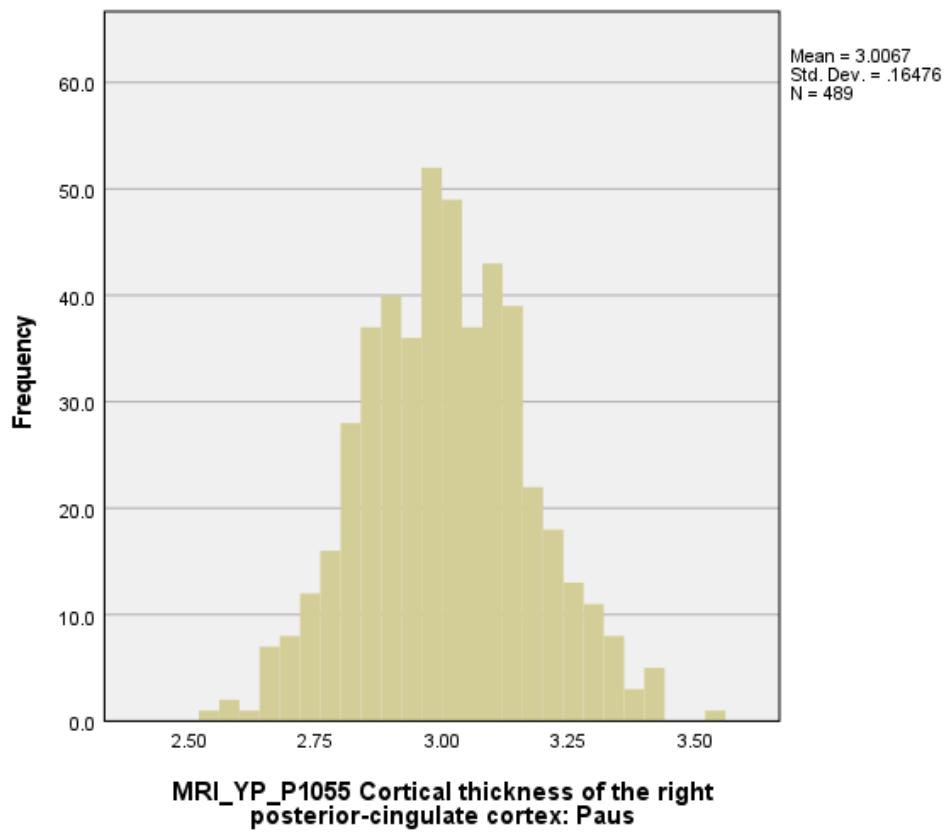
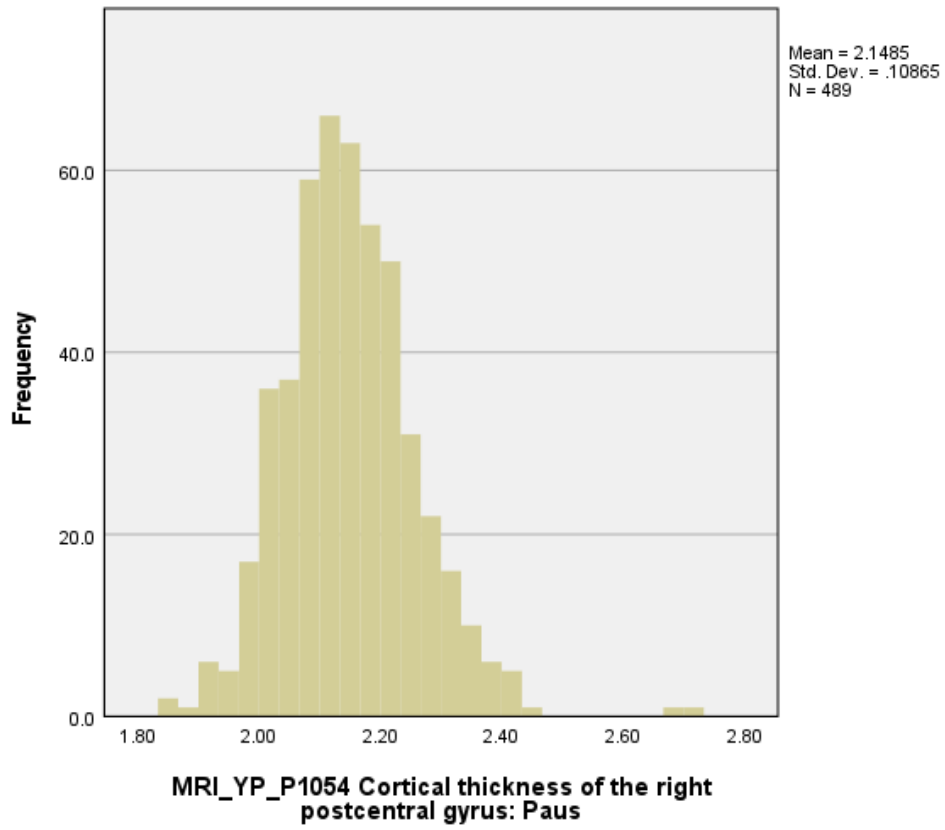


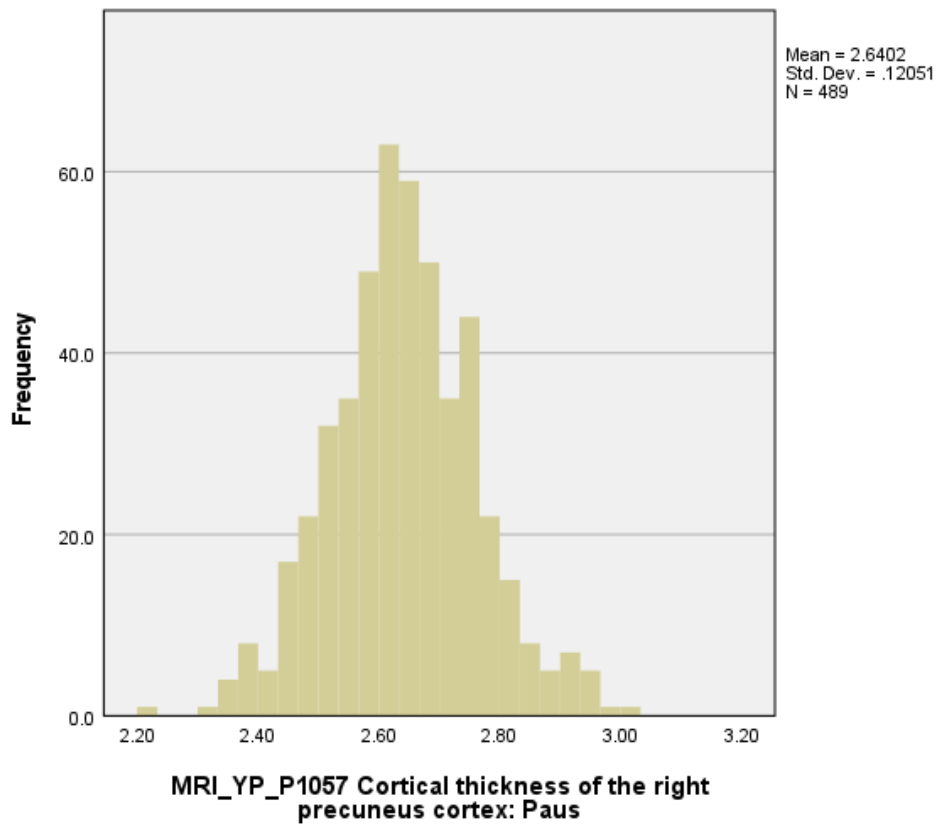
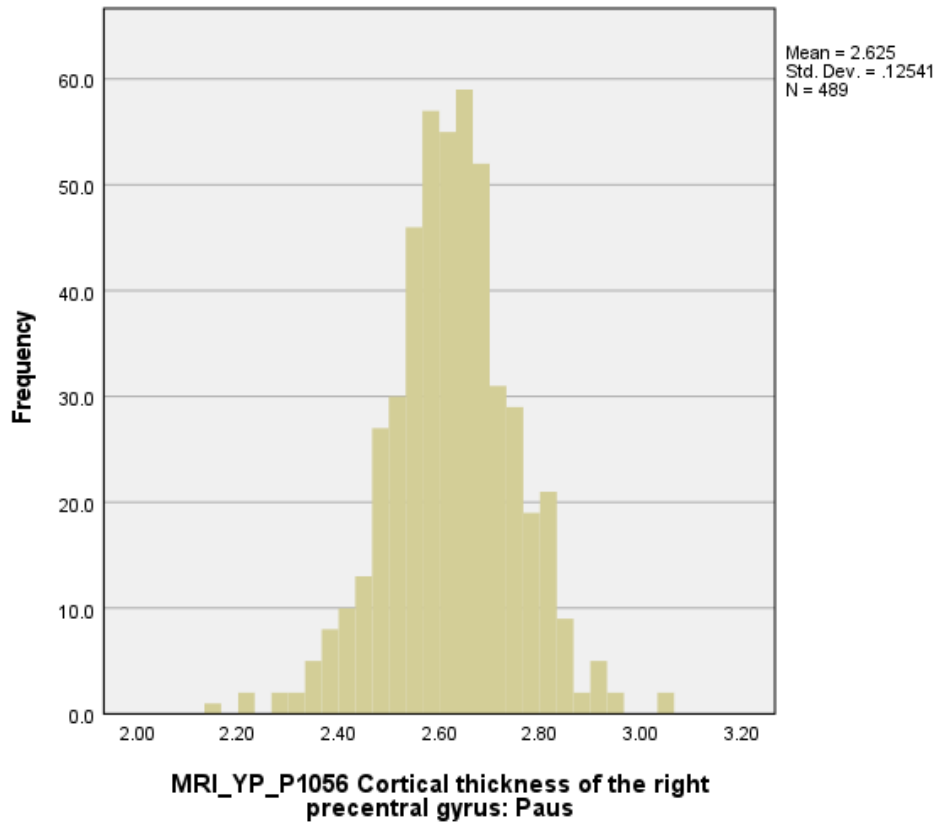


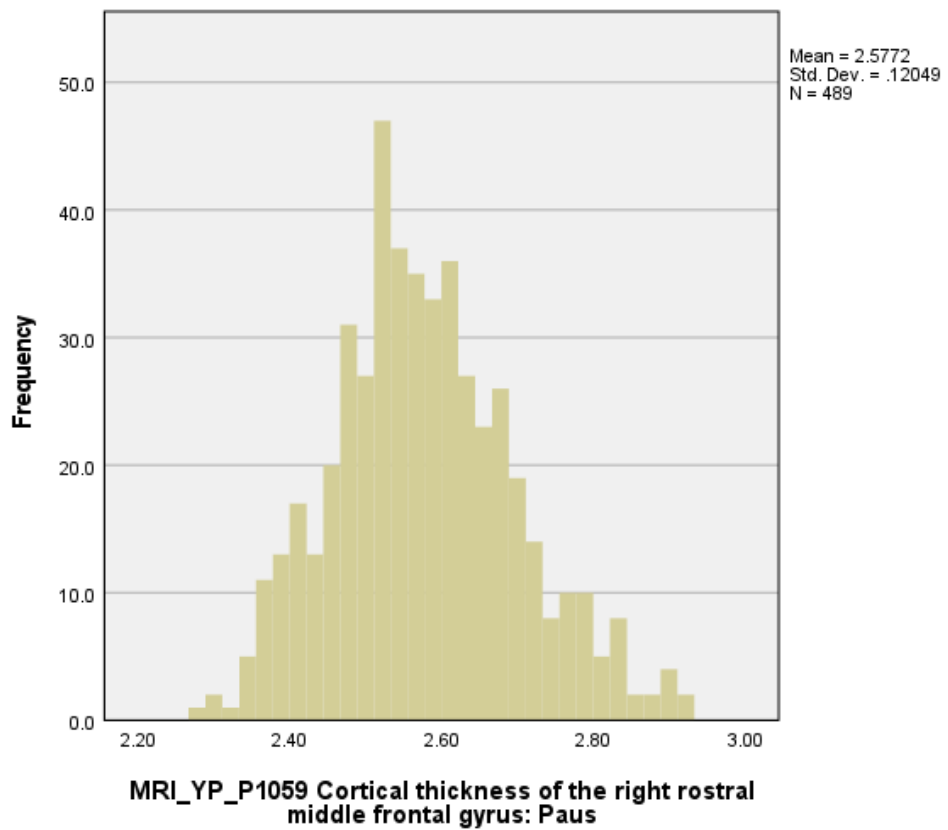
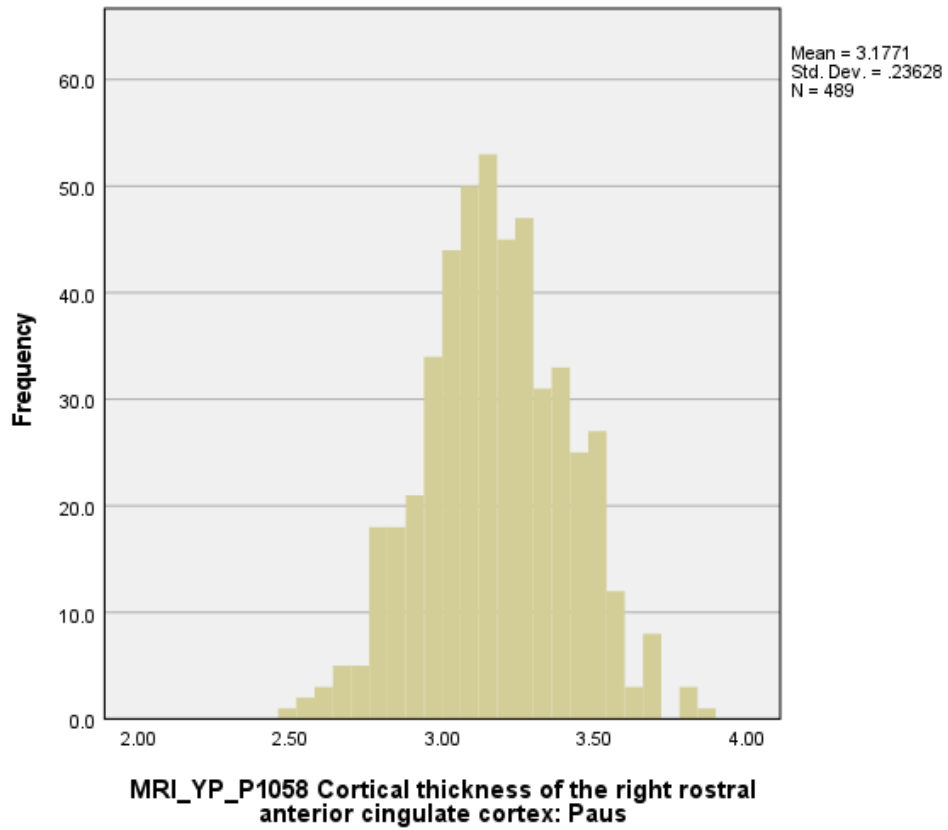


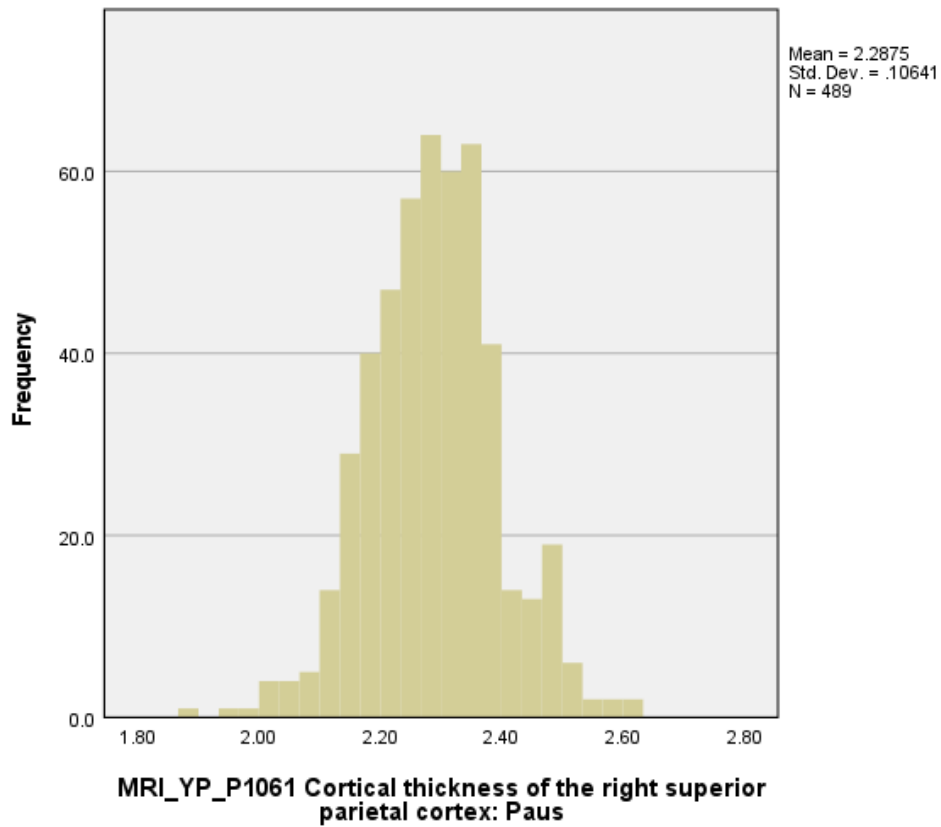
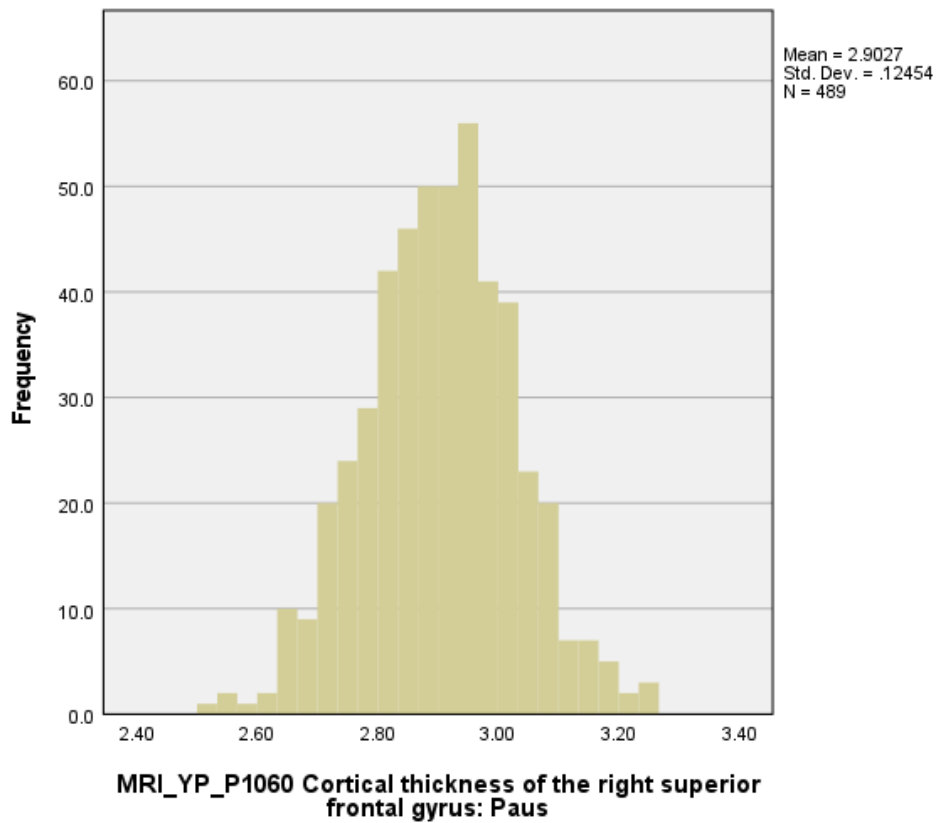


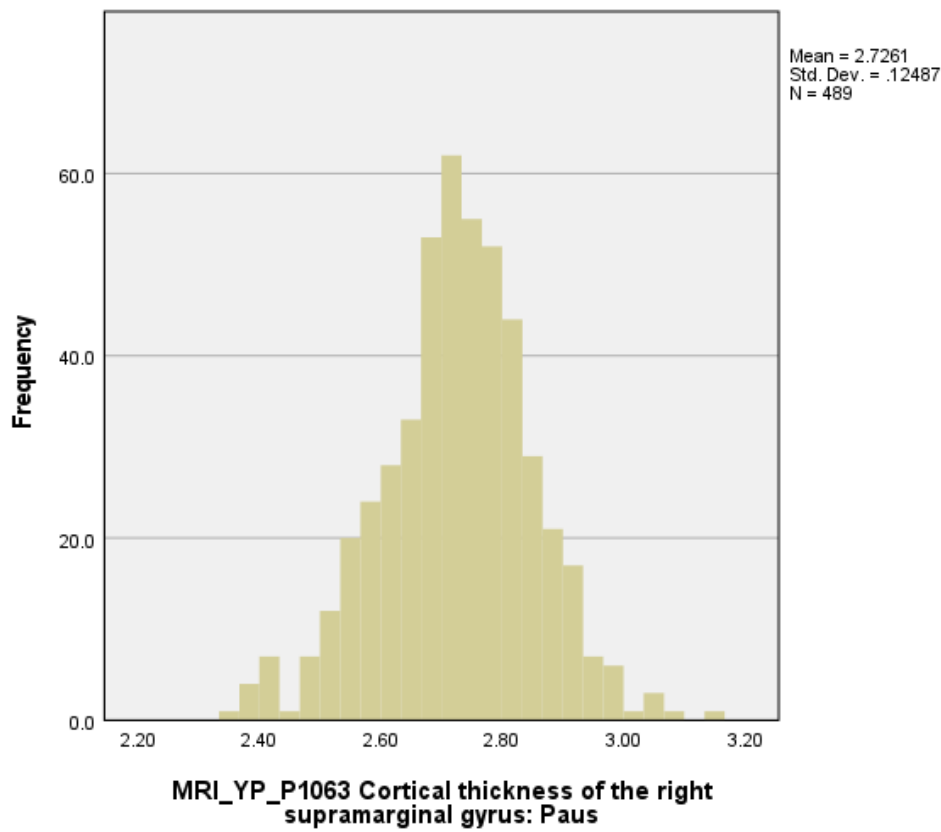
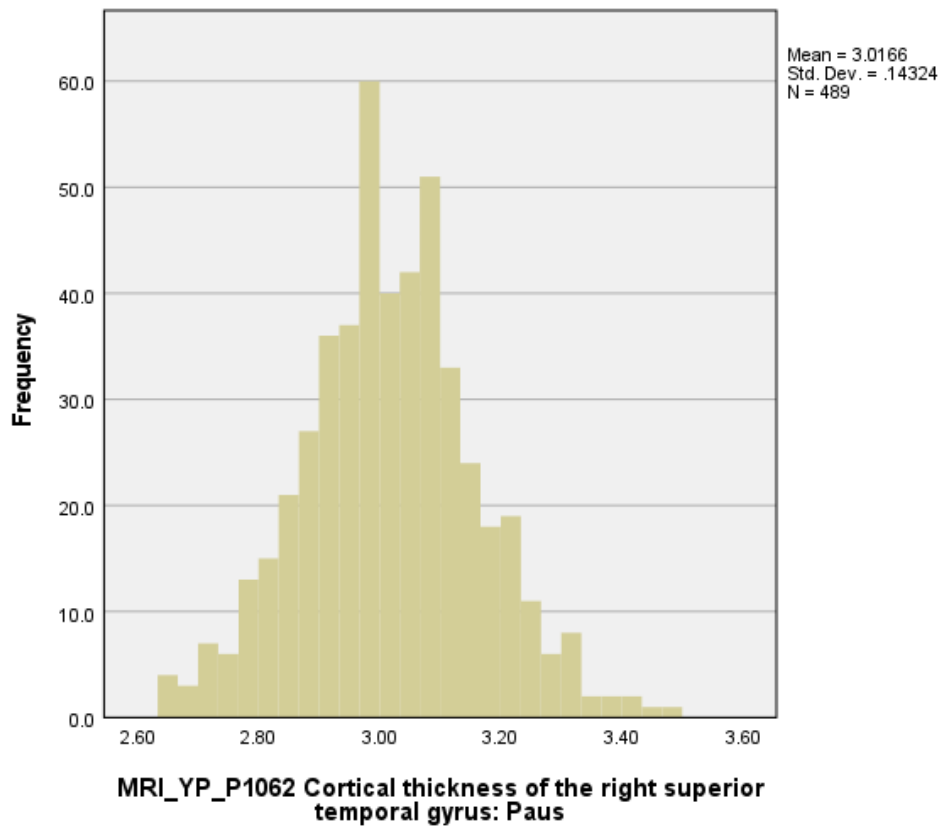


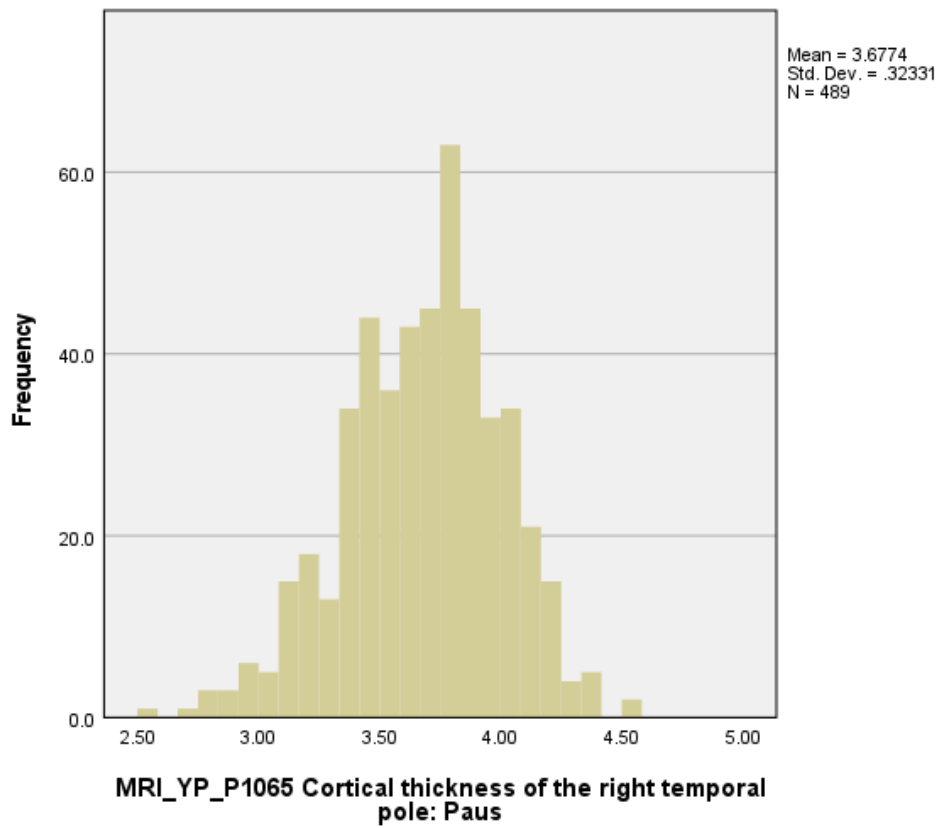
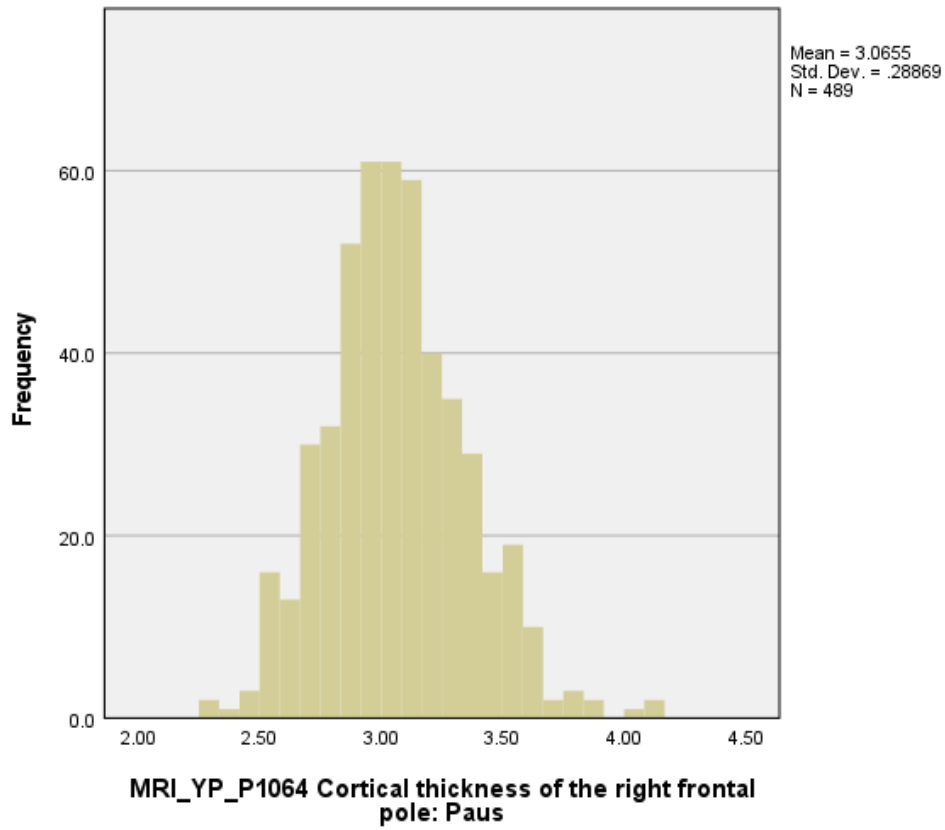


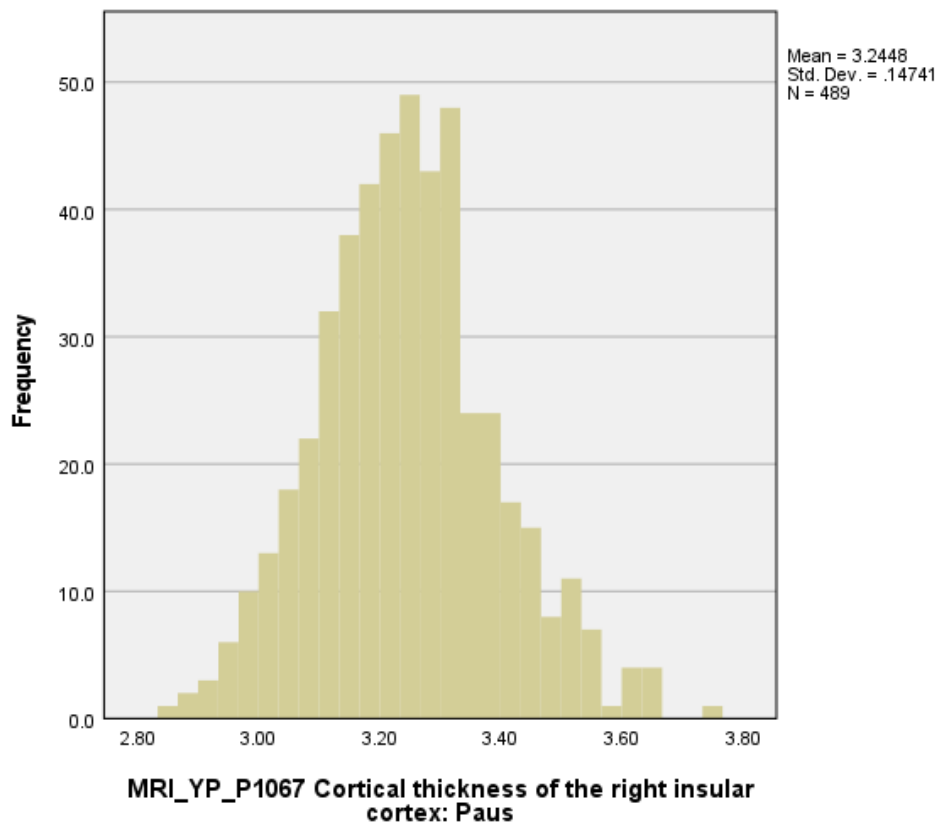
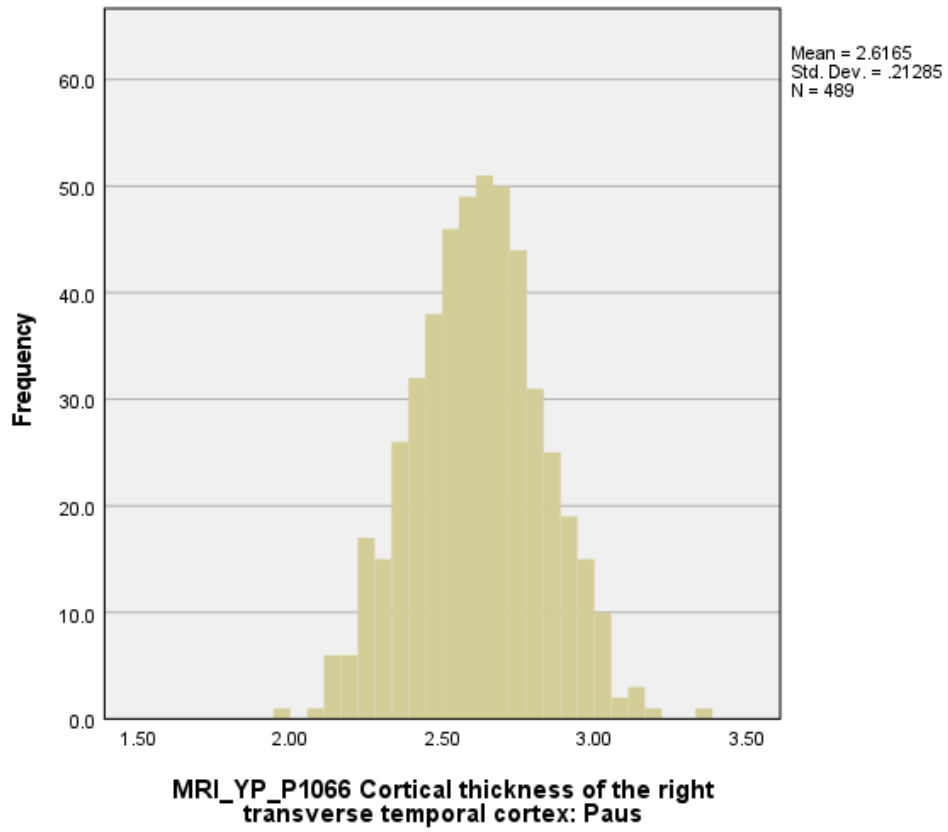


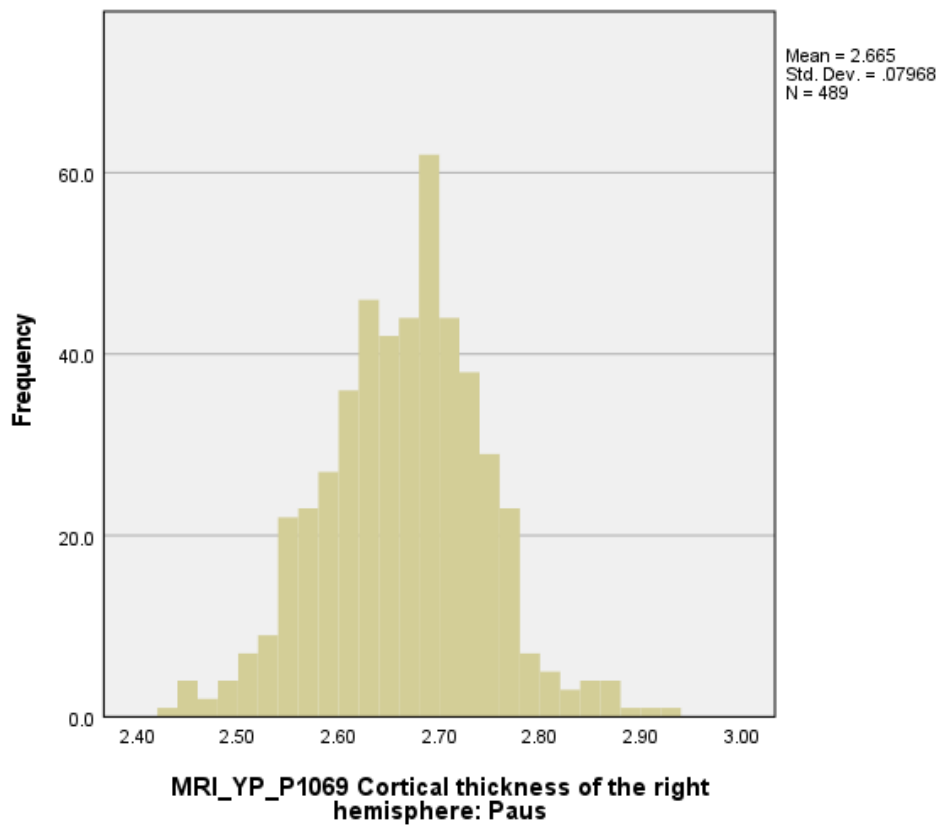
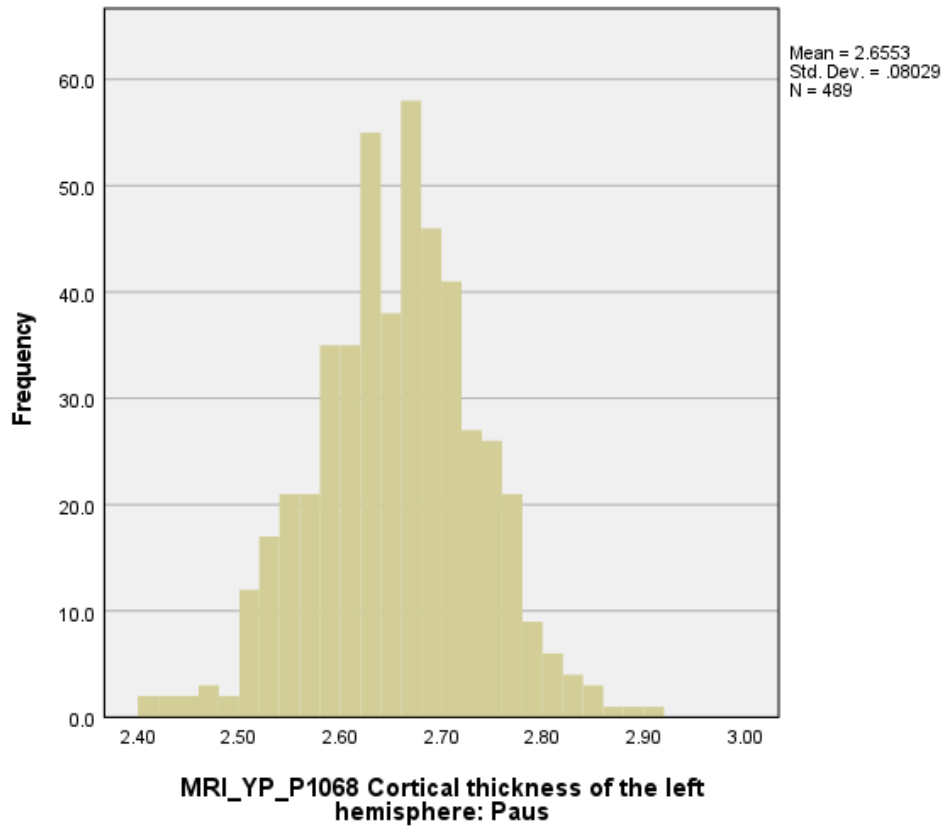


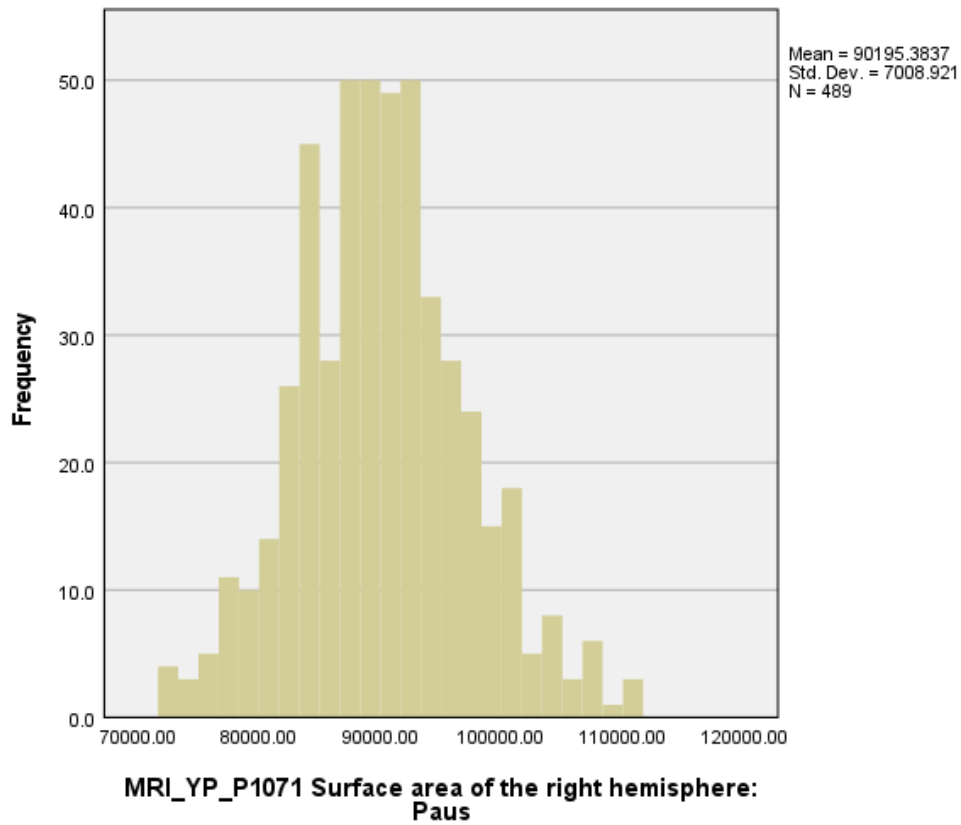
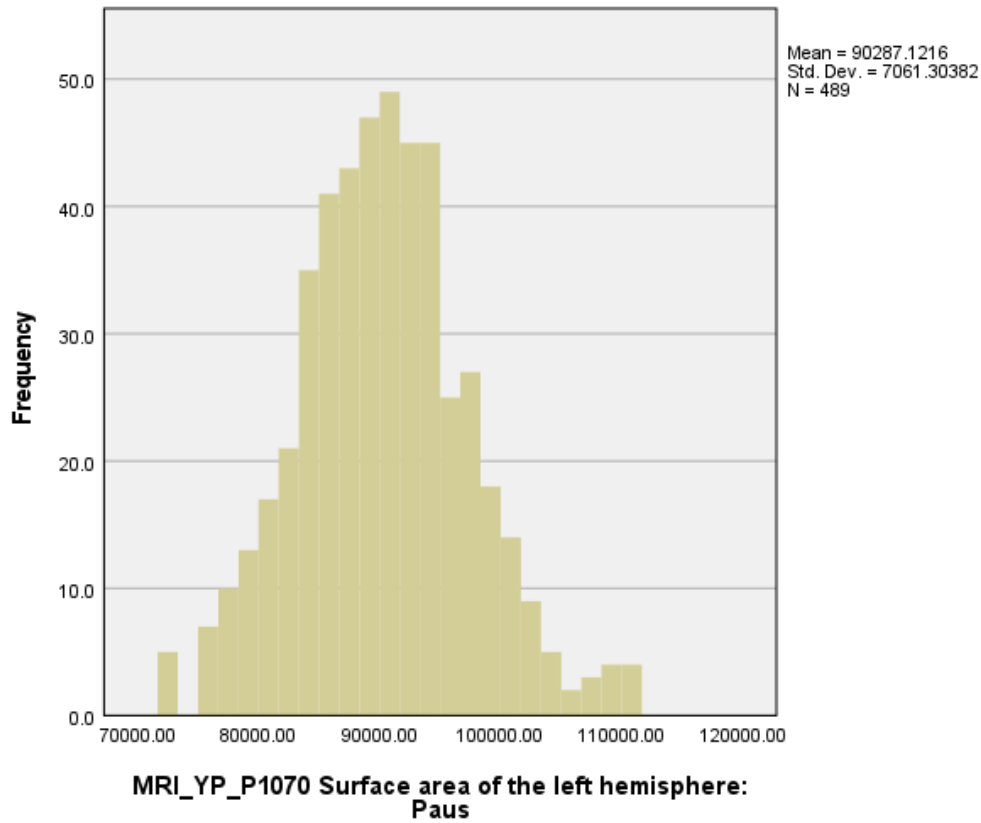


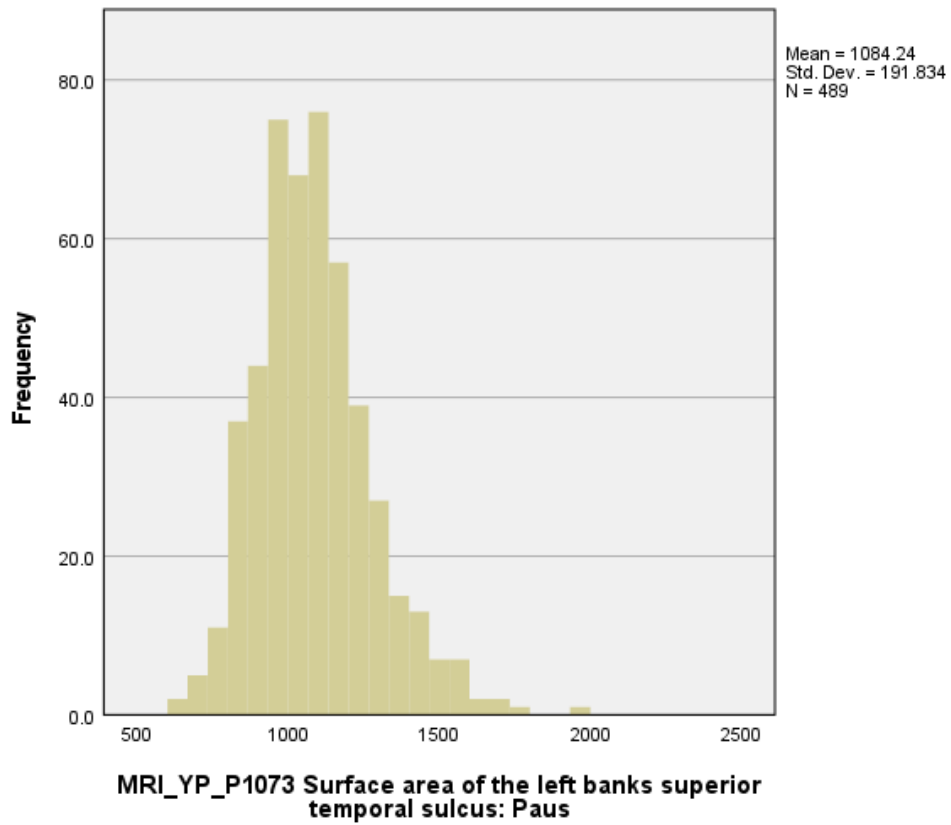
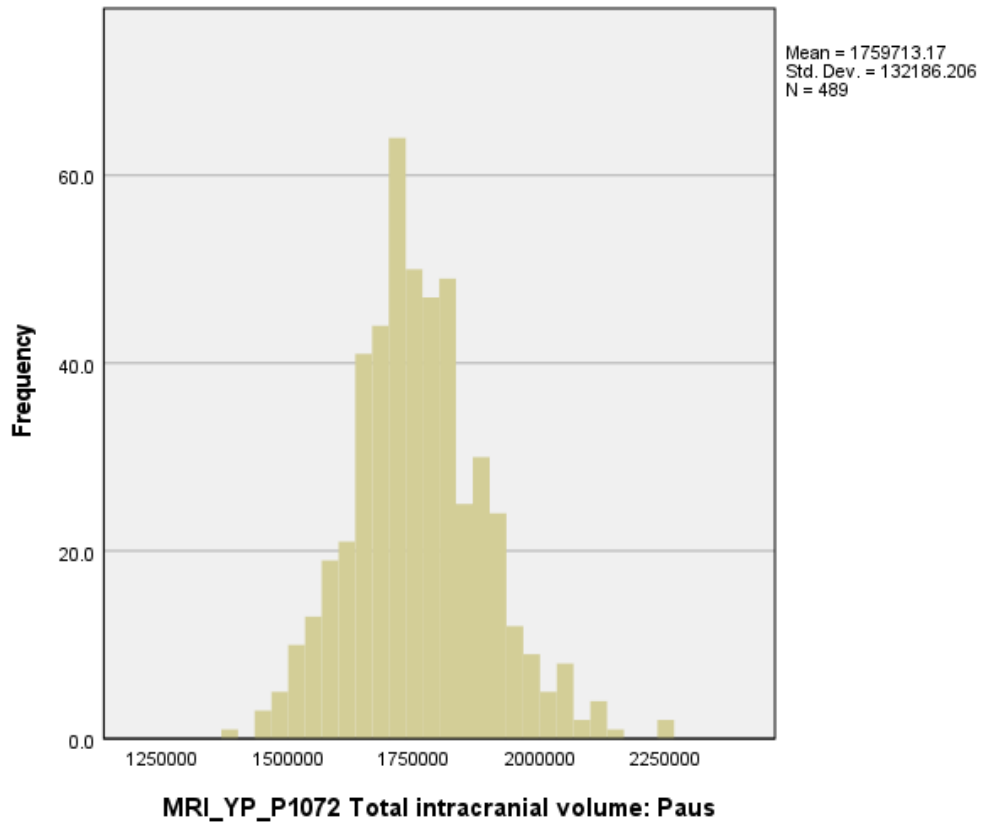


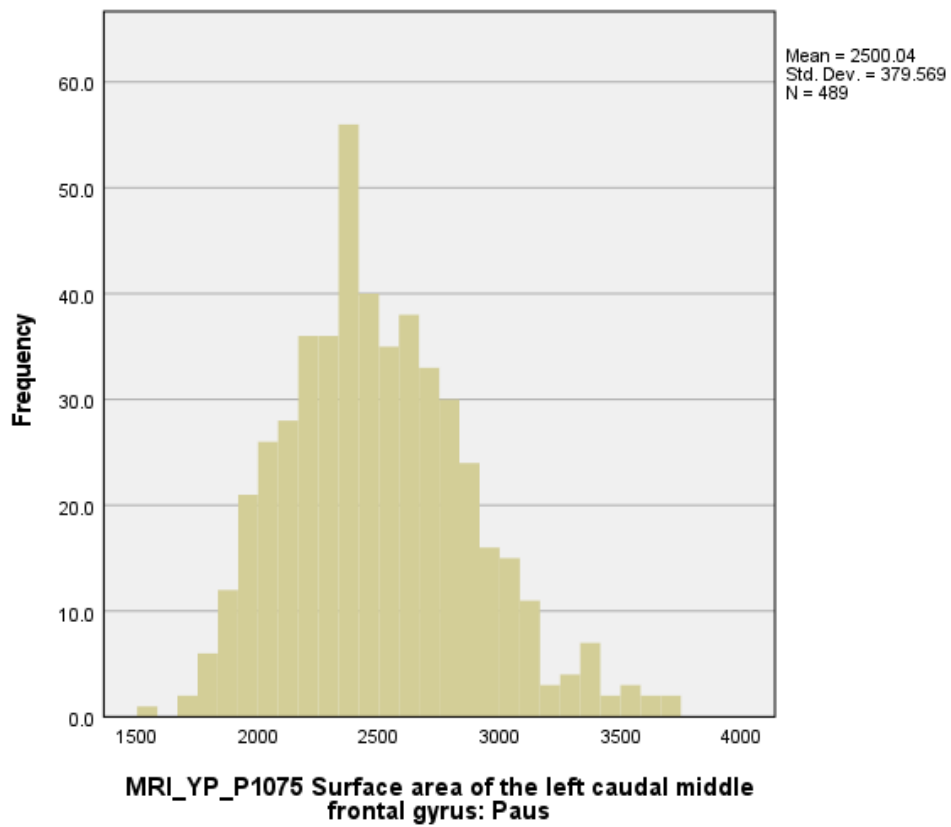
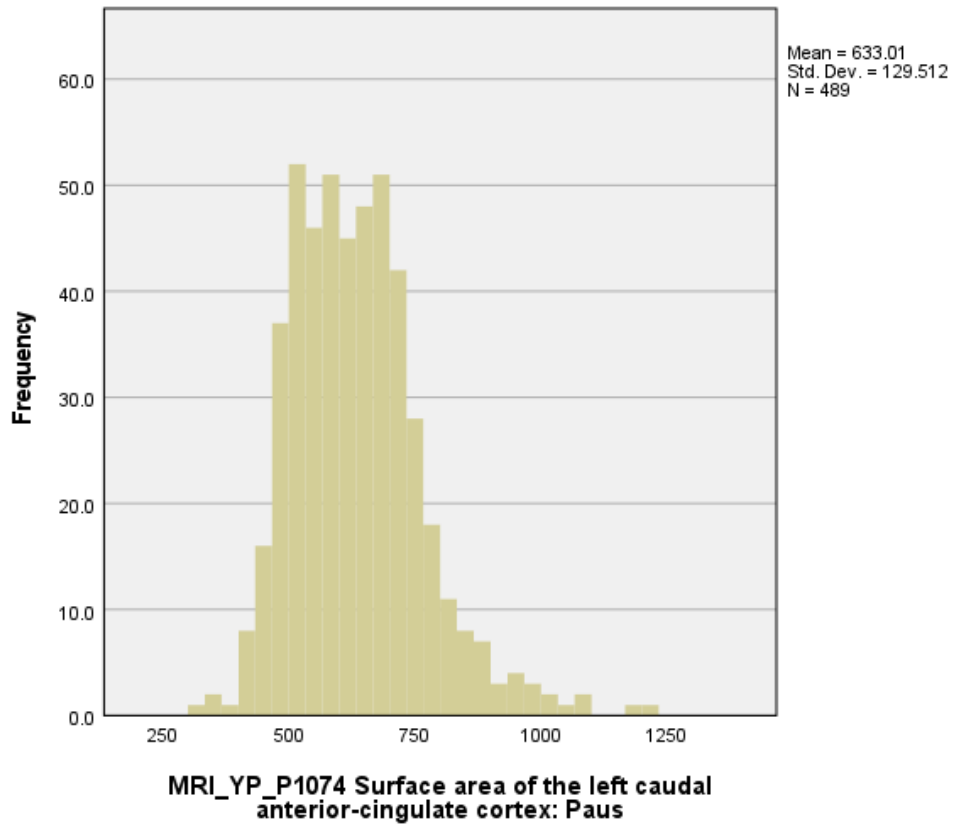


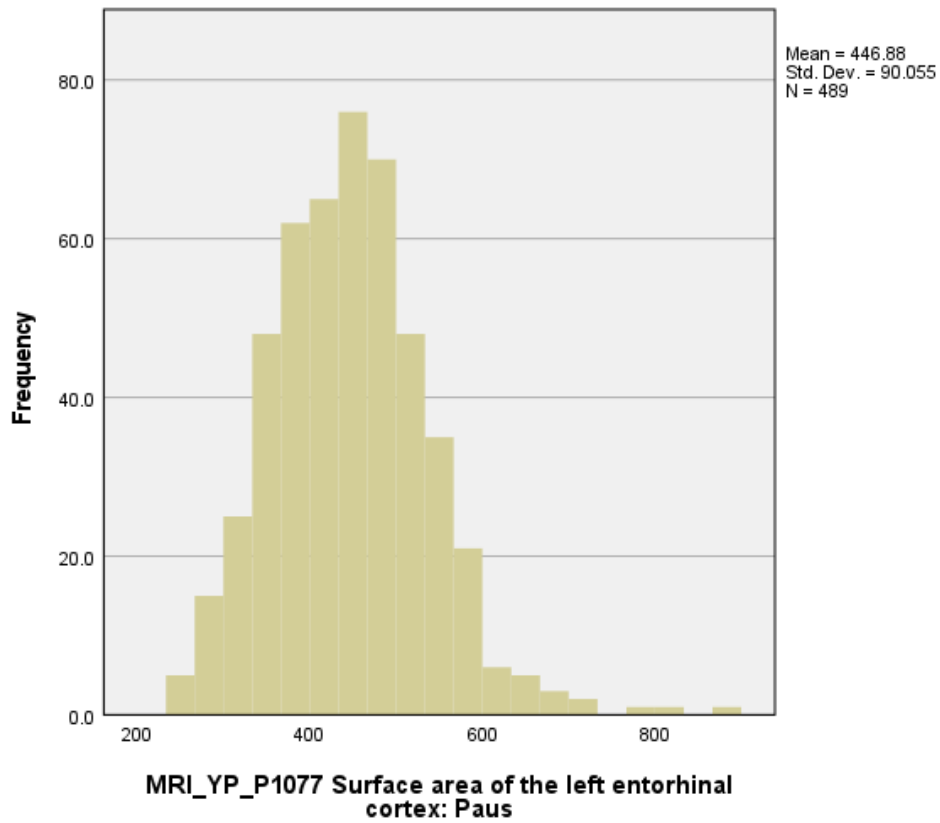
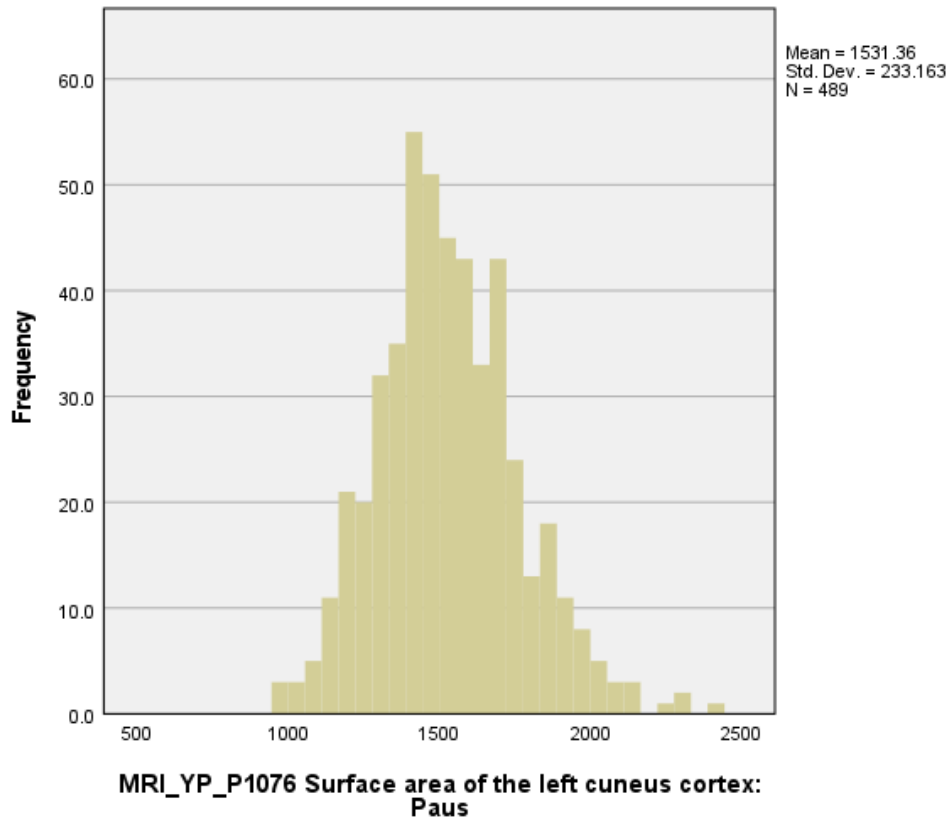


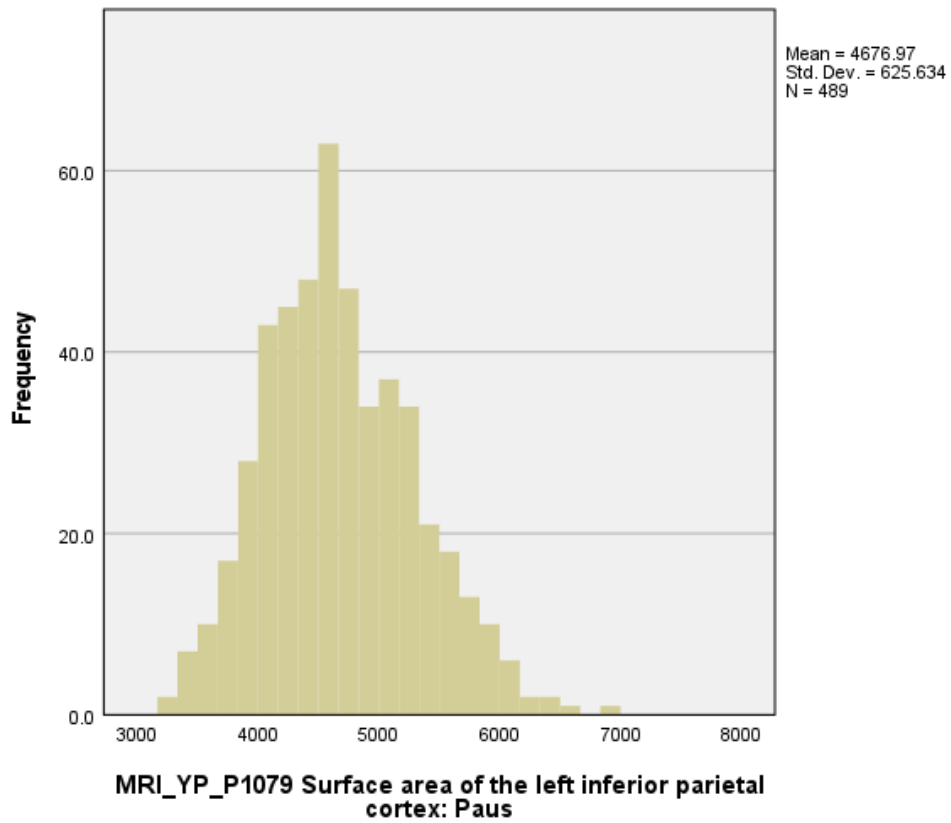
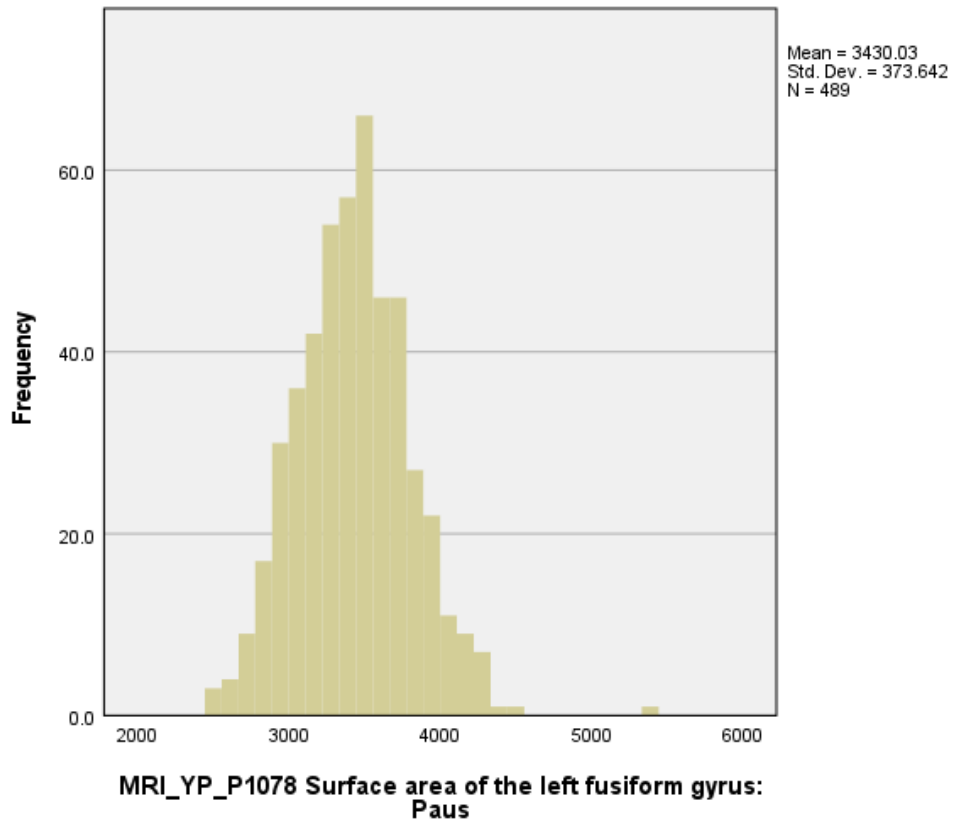


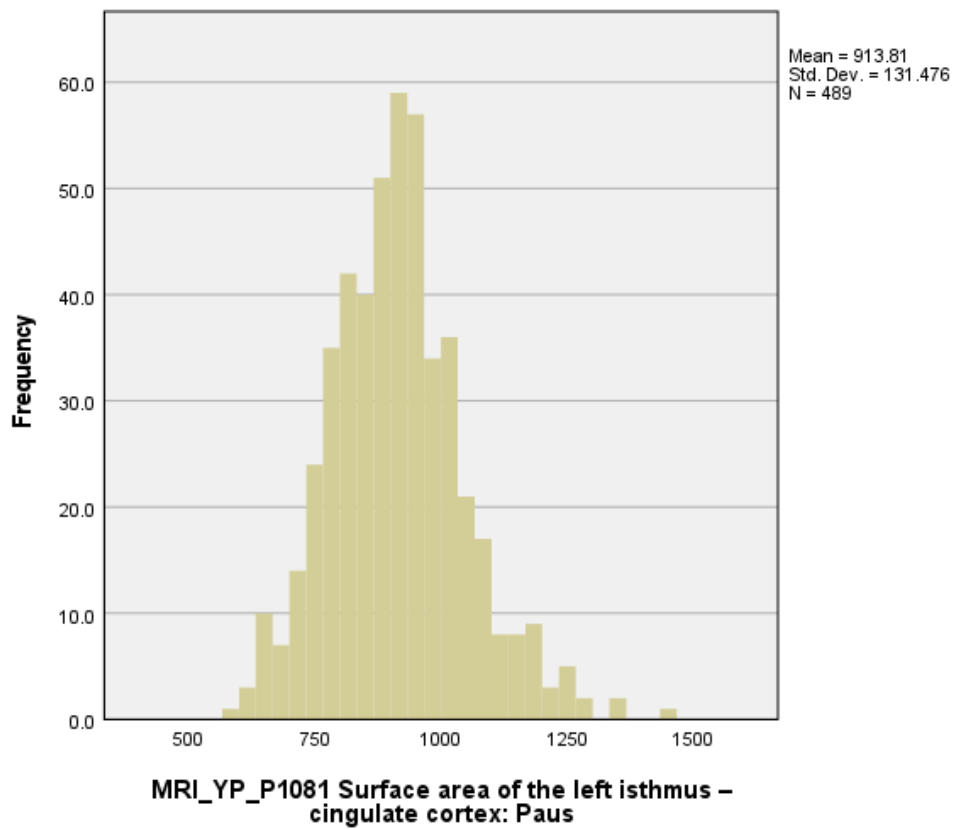
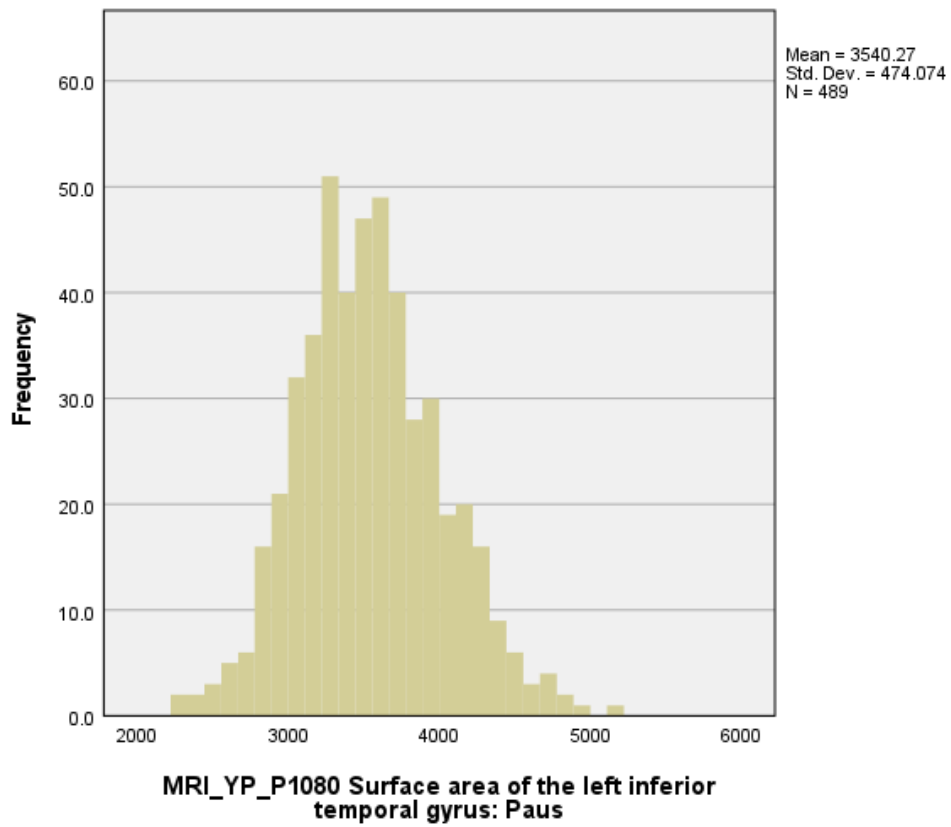


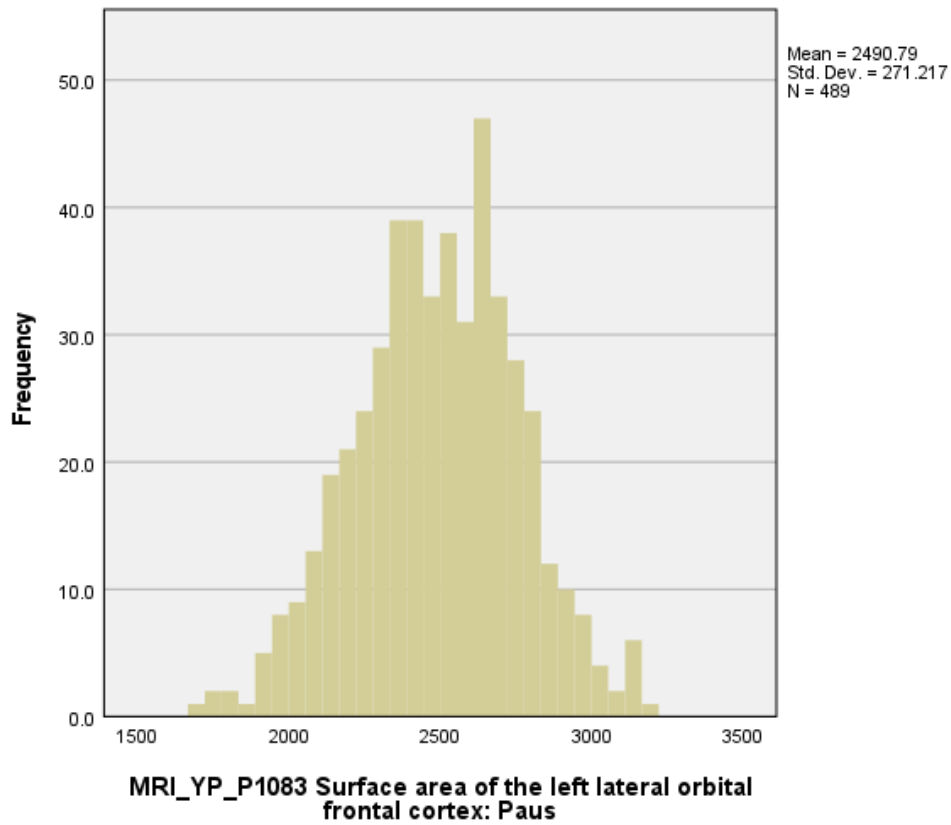
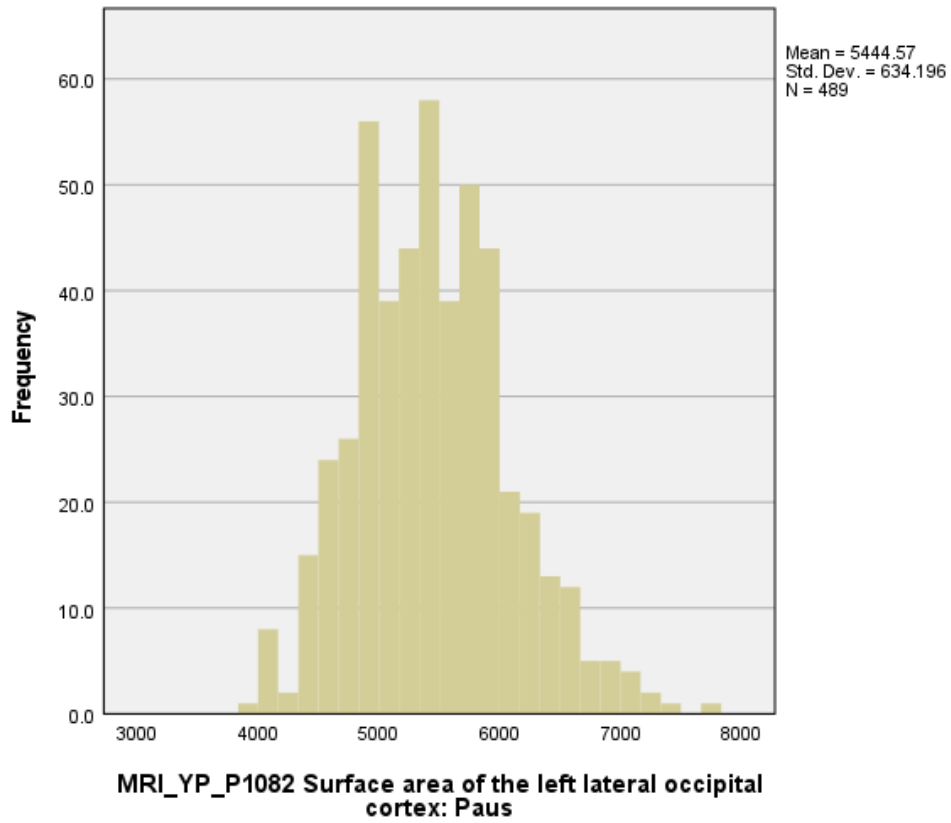


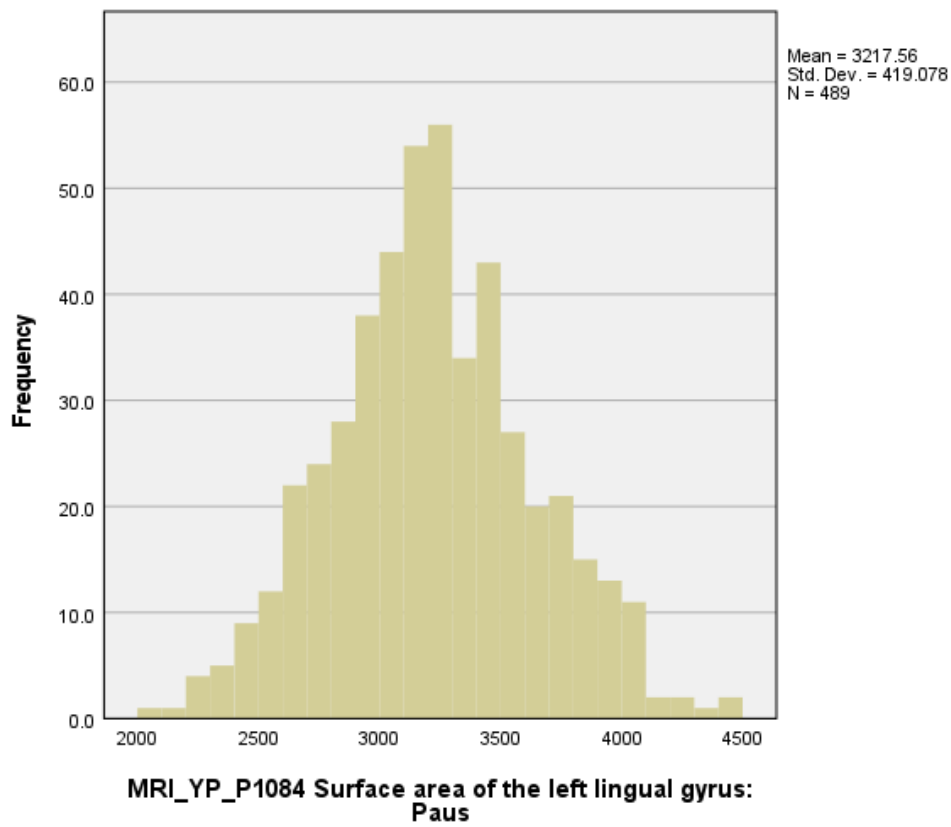
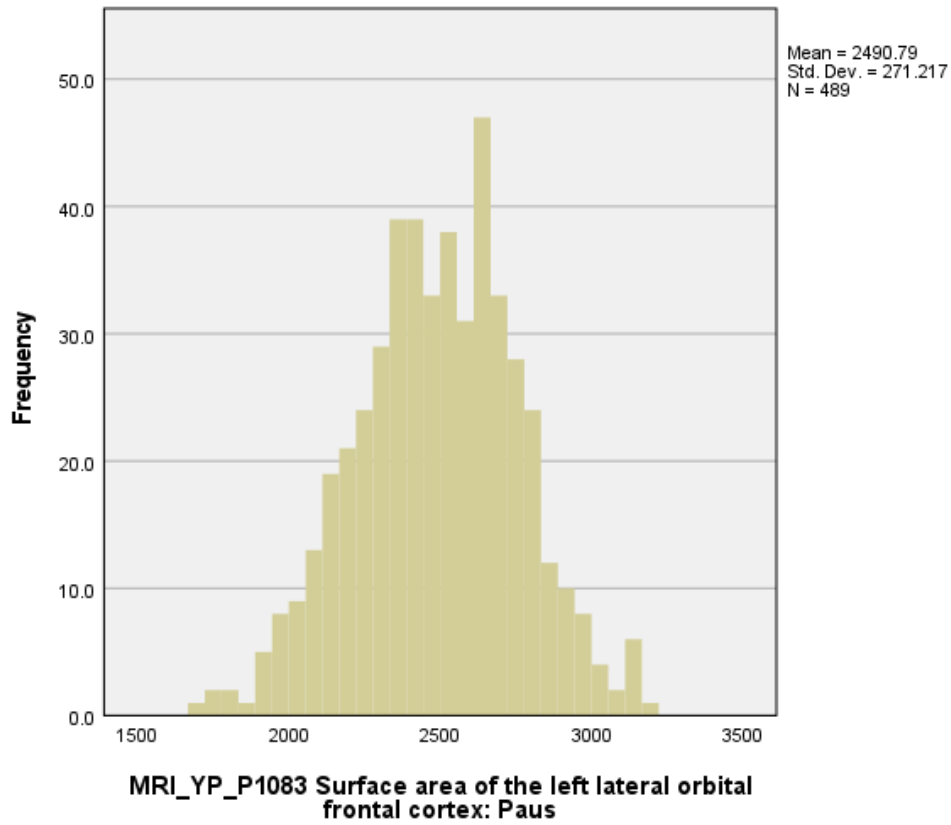


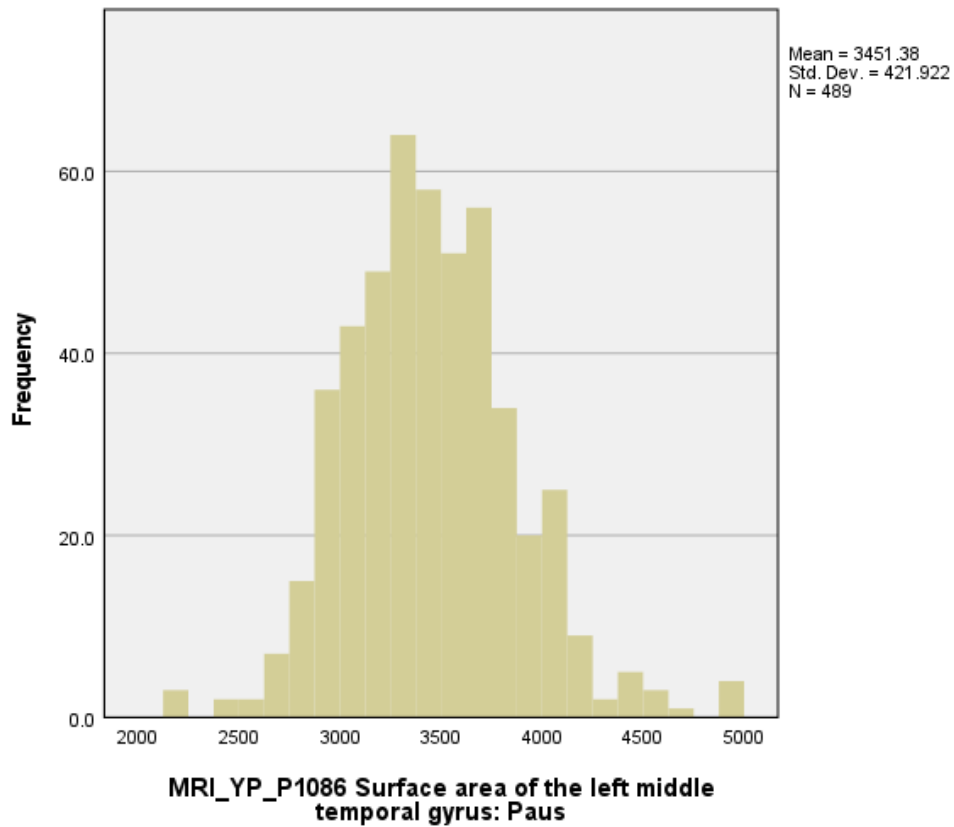
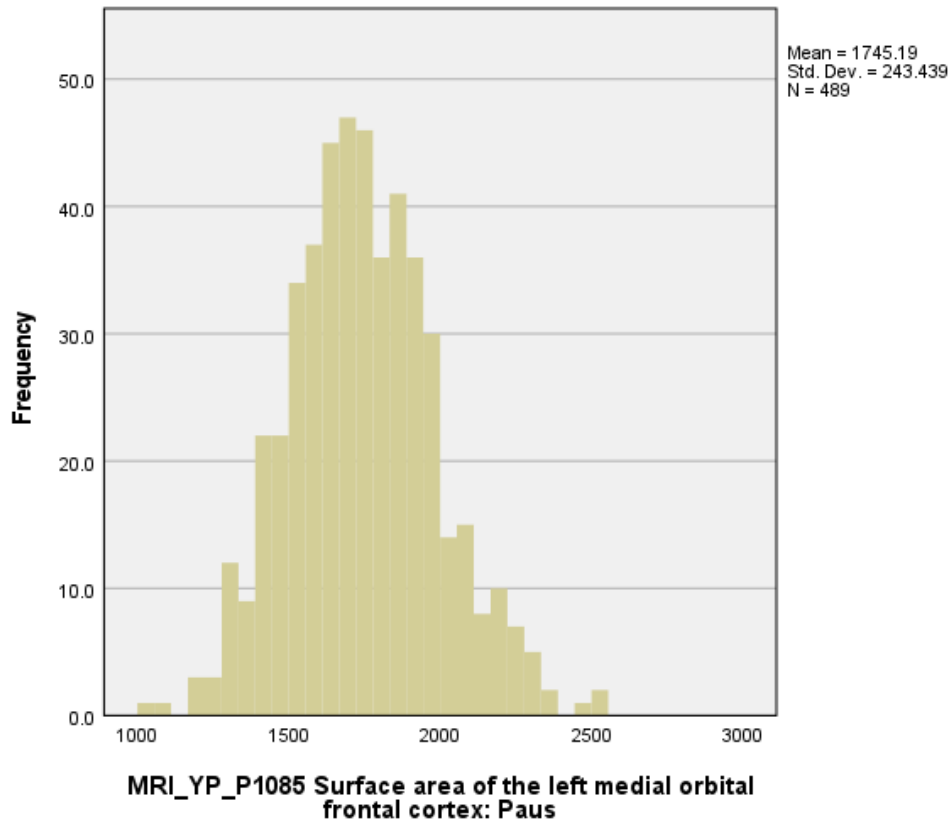


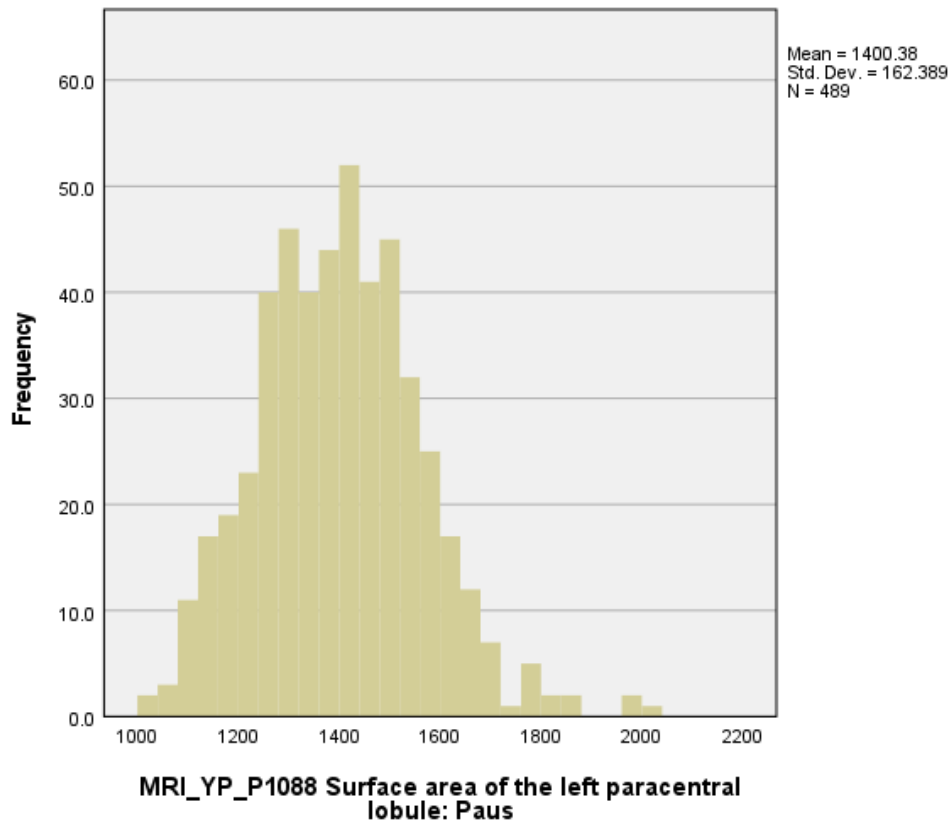
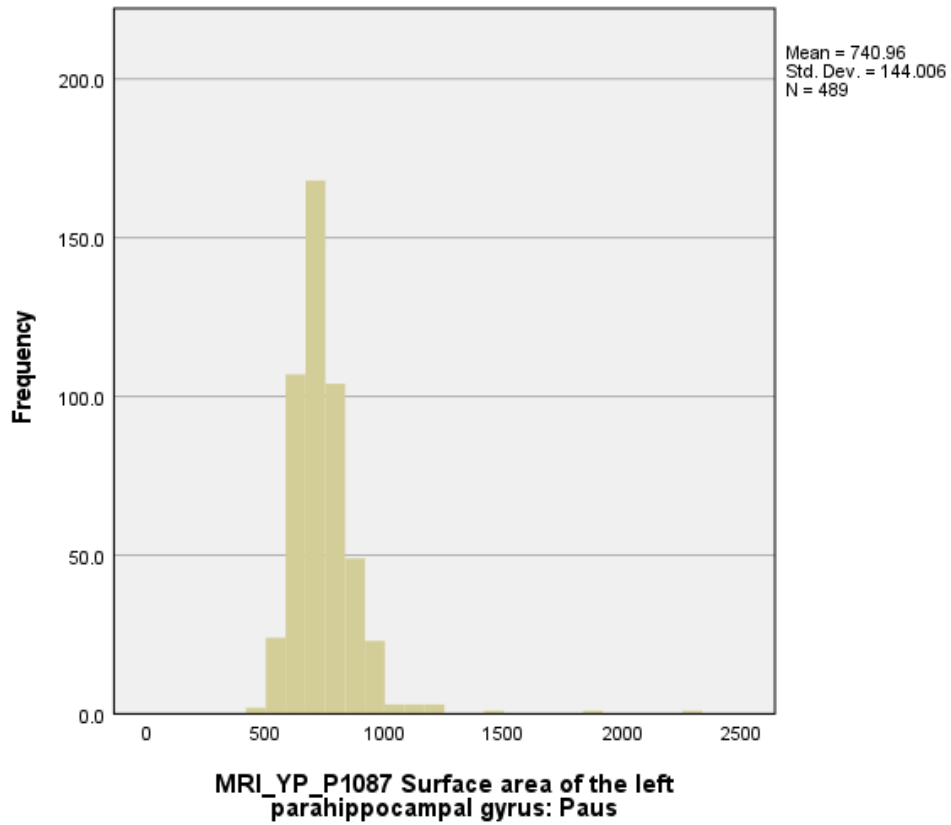


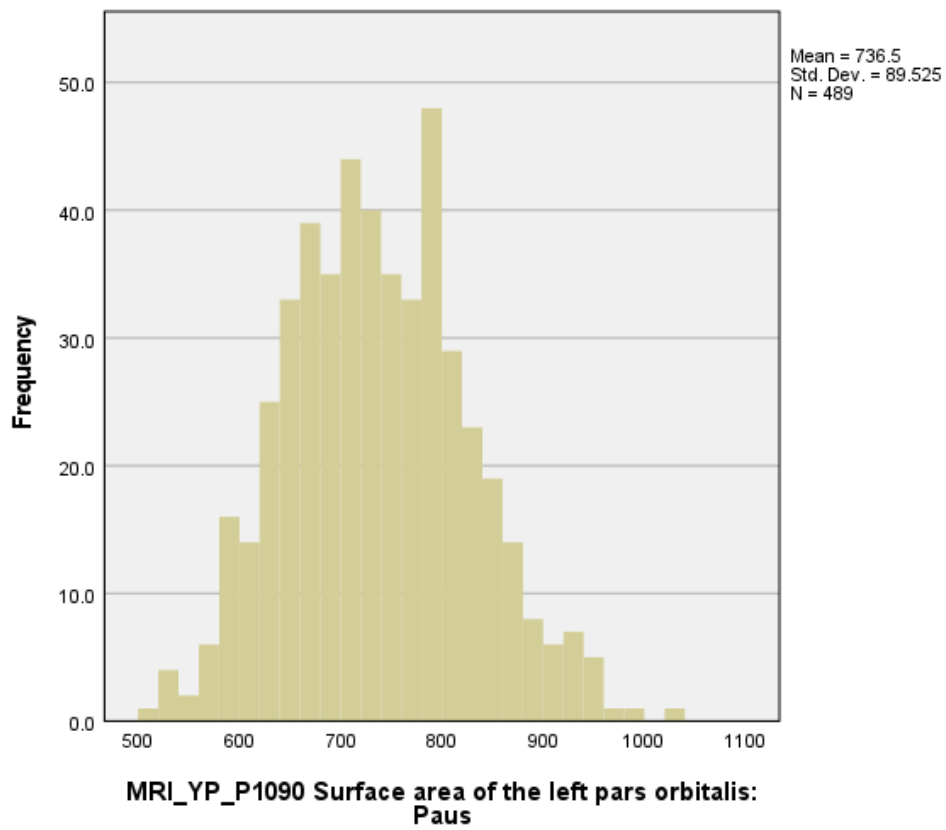
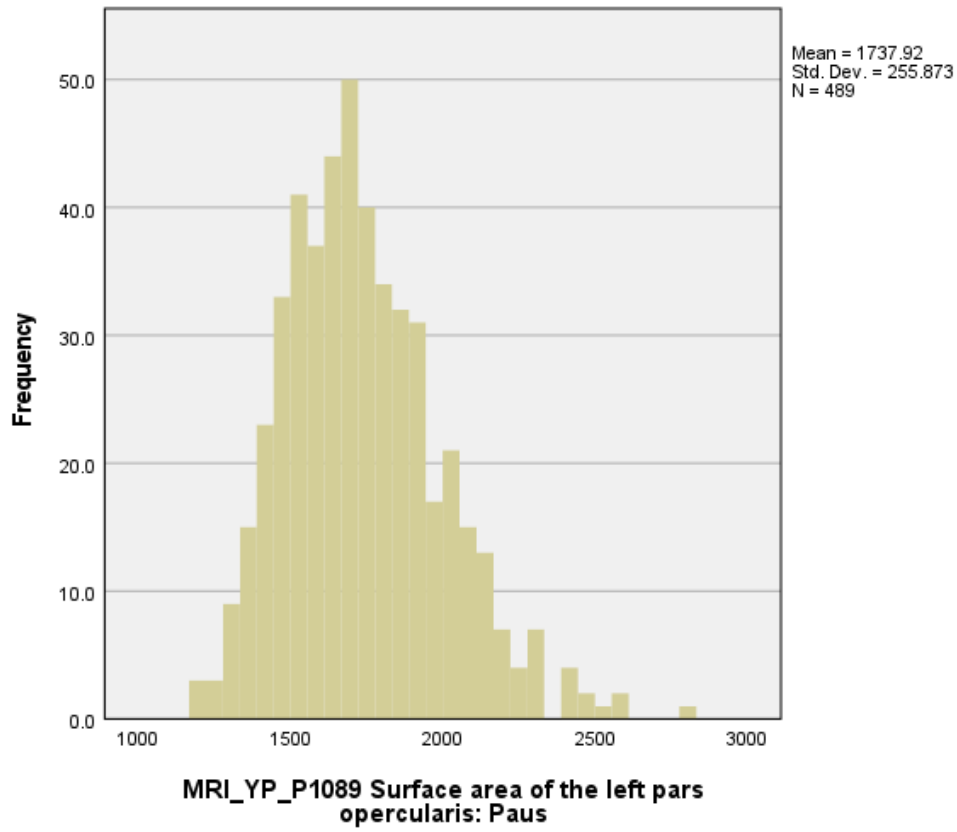


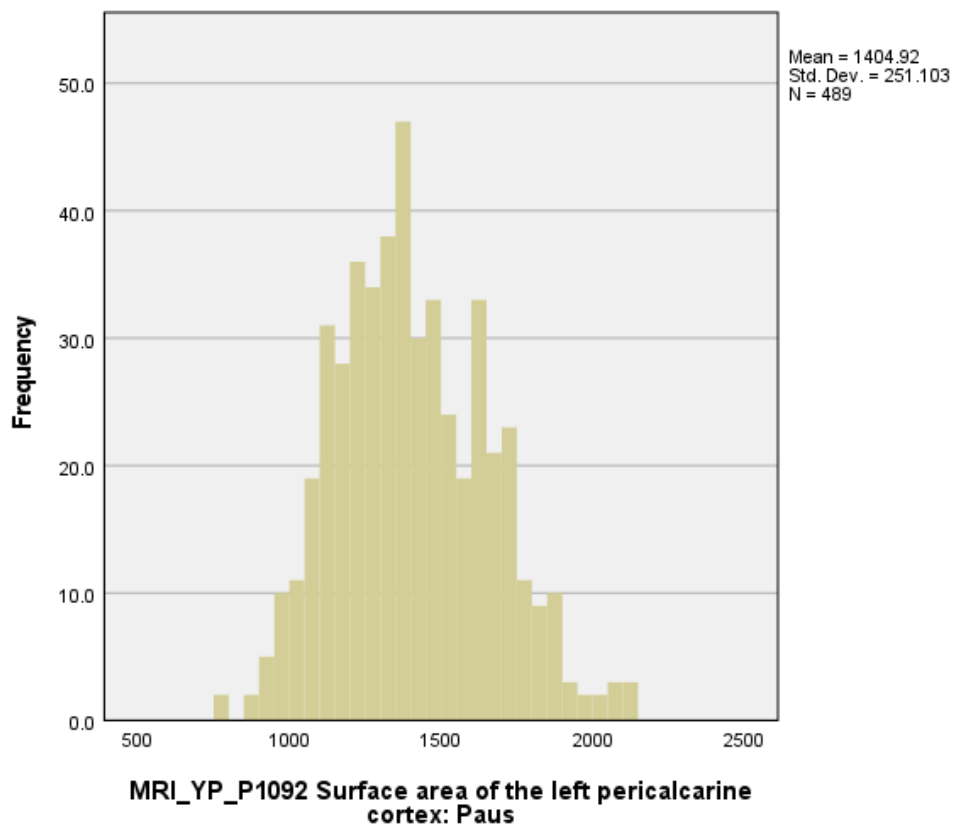
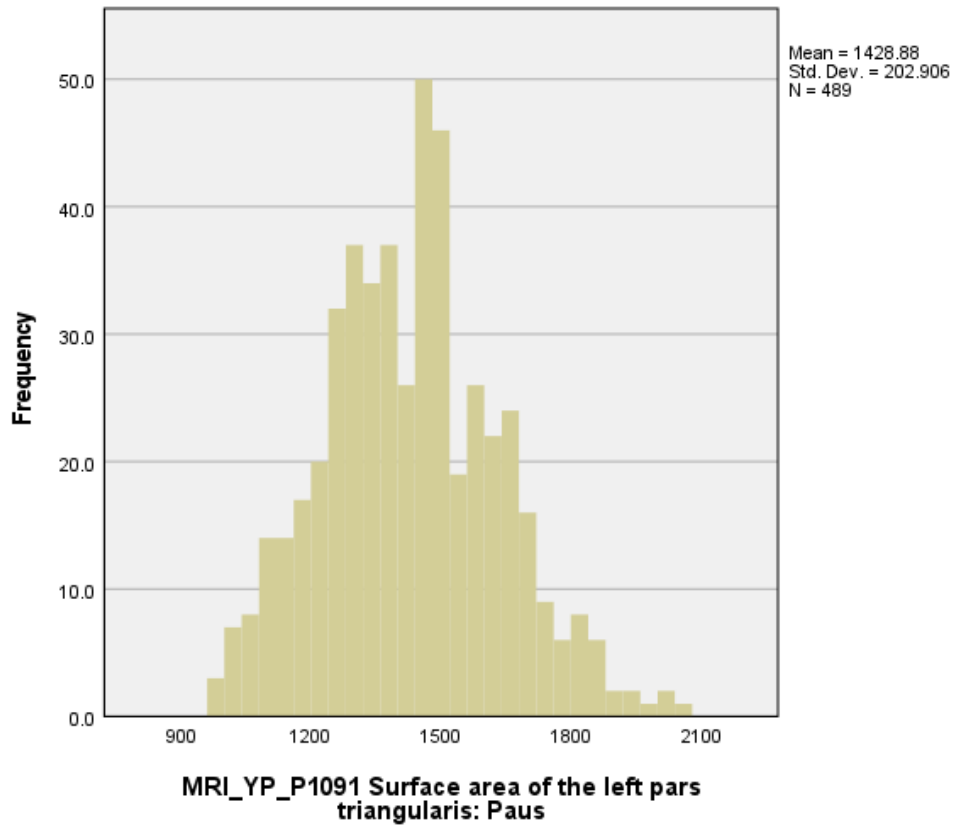


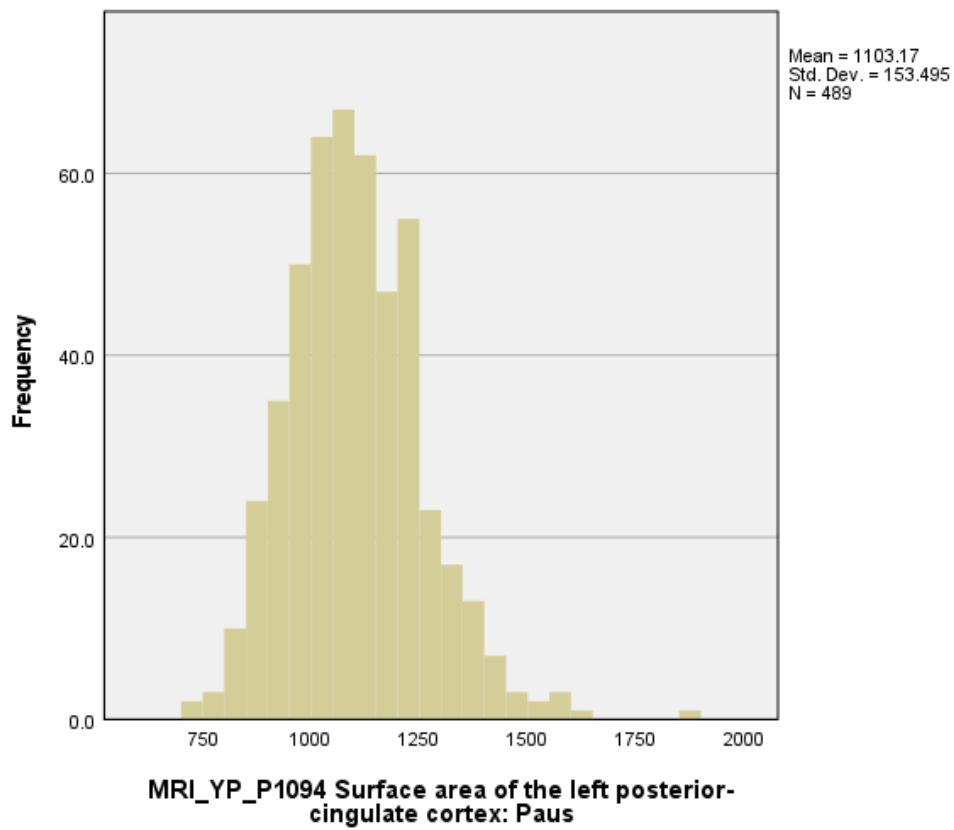
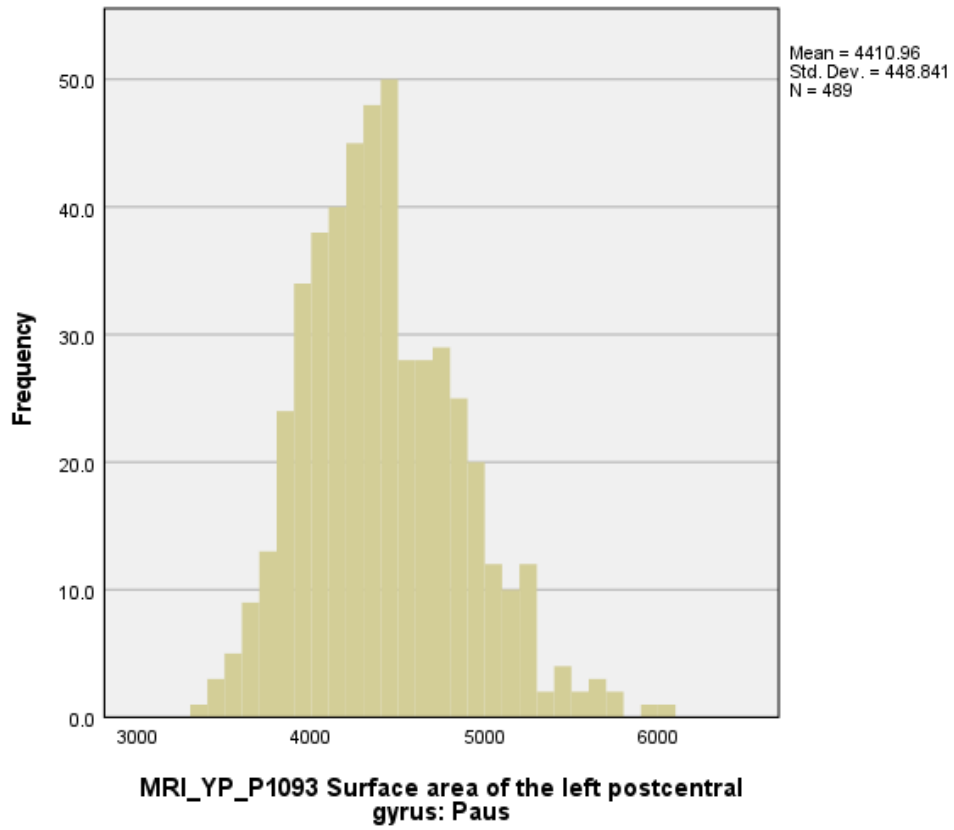


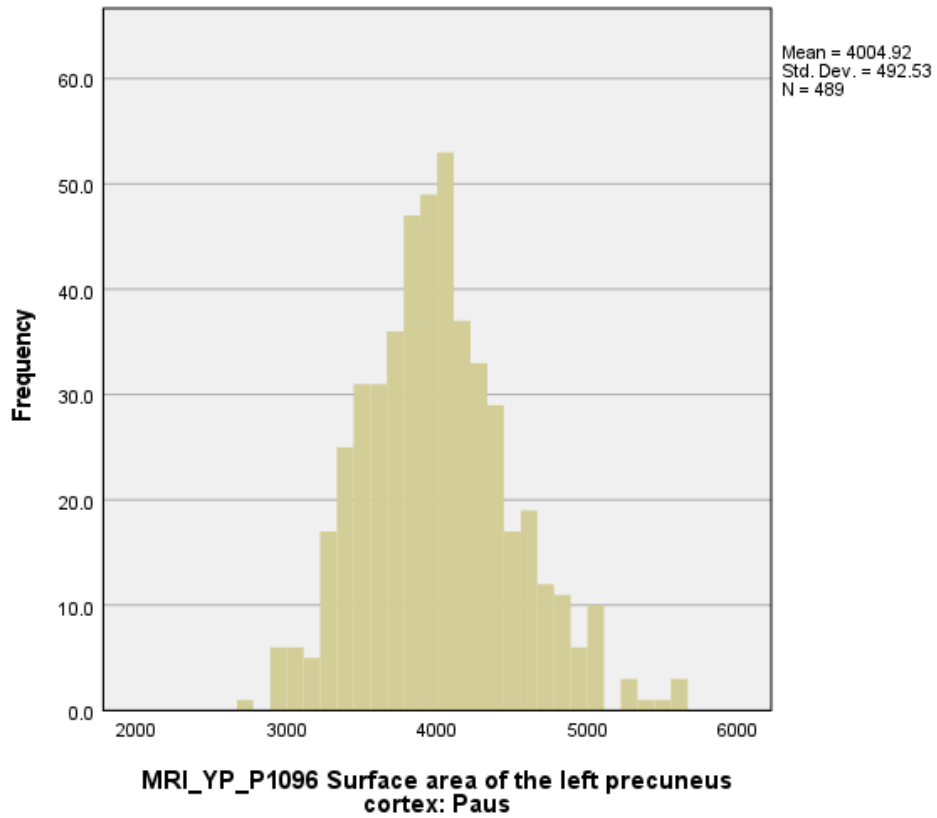
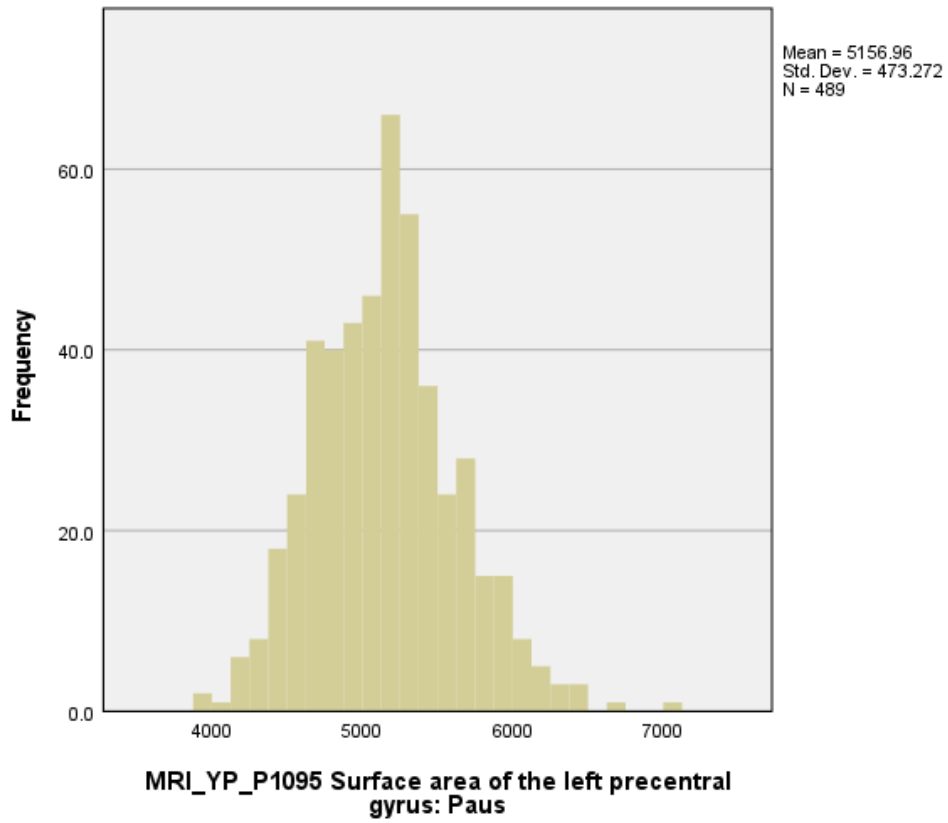


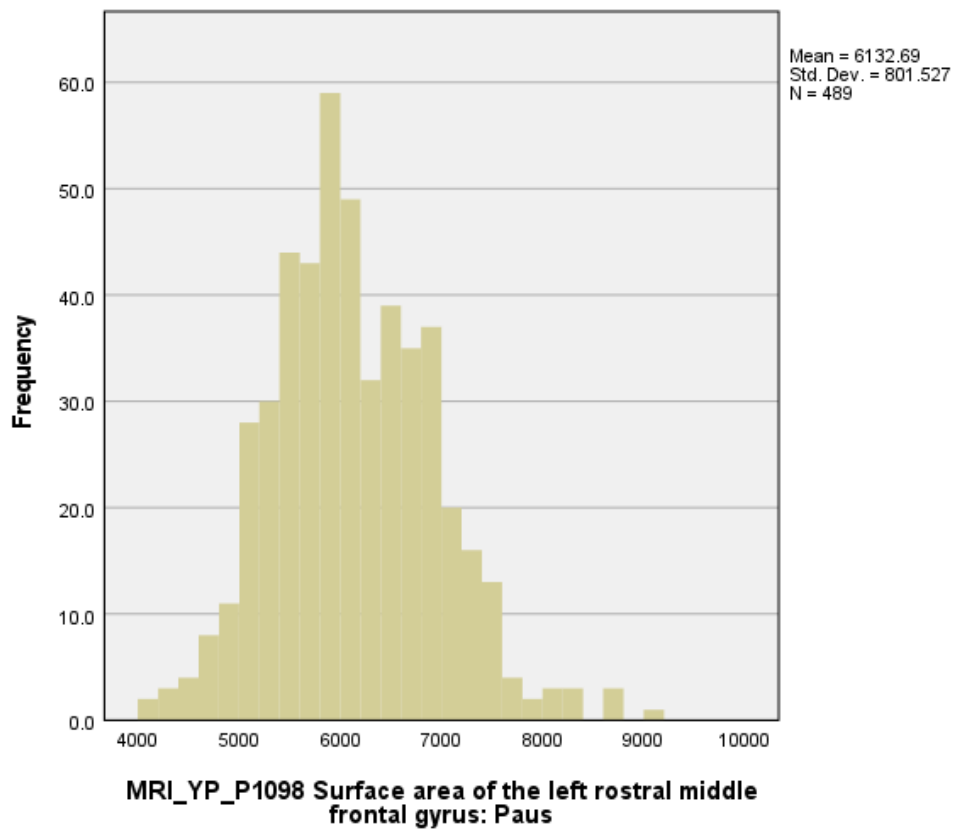
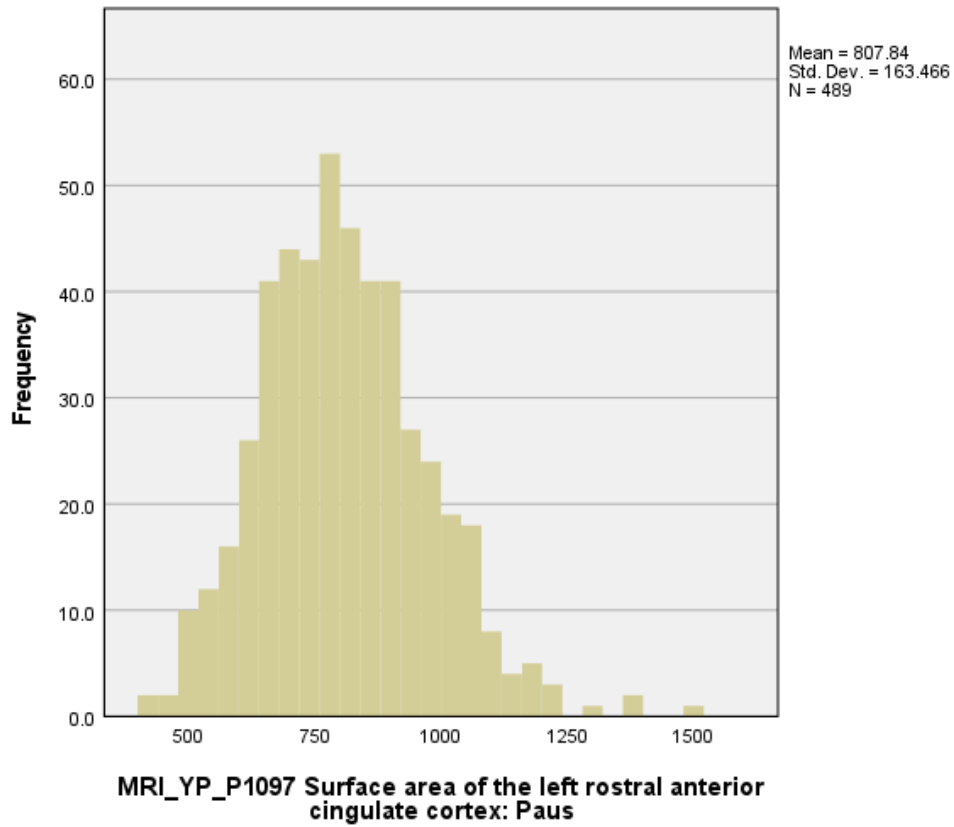


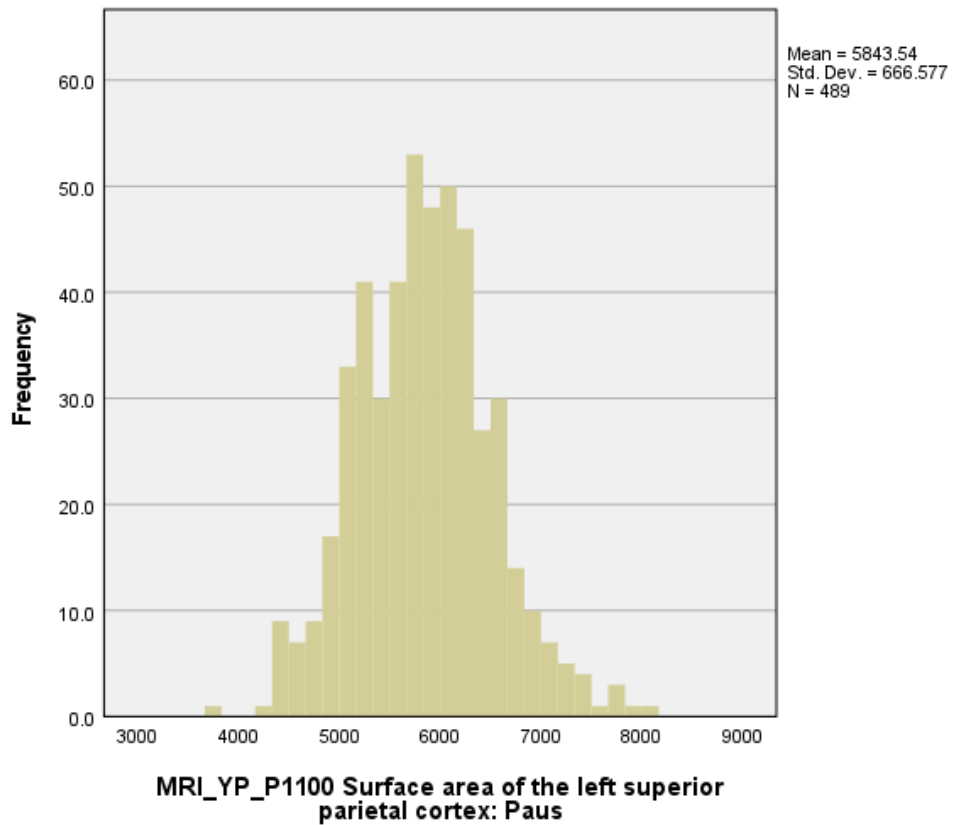
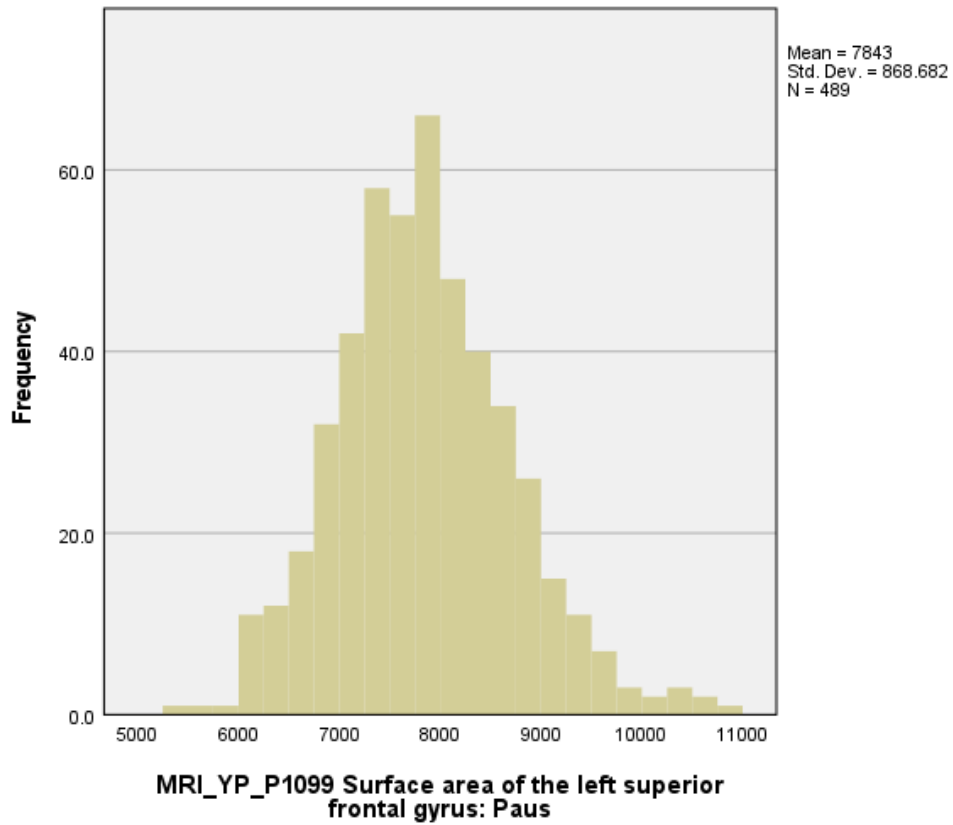


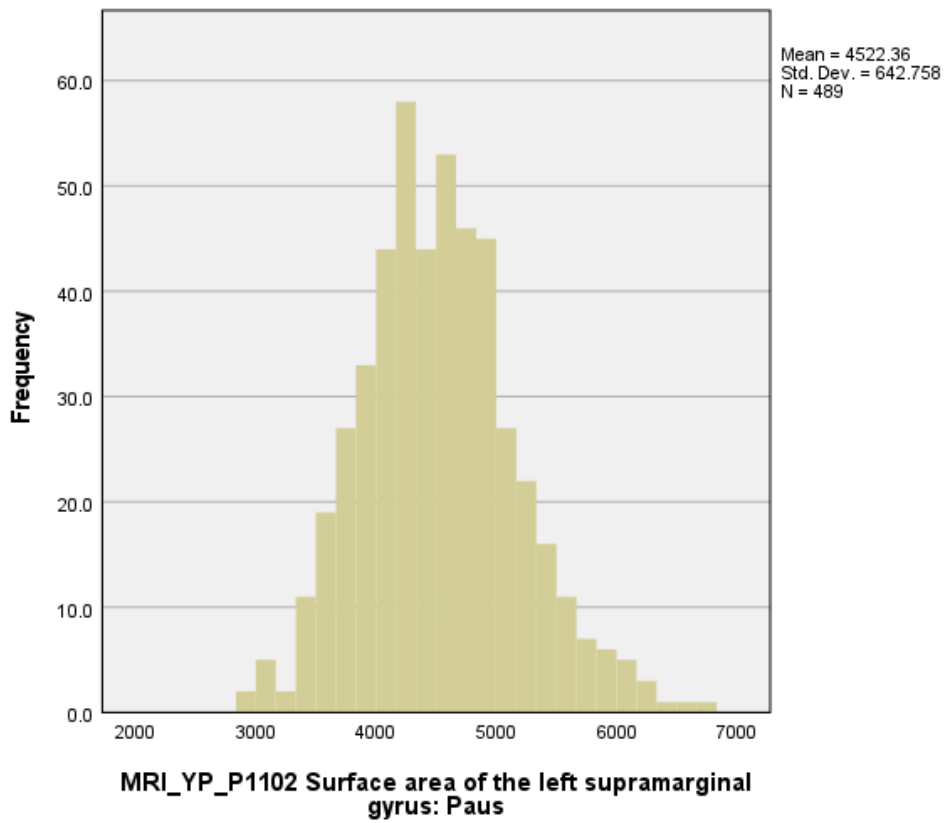
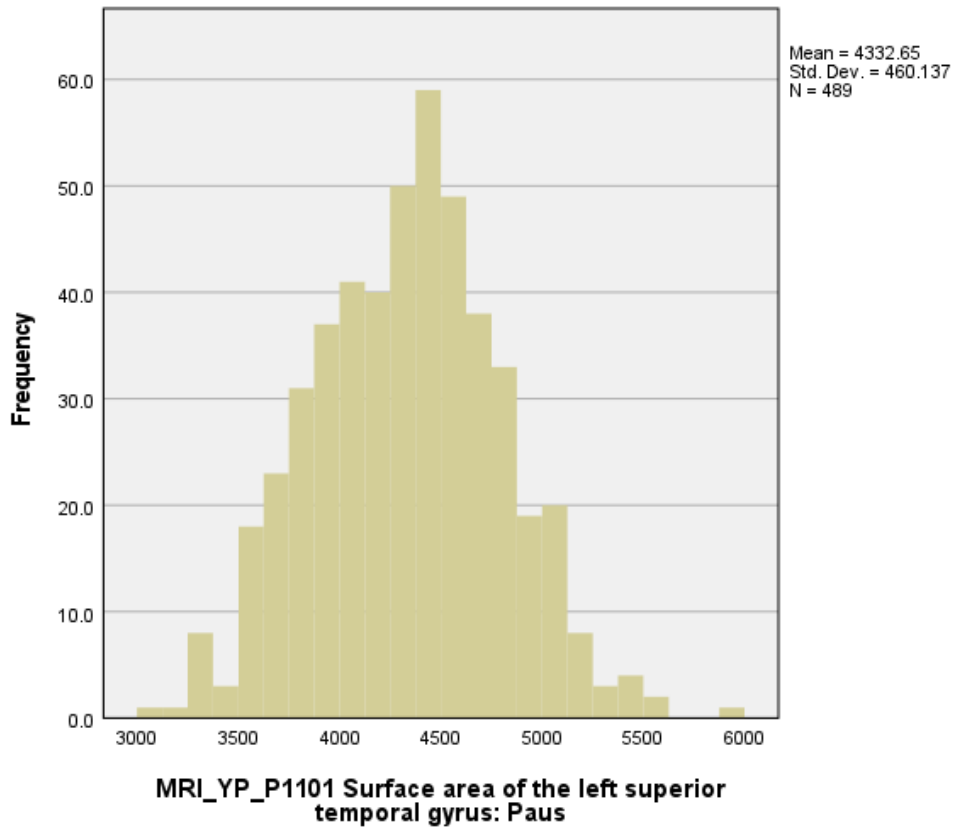


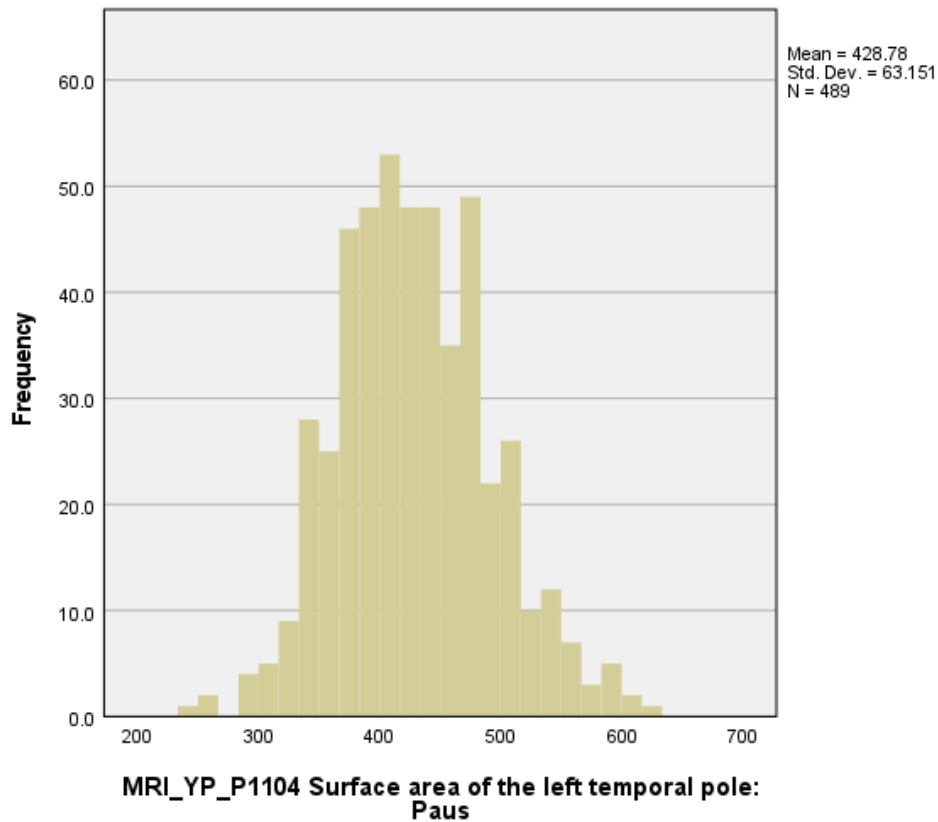
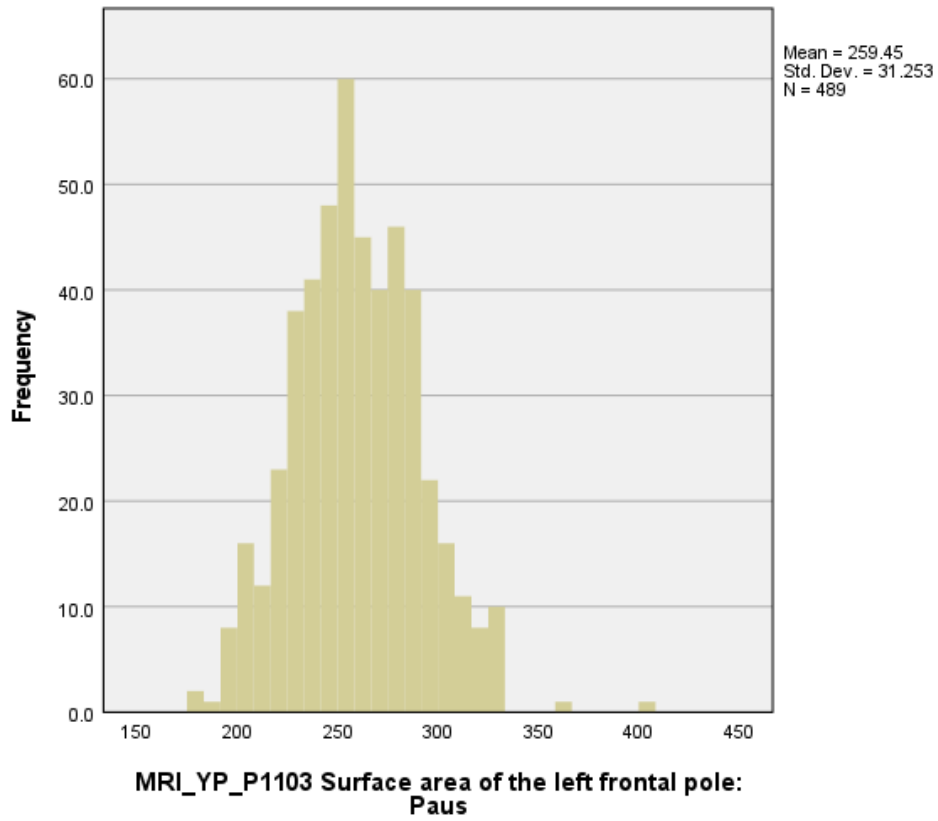


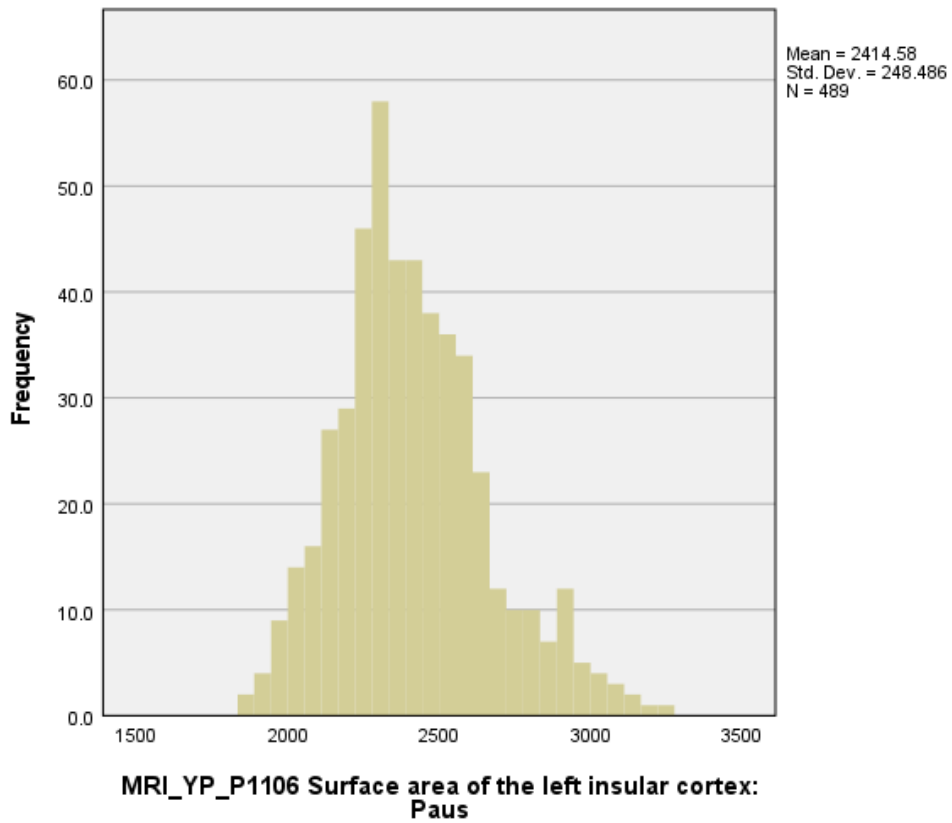
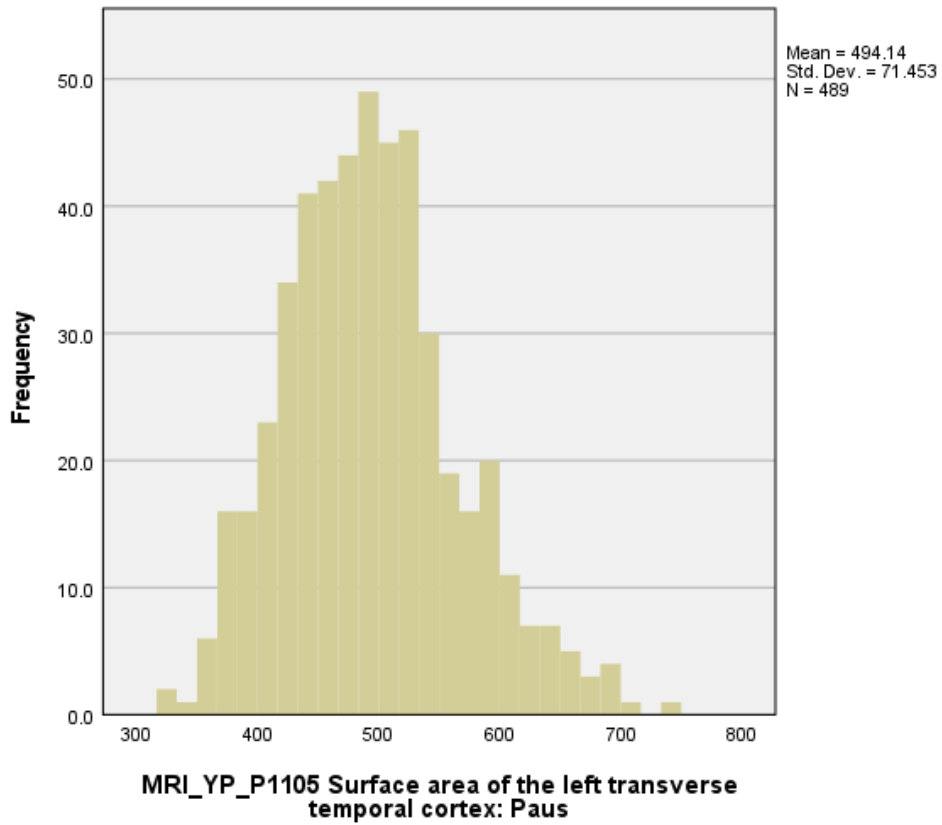


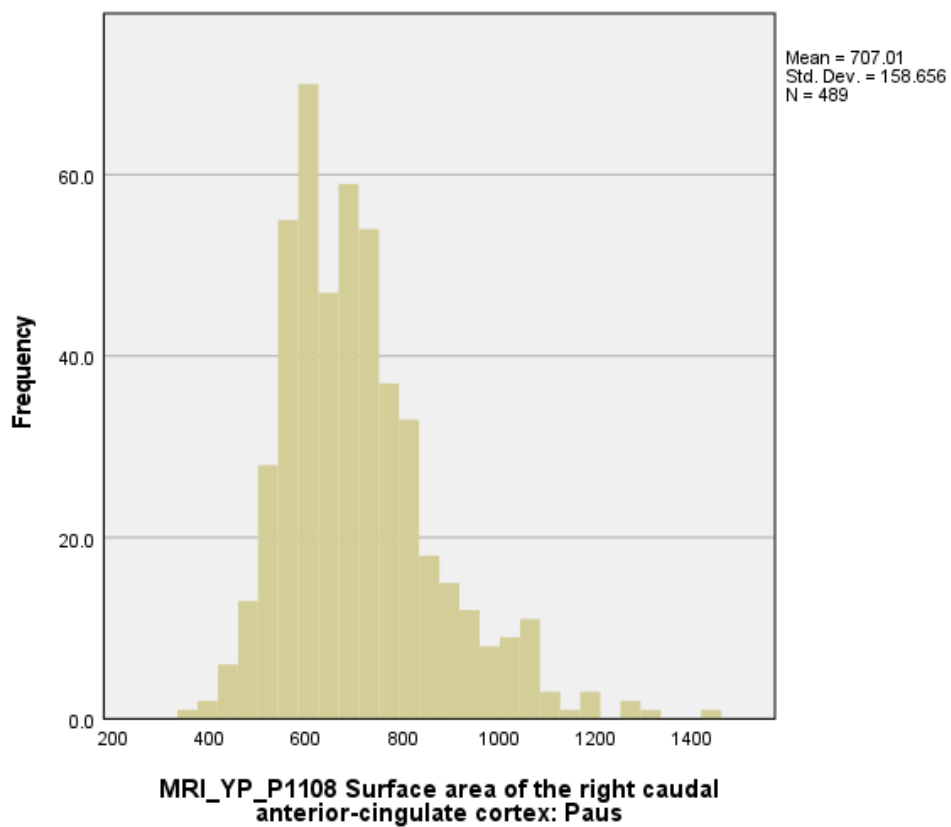
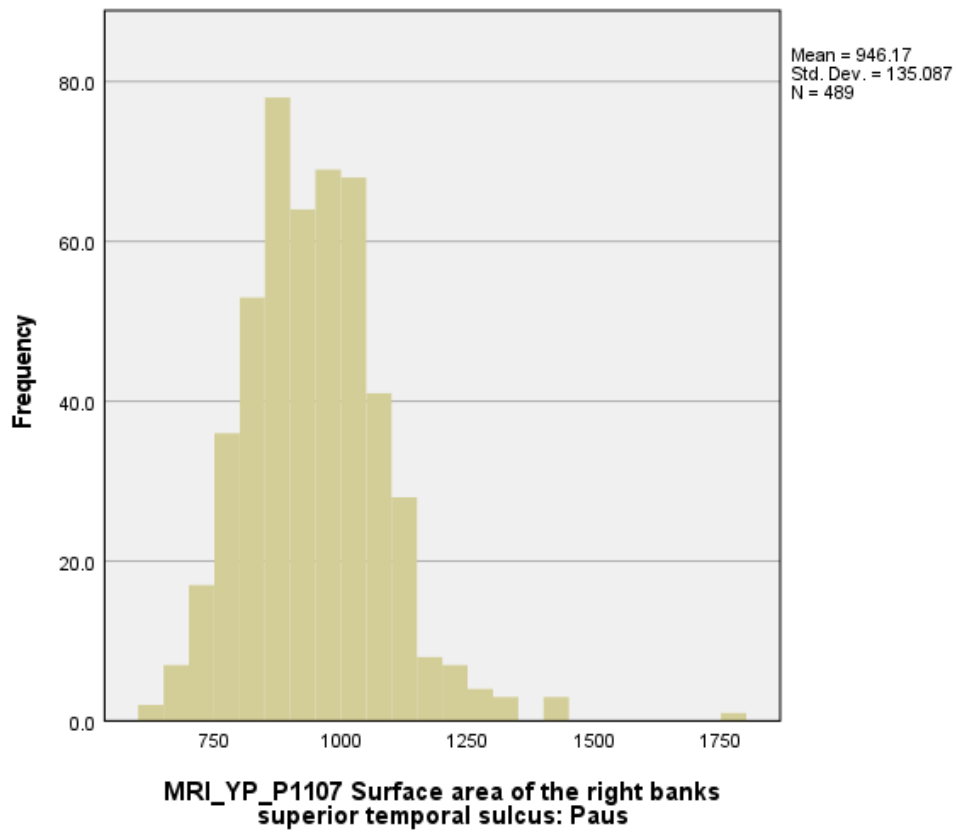


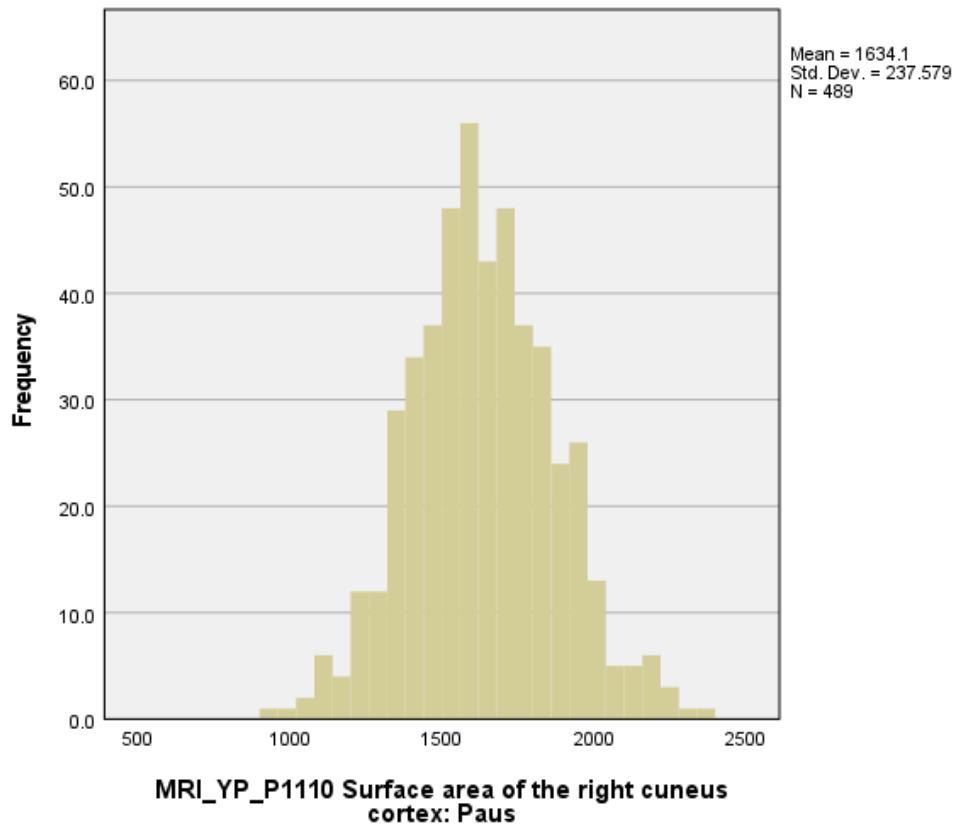
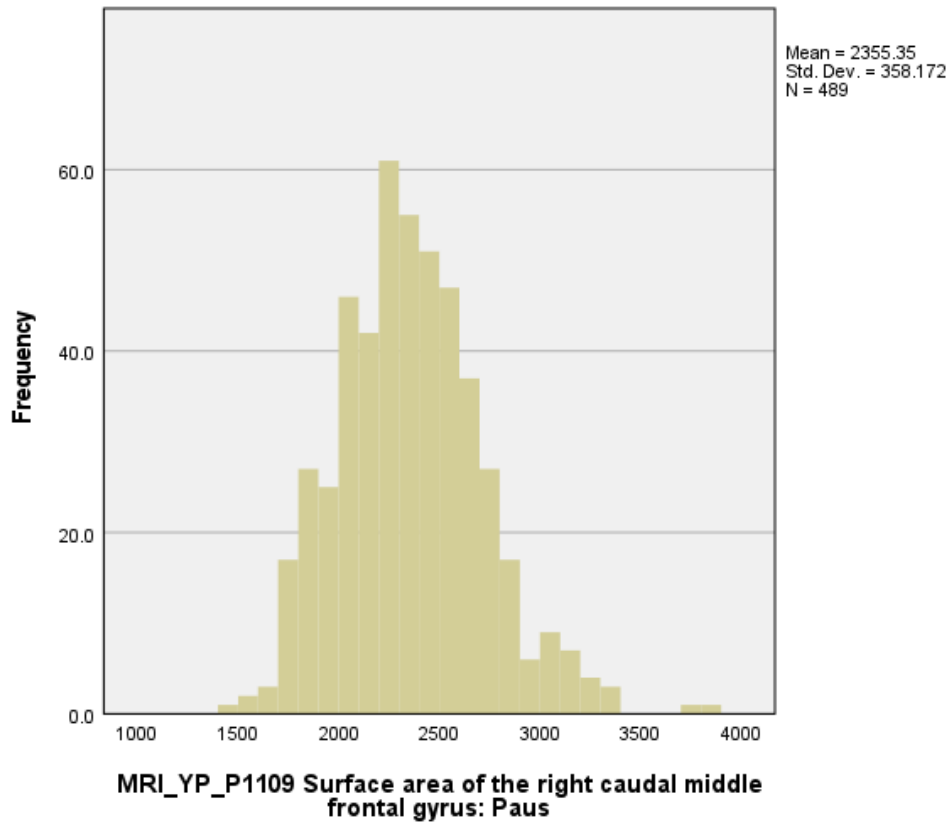


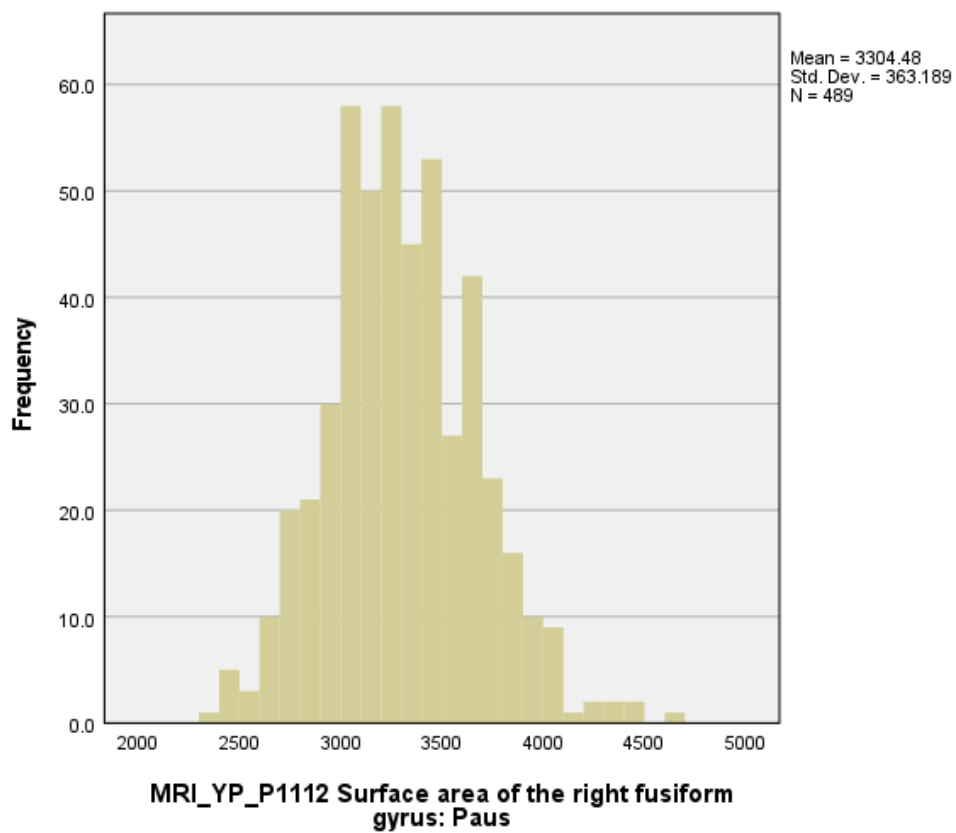
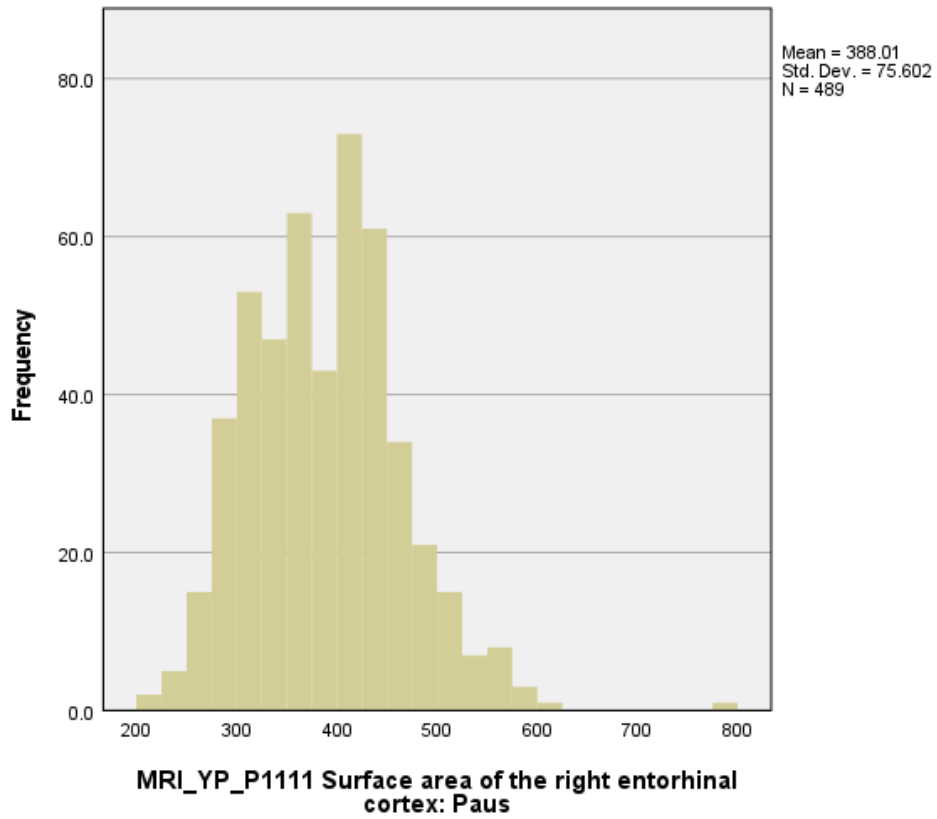


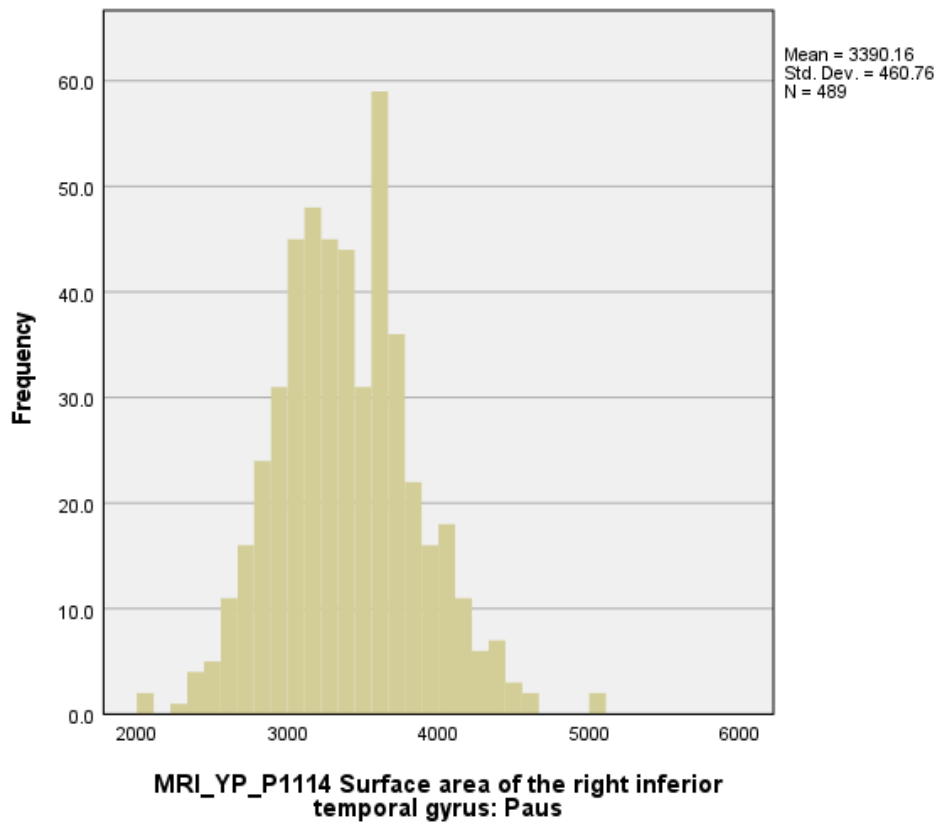
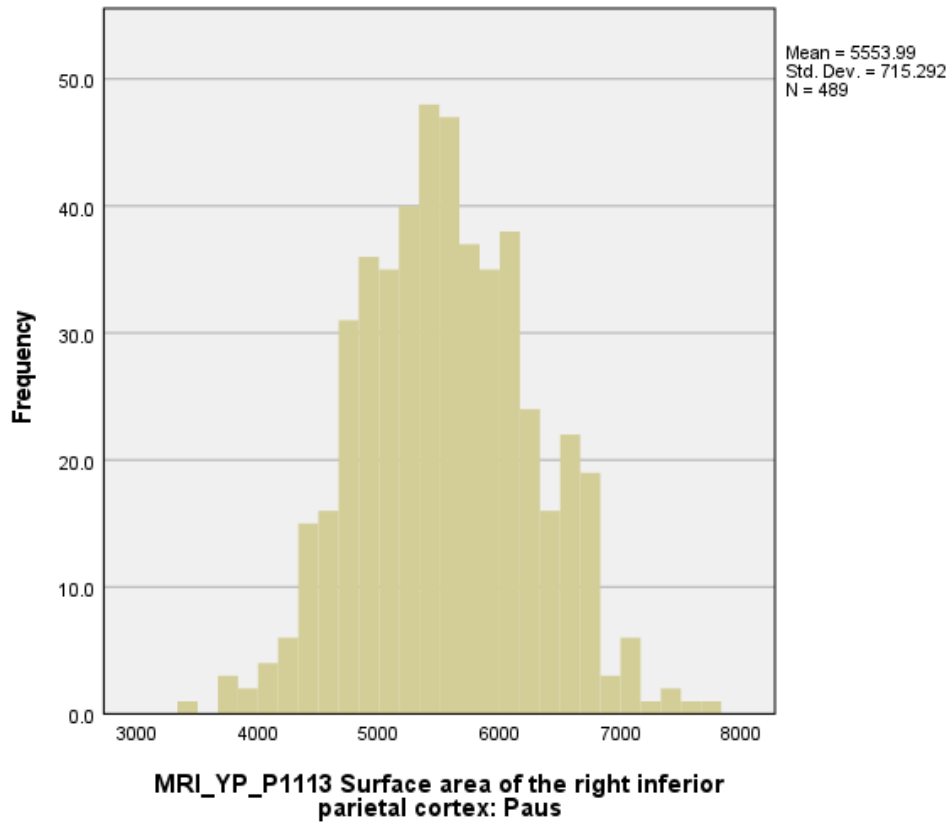


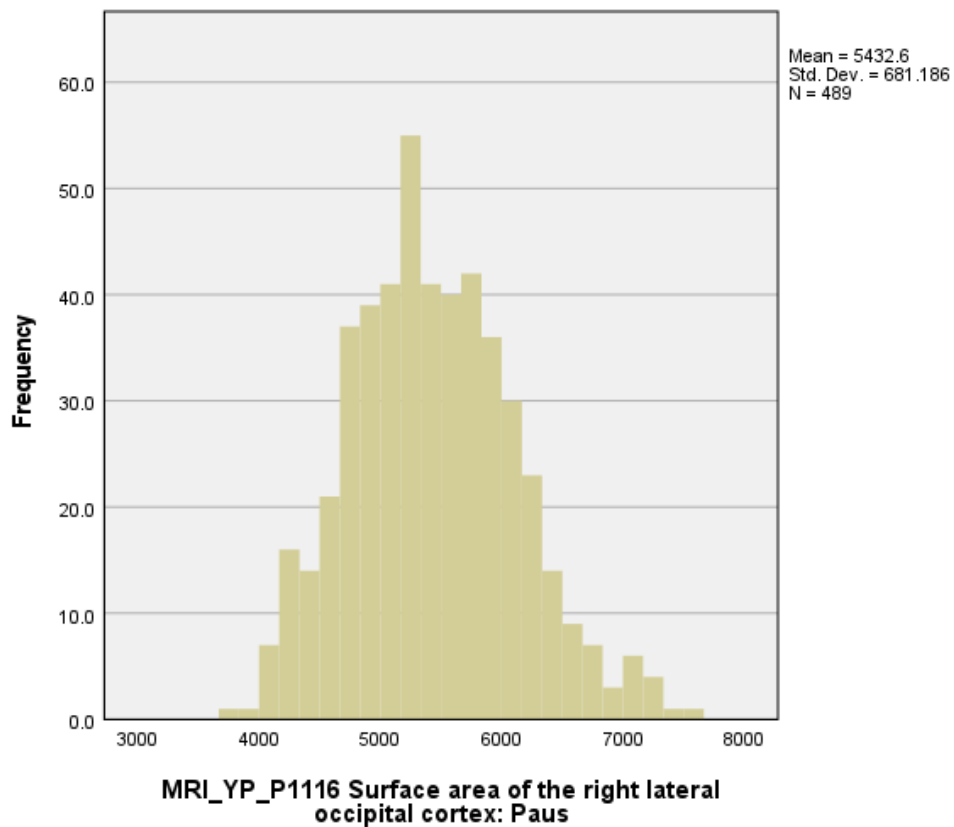
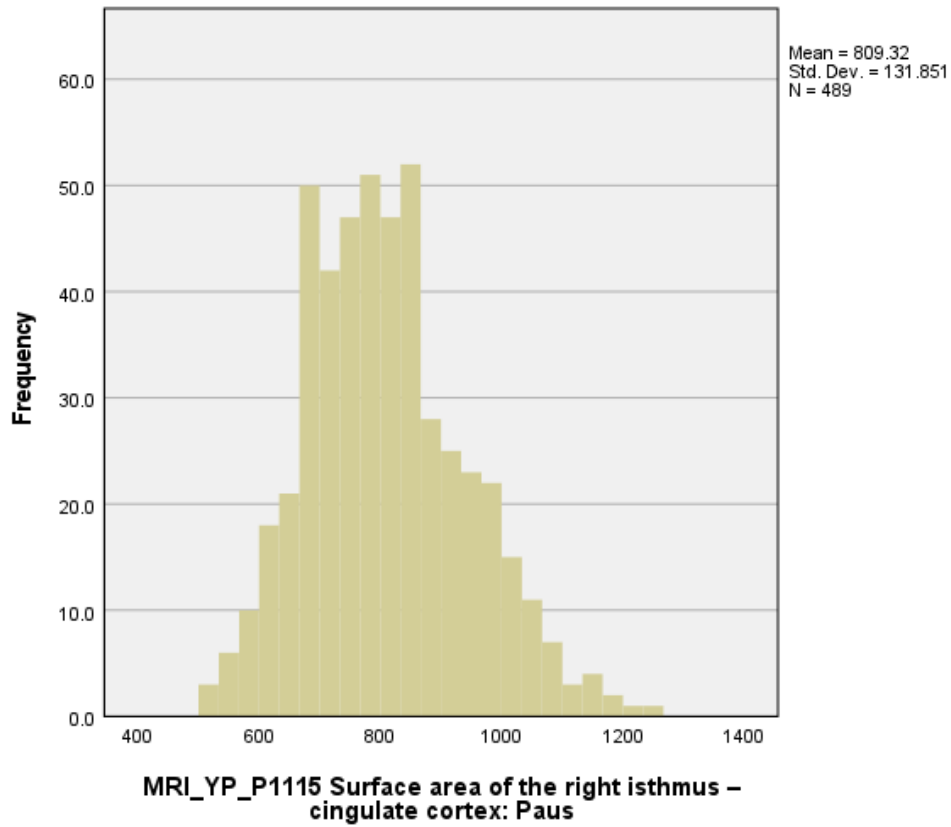


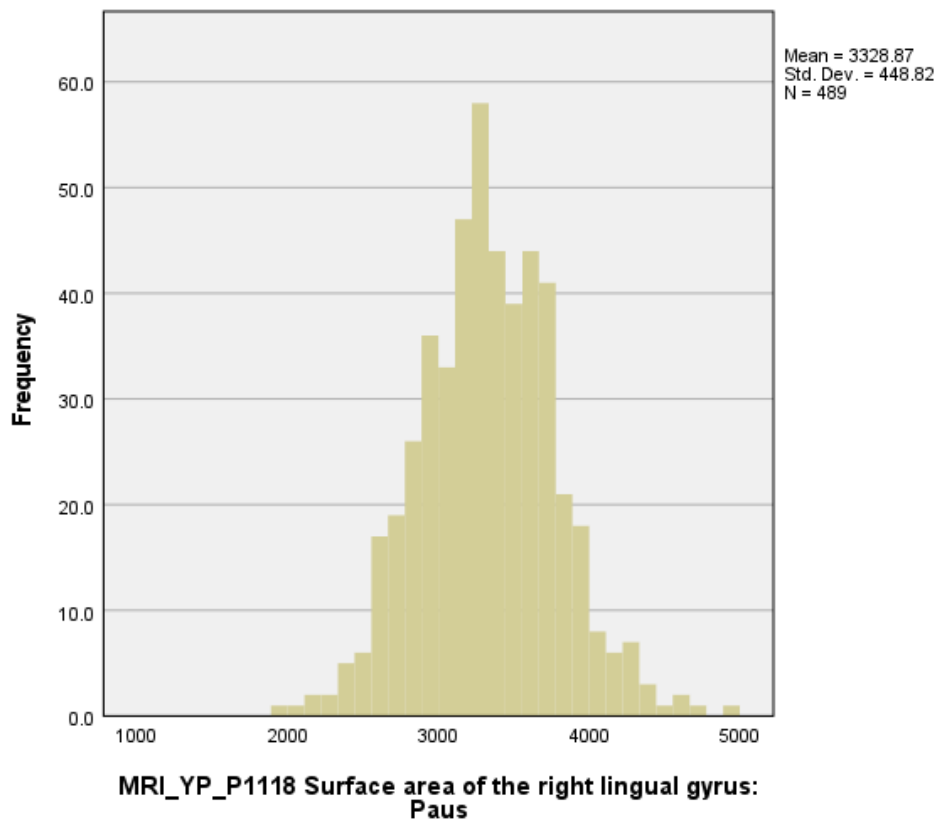
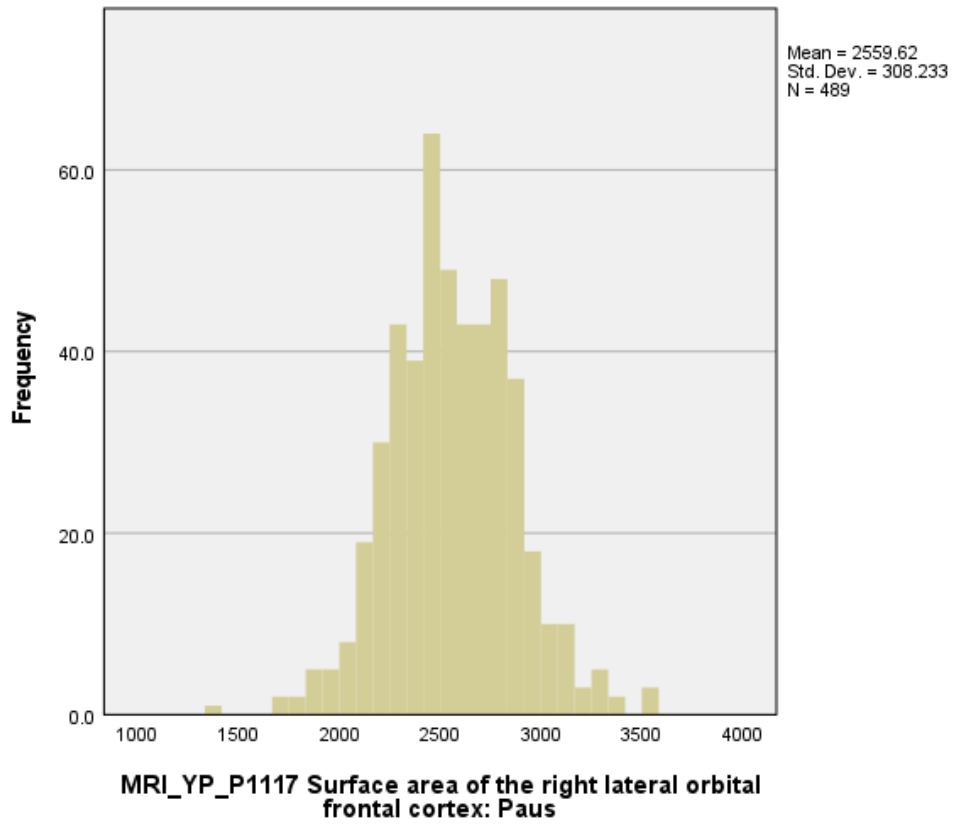


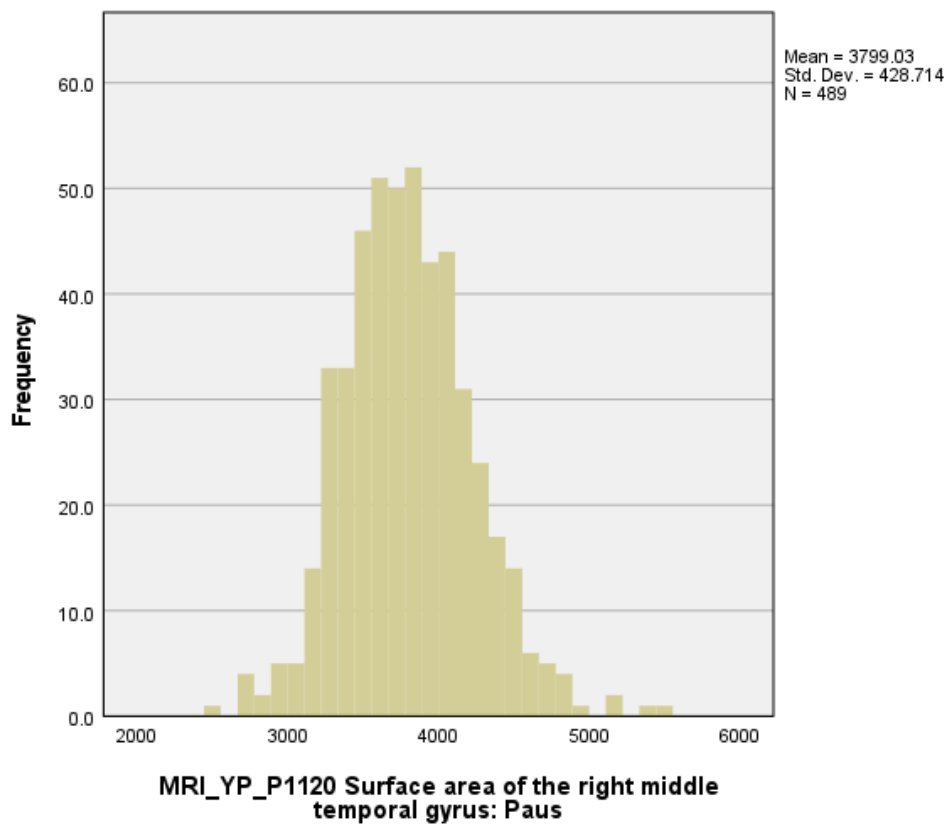
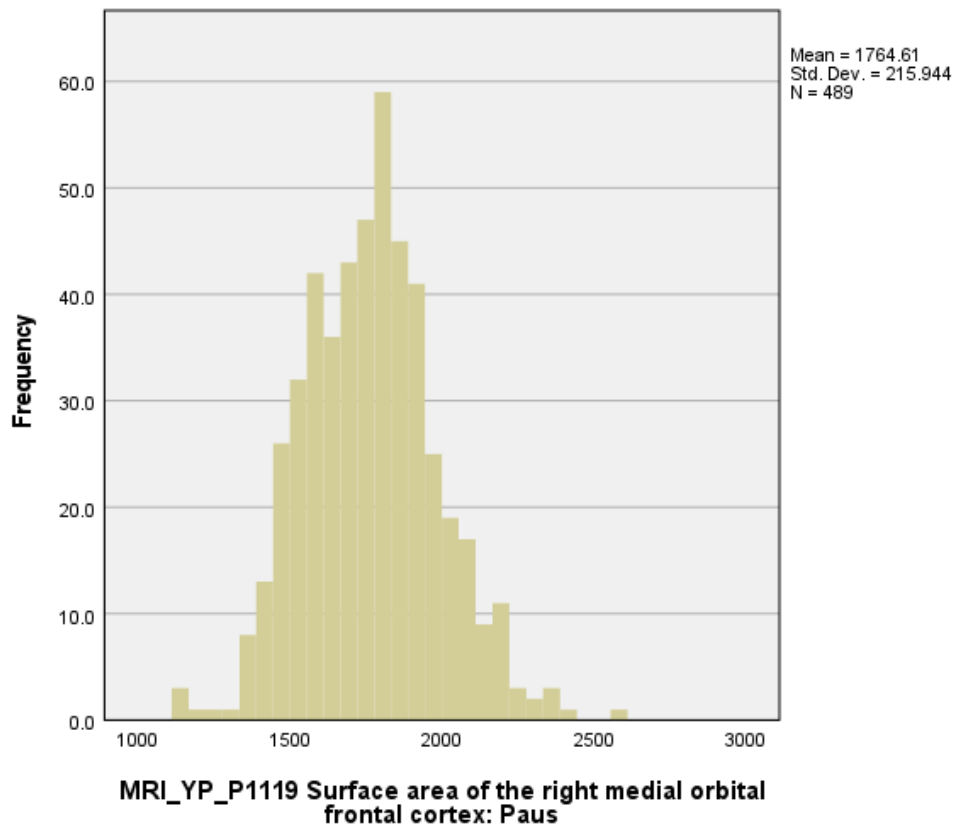


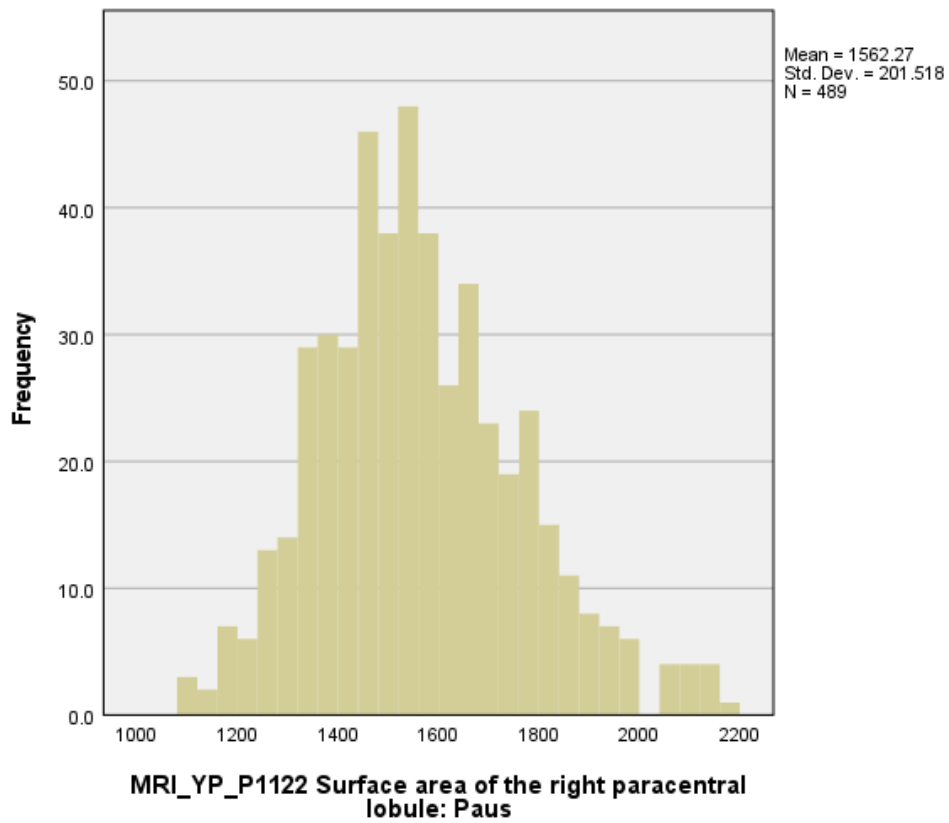
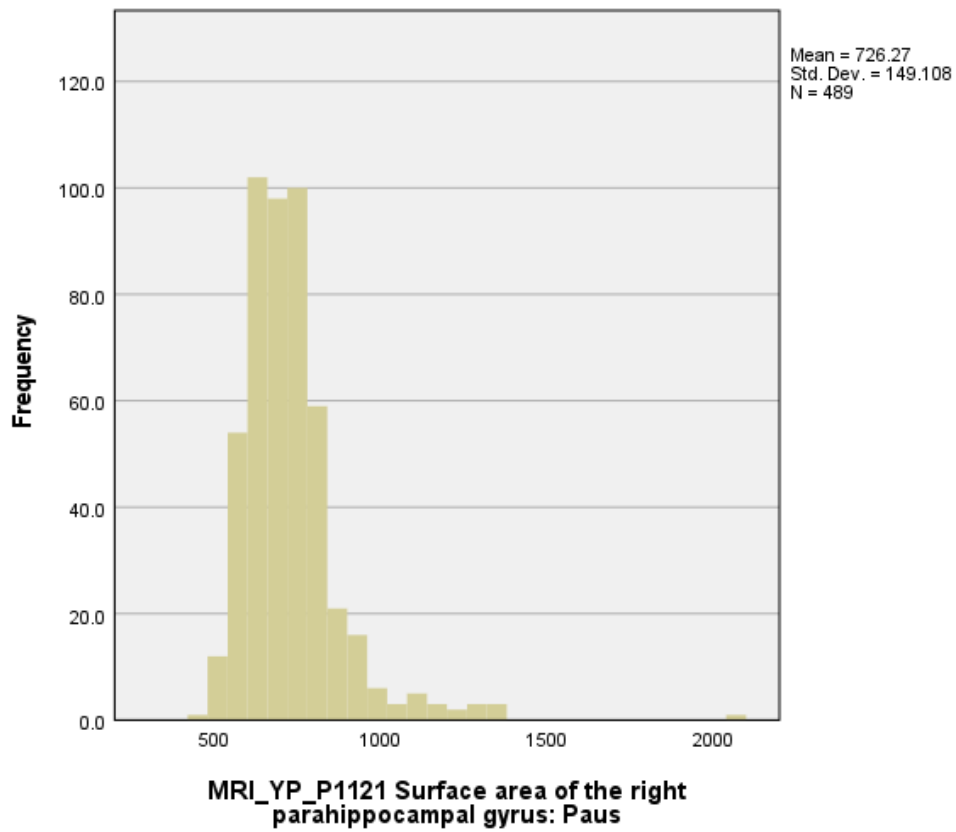


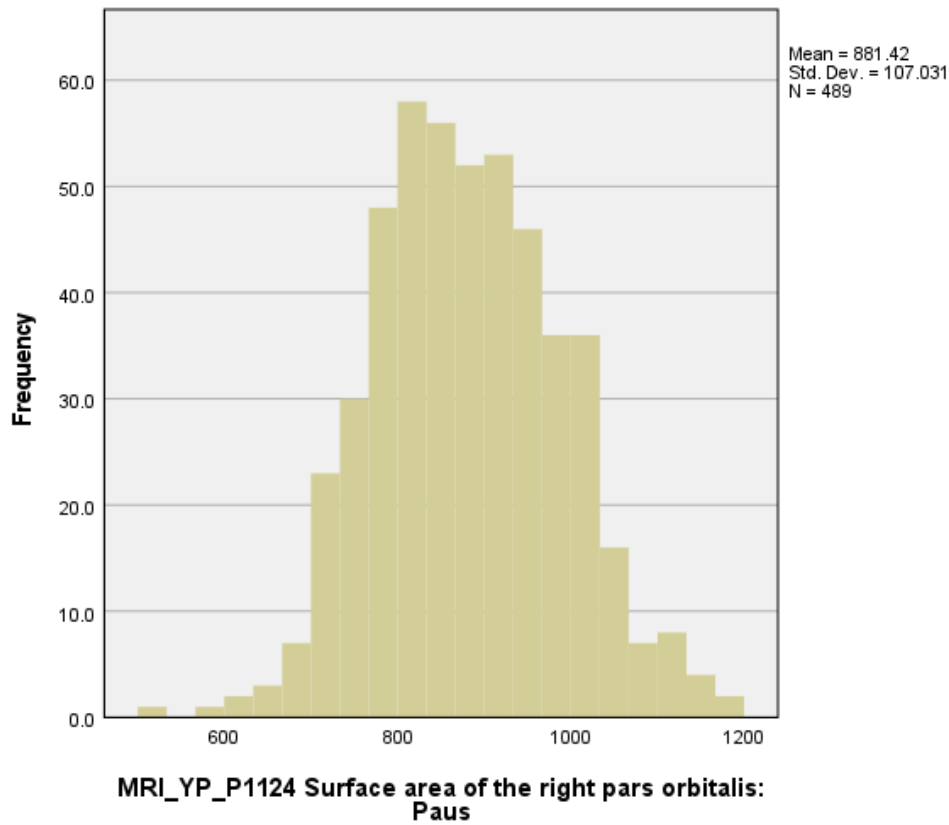
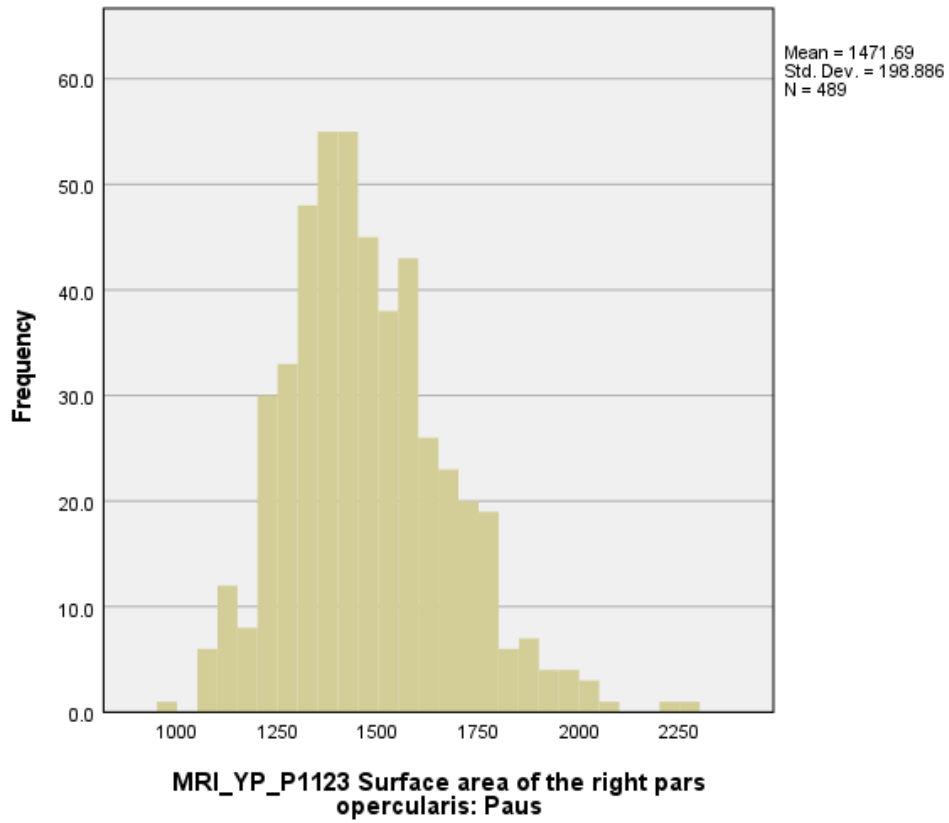


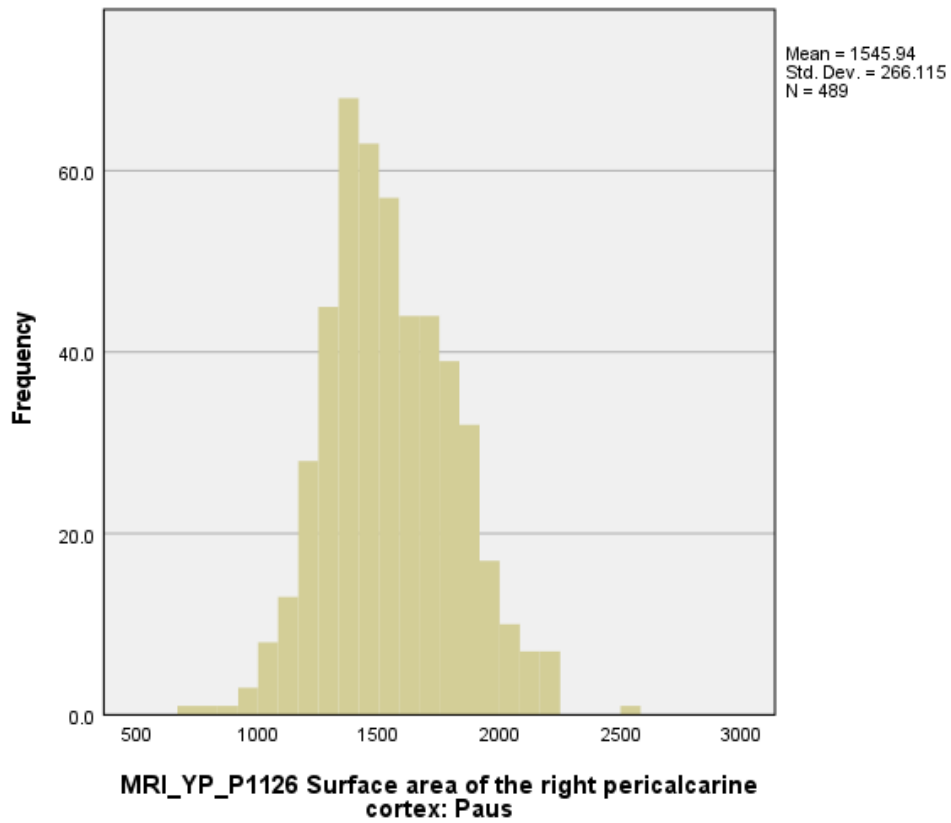
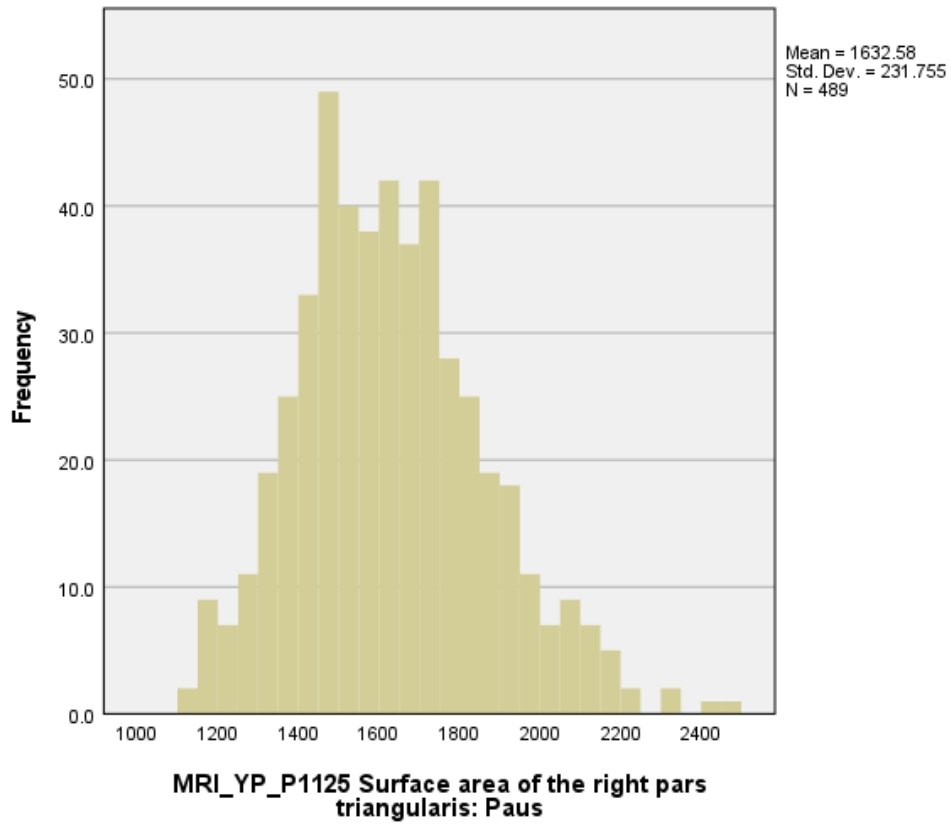


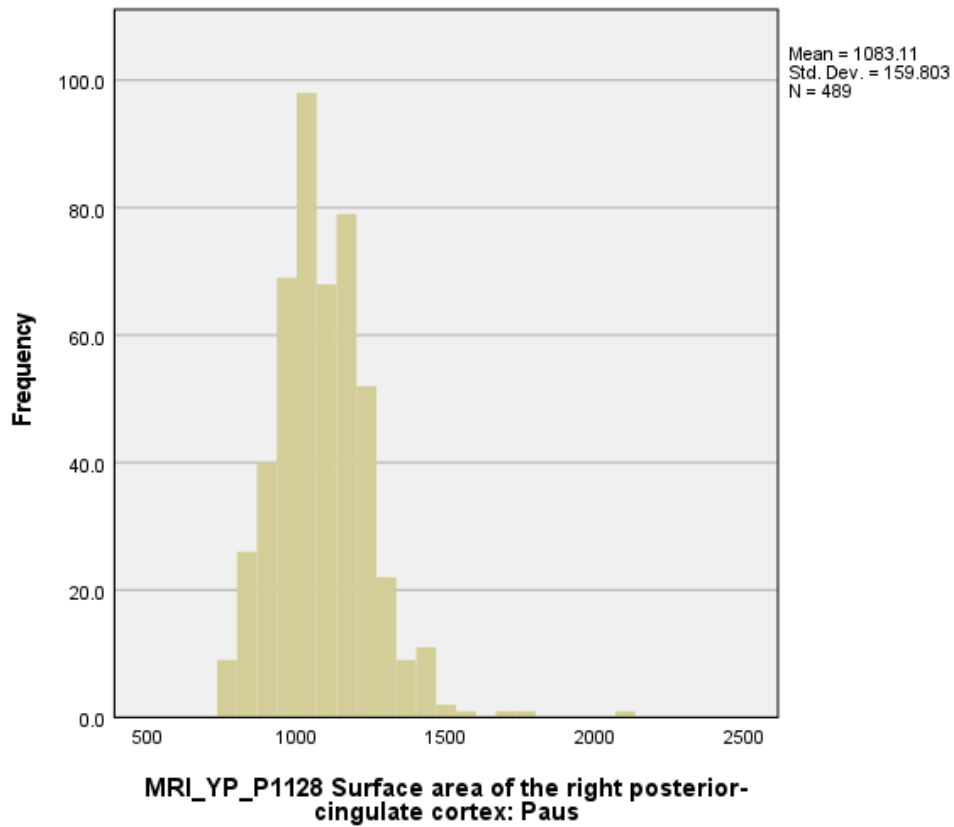
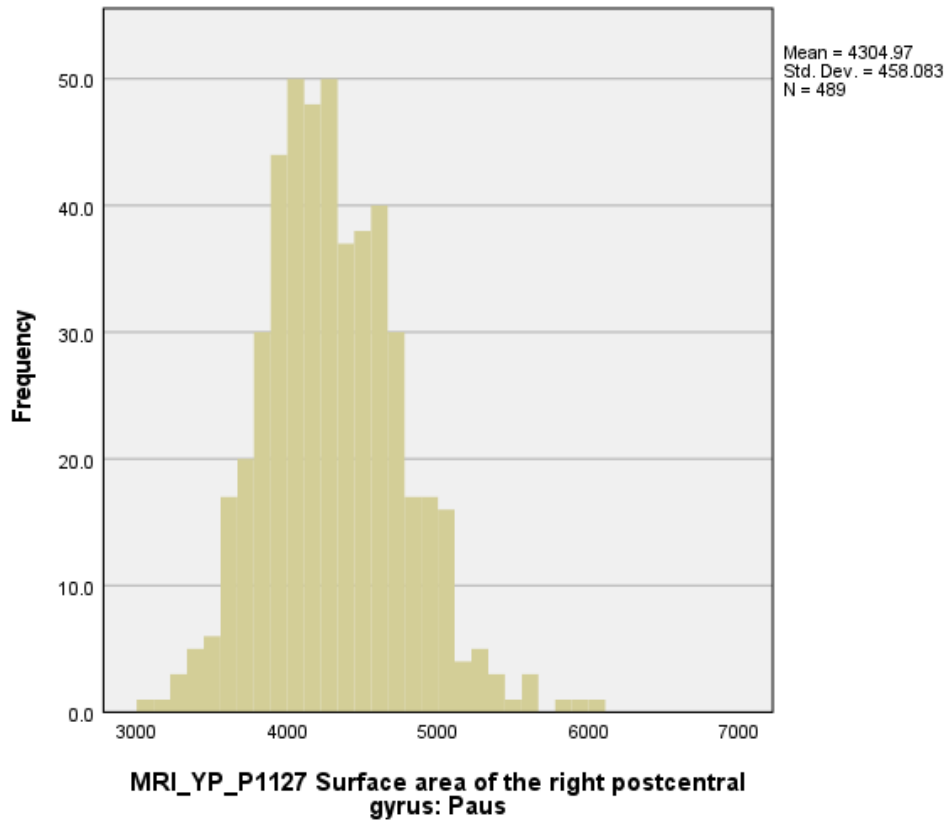


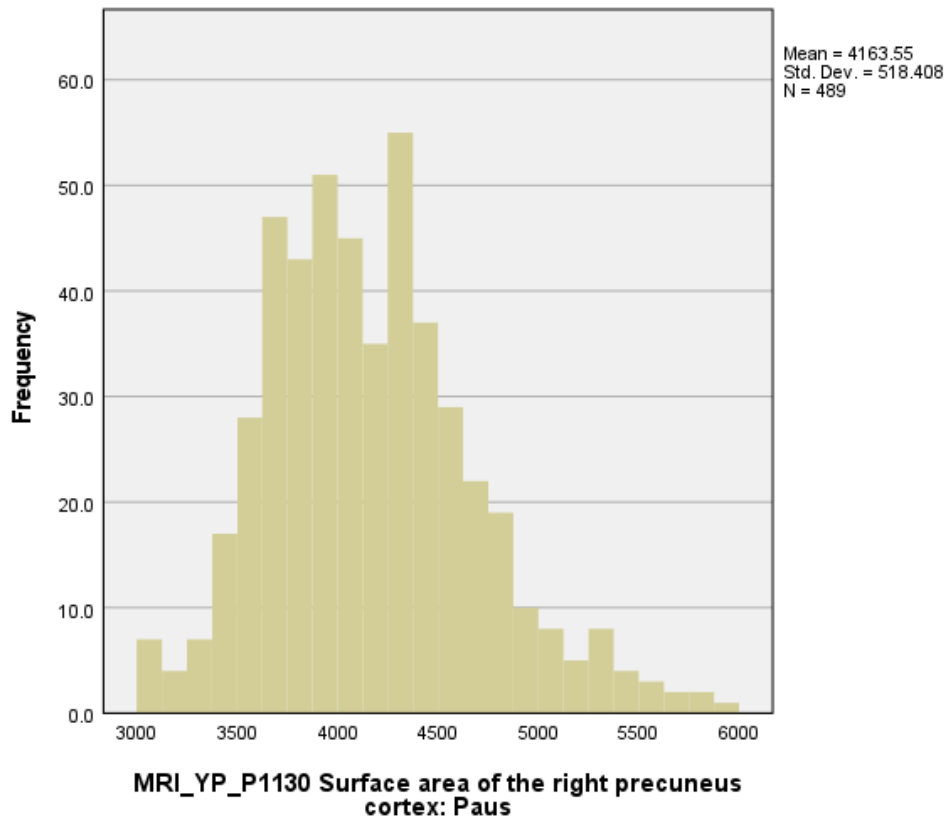
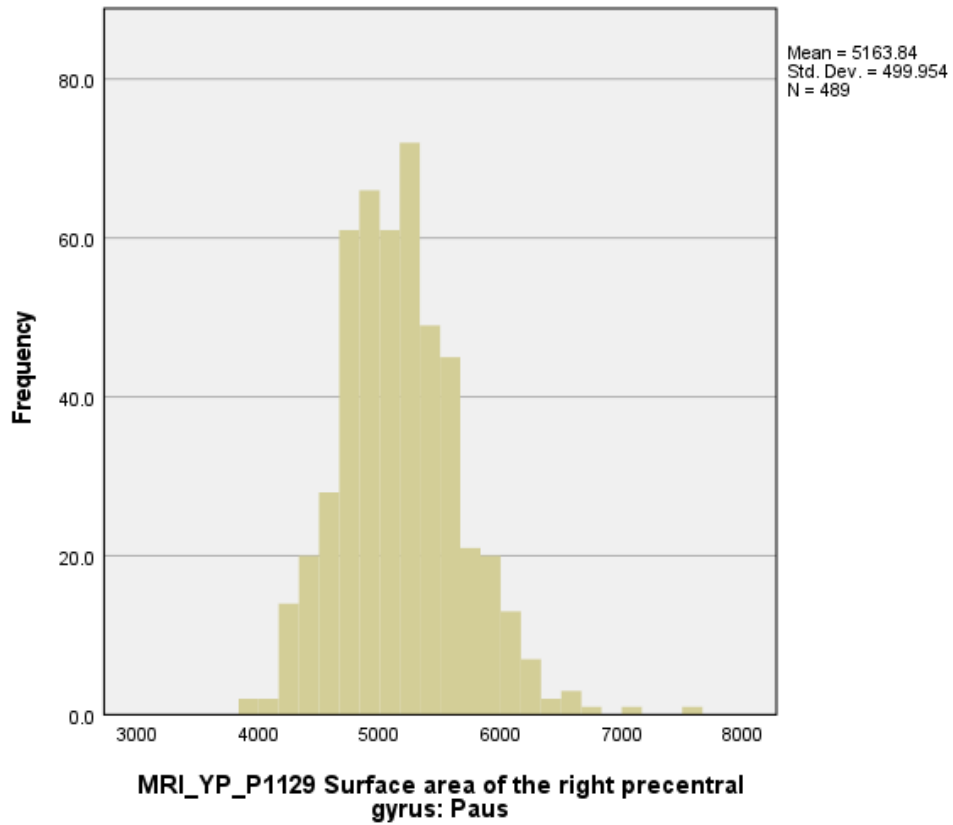


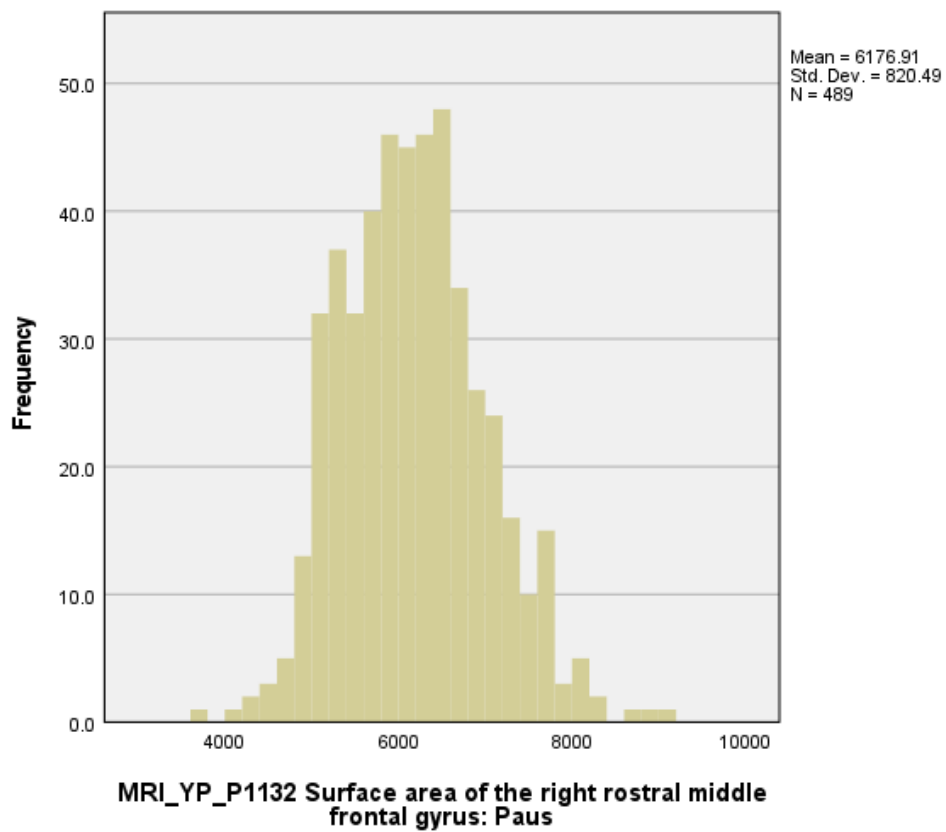
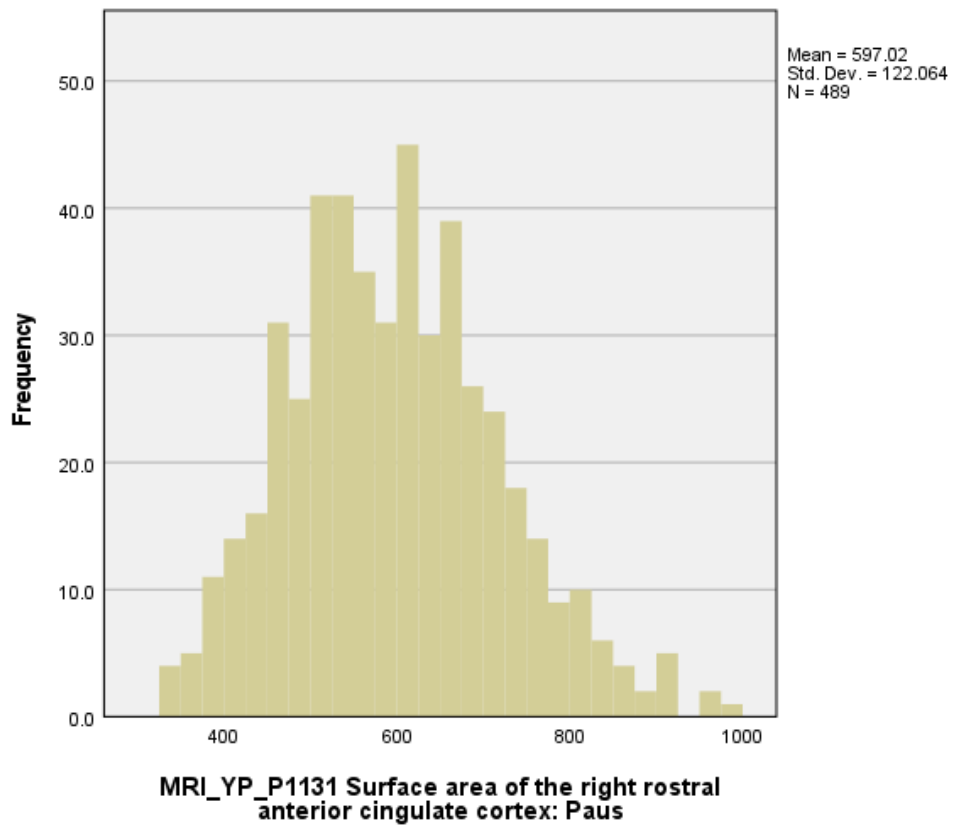


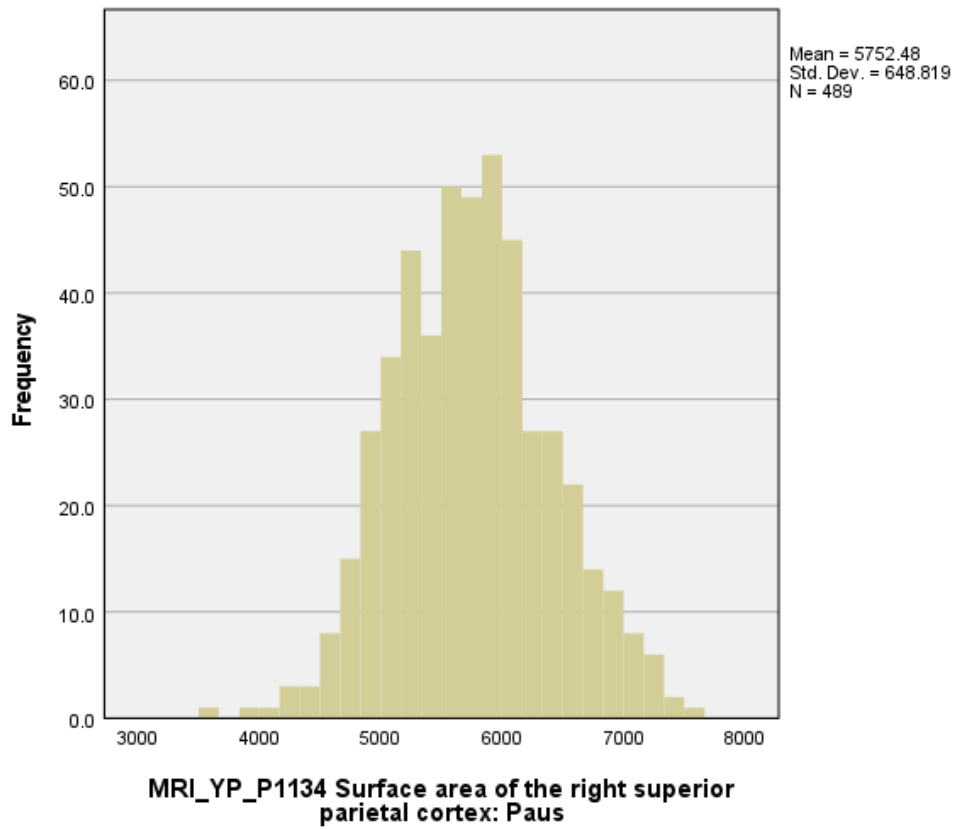
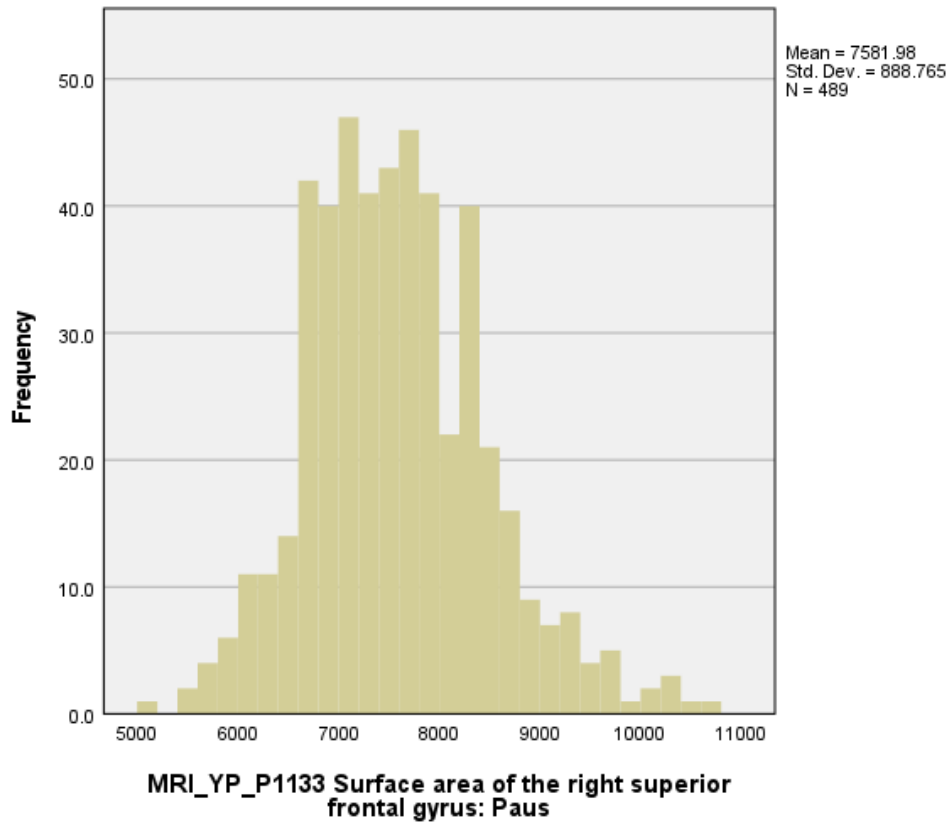


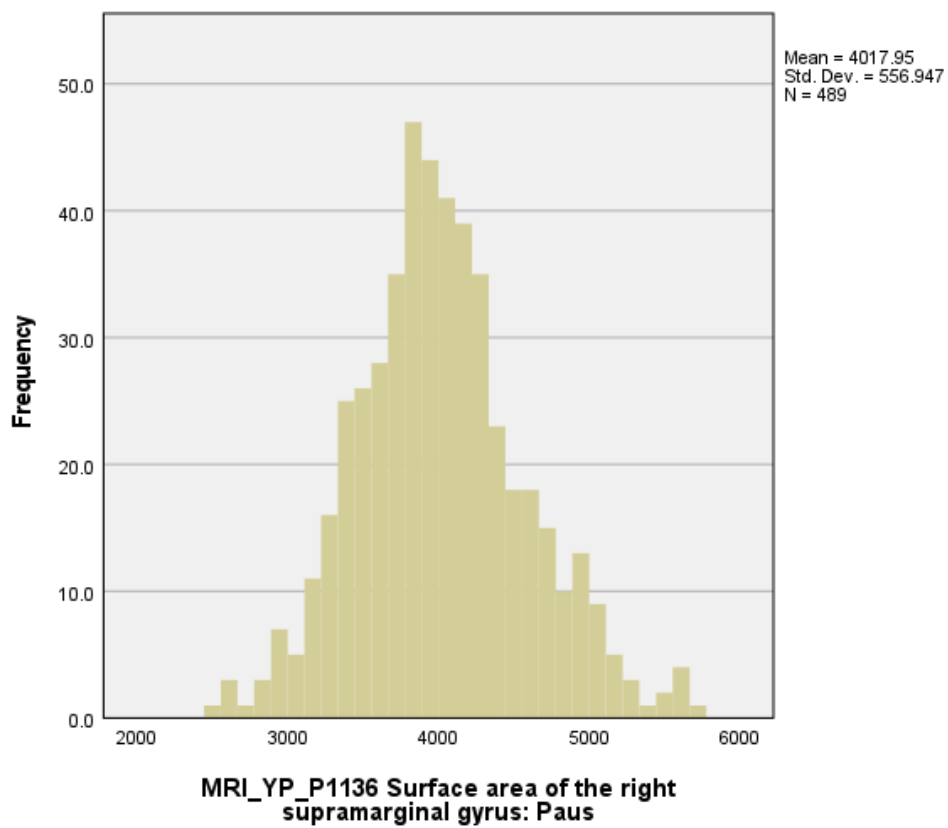
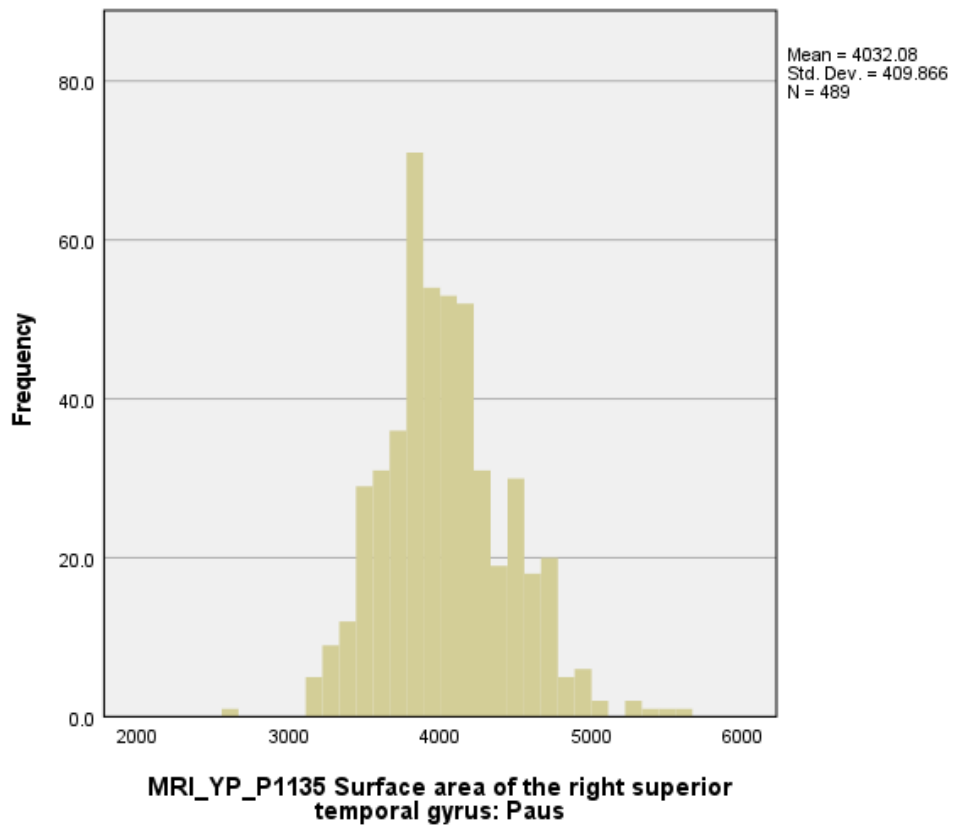


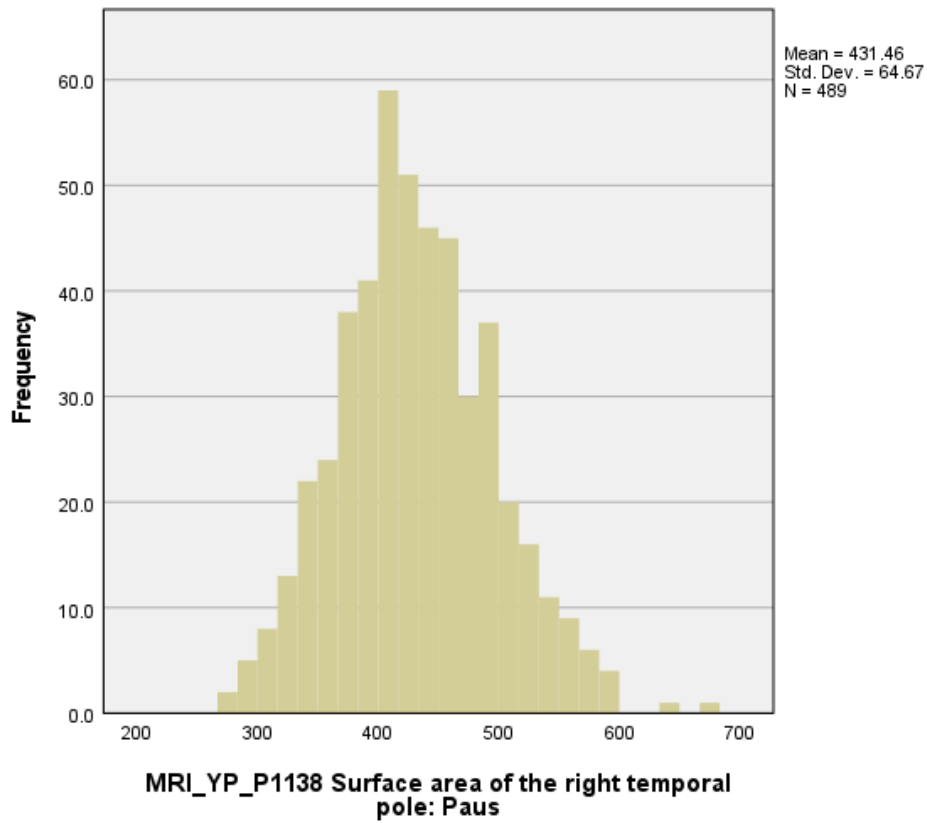
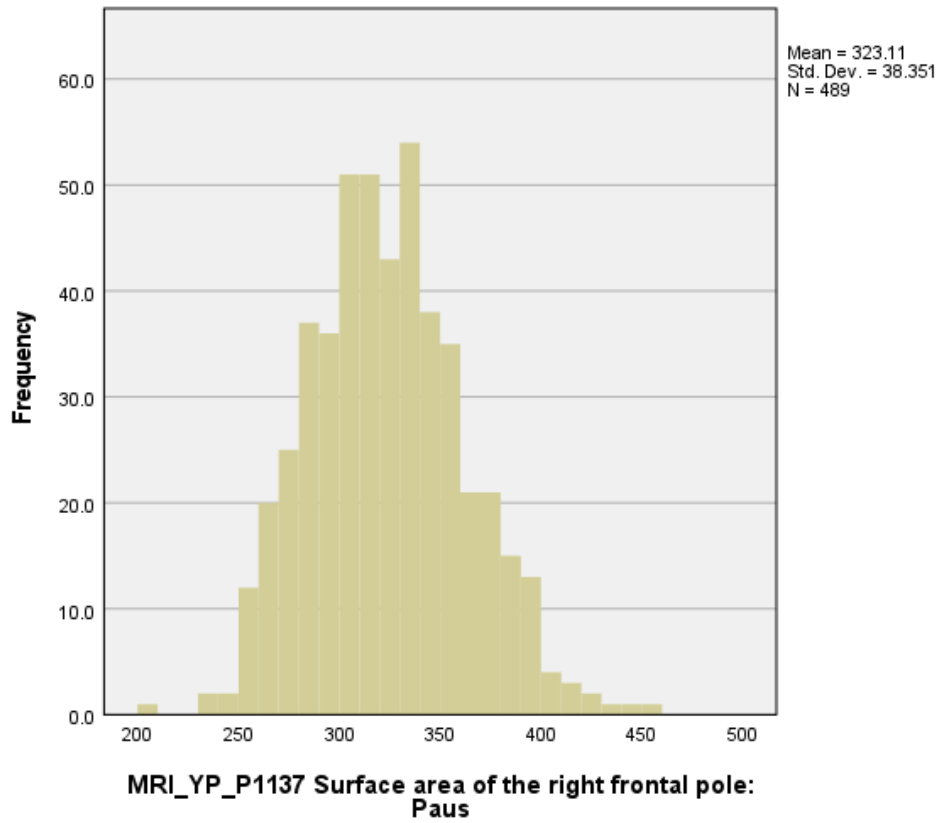


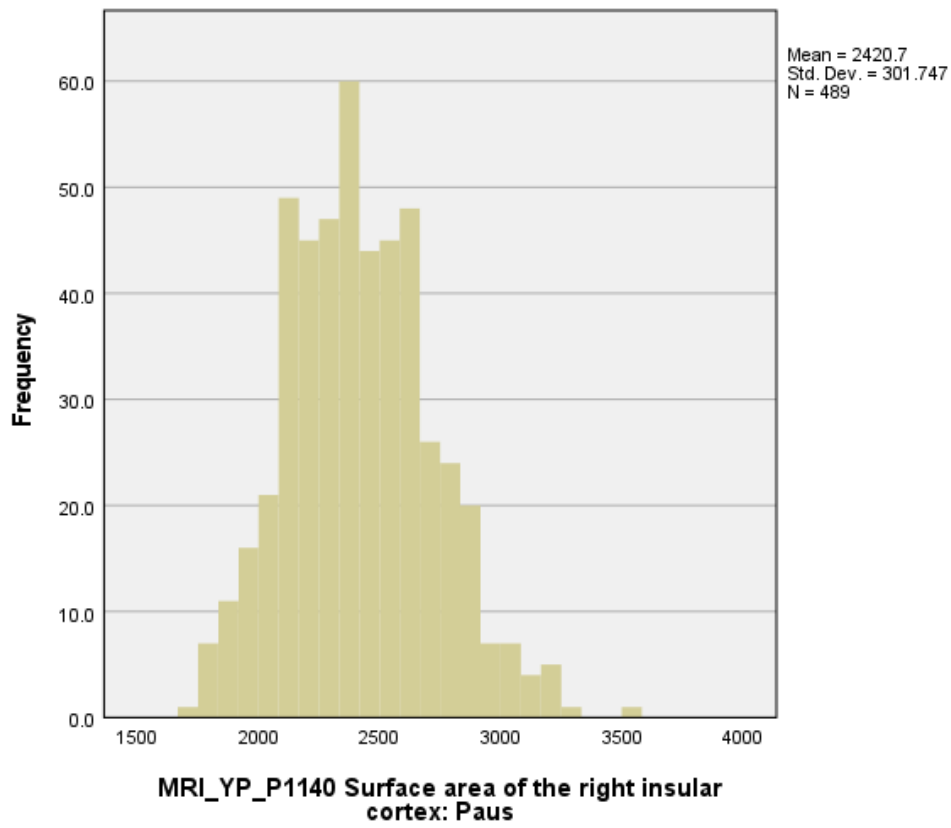
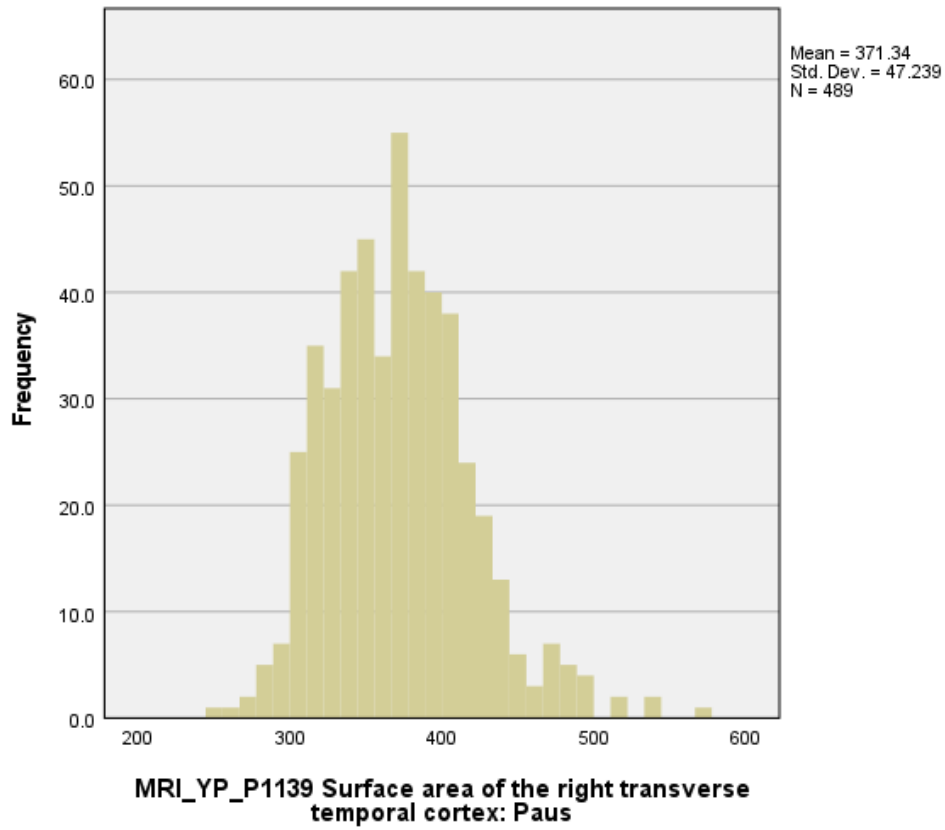


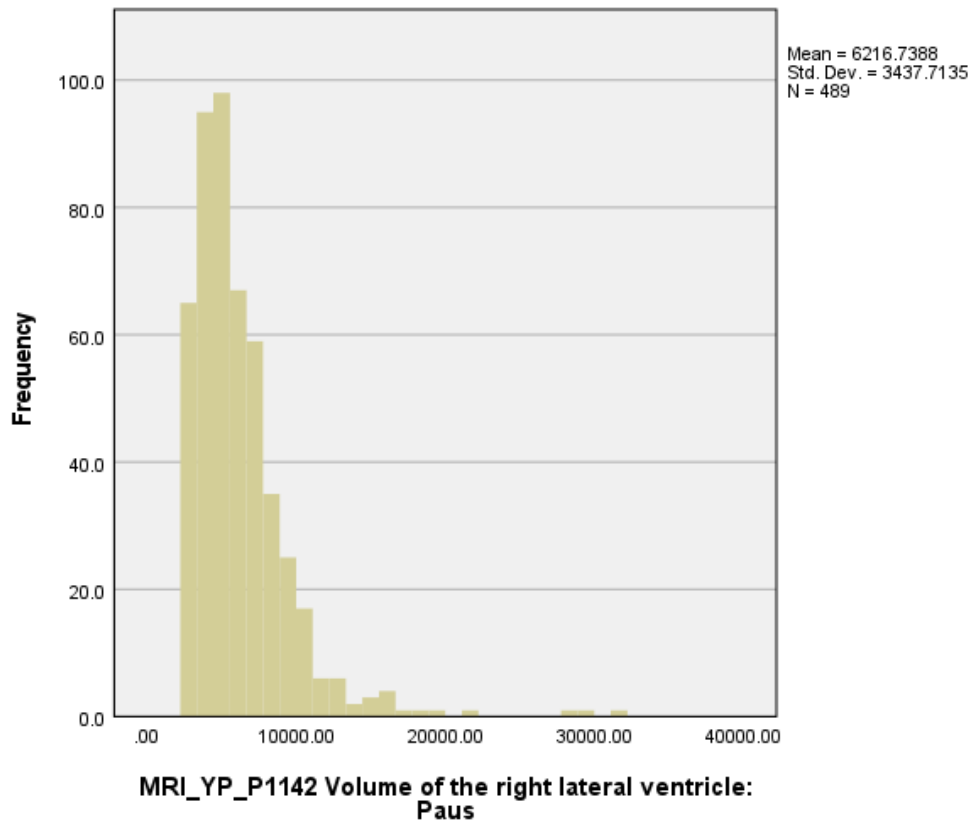
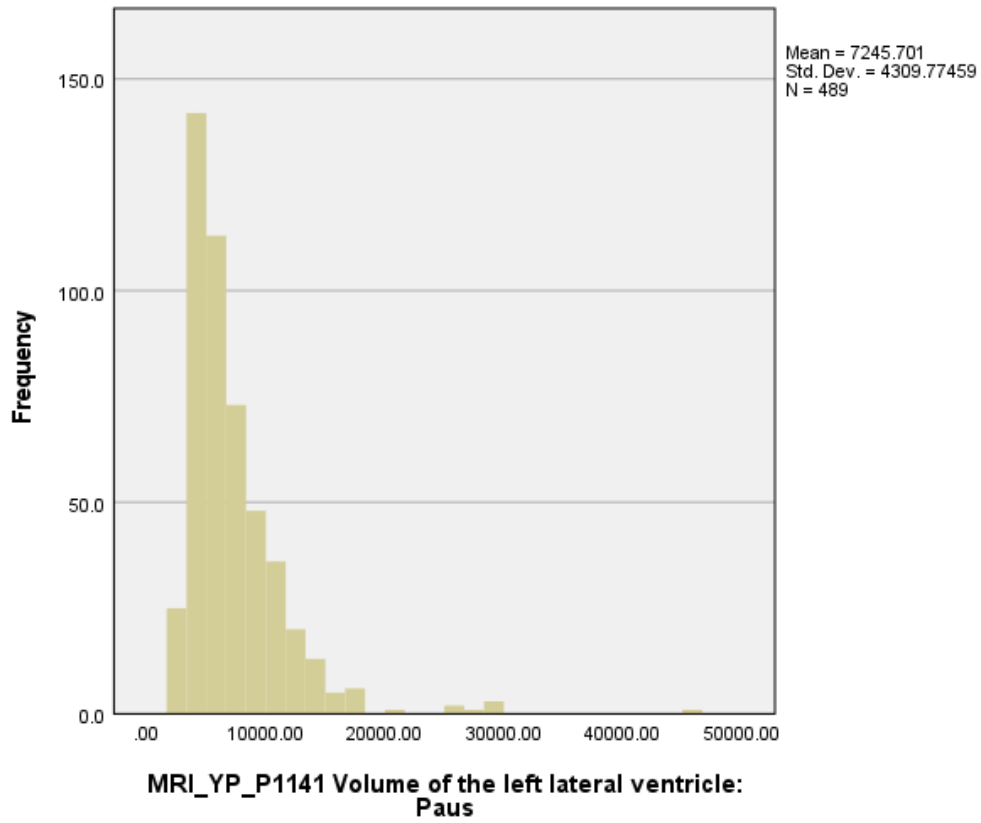


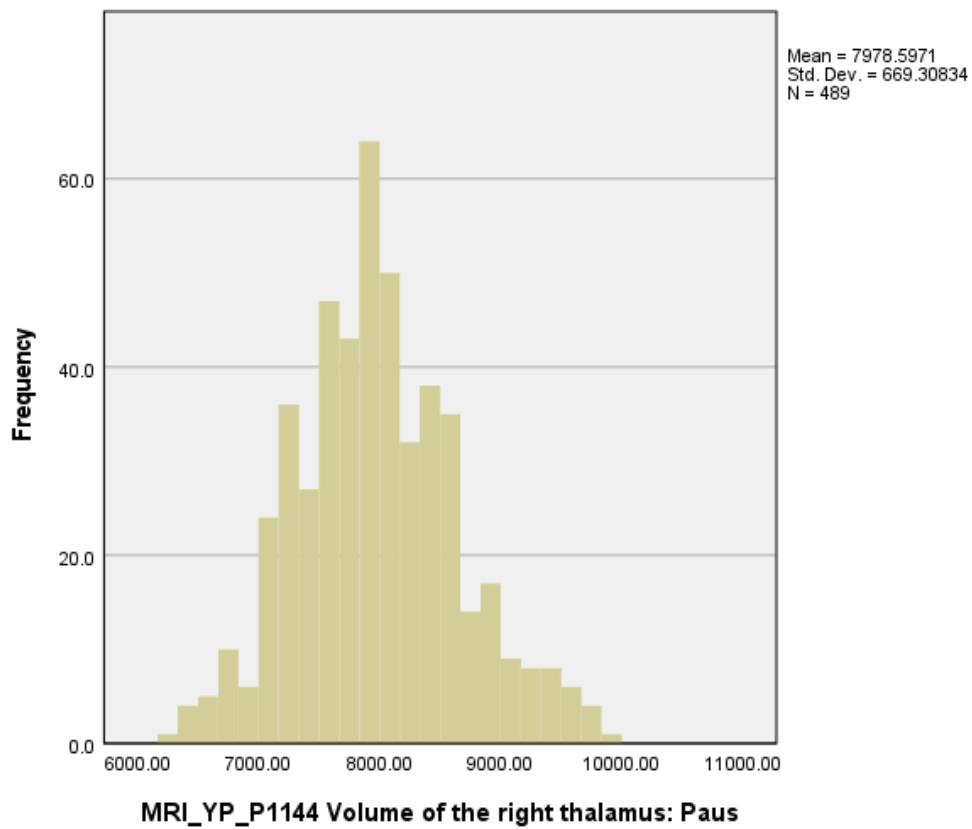
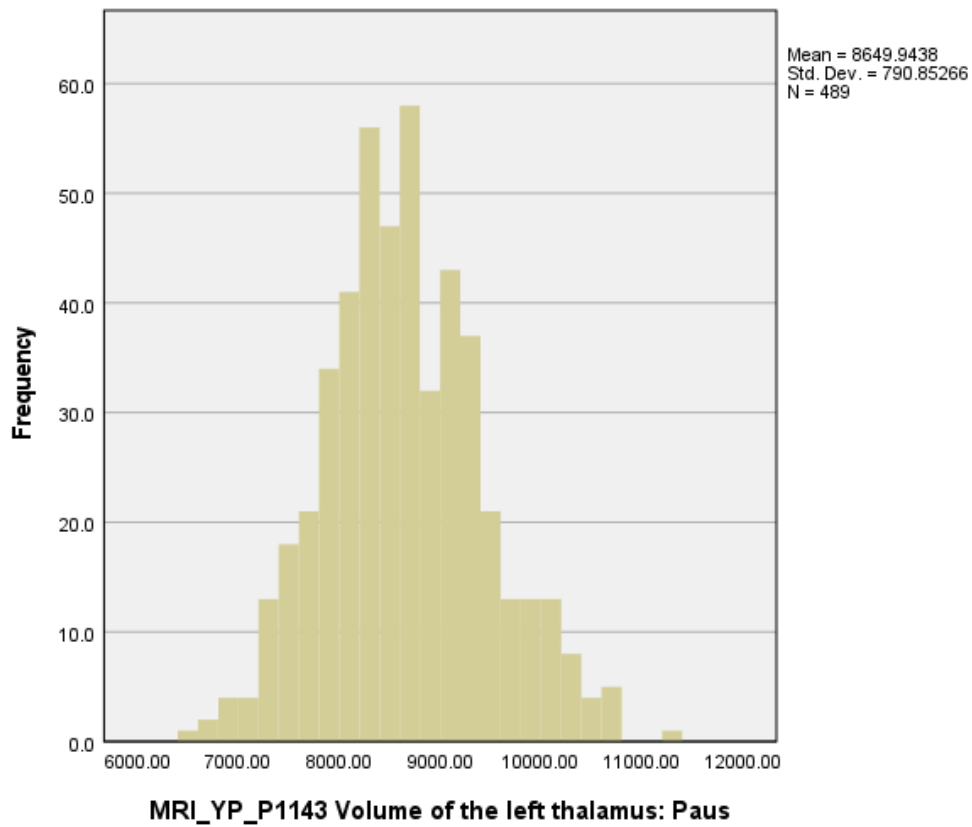


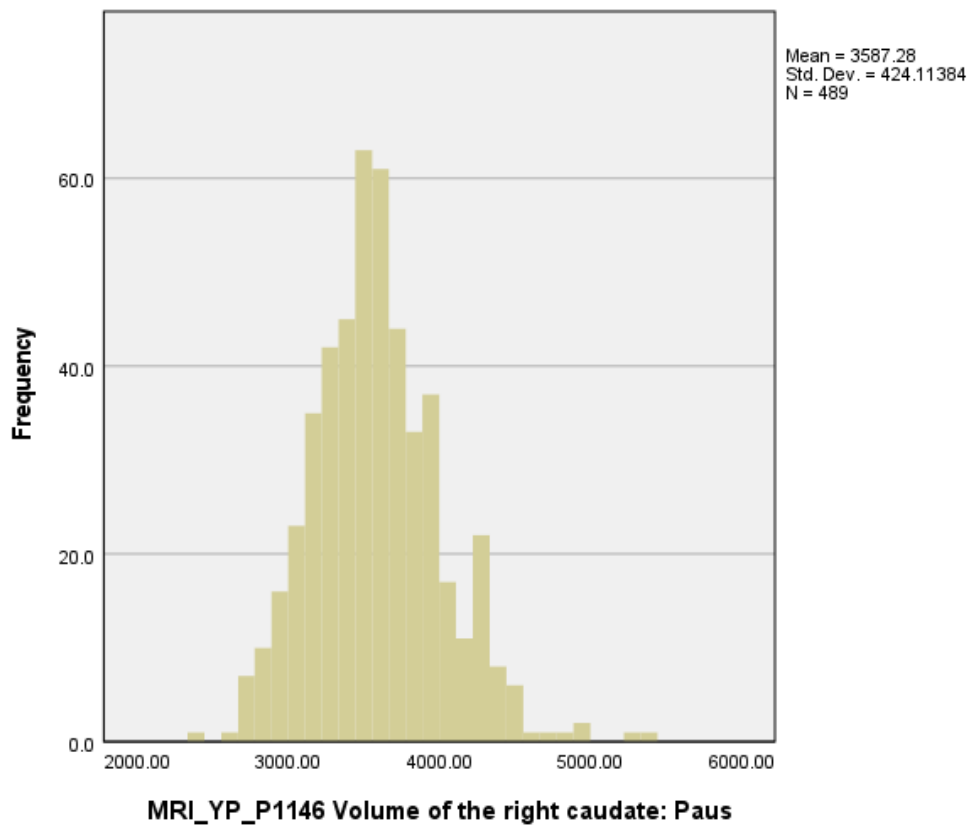
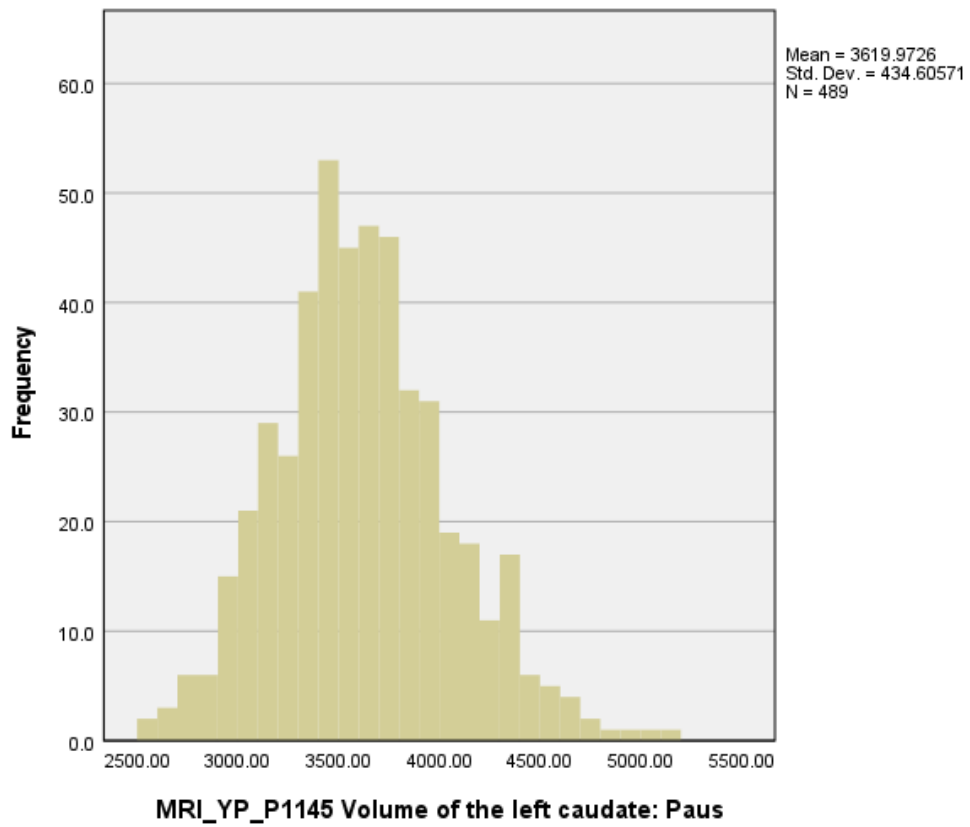


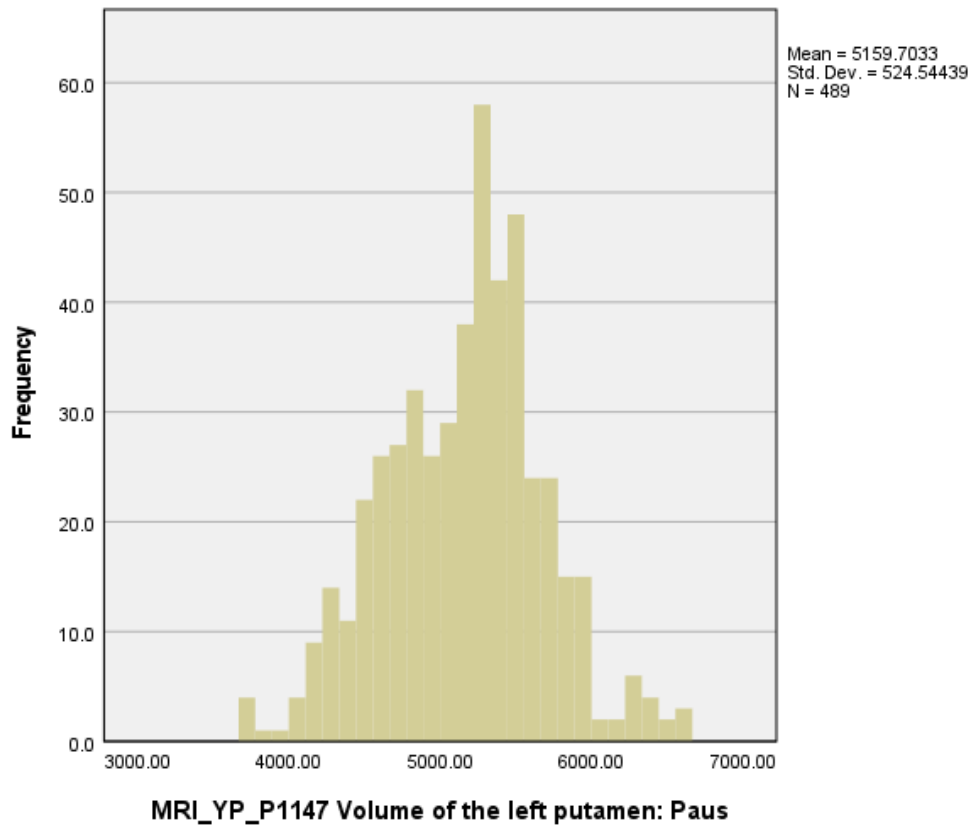


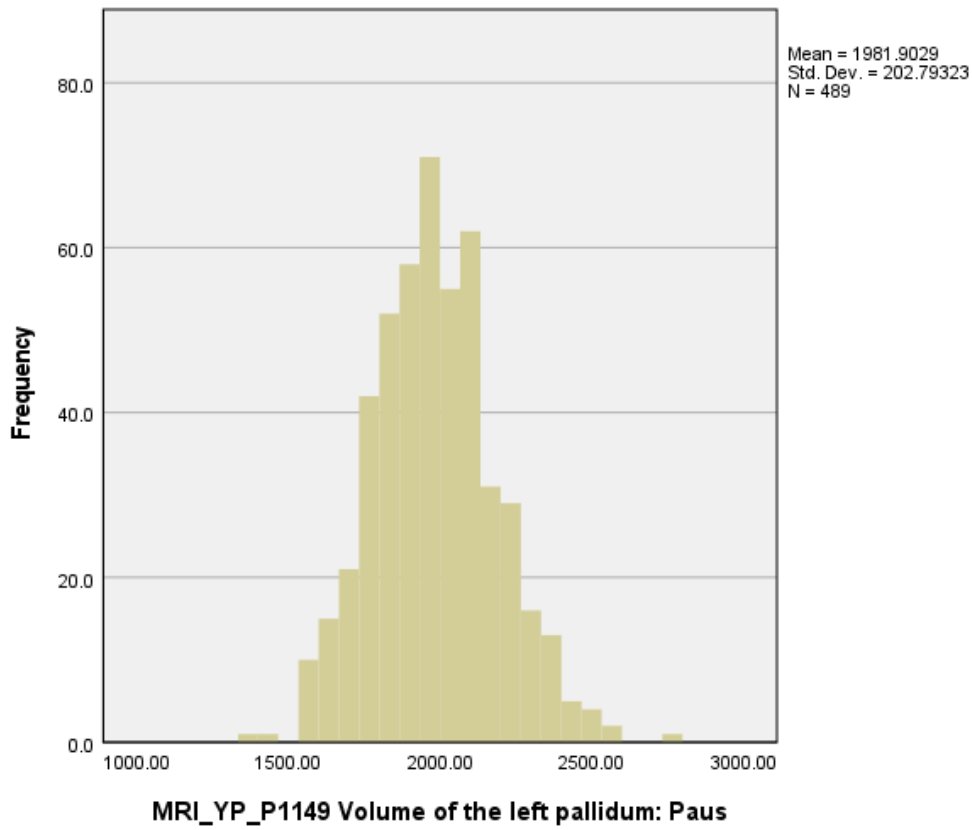
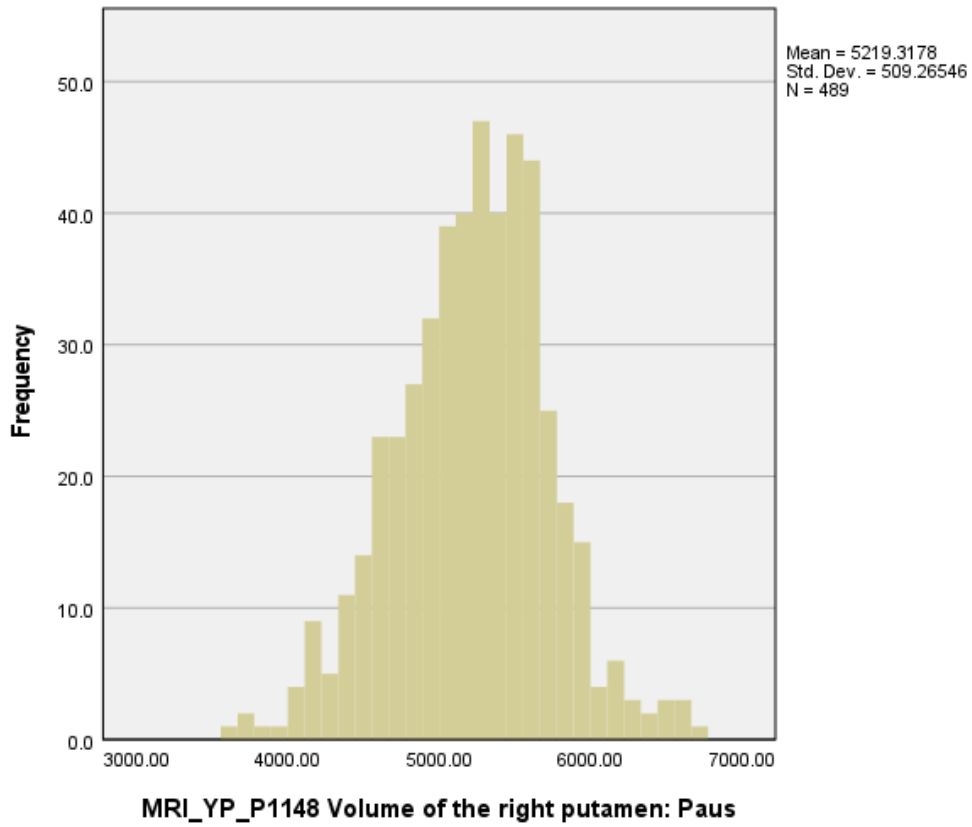


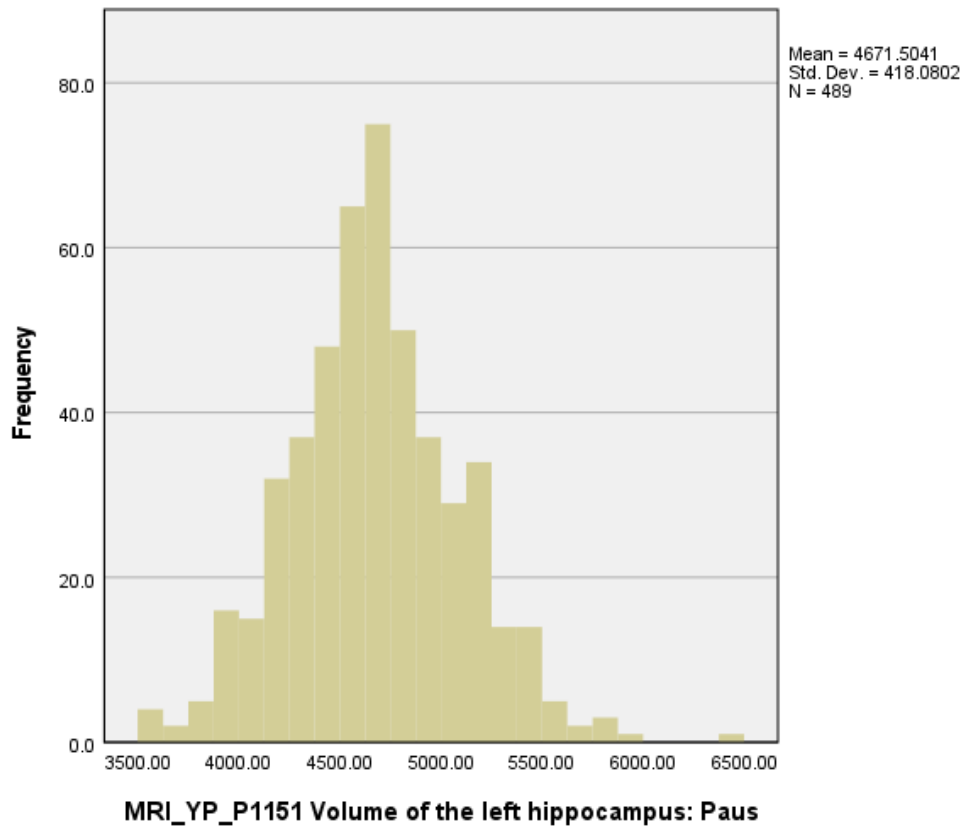
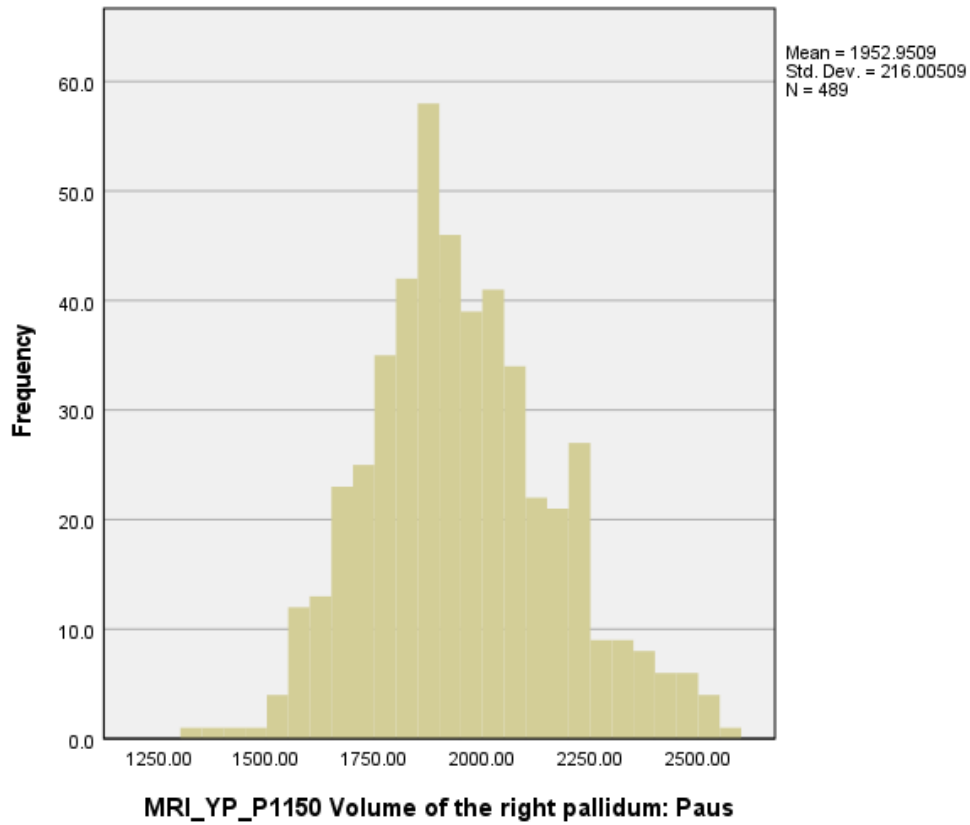


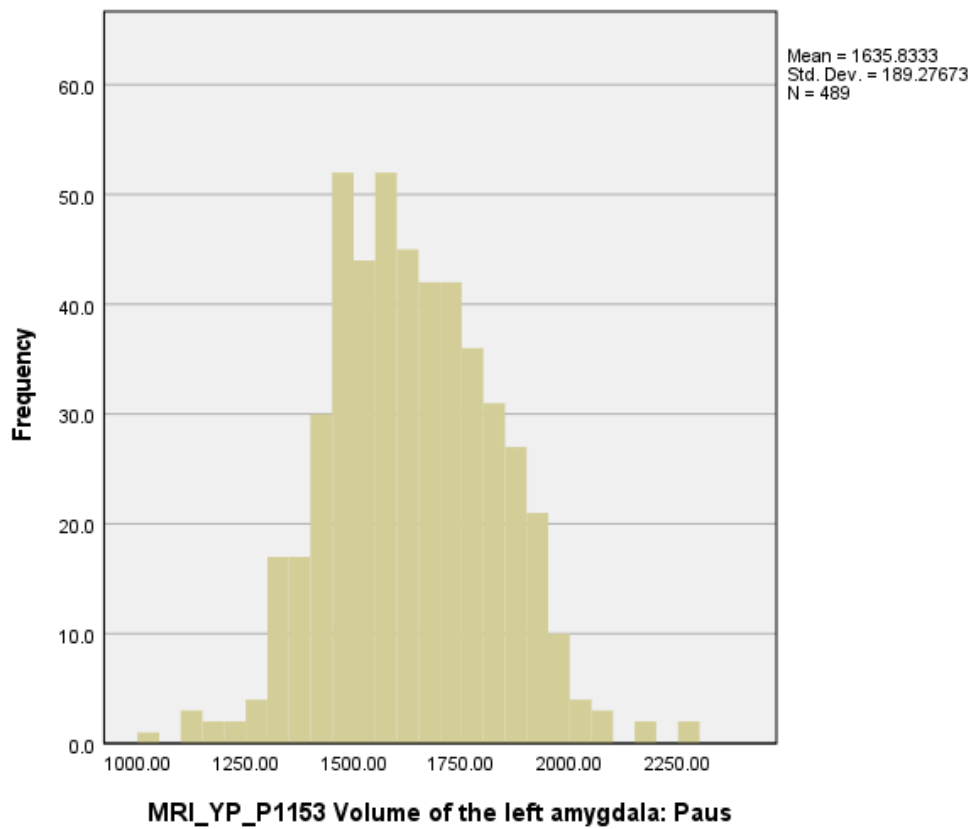
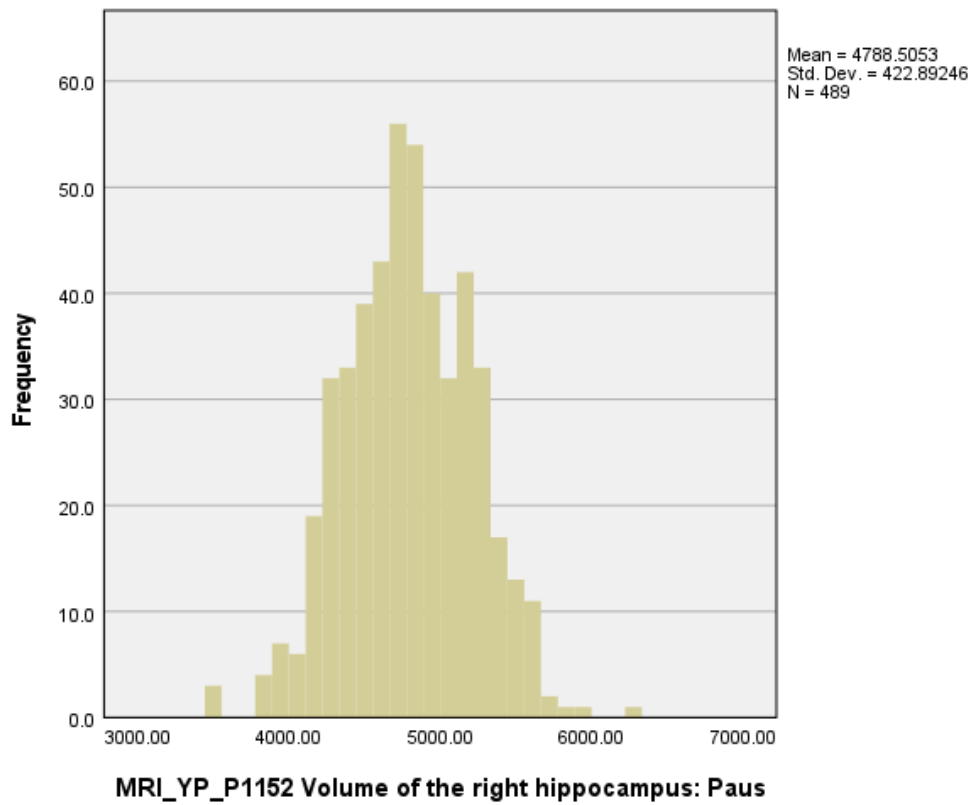


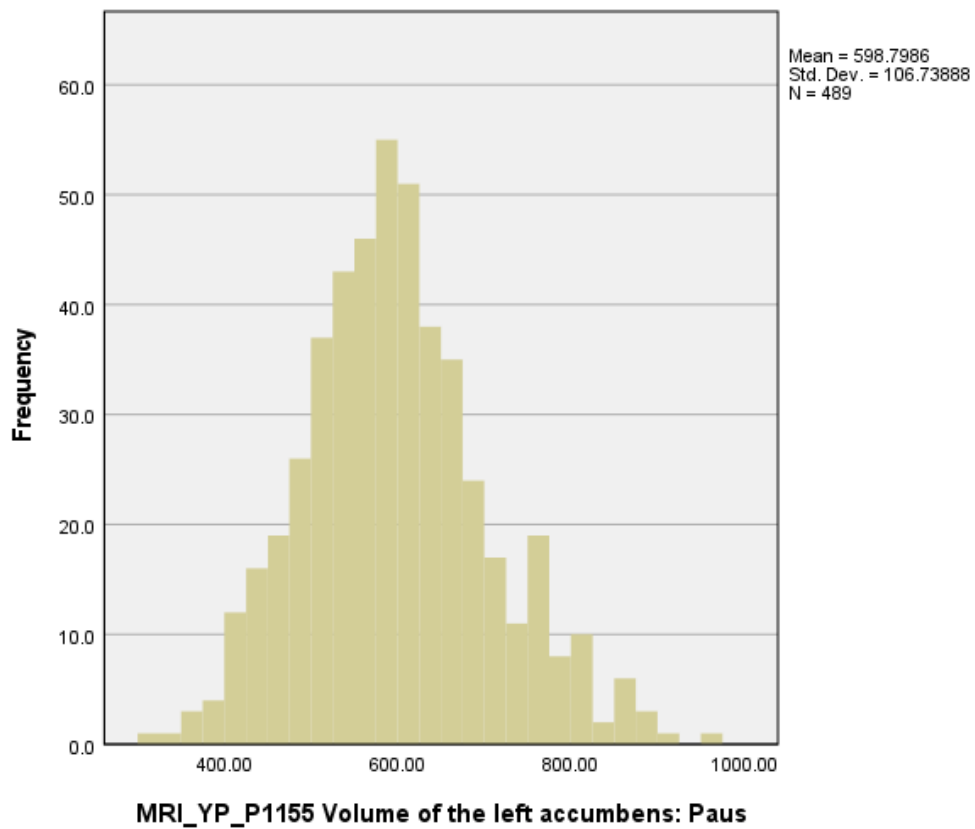
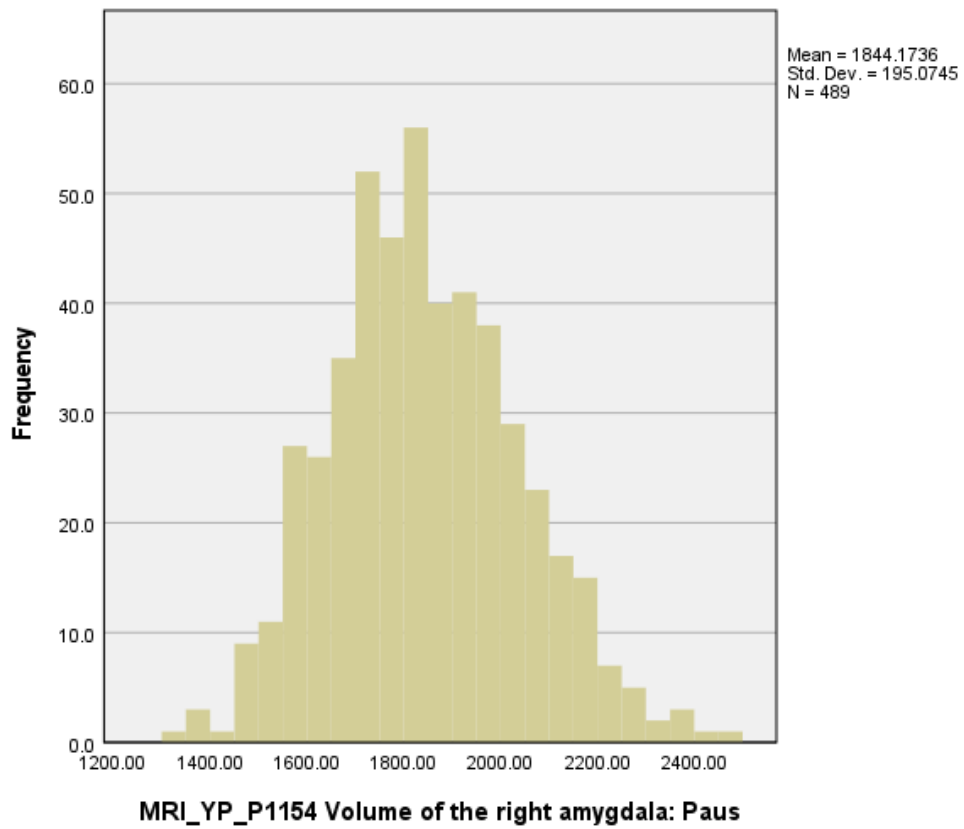


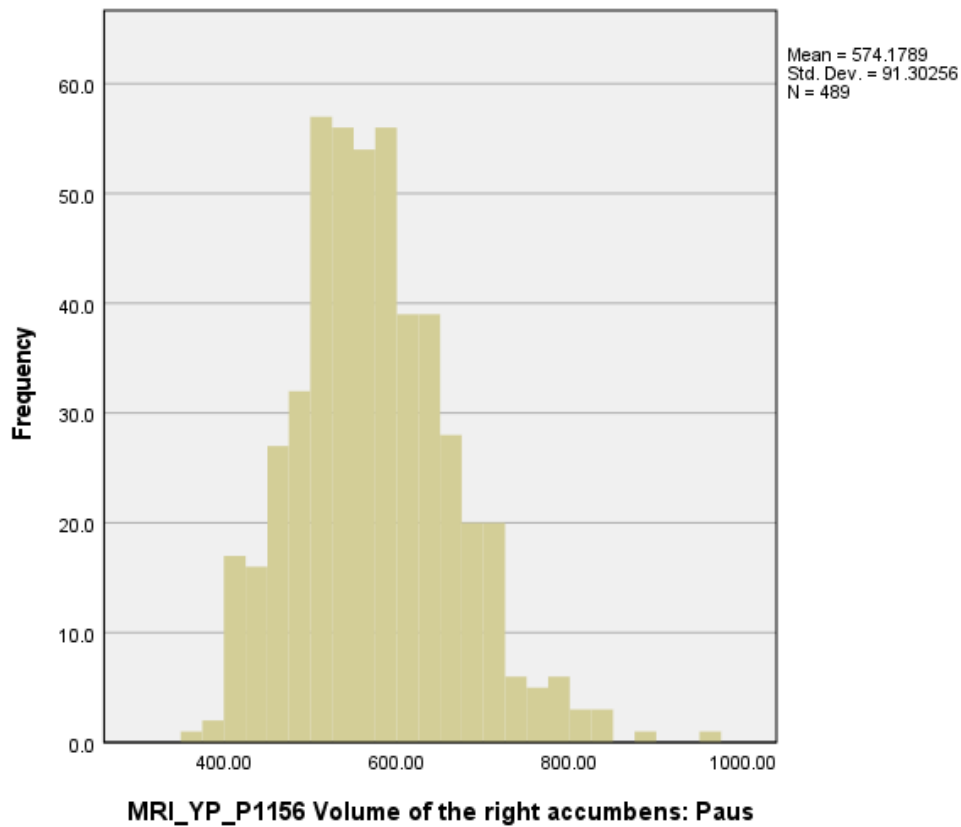












MRI_YP_P1157 Quality control rating for the cortical parcellation: Paus

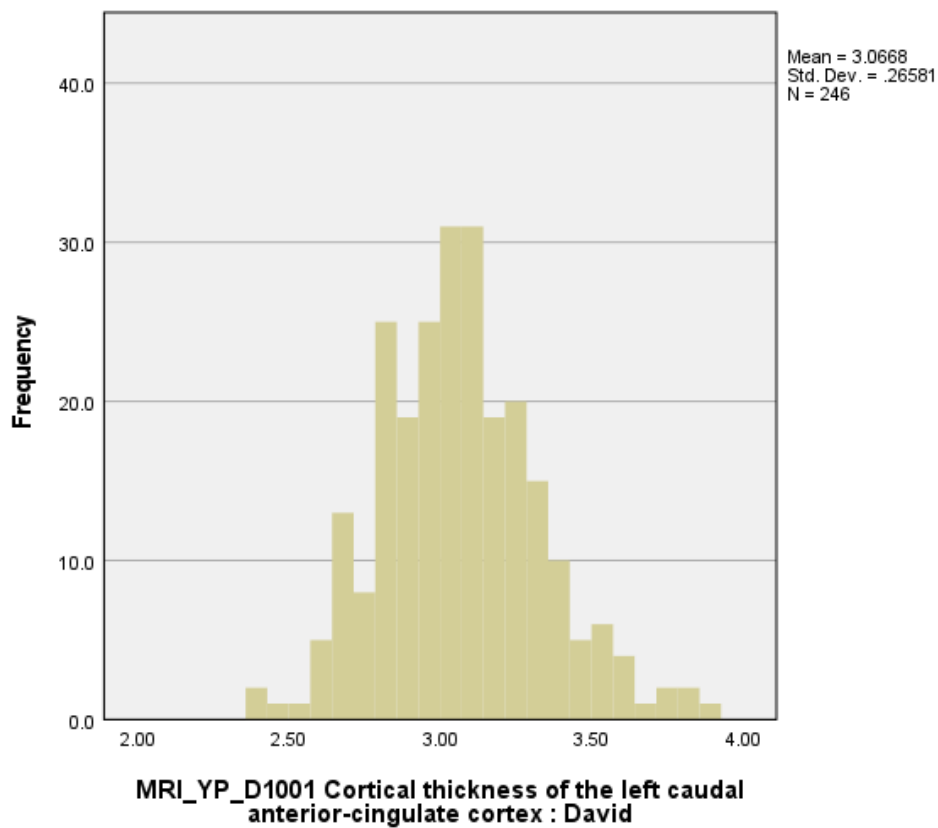
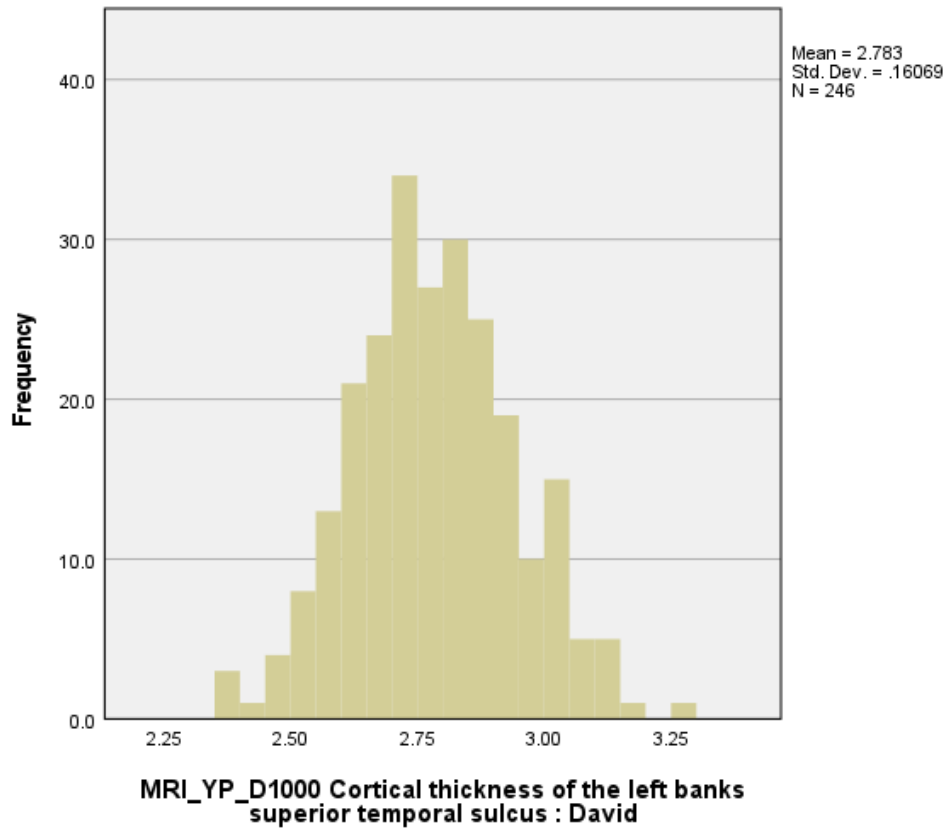
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 pass	262	1.3	53.6	53.6
	1 moderate	202	1.0	41.3	94.9
	2 fail	25	.1	5.1	100.0
	Total	489	2.4	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-9 MRI data not available	24	.1		
	-7 Did not take part in Paus study	378	1.8		
	Total	20016	97.6		
Total		20505	100.0		

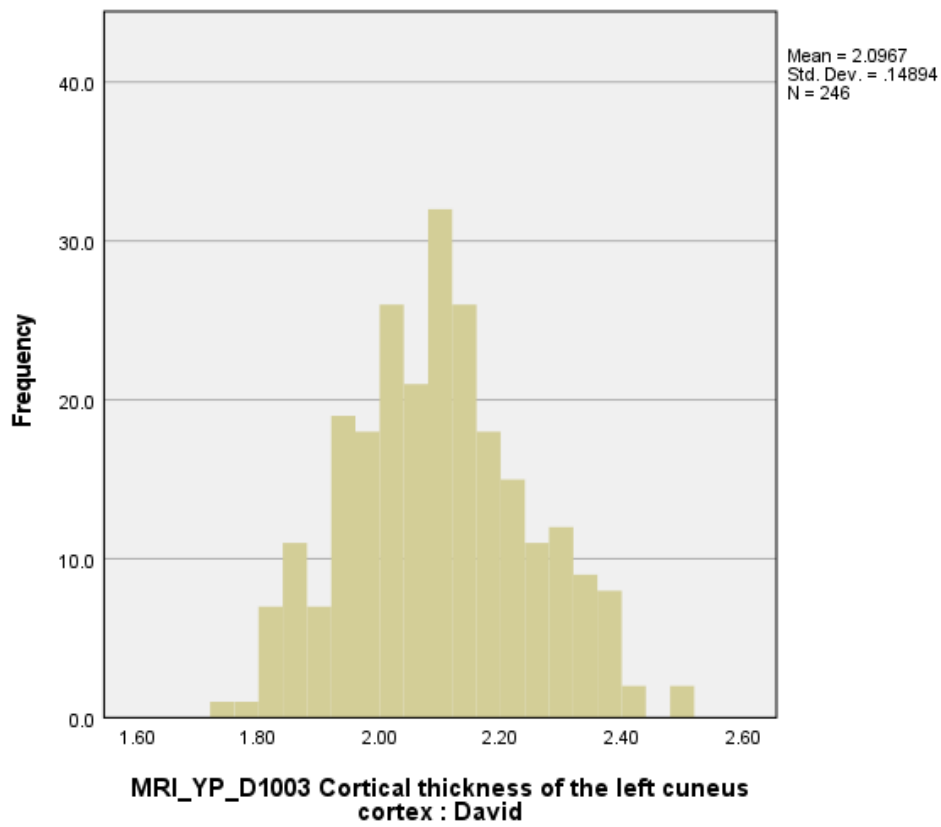
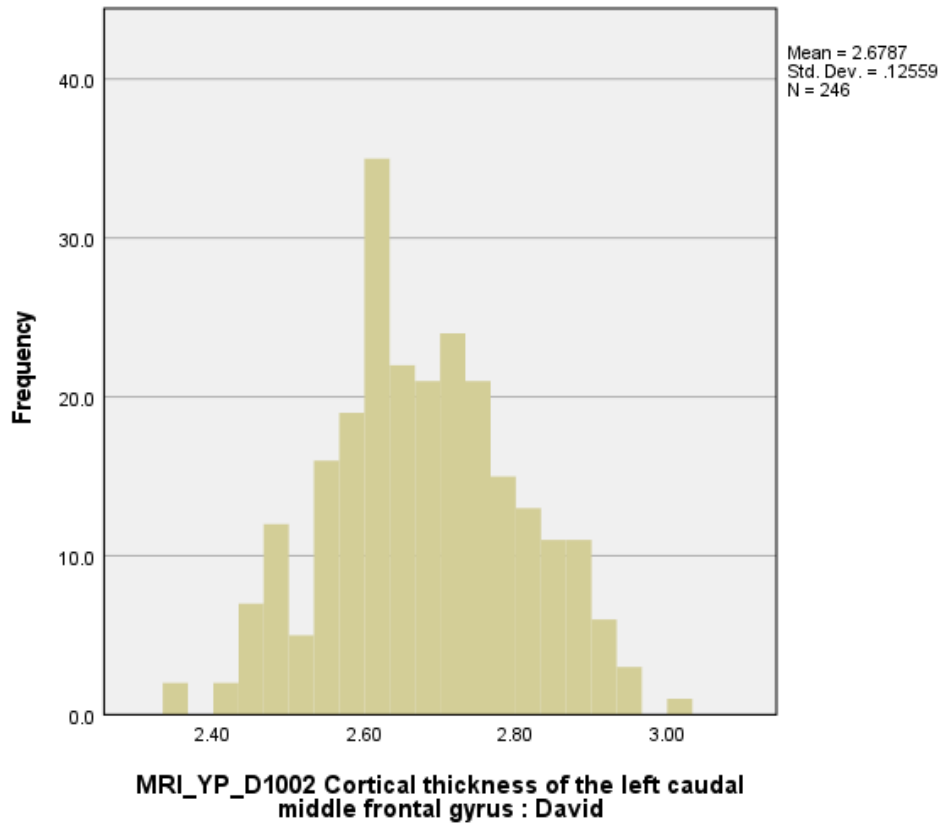
MRI_YP_P1158 Quality control rating for the subcortical segmentation:

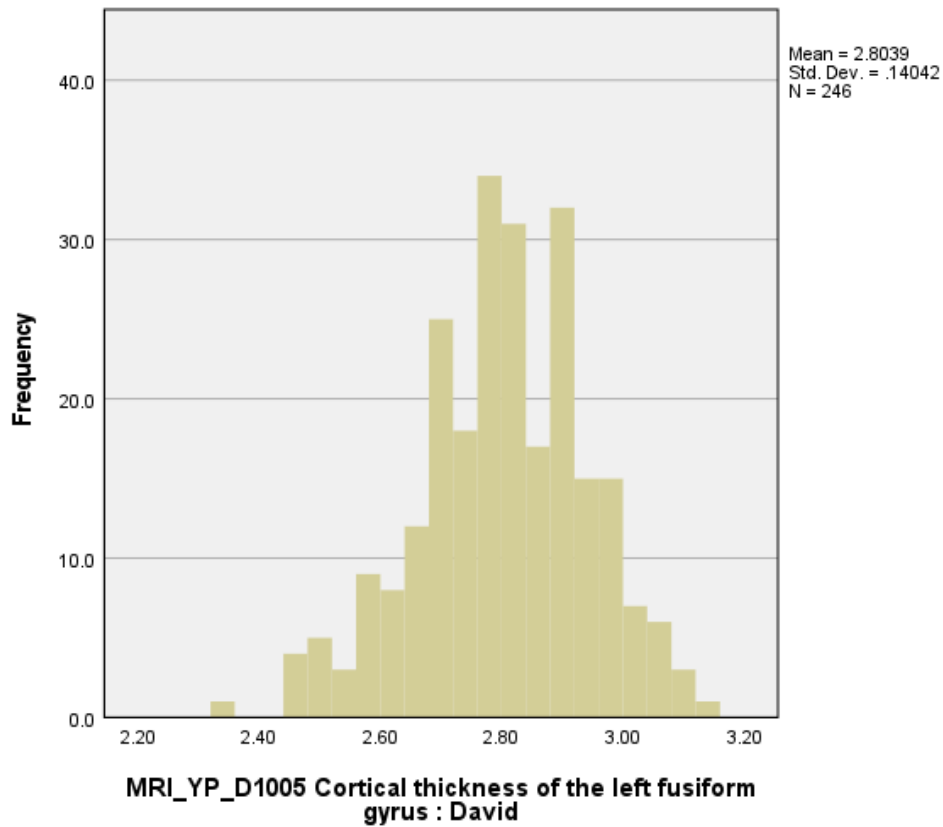
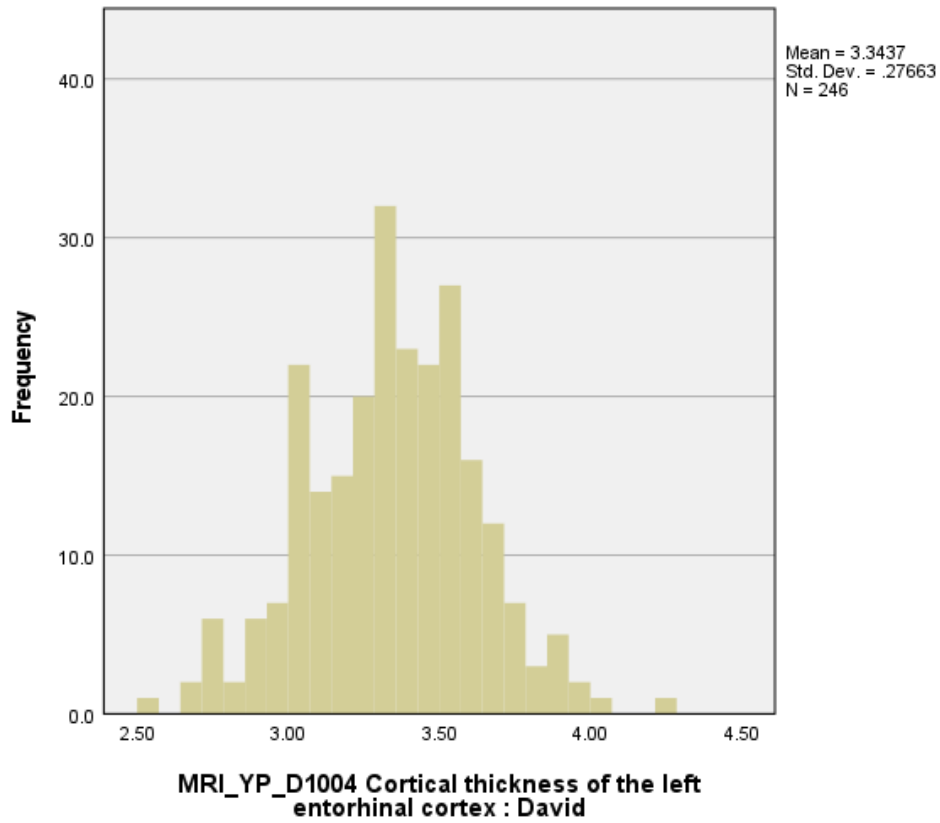
Paus

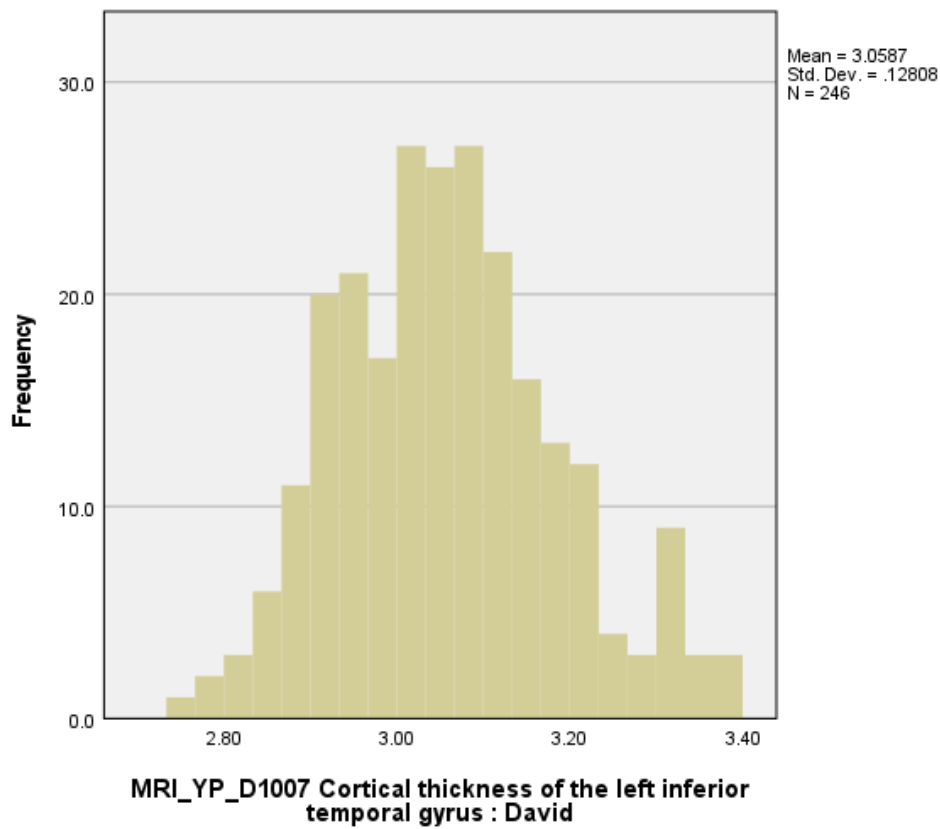
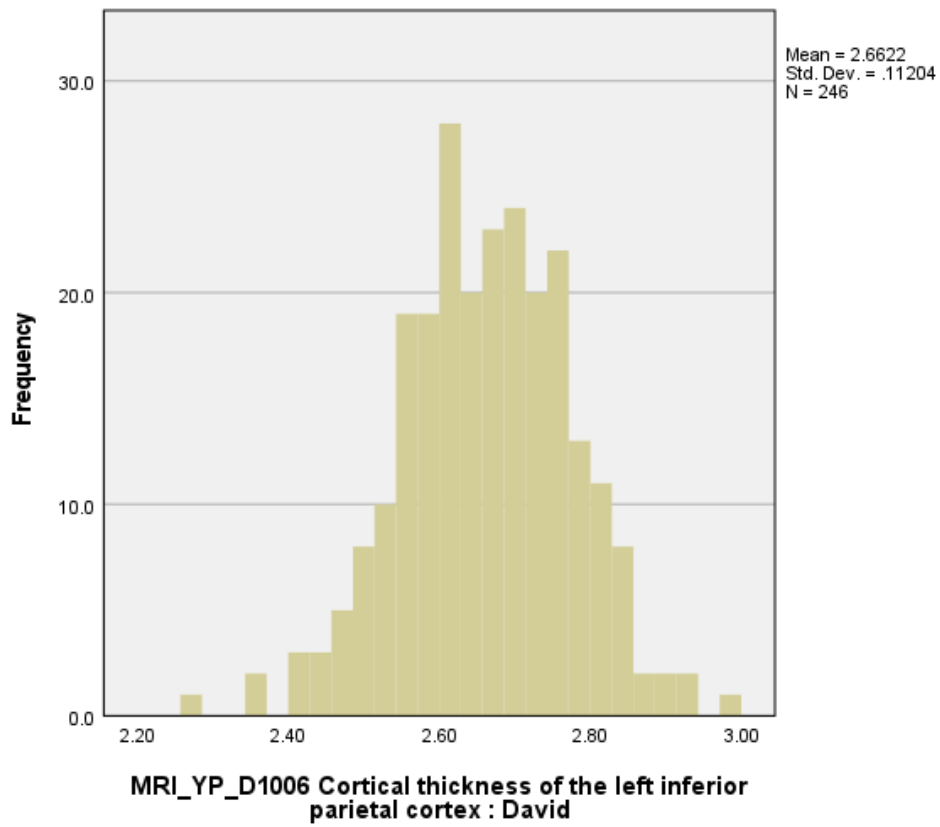
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 pass	455	2.2	93.0	93.0
	1 moderate	16	.1	3.3	96.3
	2 fail	18	.1	3.7	100.0
	Total	489	2.4	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-9 MRI data not available	24	.1		
	-7 Did not take part in Paus study	378	1.8		
	Total	20016	97.6		
Total		20505	100.0		

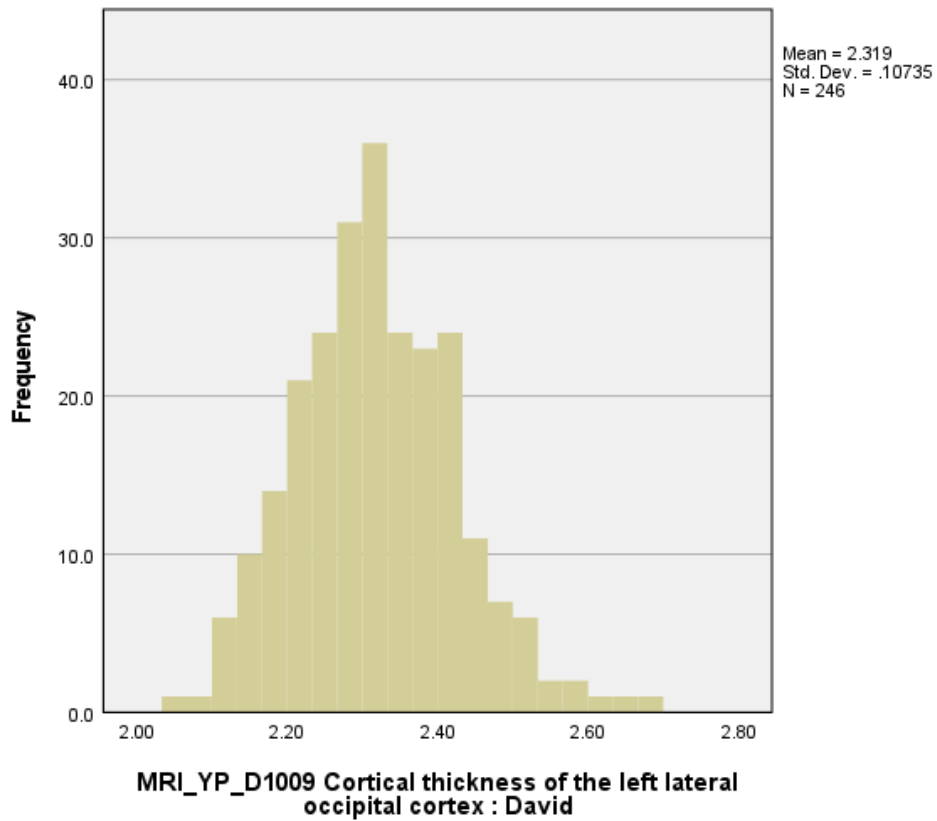
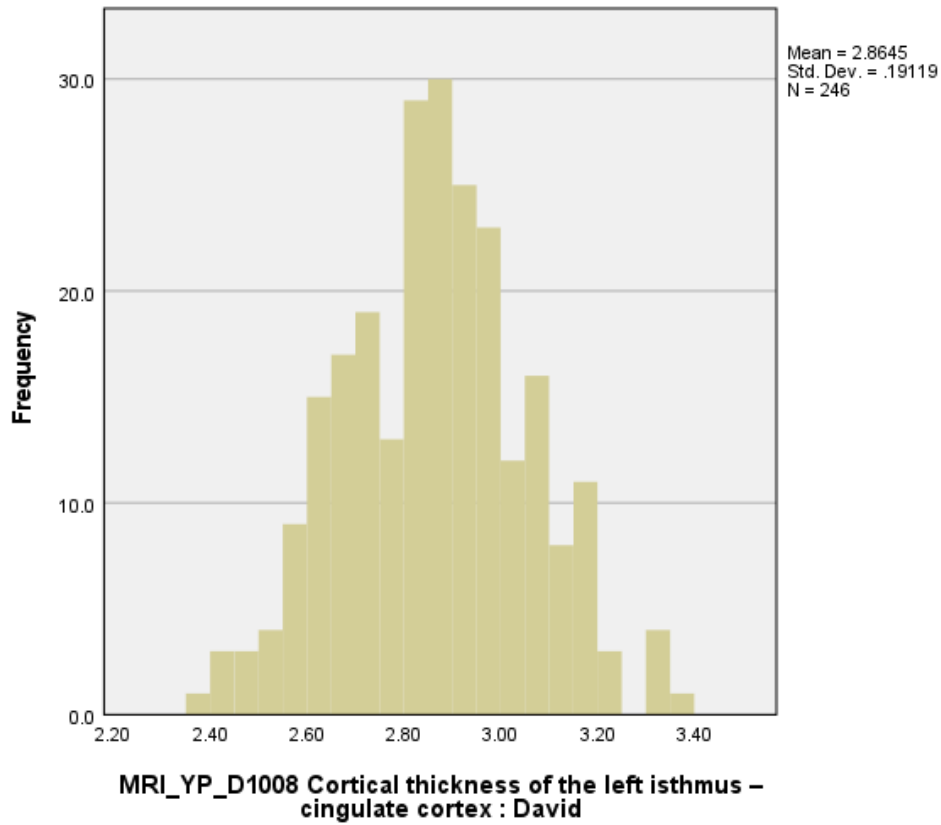
David (ALSPAC-PE Study) MRI frequencies & histograms

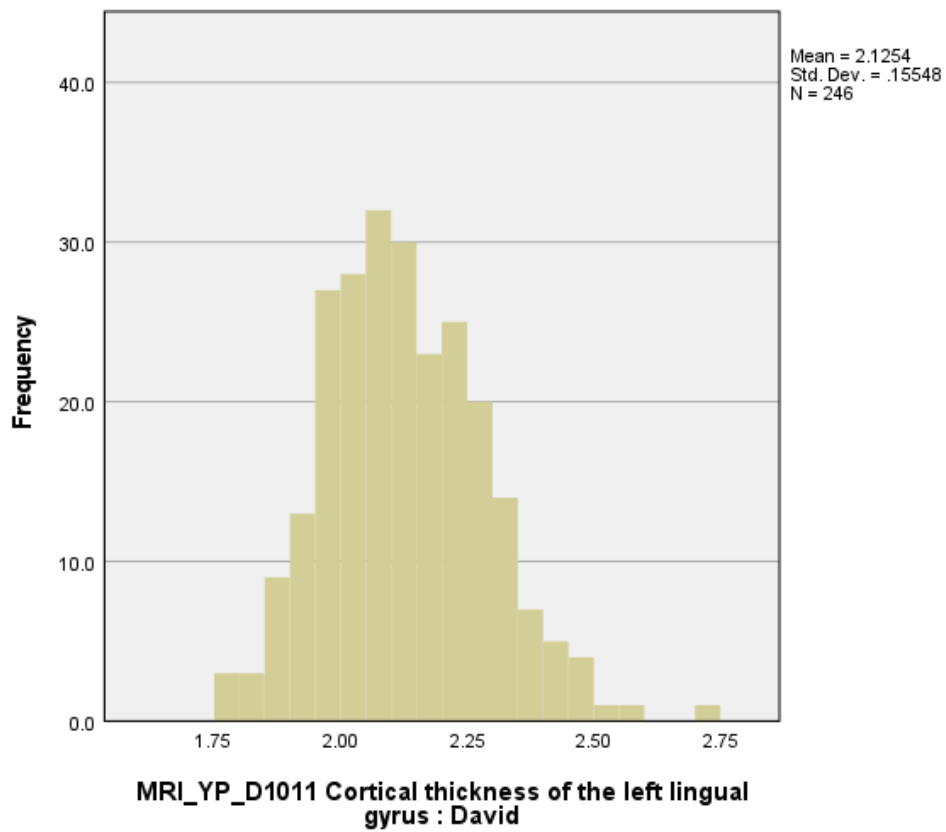
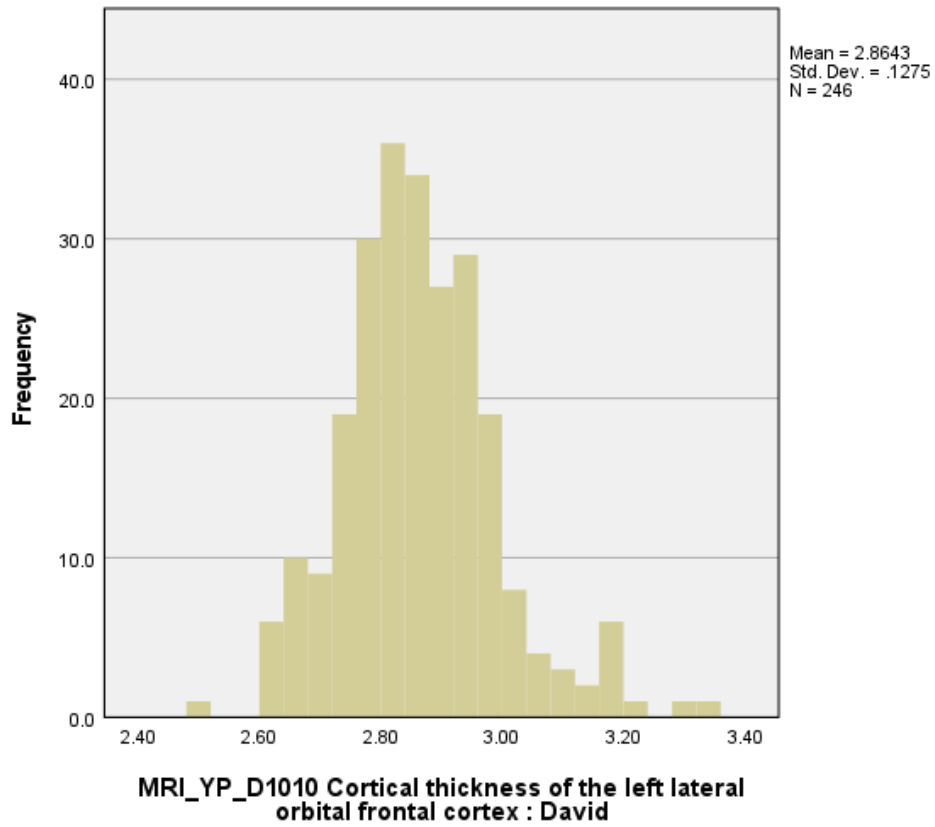


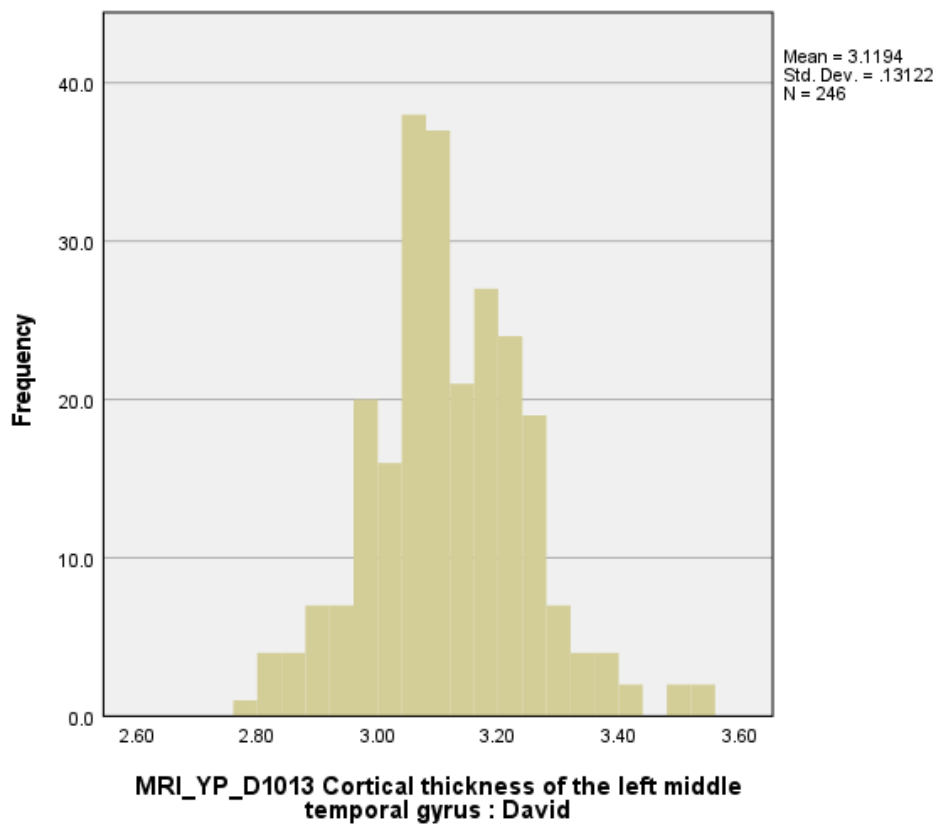
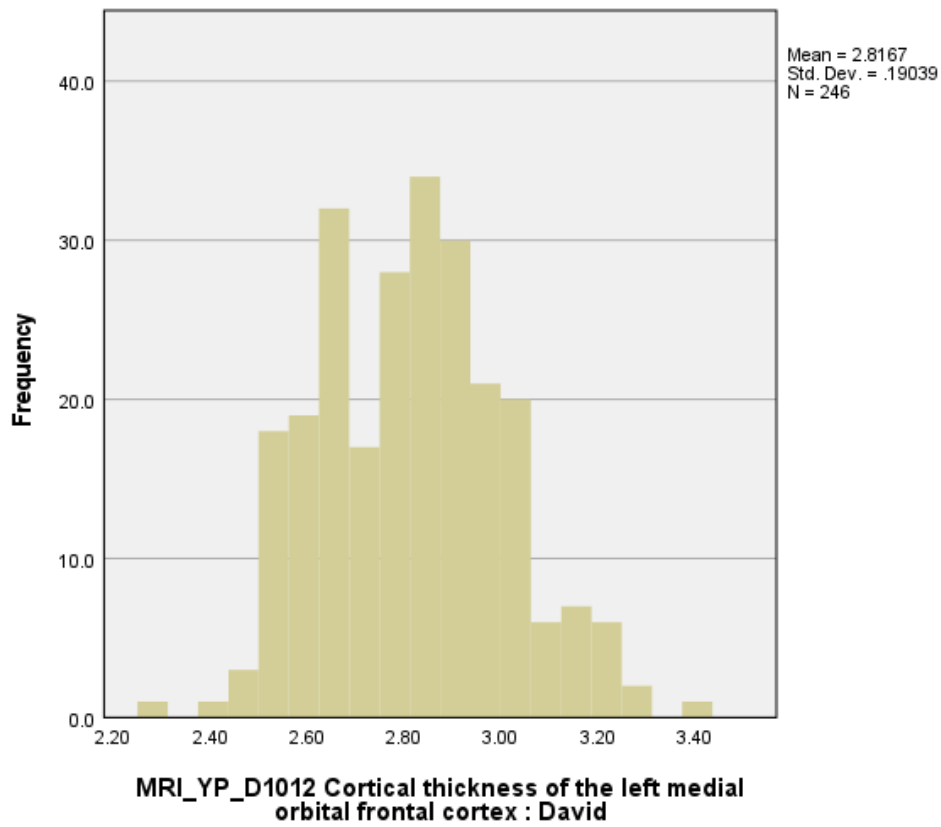


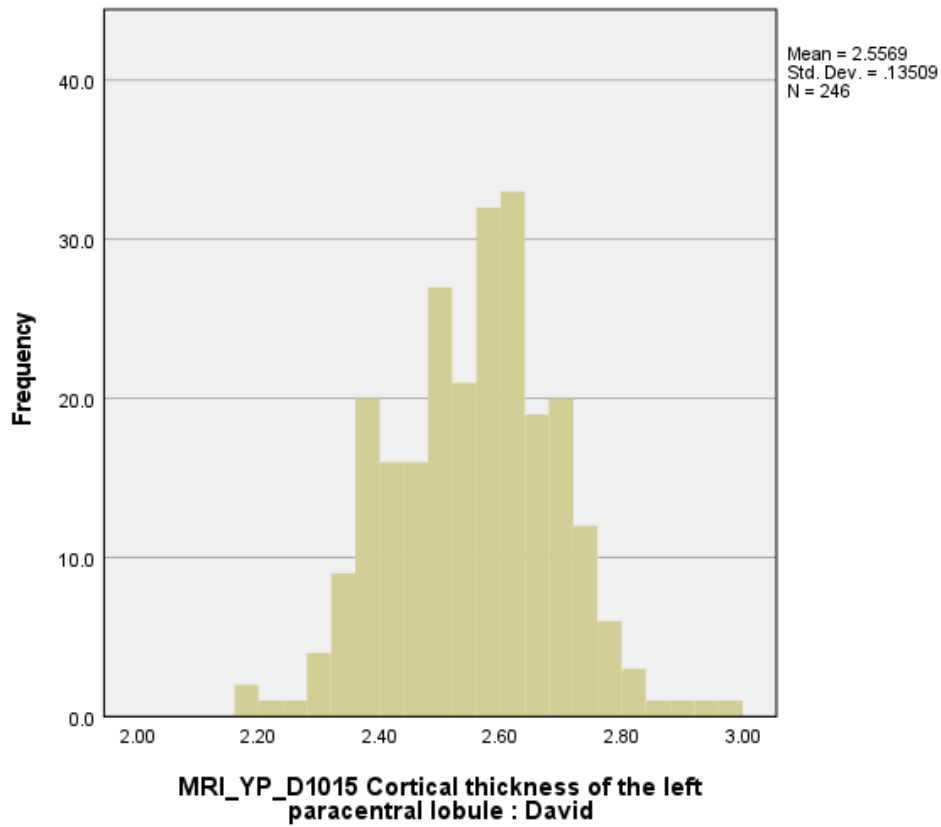
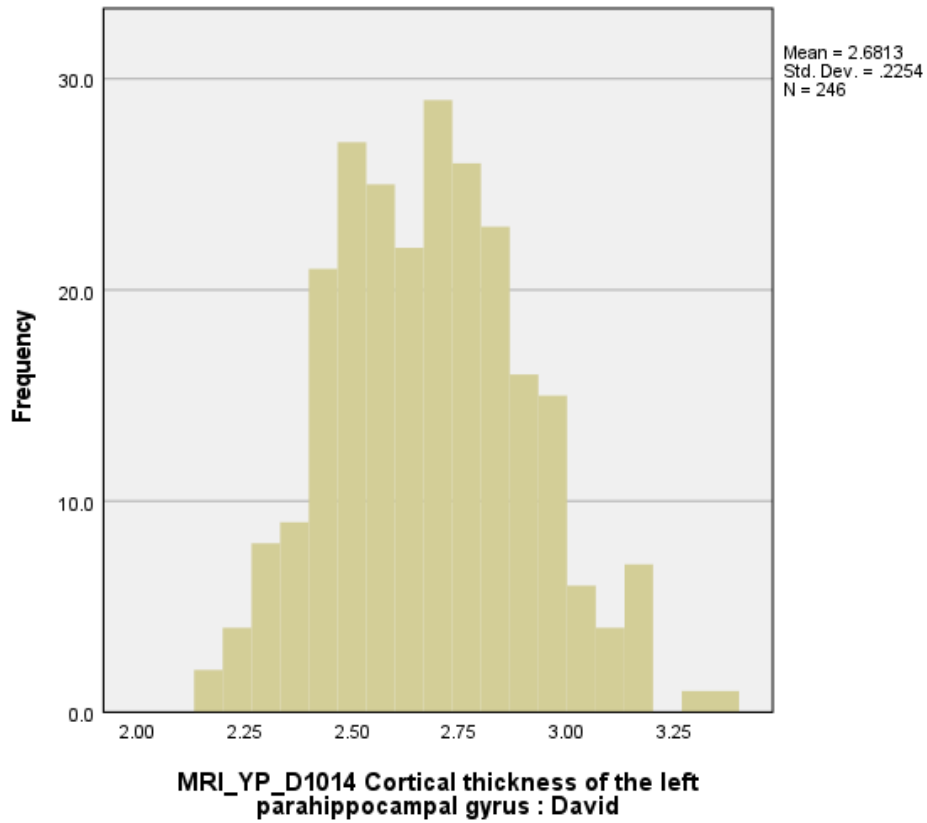


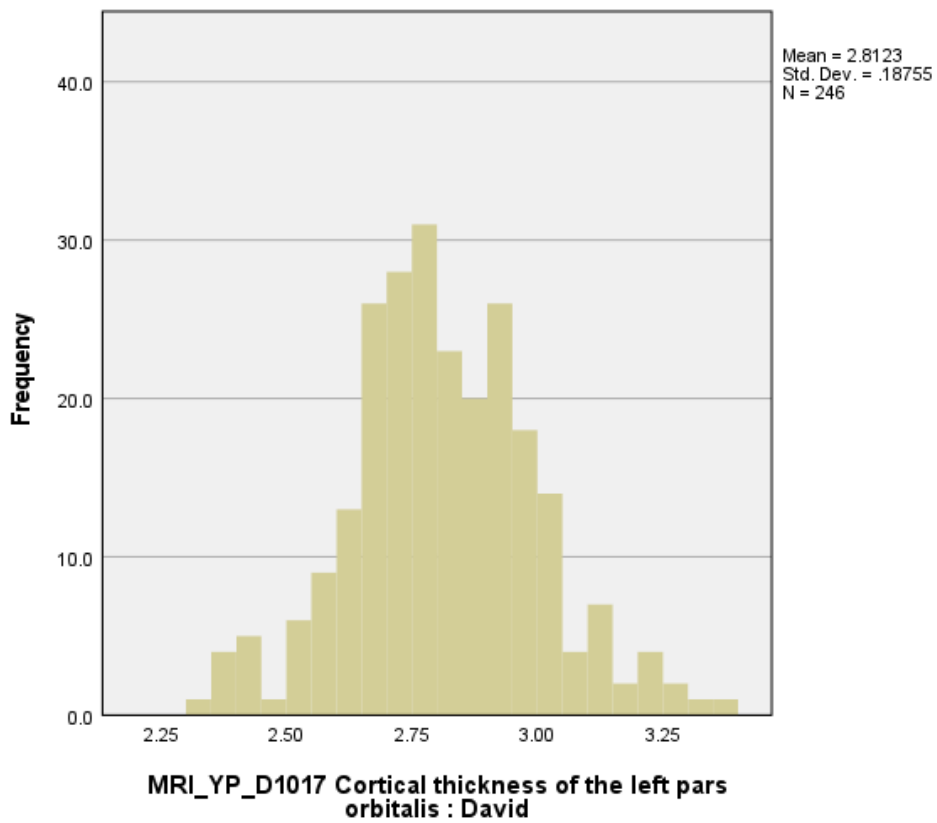
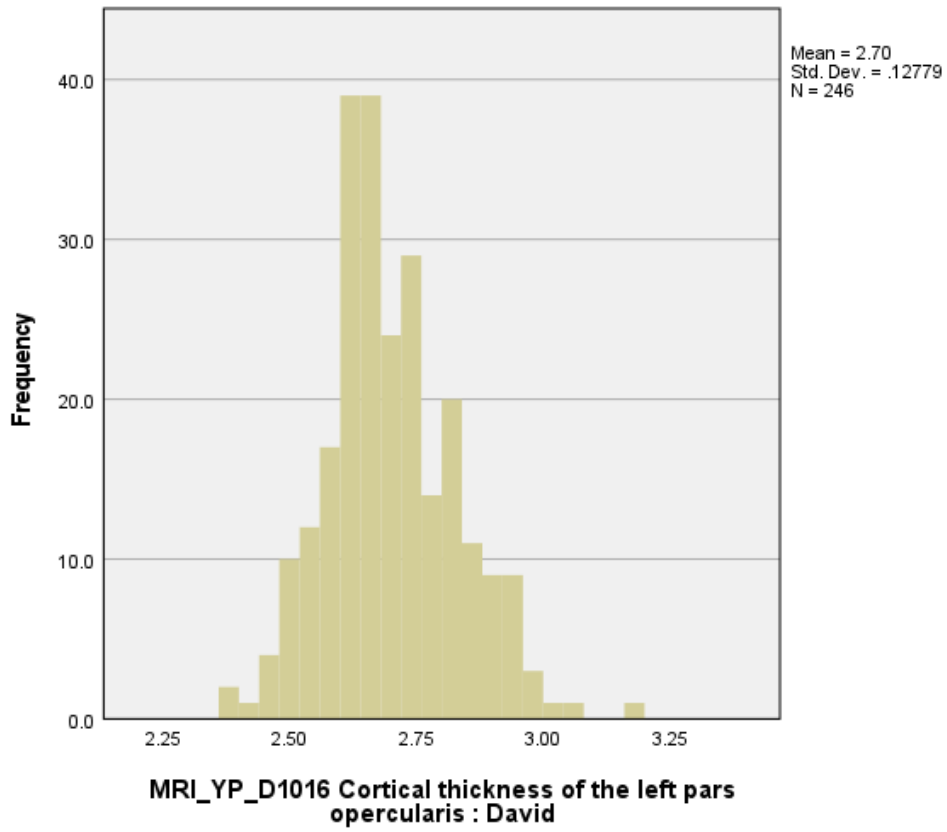


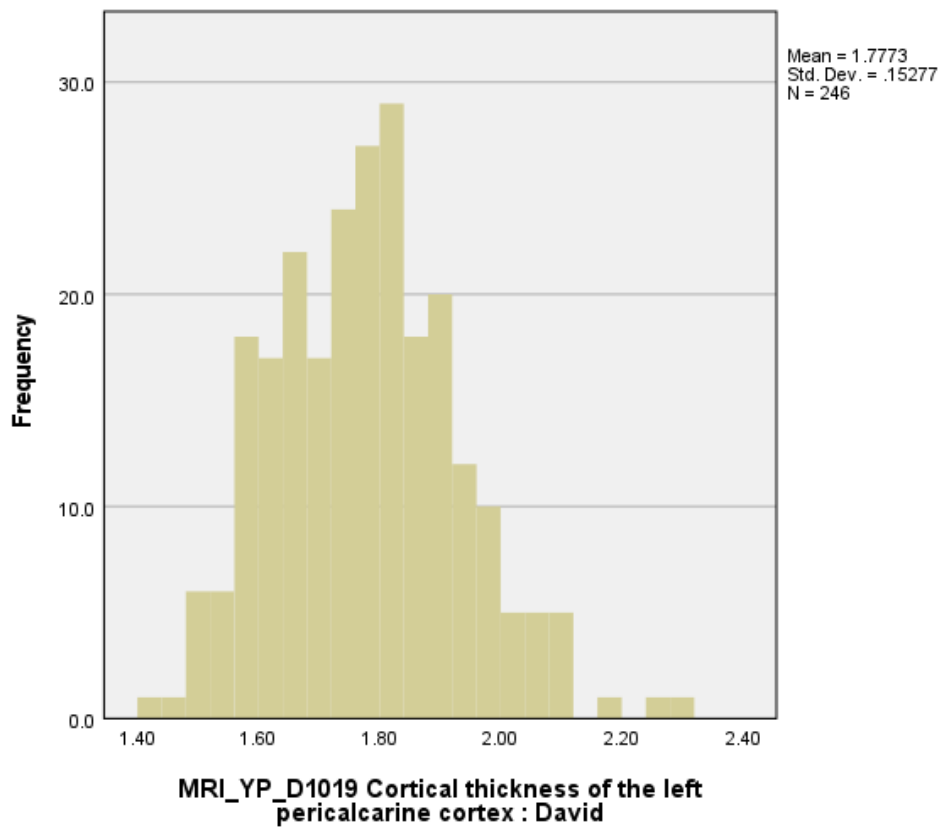
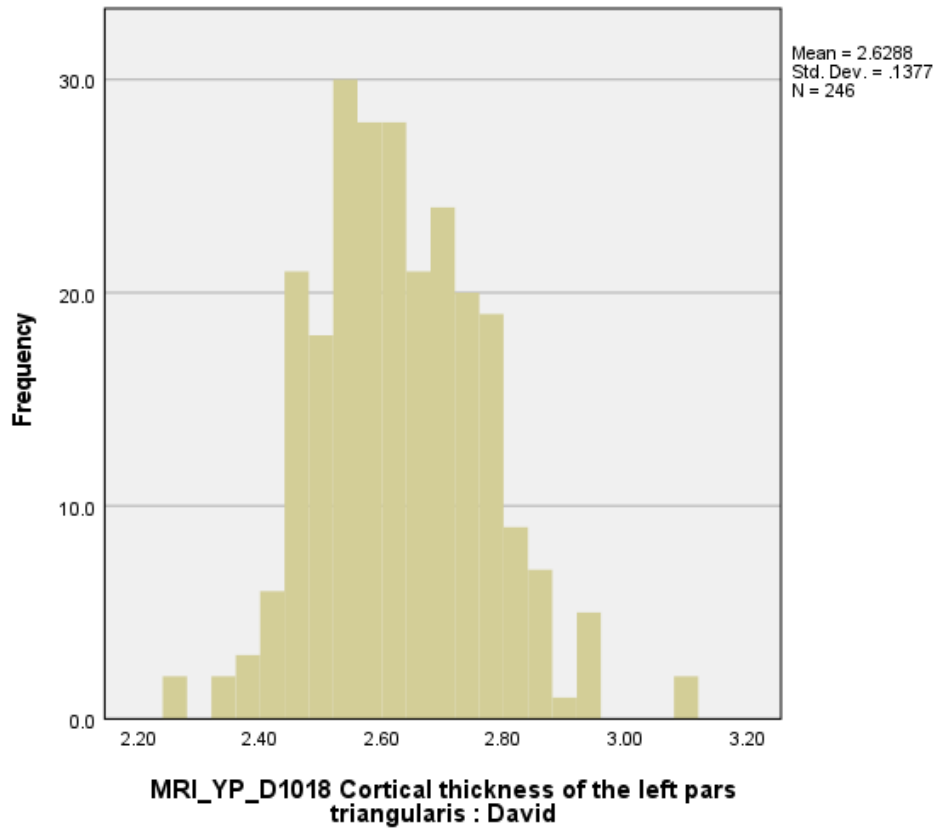


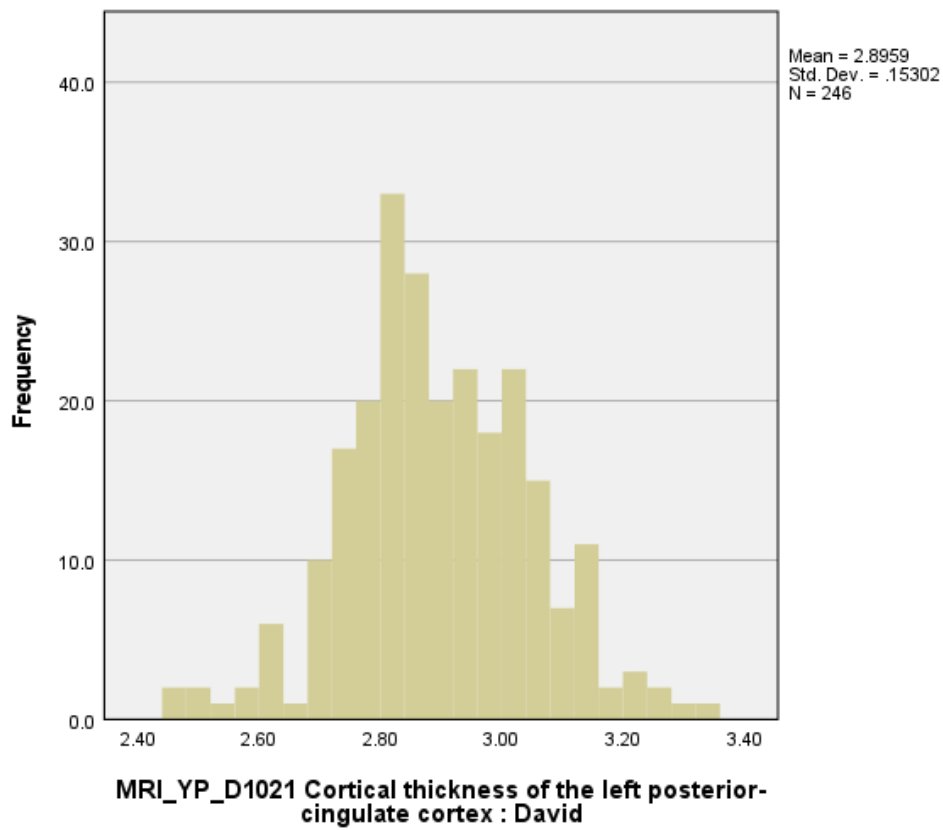
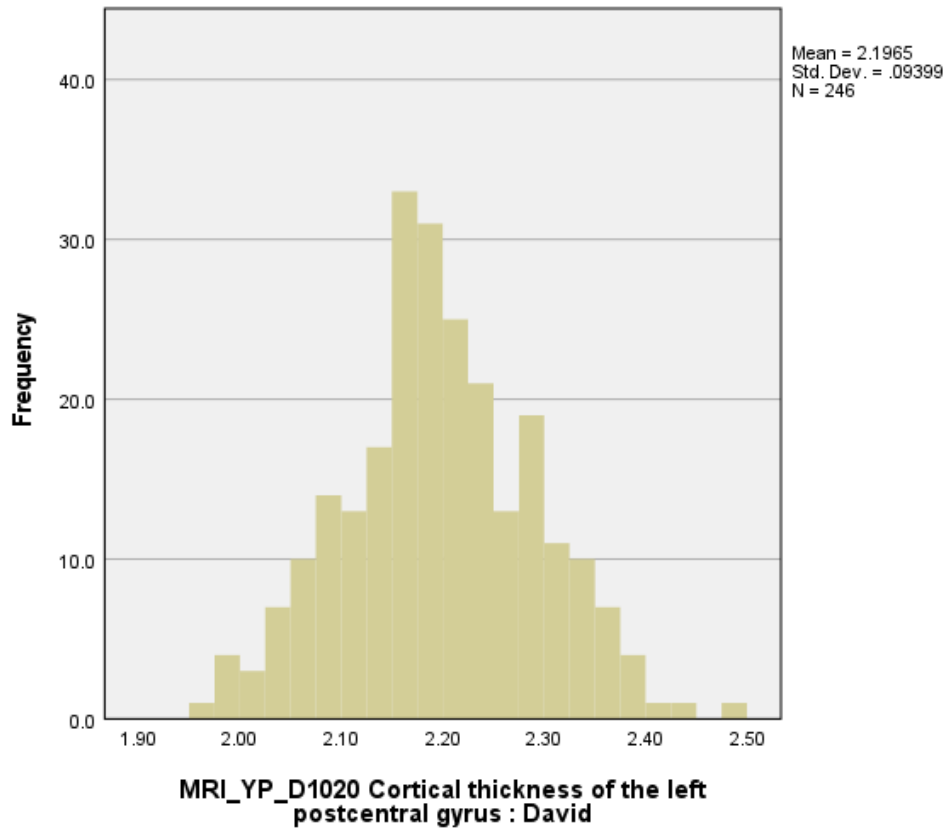


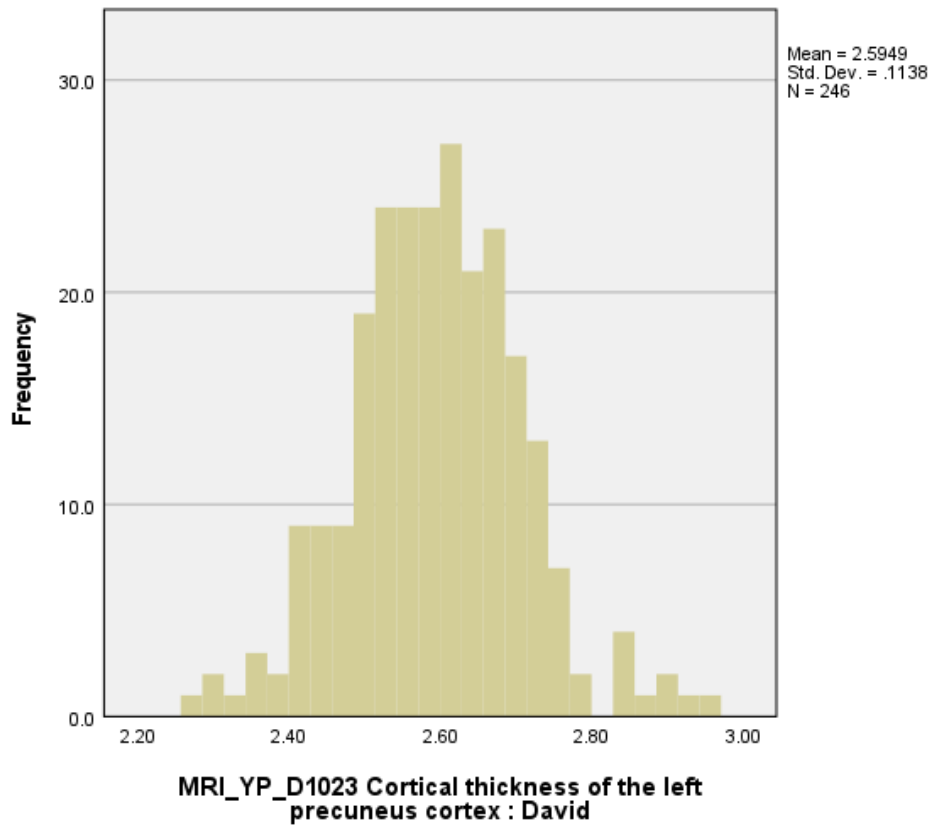
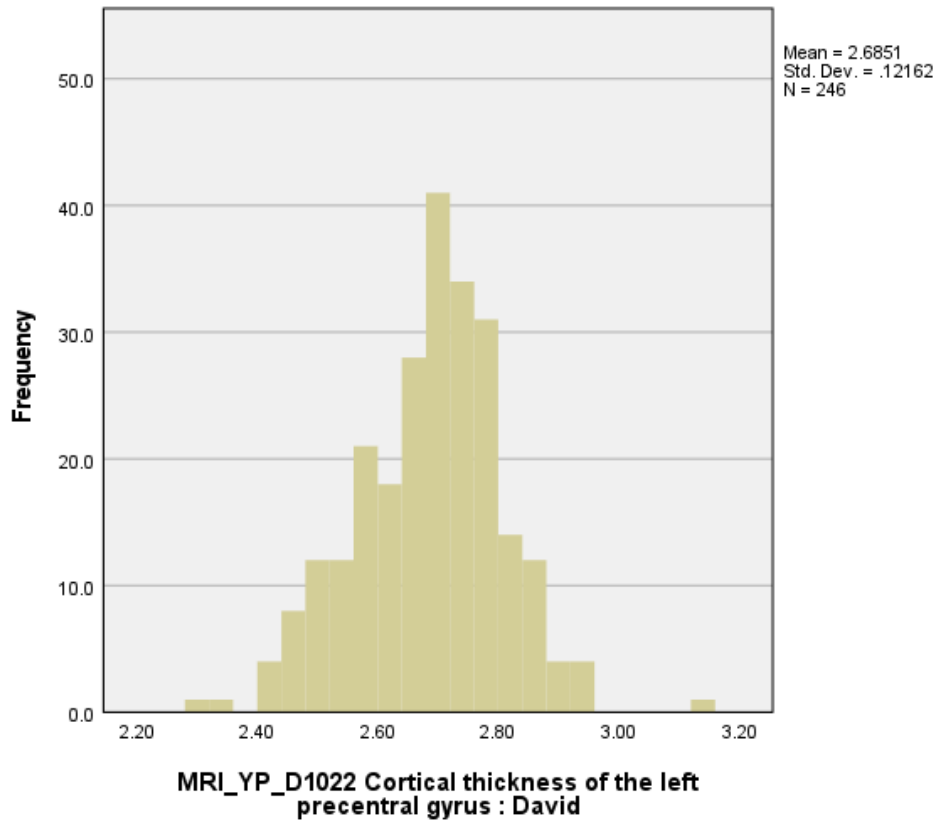


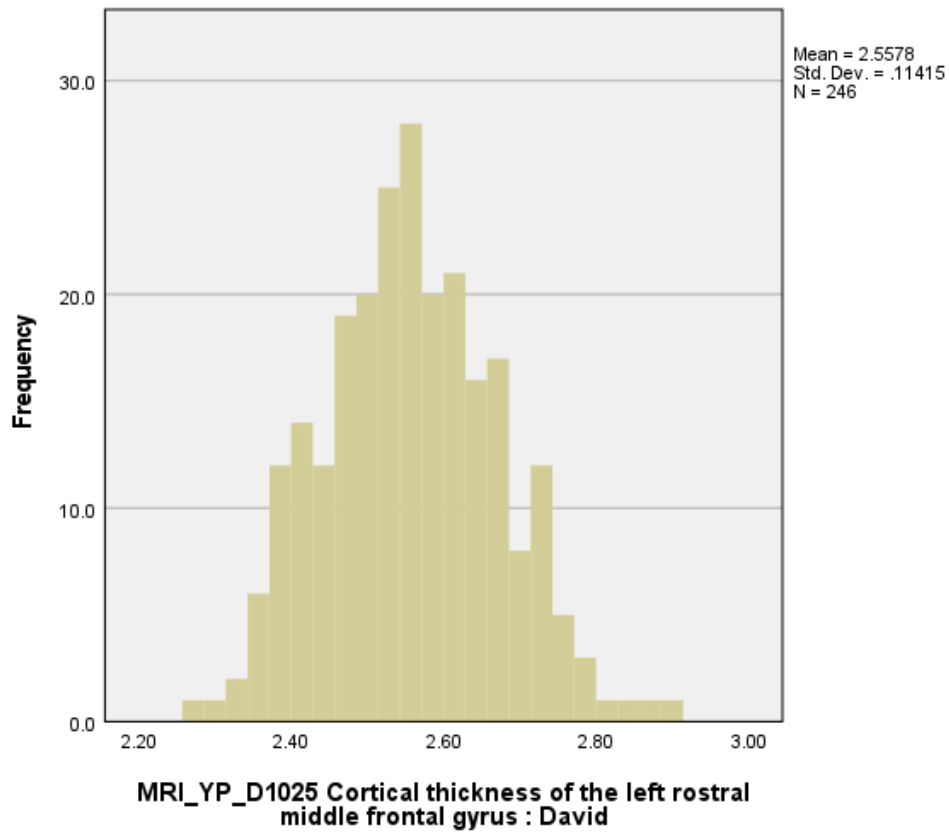
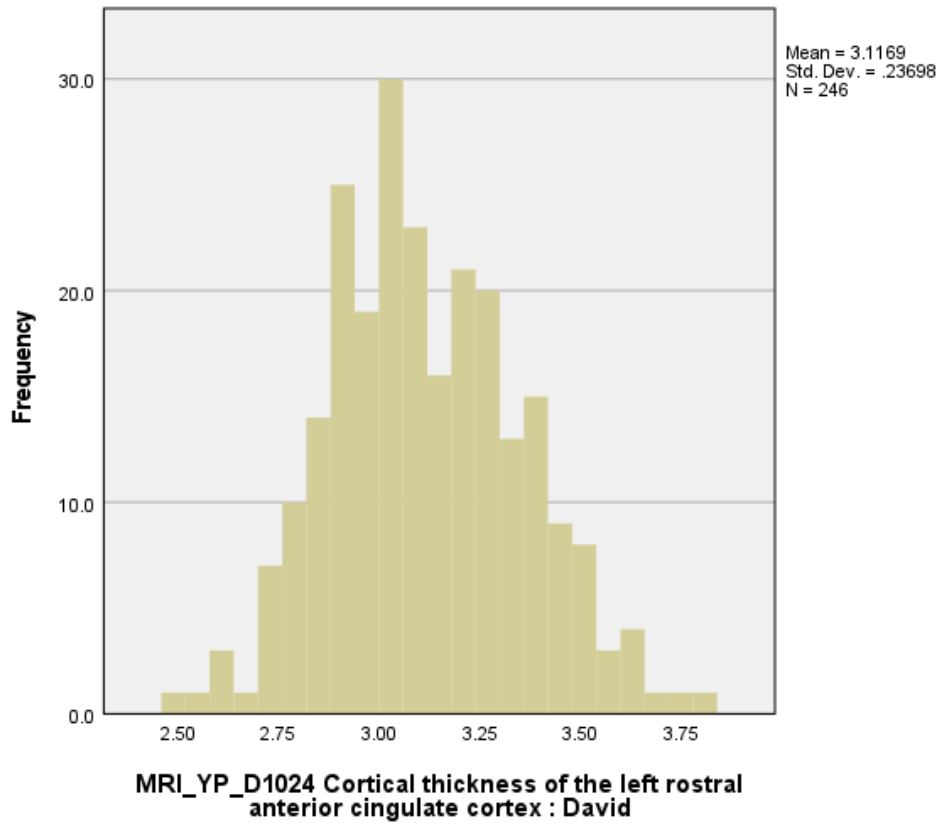


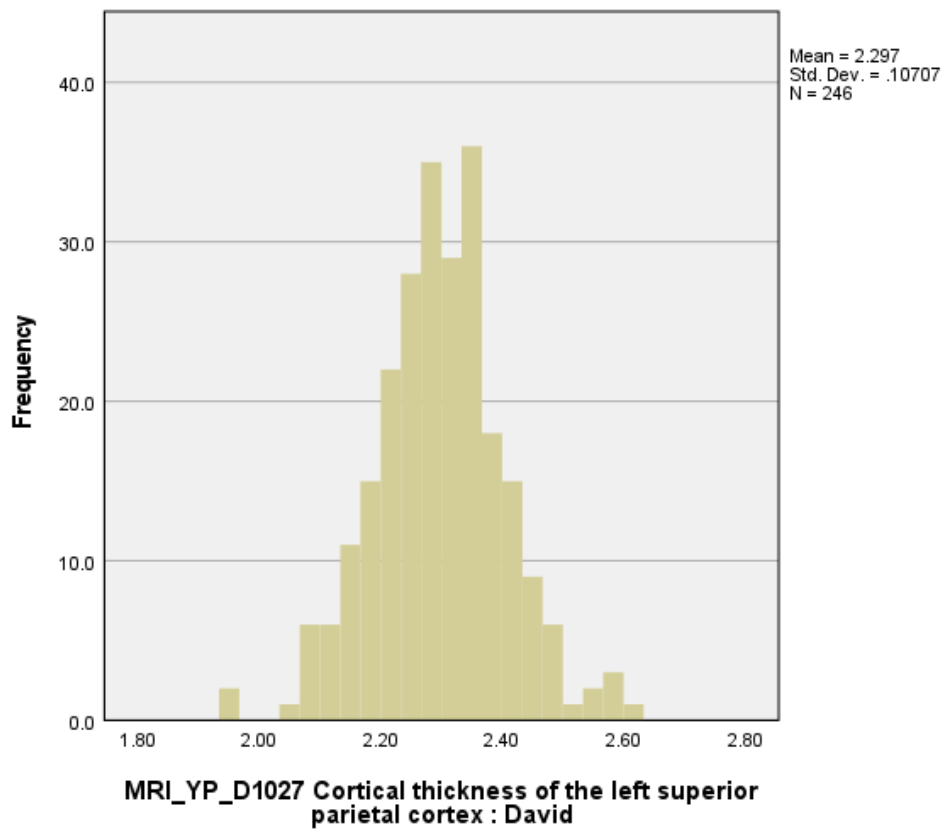
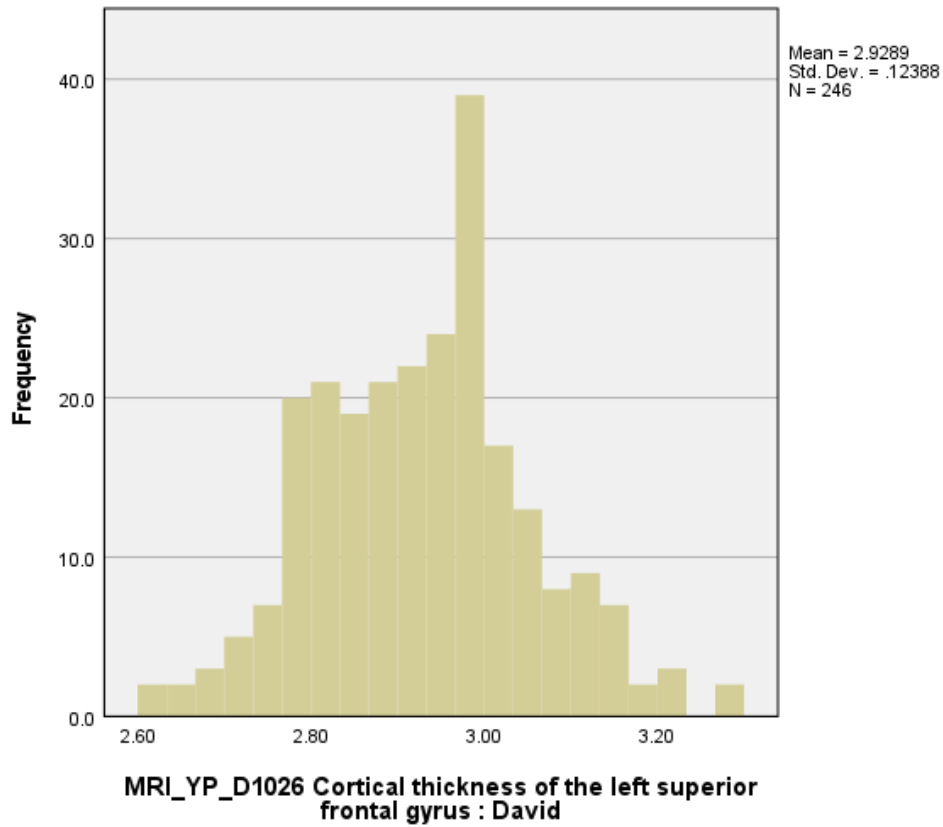


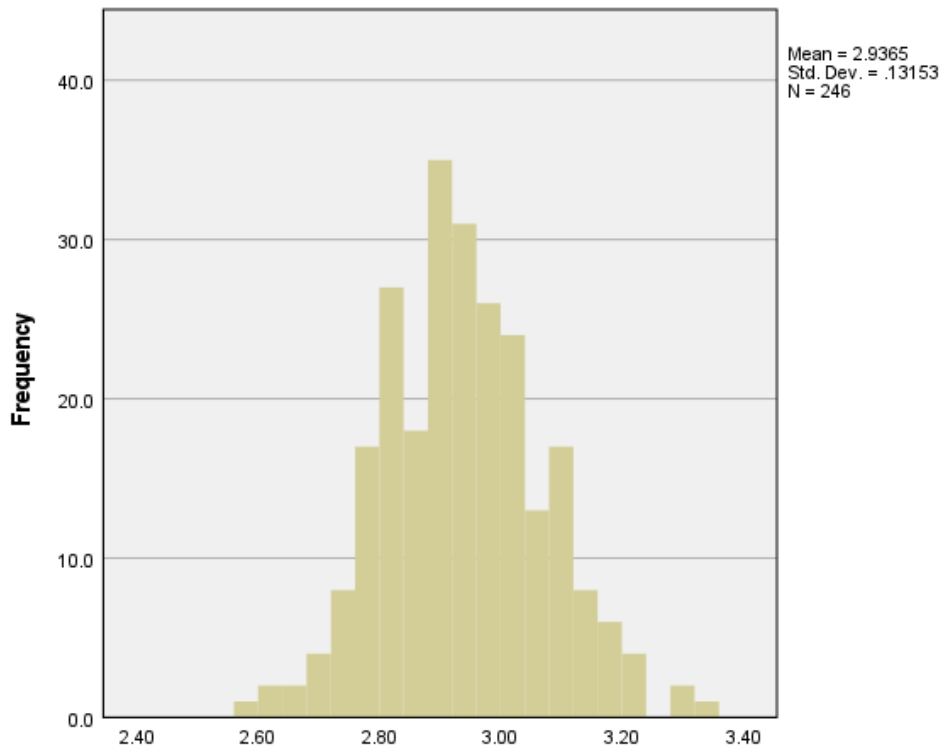




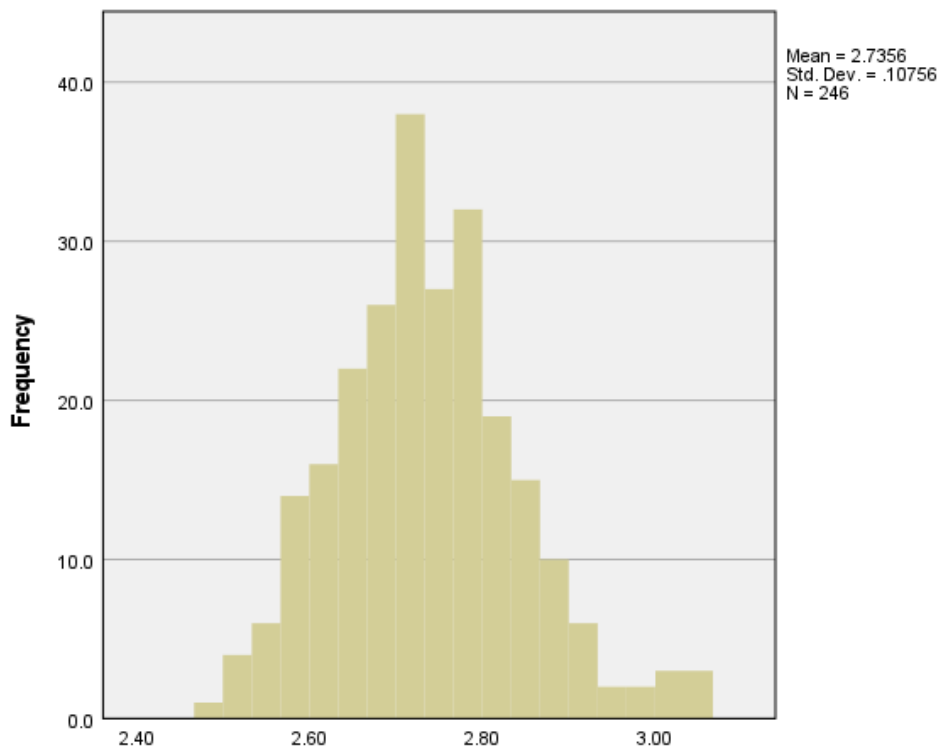




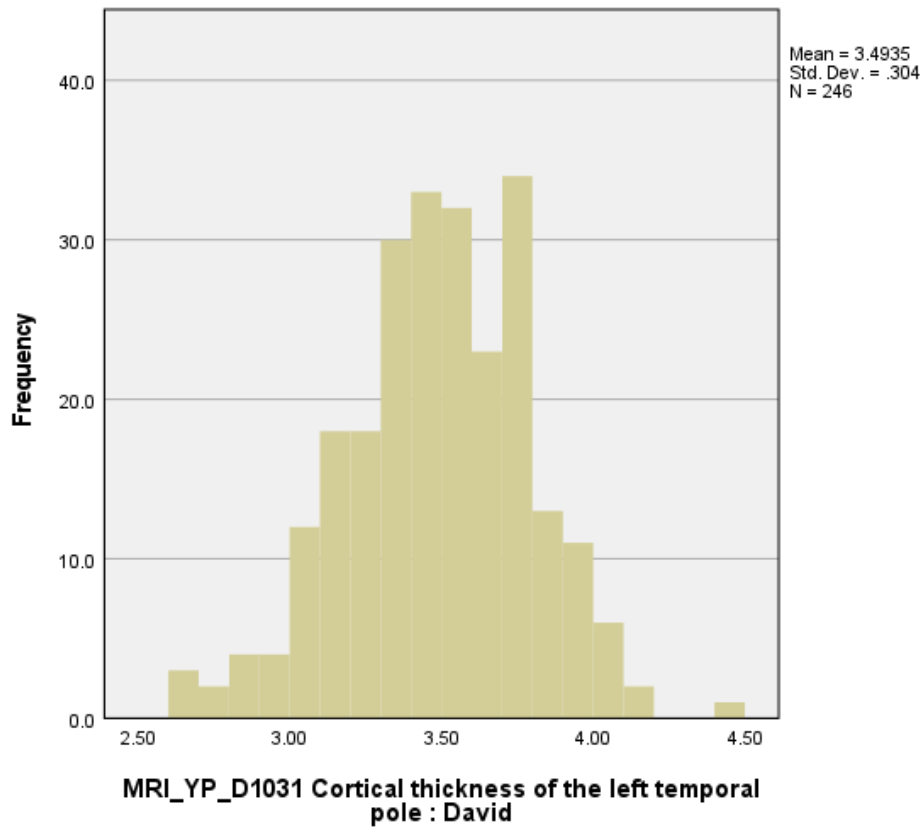
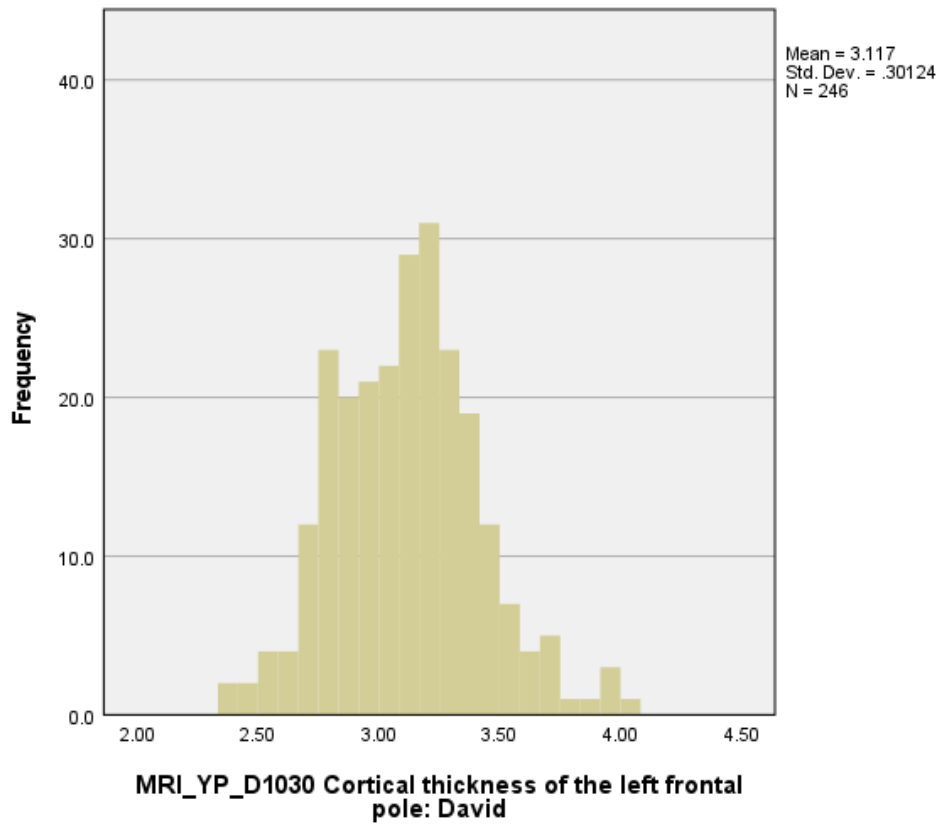


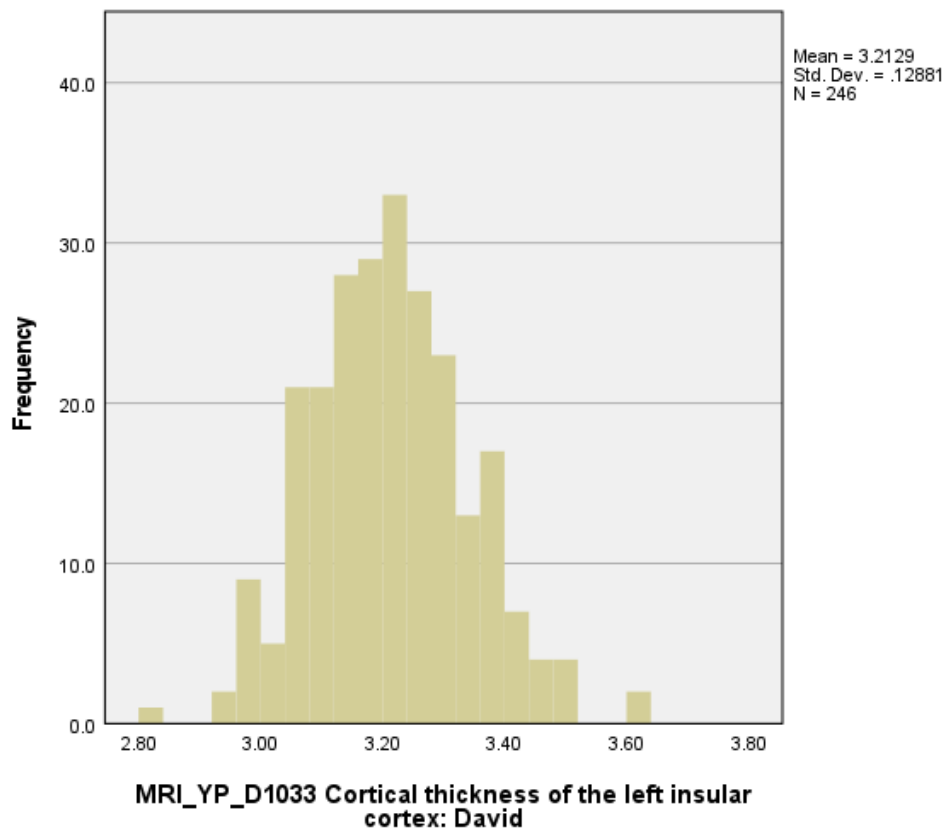
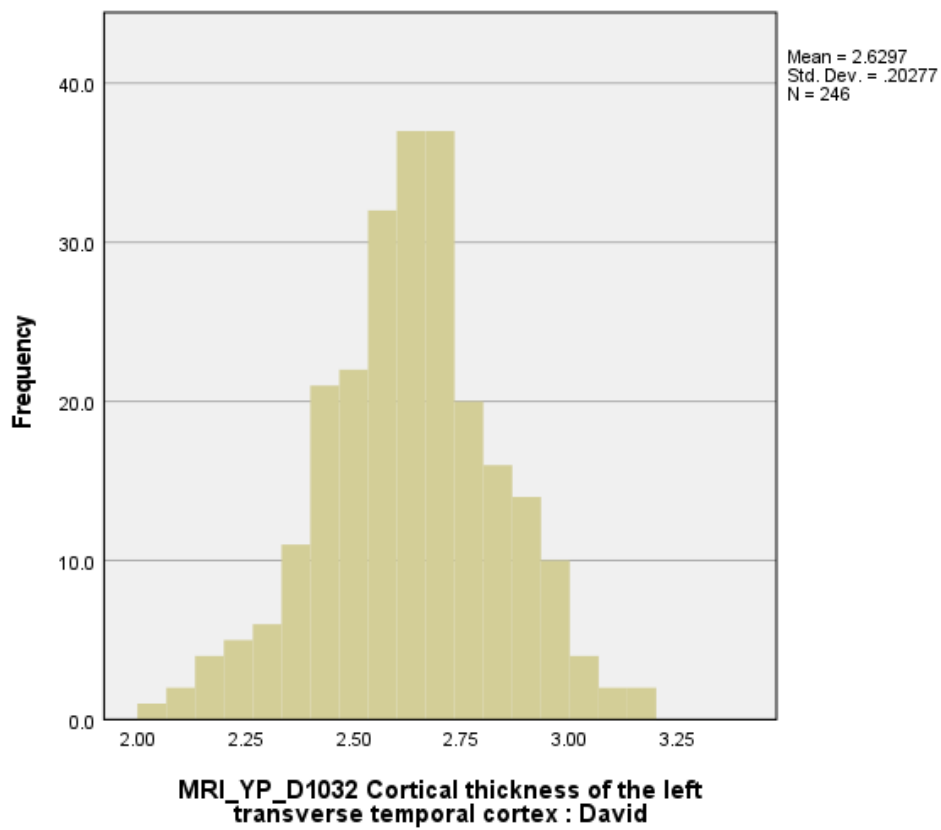


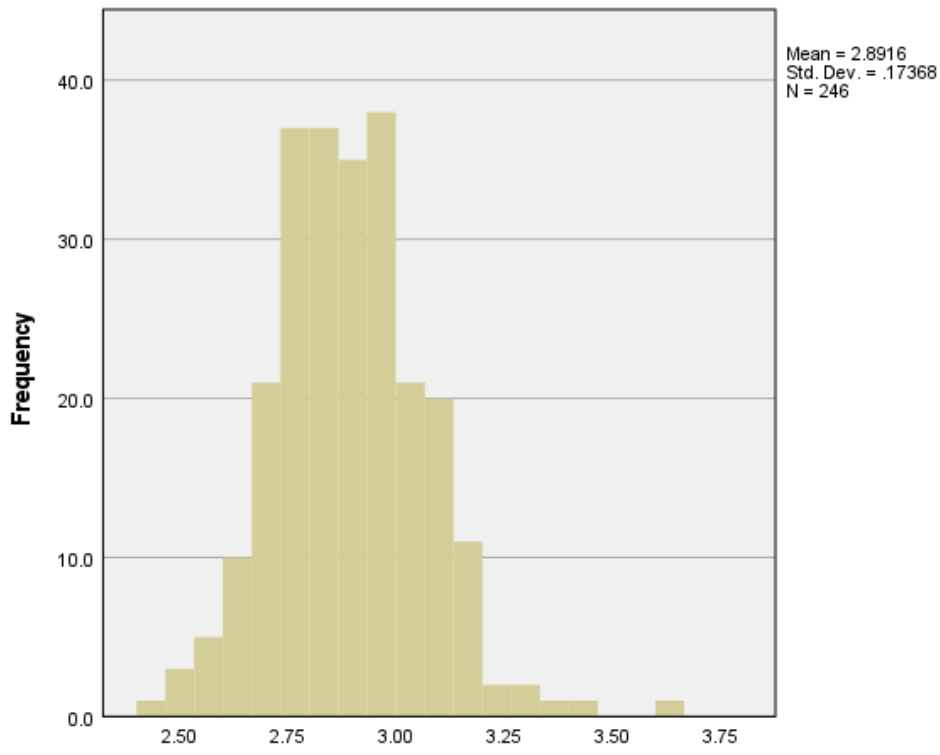
MRI_YP_D1028 Cortical thickness of the left superior temporal gyrus : David



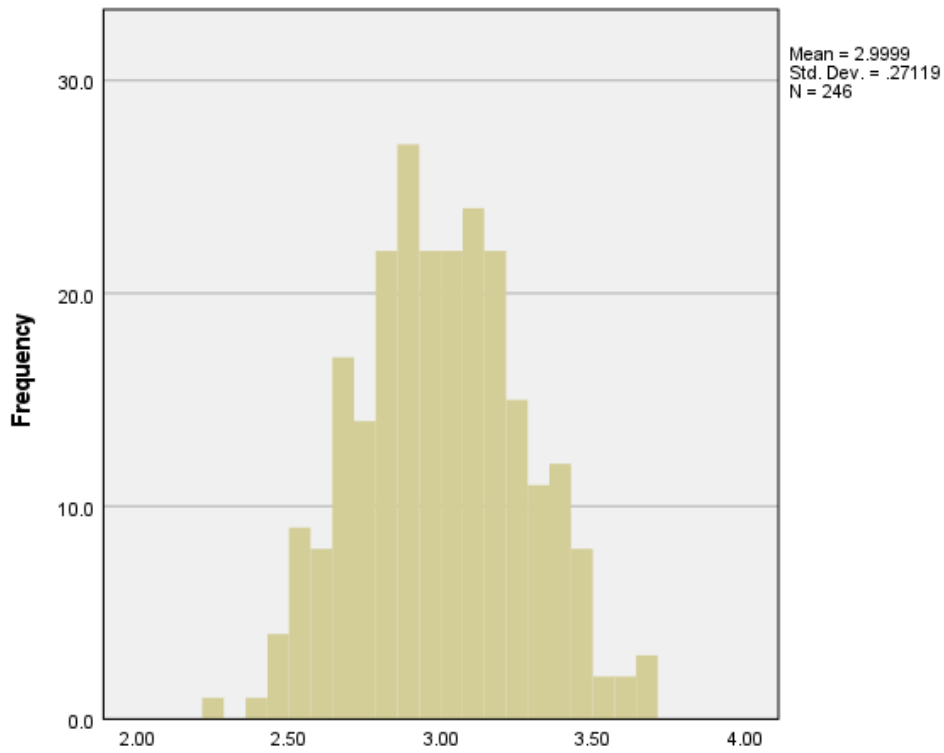
MRI_YP_D1029 Cortical thickness of the left supramarginal gyrus : David



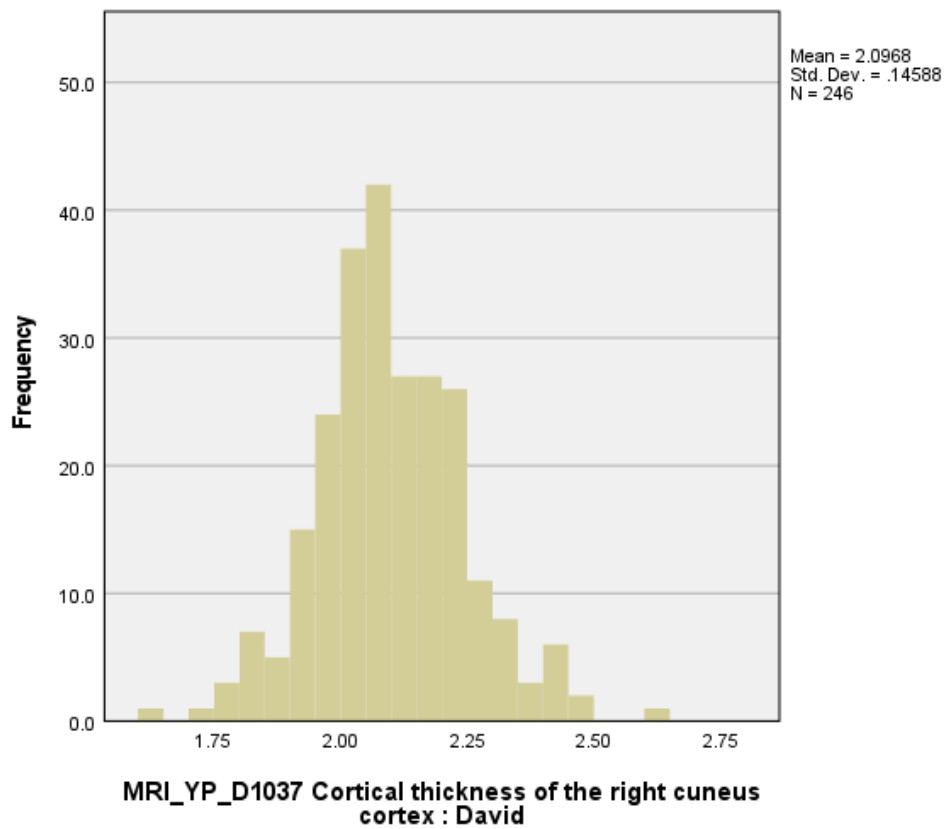
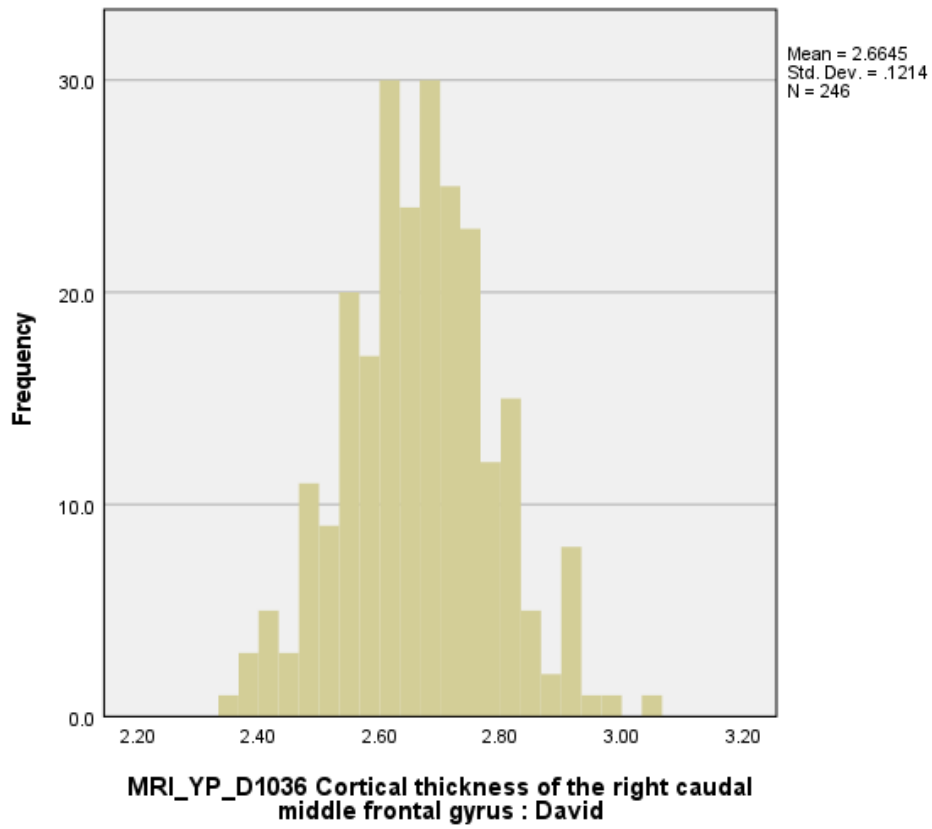


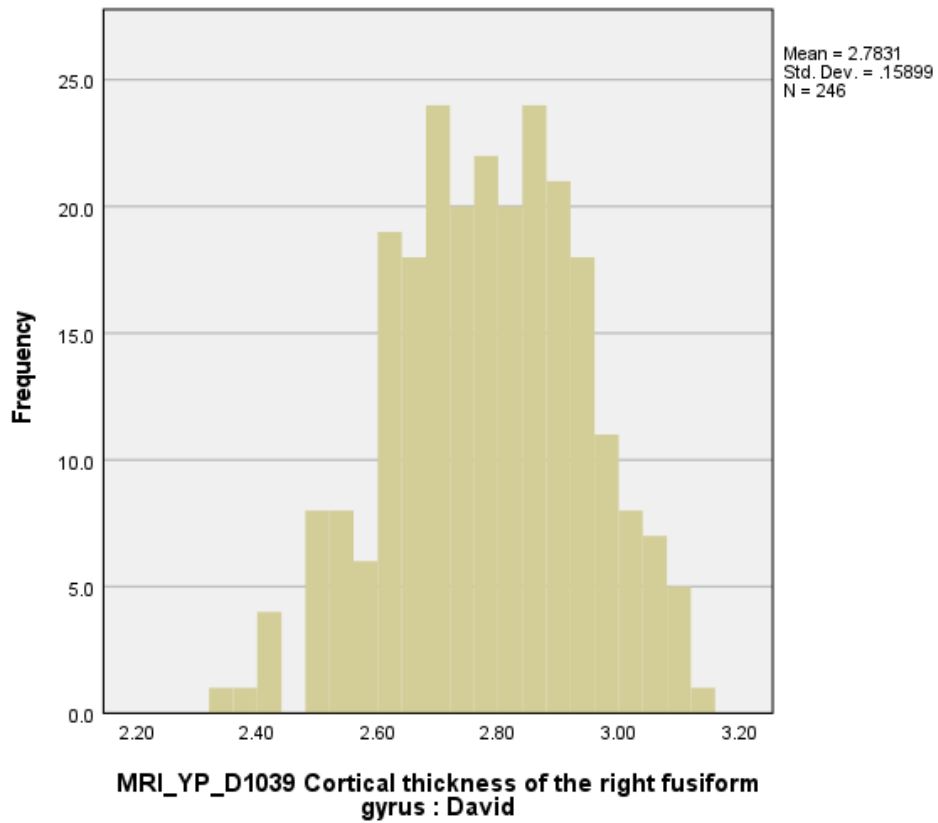
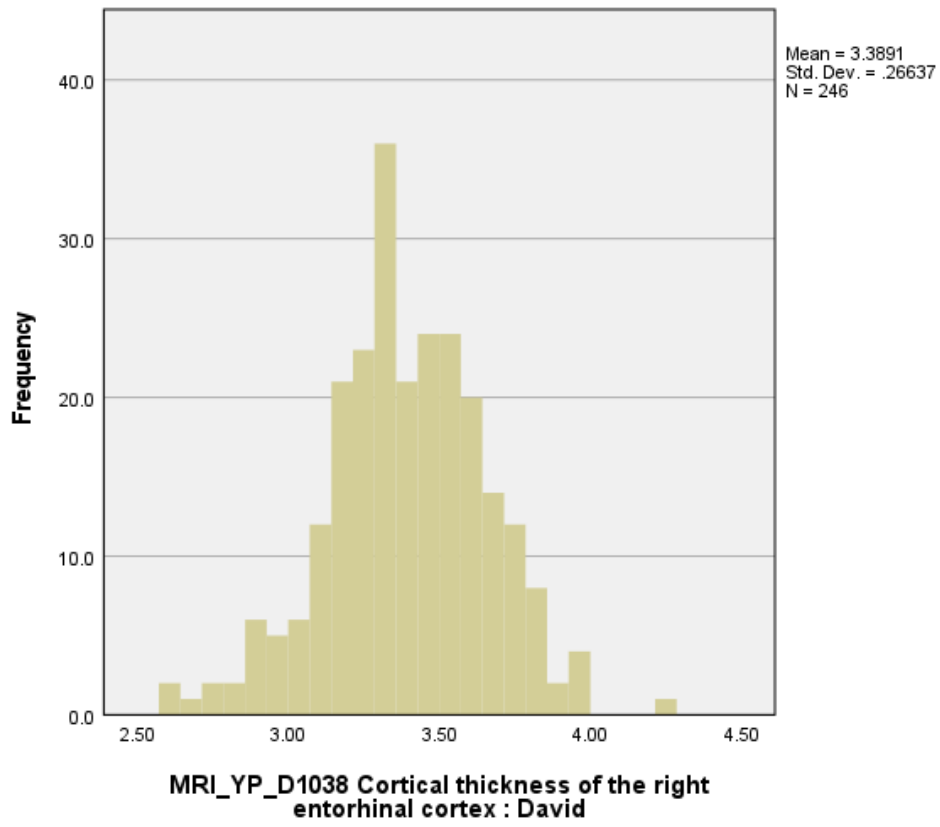


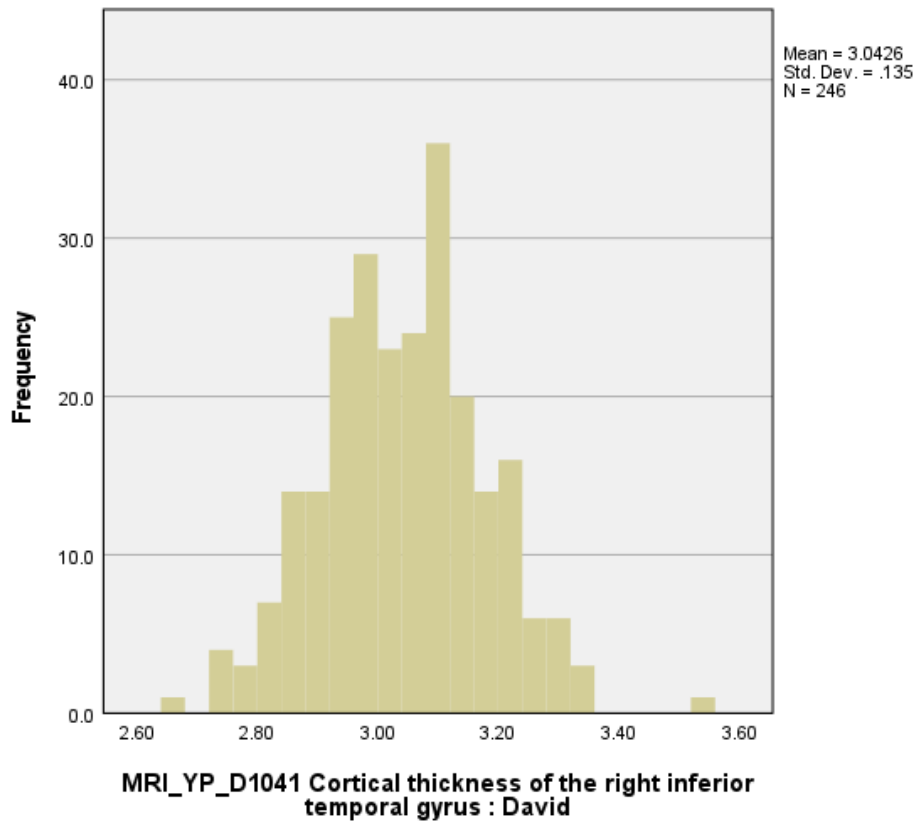
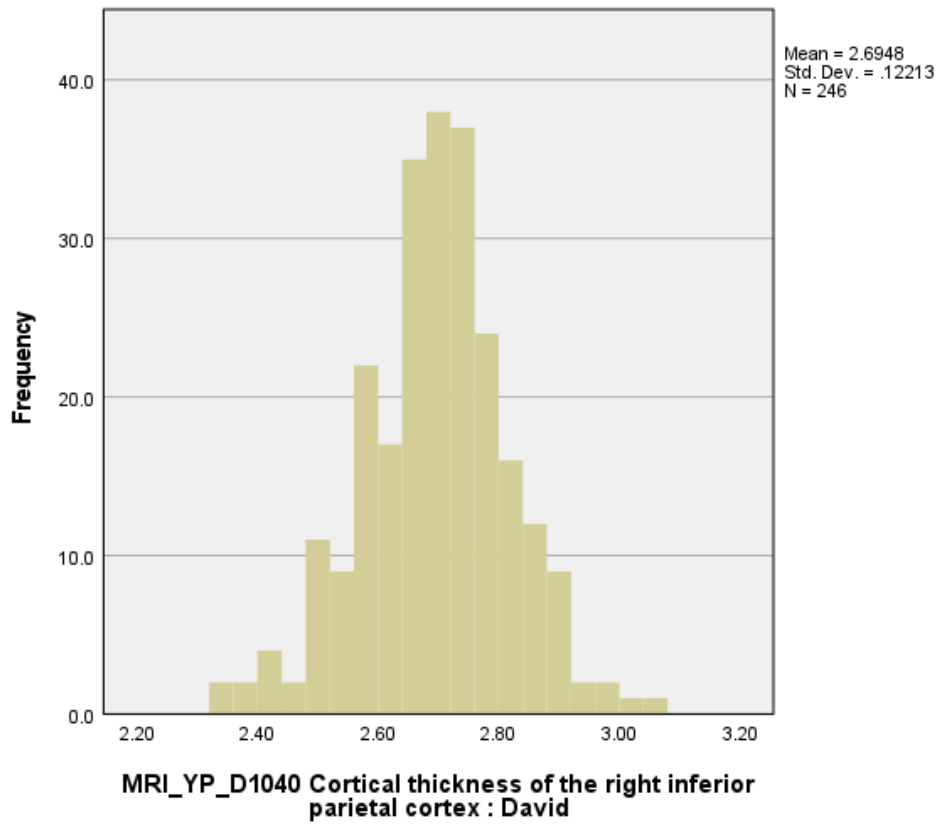
MRI_YP_D1034 Cortical thickness of the right banks superior temporal sulcus : David

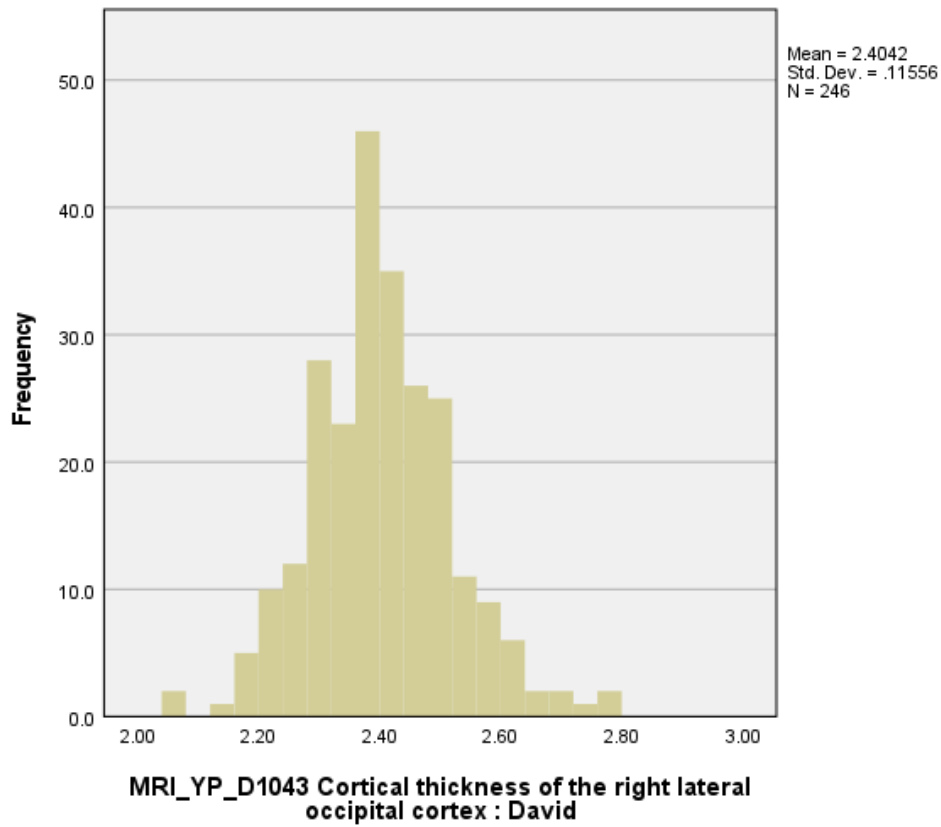
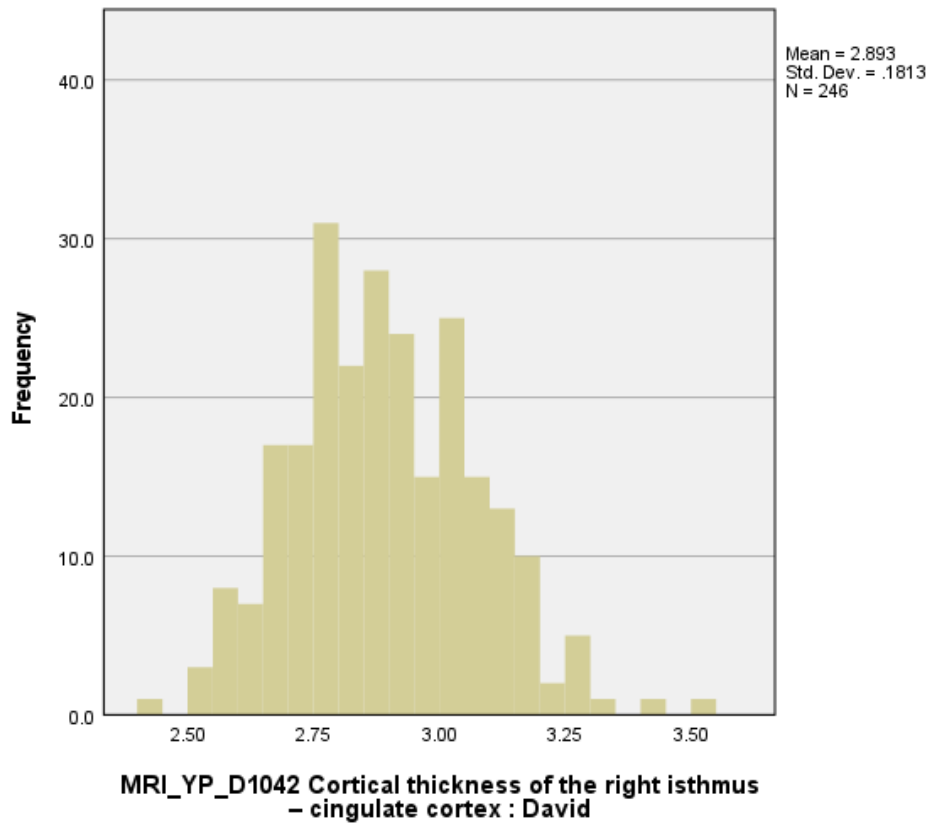


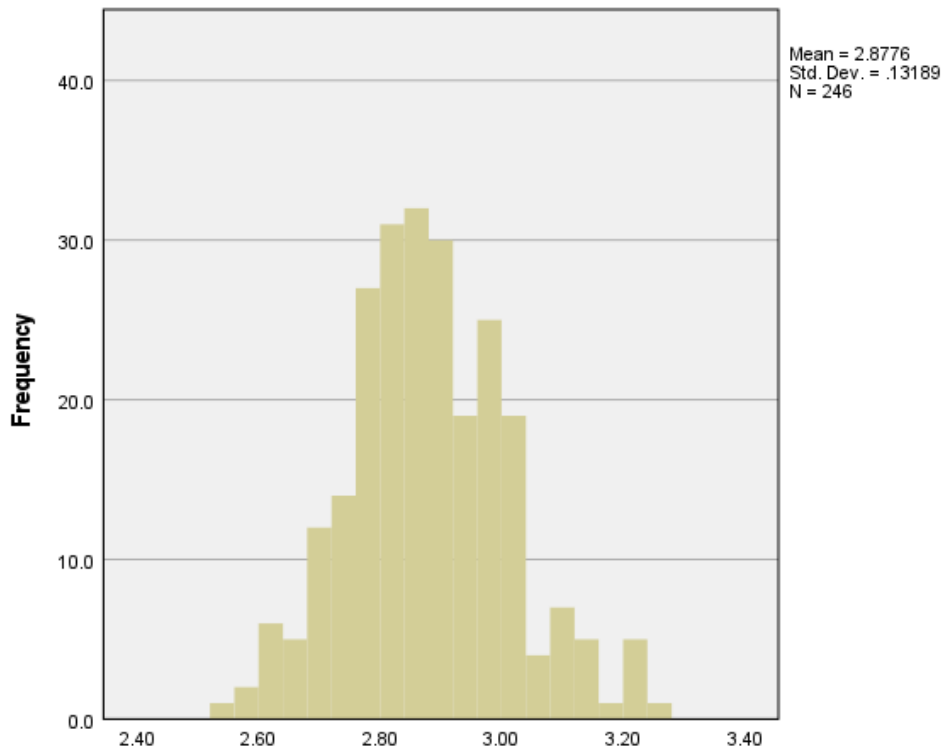
MRI_YP_D1035 Cortical thickness of the right caudal anterior-cingulate cortex : David



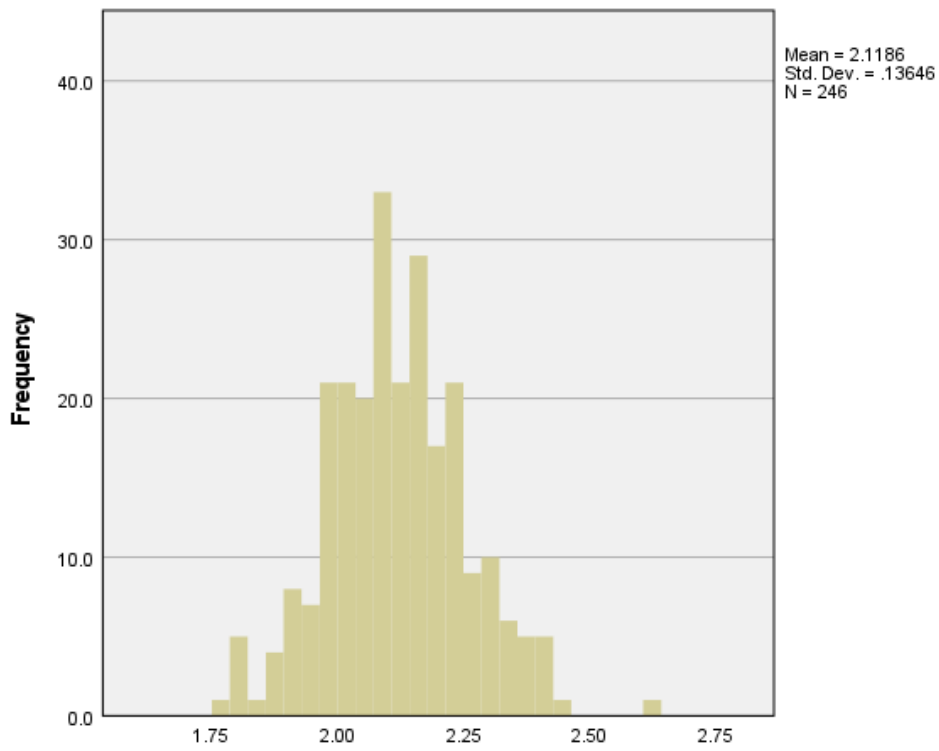




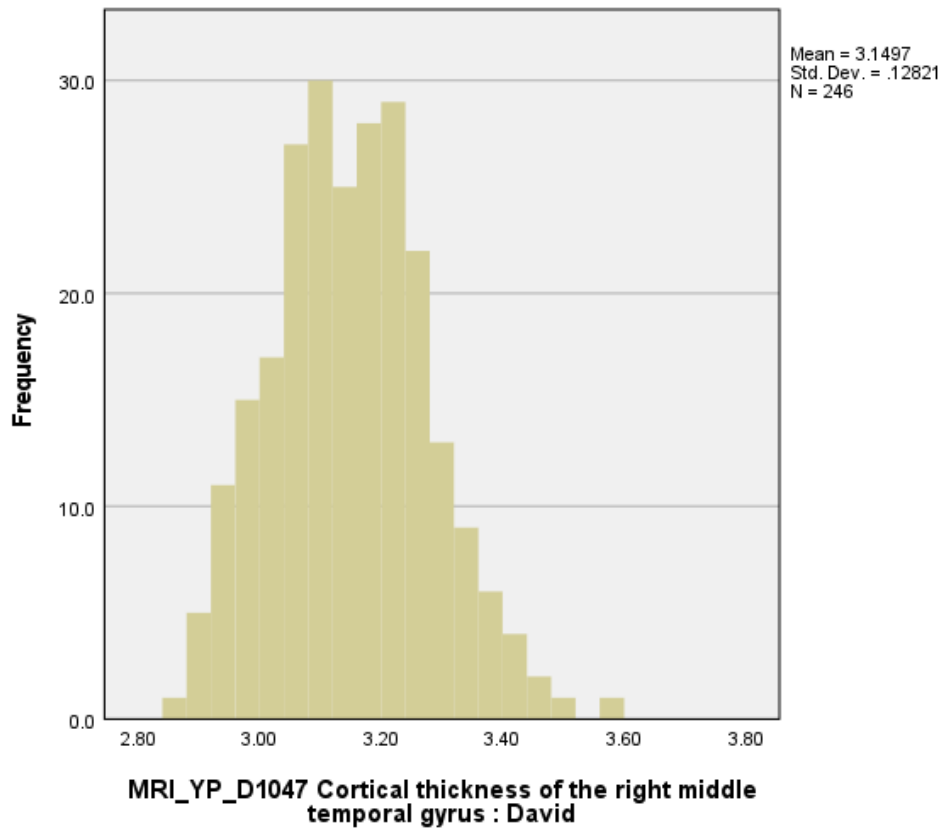
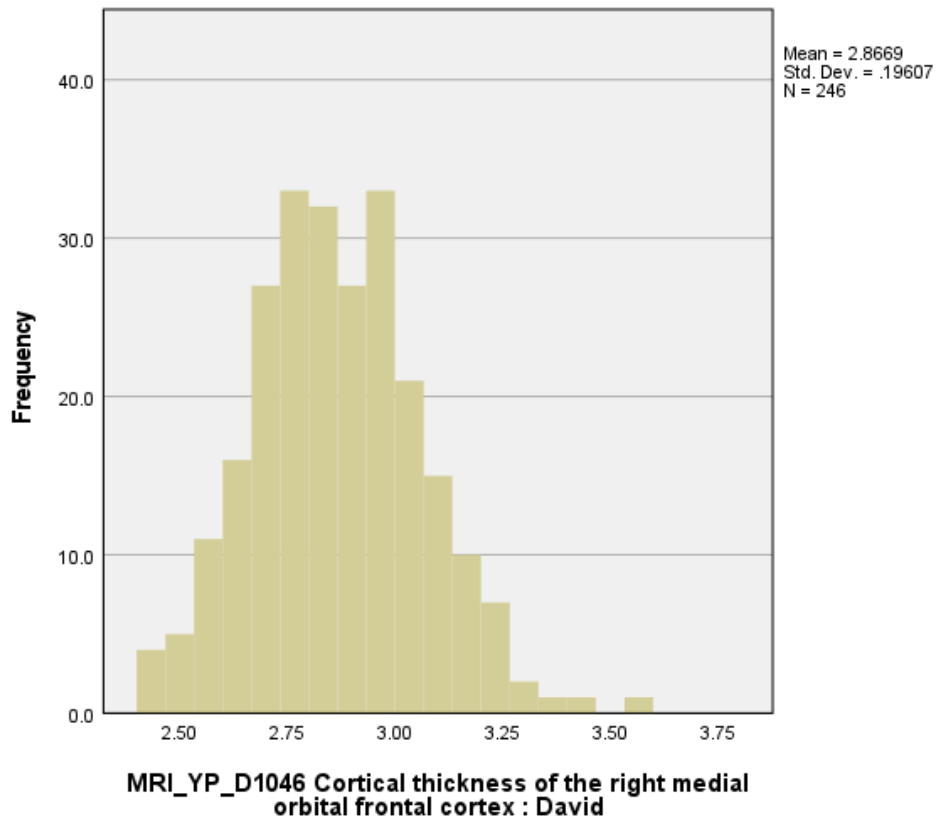


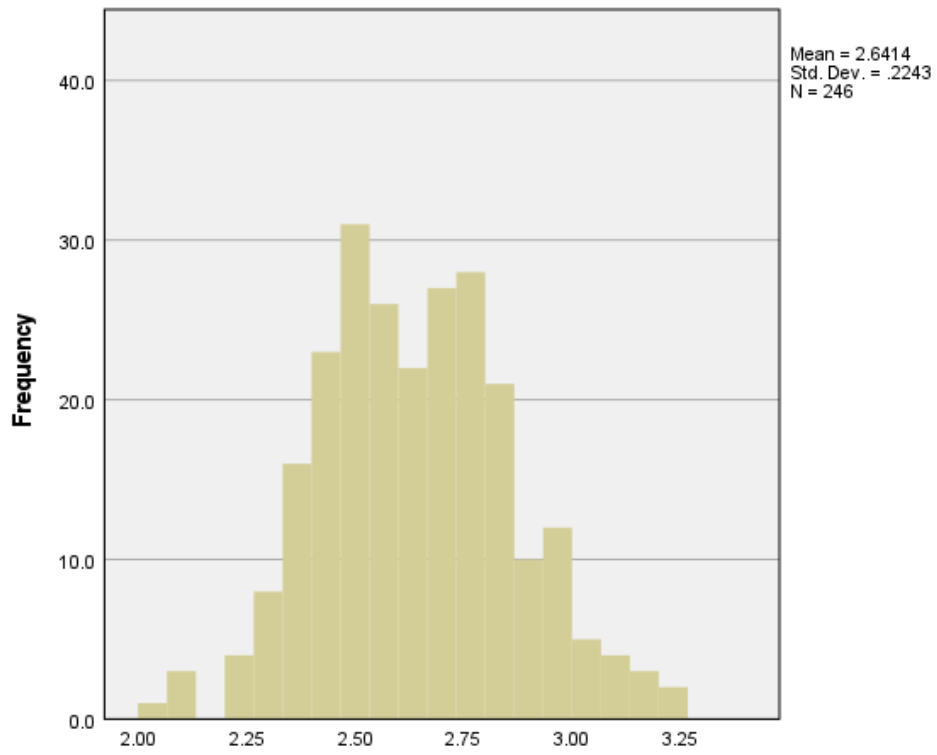


MRI_YP_D1044 Cortical thickness of the right lateral orbital frontal cortex : David

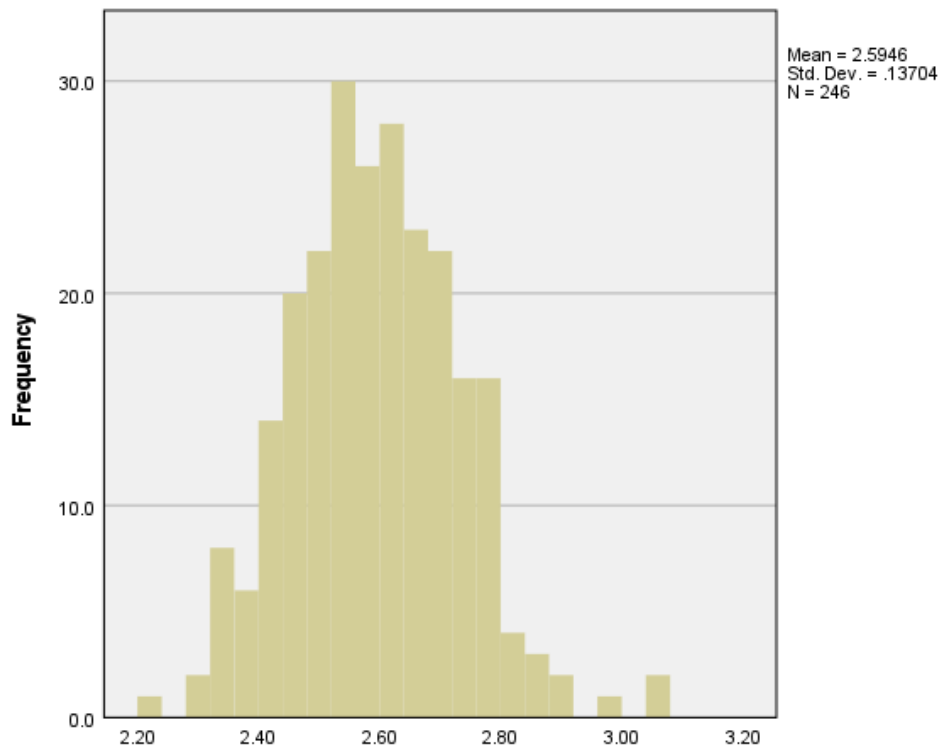


MRI_YP_D1045 Cortical thickness of the right lingual gyrus : David

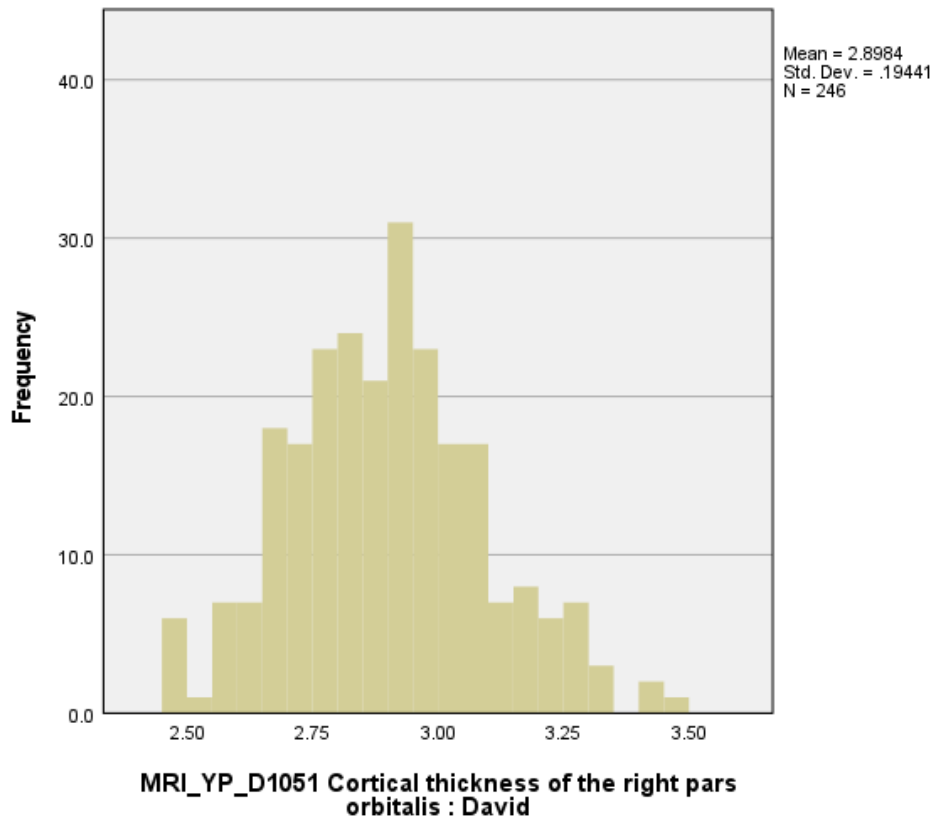
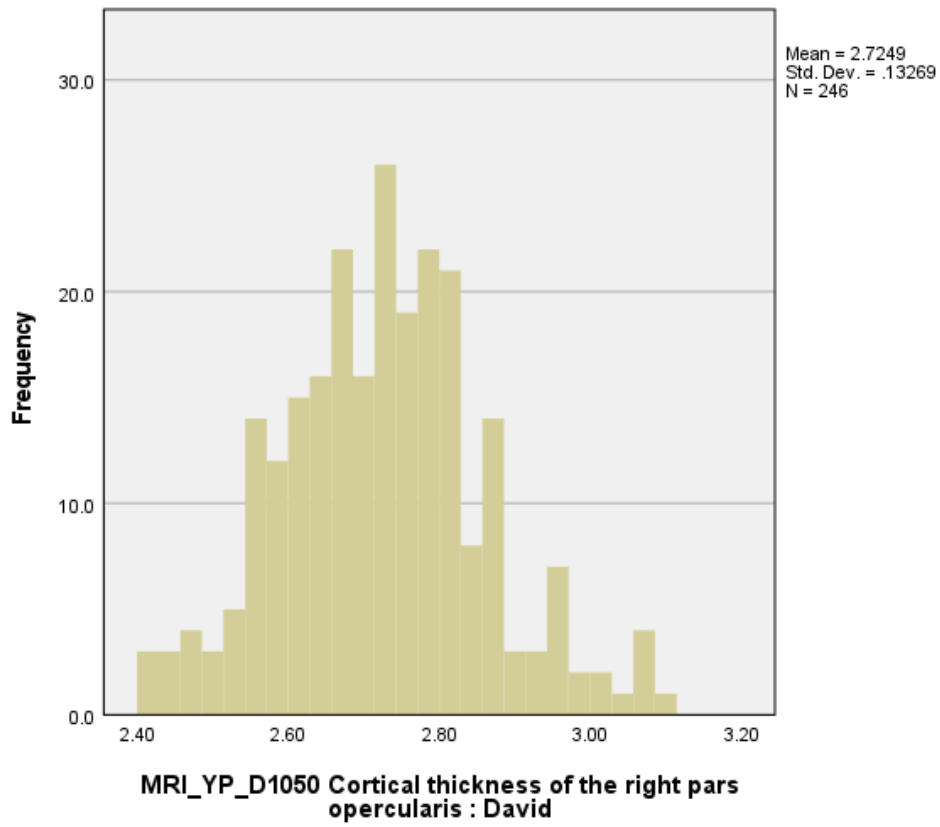


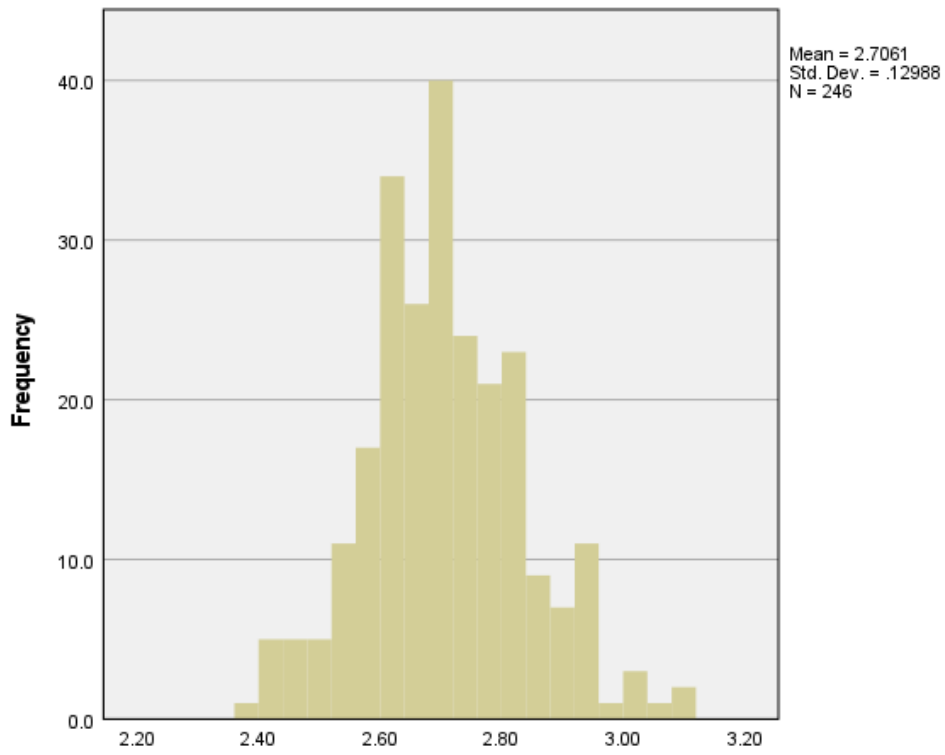


MRI_YP_D1048 Cortical thickness of the right parahippocampal gyrus : David

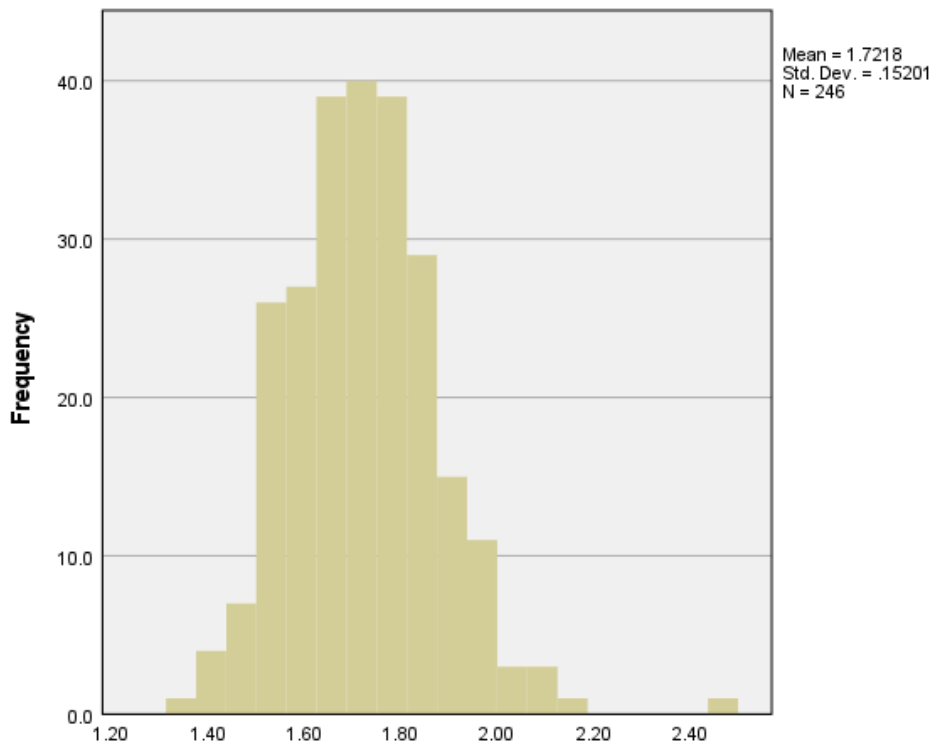


MRI_YP_D1049 Cortical thickness of the right paracentral lobule : David

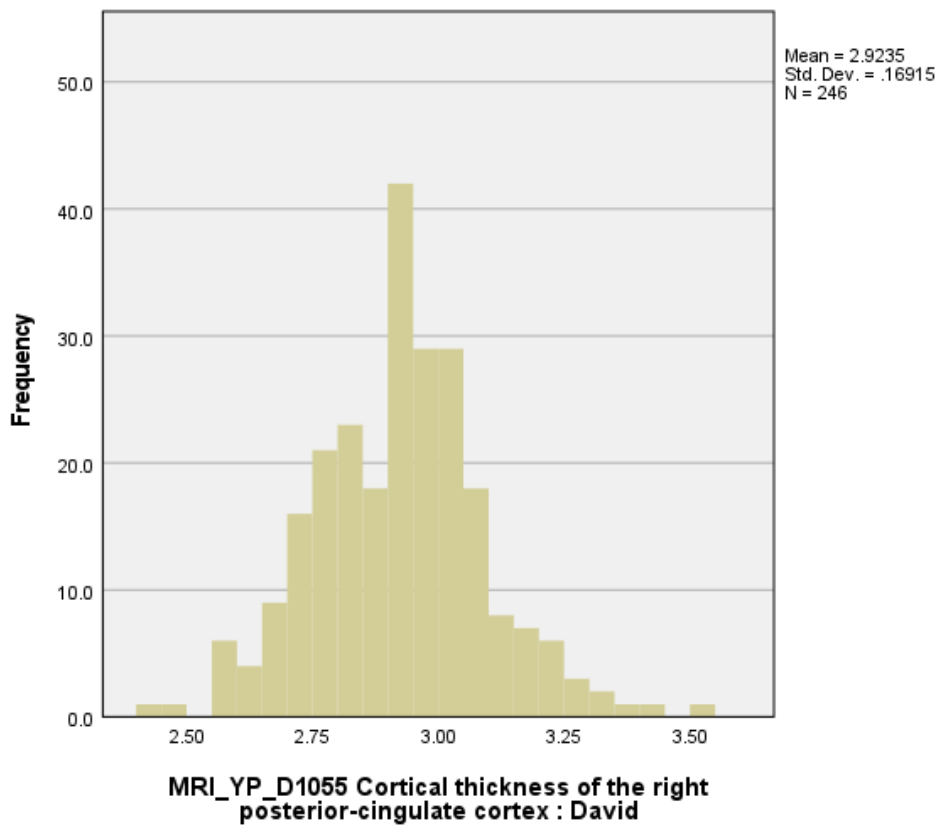
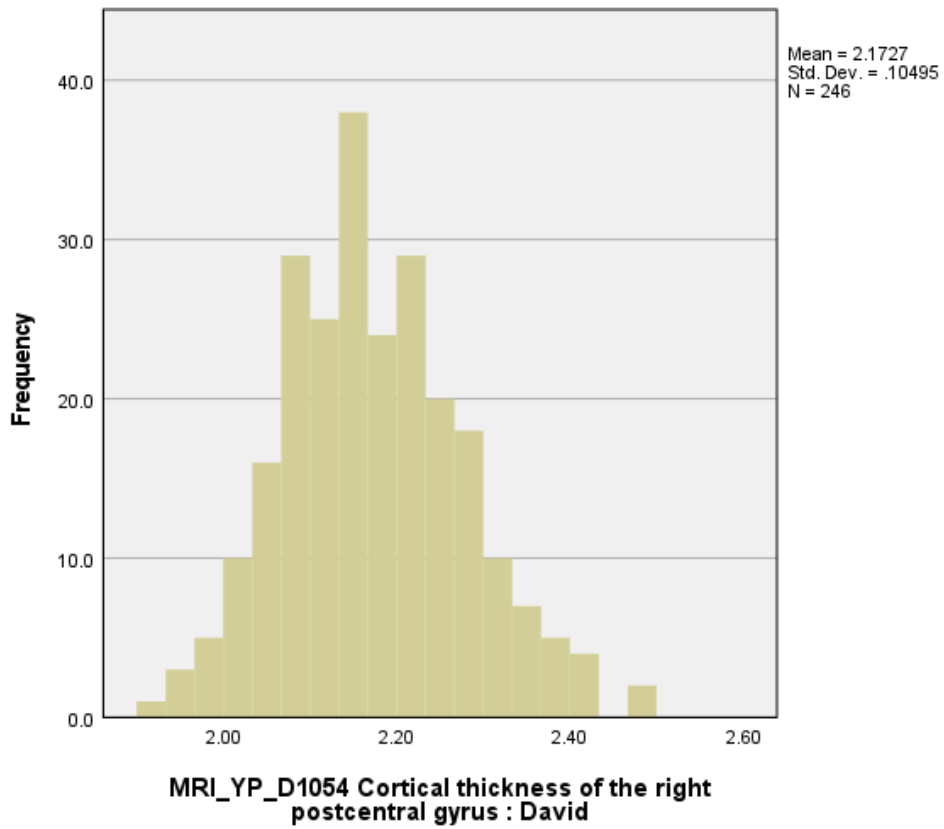


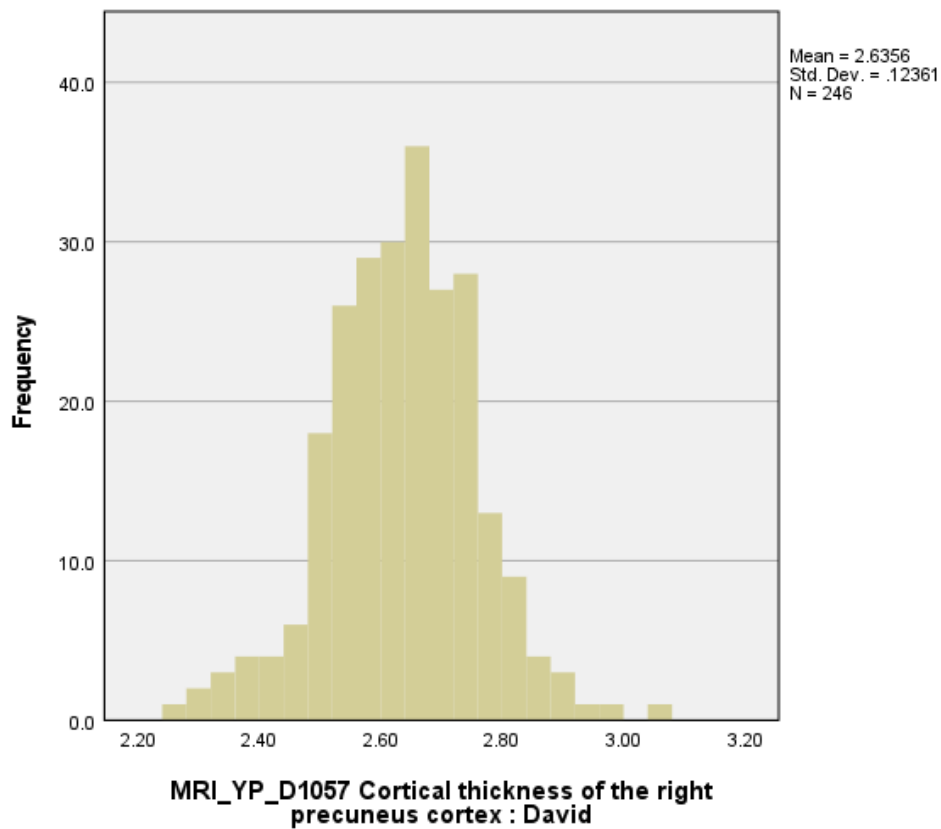
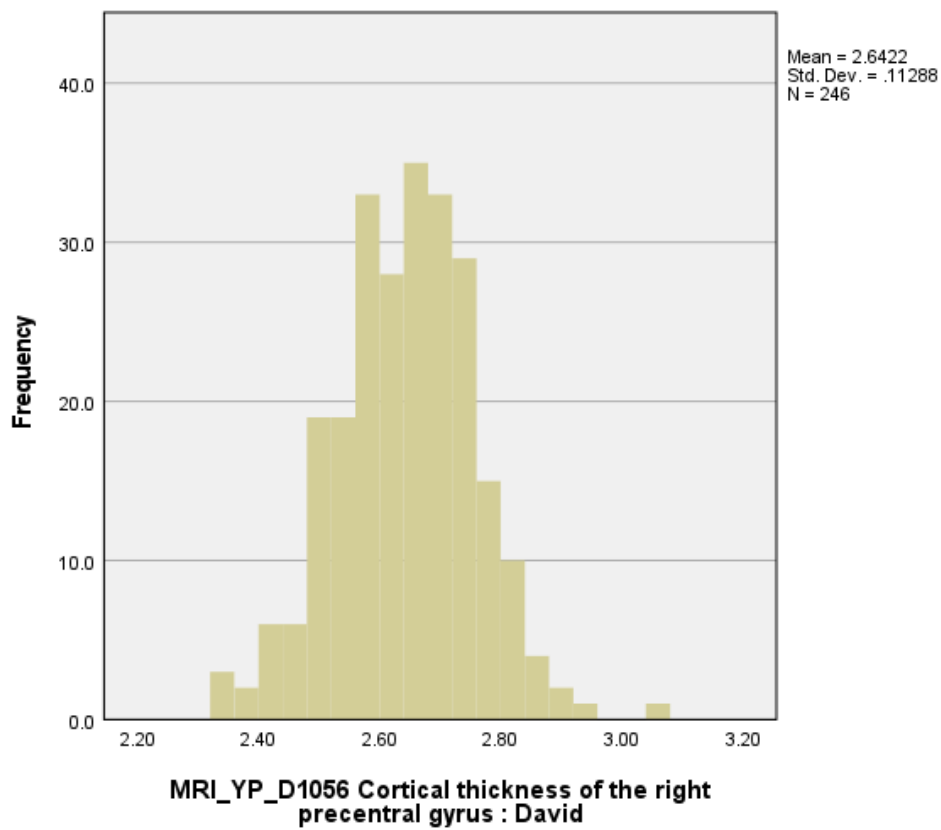


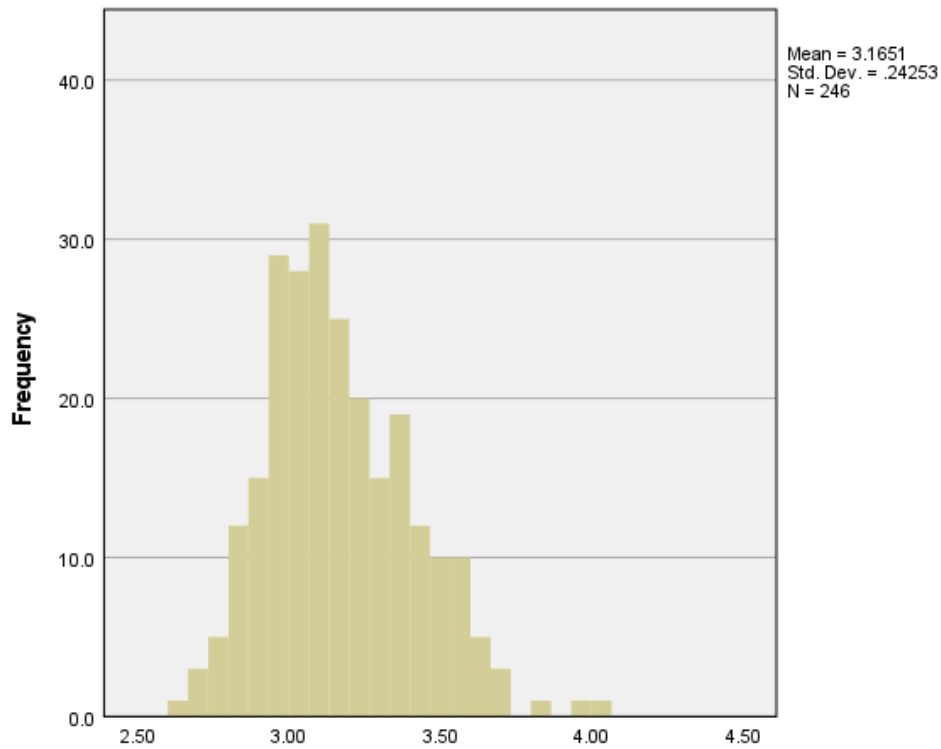
MRI_YP_D1052 Cortical thickness of the right pars triangularis : David



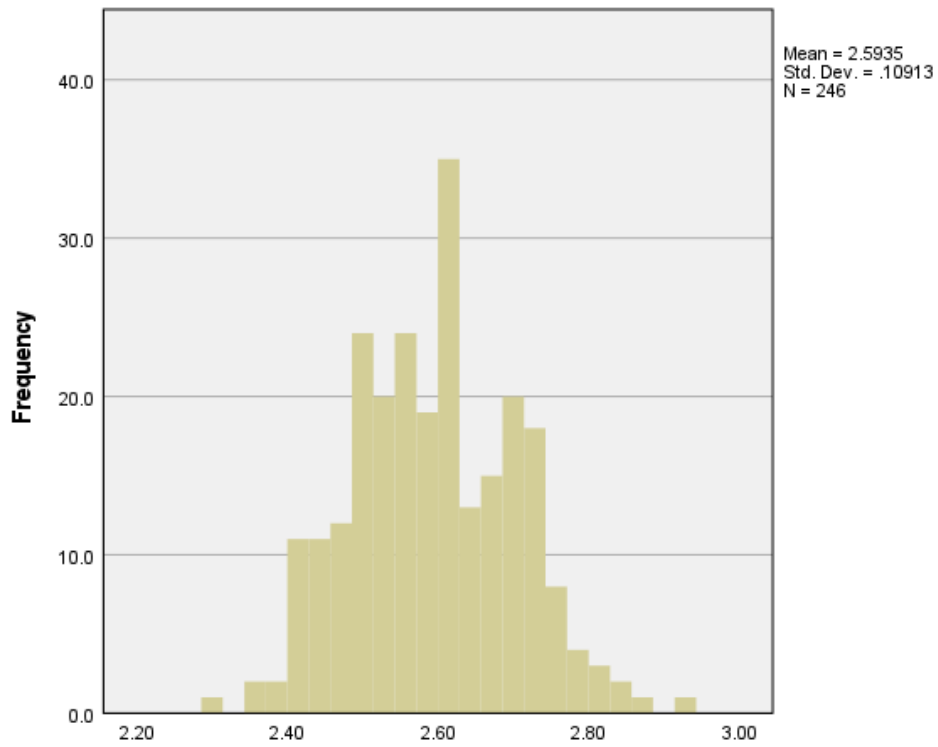
MRI_YP_D1053 Cortical thickness of the right pericalcarine cortex : David



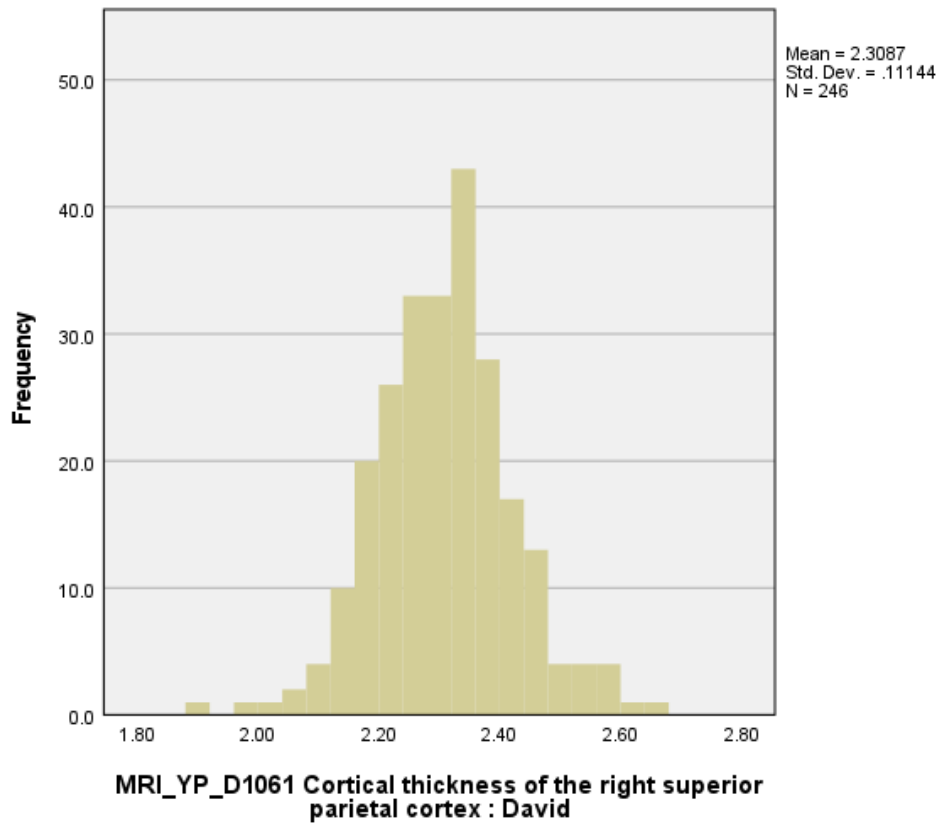
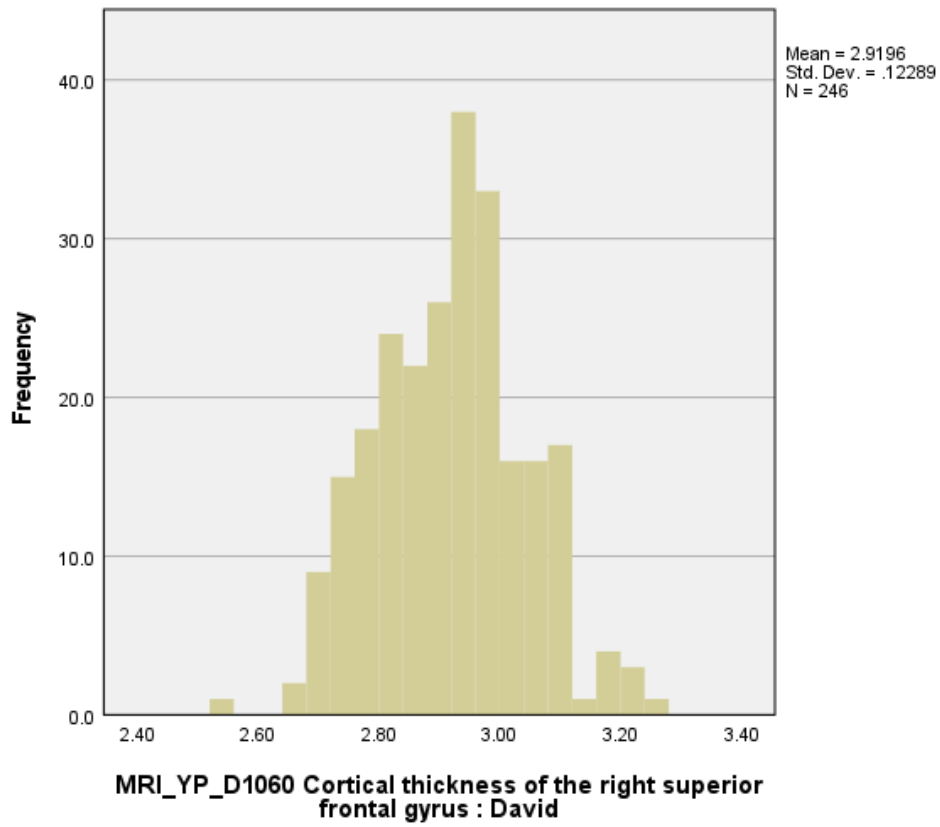


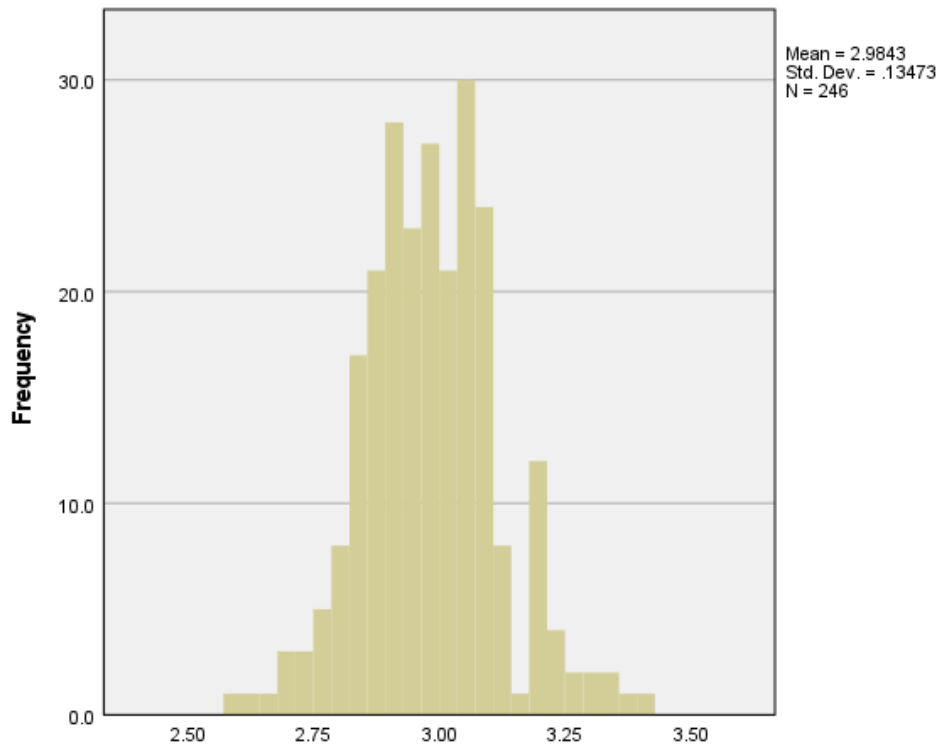


MRI_YP_D1058 Cortical thickness of the right rostral anterior cingulate cortex : David

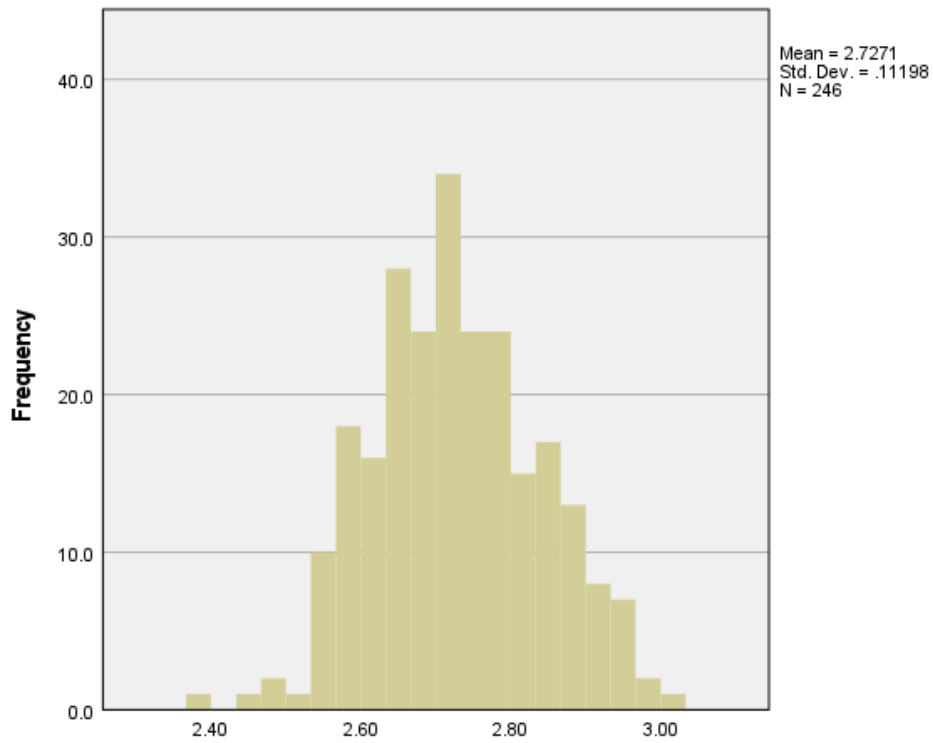


MRI_YP_D1059 Cortical thickness of the right rostral middle frontal gyrus : David

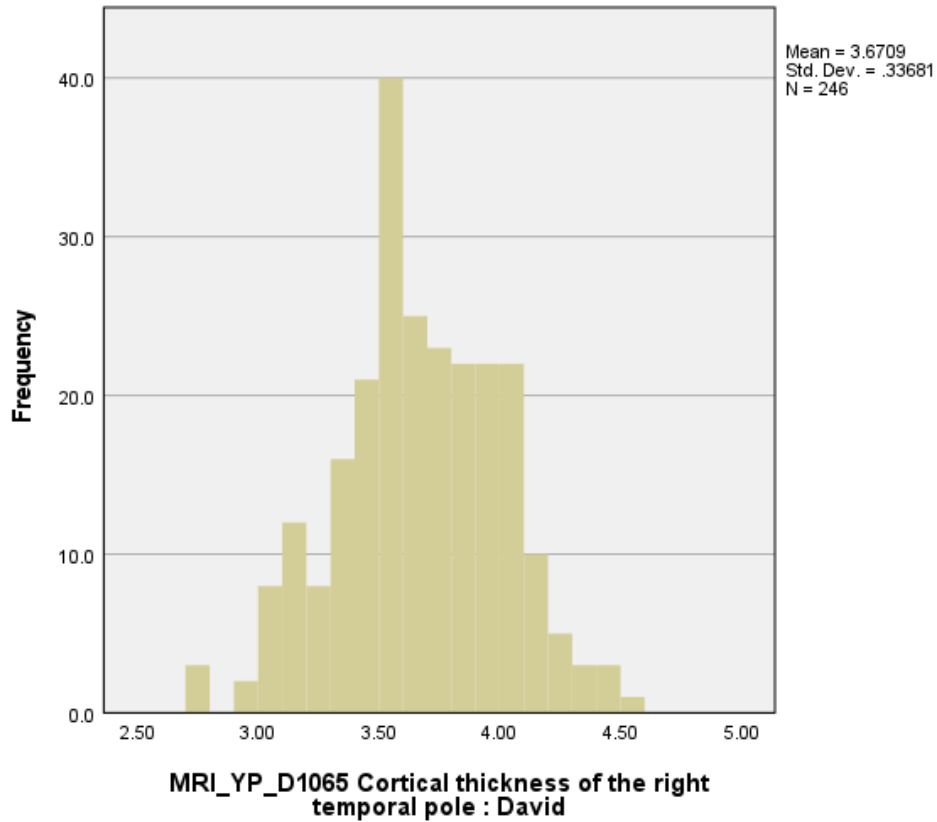
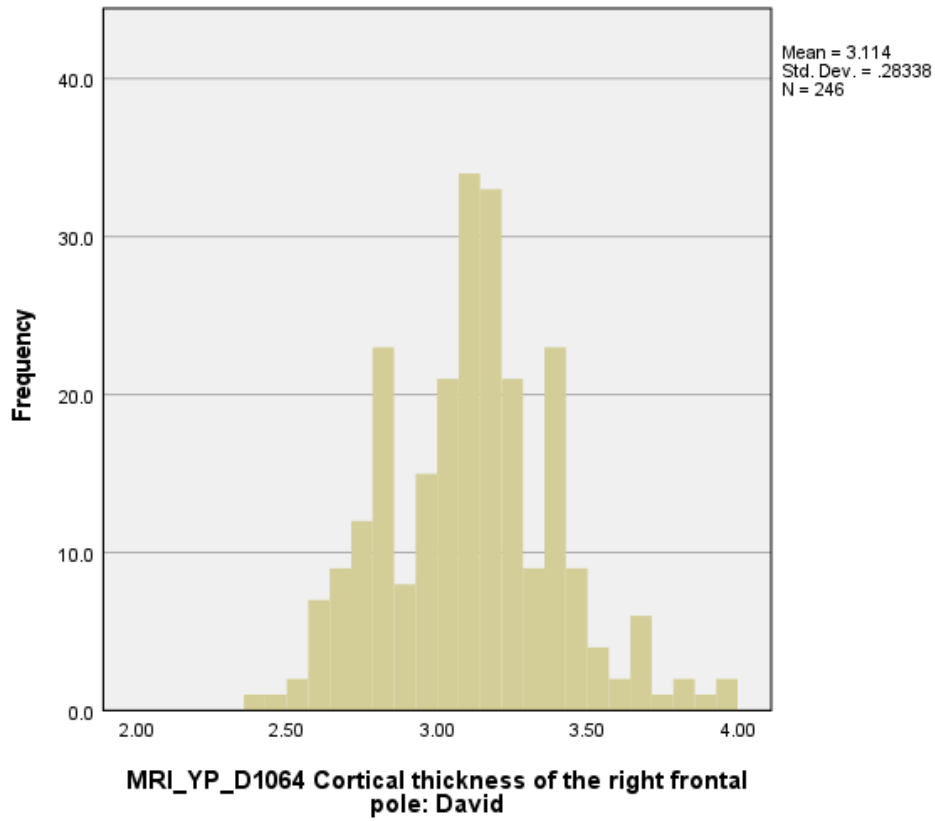


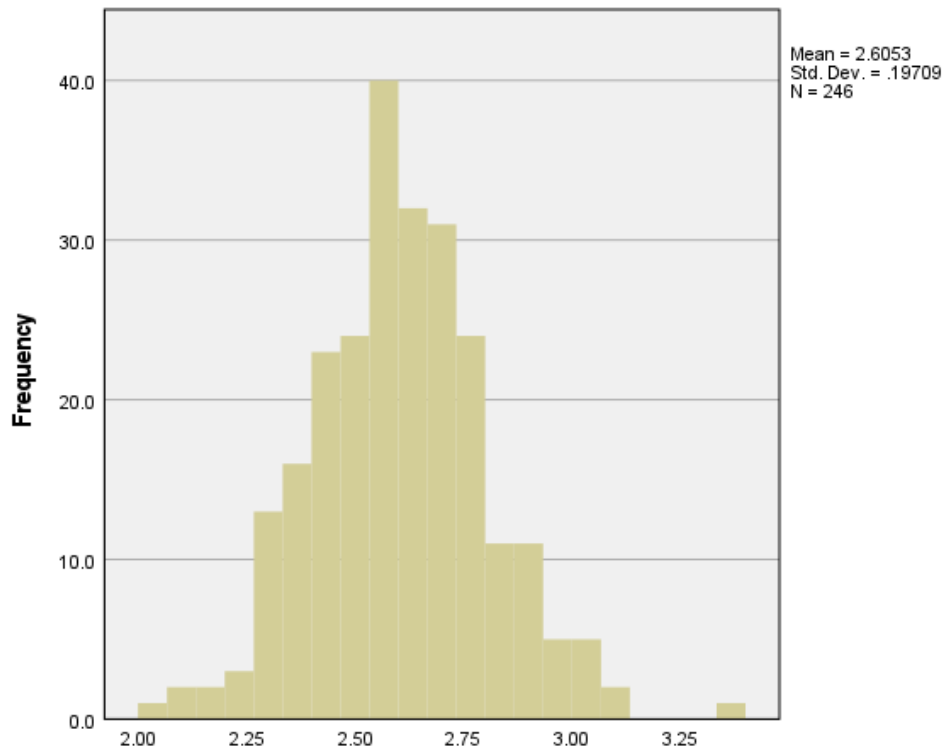


MRI_YP_D1062 Cortical thickness of the right superior temporal gyrus : David

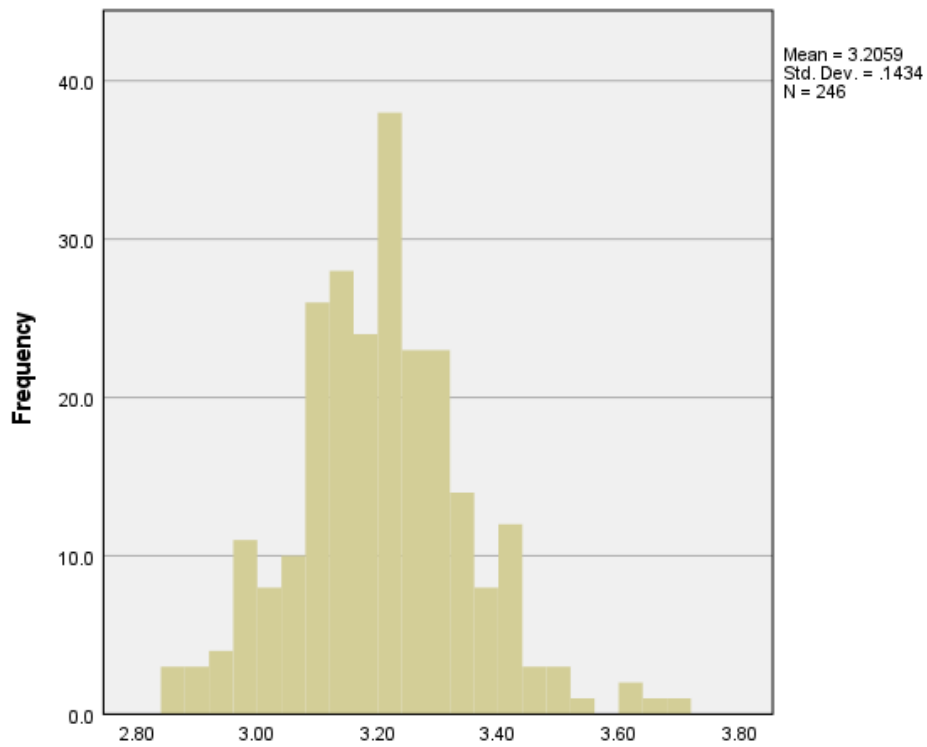


MRI_YP_D1063 Cortical thickness of the right supramarginal gyrus : David

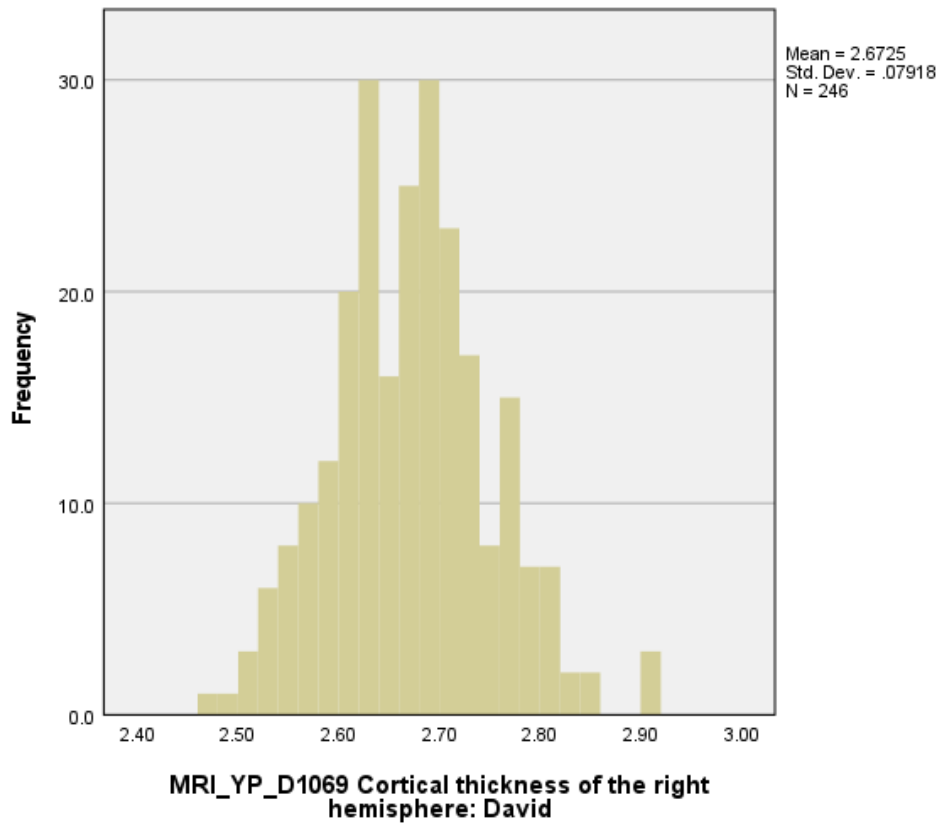
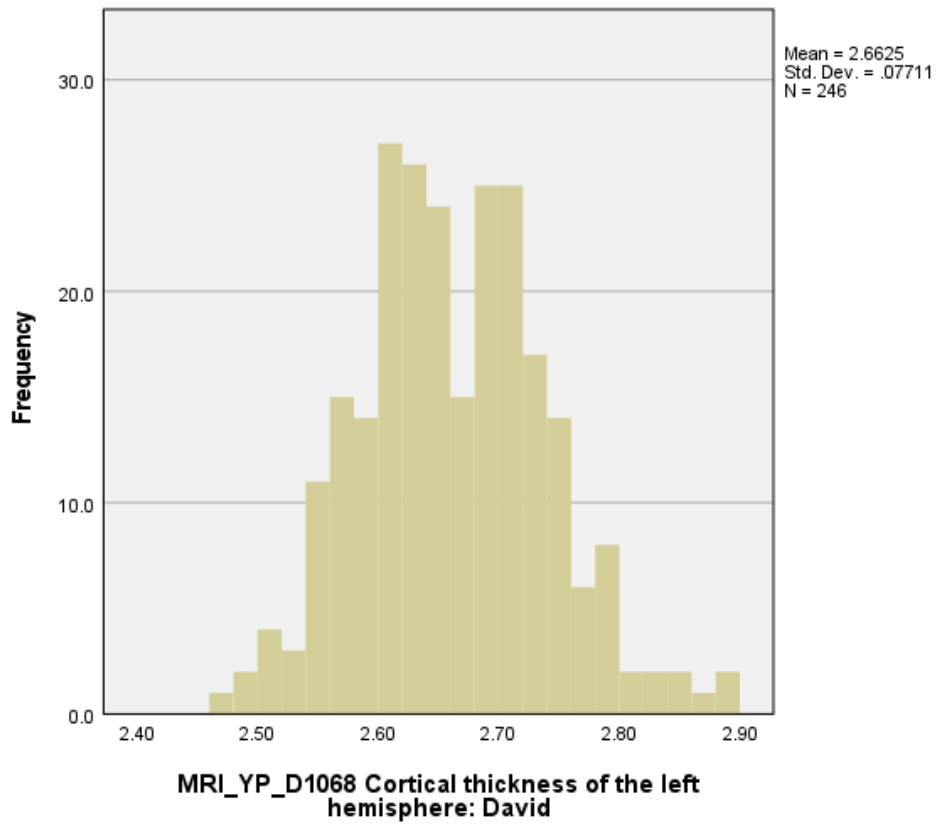


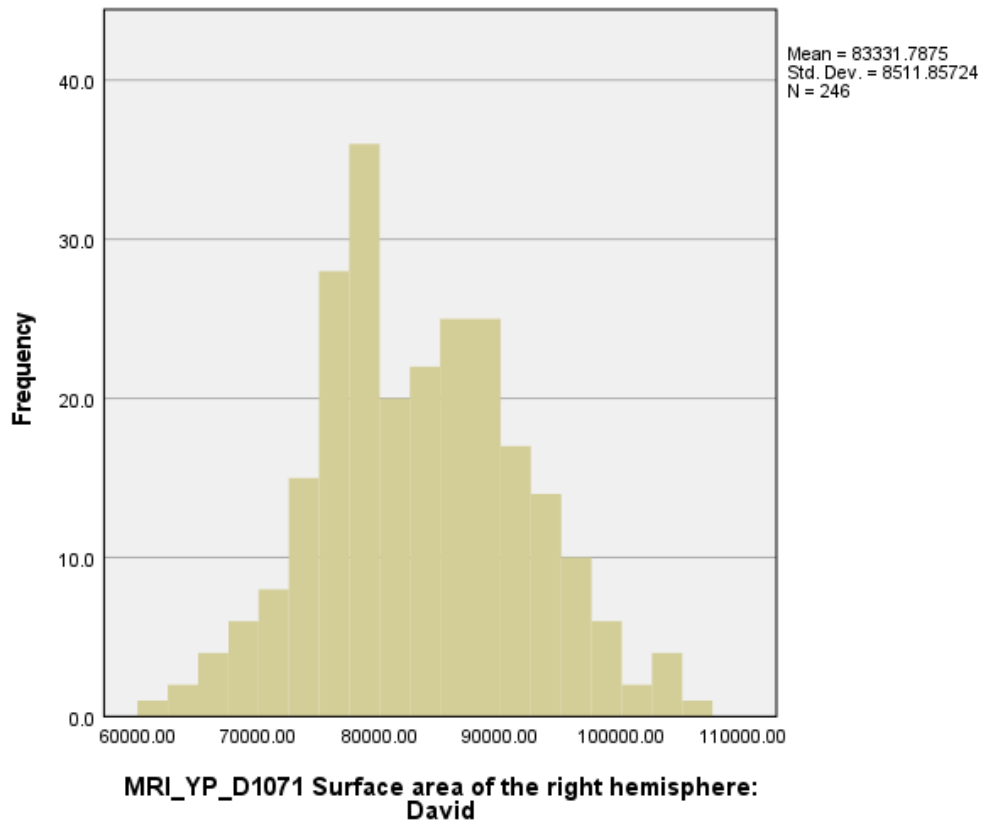
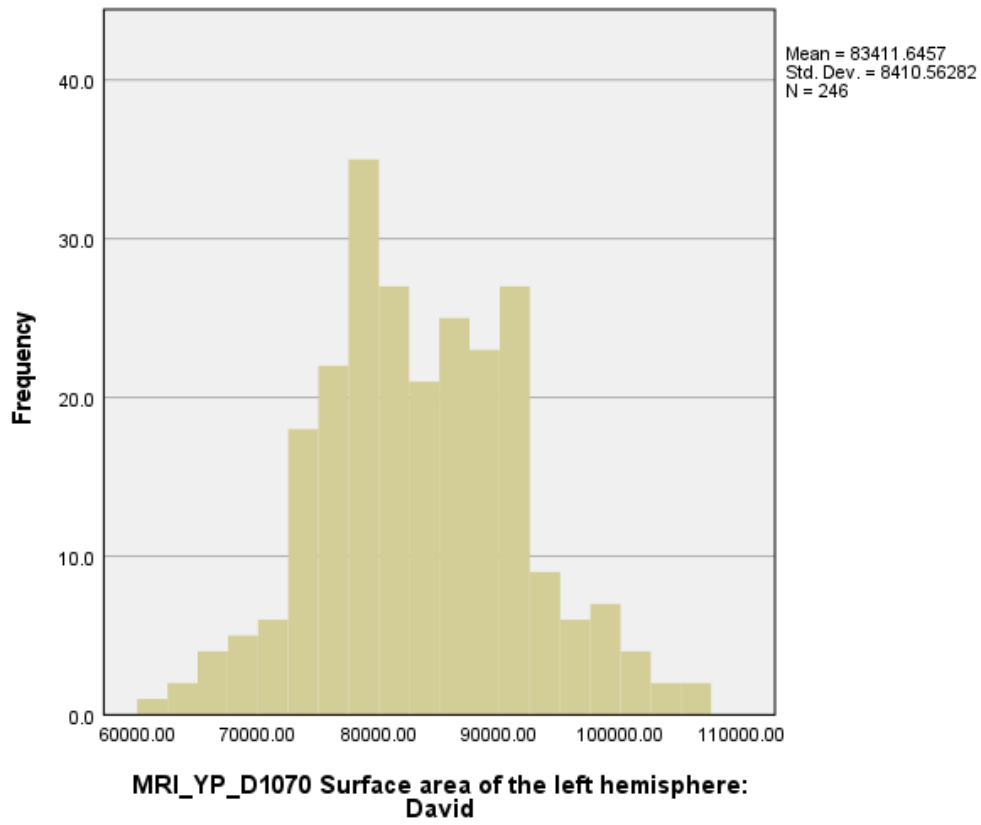


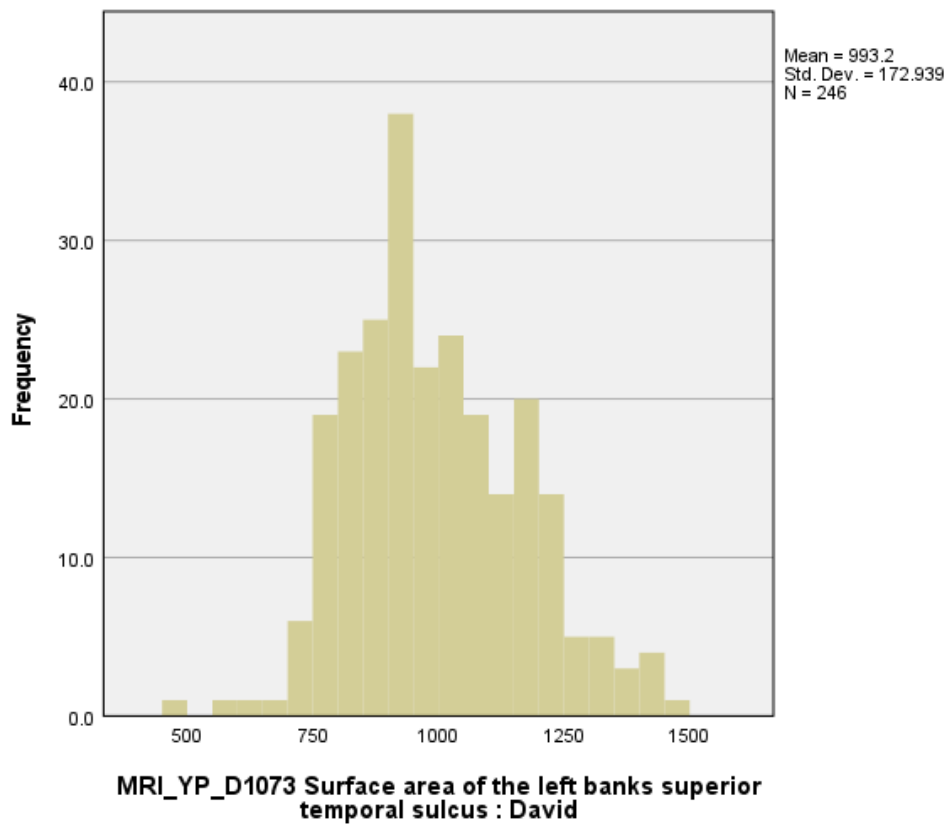
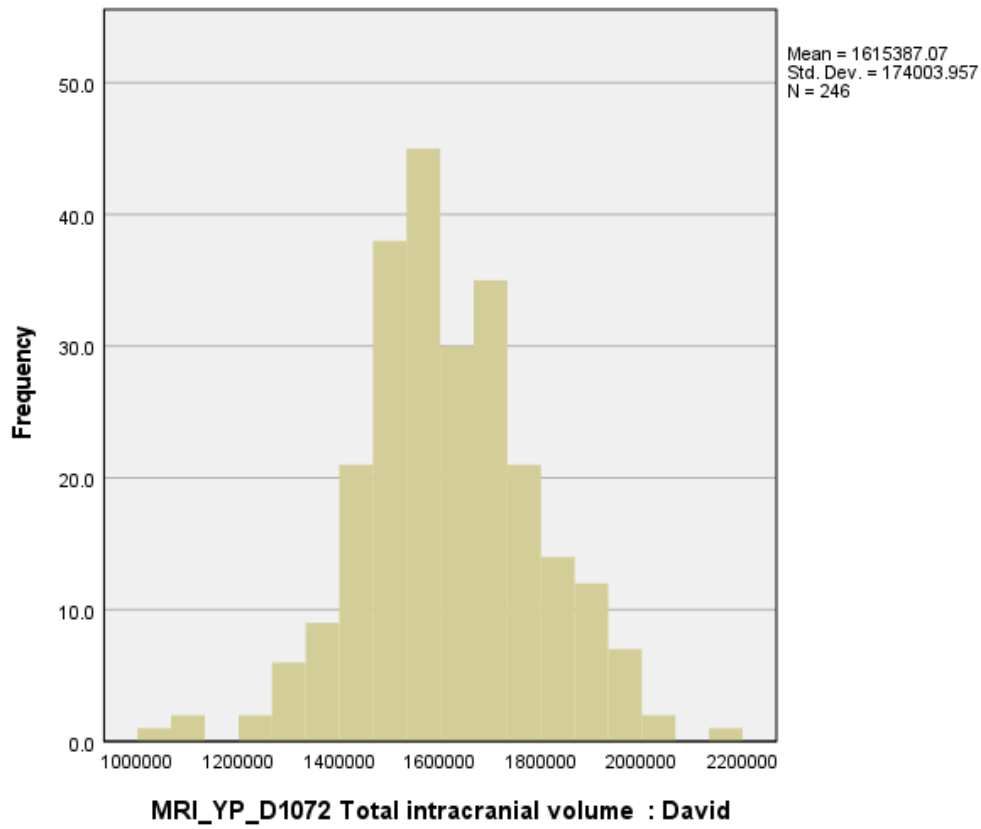
MRI_YP_D1066 Cortical thickness of the right transverse temporal cortex : David

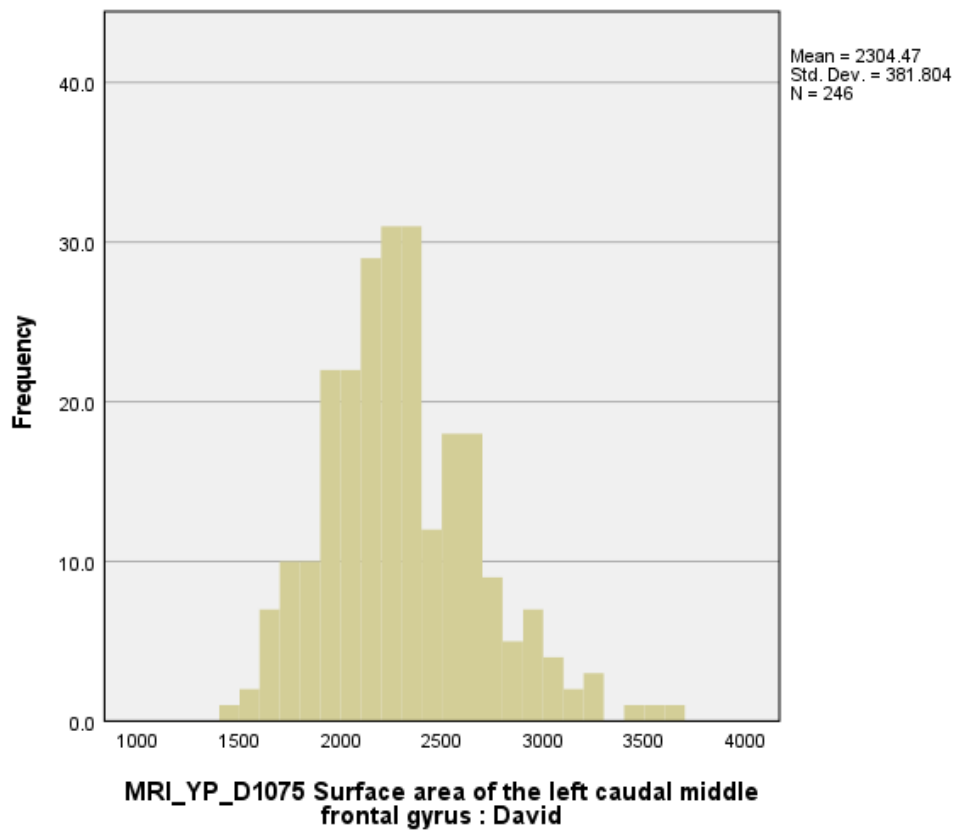
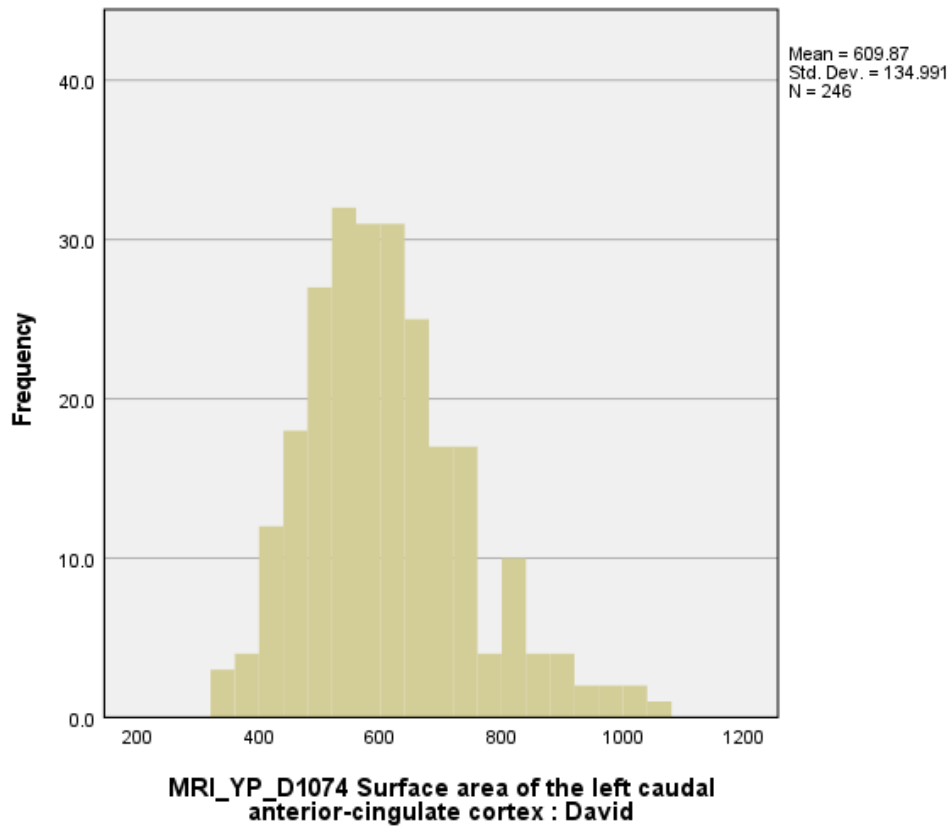


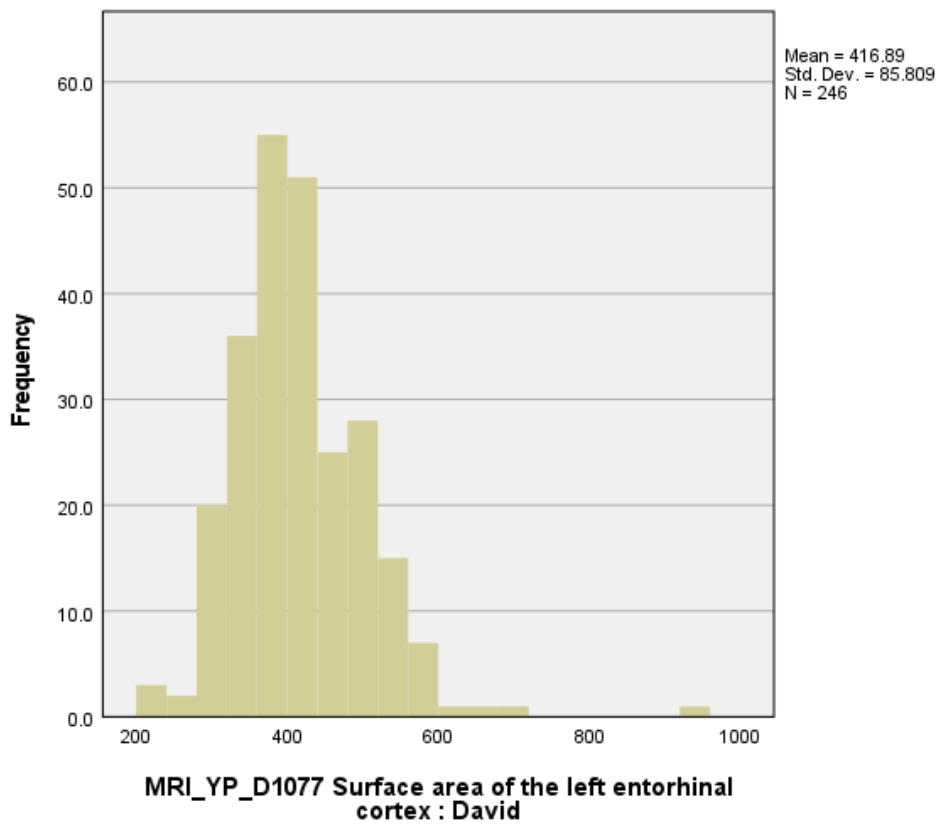
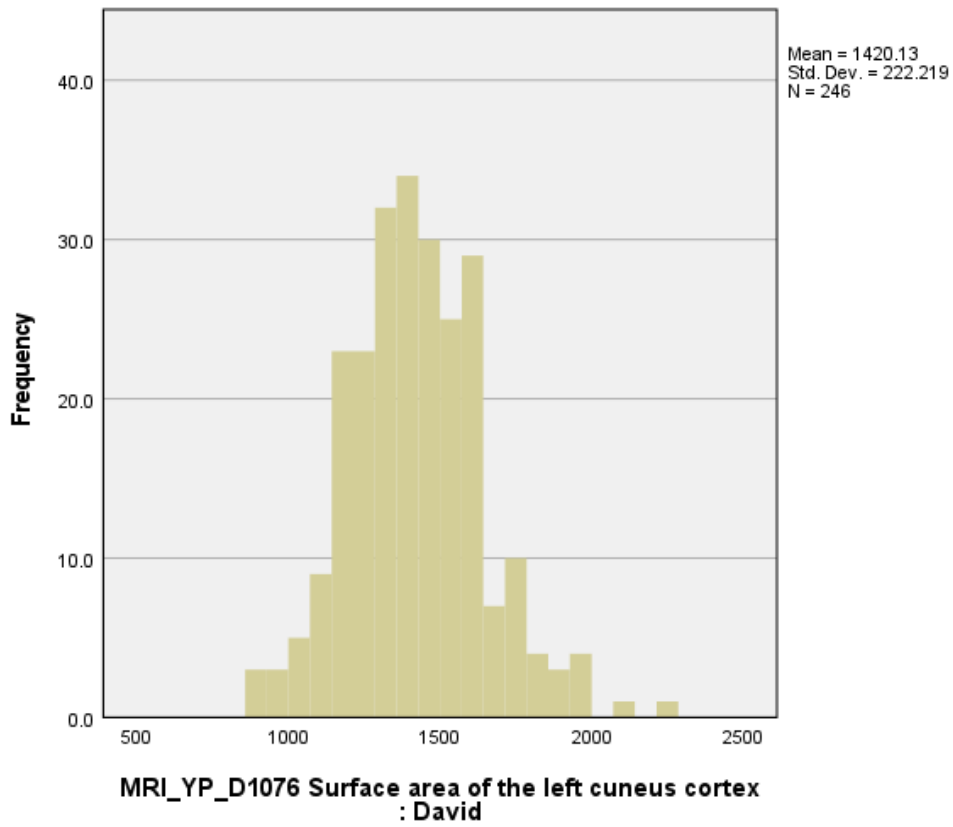
MRI_YP_D1067 Cortical thickness of the right insular cortex: David

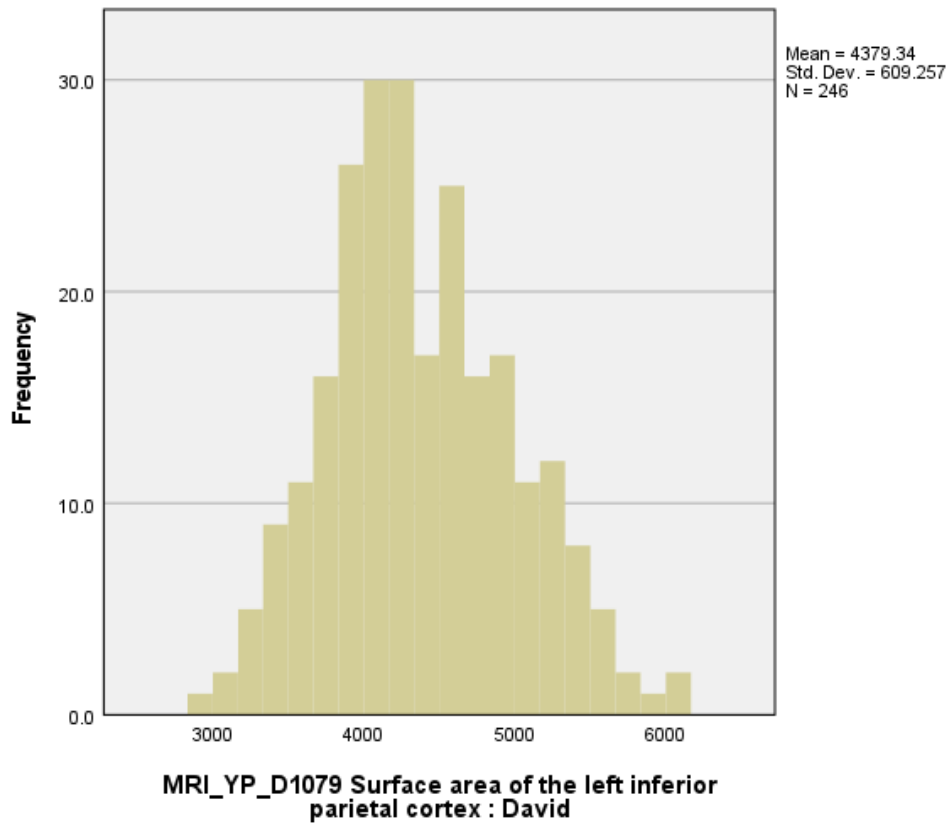
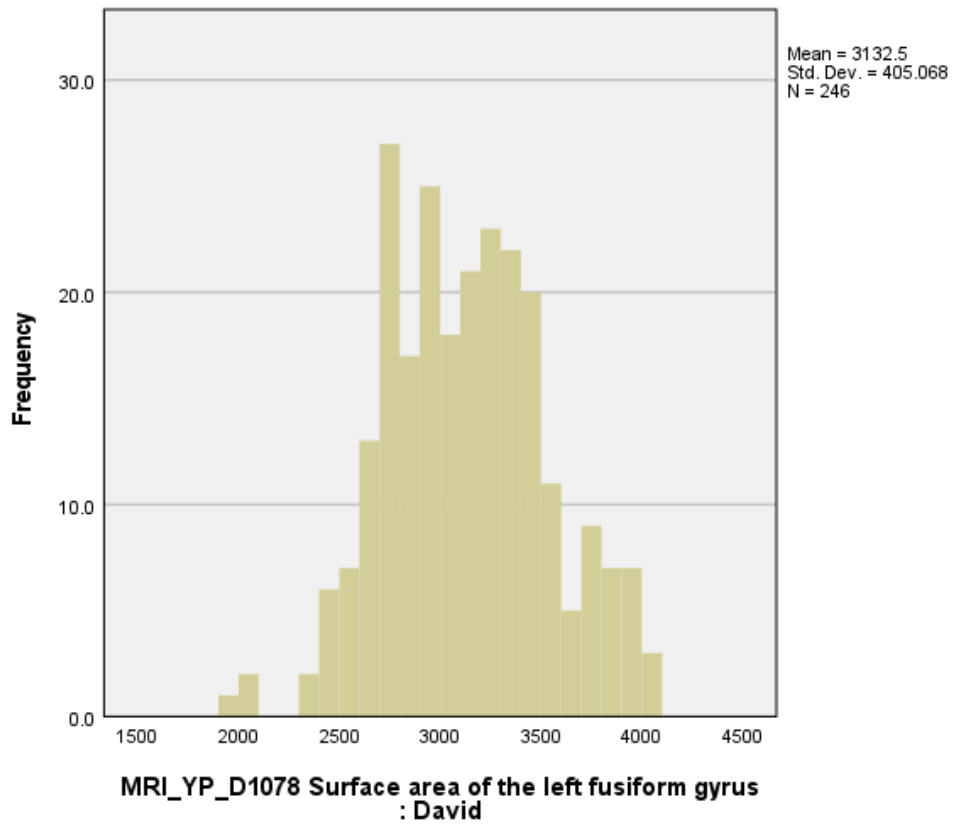


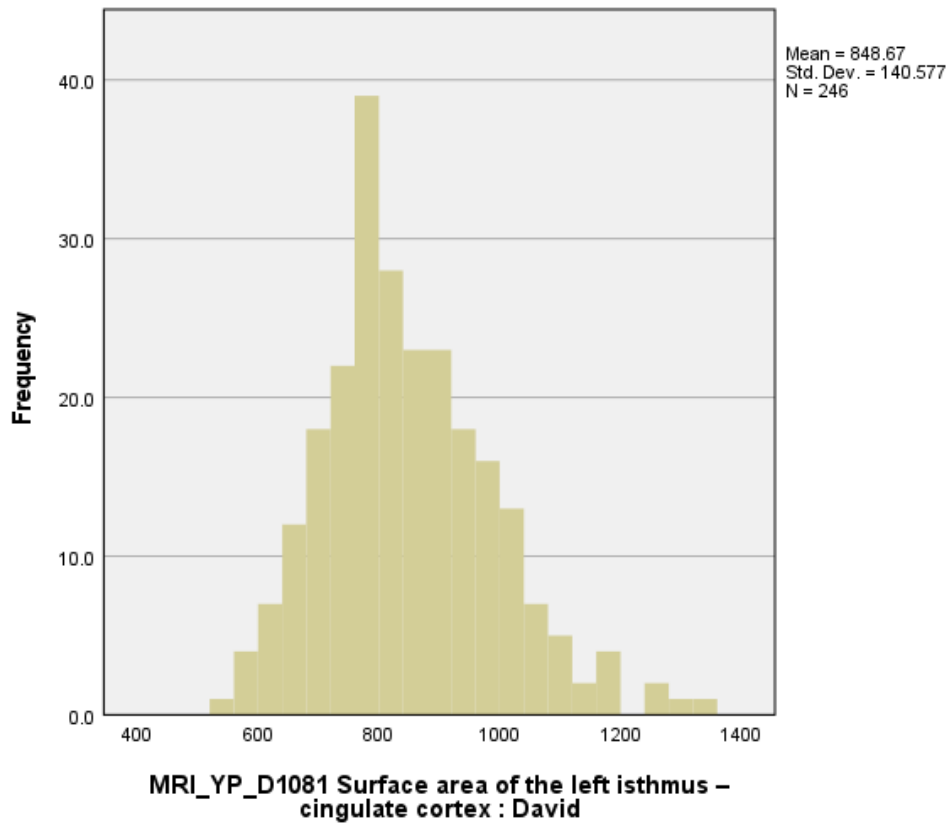
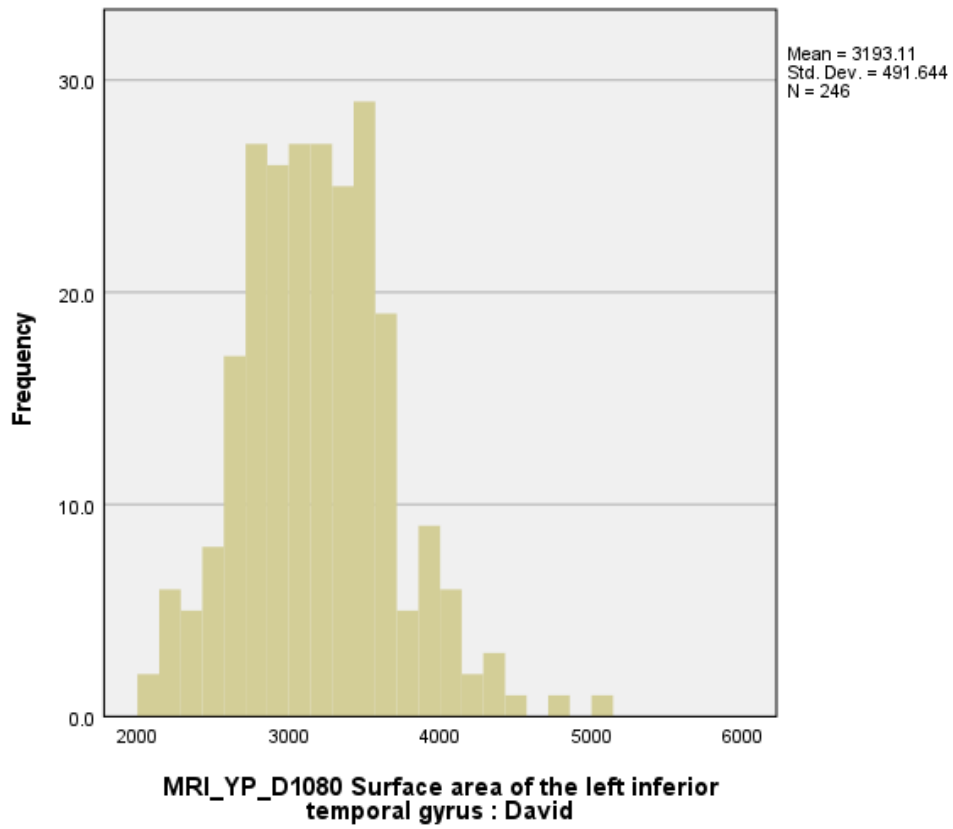


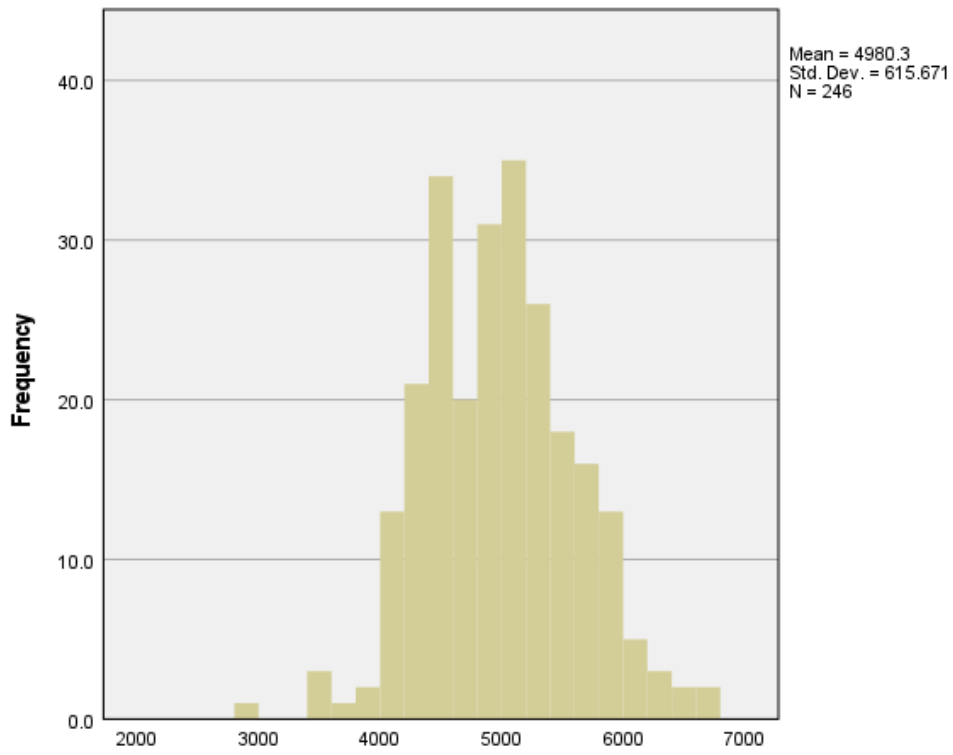




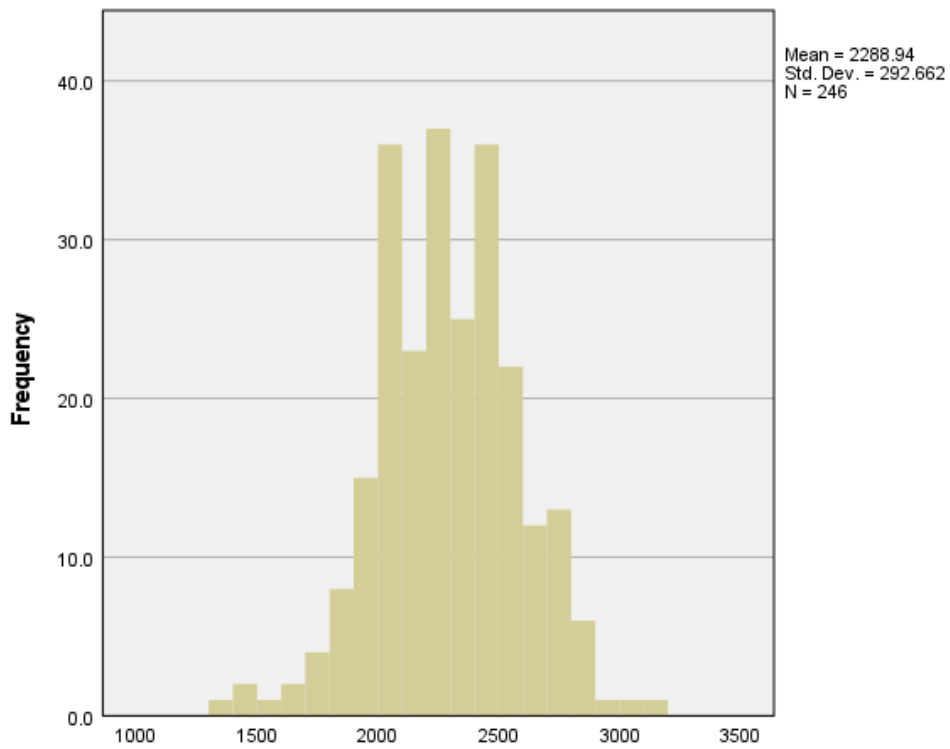




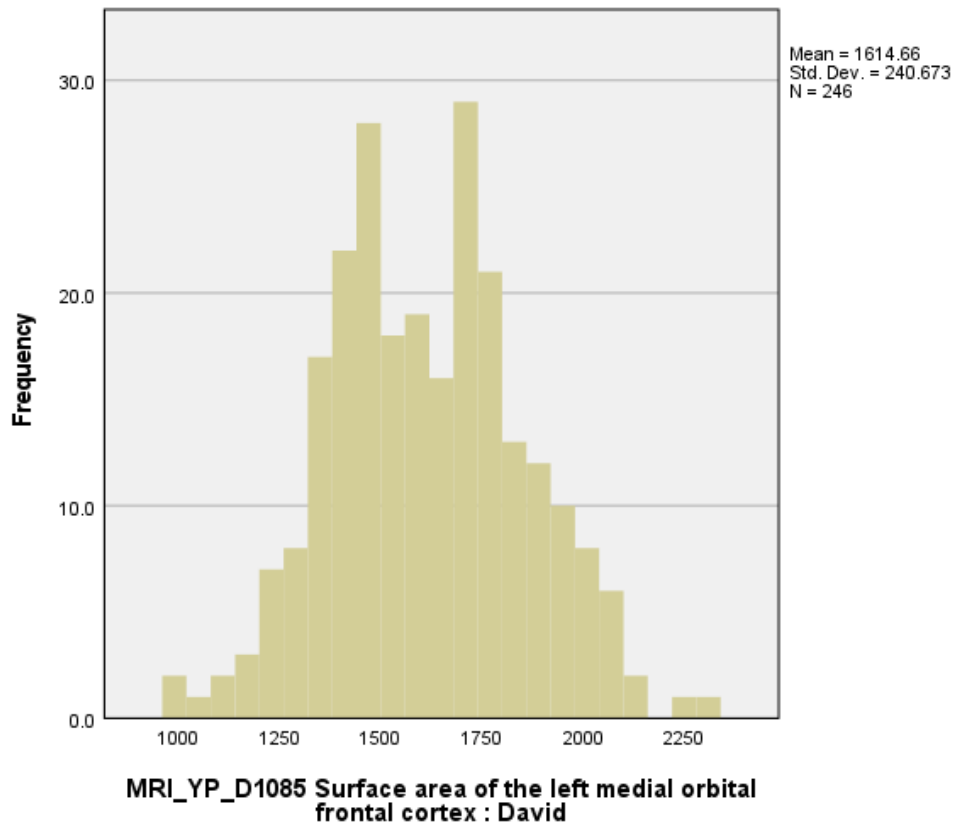
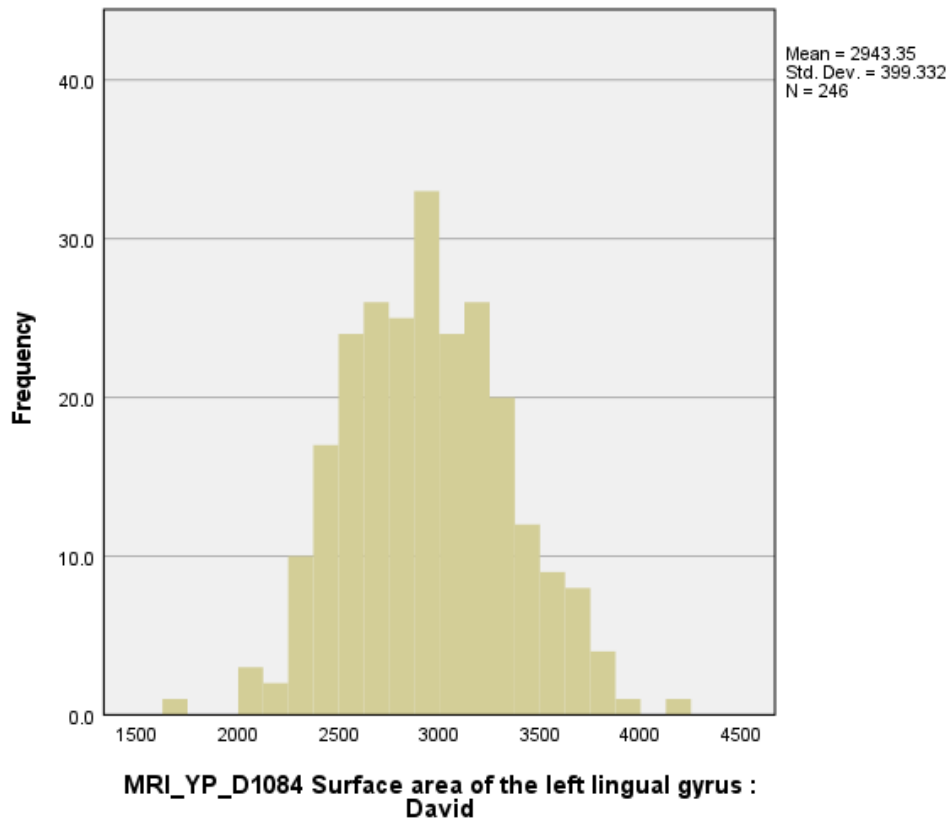


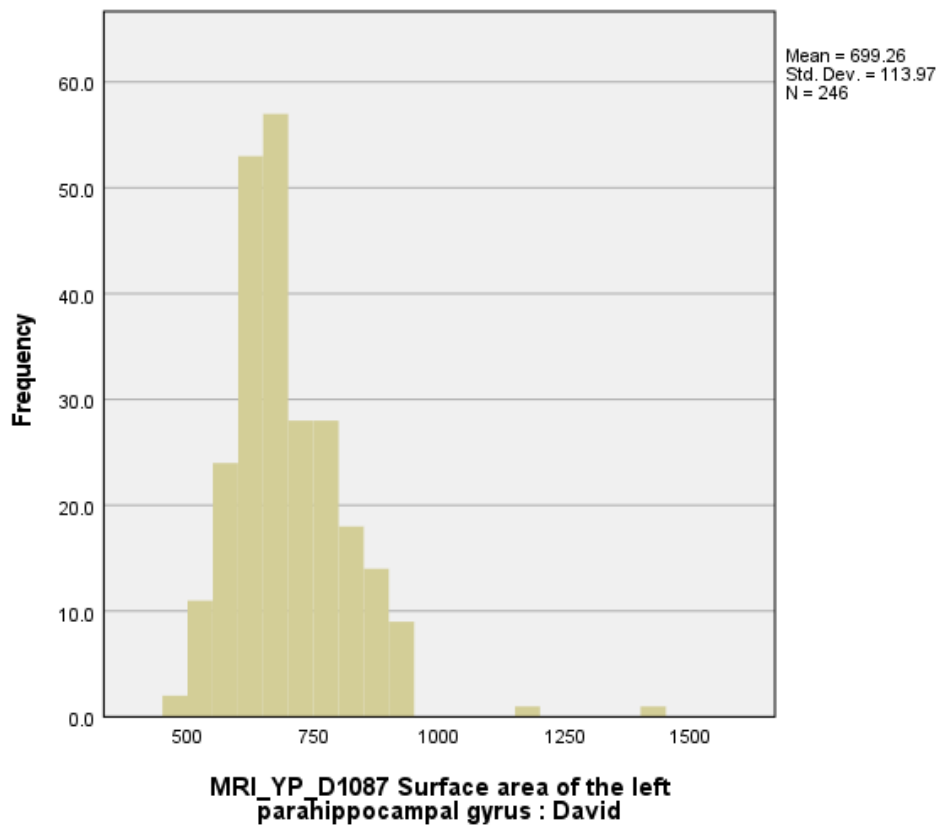
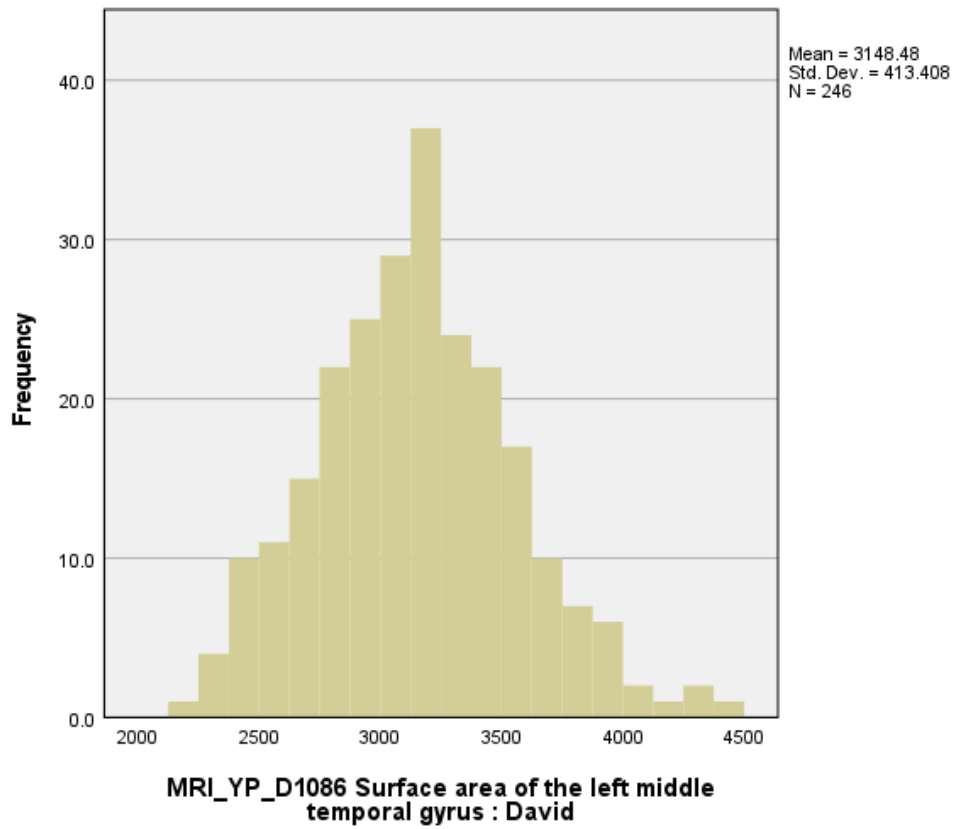


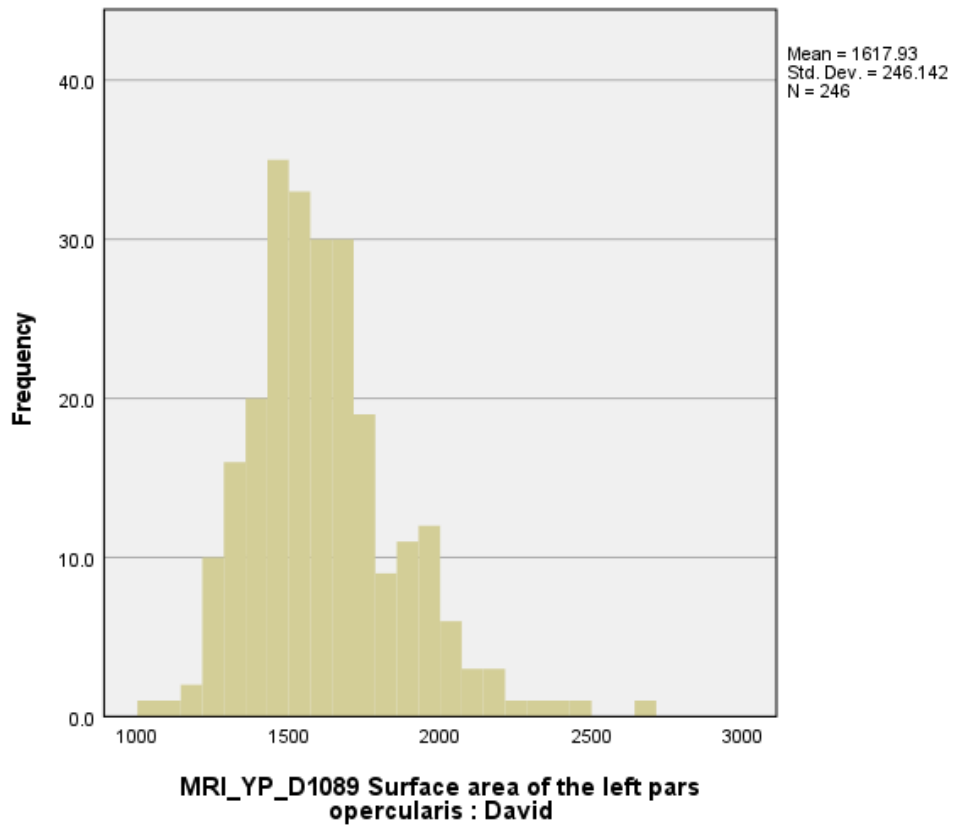
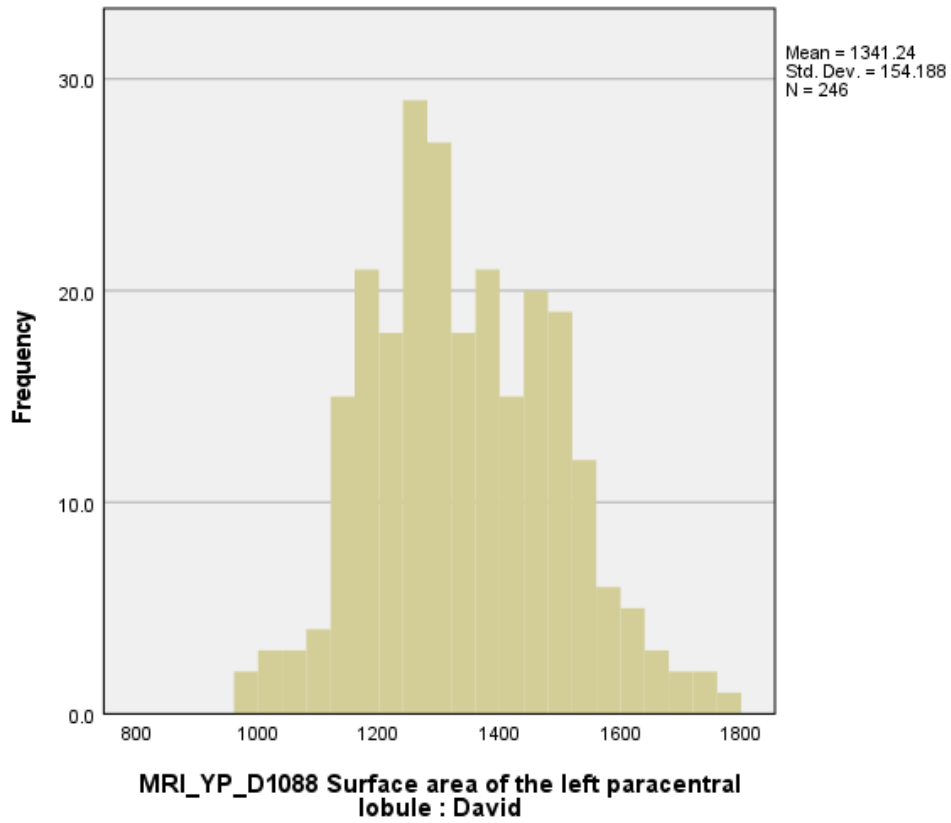
MRI_YP_D1082 Surface area of the left lateral occipital cortex : David

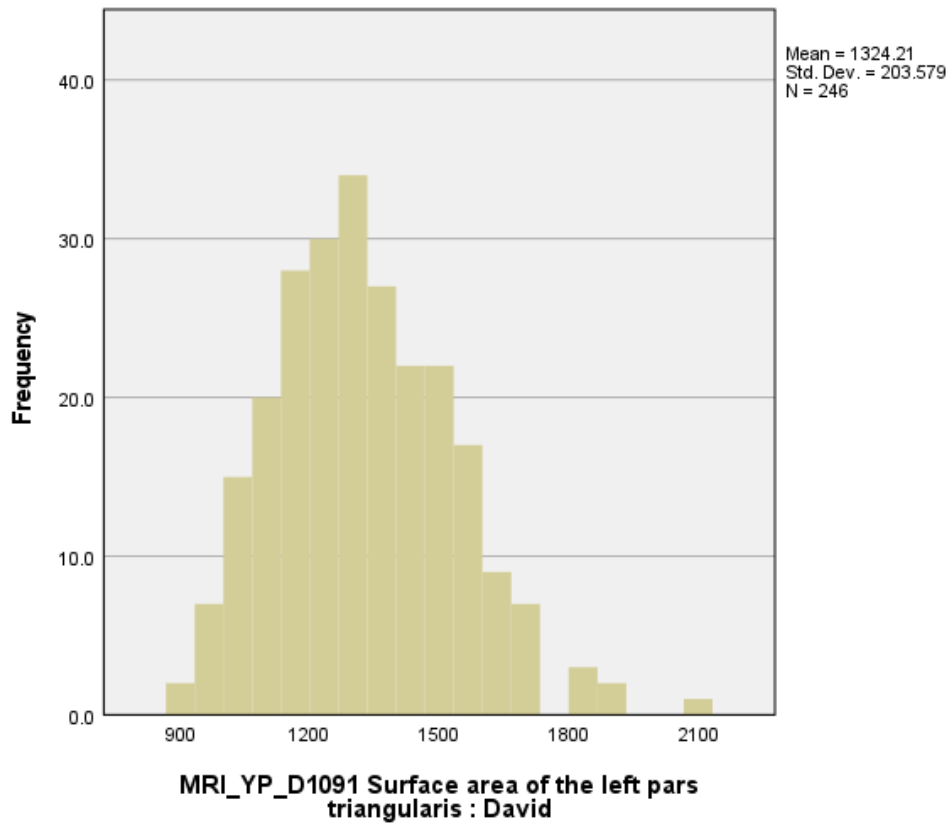
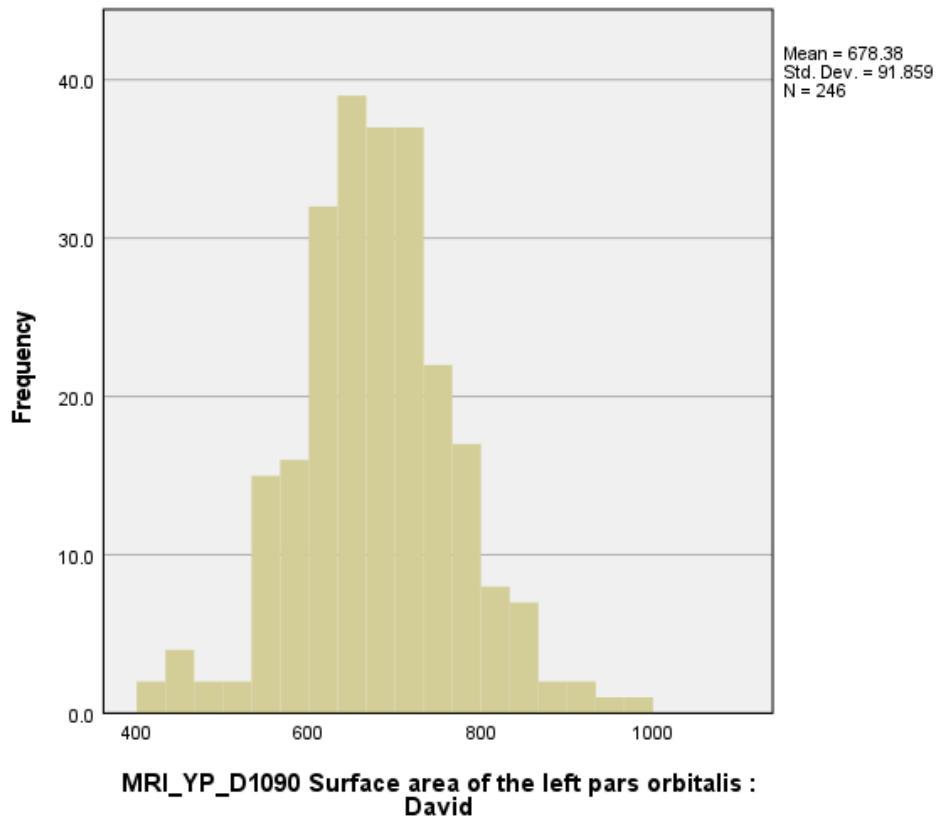


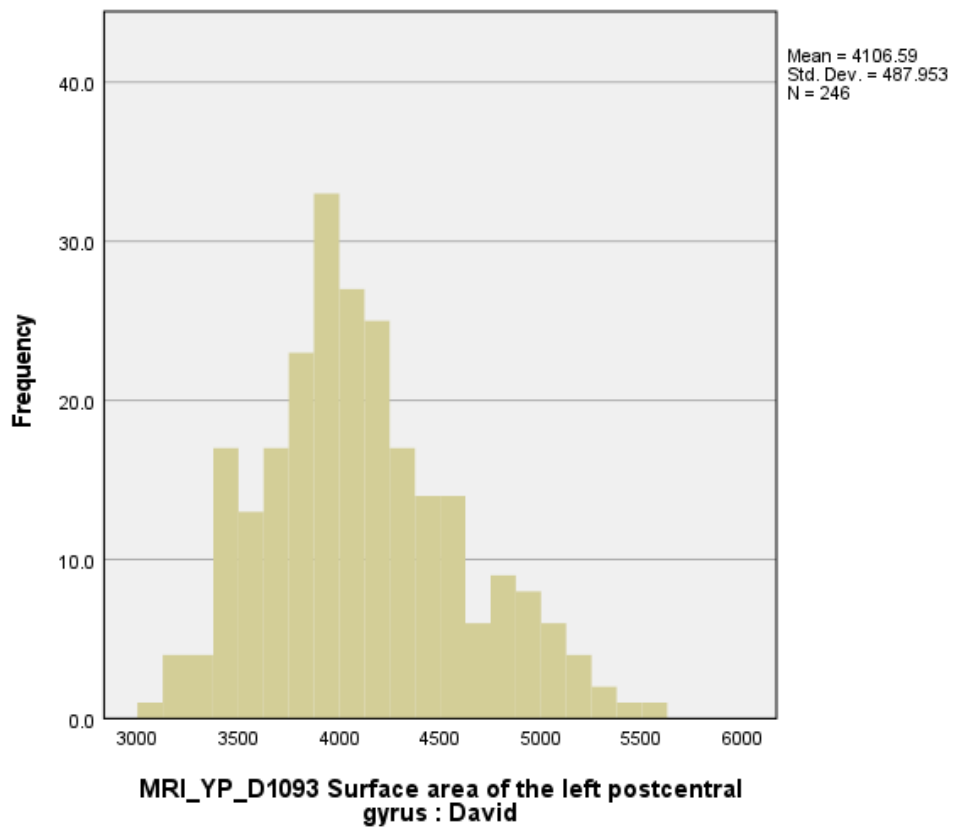
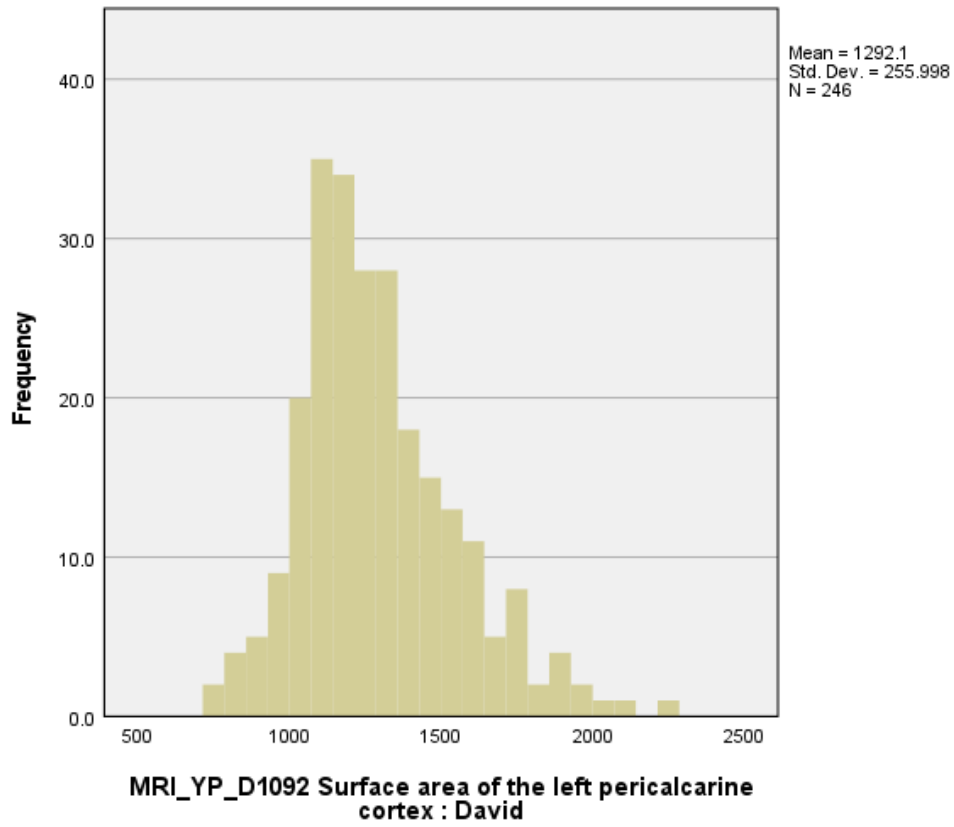
MRI_YP_D1083 Surface area of the left lateral orbital frontal cortex : David

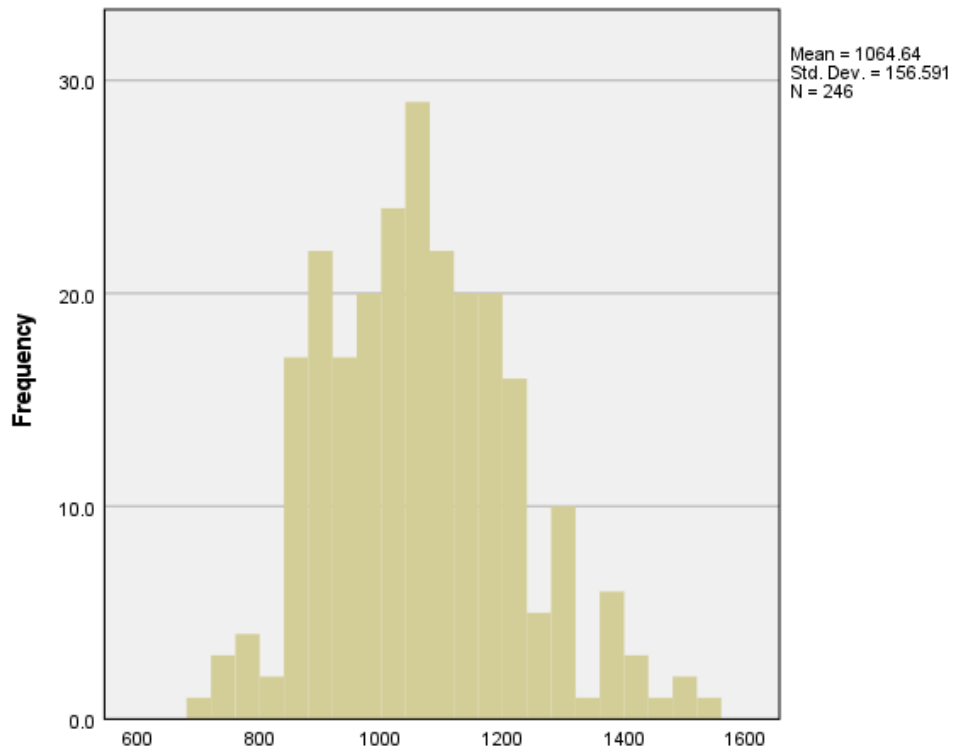




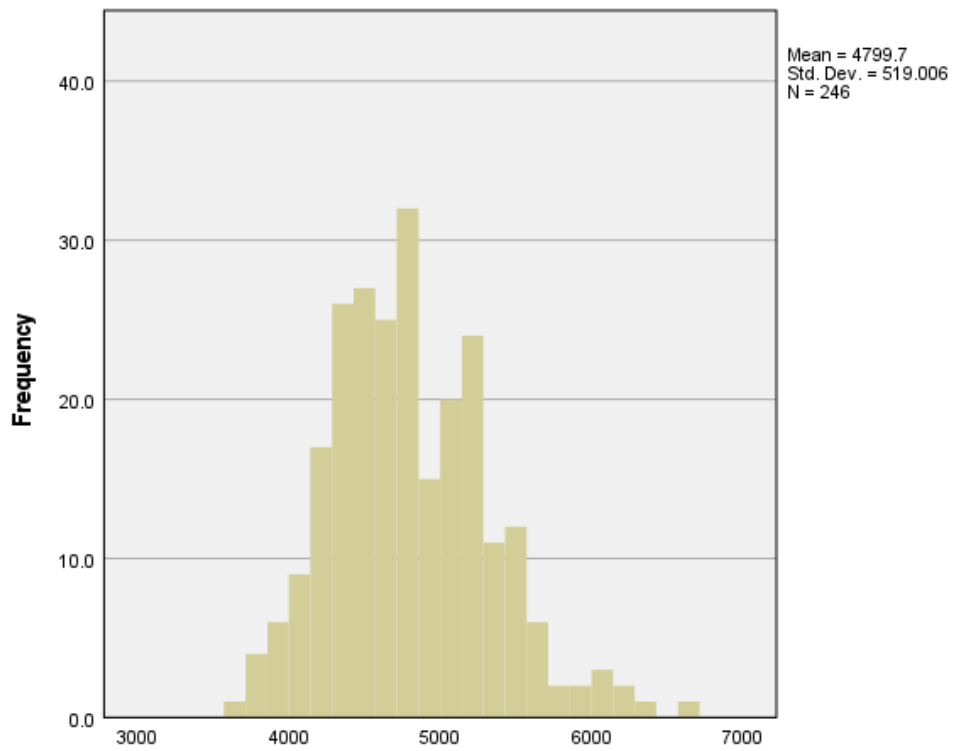




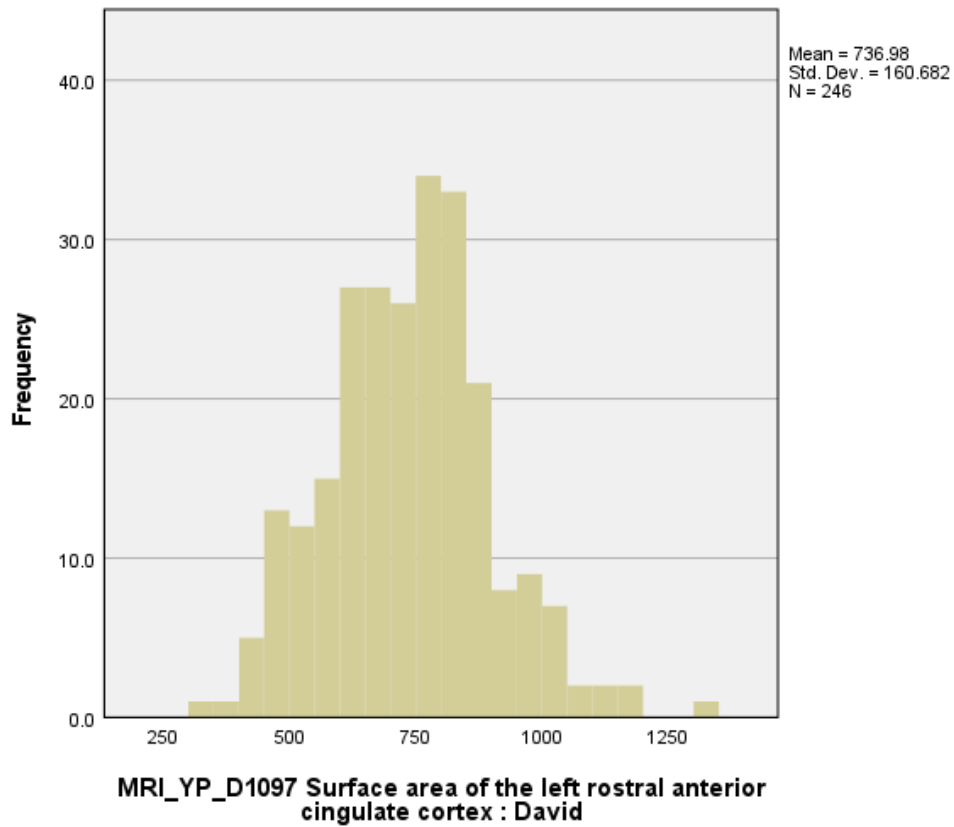
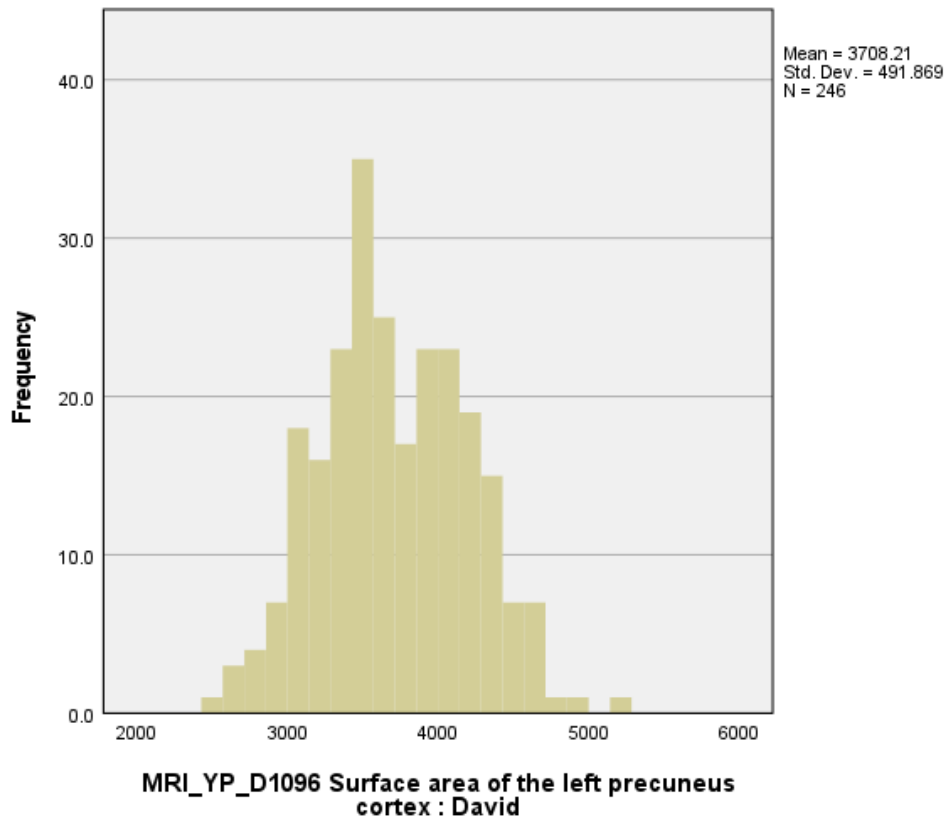


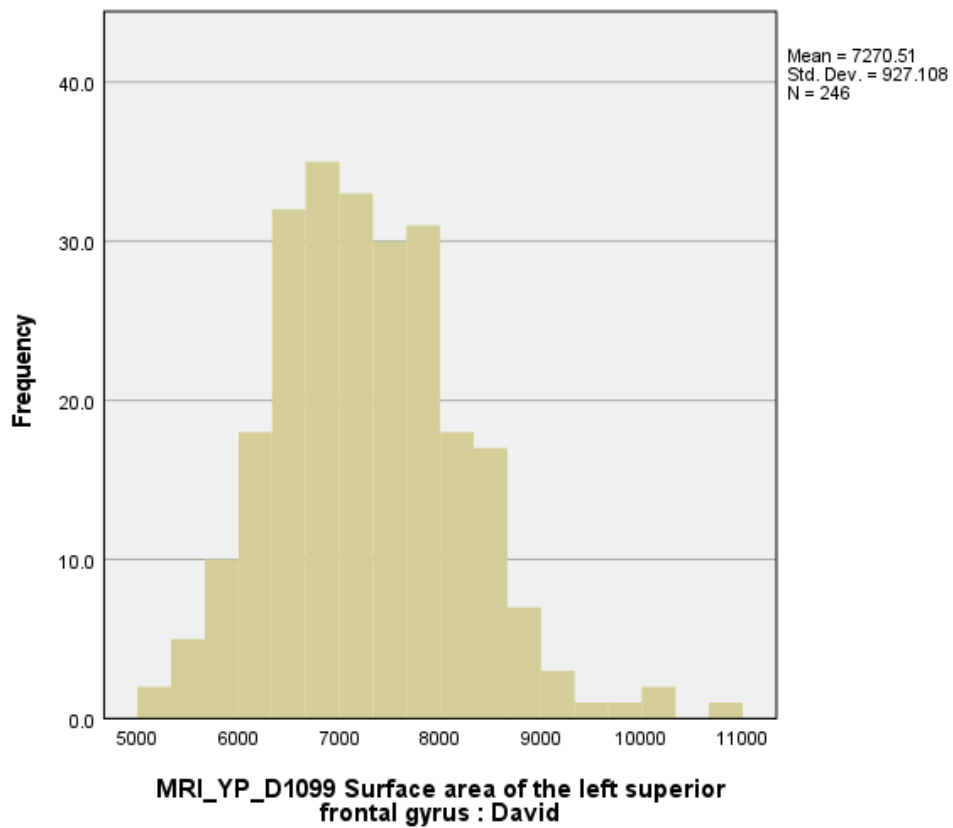
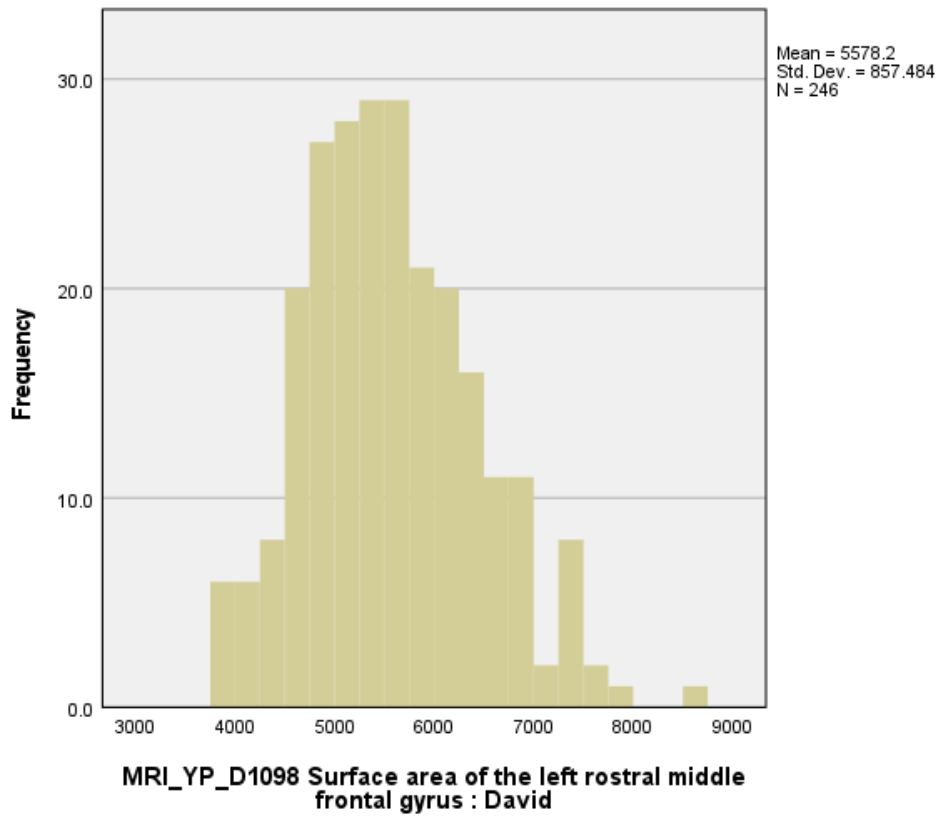


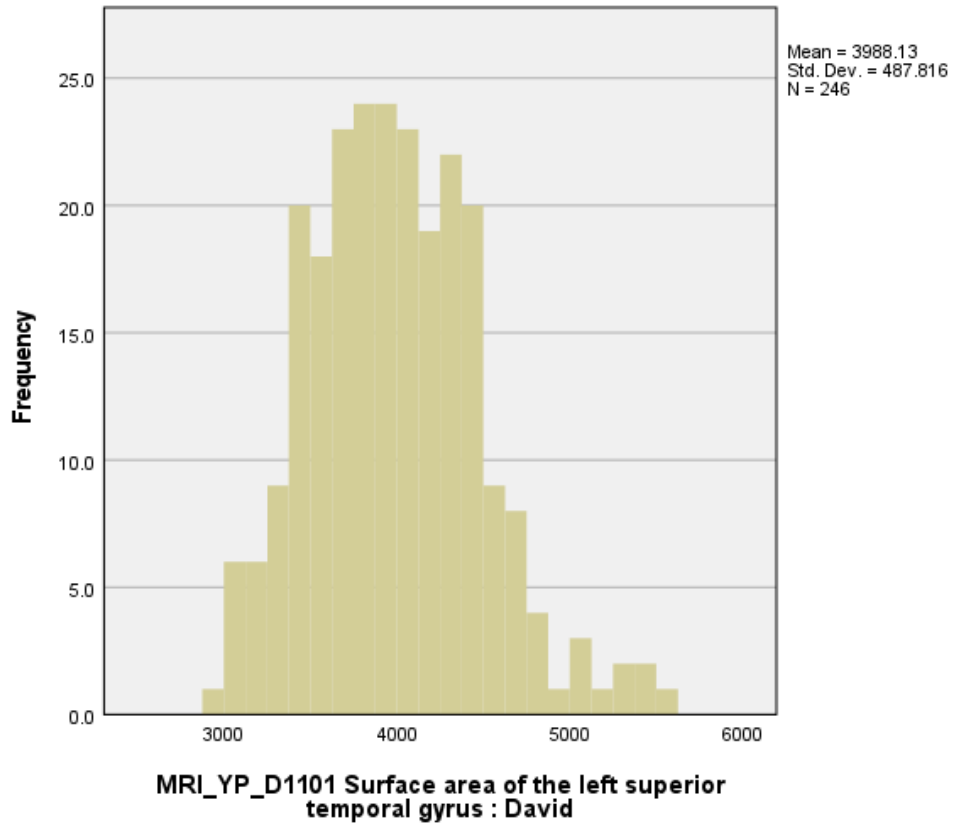
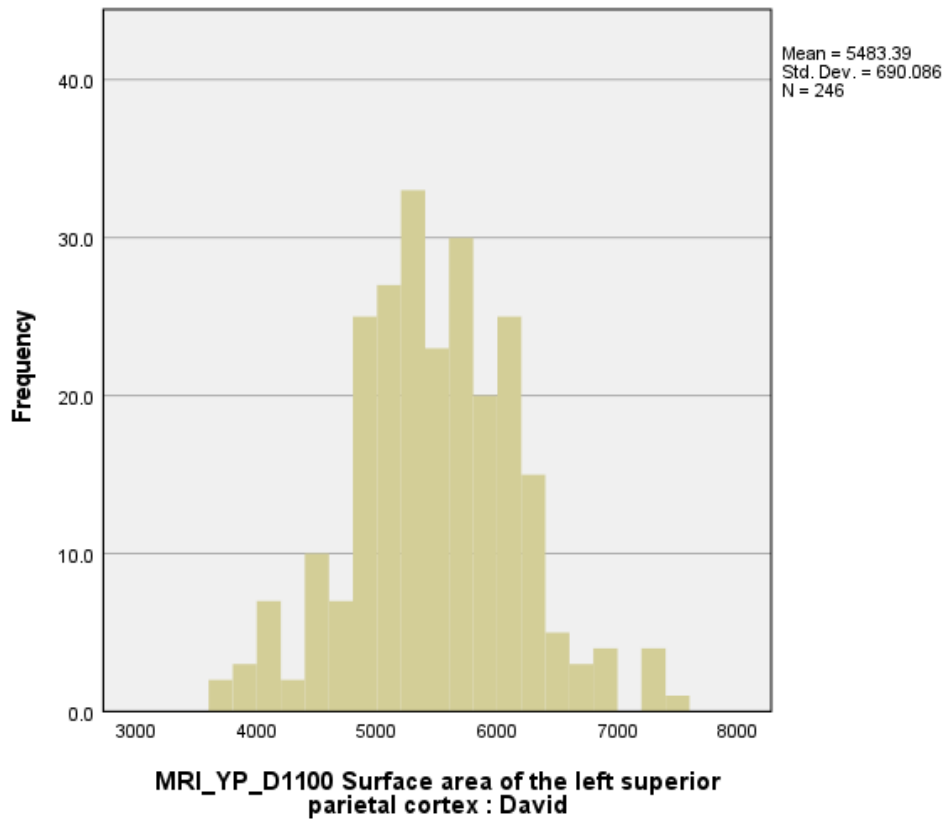
MRI_YP_D1094 Surface area of the left posterior-cingulate cortex : David

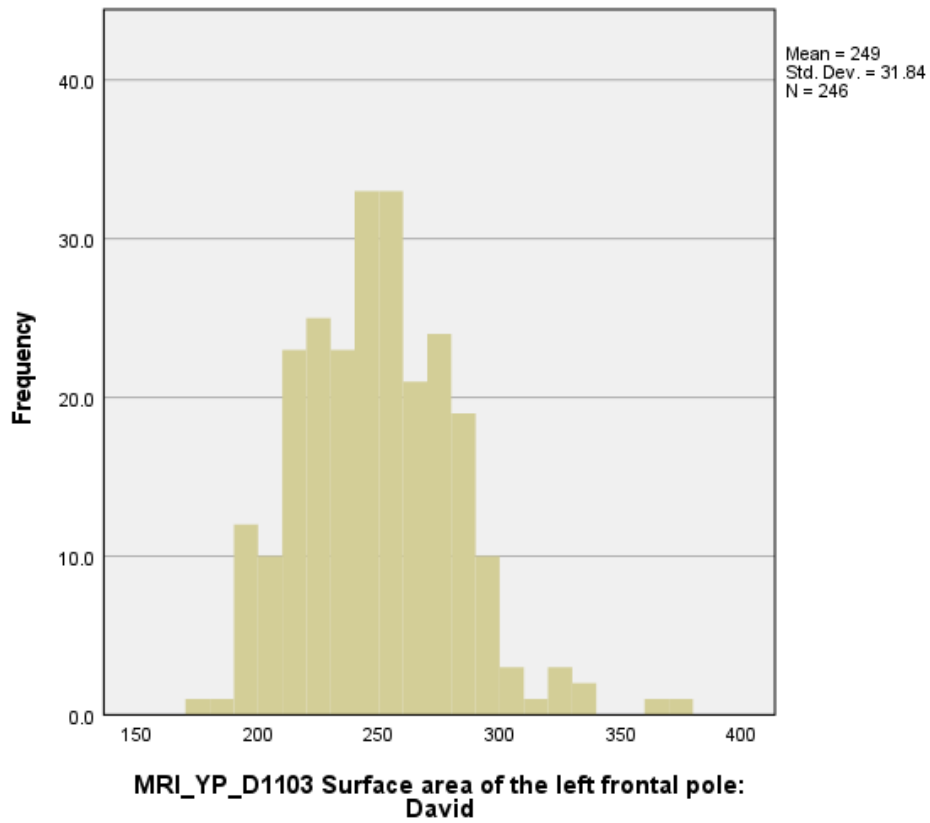
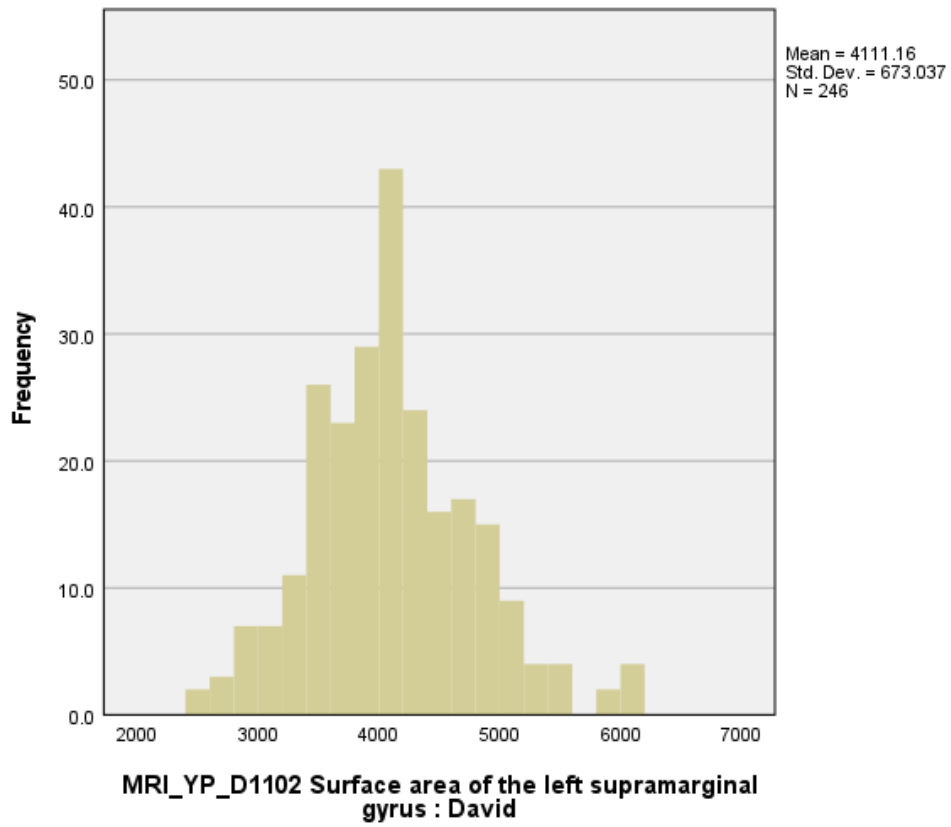


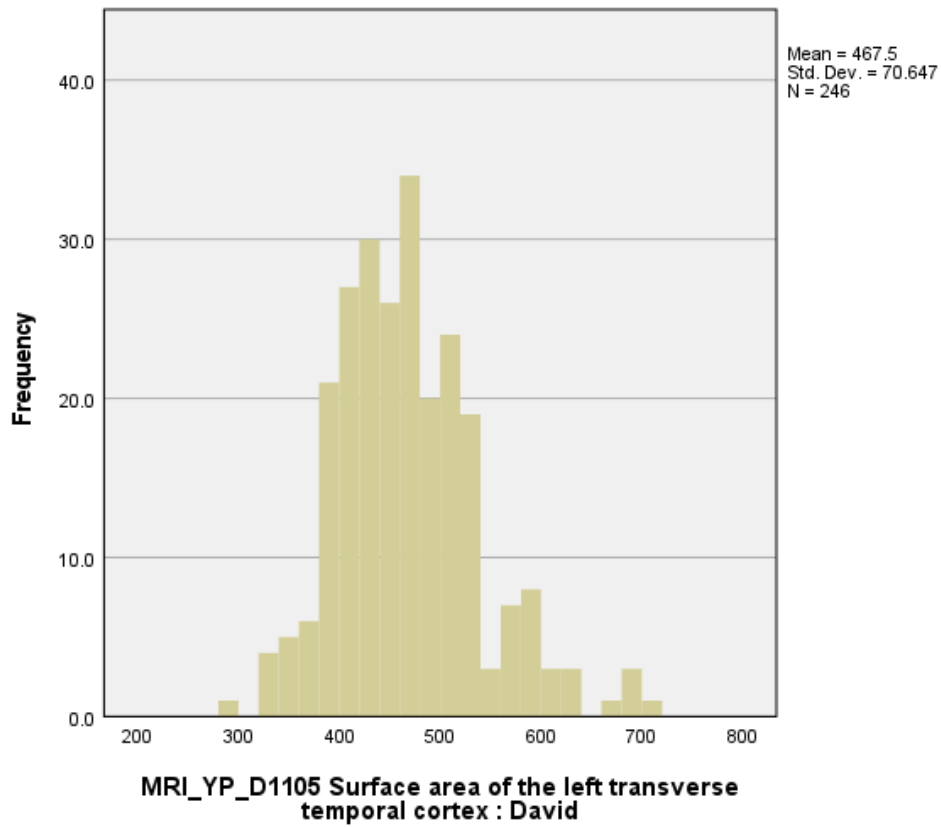
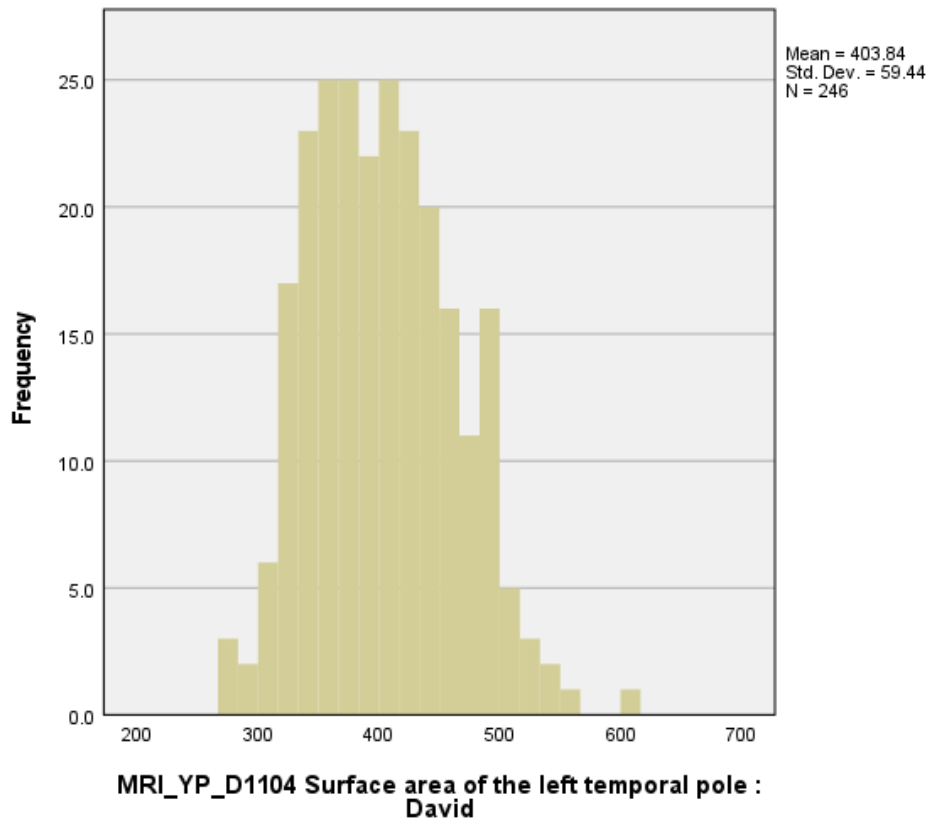
MRI_YP_D1095 Surface area of the left precentral gyrus : David

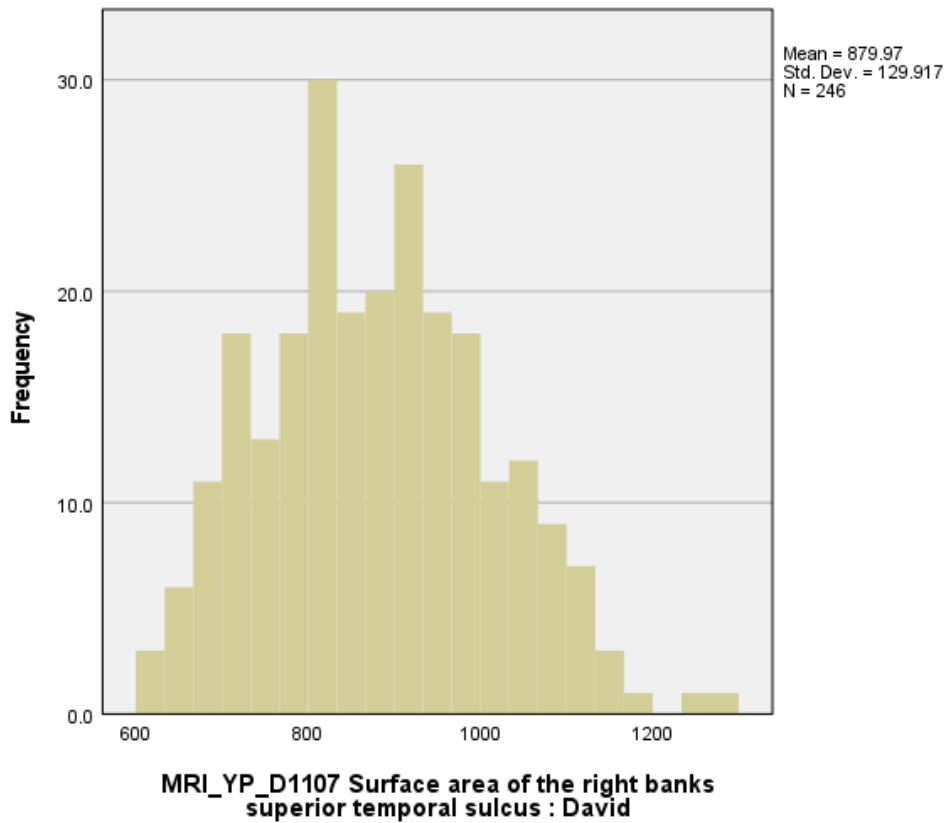
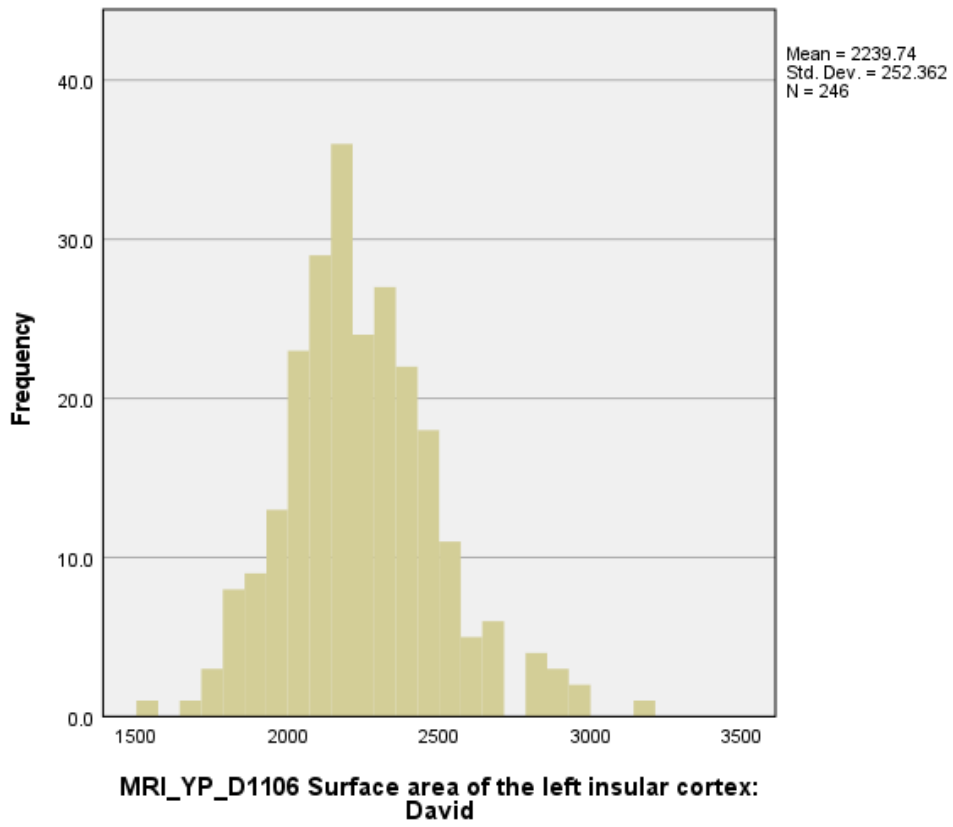


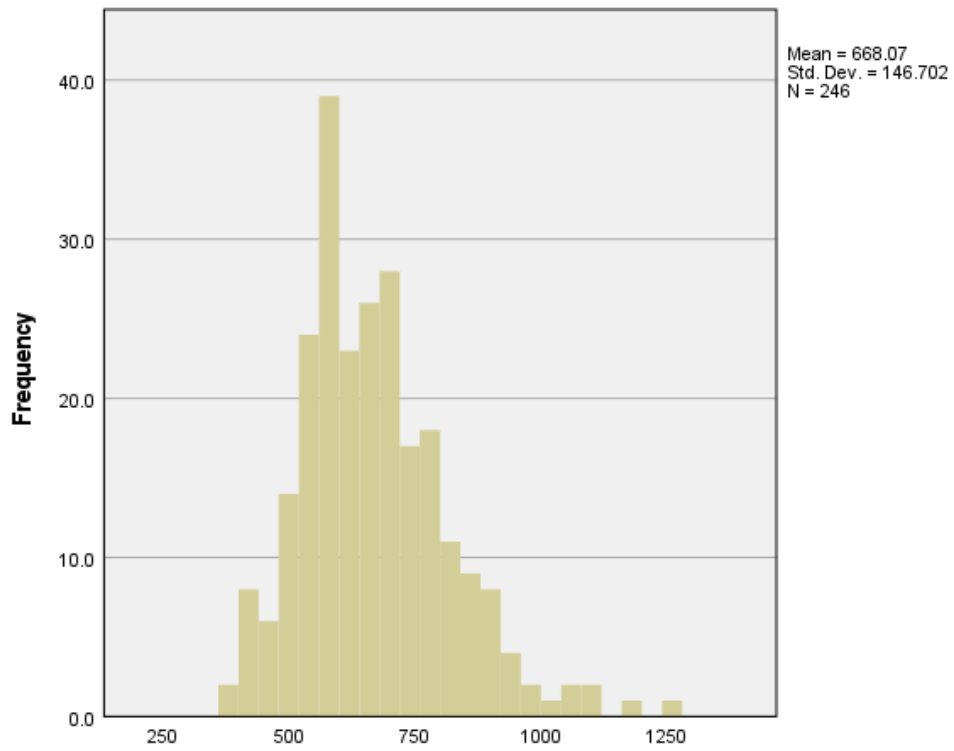




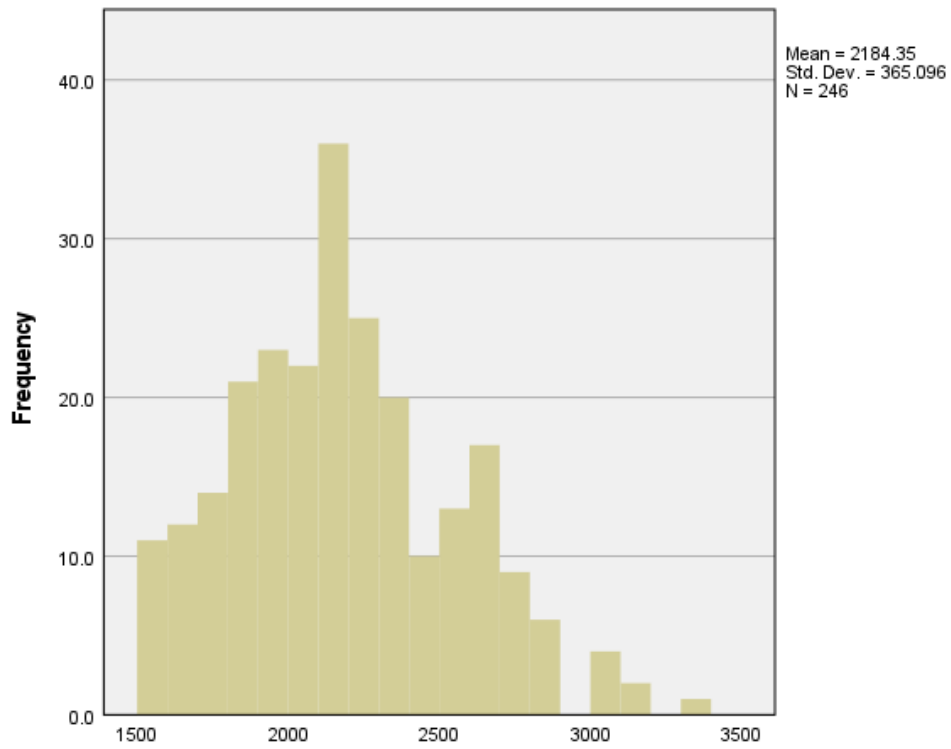




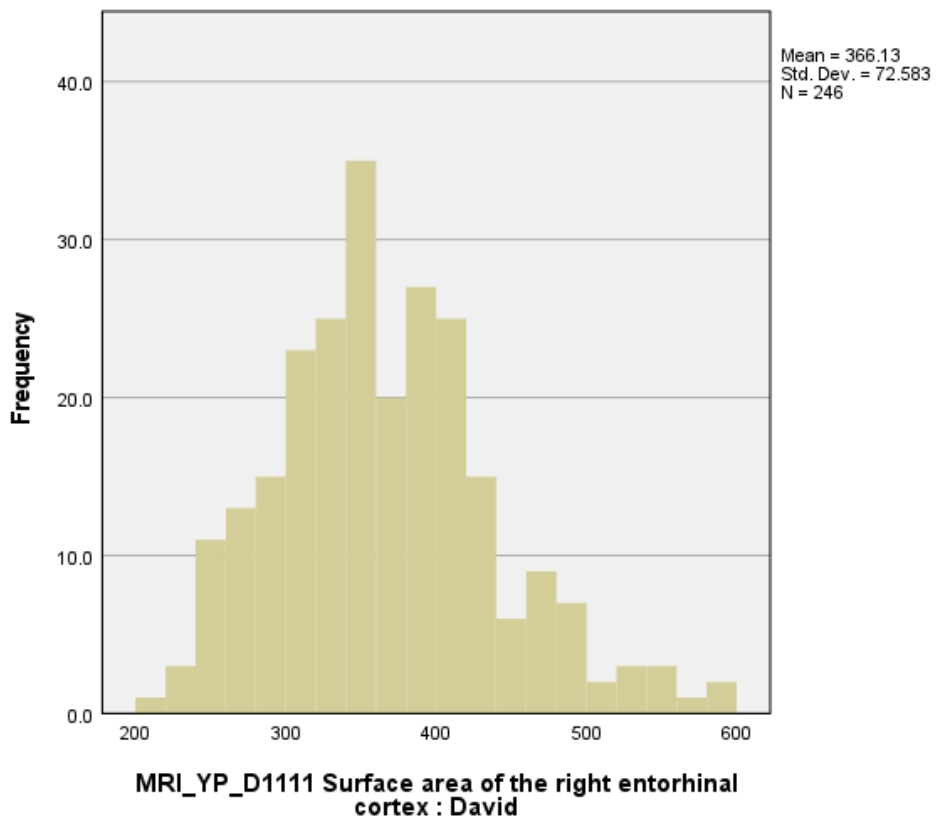
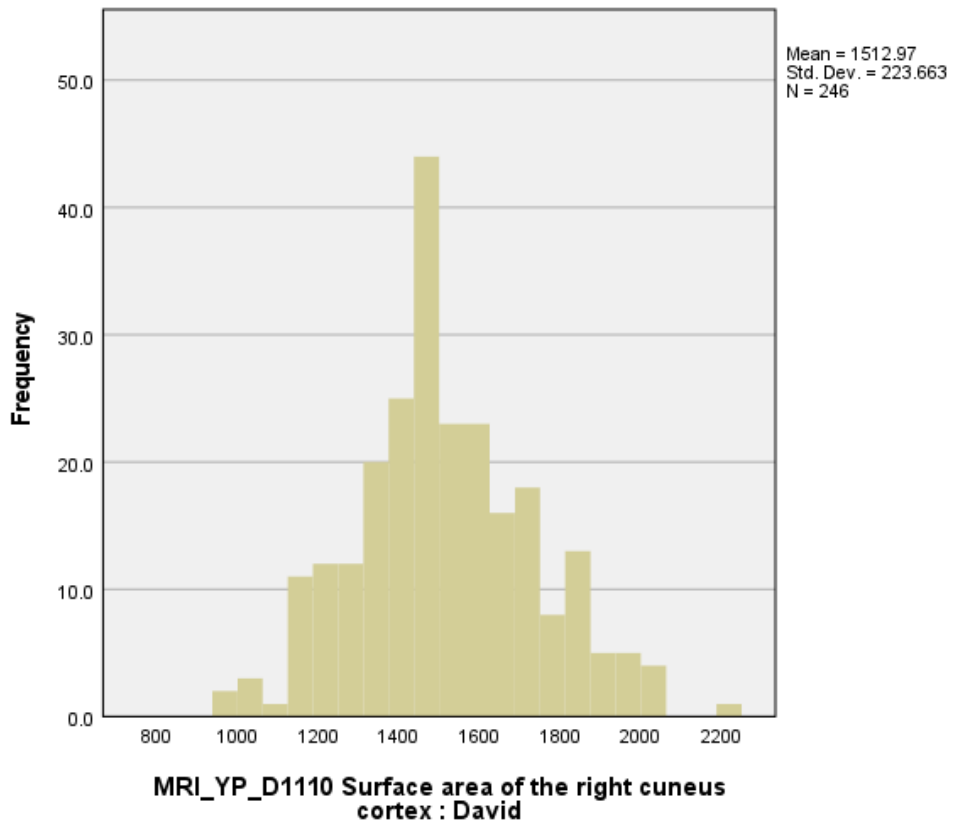


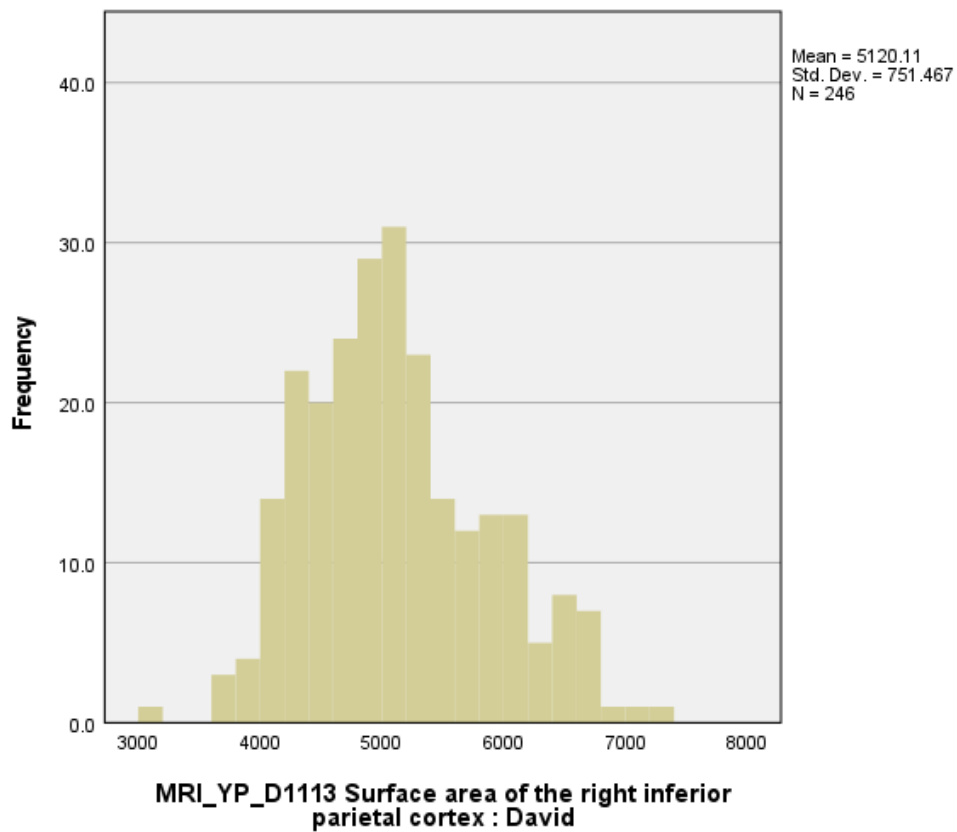
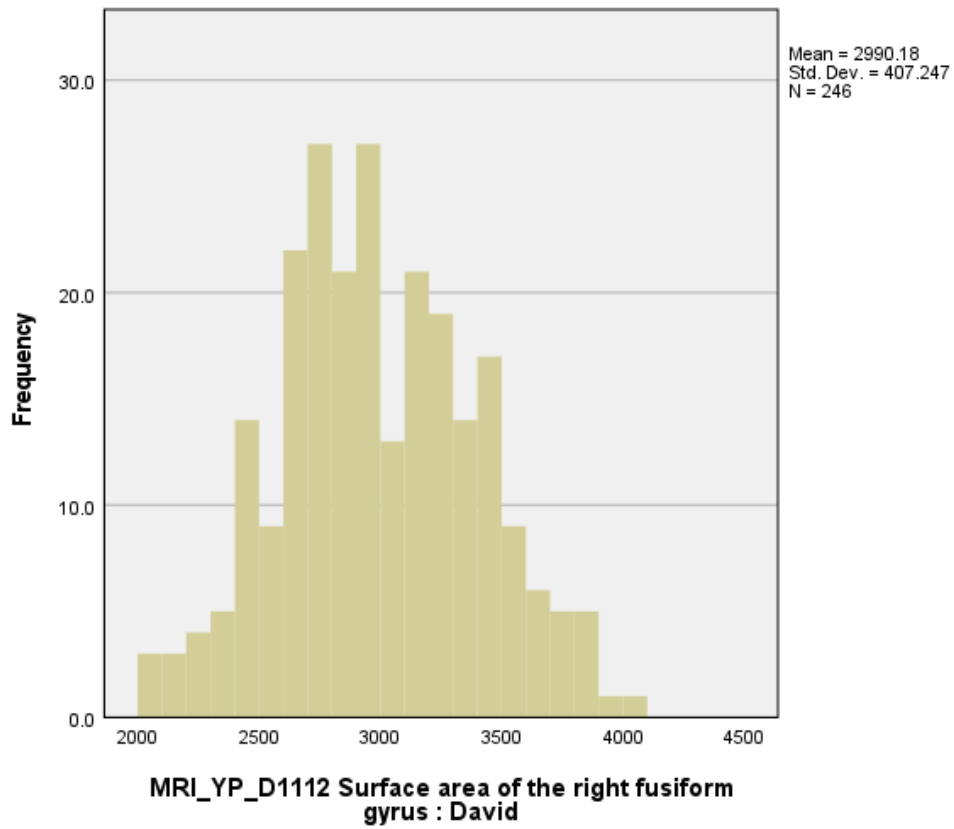


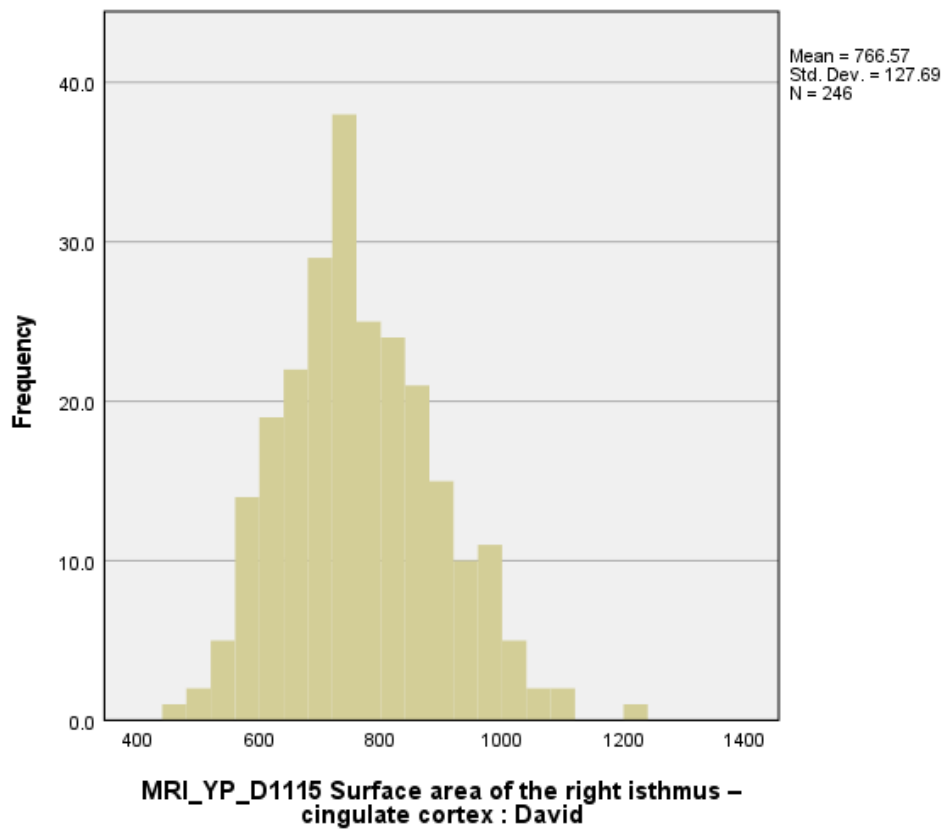
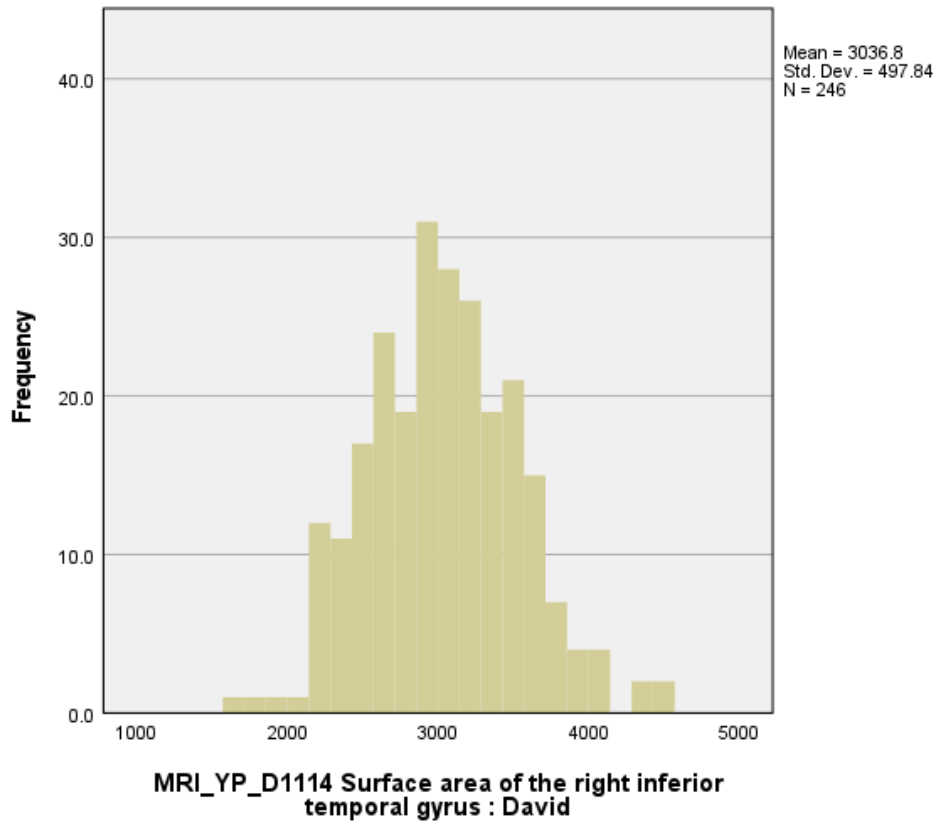
MRI_YP_D1108 Surface area of the right caudal anterior-cingulate cortex : David

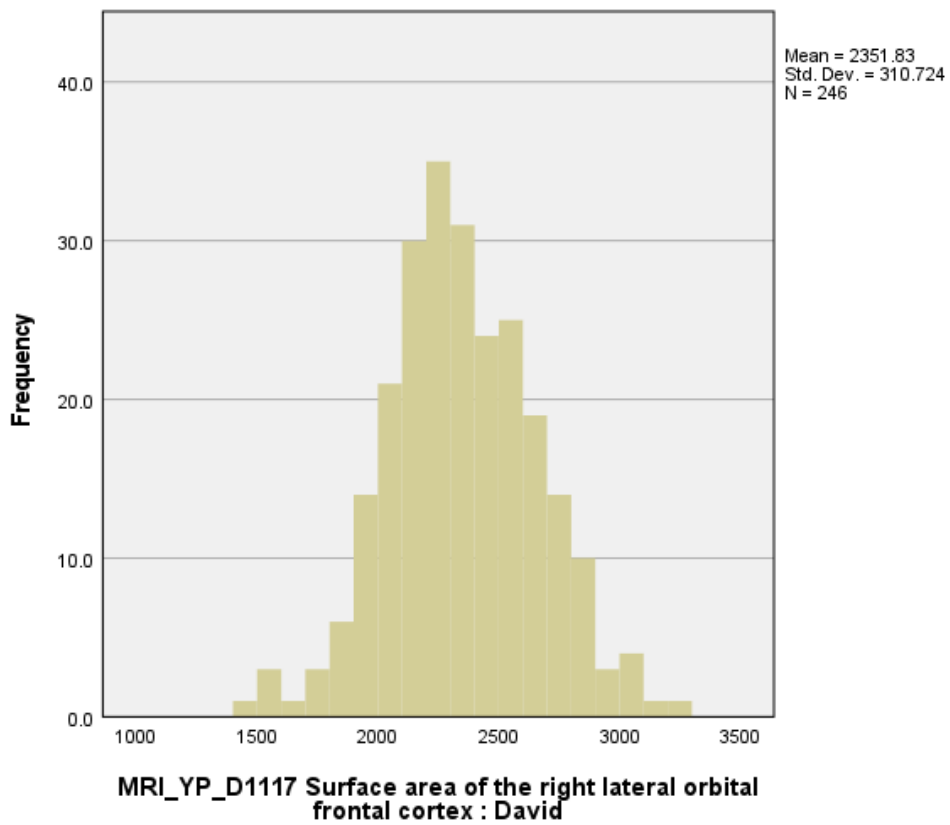
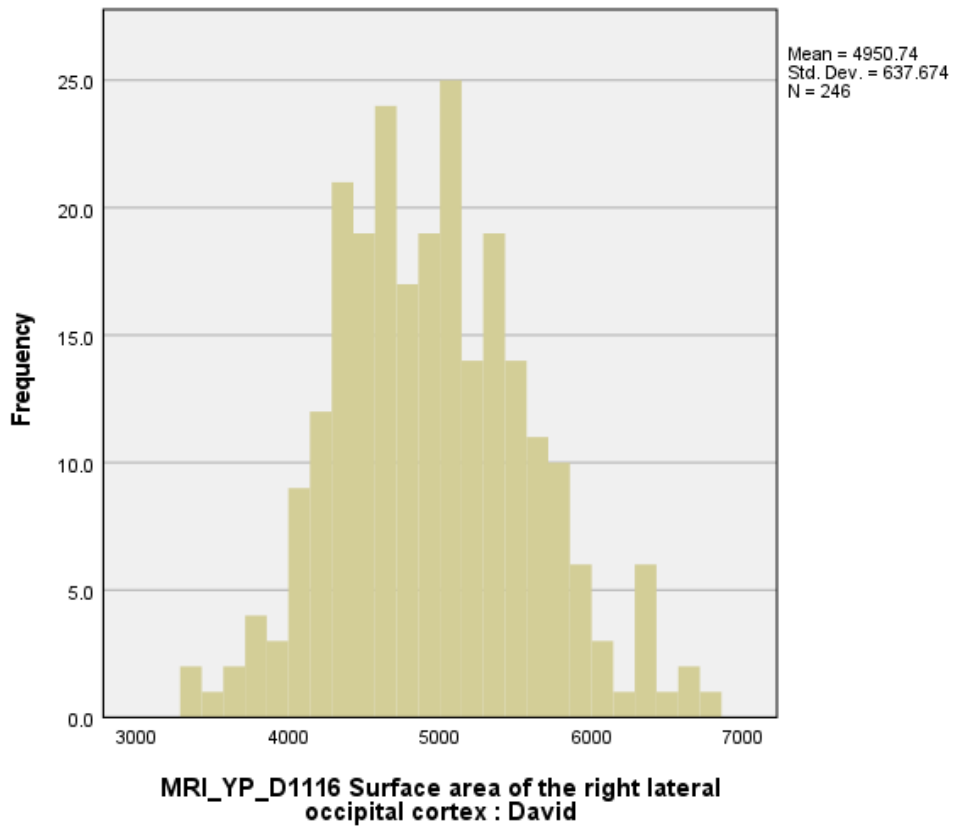


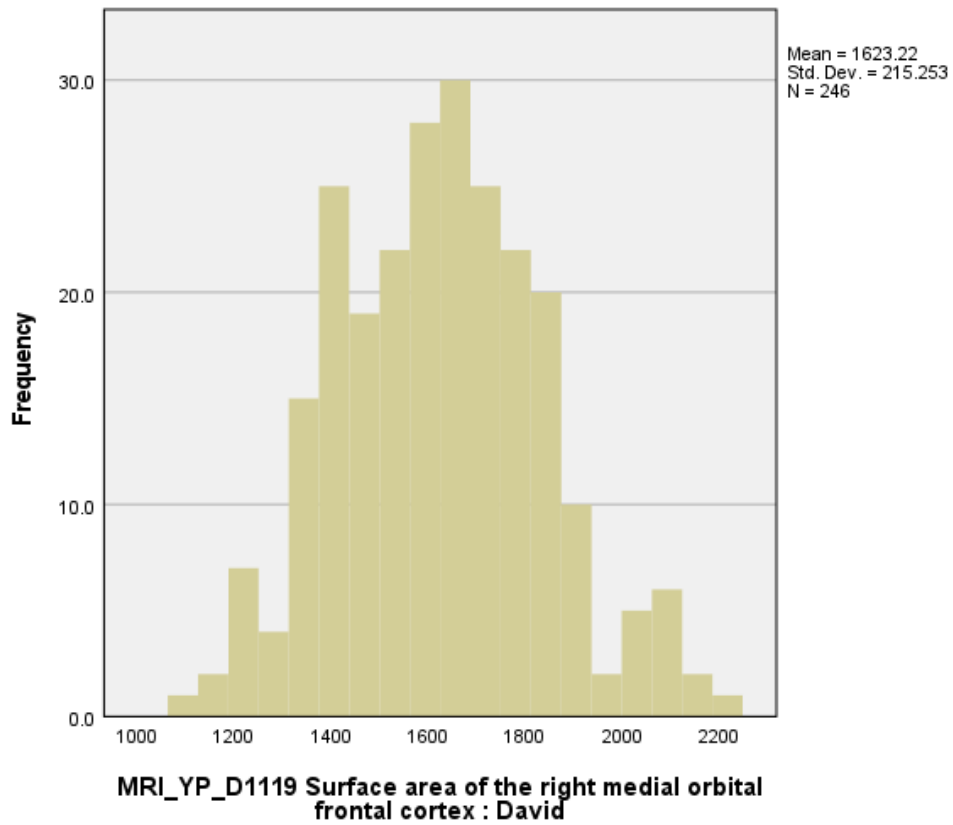
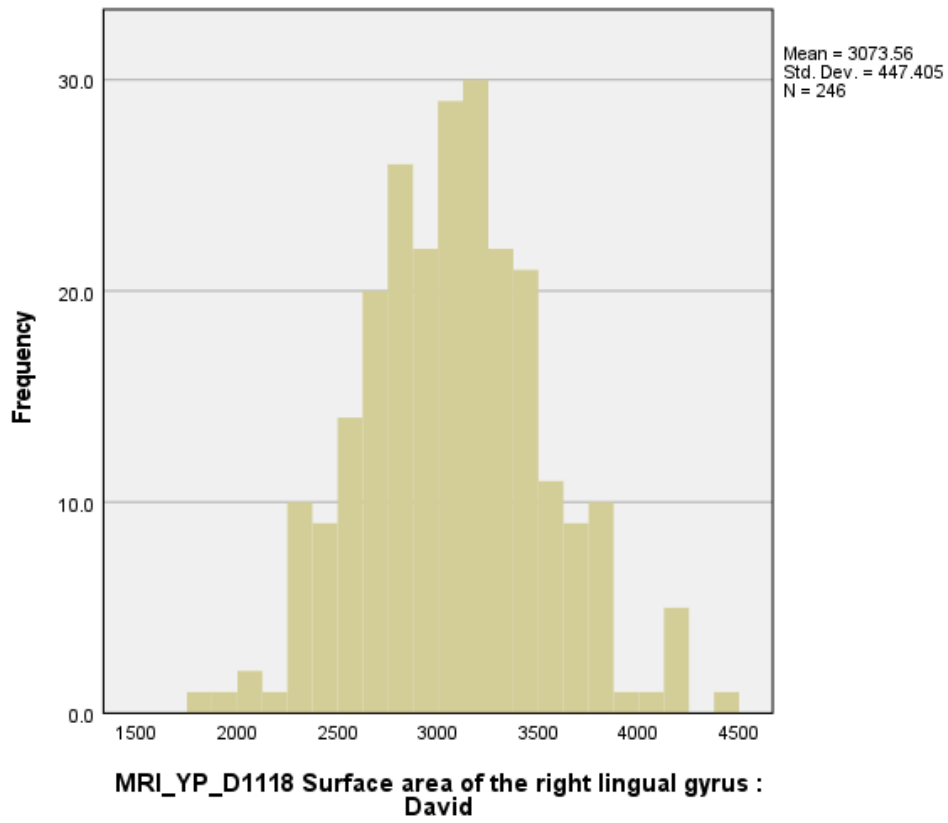
MRI_YP_D1109 Surface area of the right caudal middle frontal gyrus : David

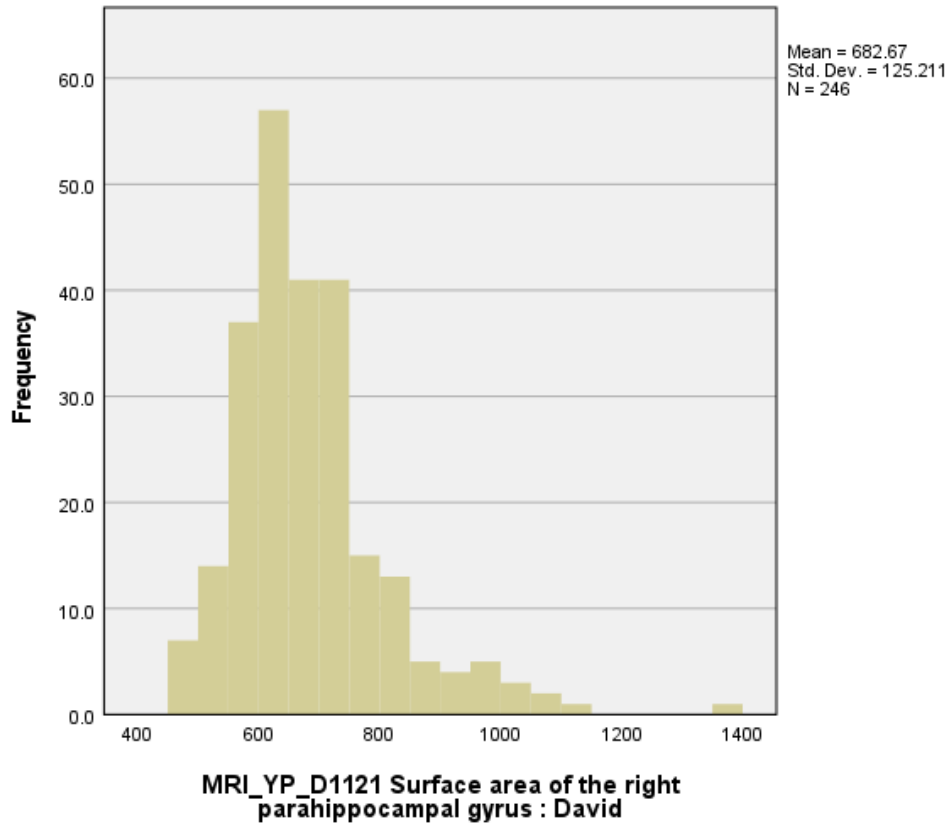
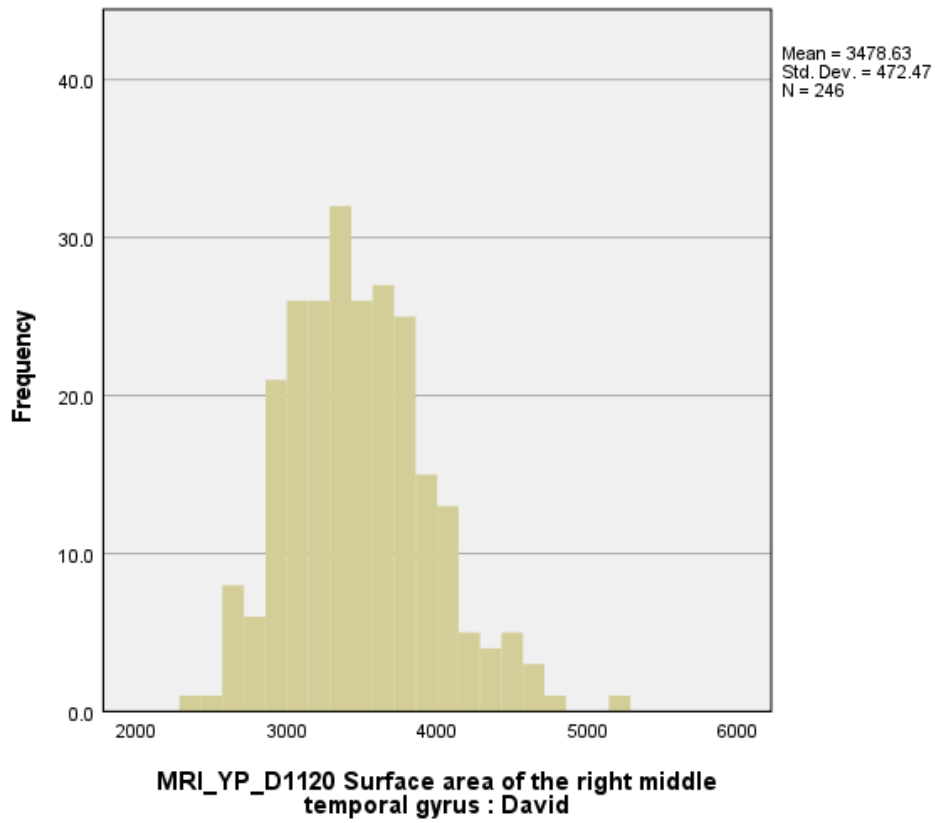


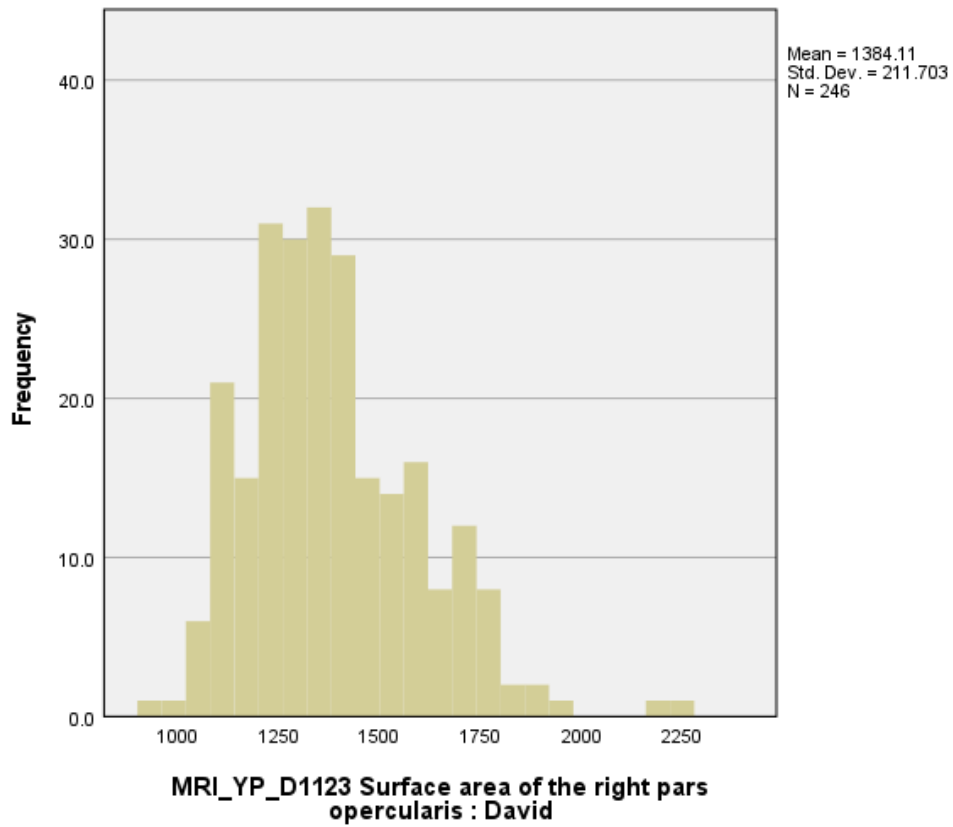
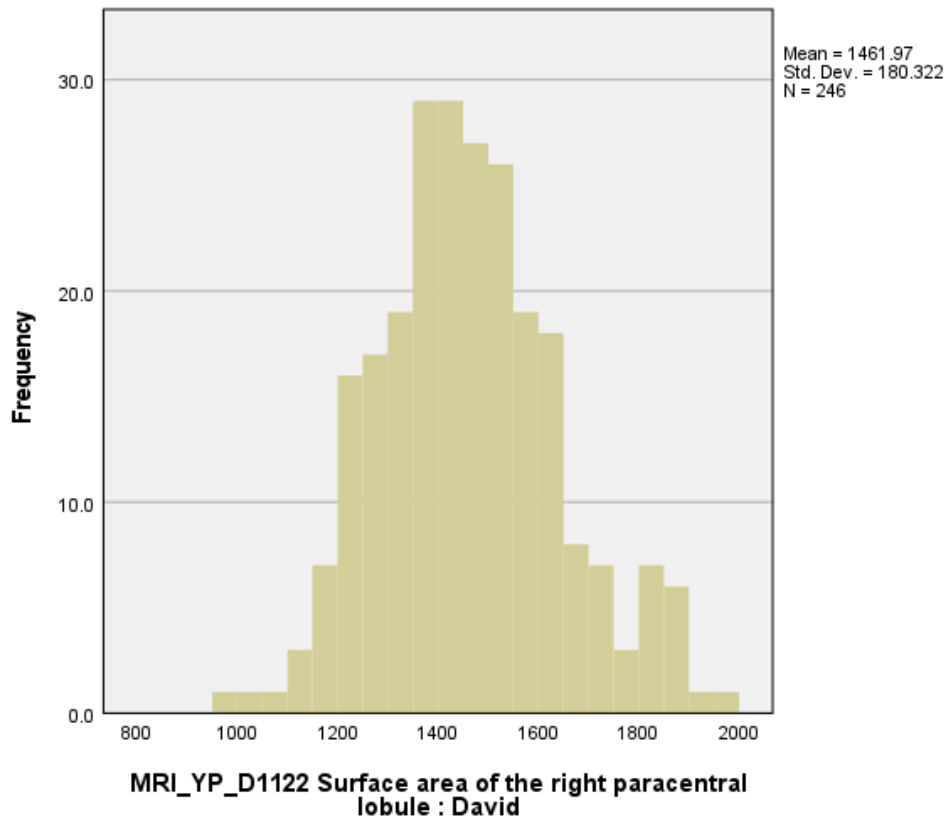


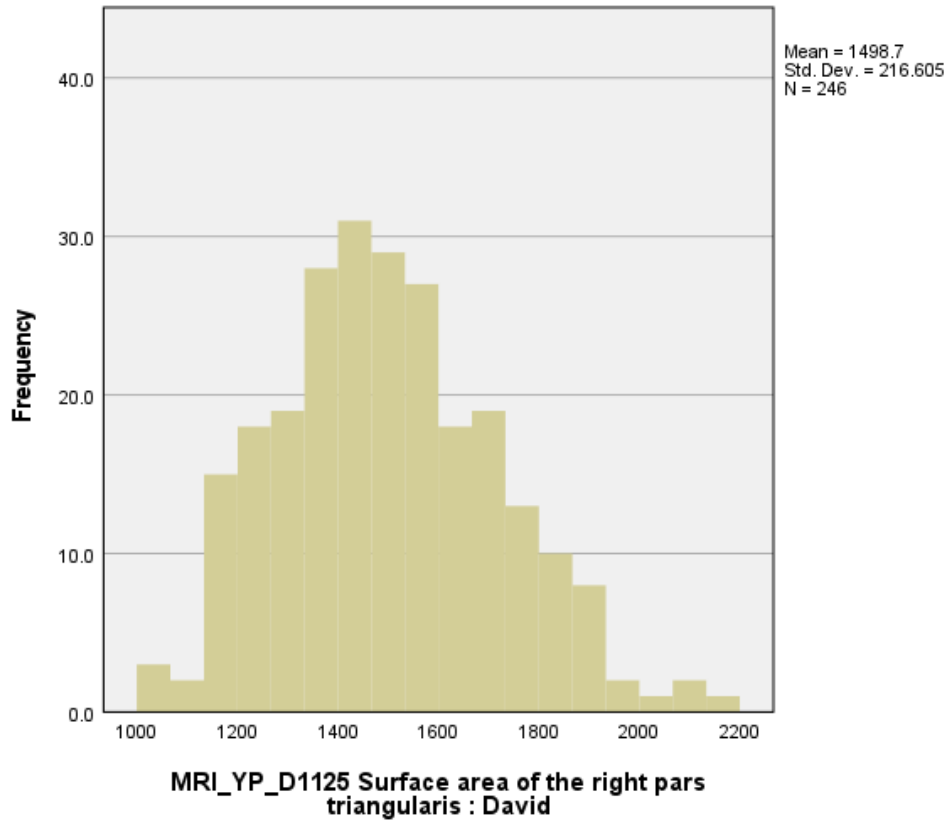
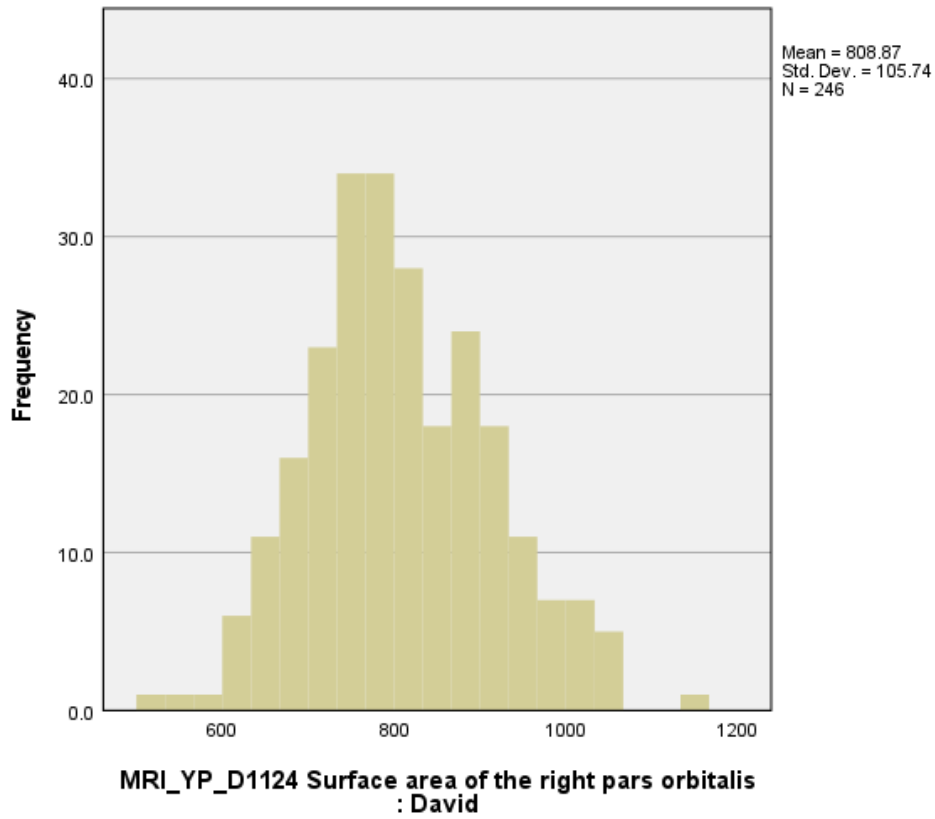


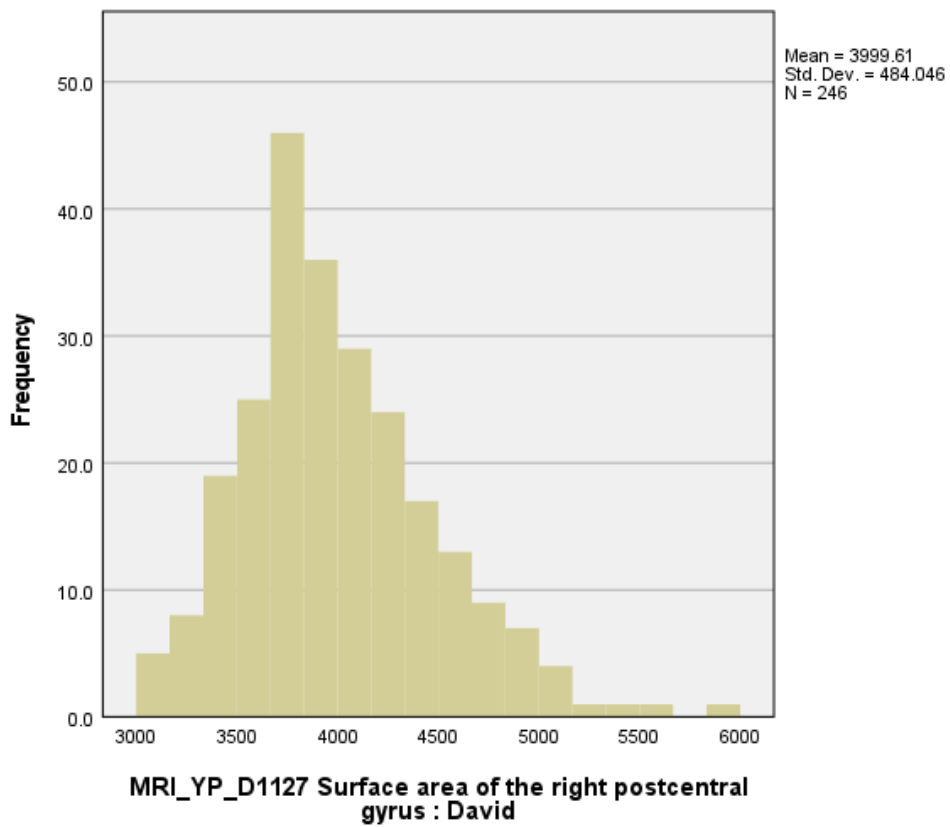
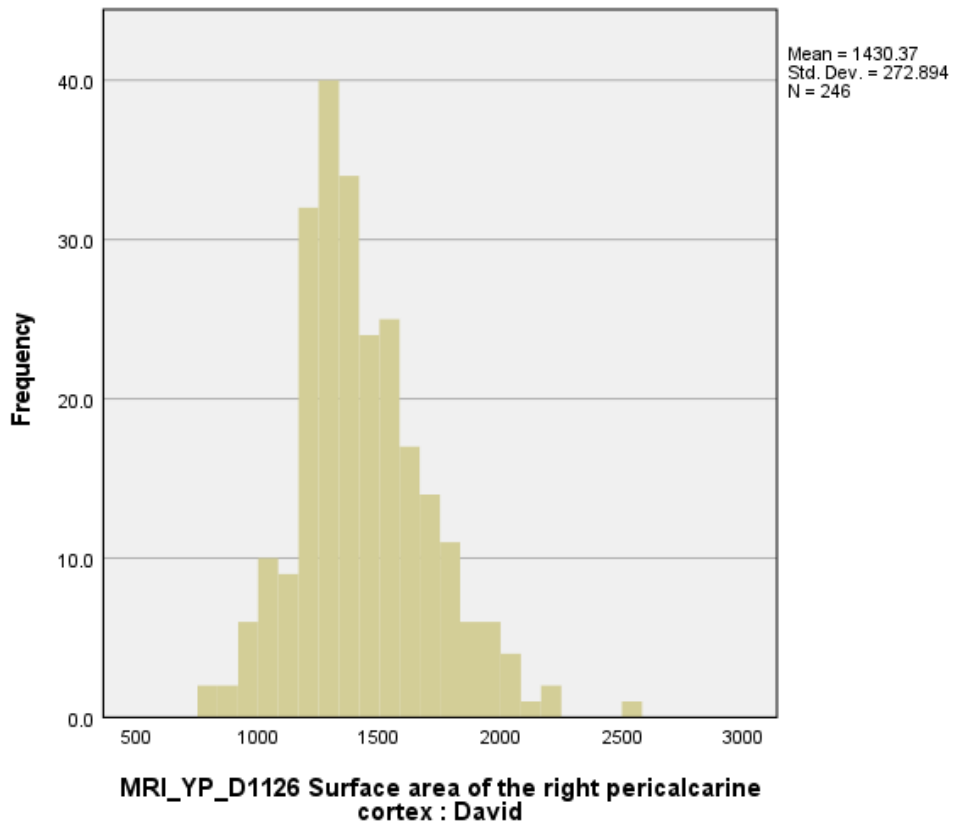


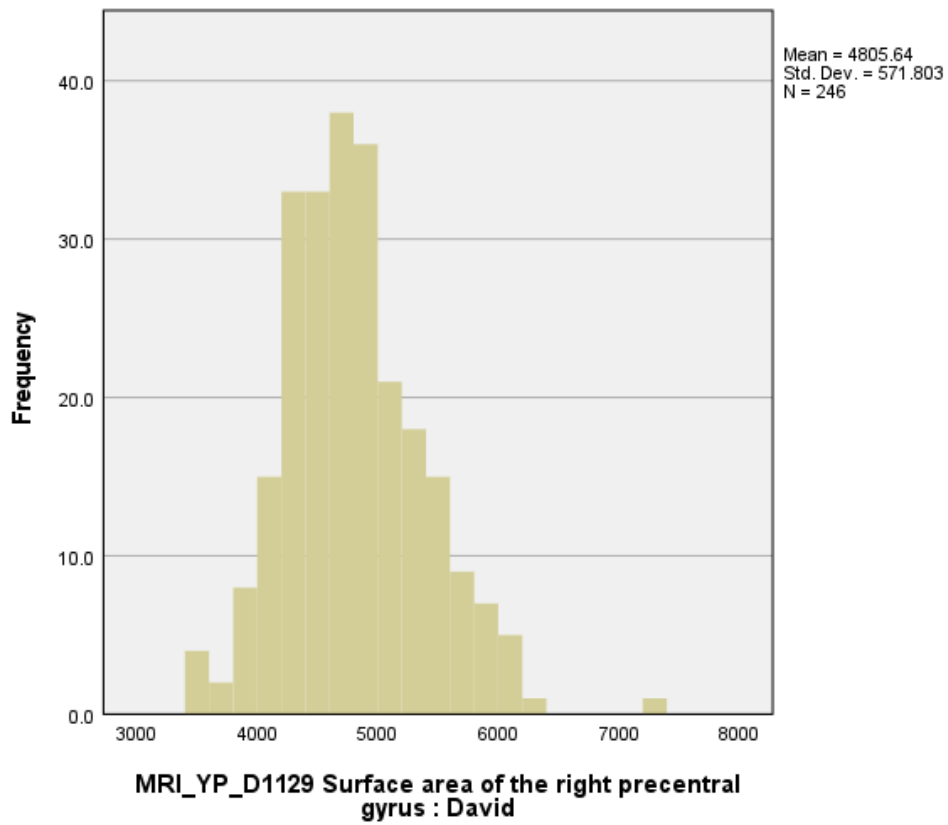
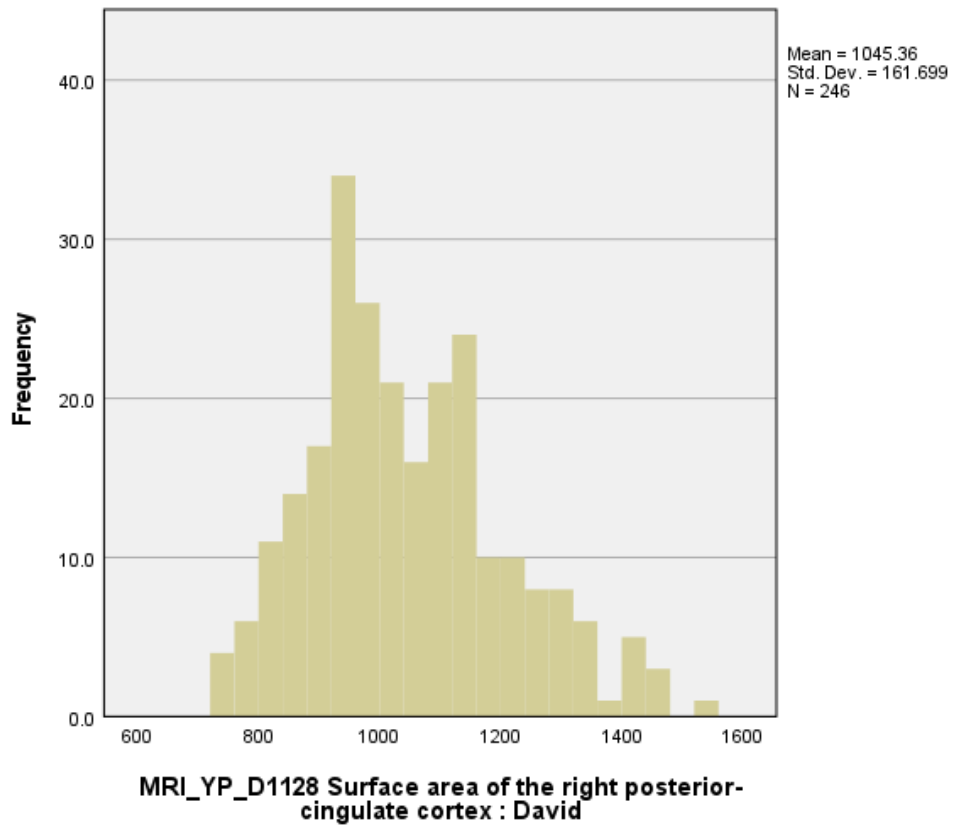


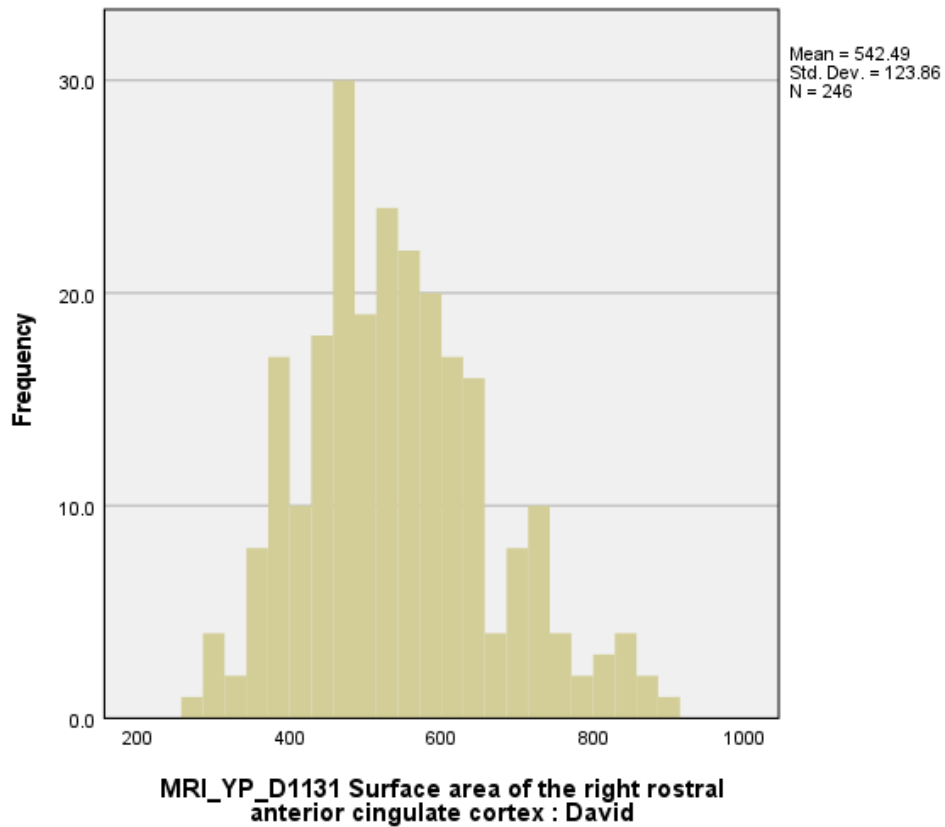
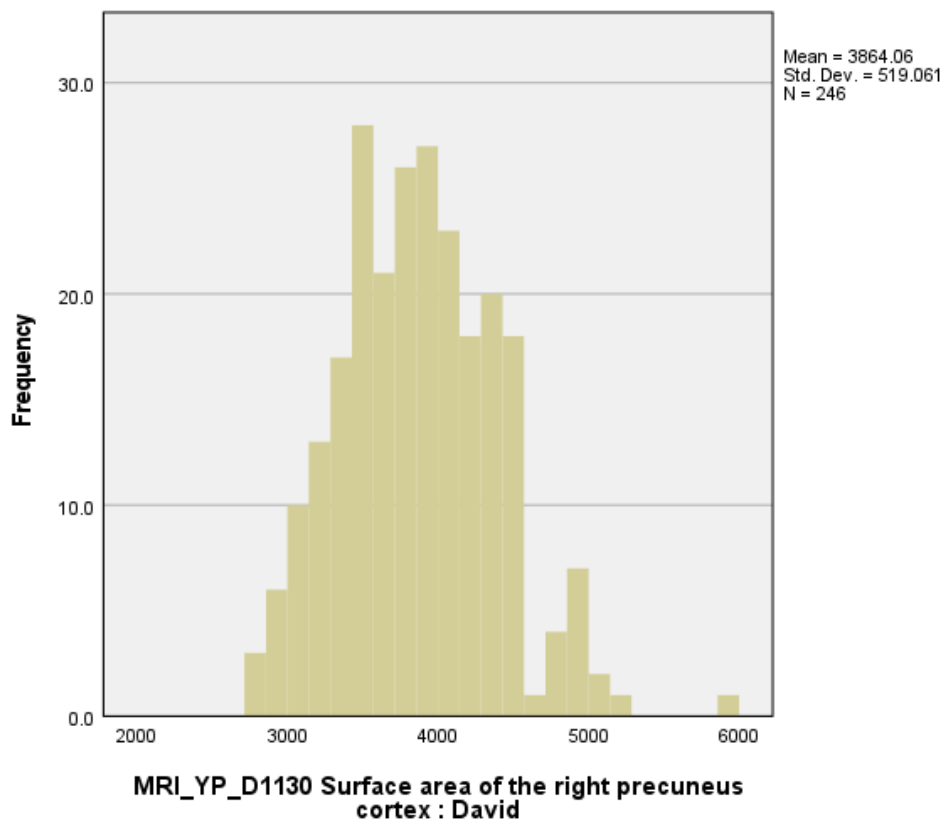


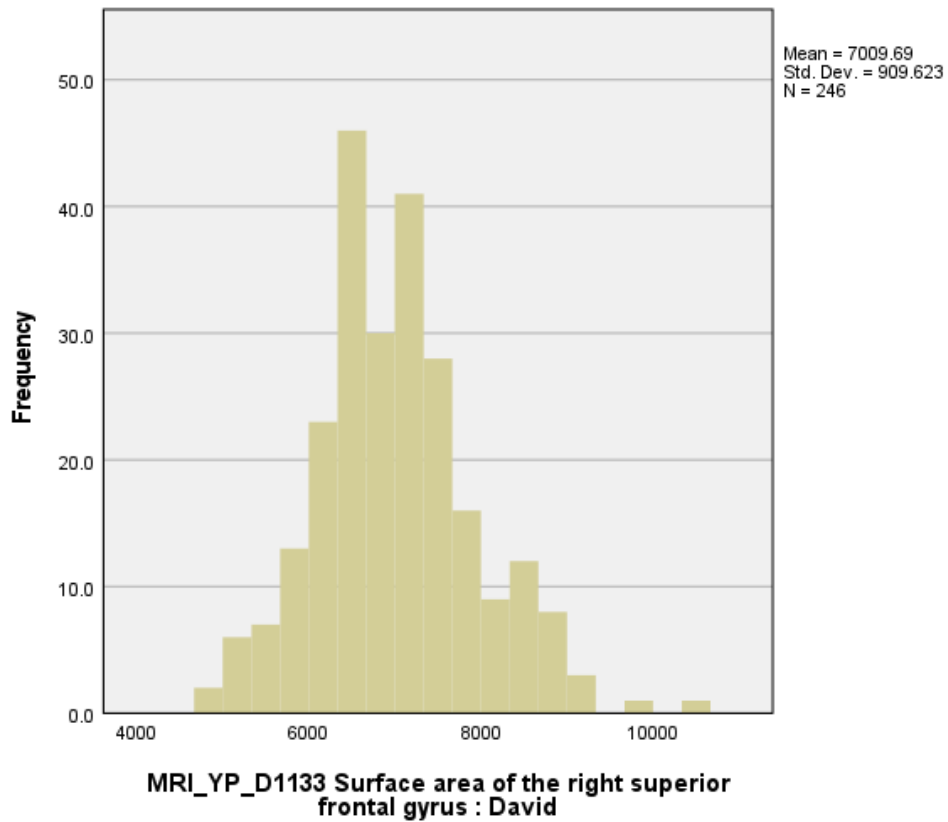
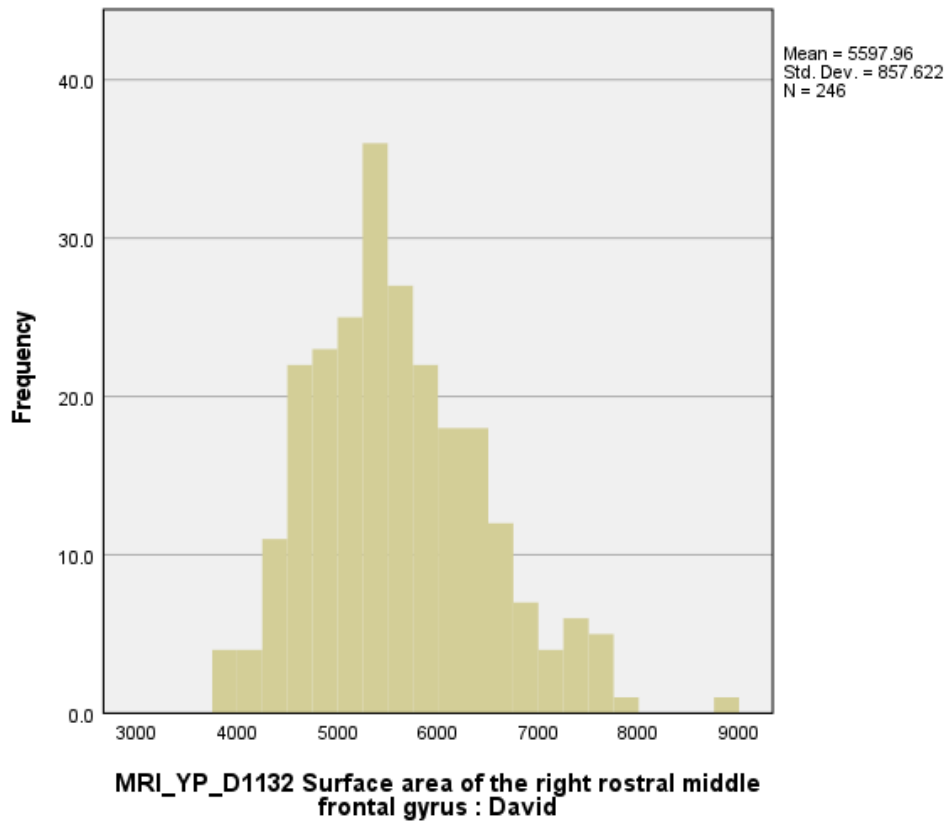


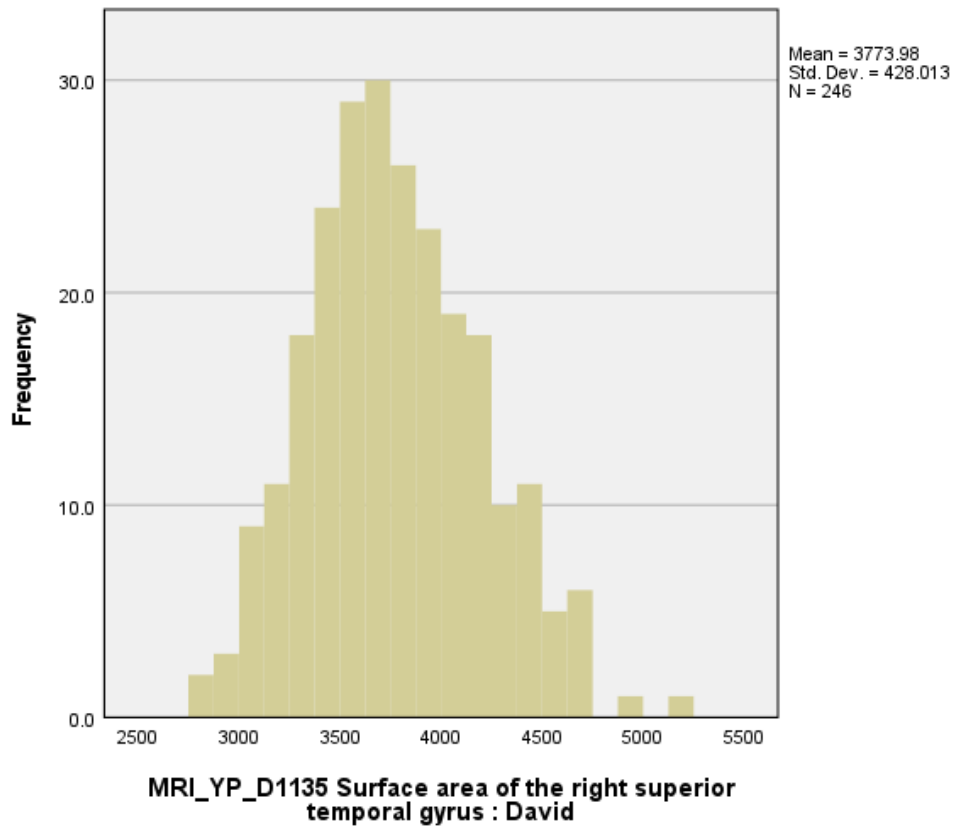
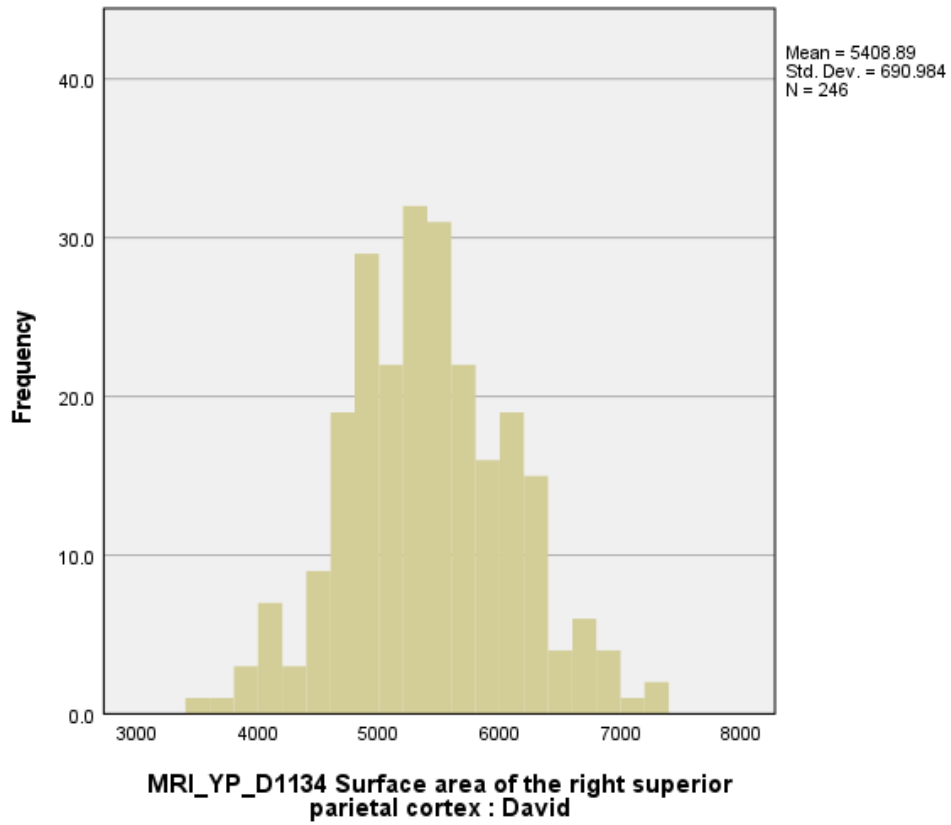


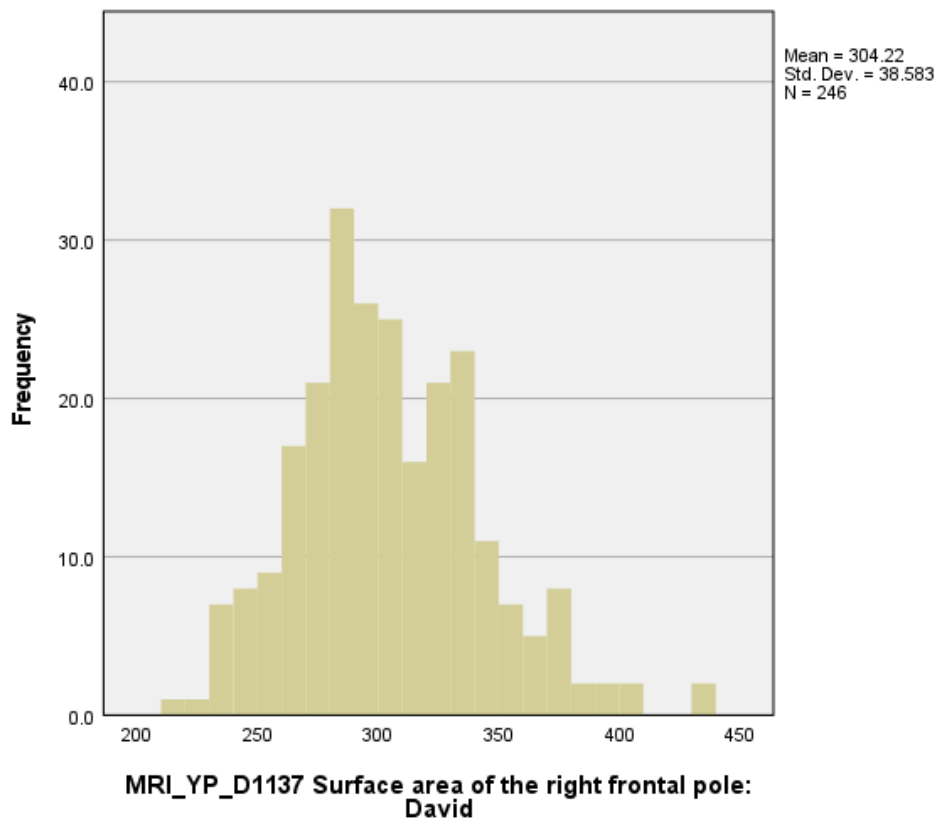
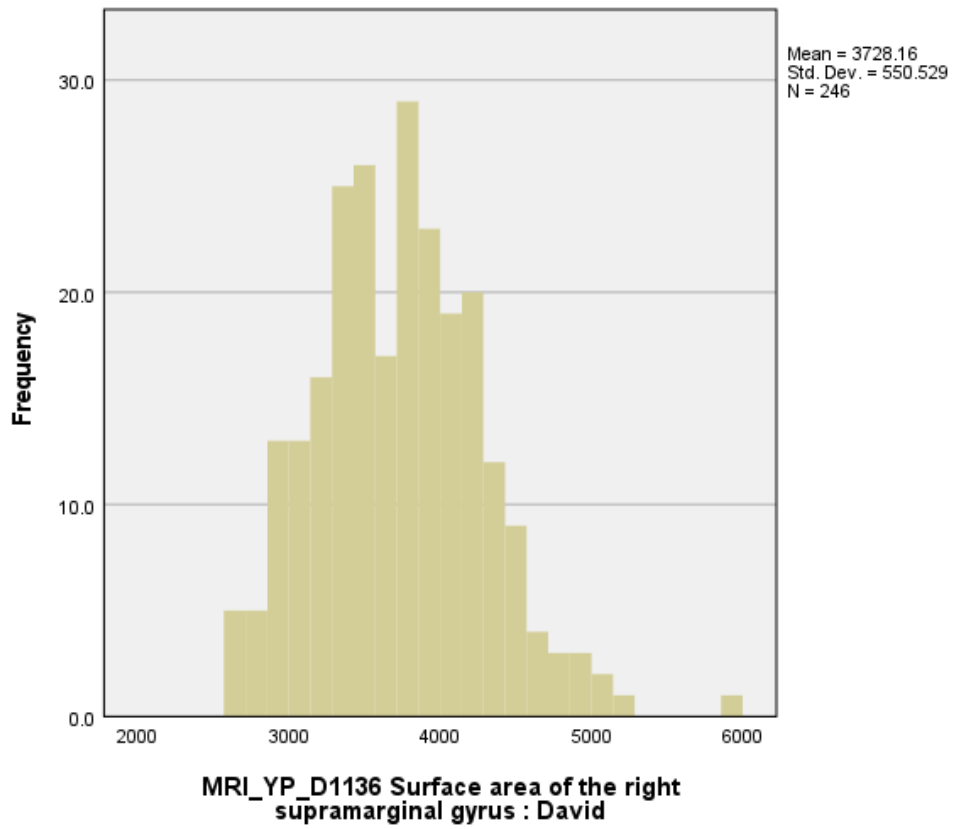


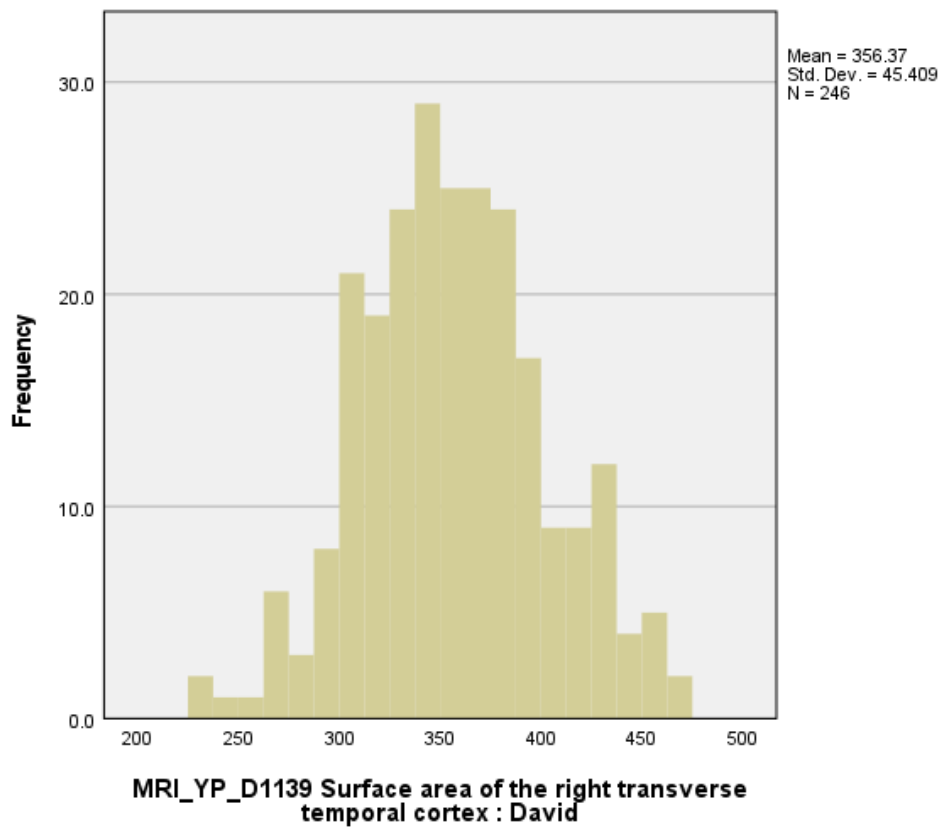
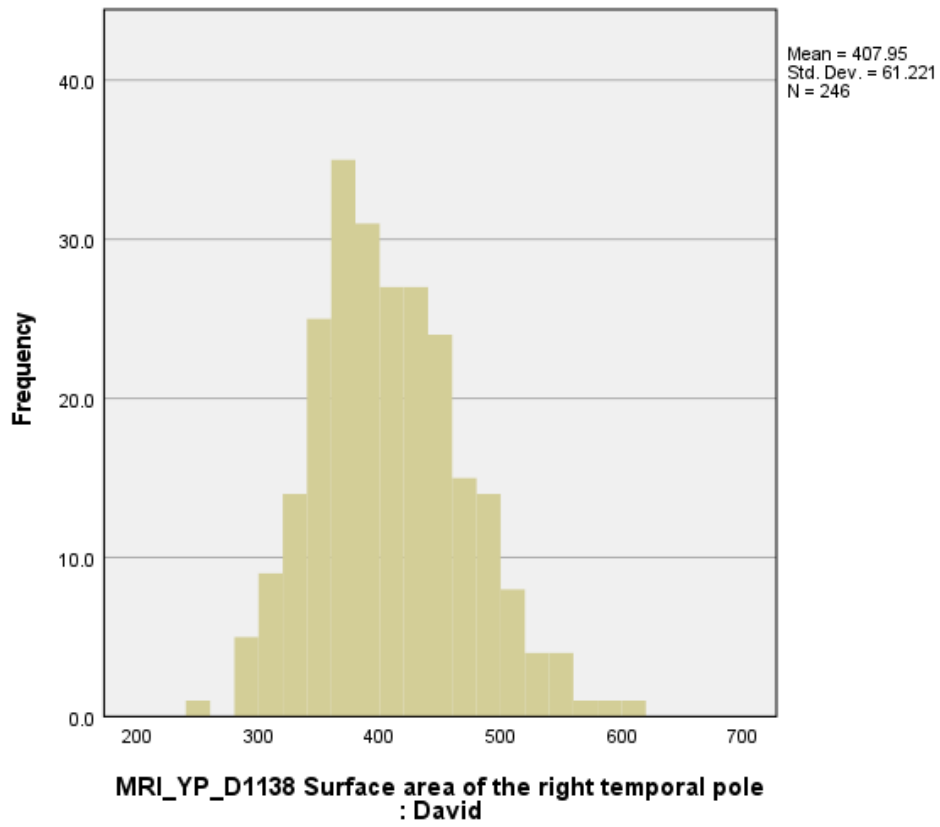


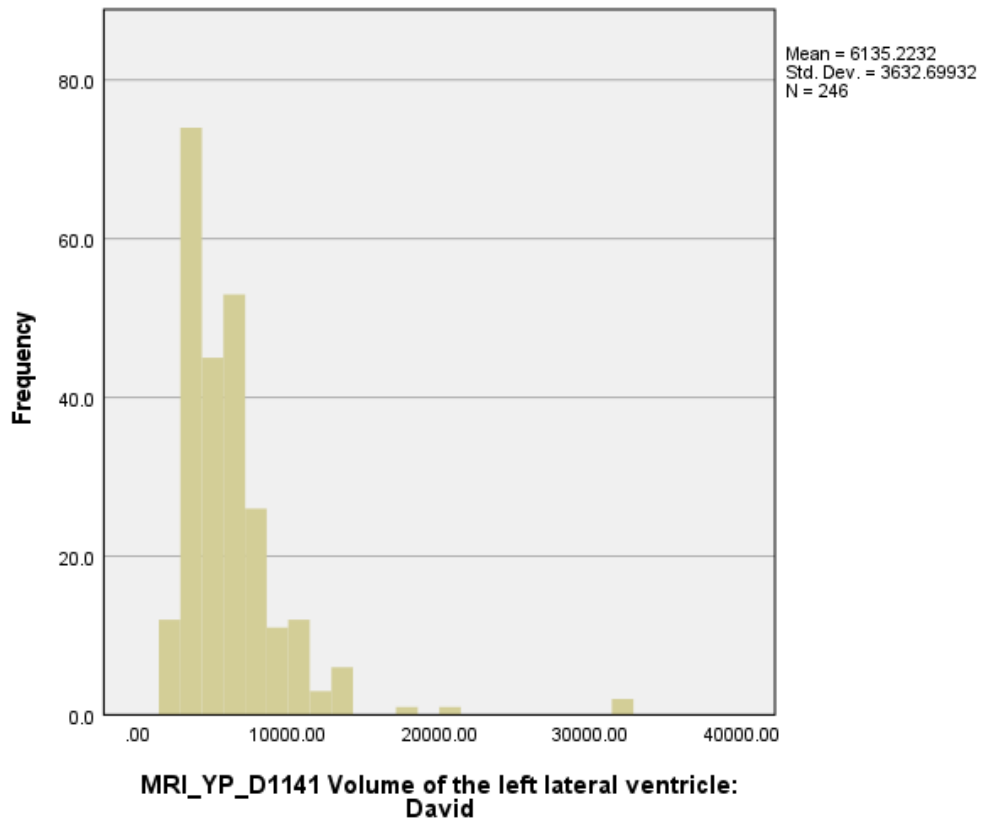
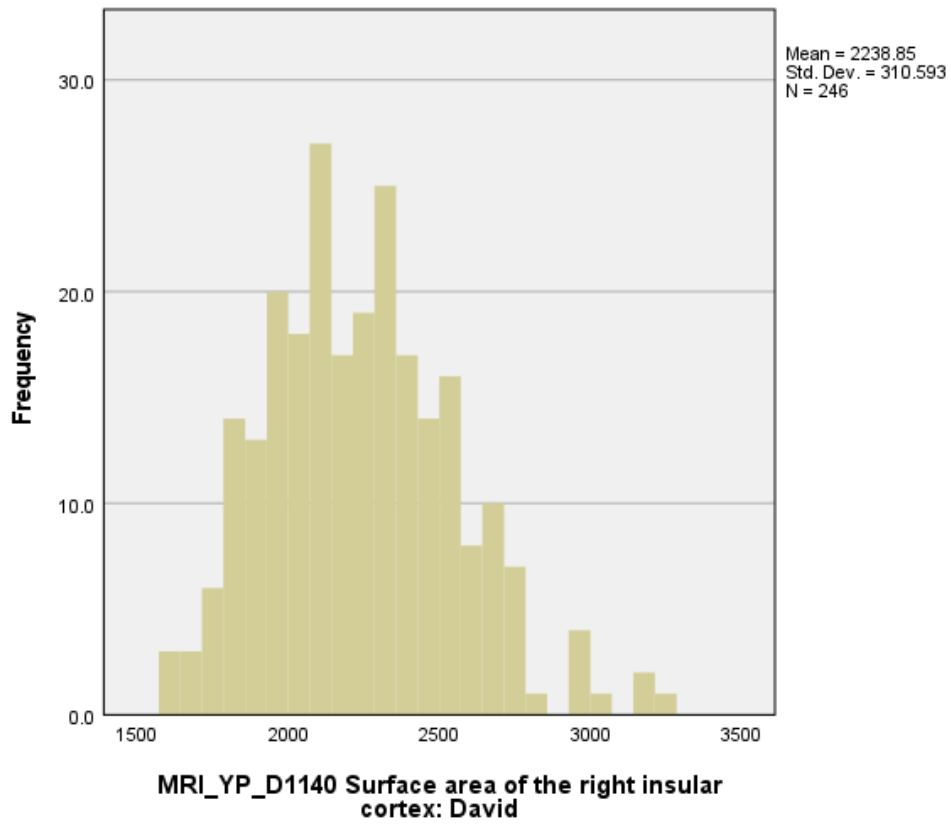


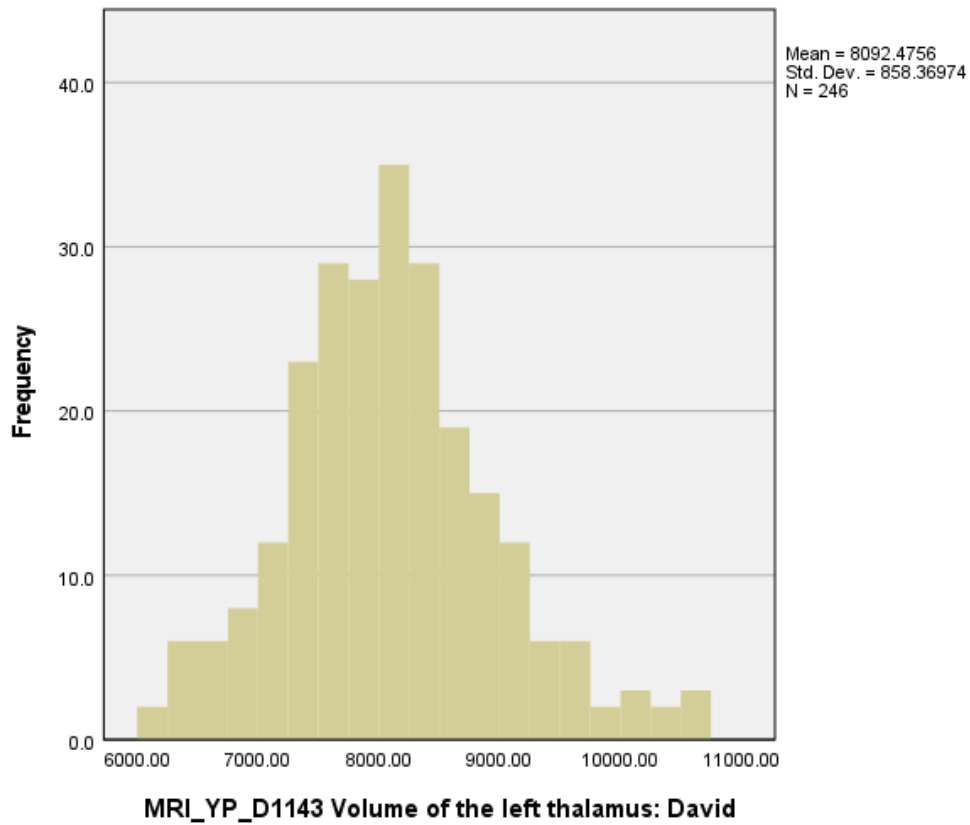
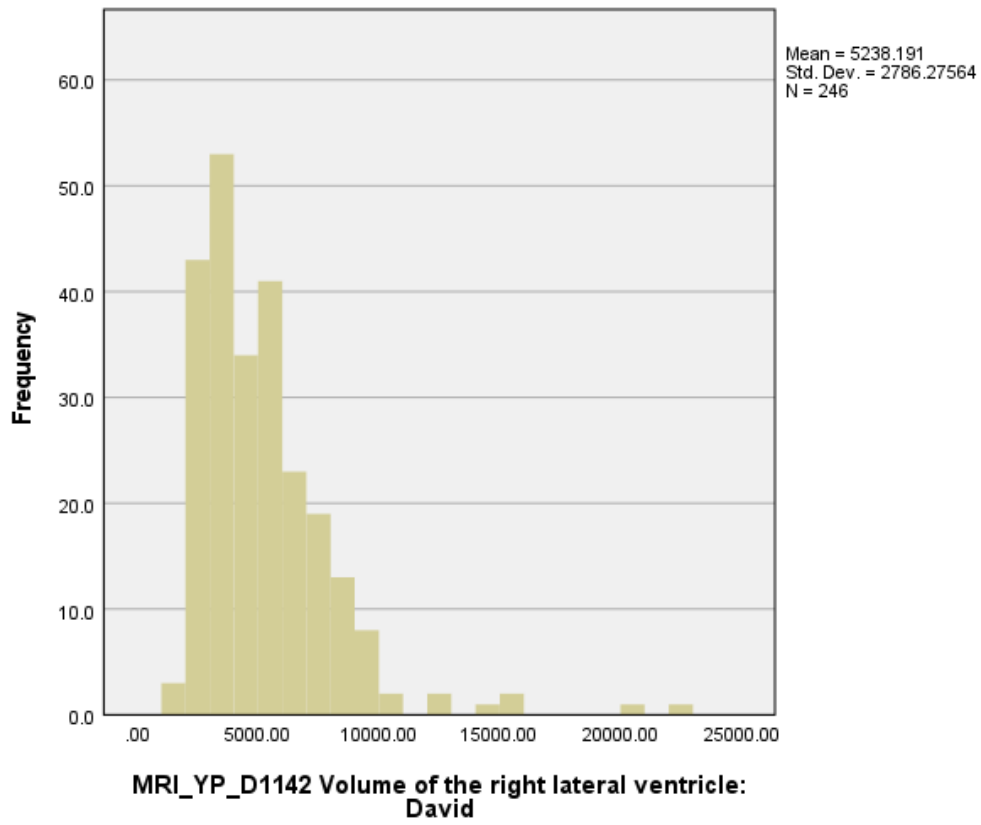


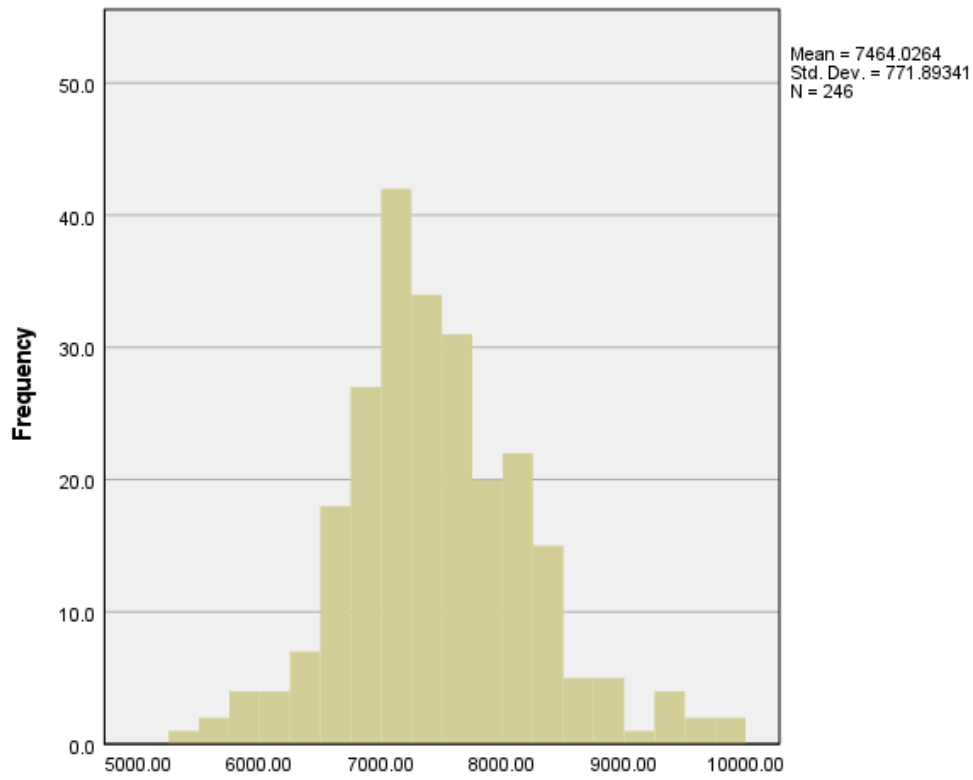




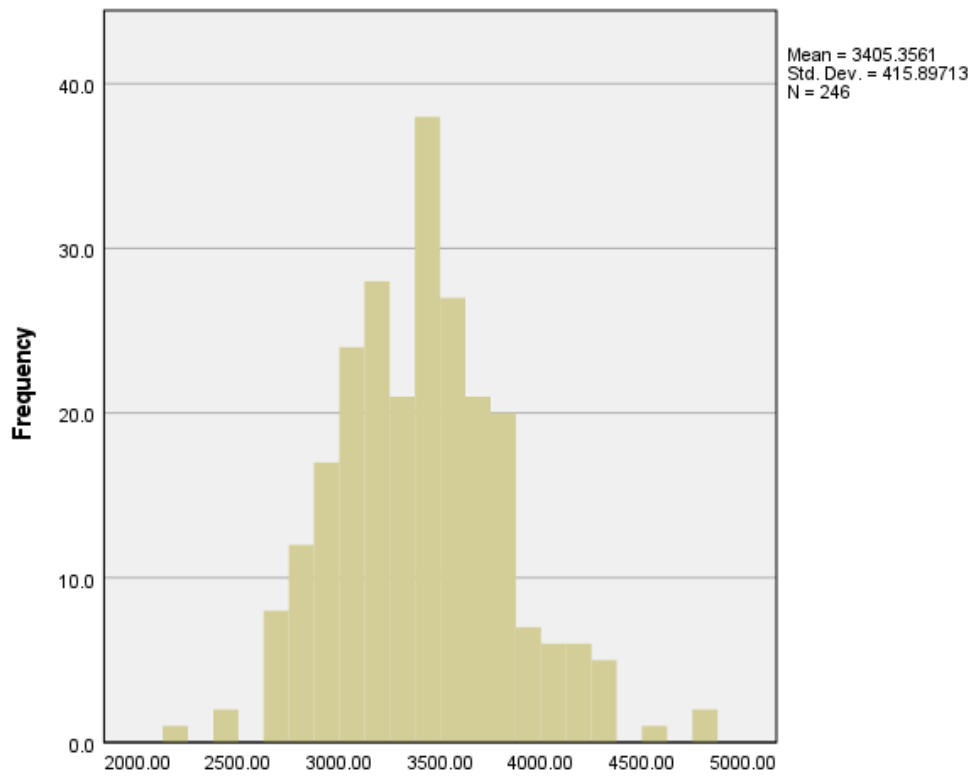




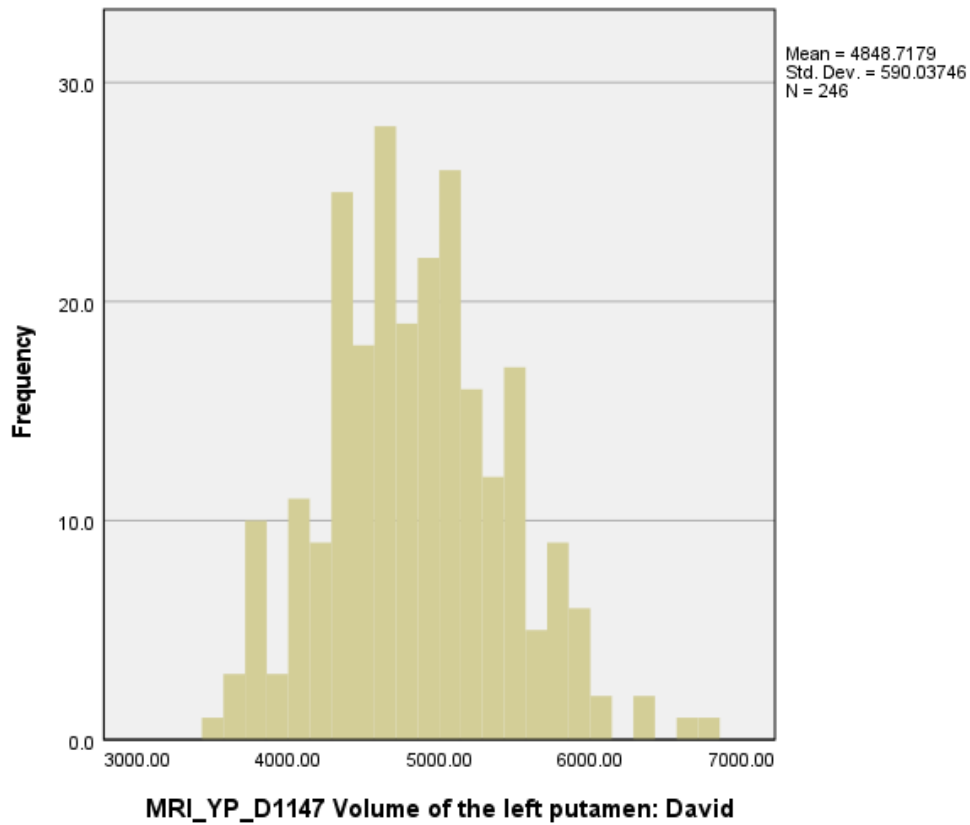
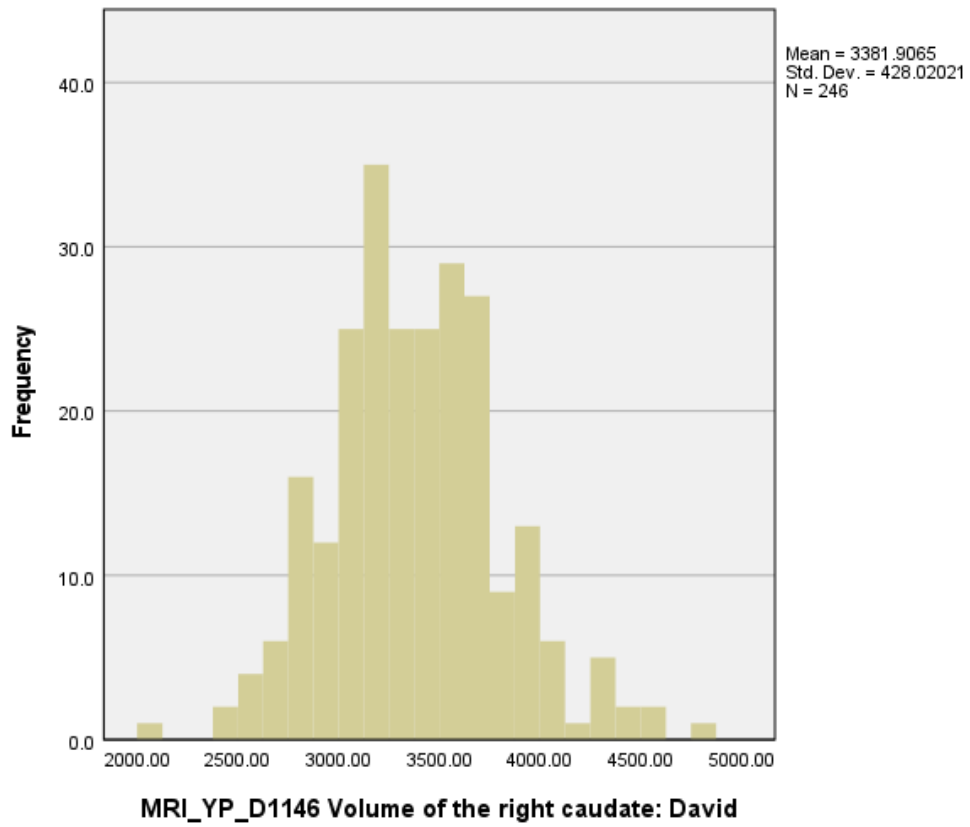


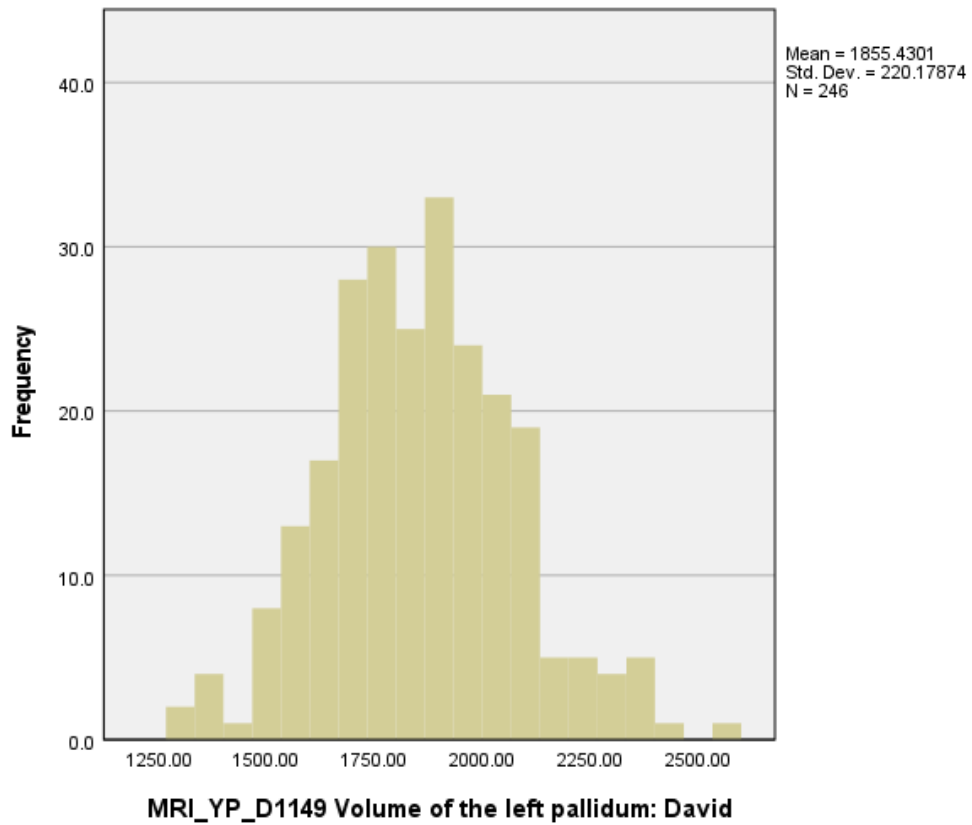
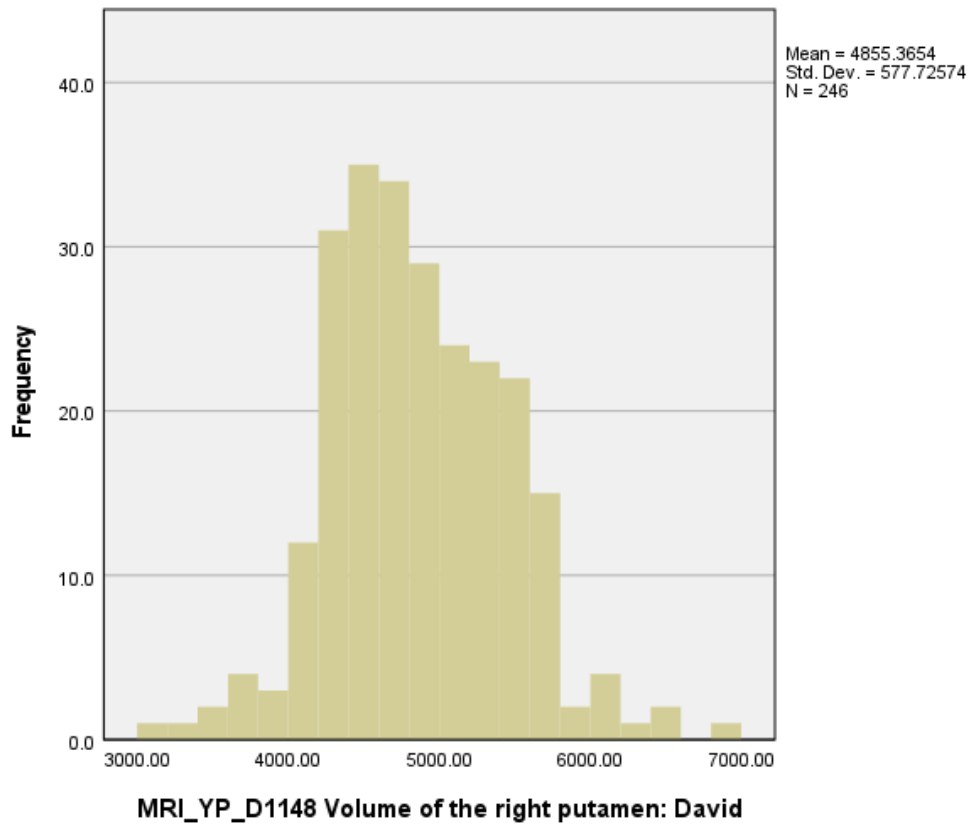


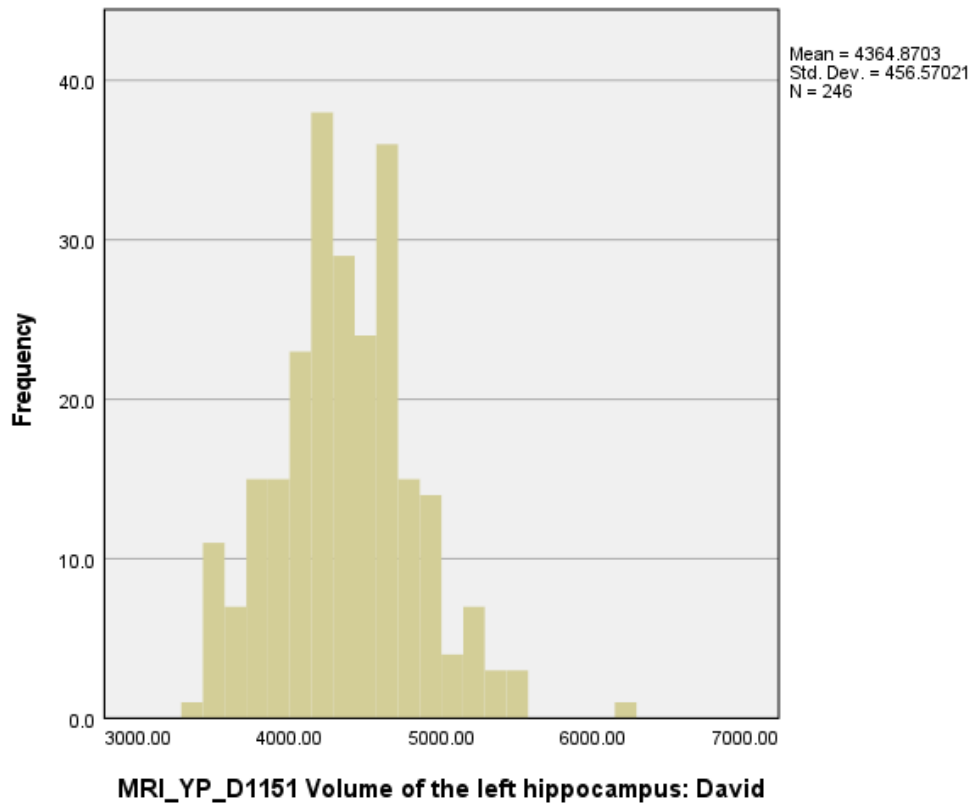
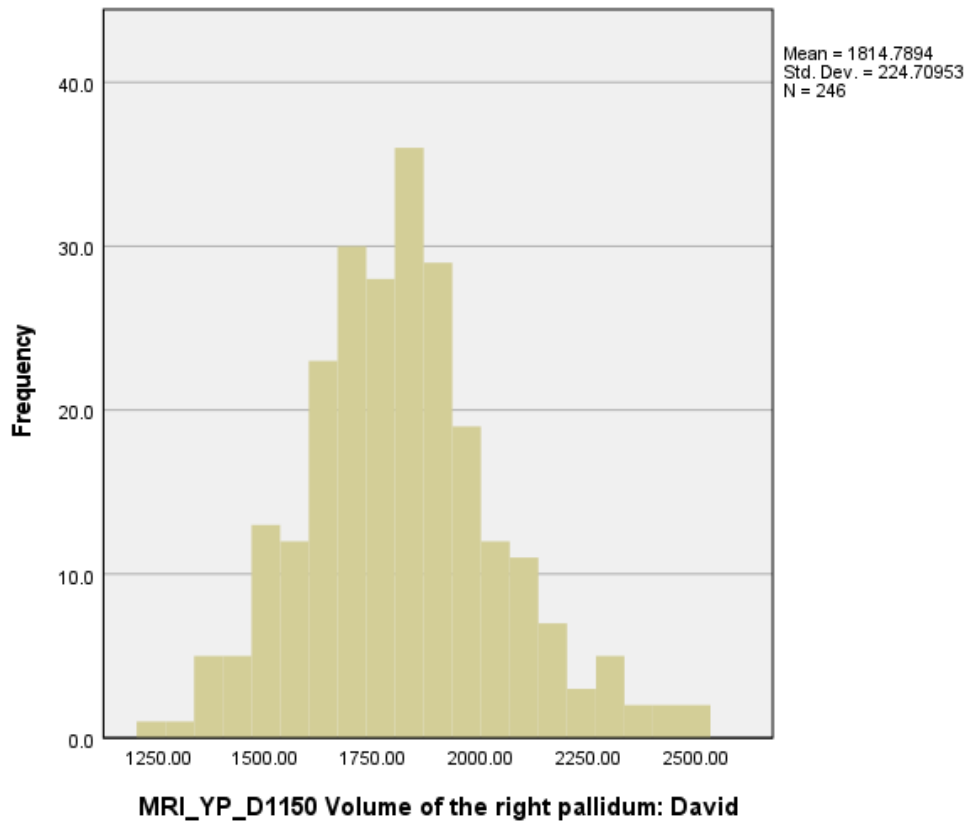
MRI_YP_D1144 Volume of the right thalamus: David

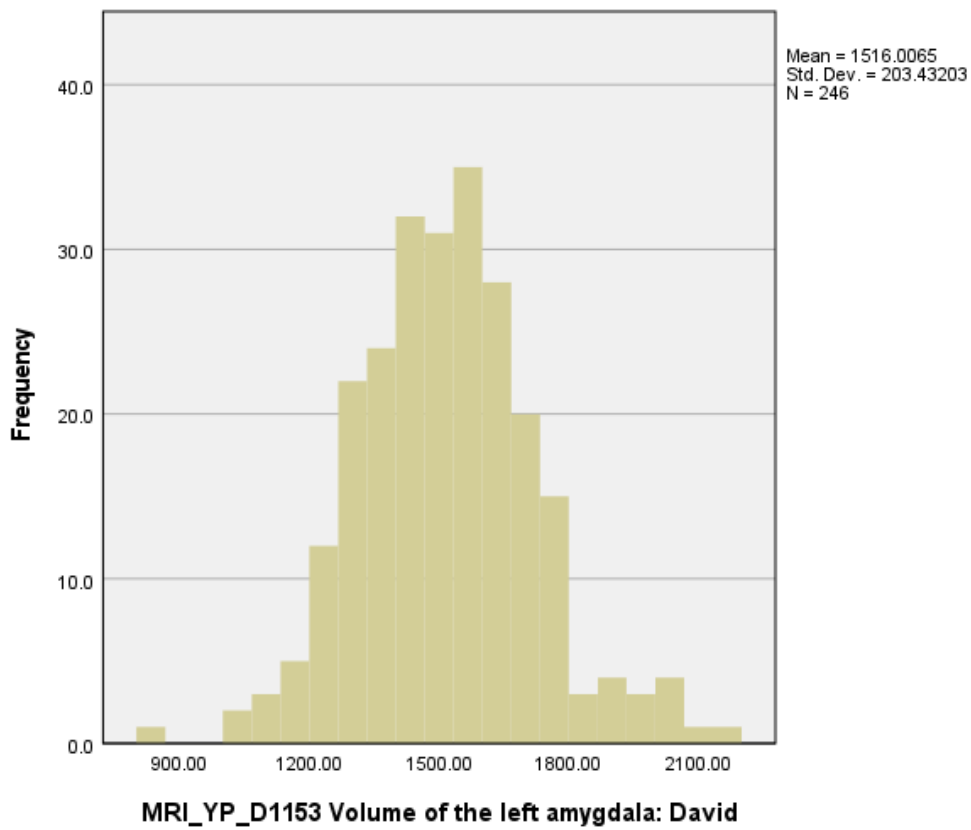
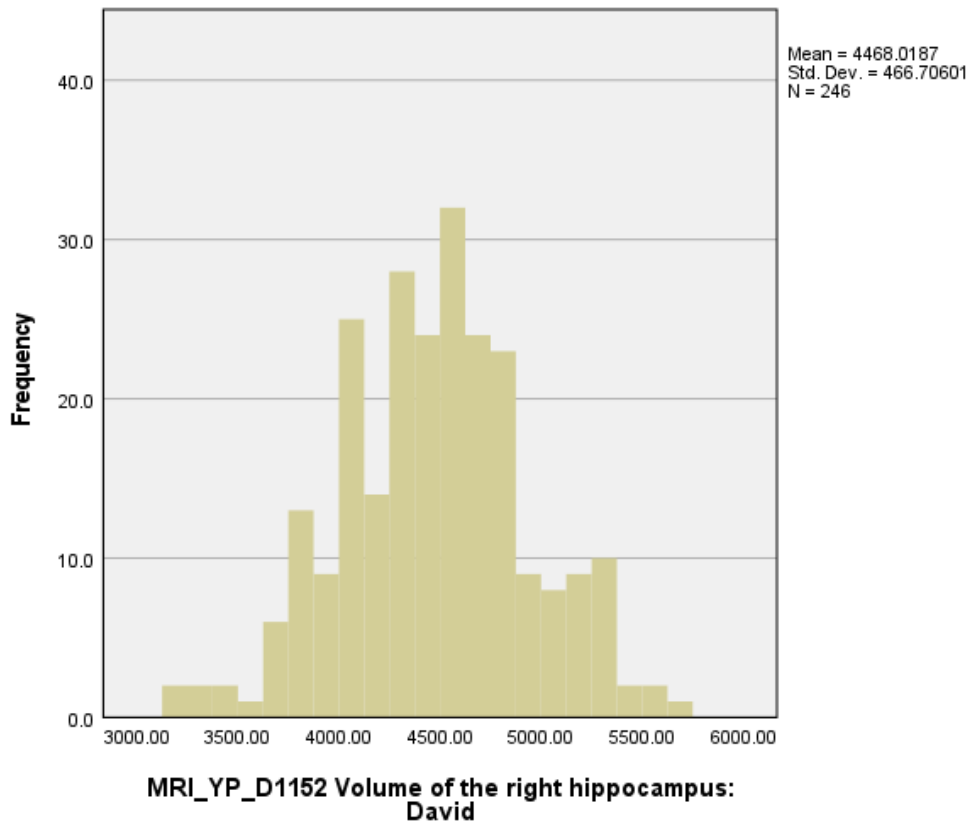


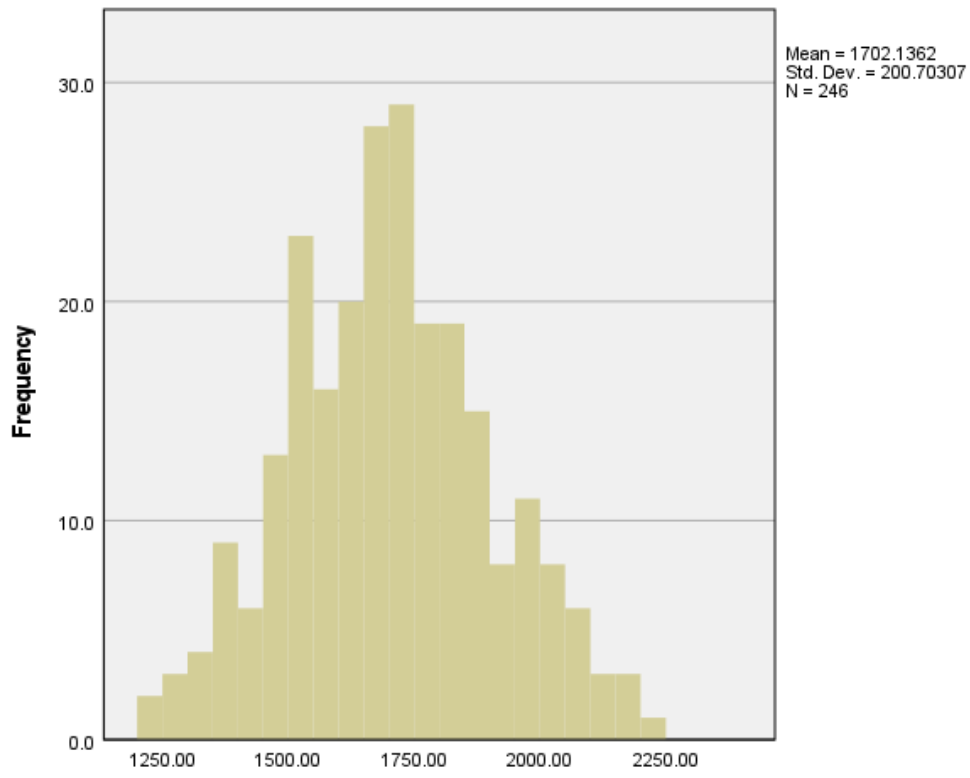
MRI_YP_D1145 Volume of the left caudate: David



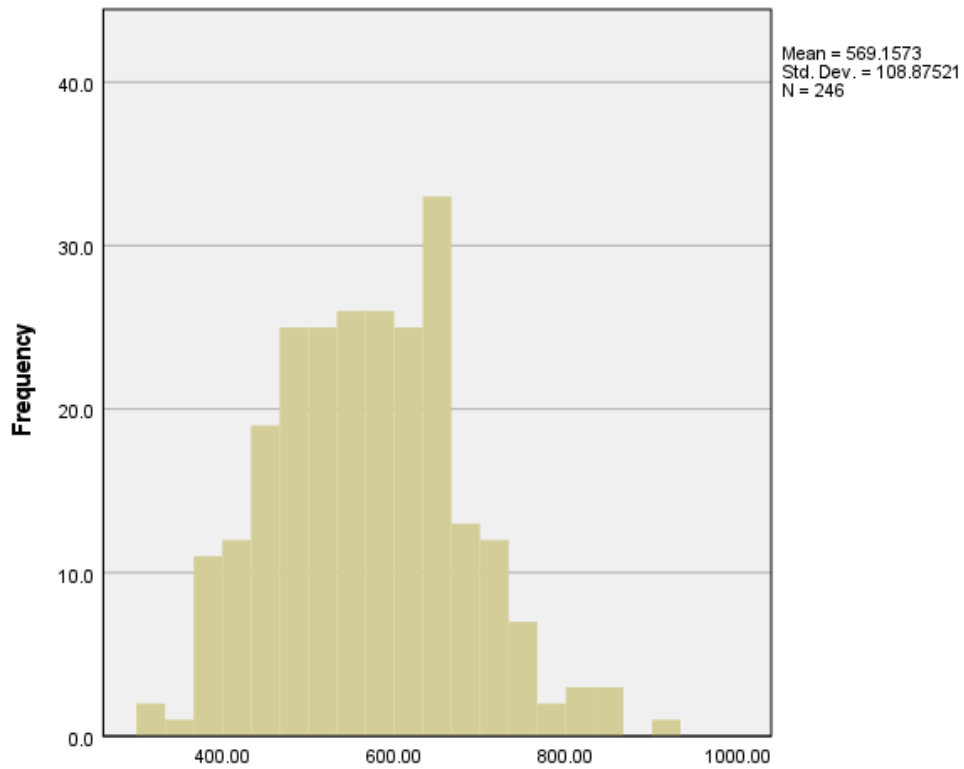




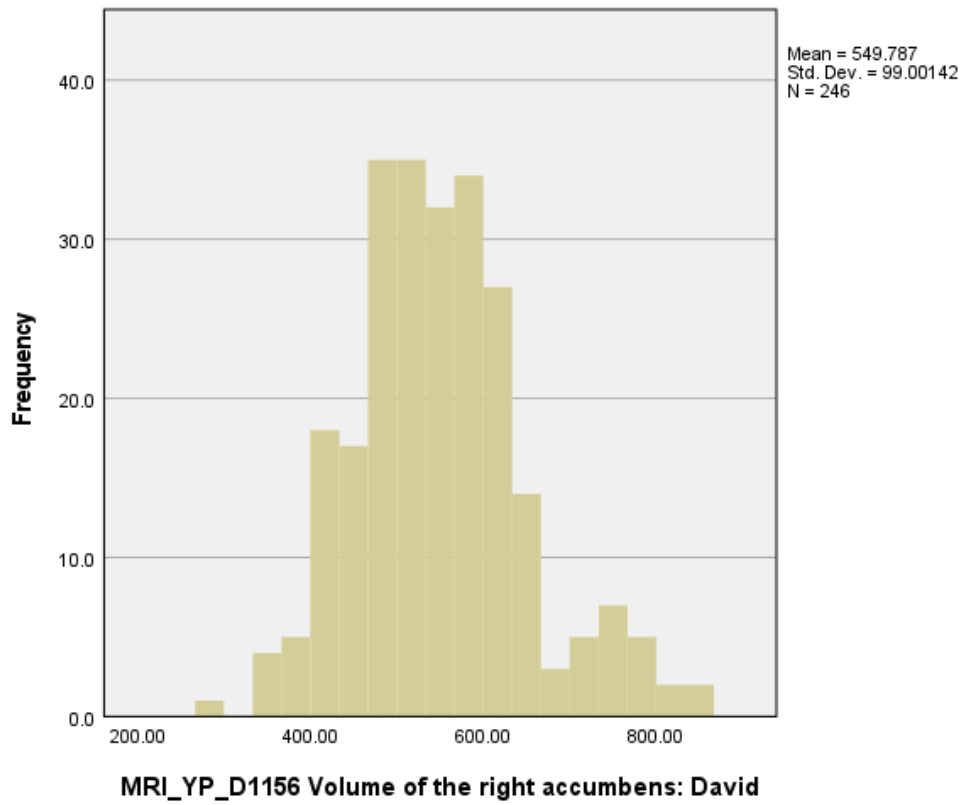




MRI_YP_D1154 Volume of the right amygdala: David



MRI_YP_D1155 Volume of the left accumbens: David



MRI_YP_D1157 Quality control rating for the cortical parcellation: David

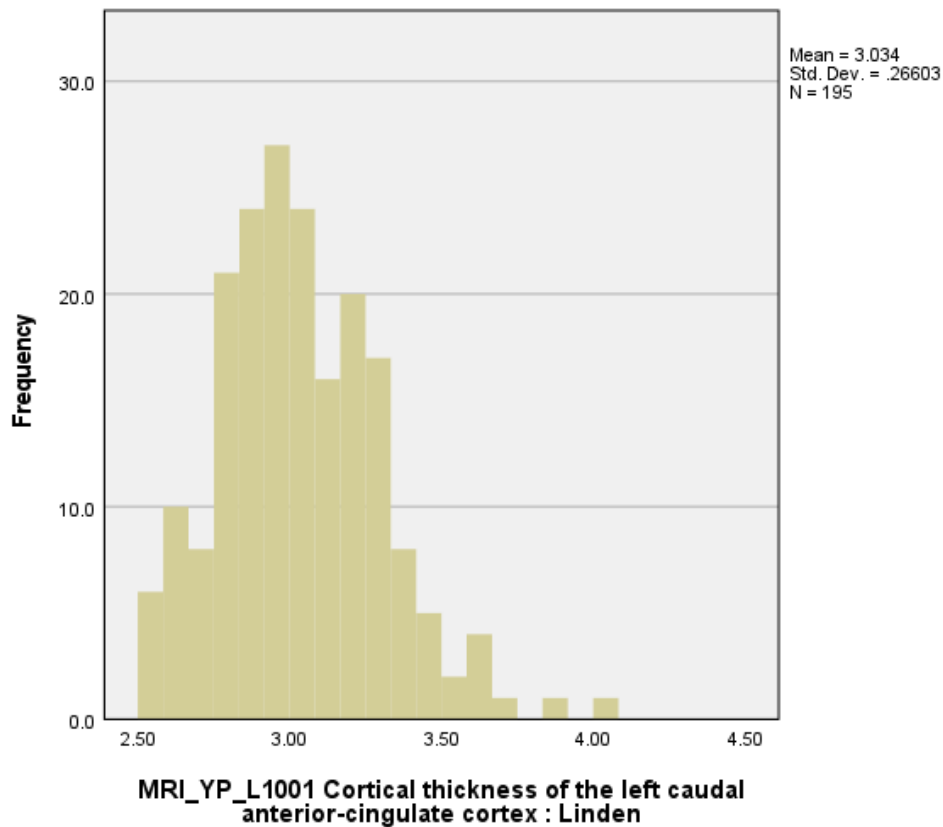
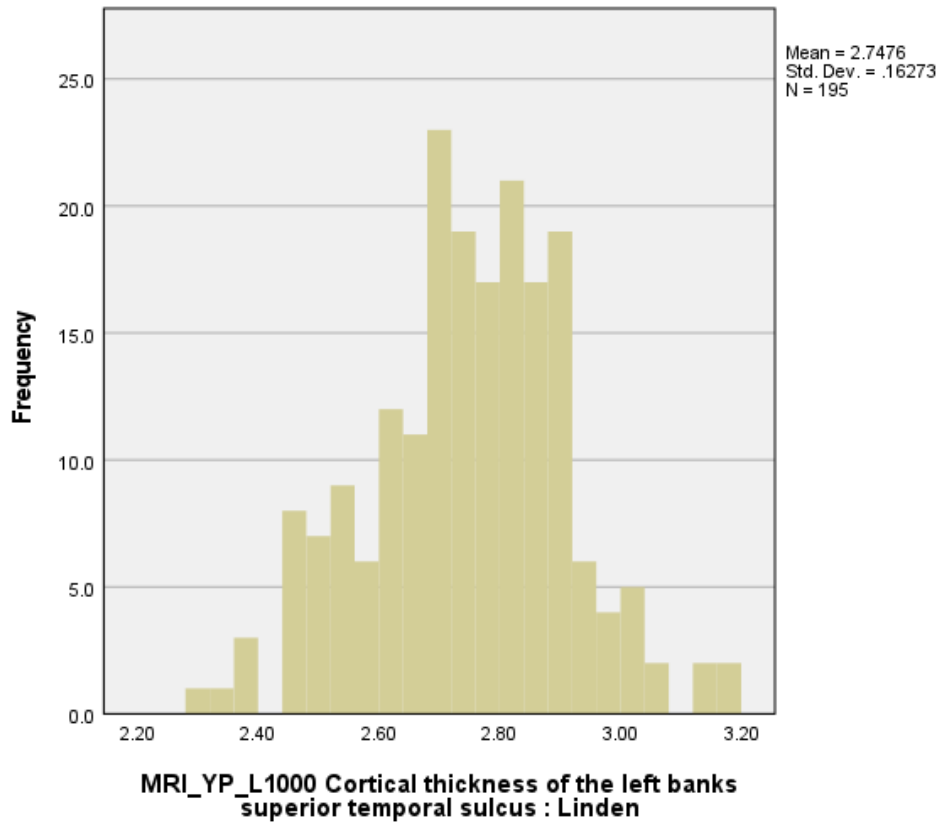
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 pass	145	.7	58.9	58.9
	1 moderate	91	.4	37.0	95.9
	2 fail	10	.0	4.1	100.0
	Total	246	1.2	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-9 MRI data not available	6	.0		
	-7 Did not take part in David study	639	3.1		
	Total	20259	98.8		
Total		20505	100.0		

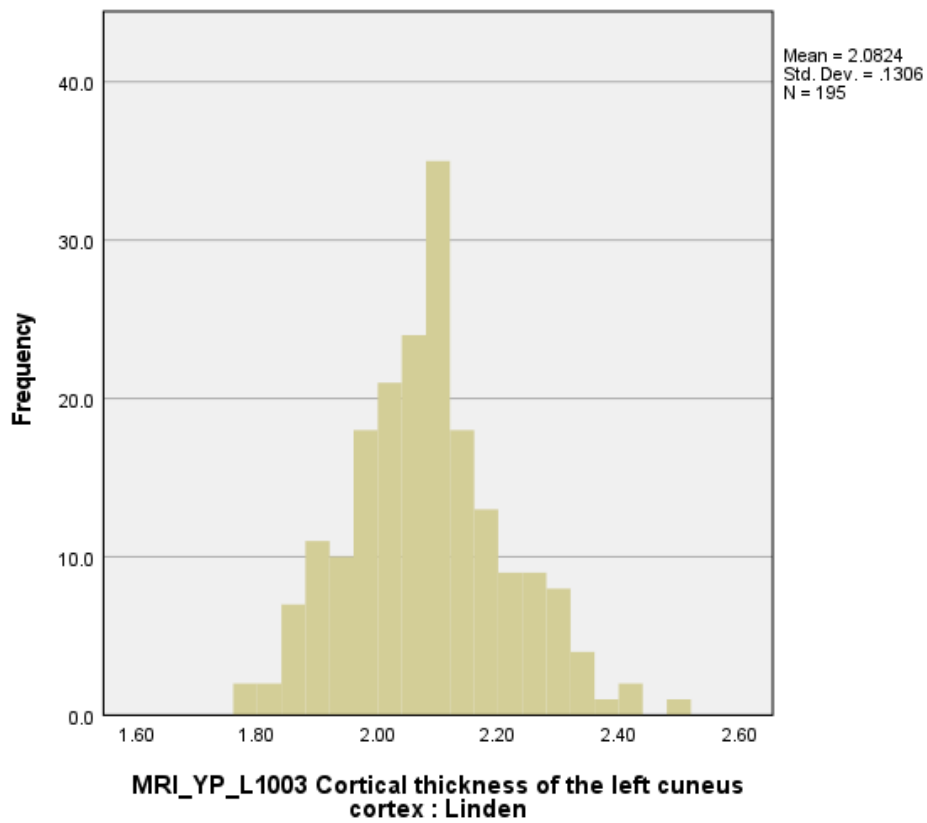
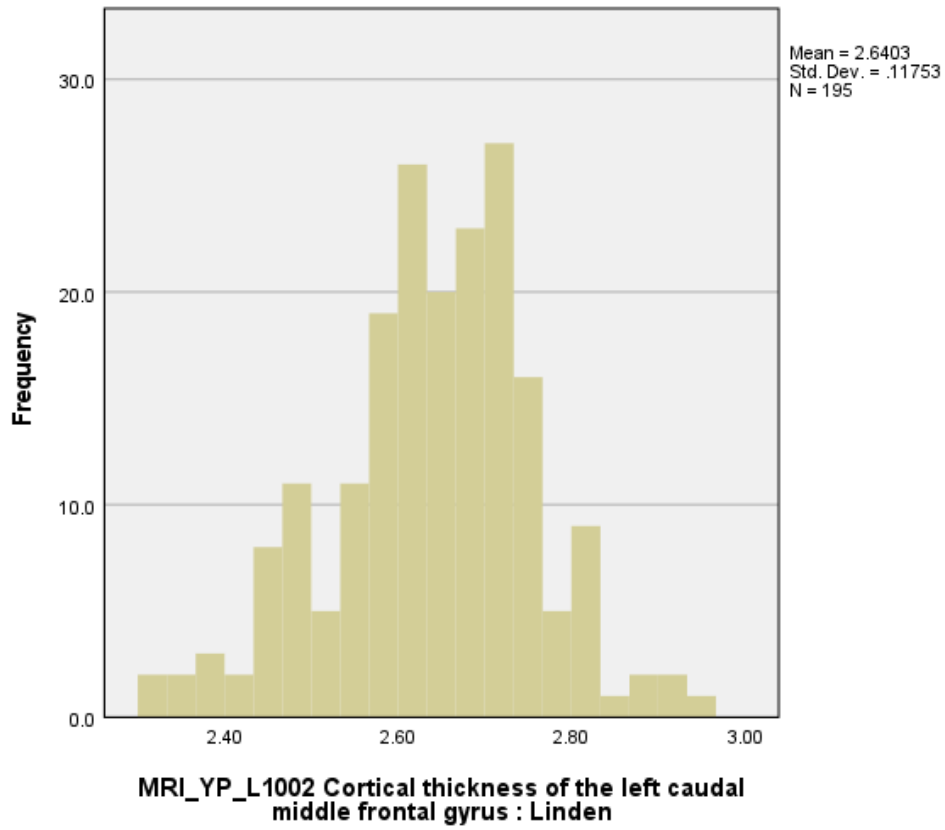
MRI_YP_D1158 Quality control rating for the subcortical segmentation:

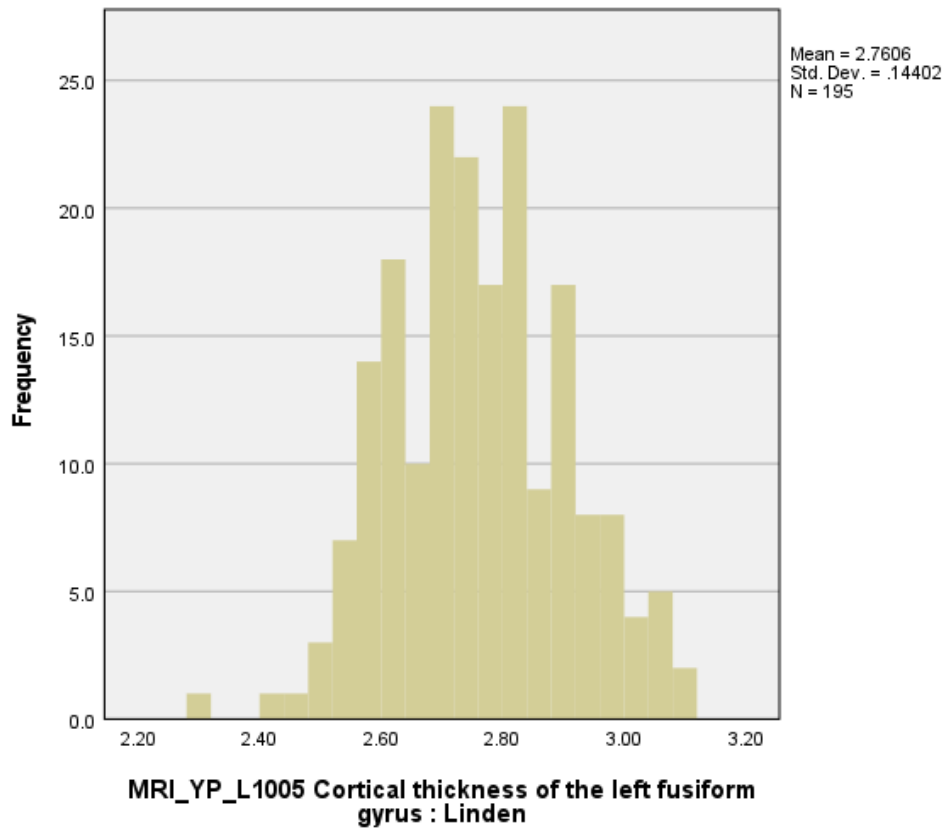
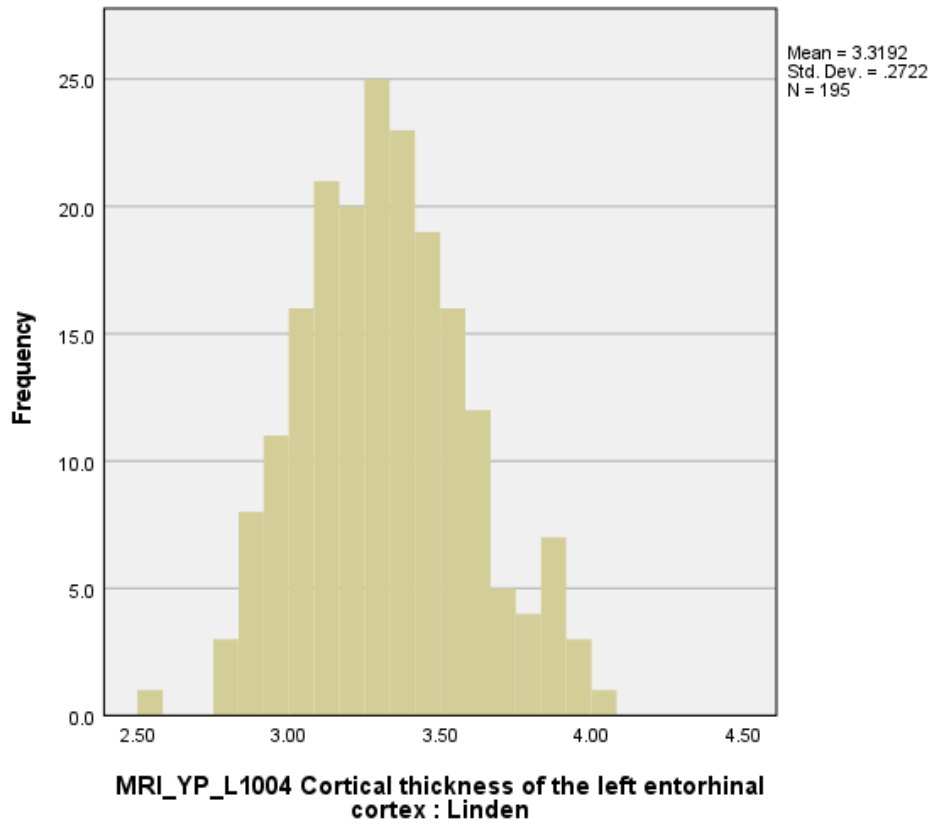
David

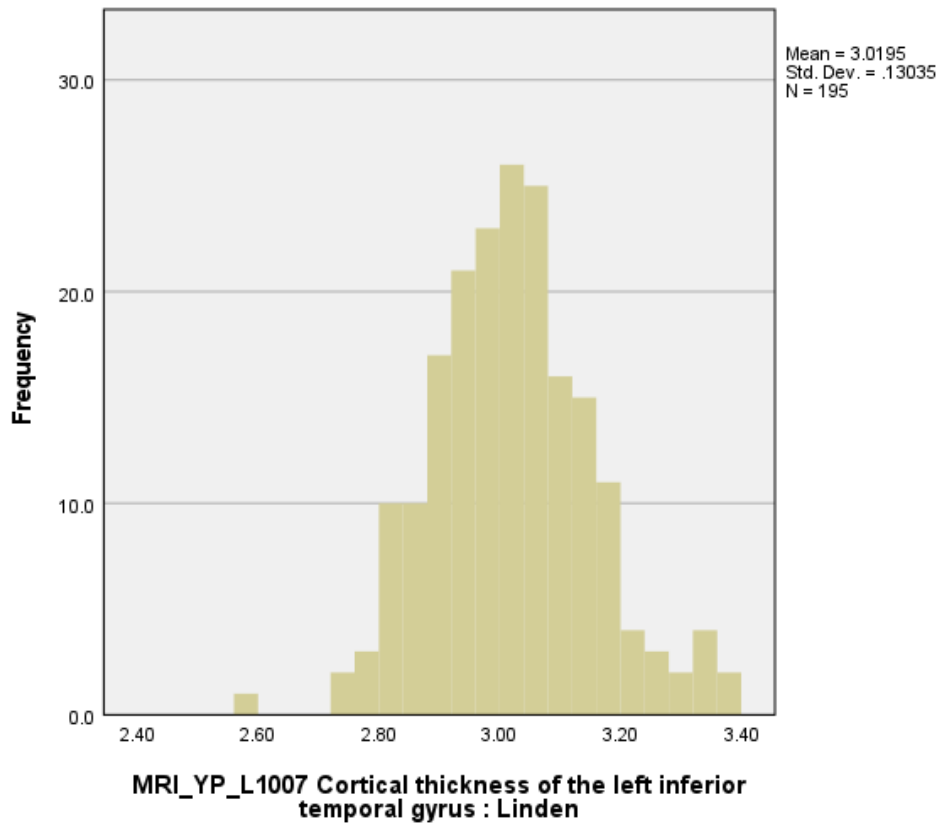
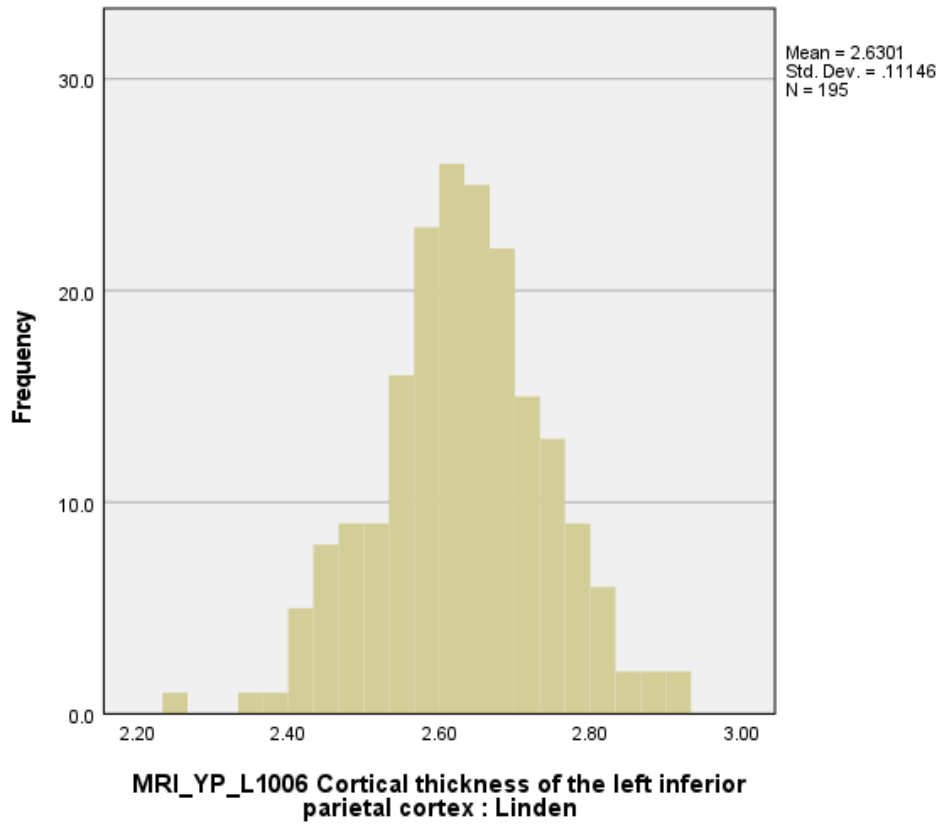
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 pass	238	1.2	96.7	96.7
	1 moderate	4	.0	1.6	98.4
	2 fail	4	.0	1.6	100.0
	Total	246	1.2	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-9 MRI data not available	6	.0		
	-7 Did not take part in David study	639	3.1		
	Total	20259	98.8		
Total		20505	100.0		

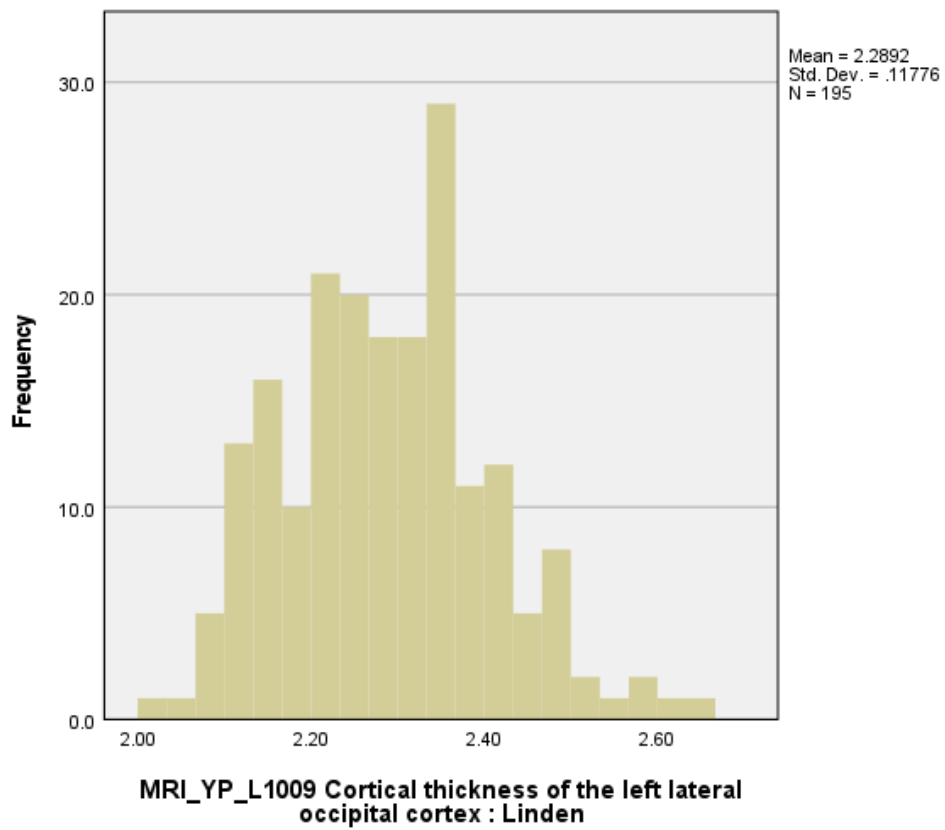
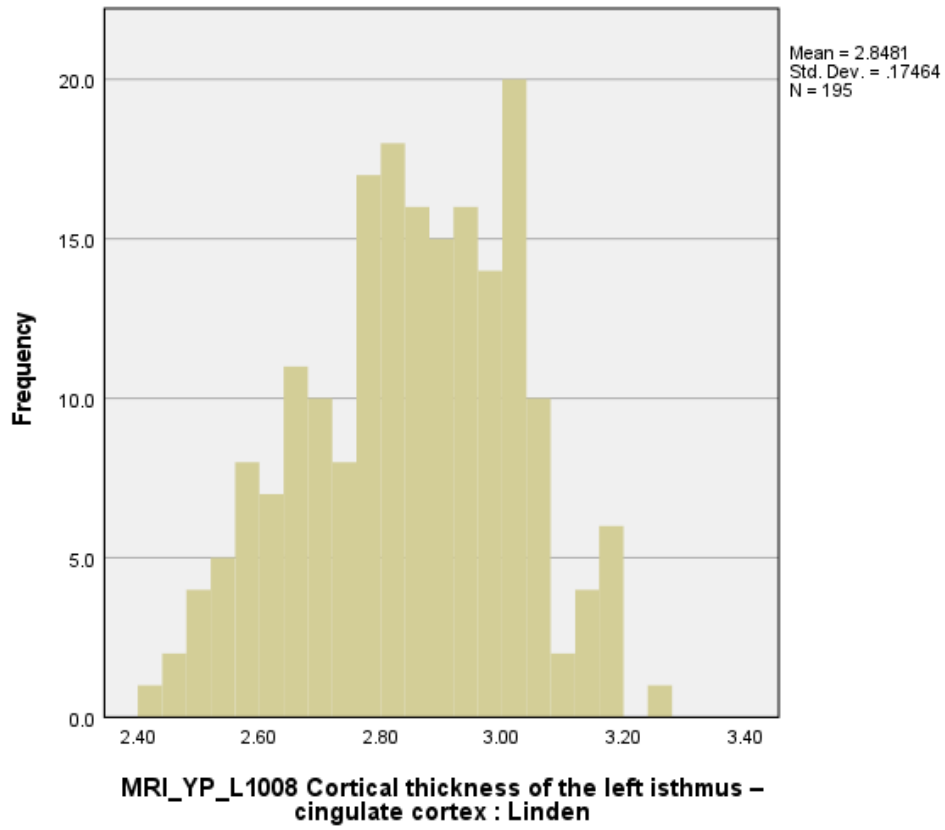
Linden (SCZ-RbG Study) MRI frequencies & histograms

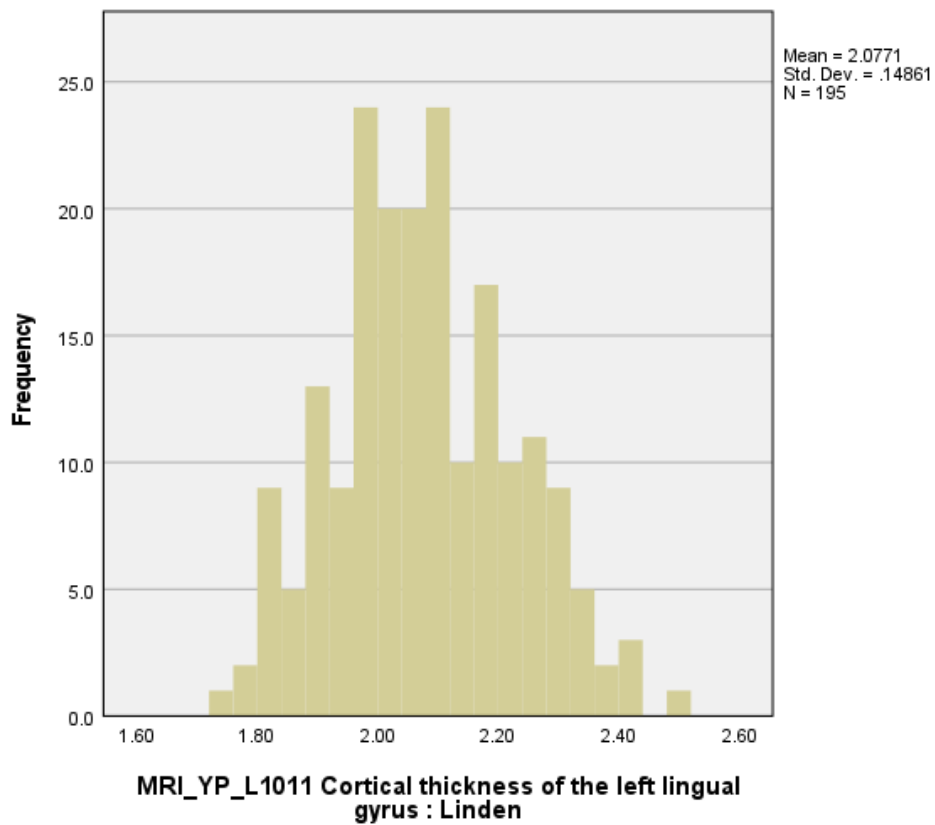
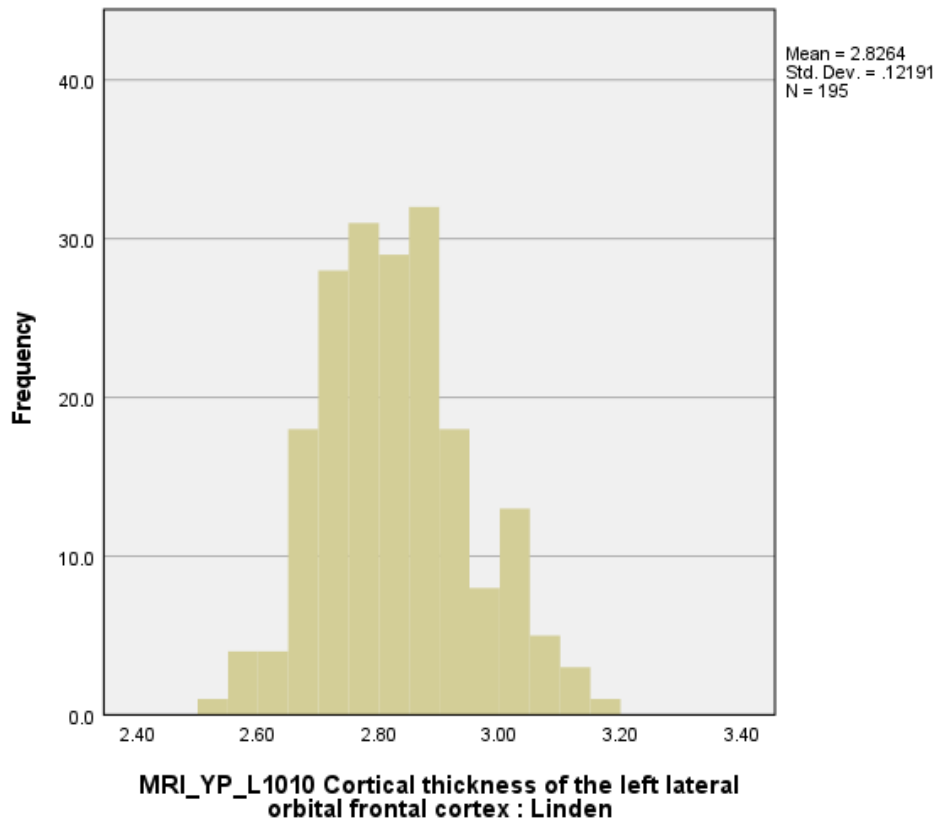


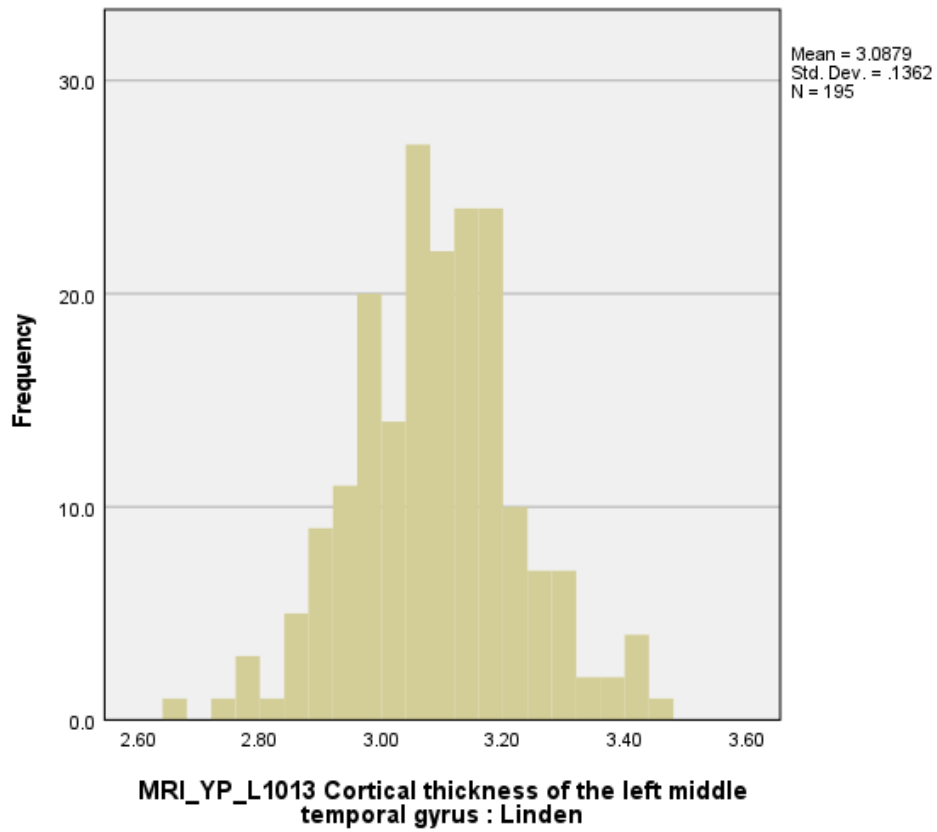
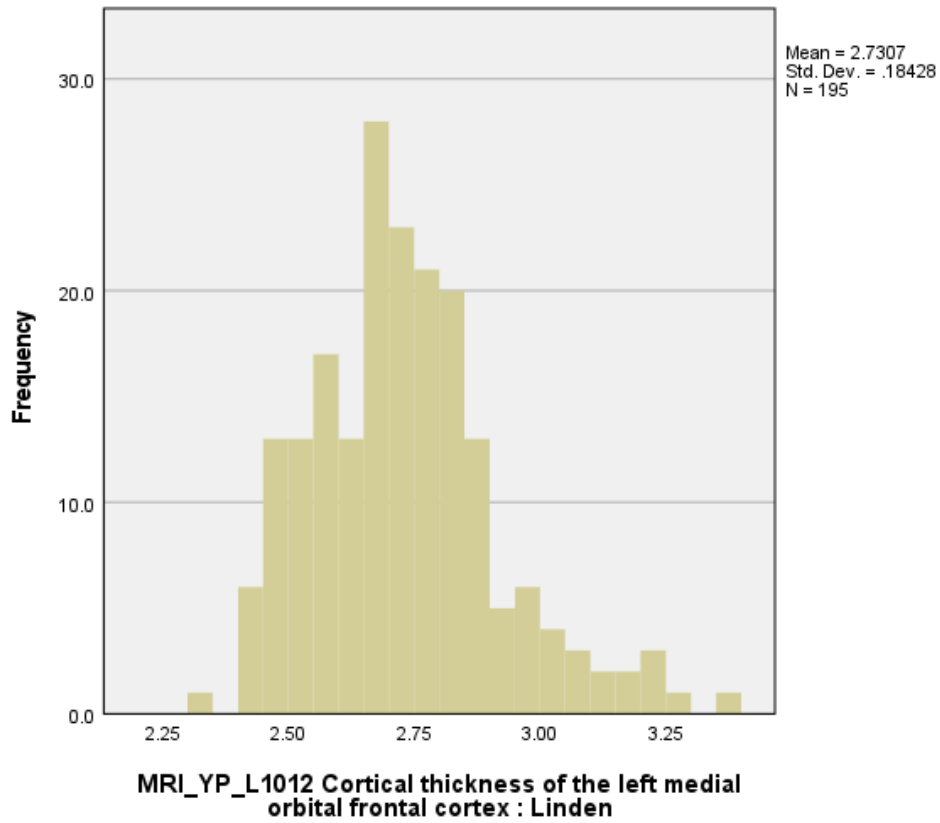


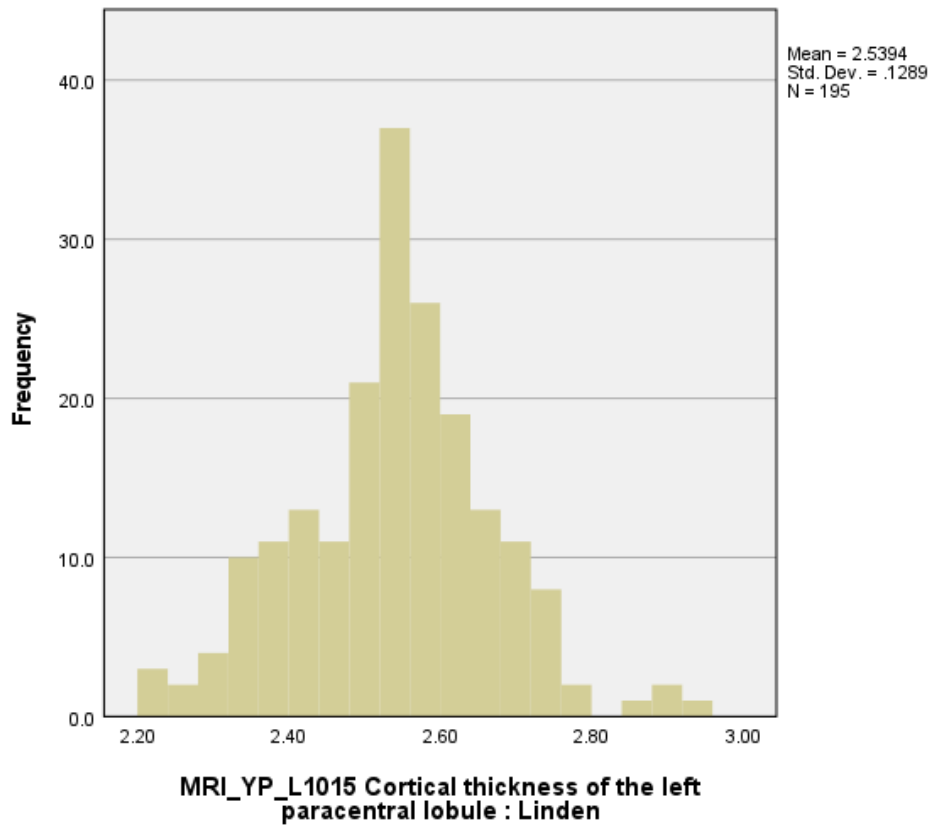
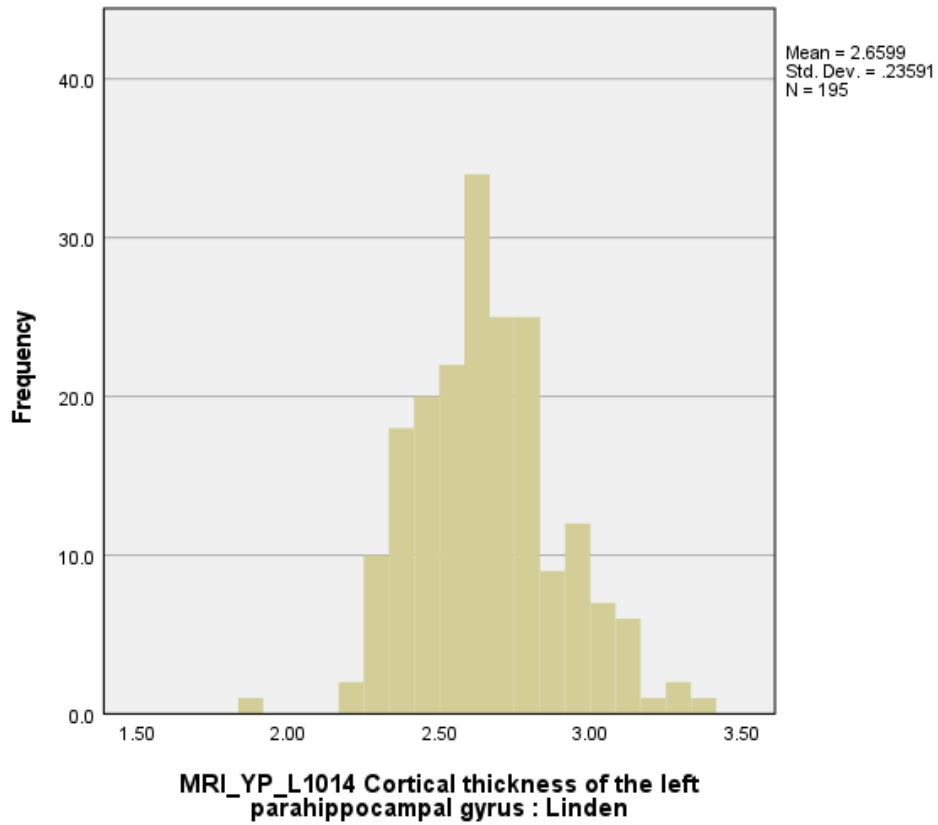


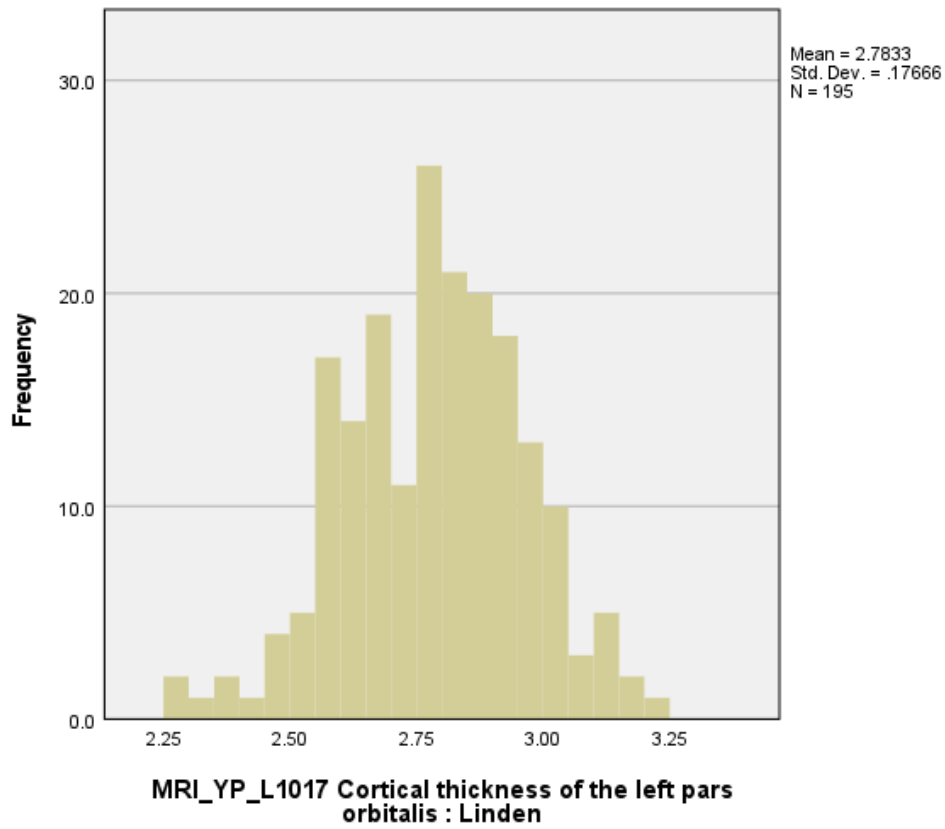
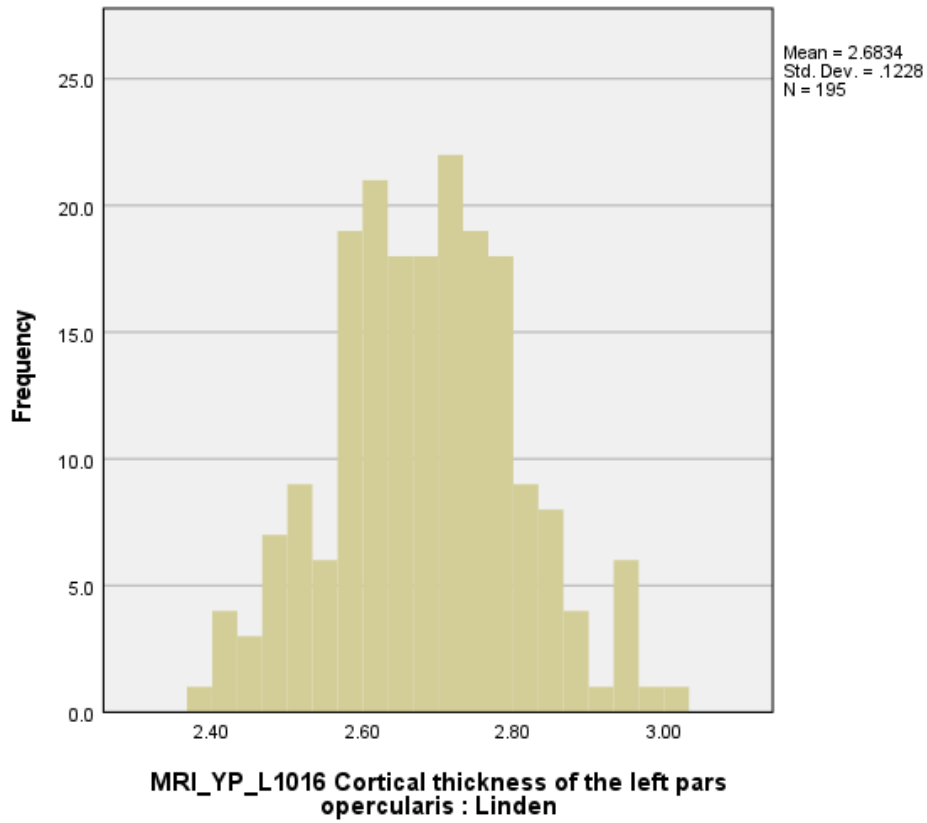


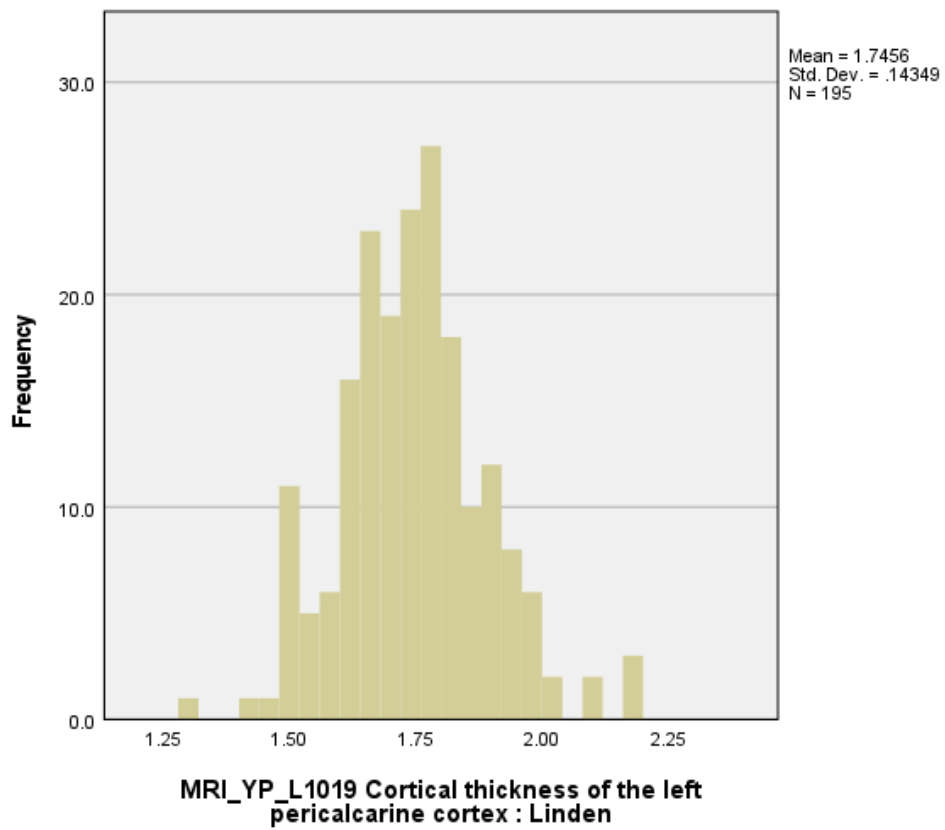
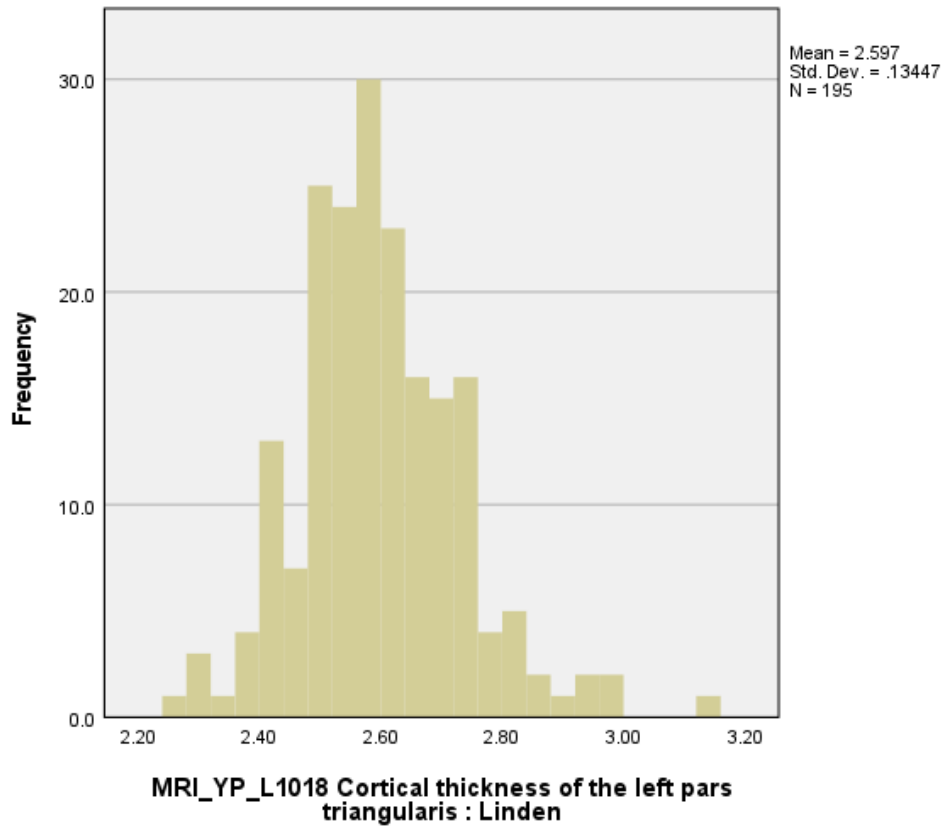


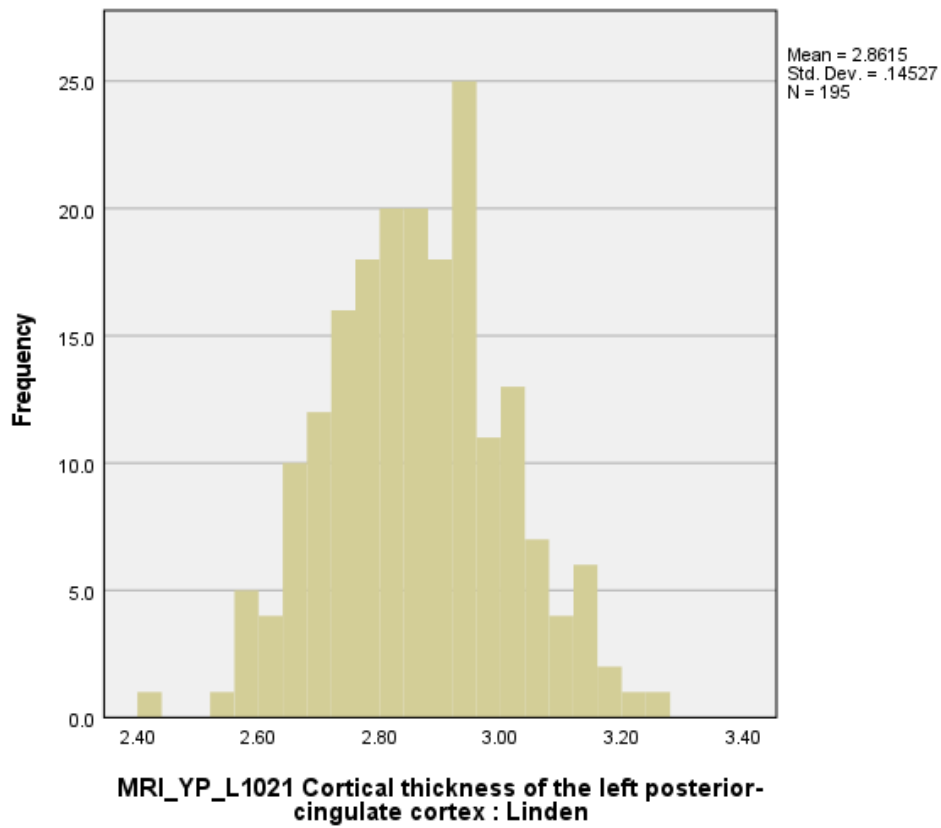
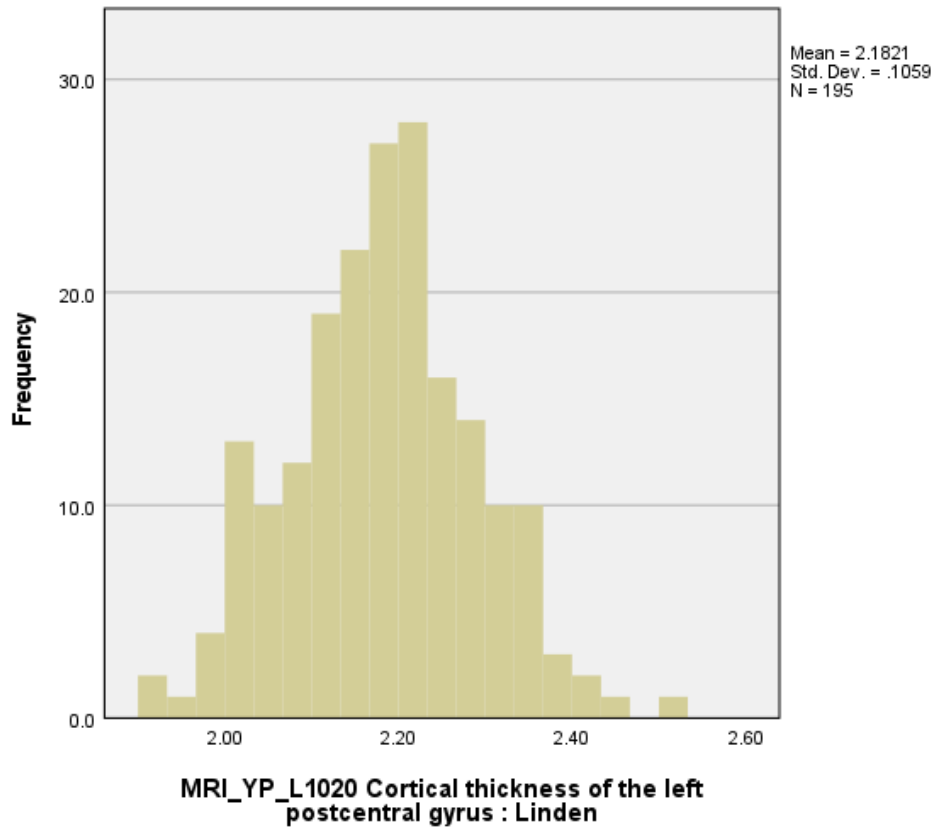


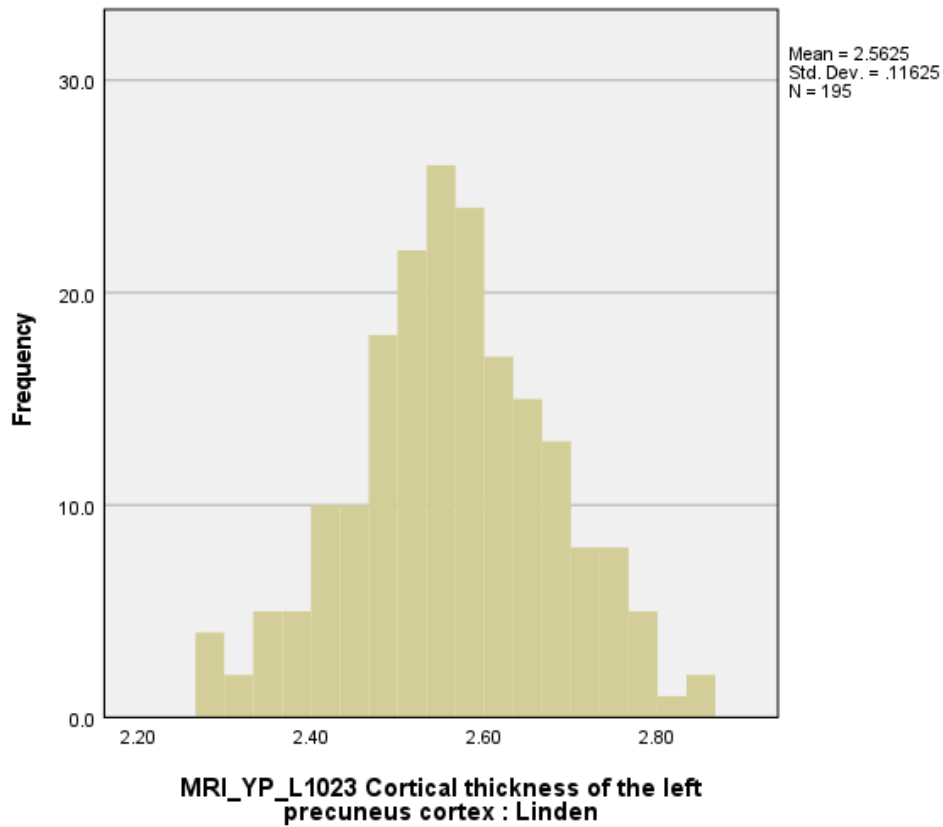
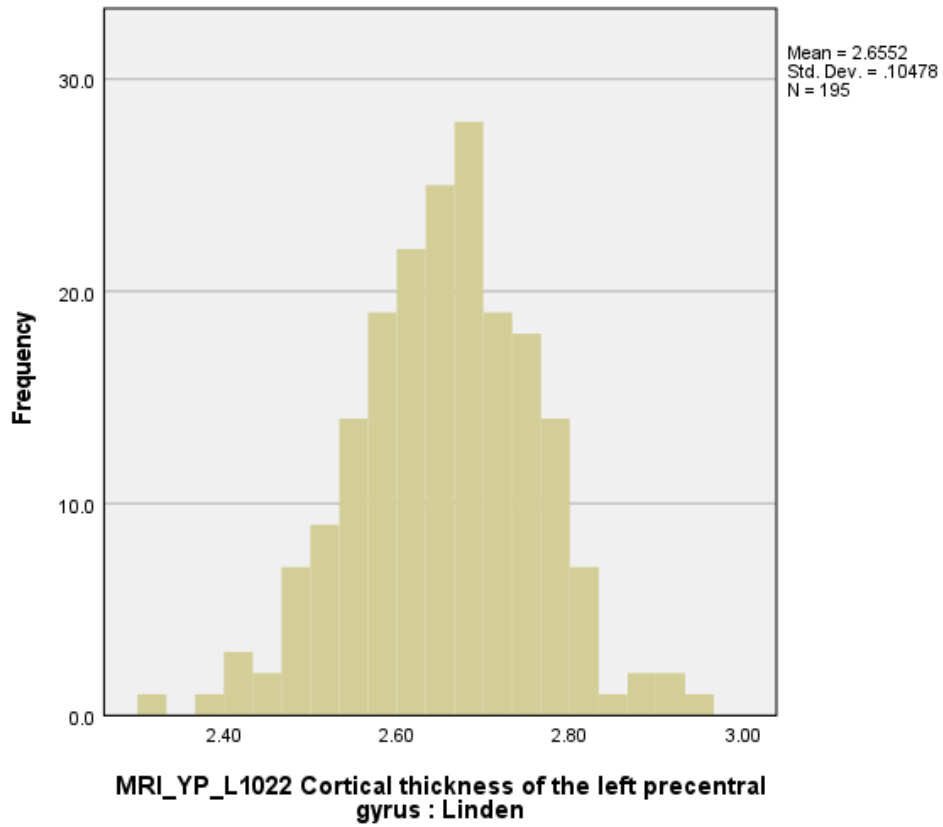


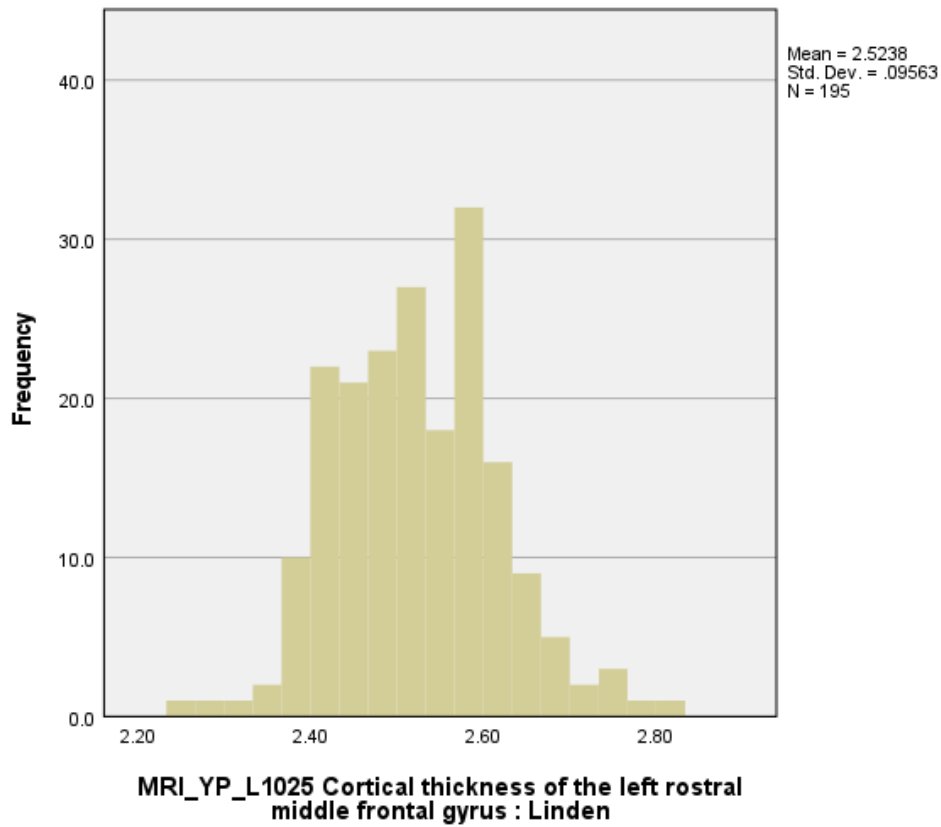
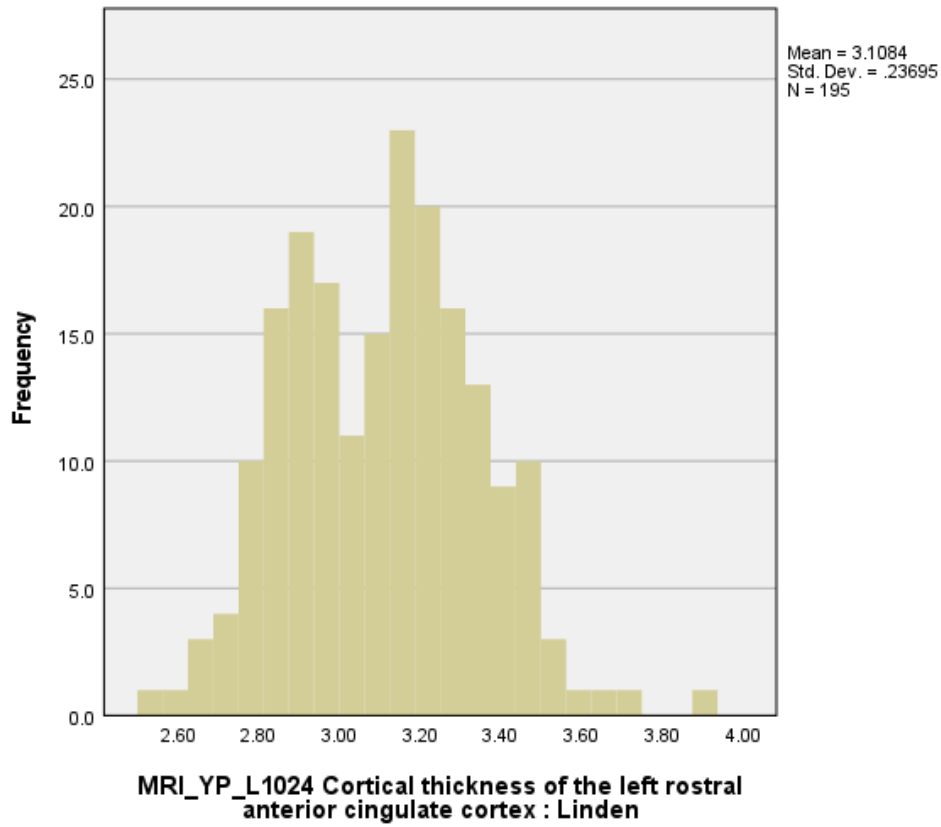


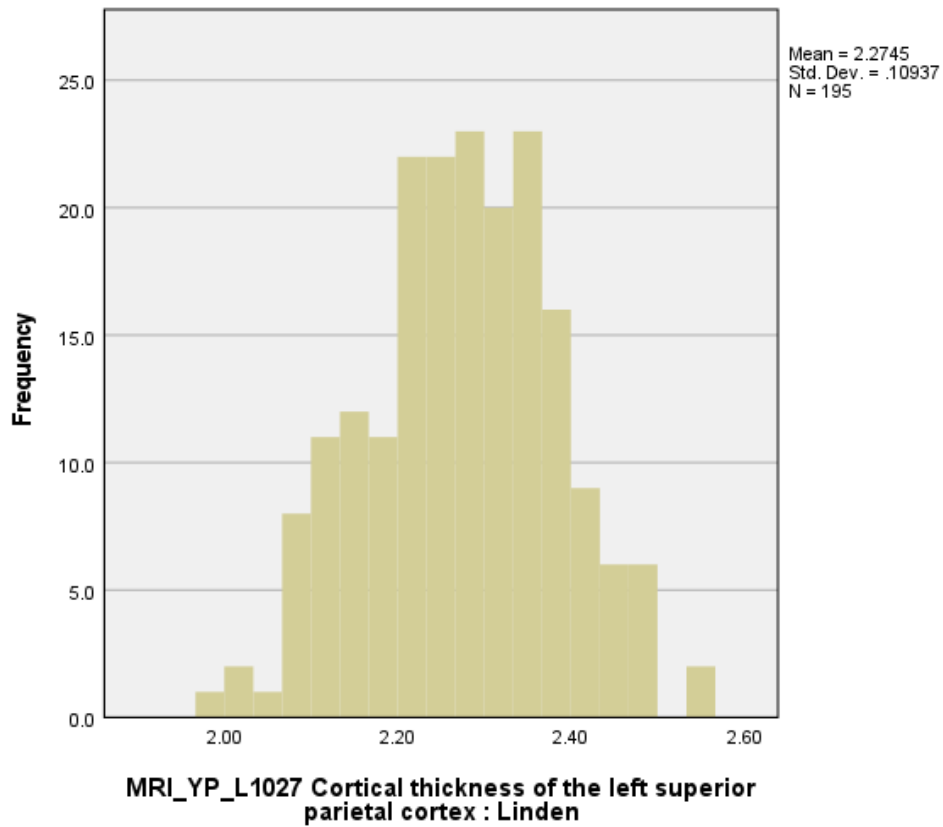
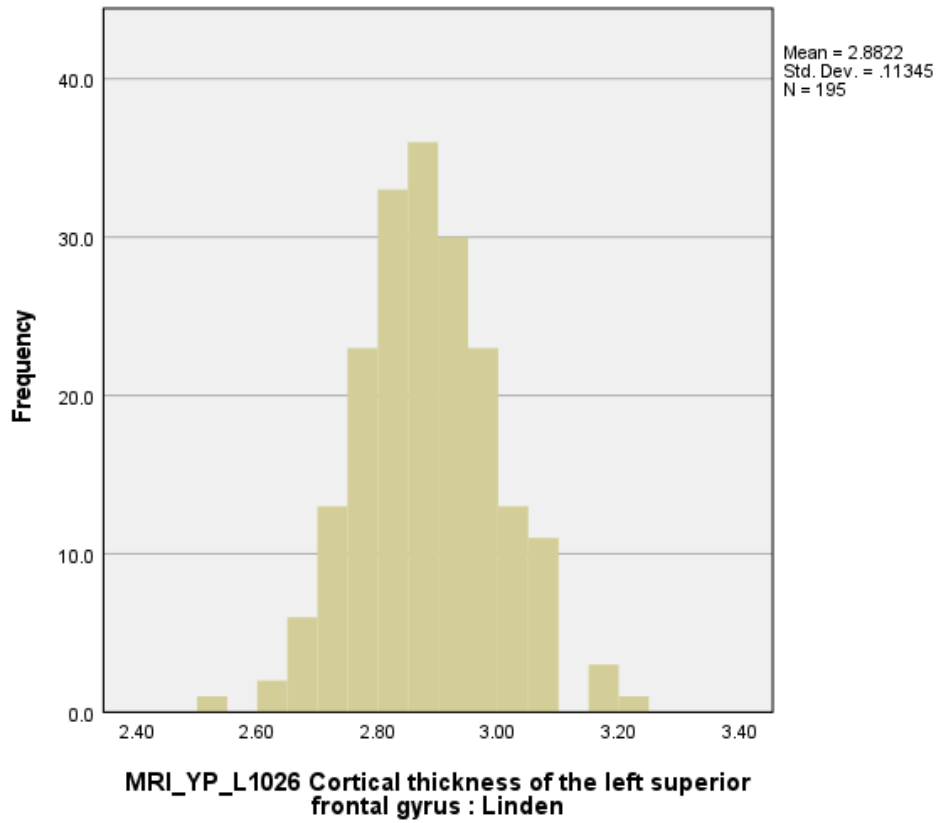


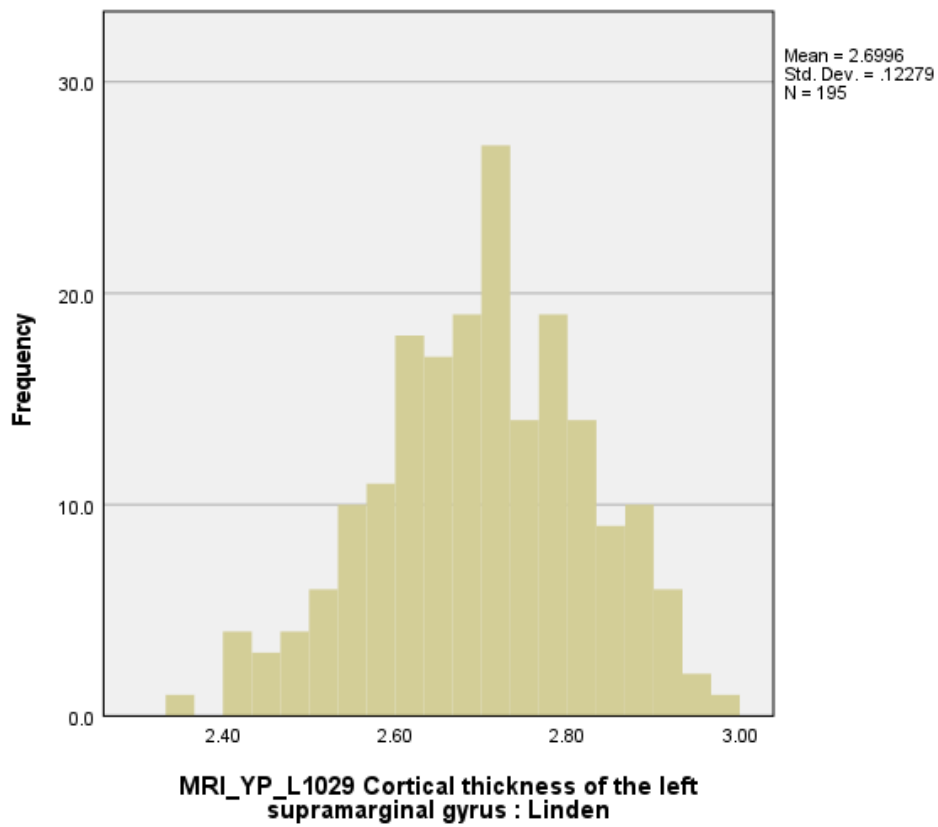
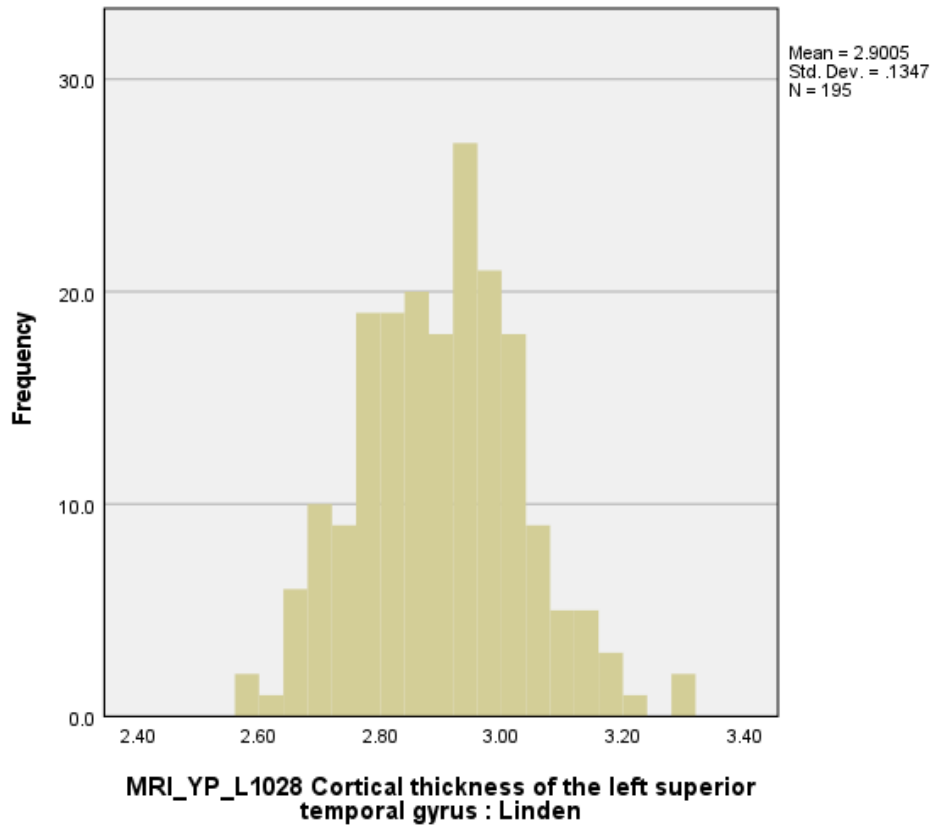


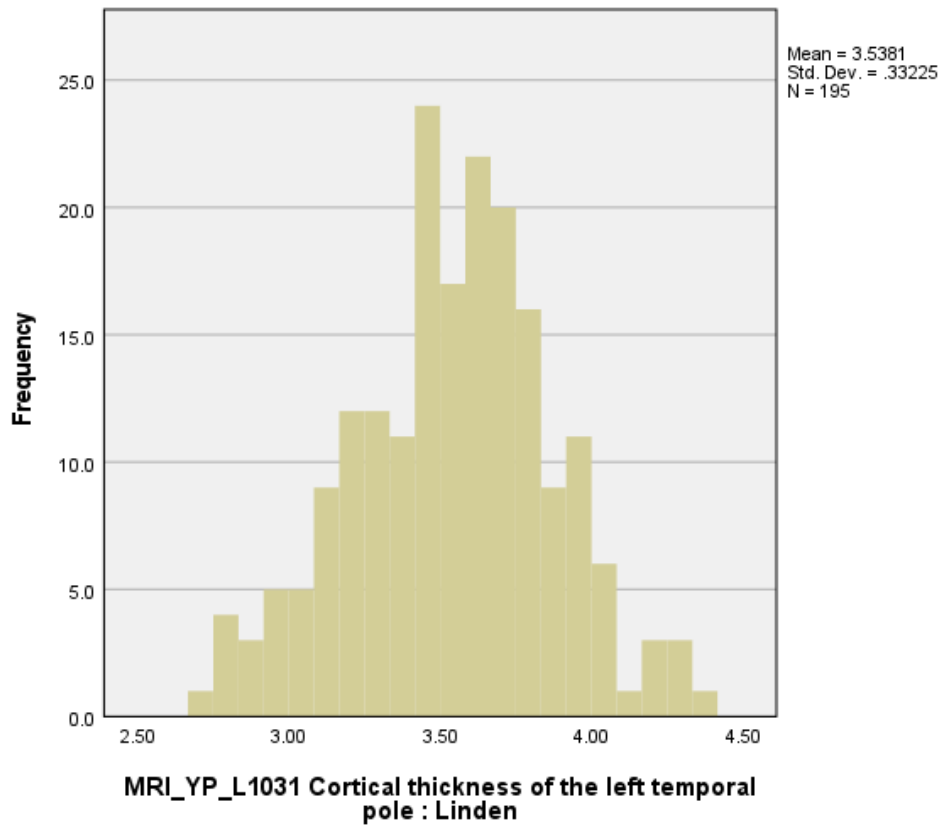
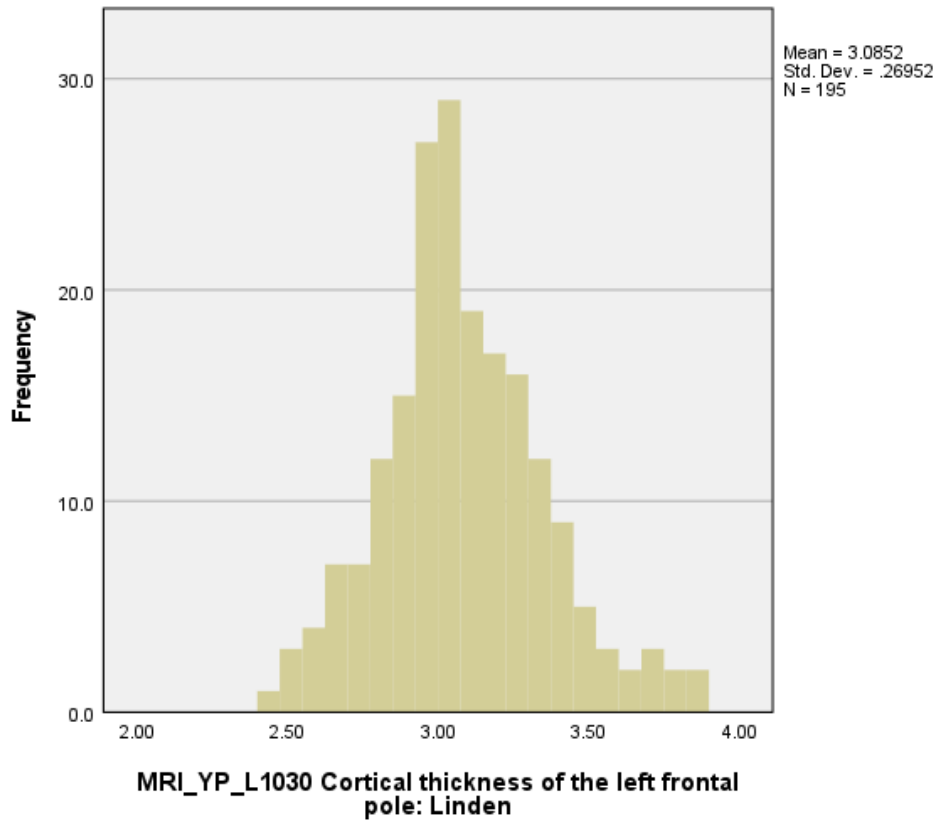


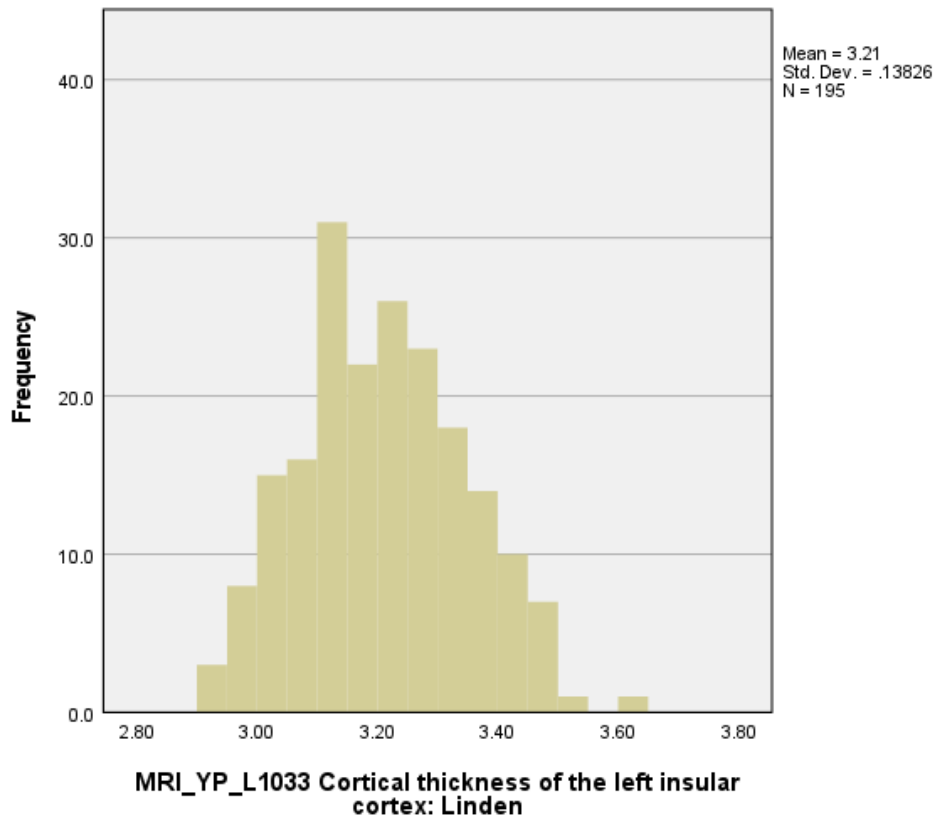
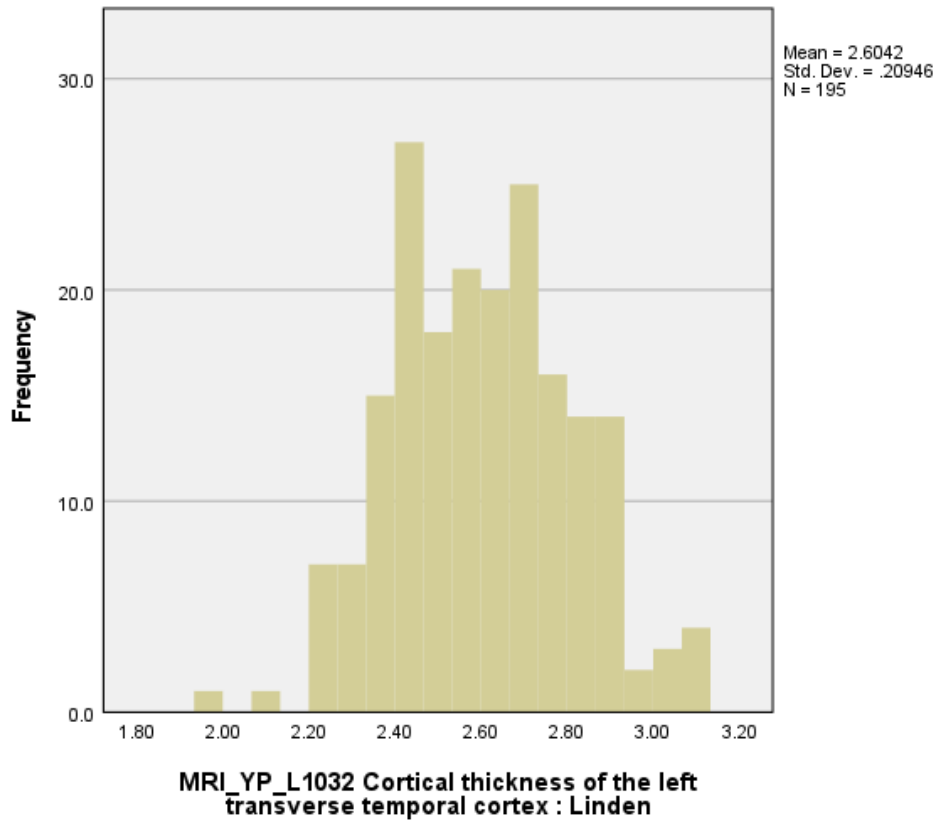


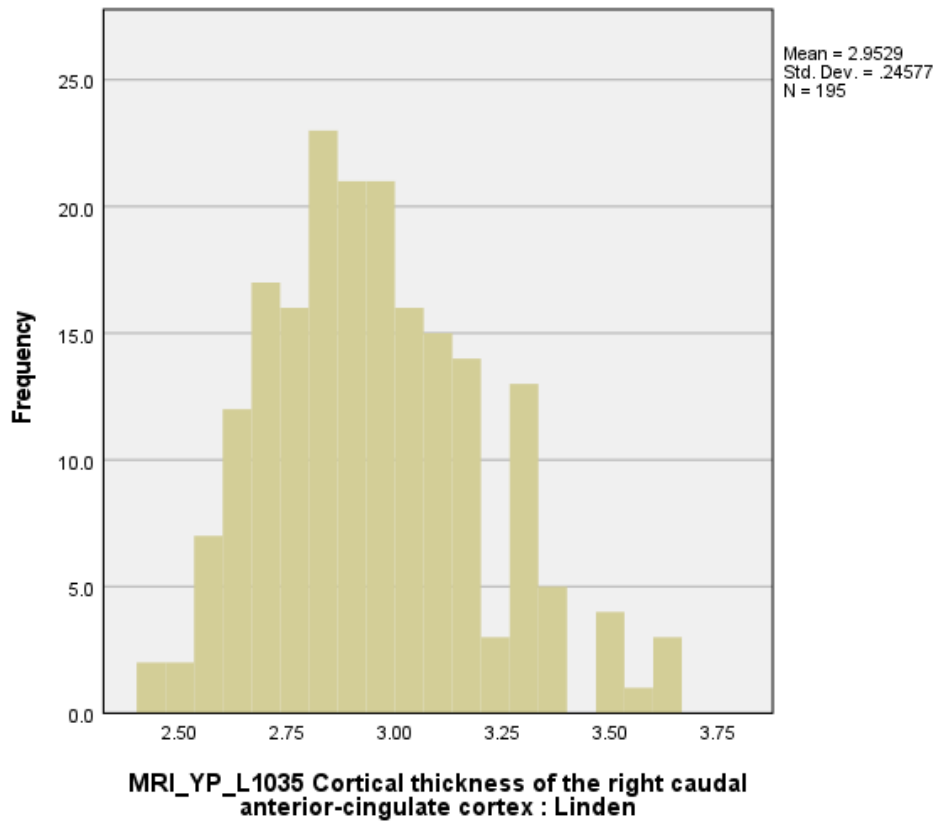
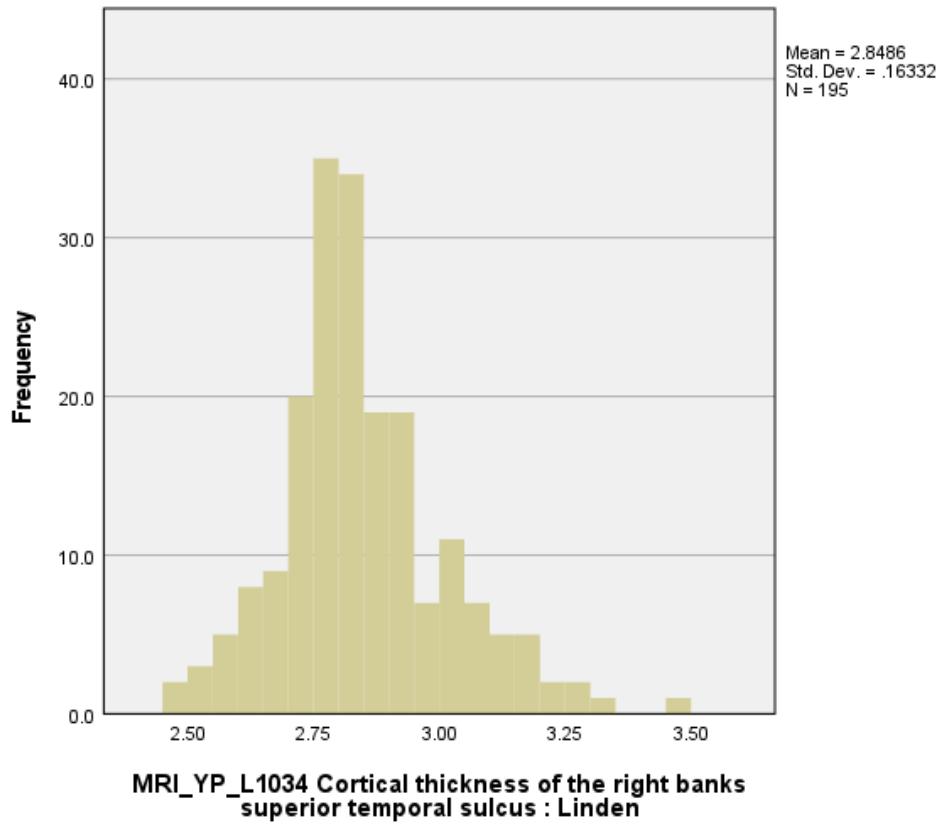


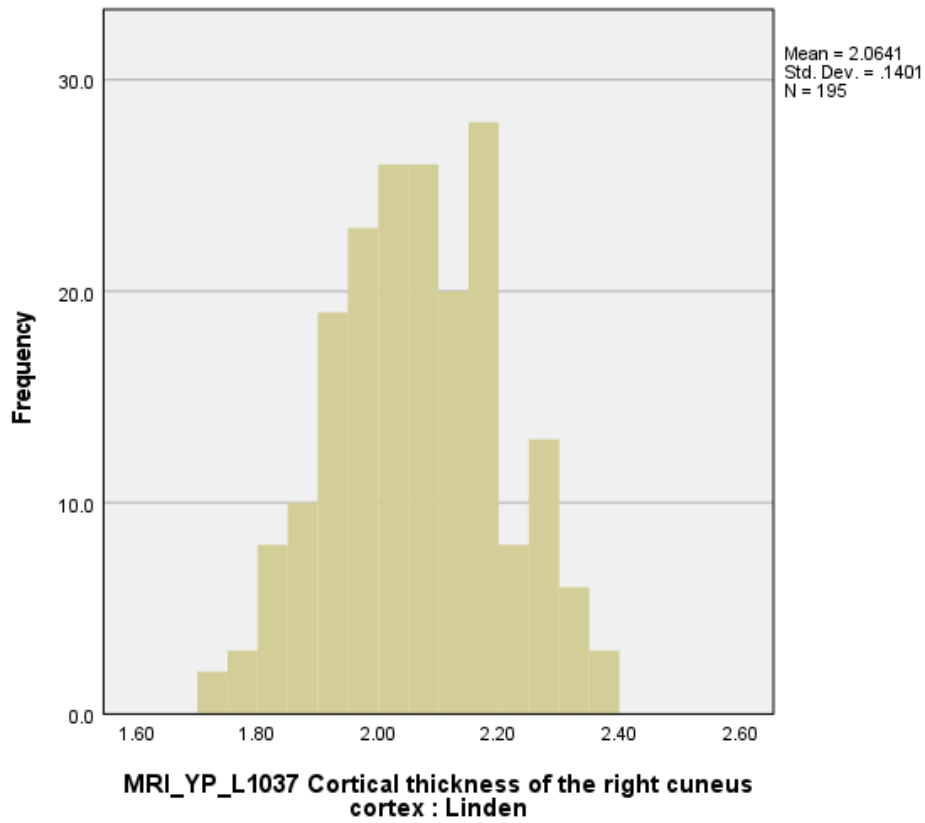
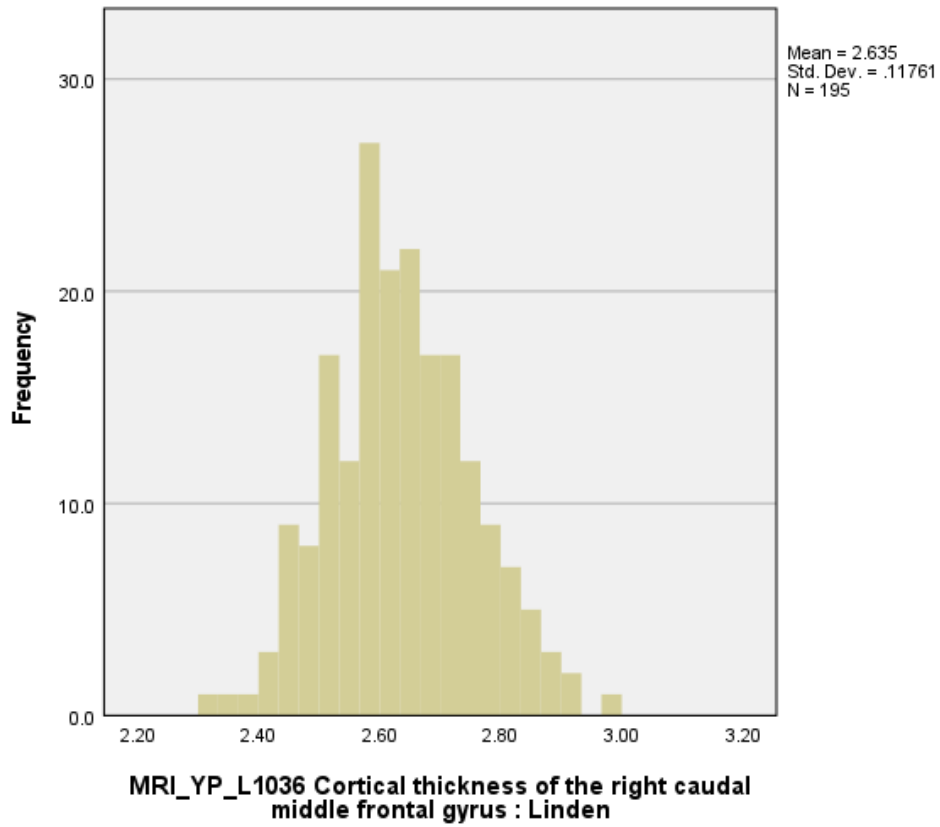


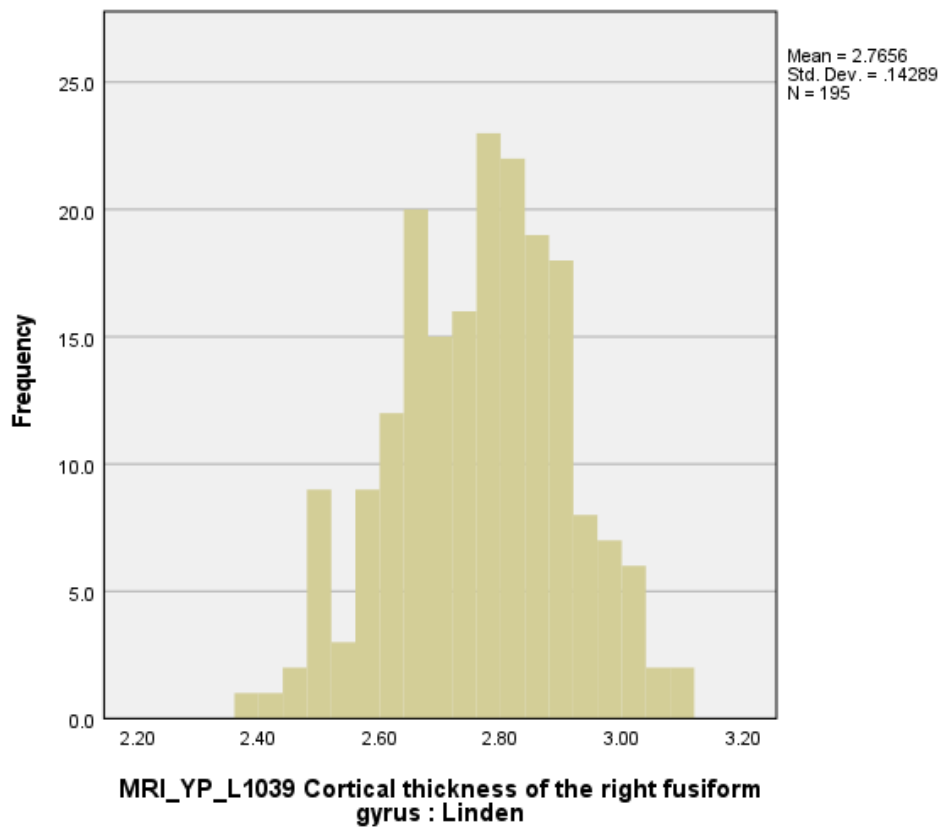
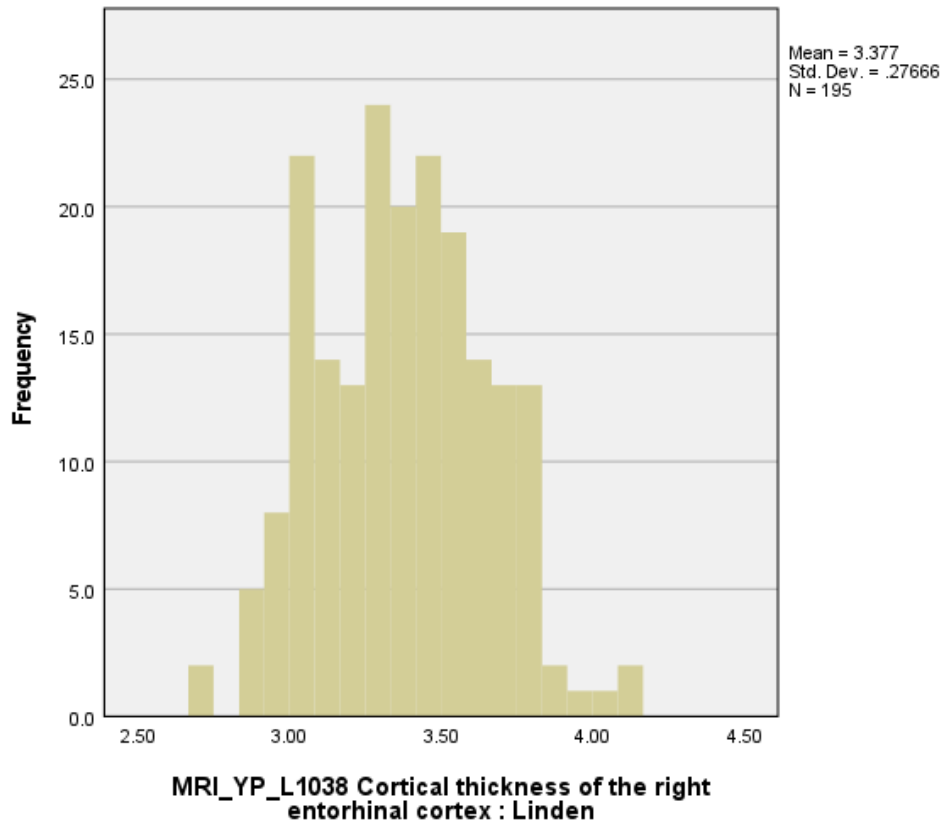


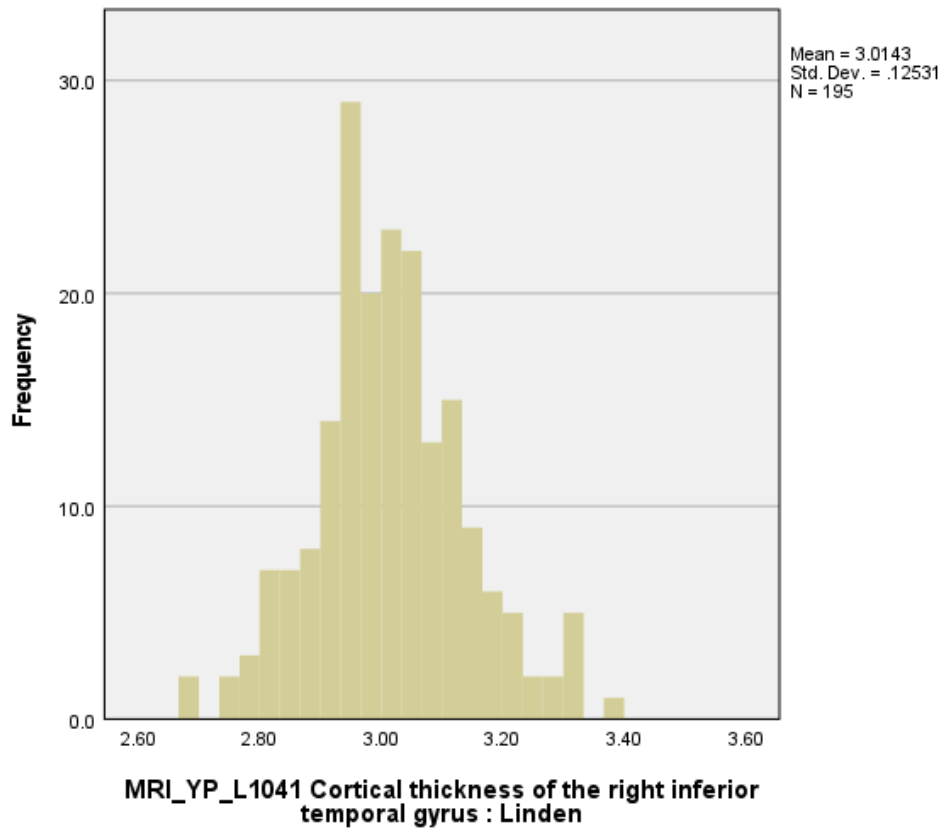
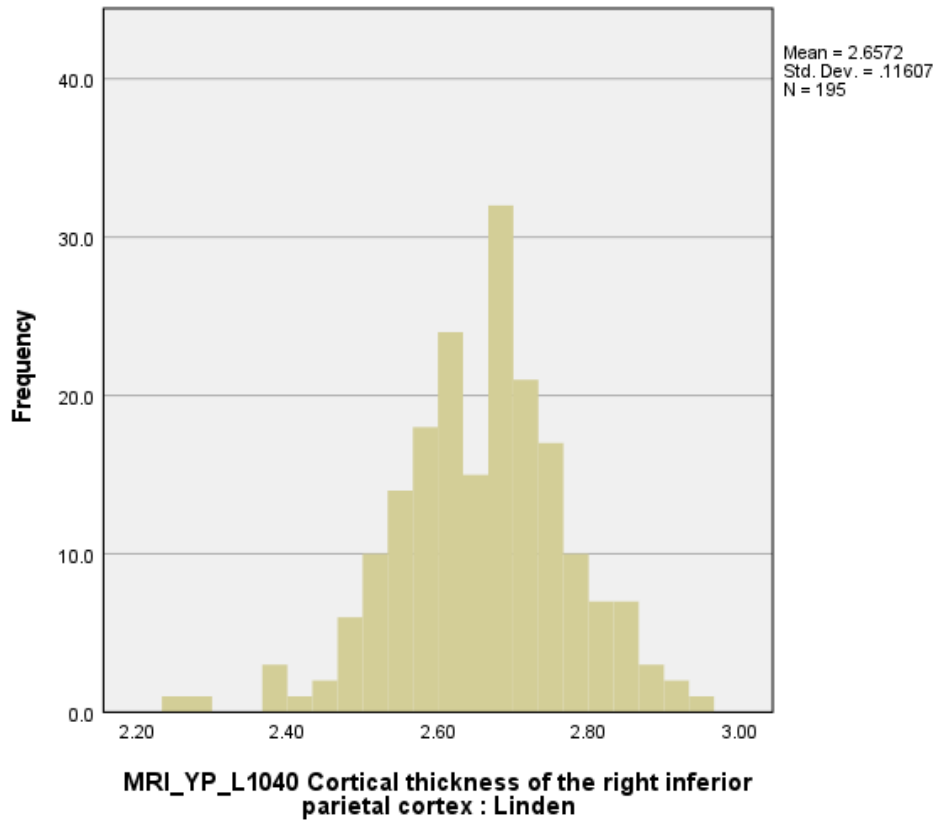


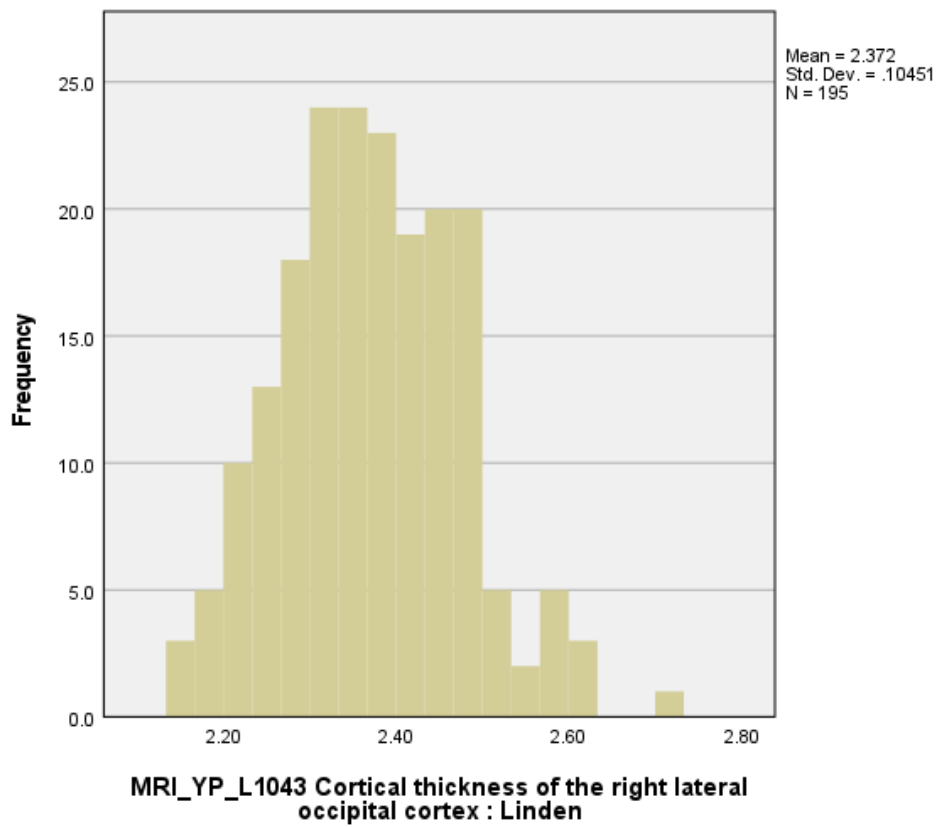
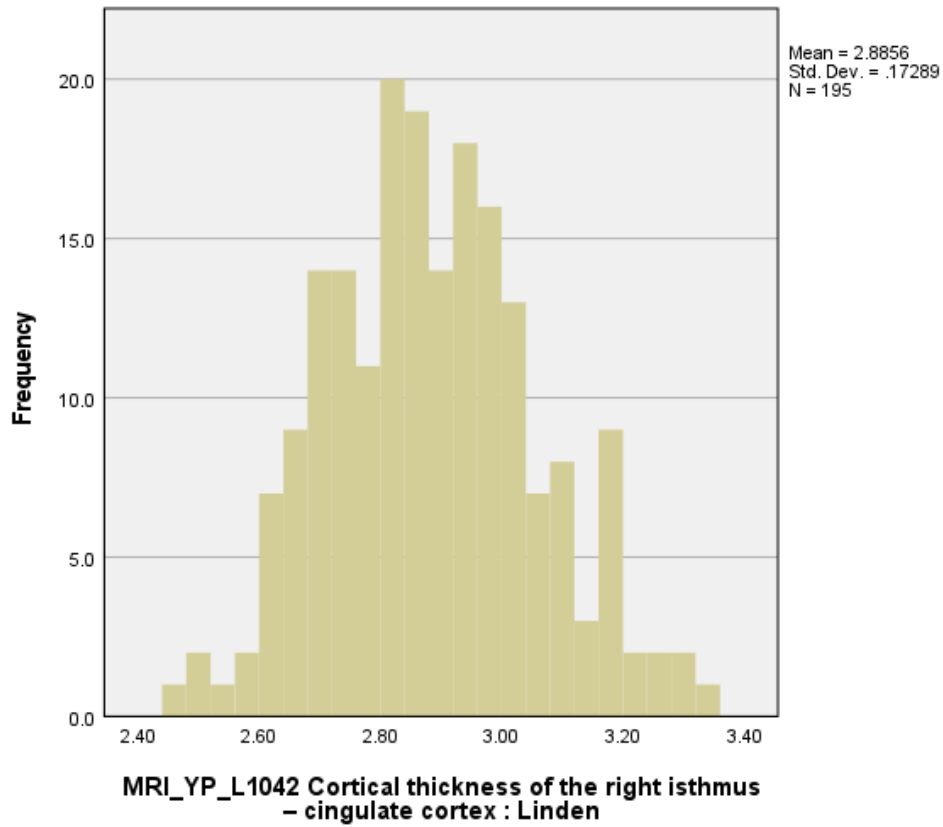


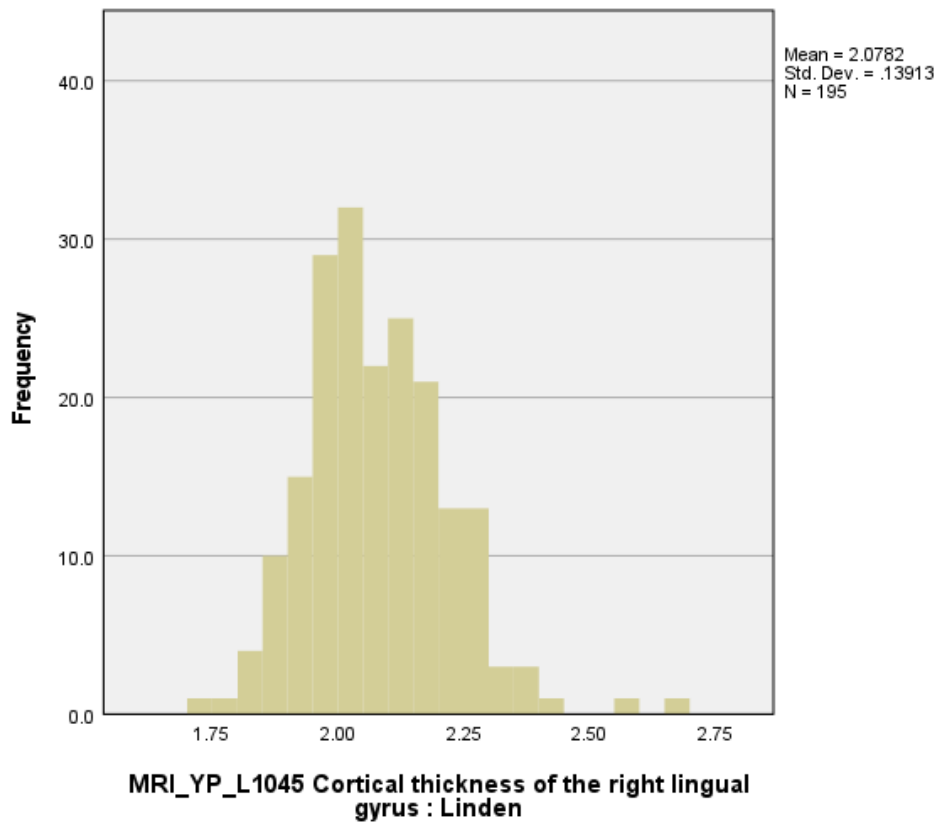
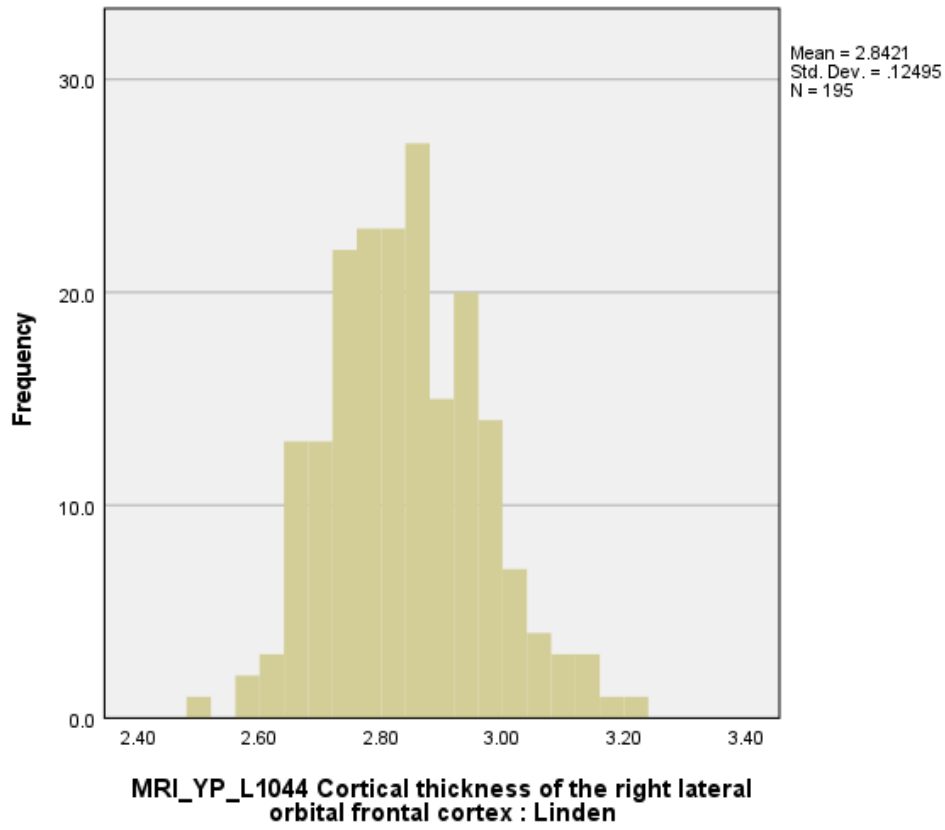


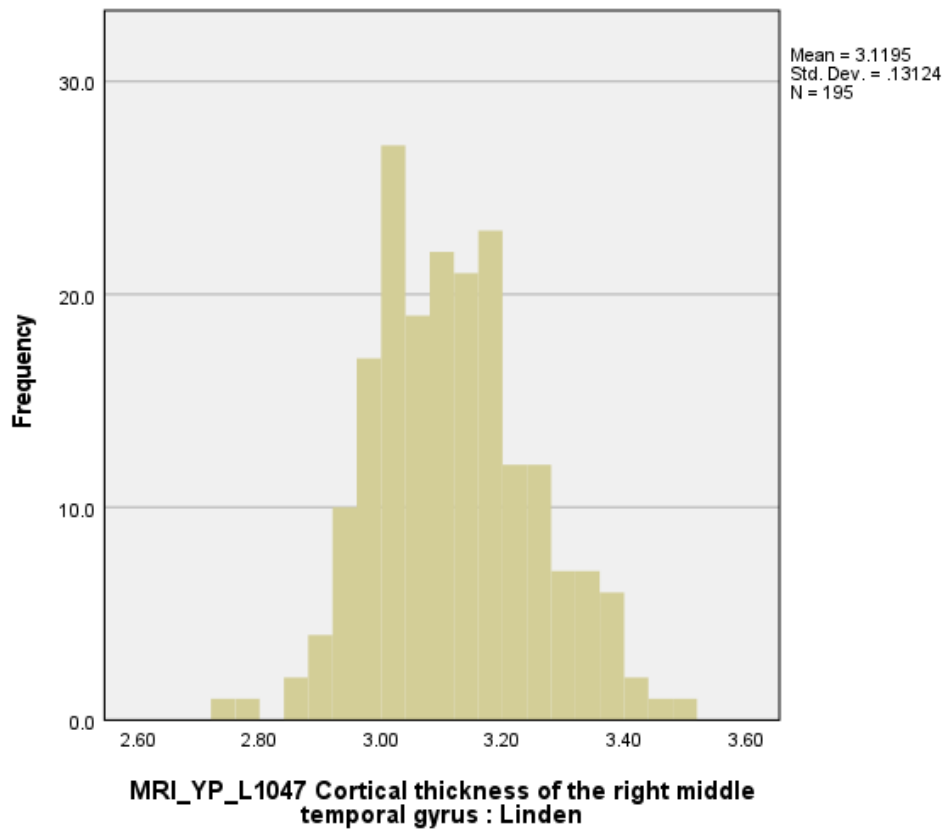
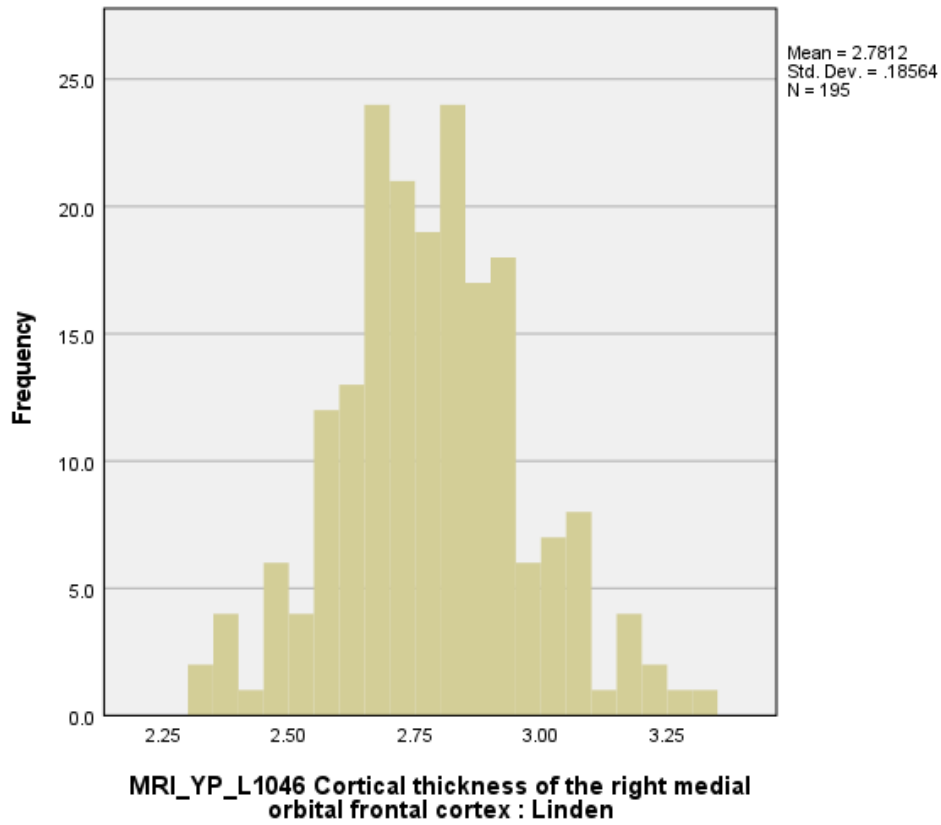


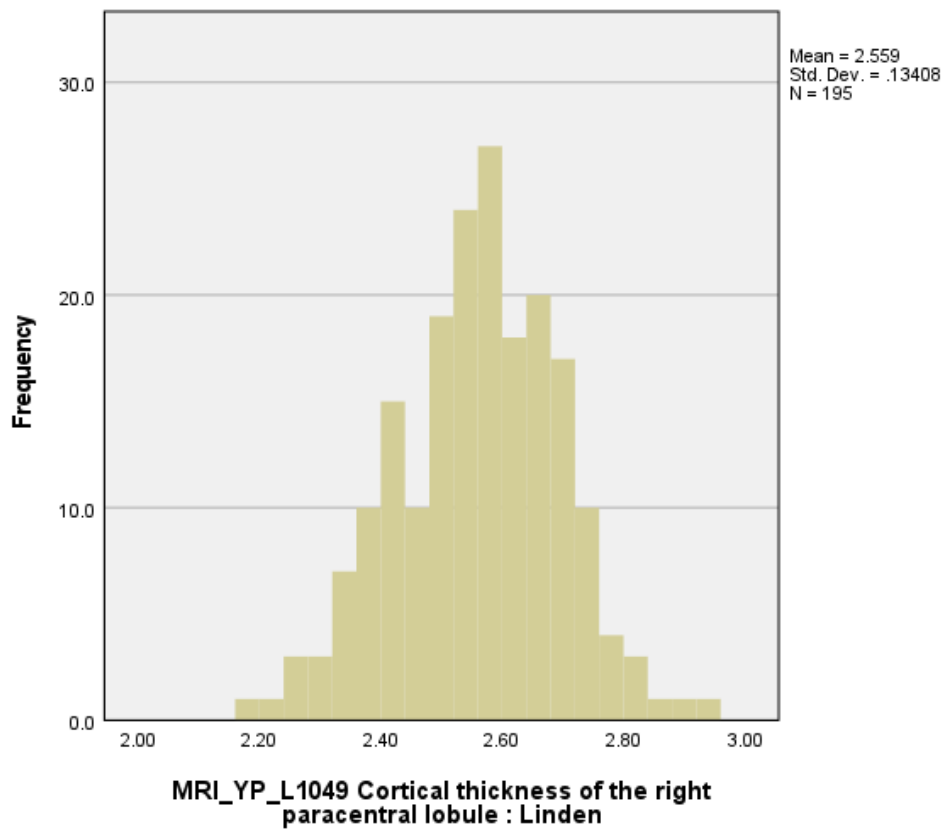
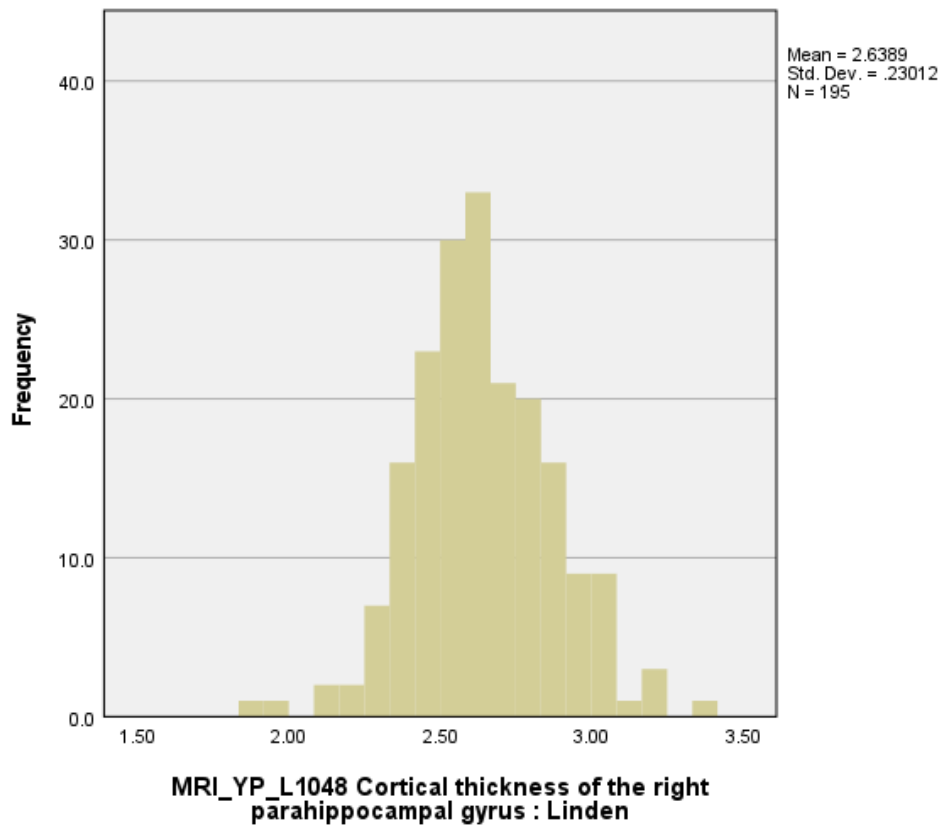


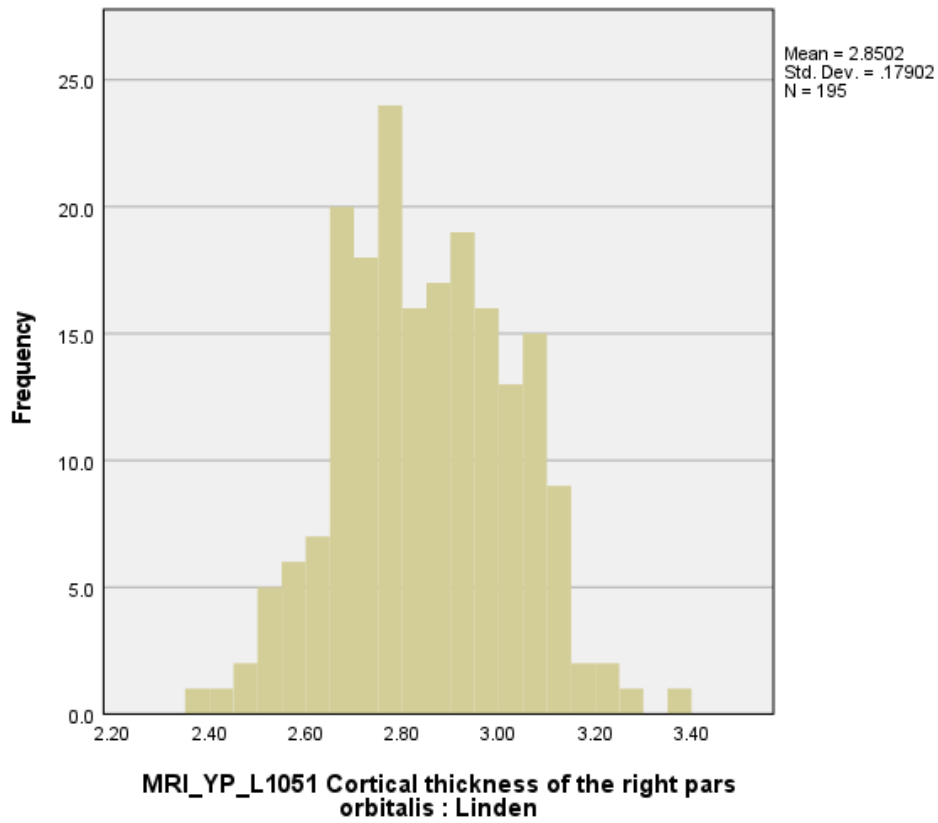
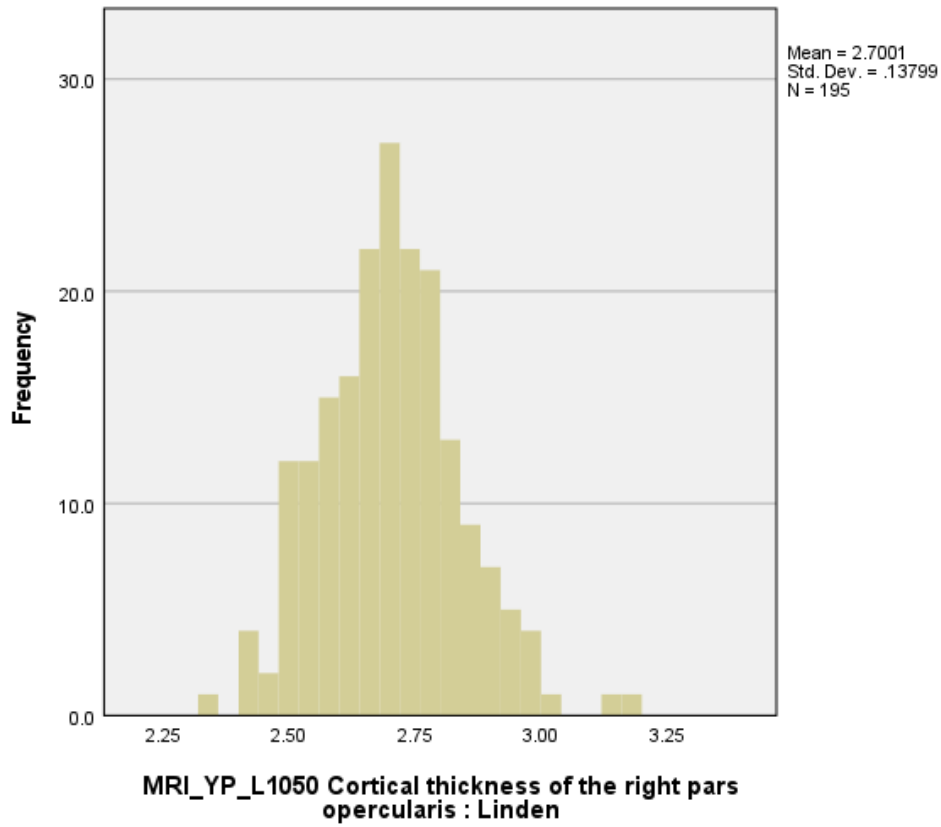


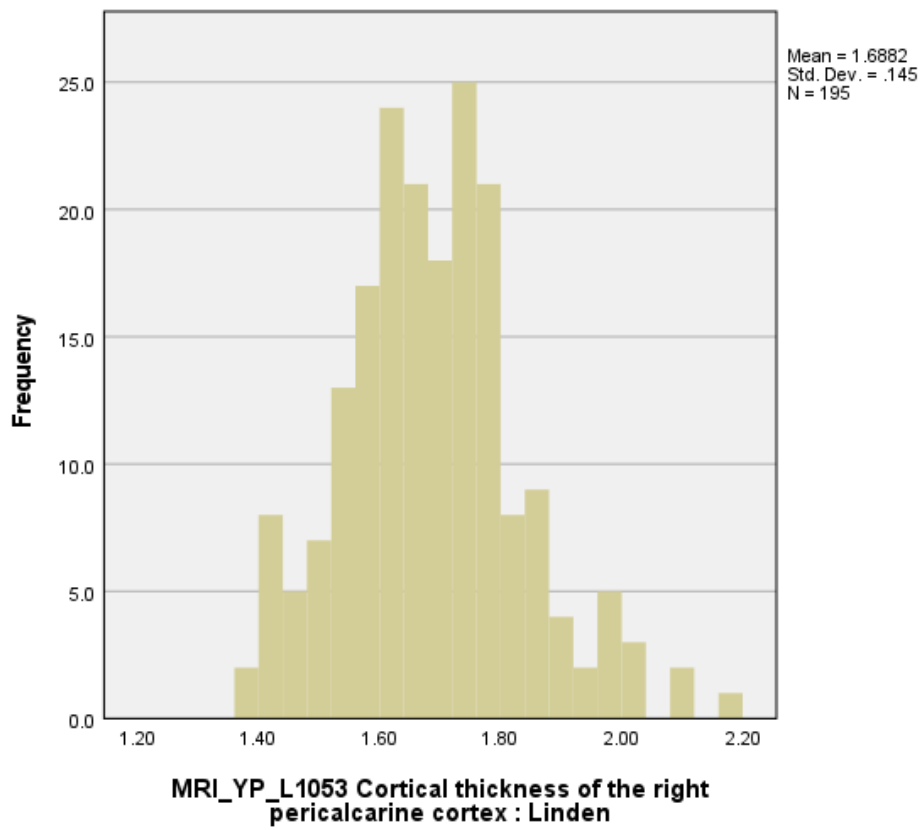
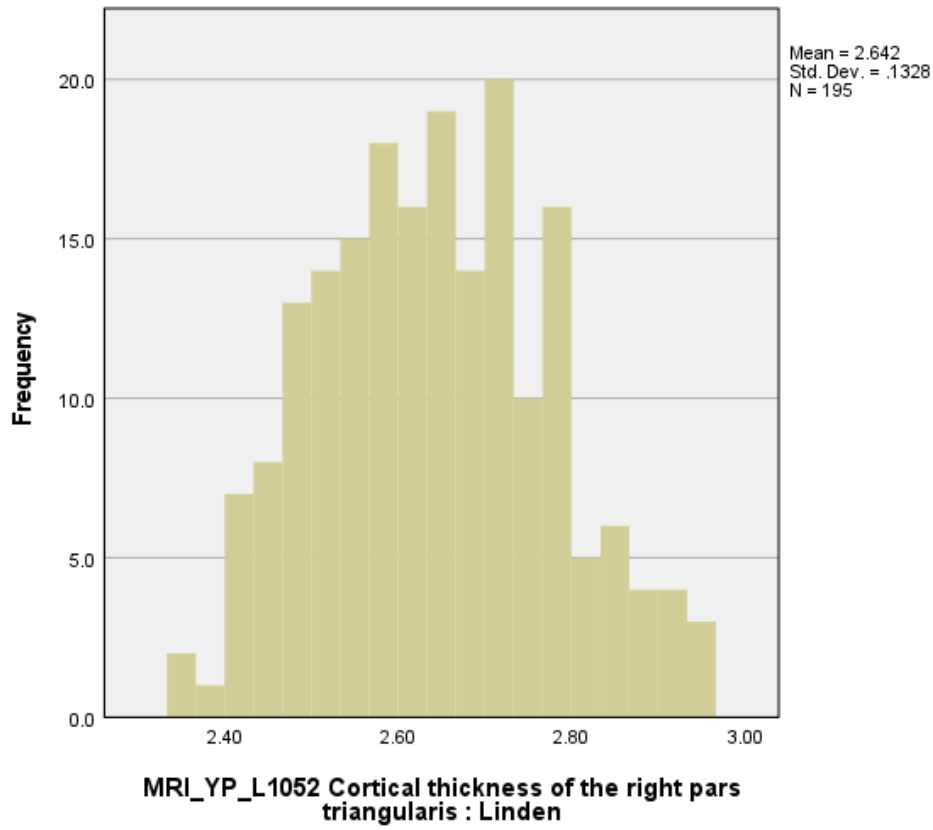


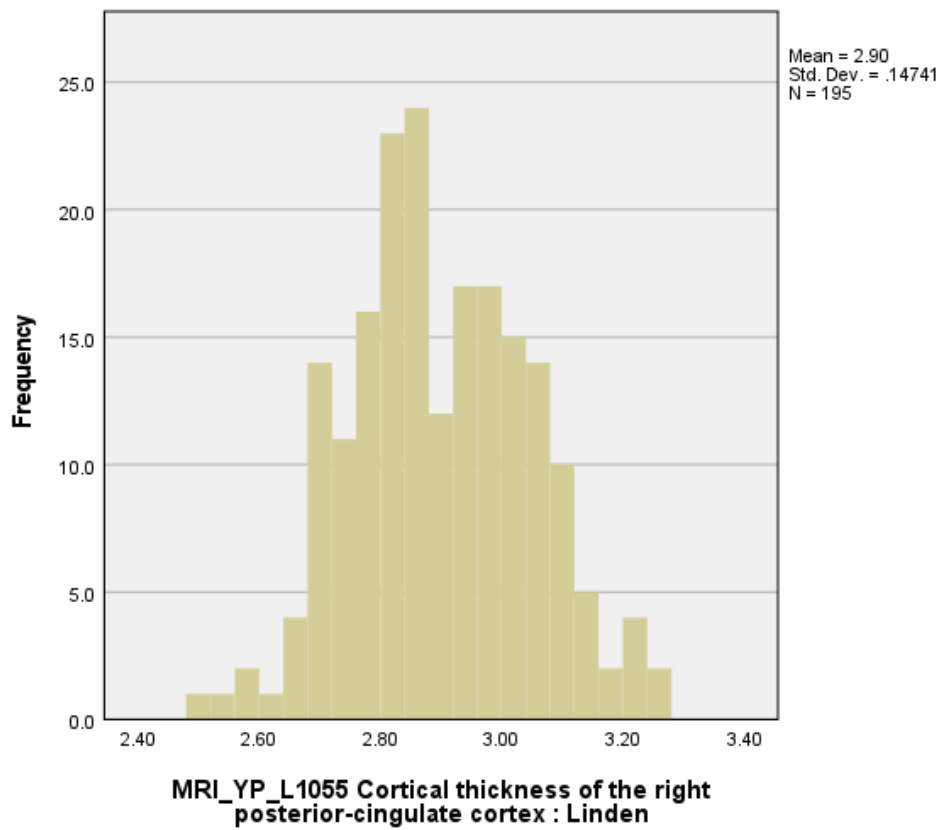
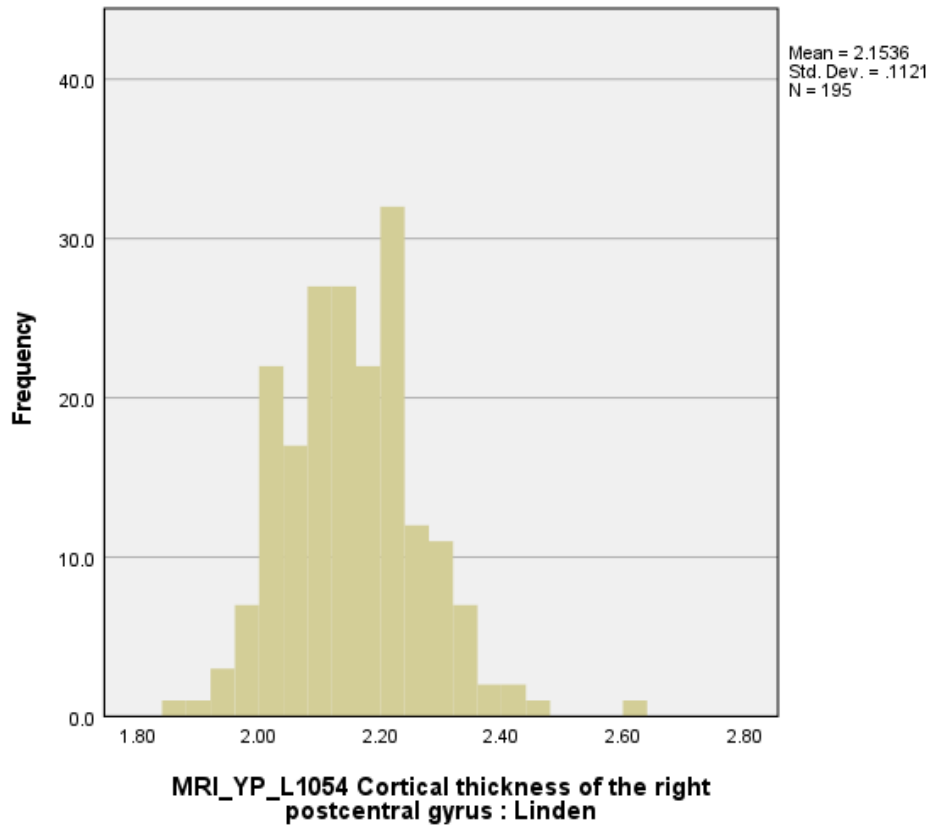


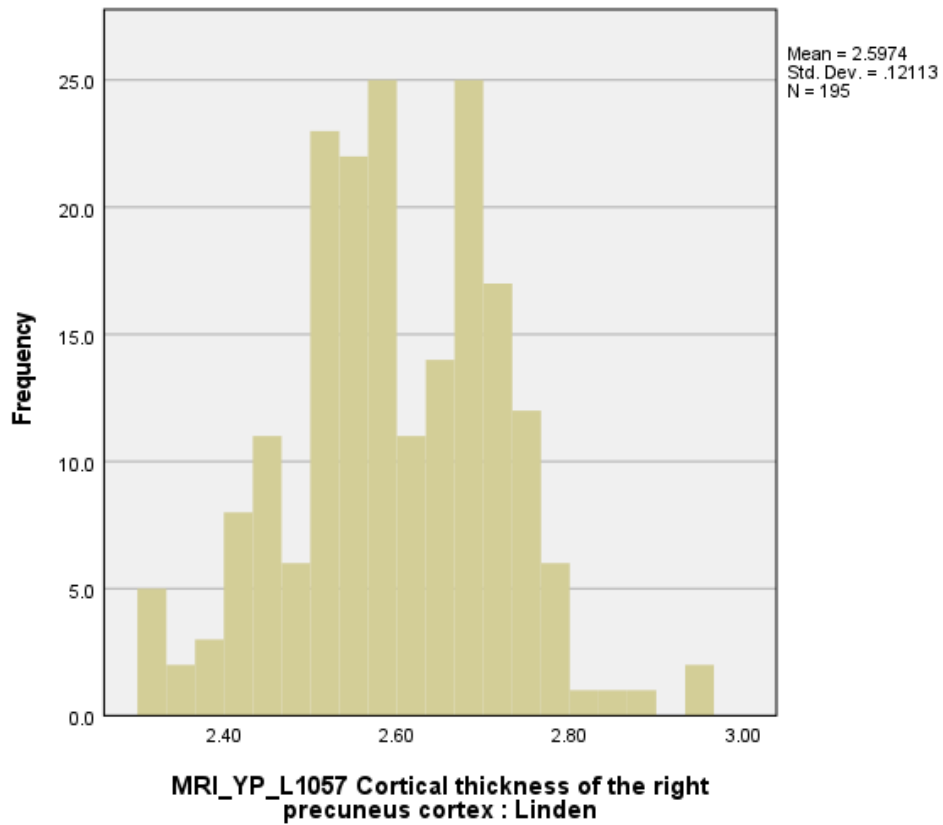
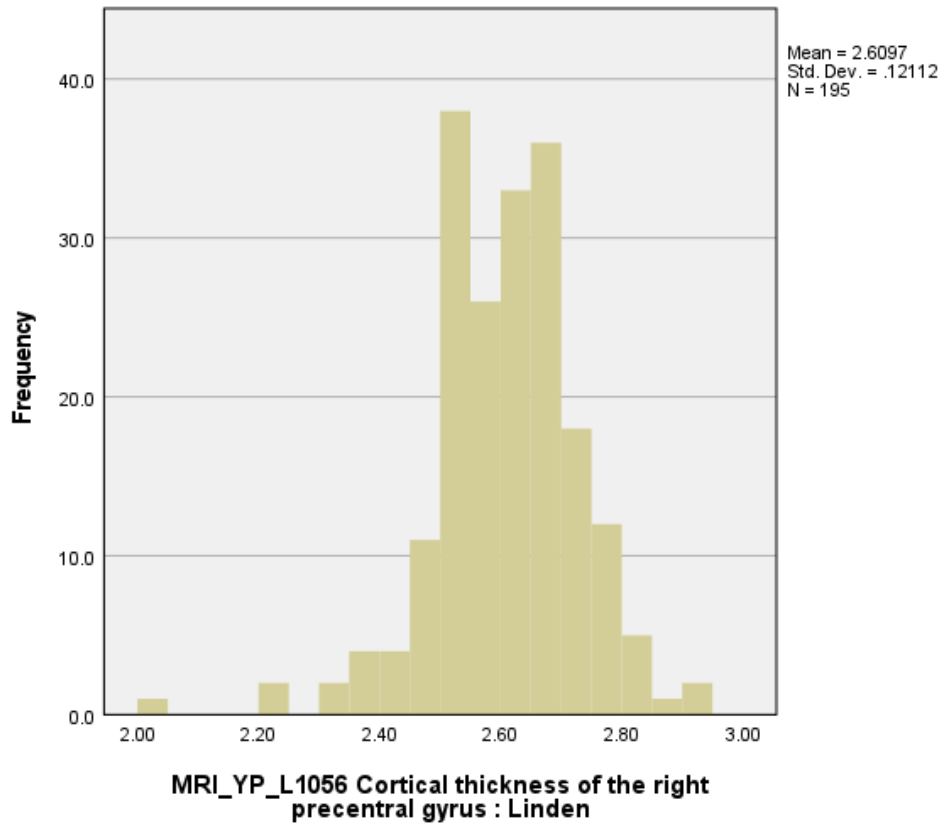


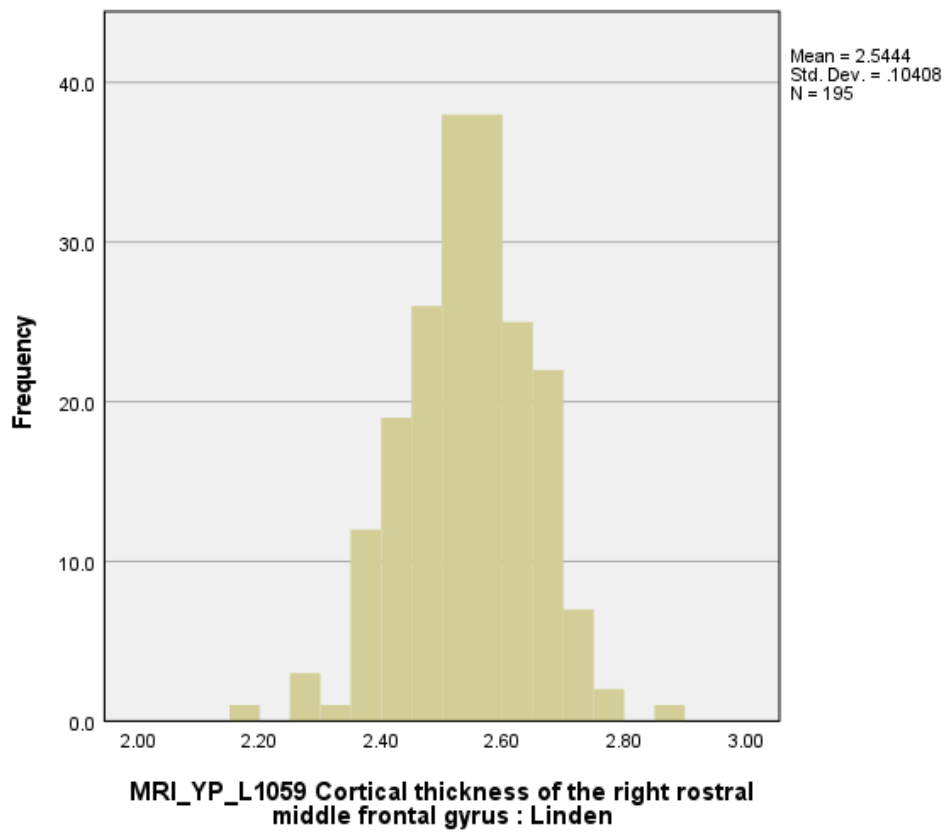
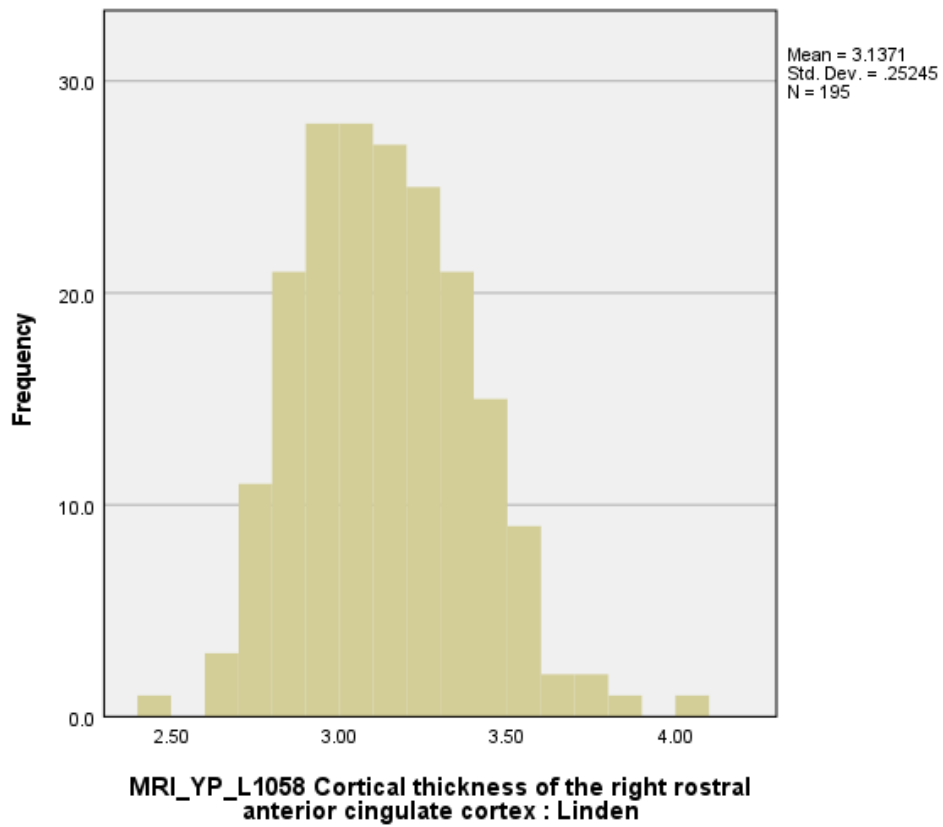


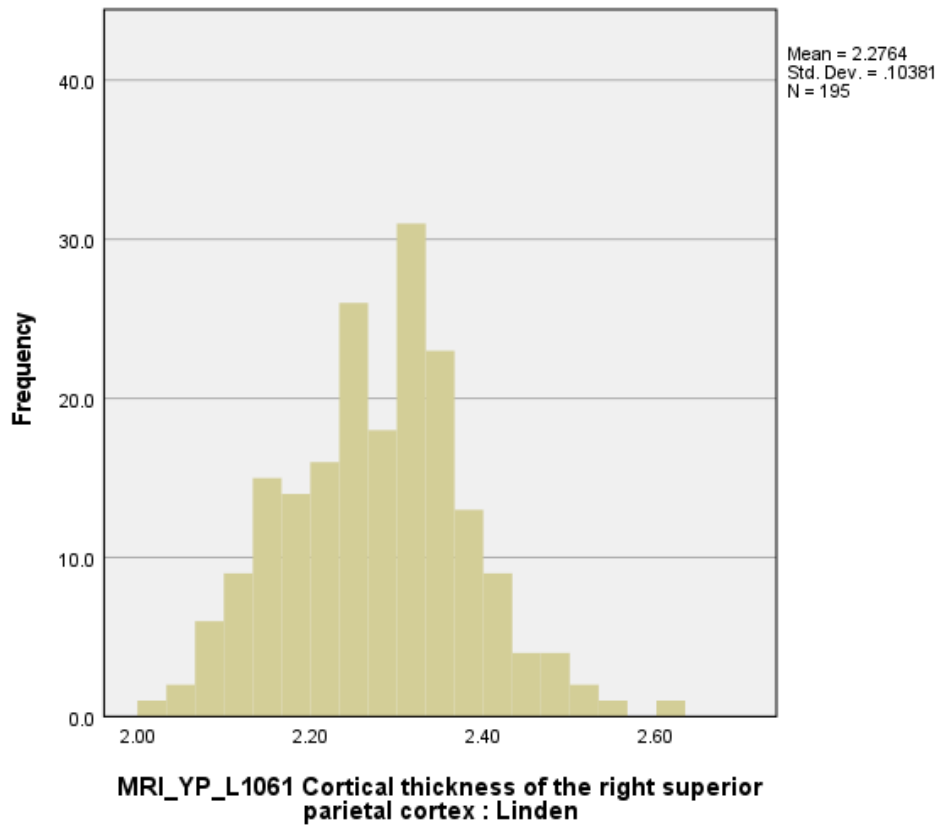
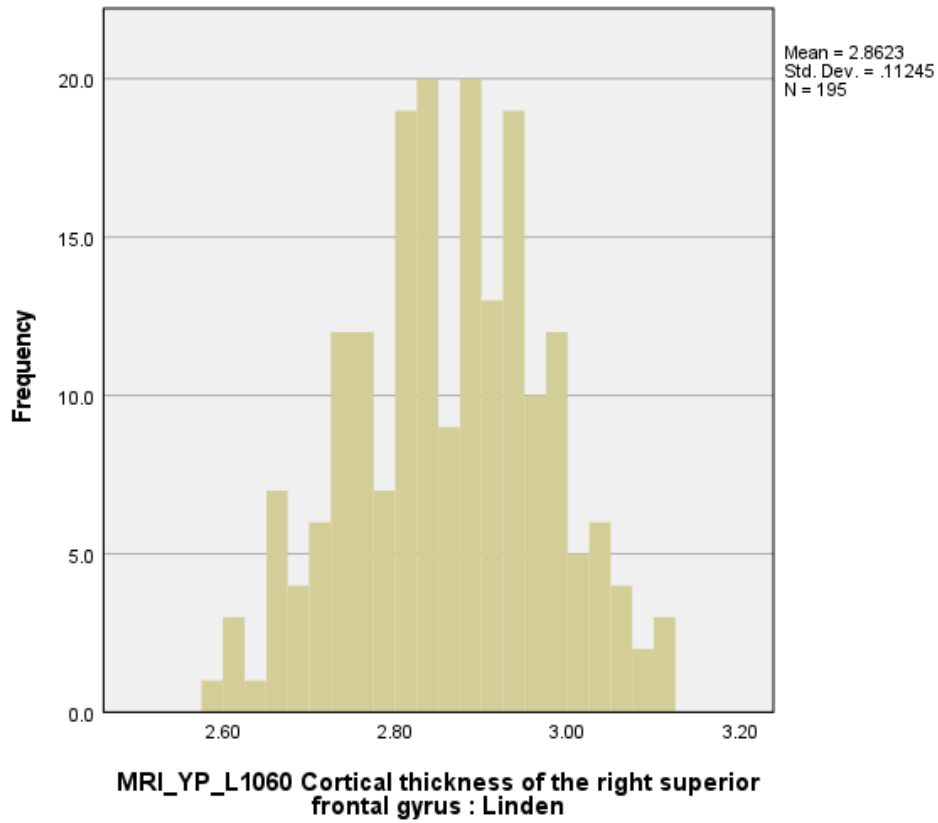


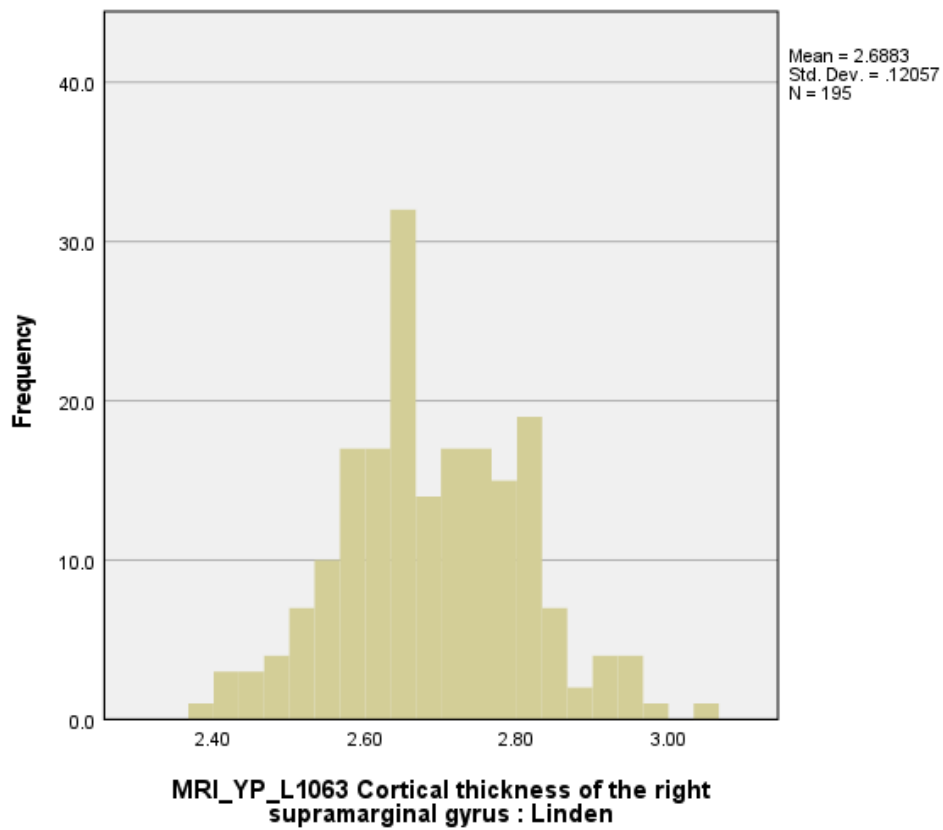
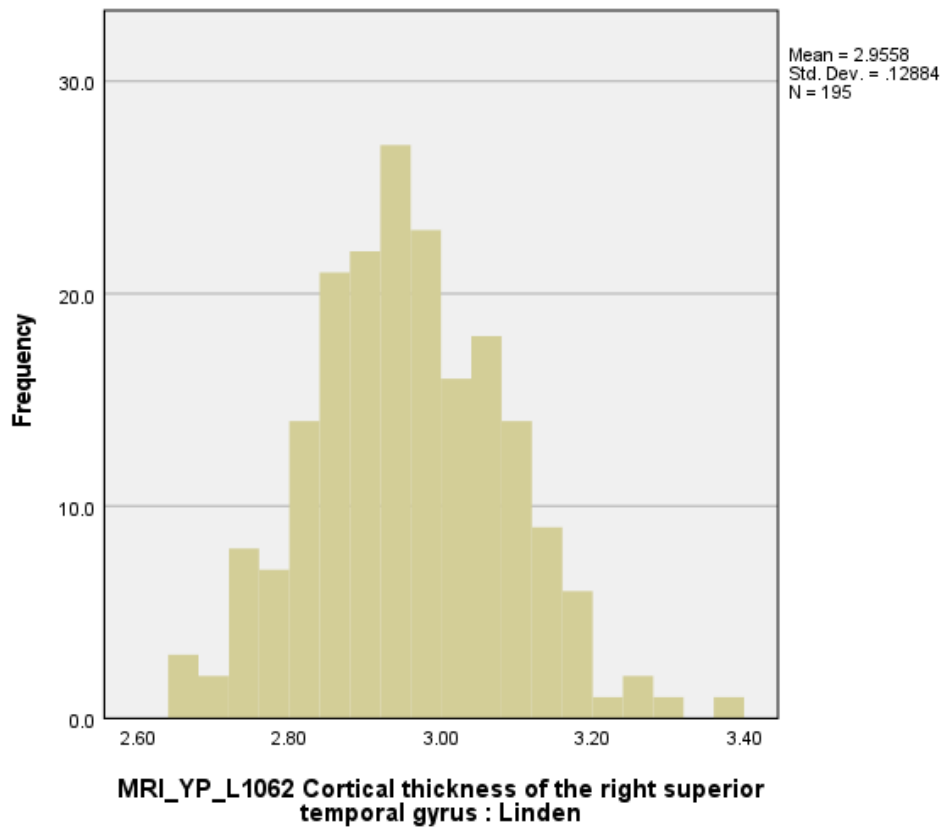


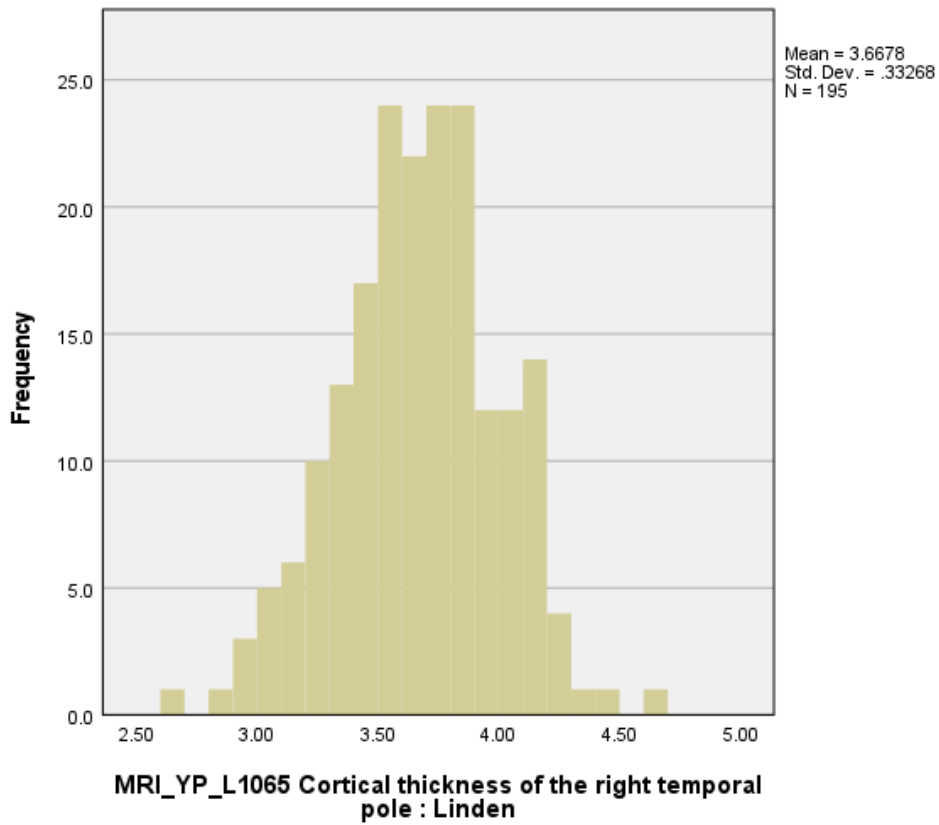
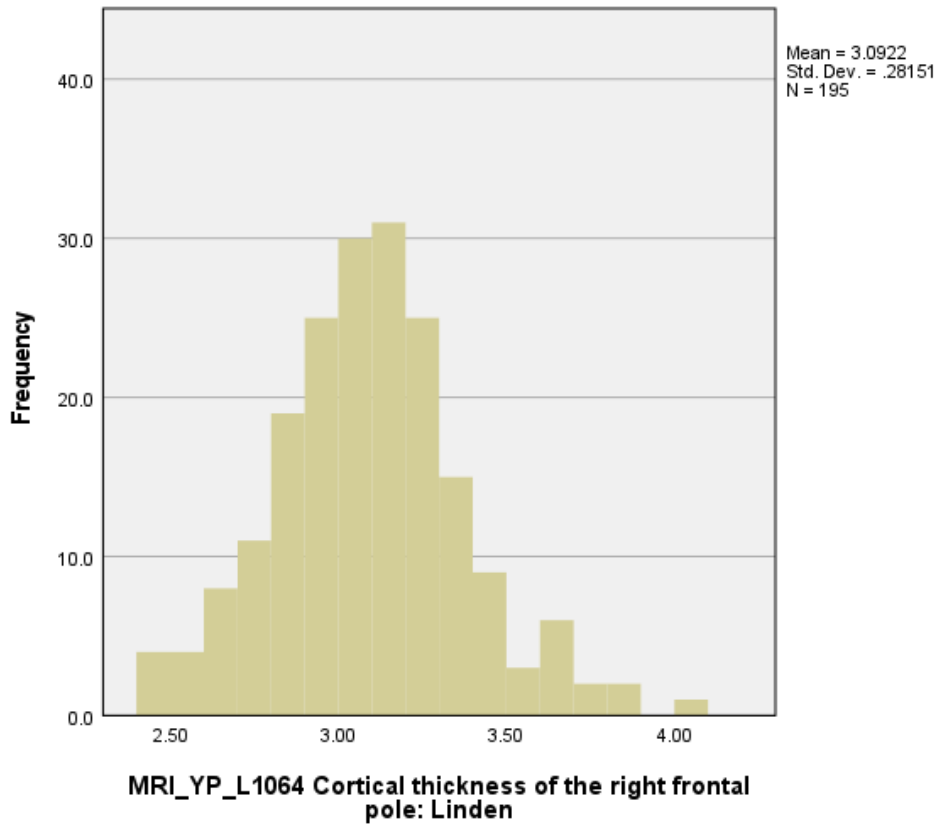


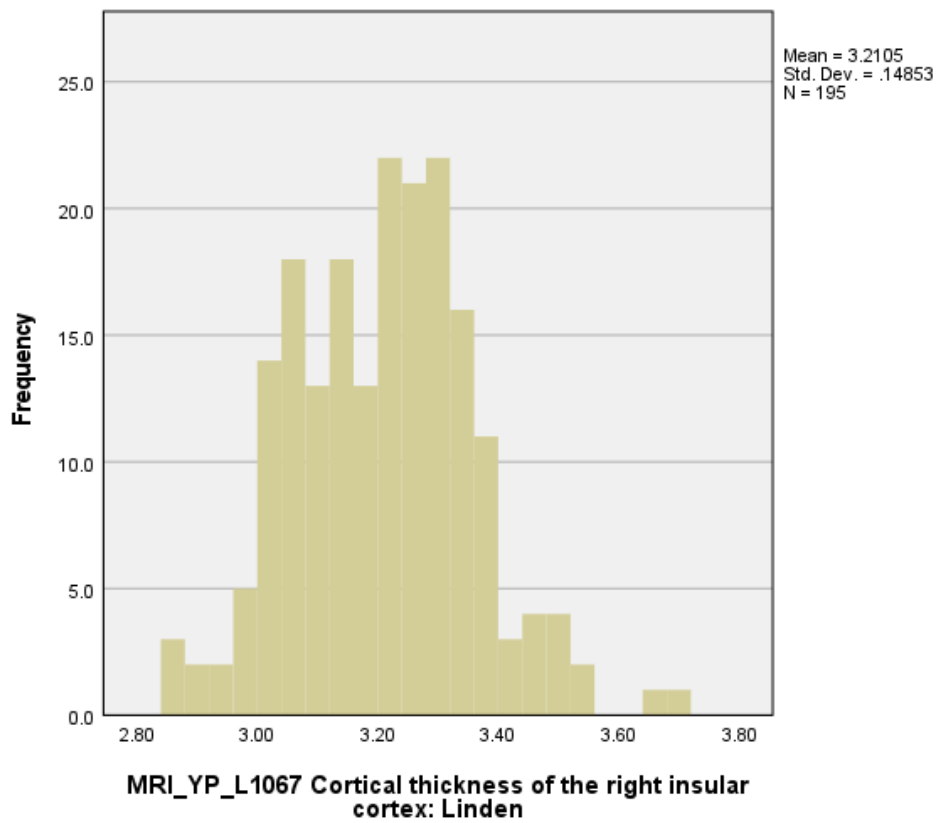
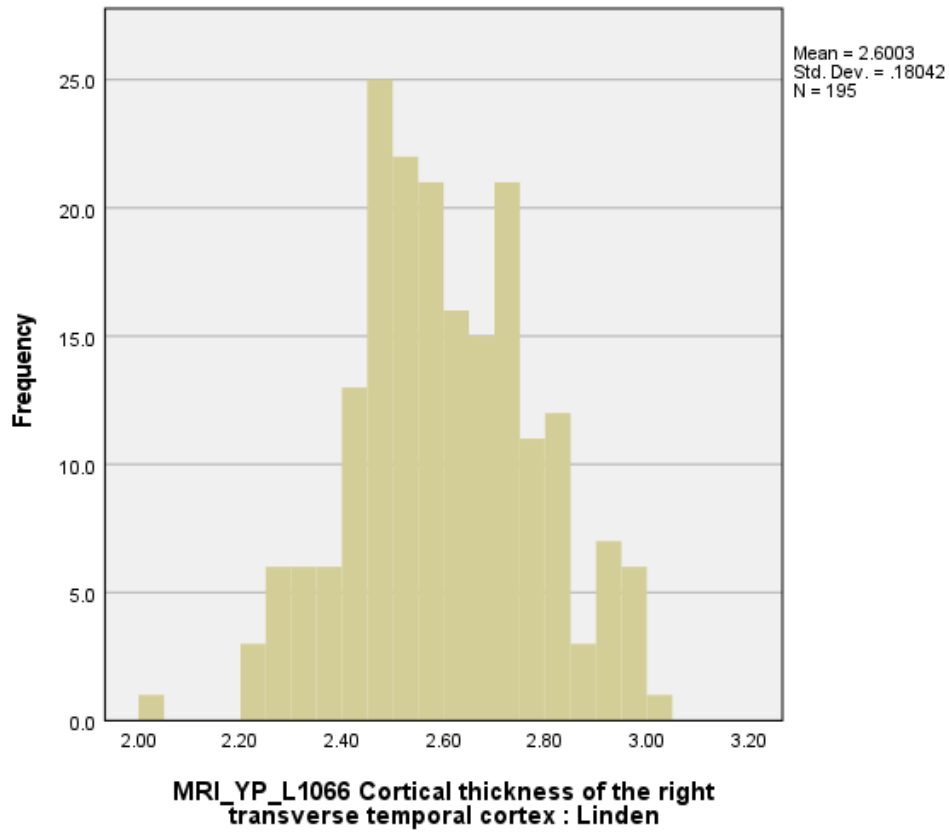


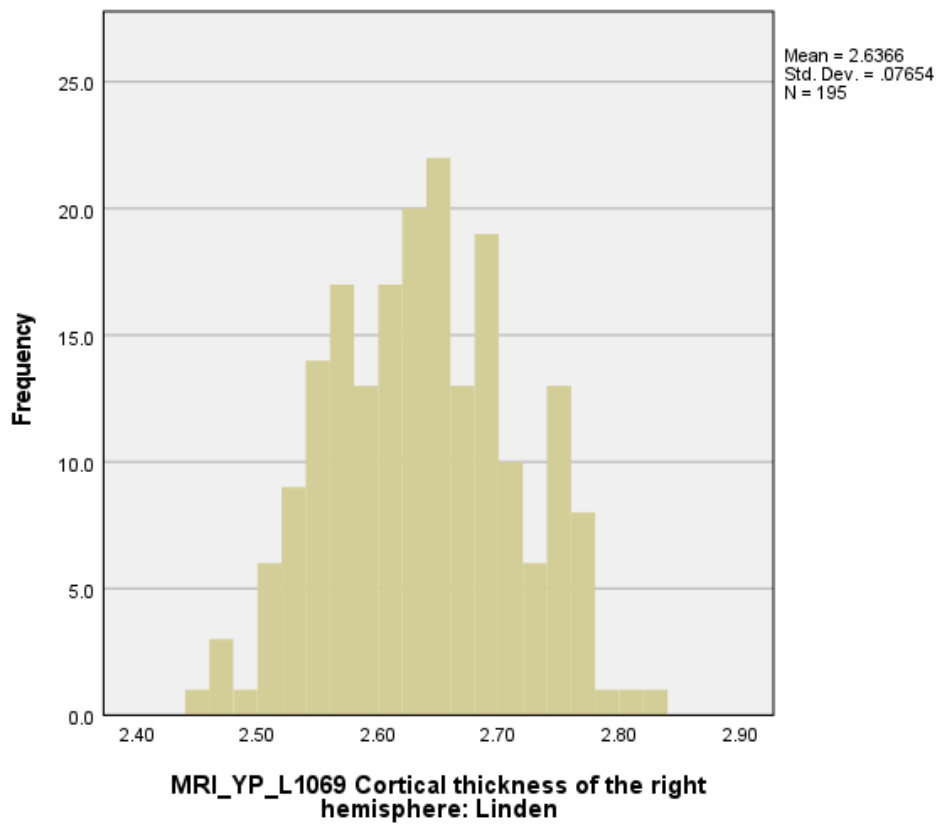
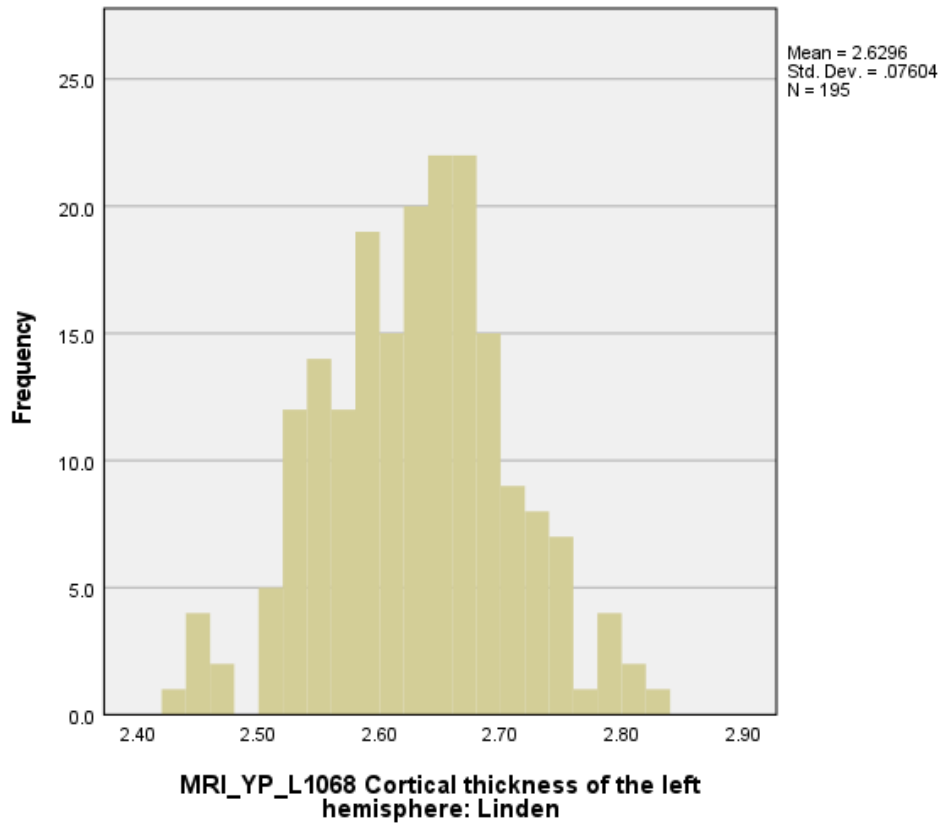


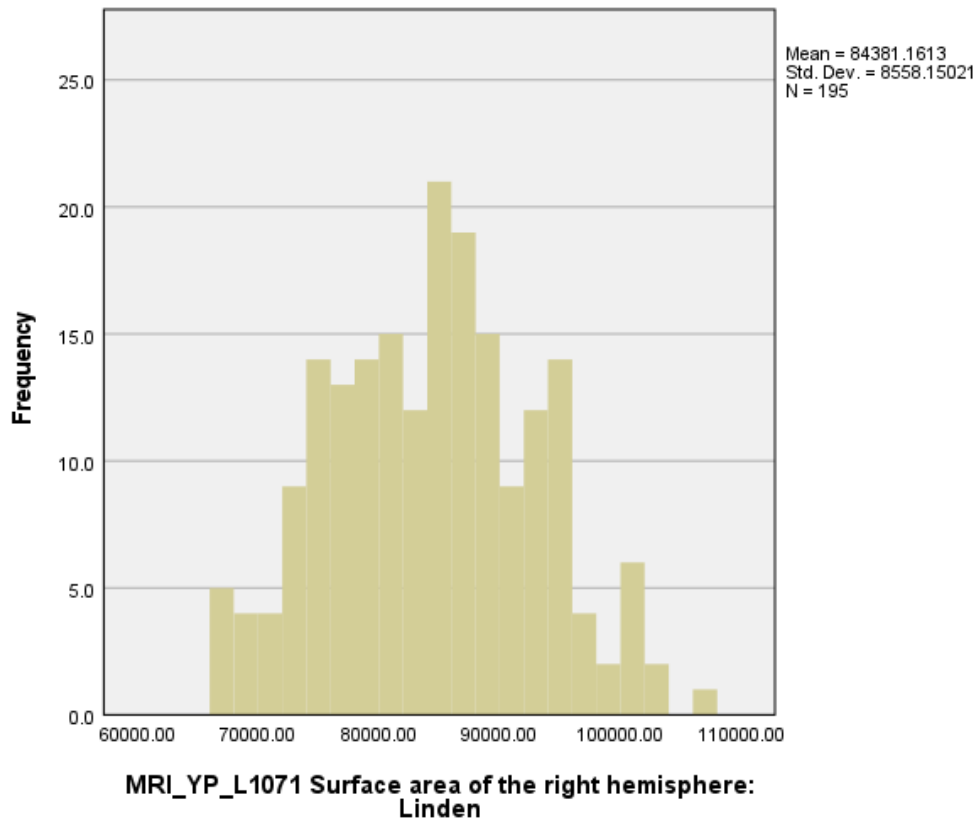
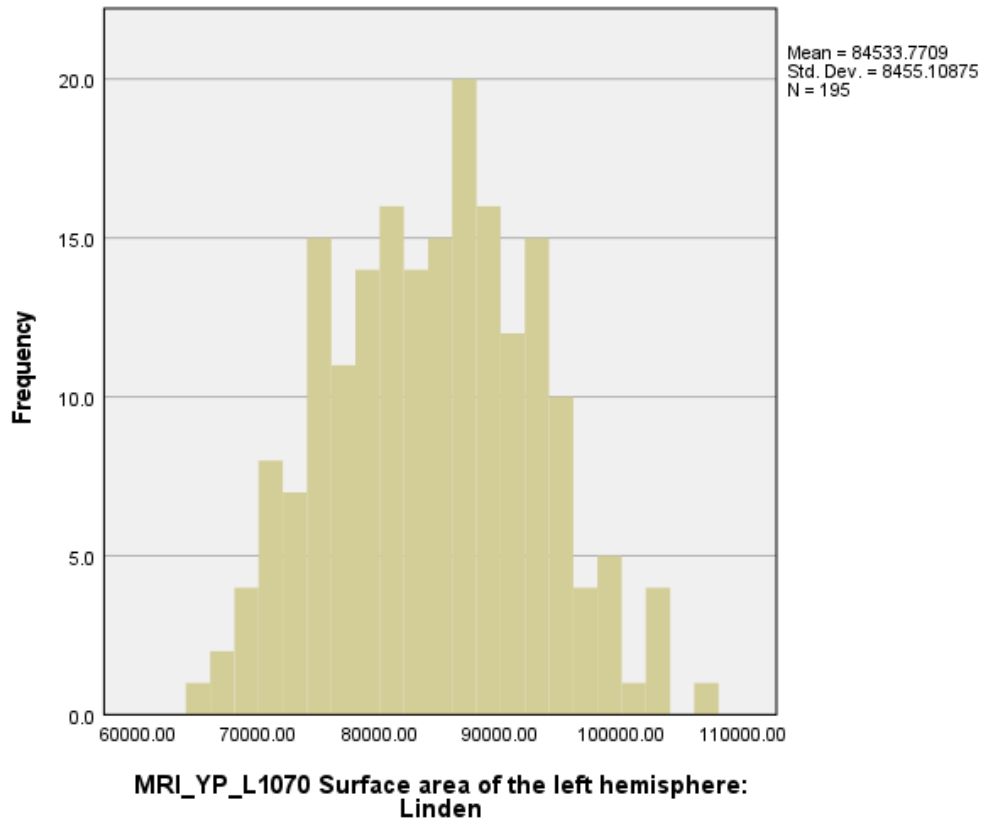


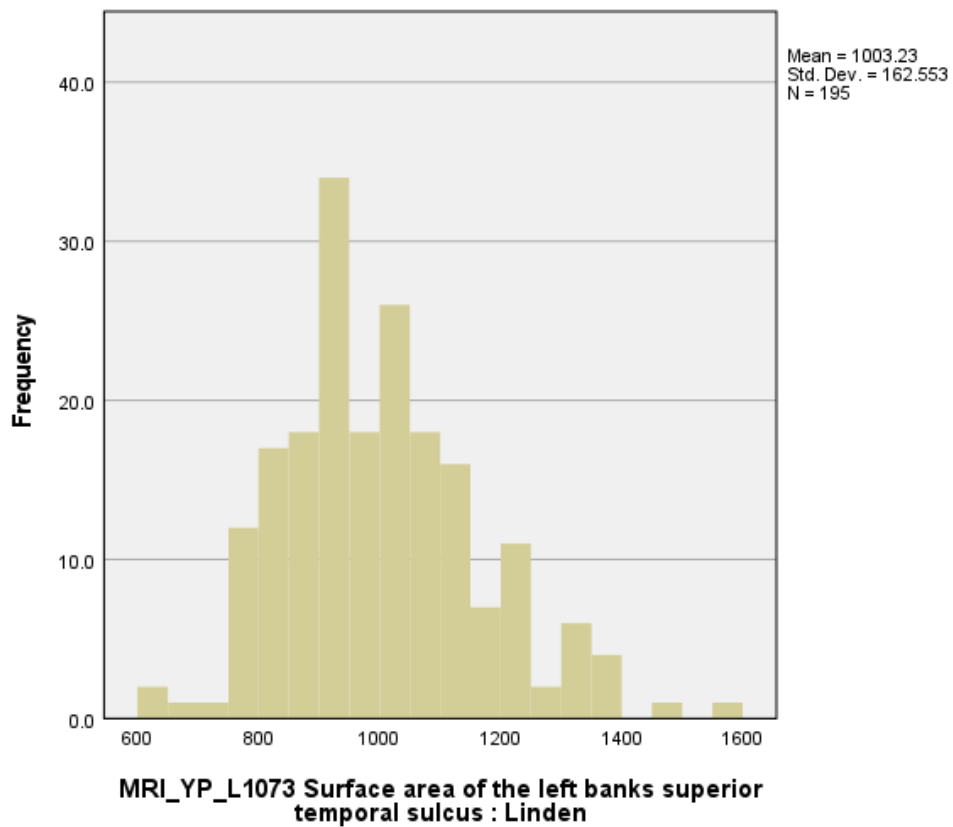
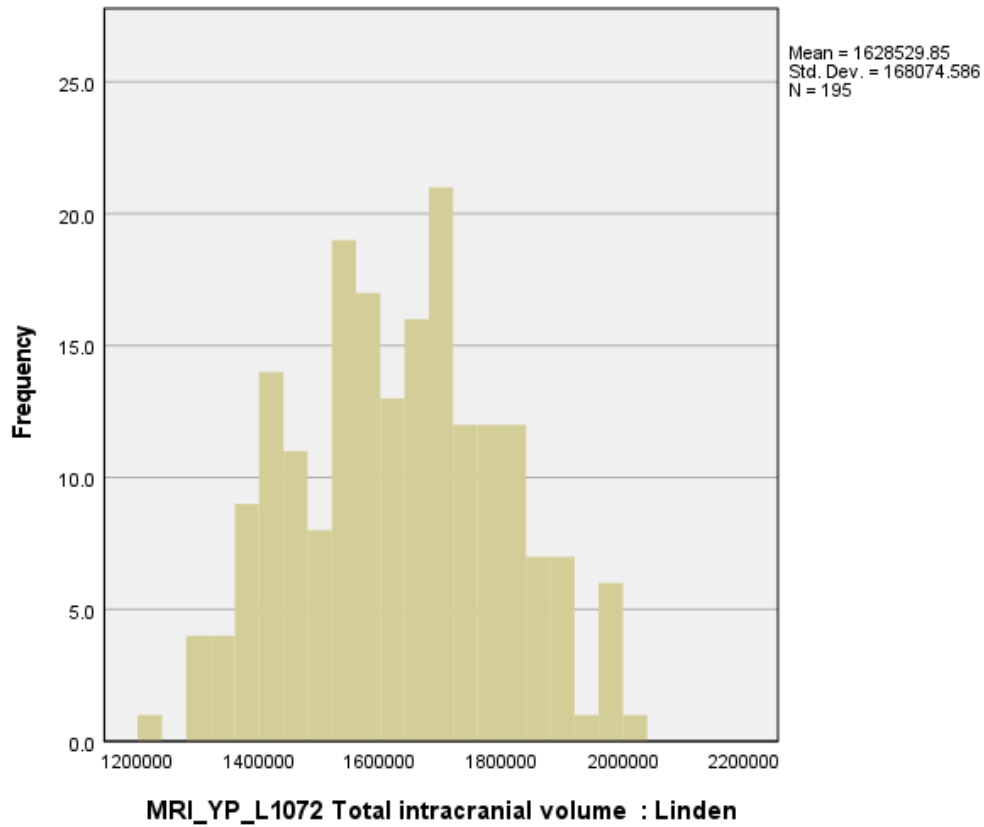


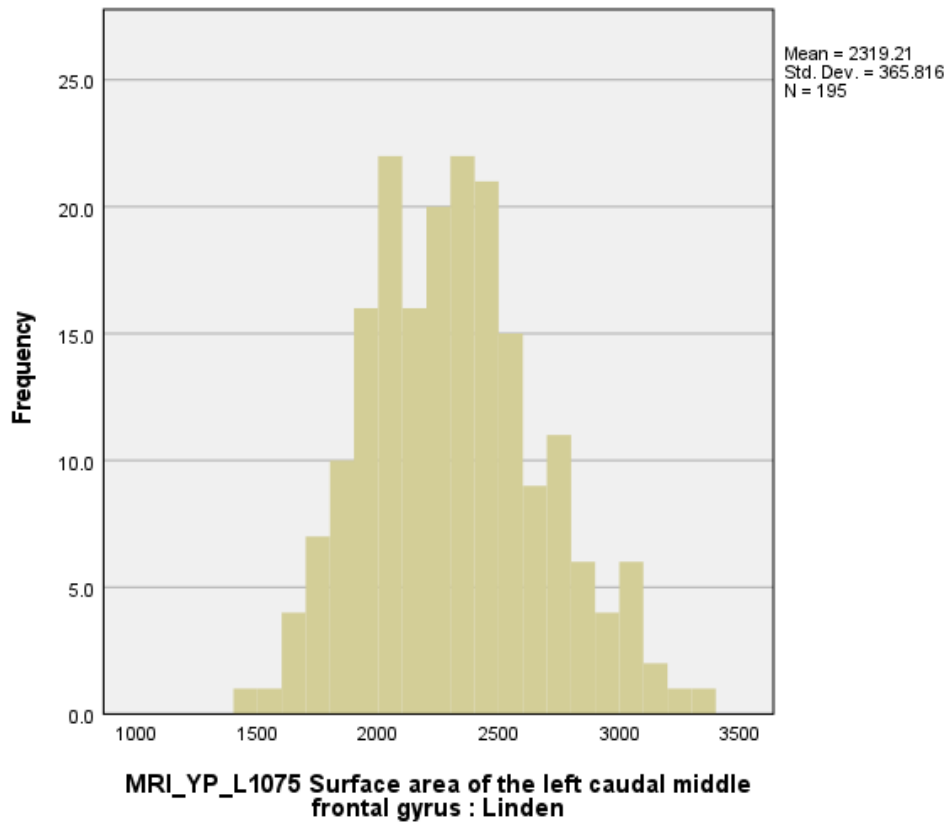
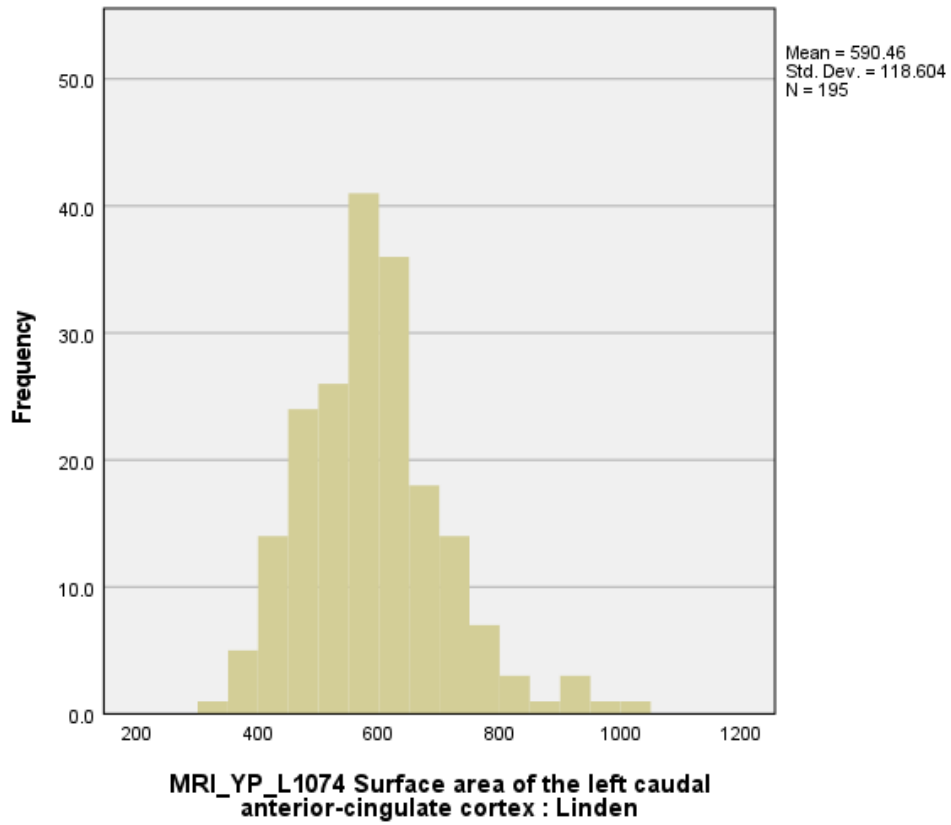


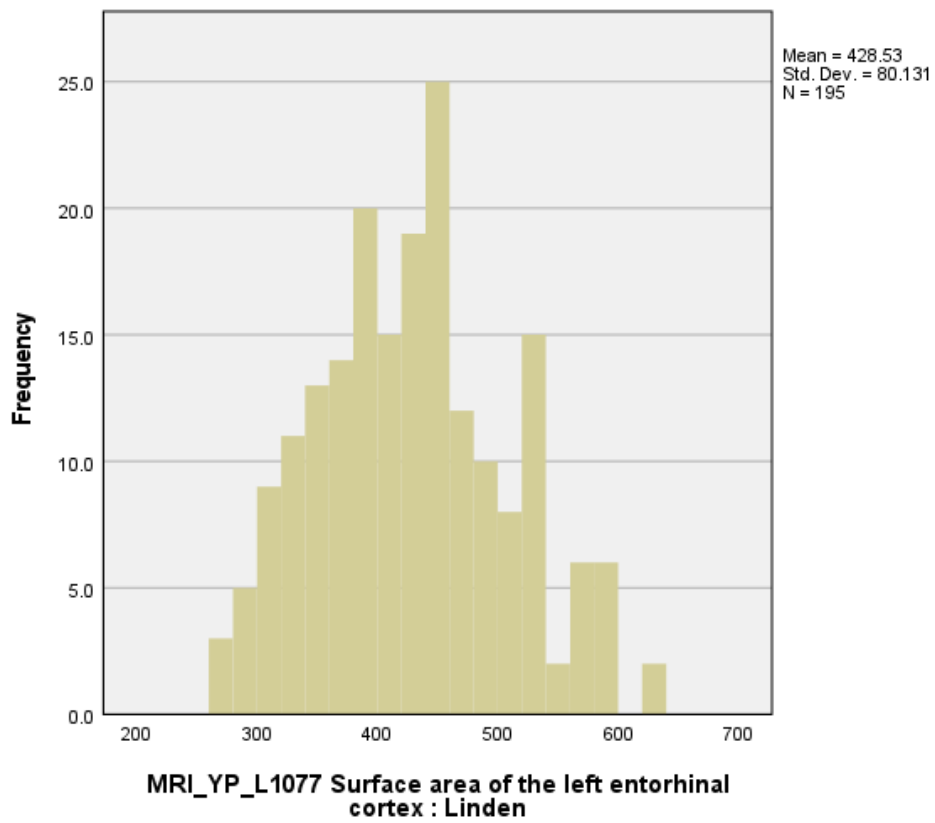
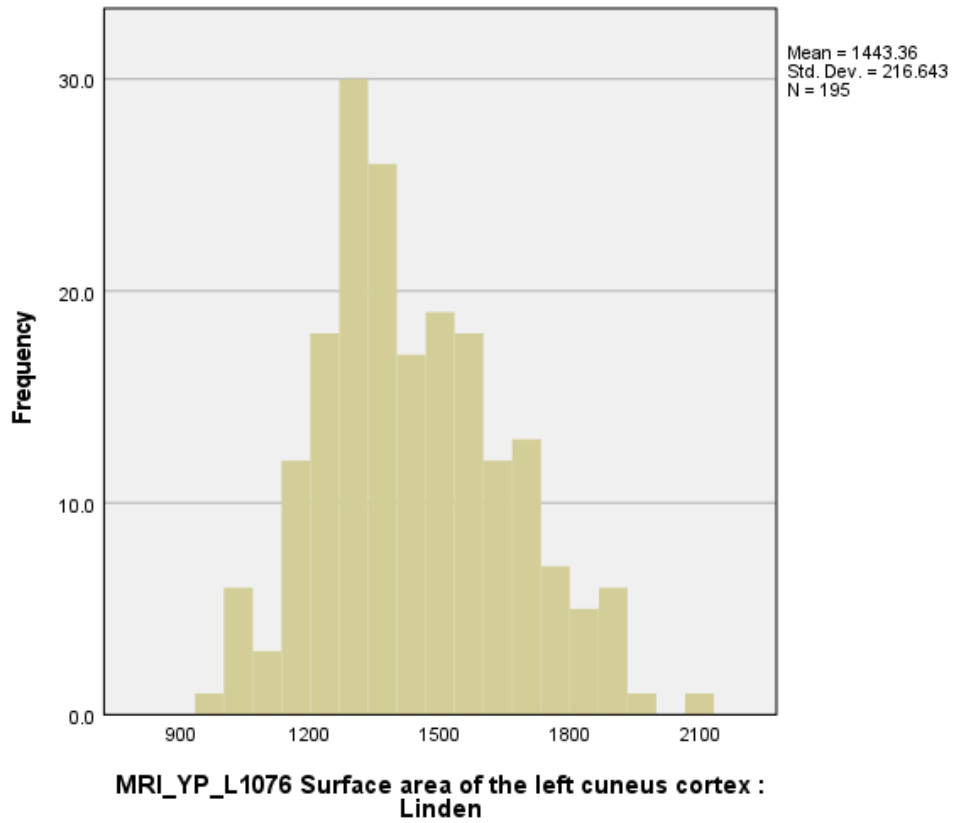


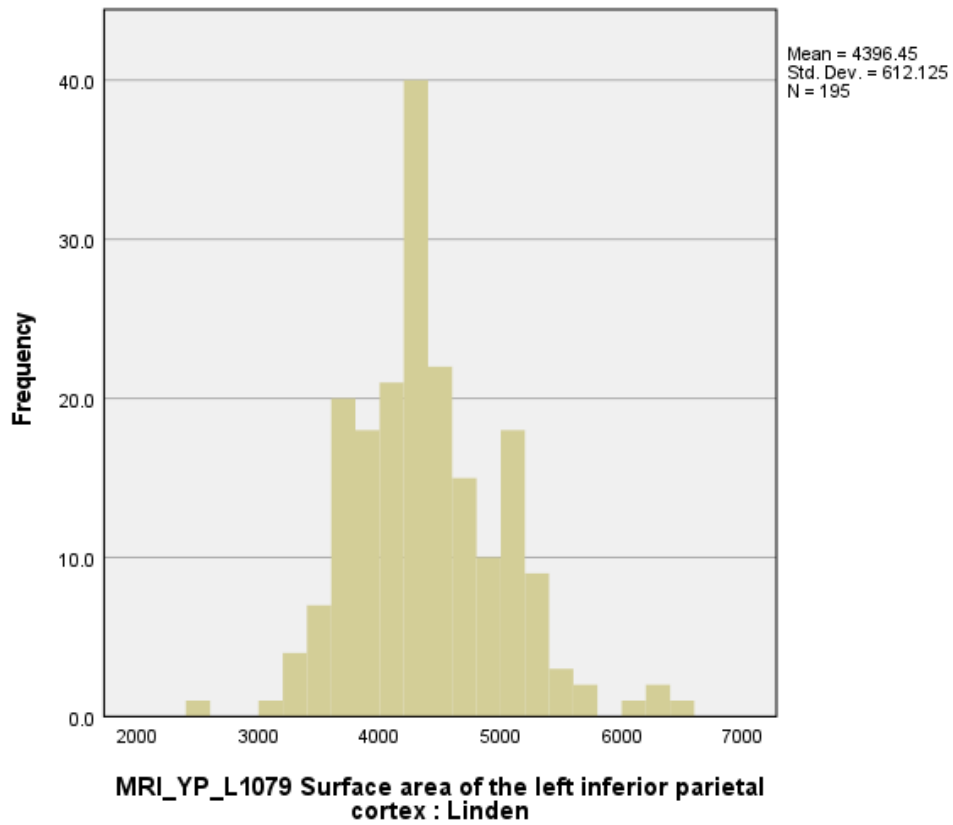
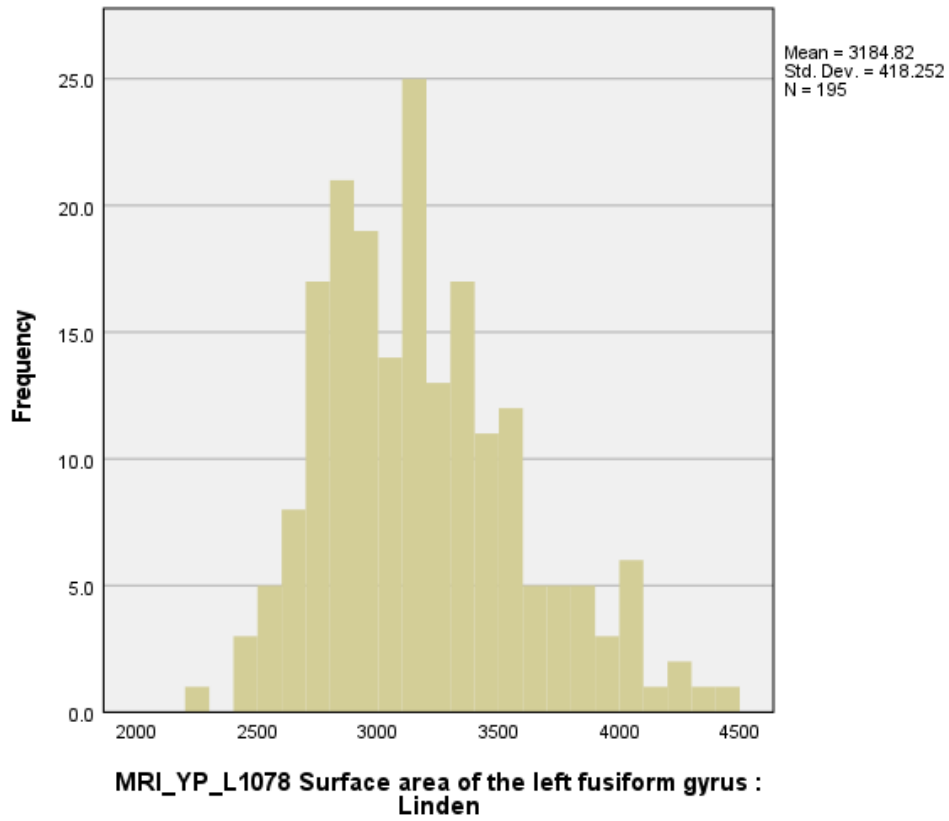


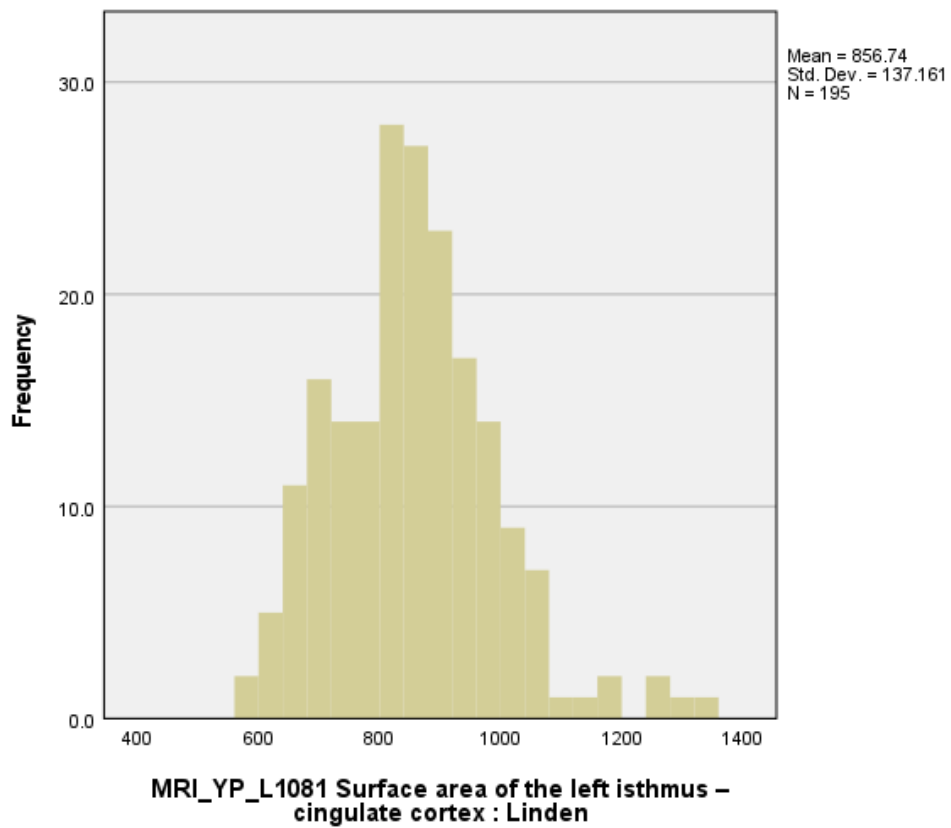
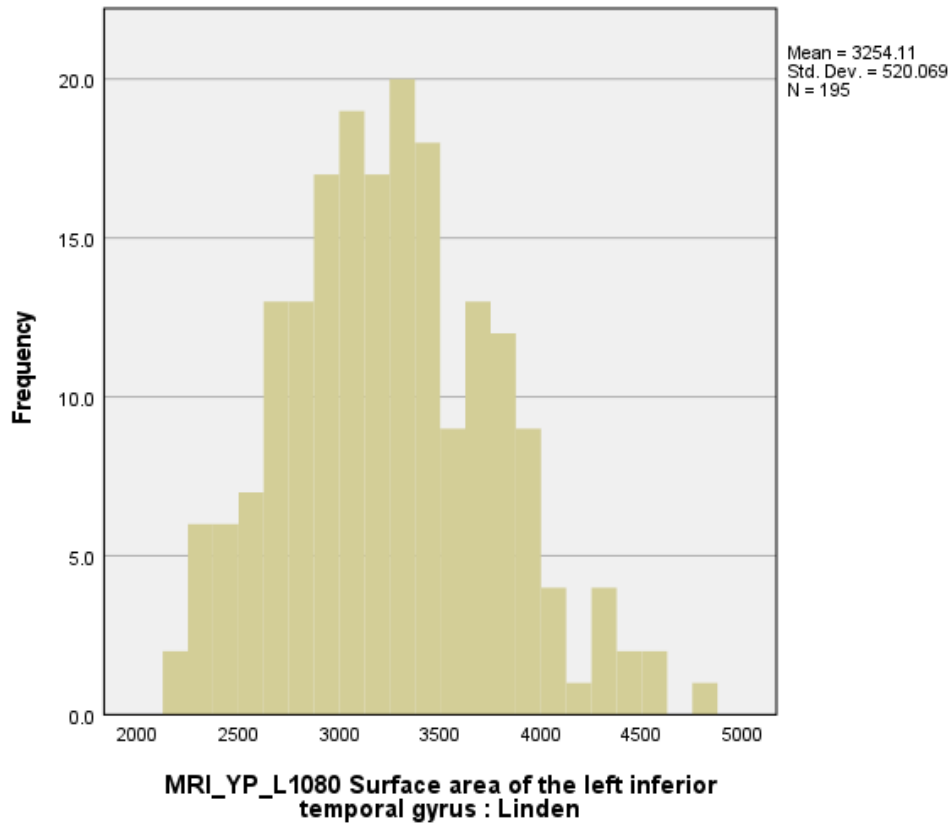


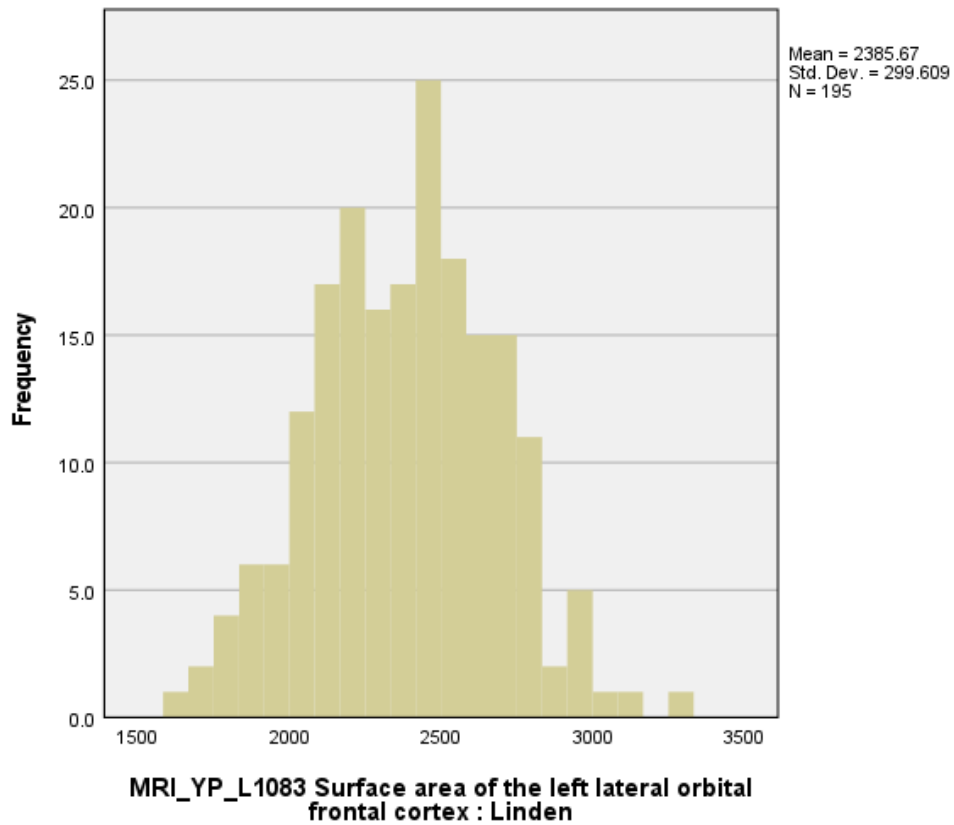
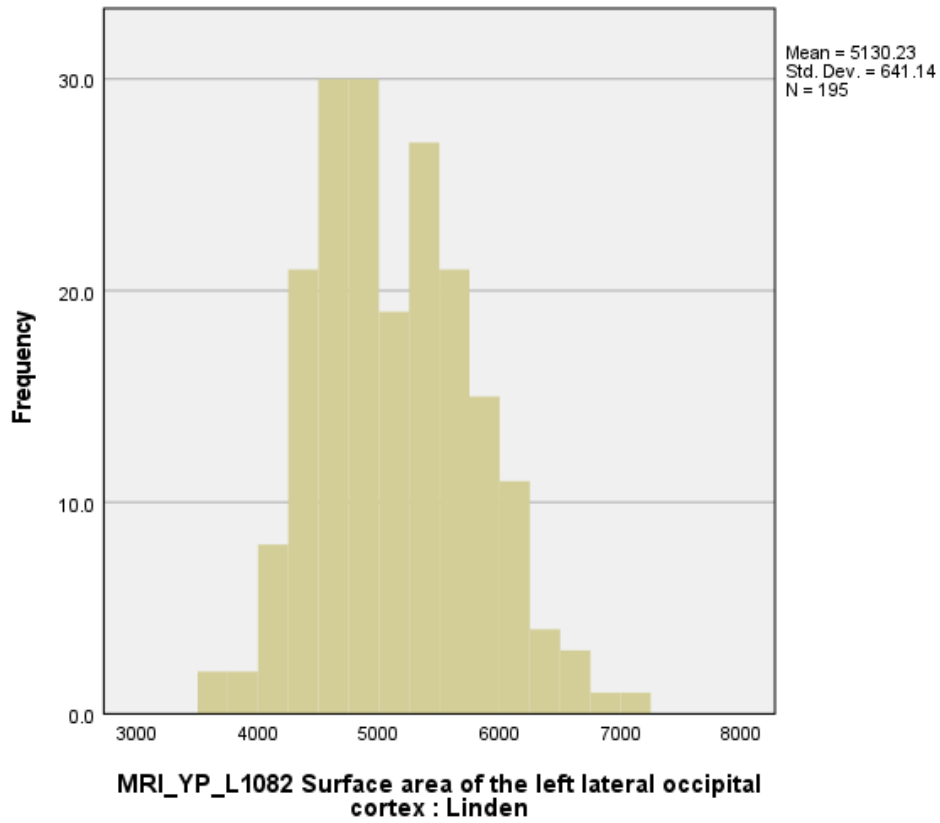


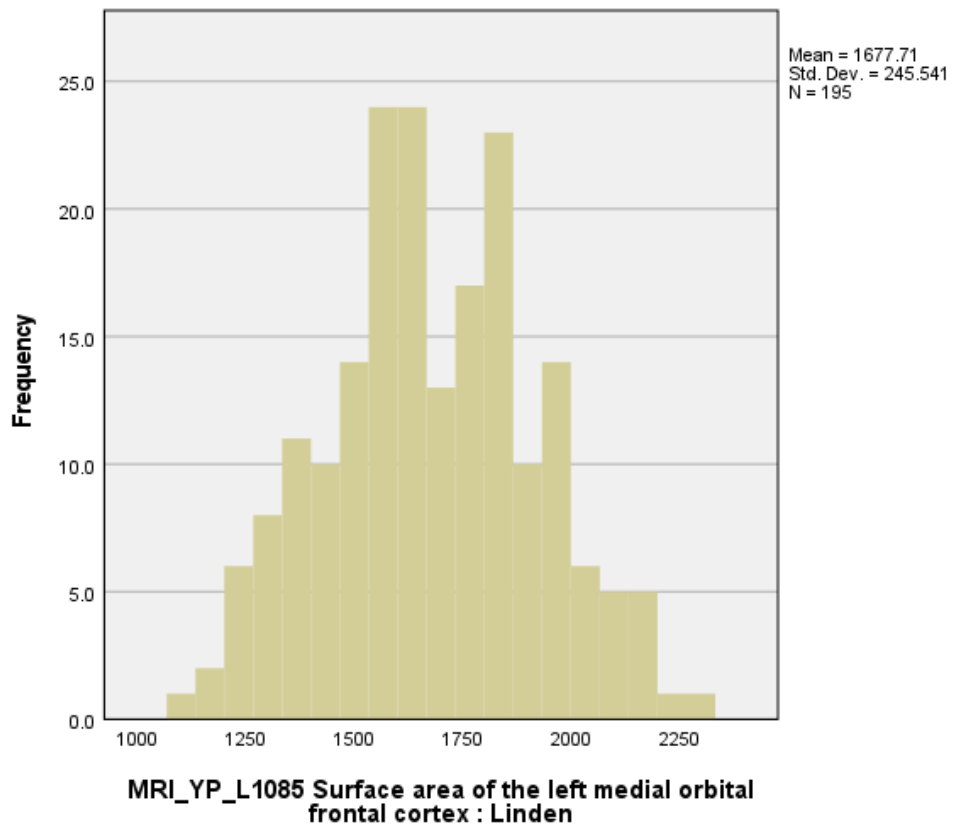
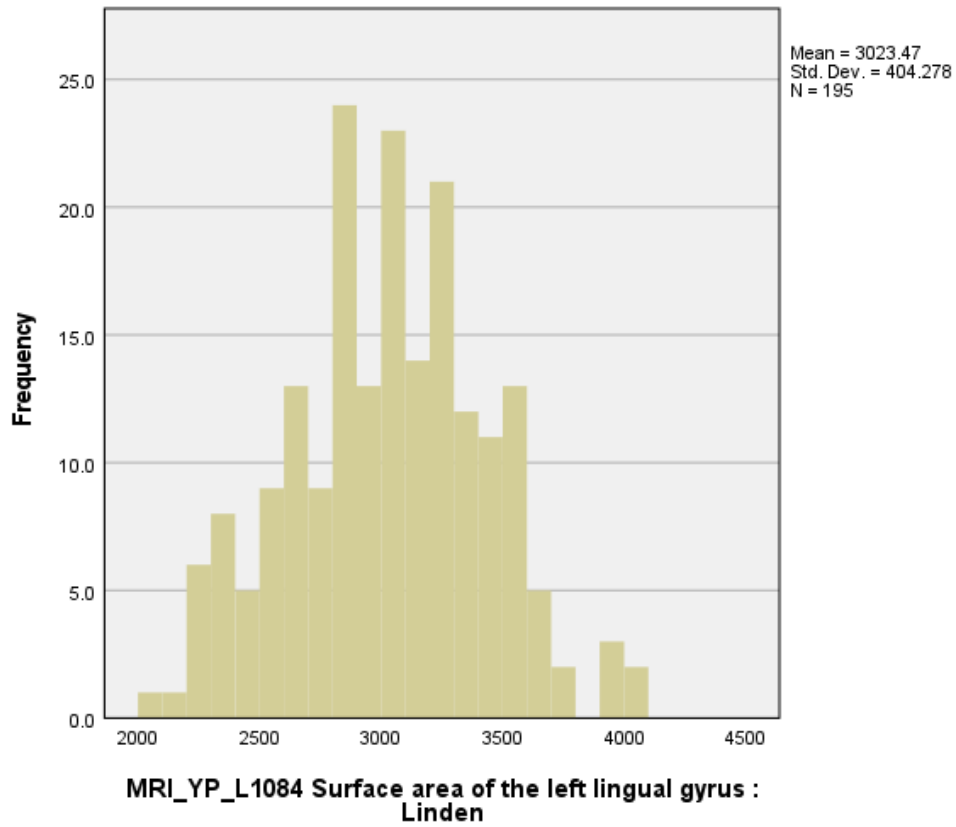


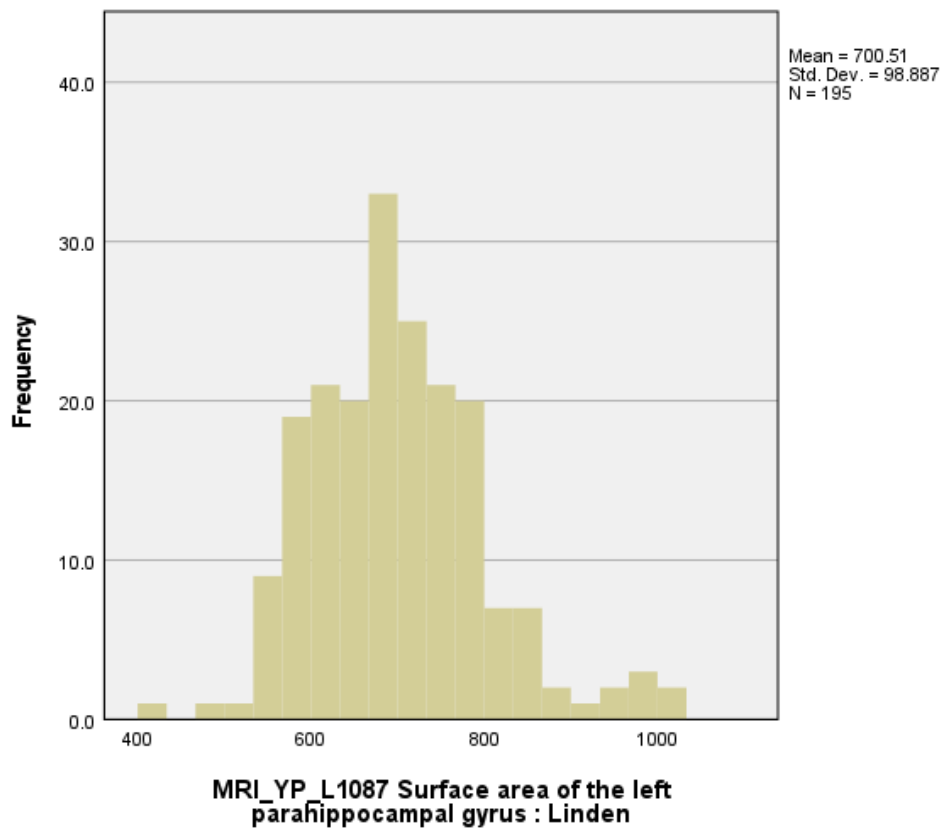
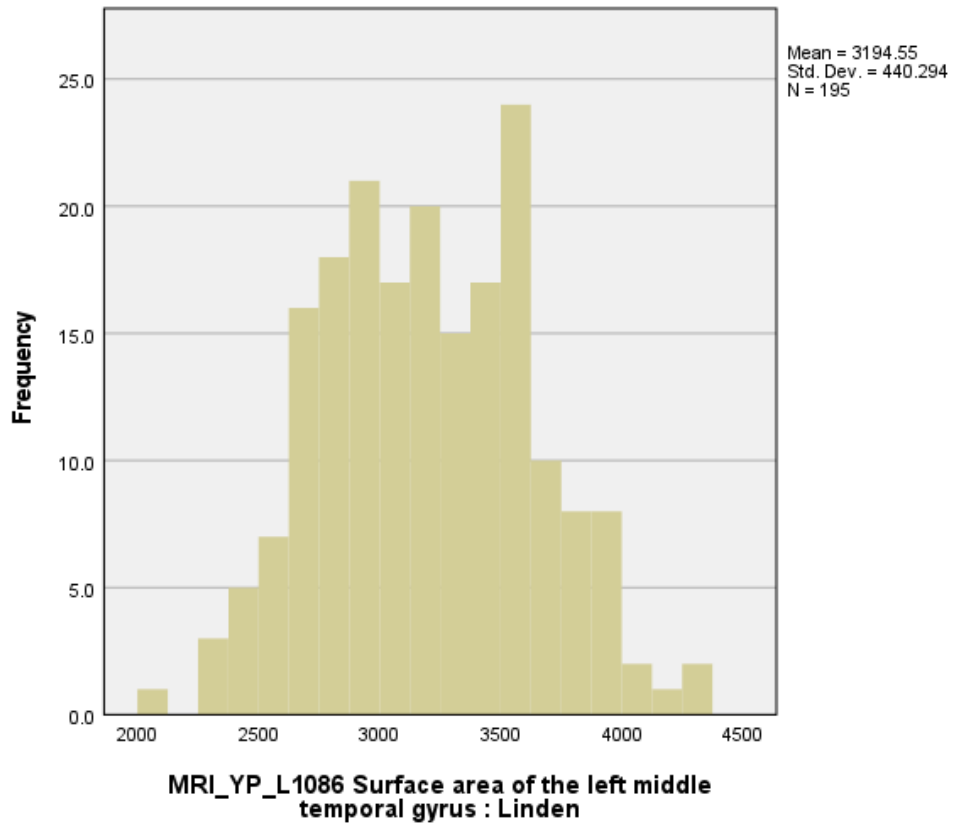


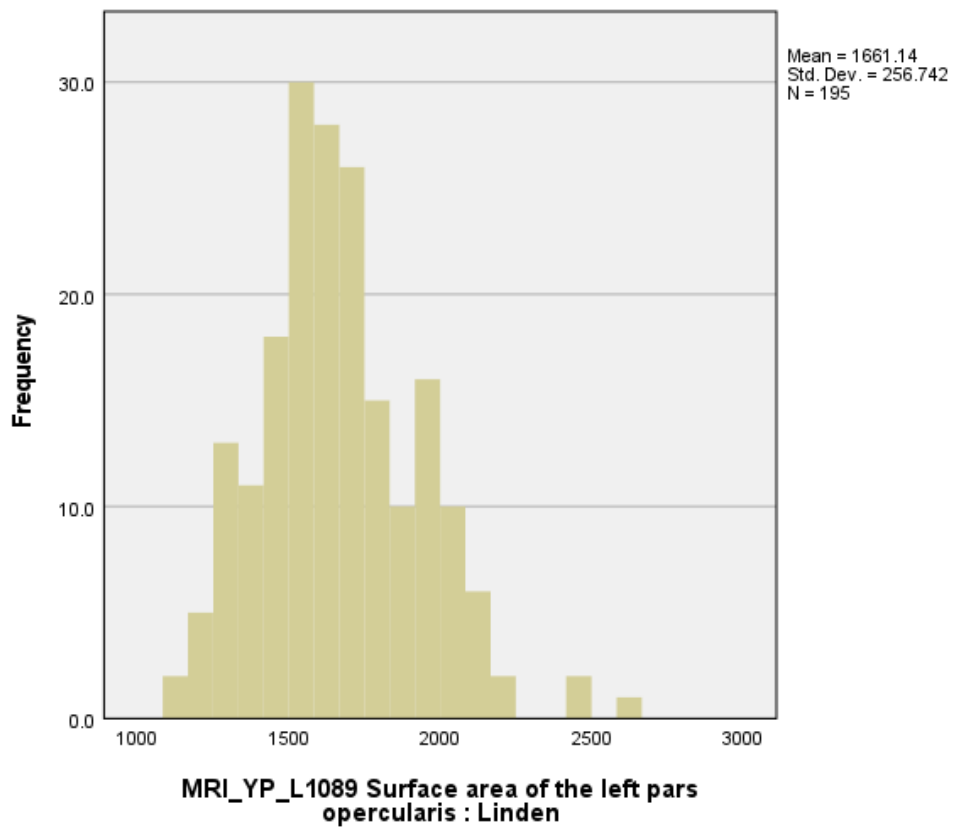
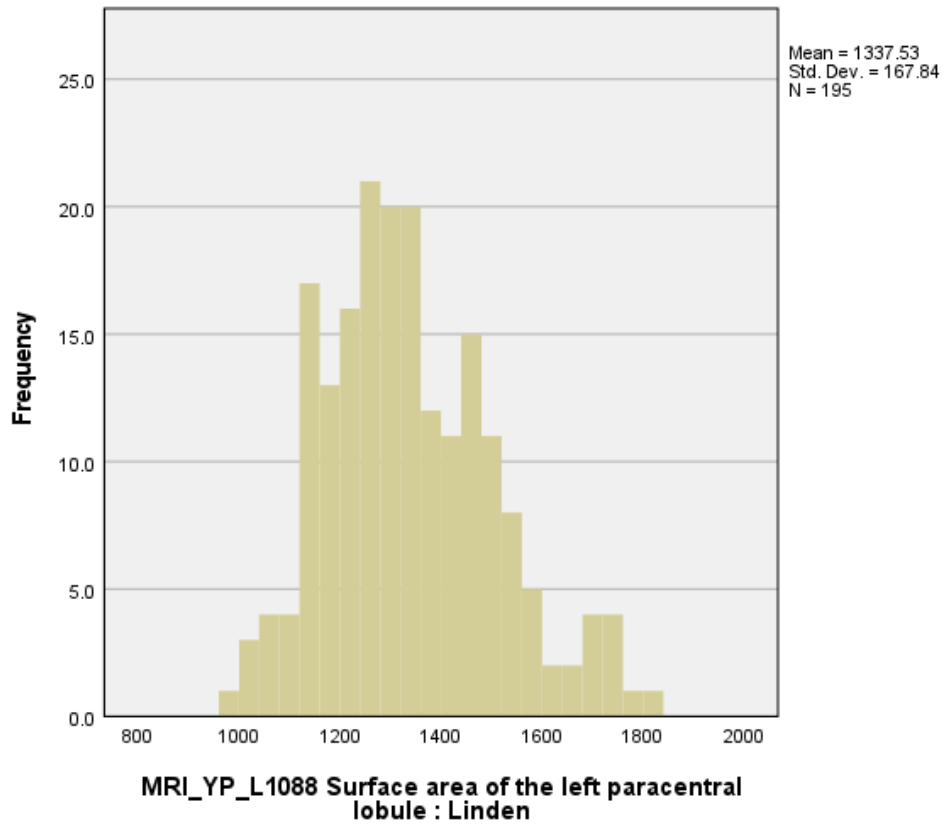


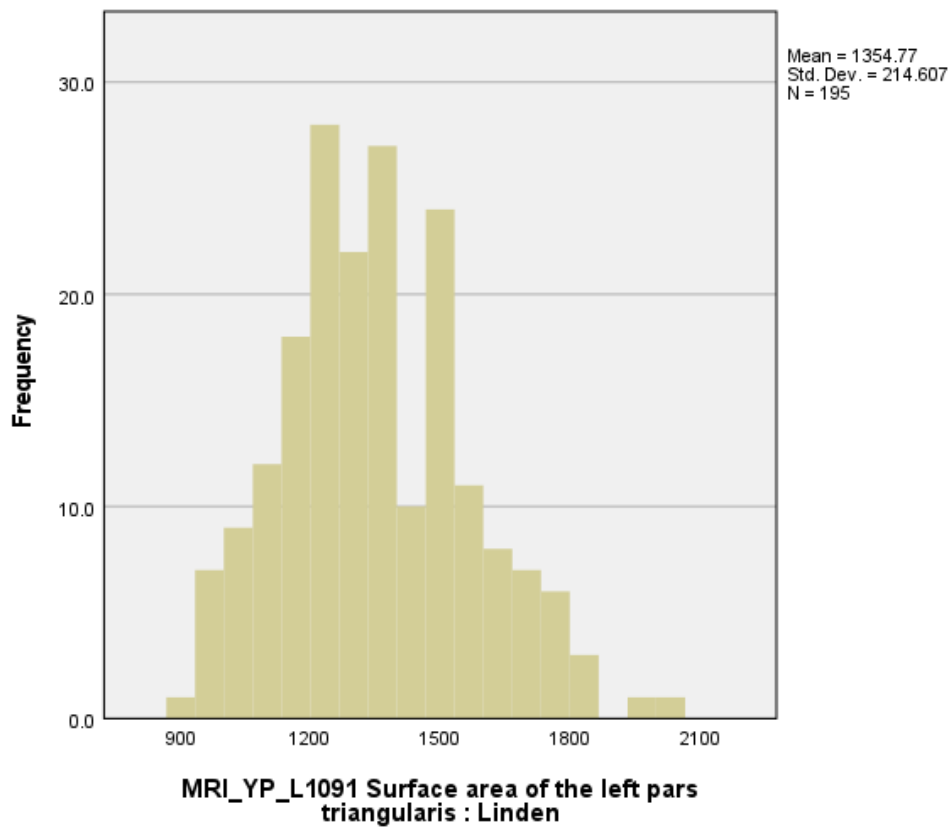
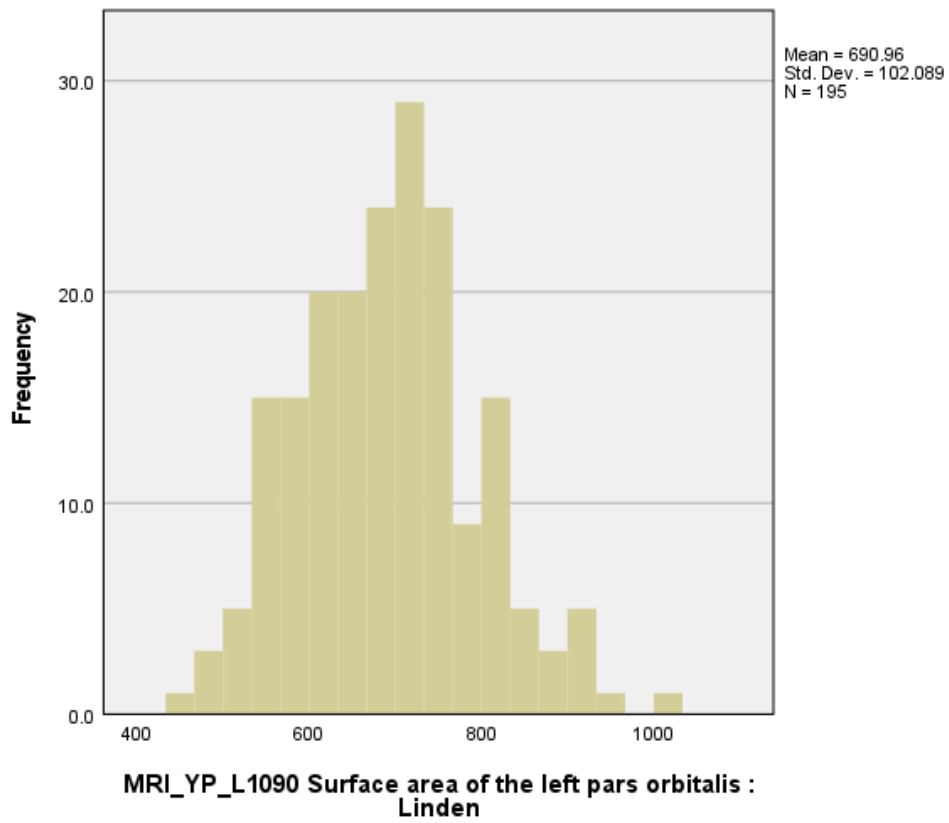


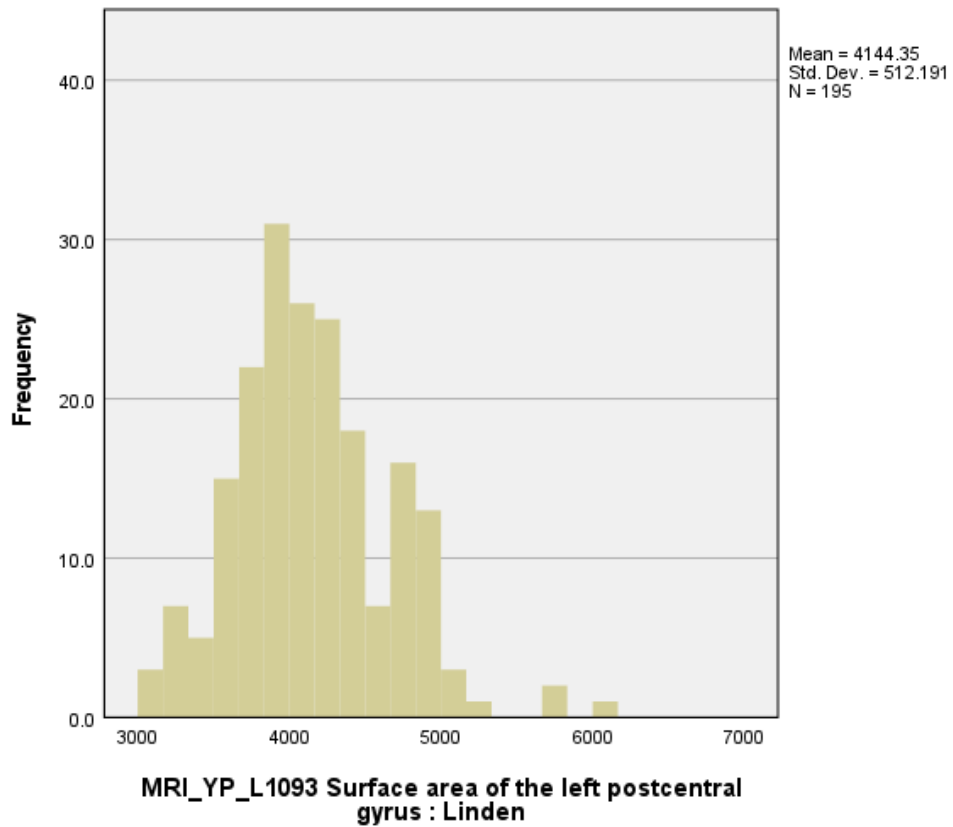
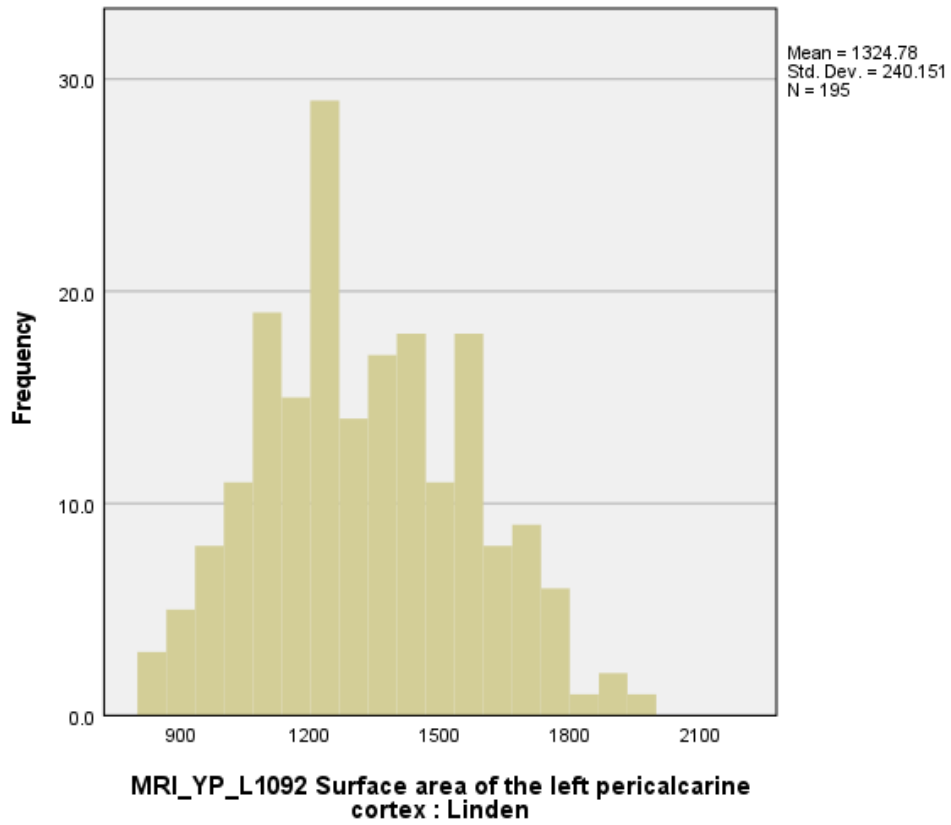


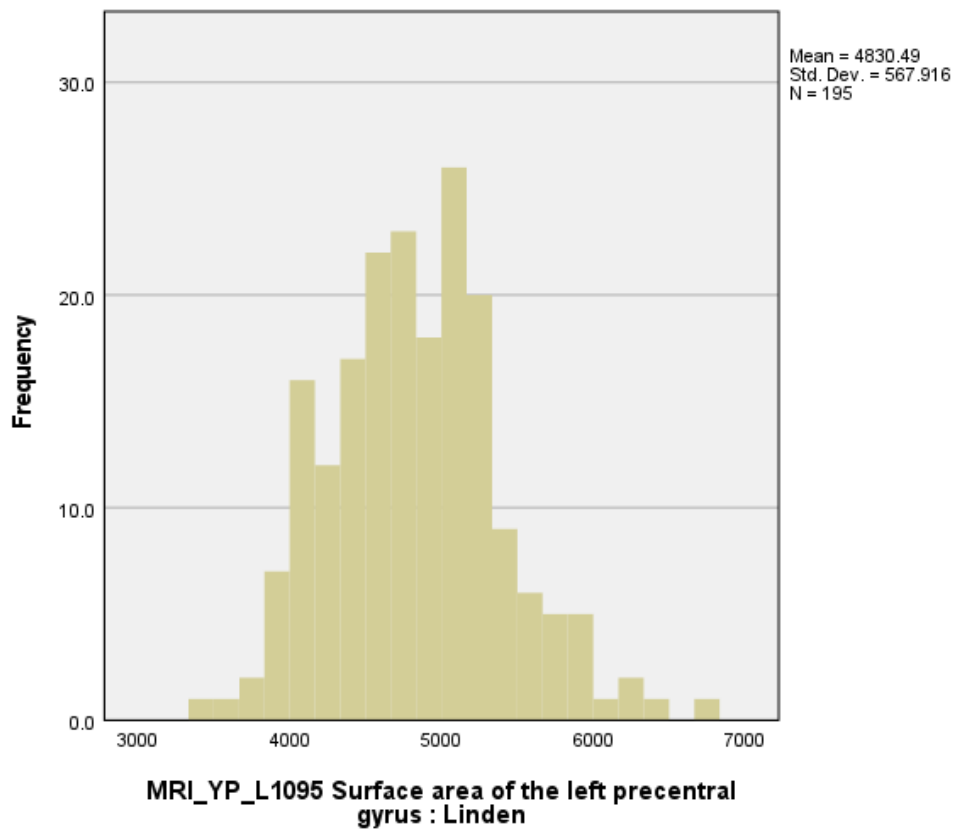
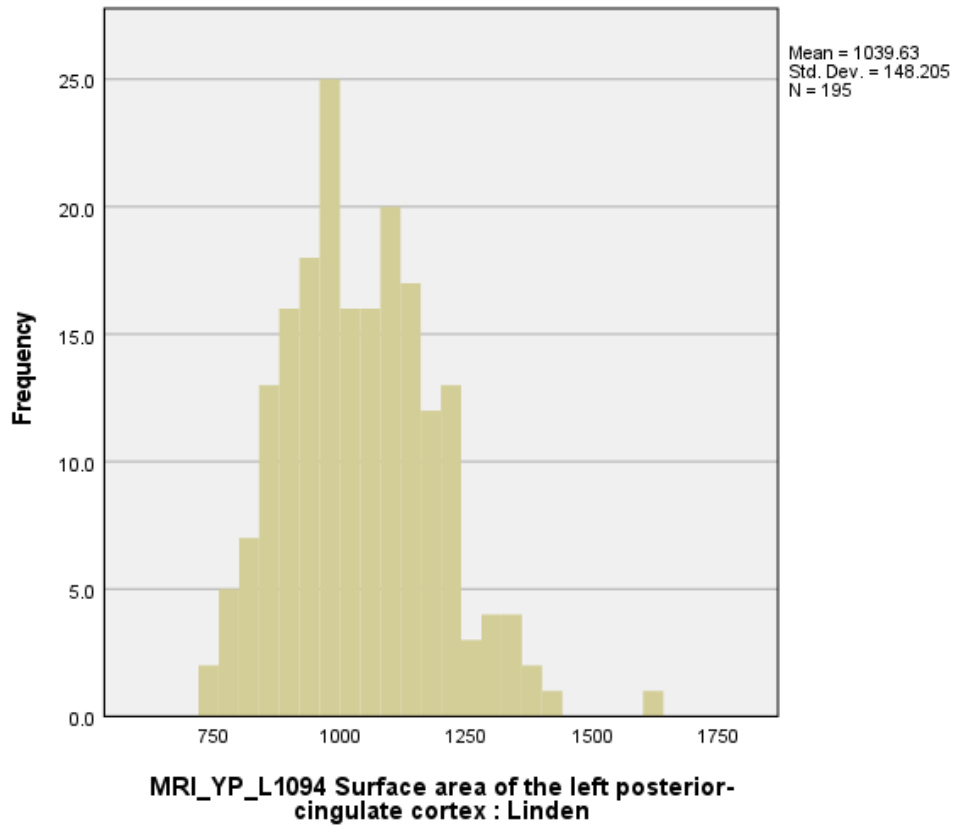


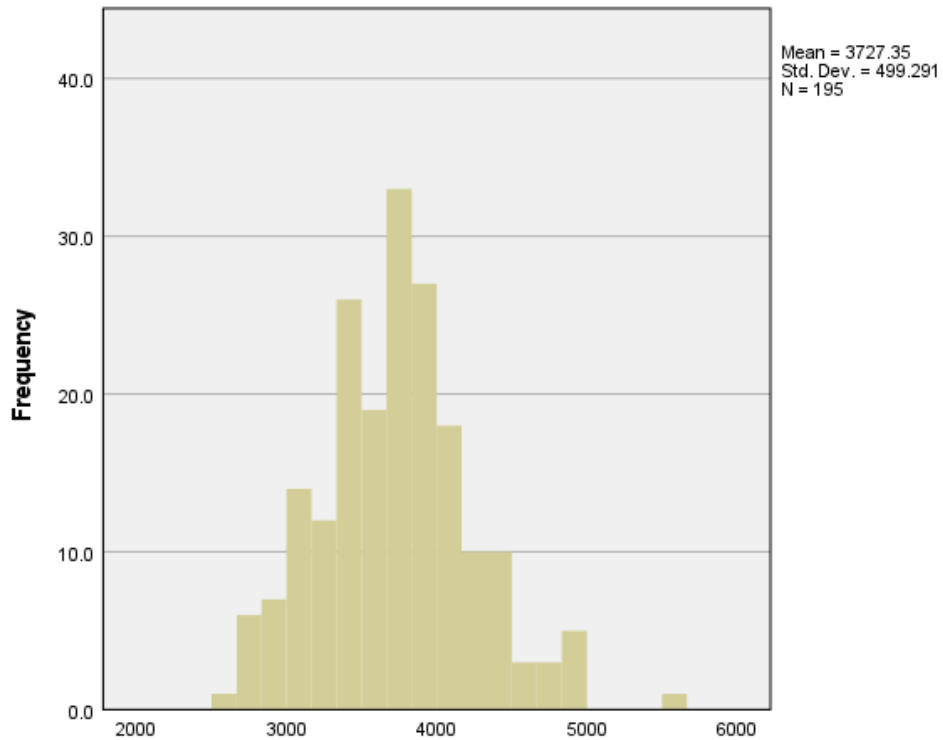




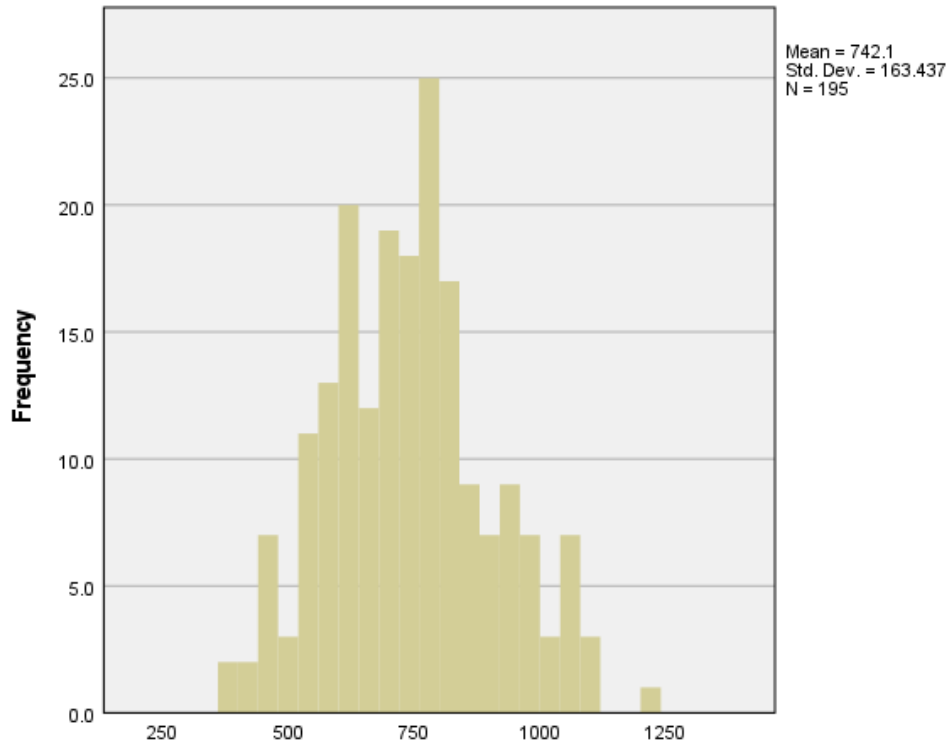




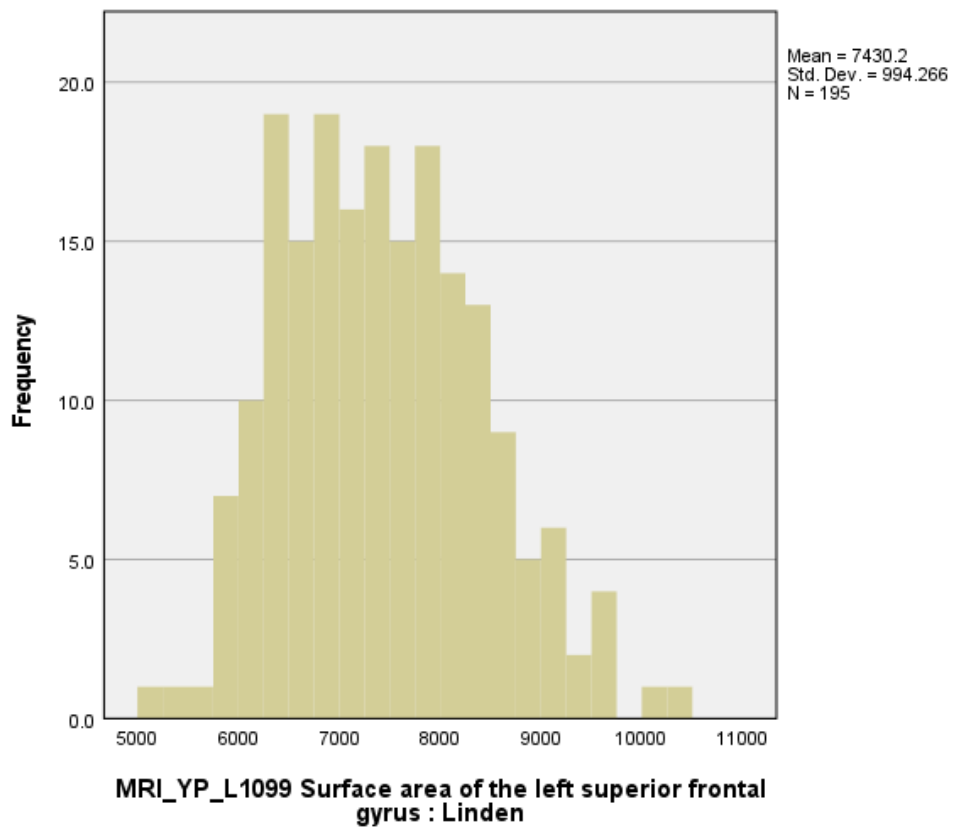
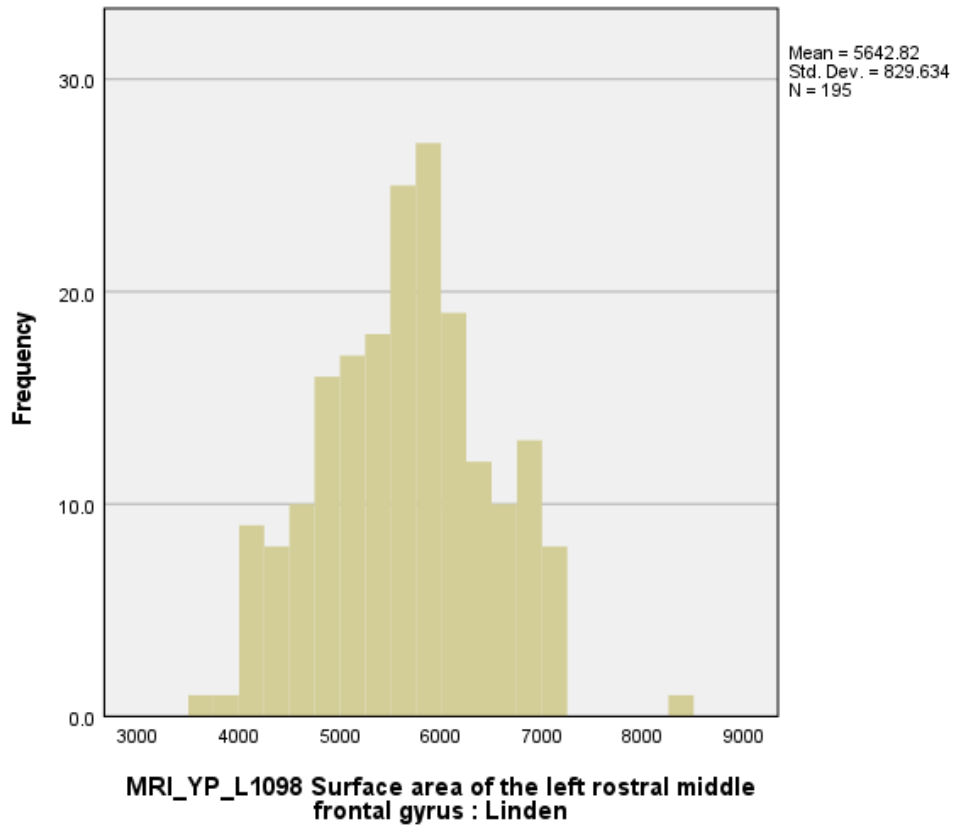


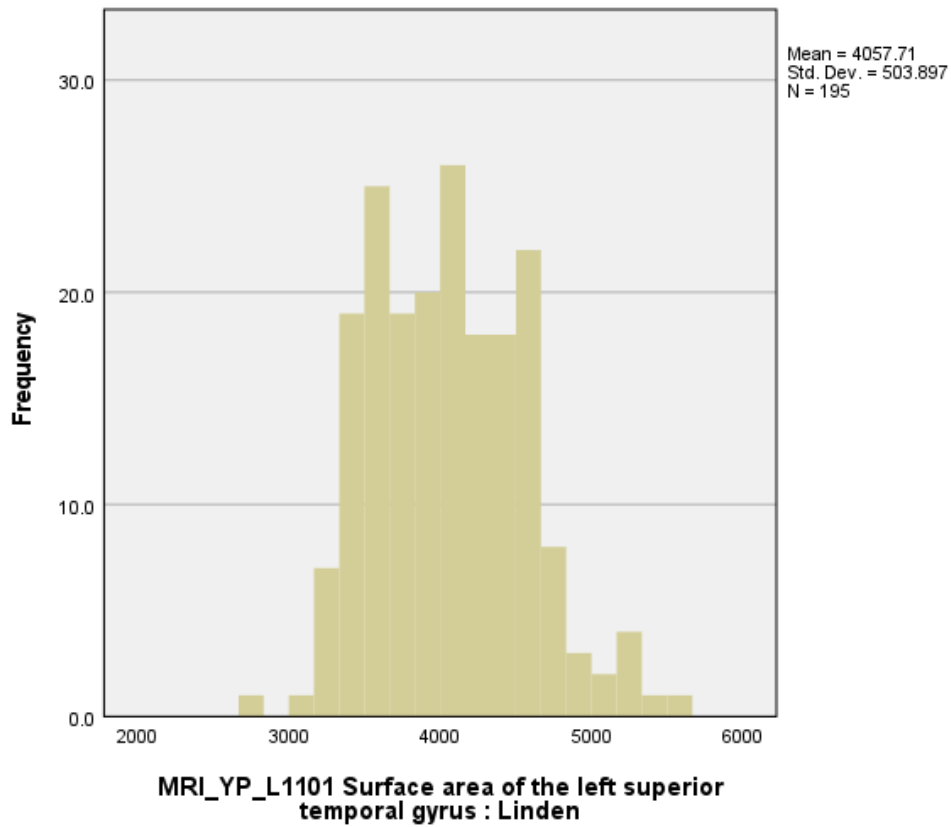
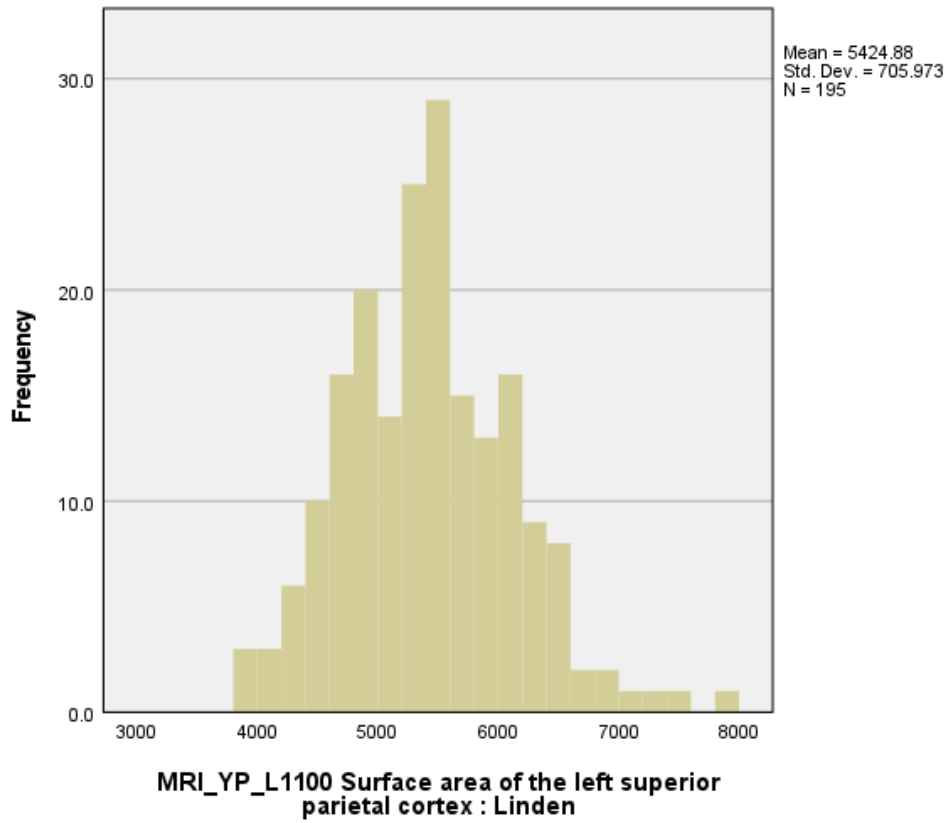


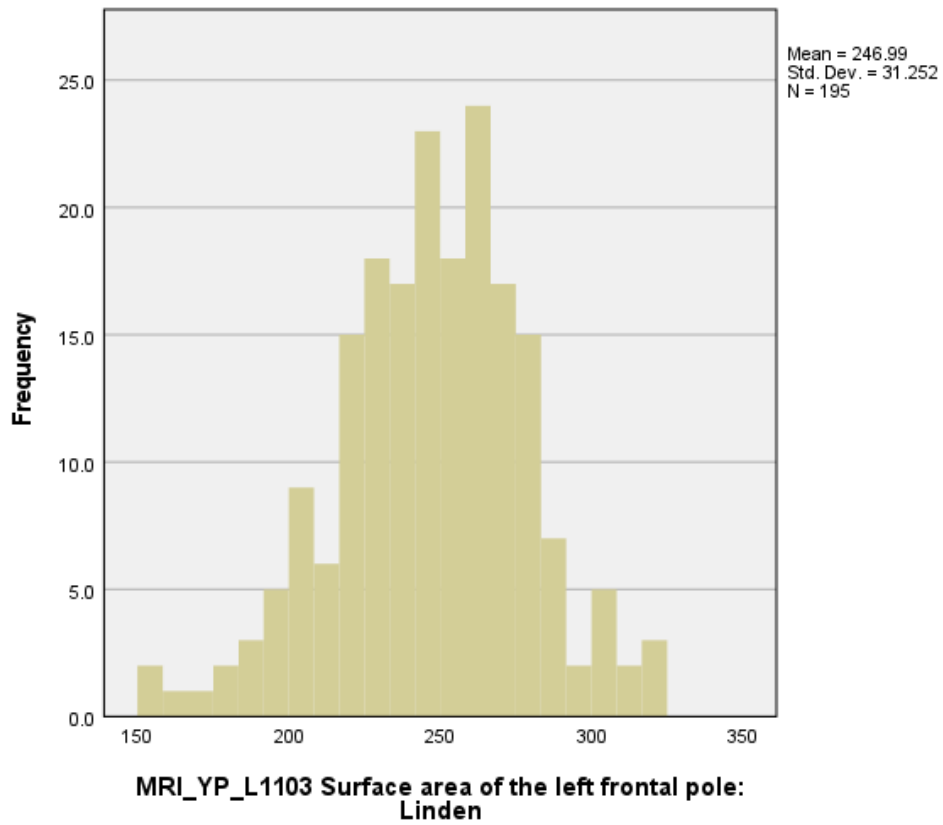
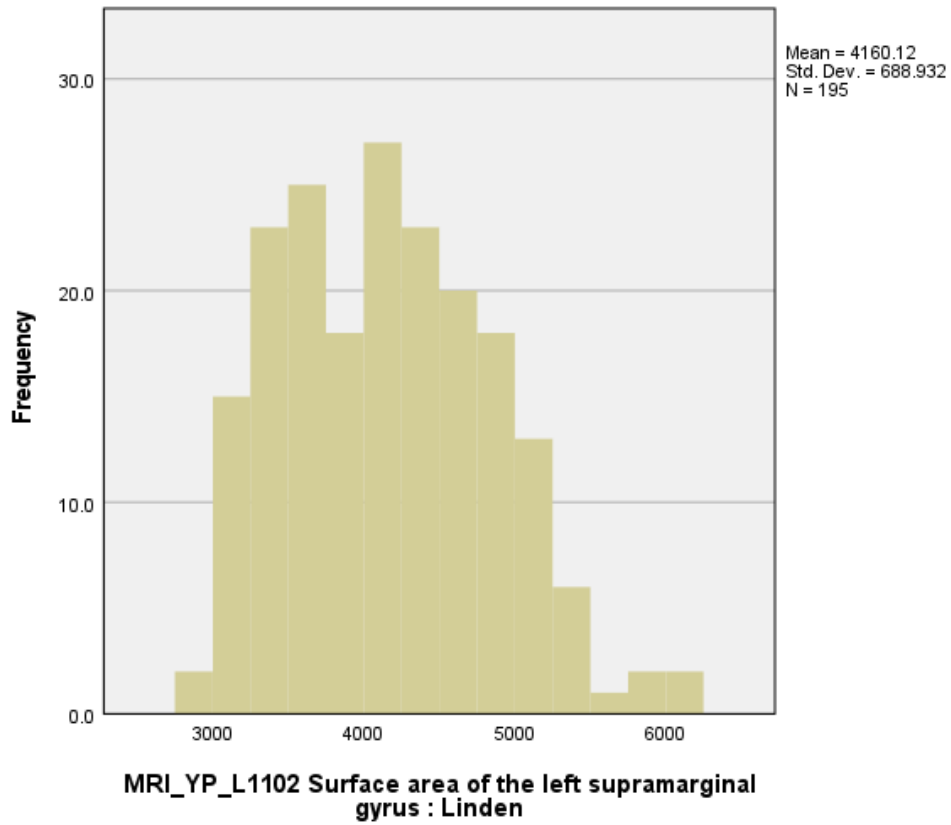
MRI_YP_L1096 Surface area of the left precuneus cortex : Linden

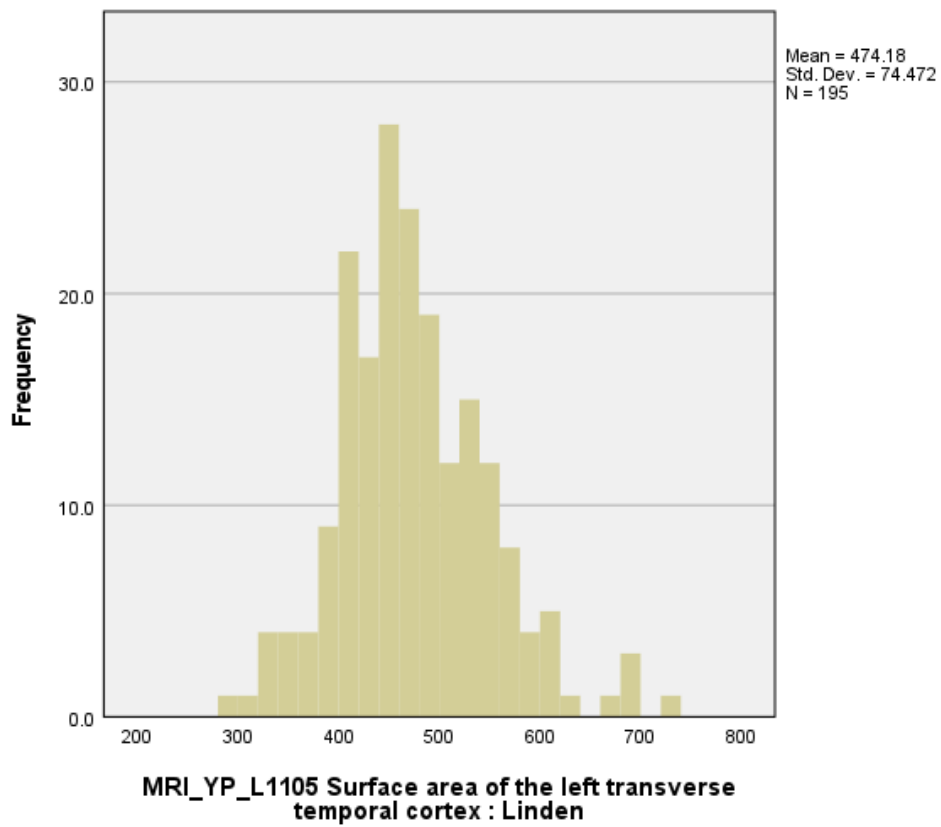
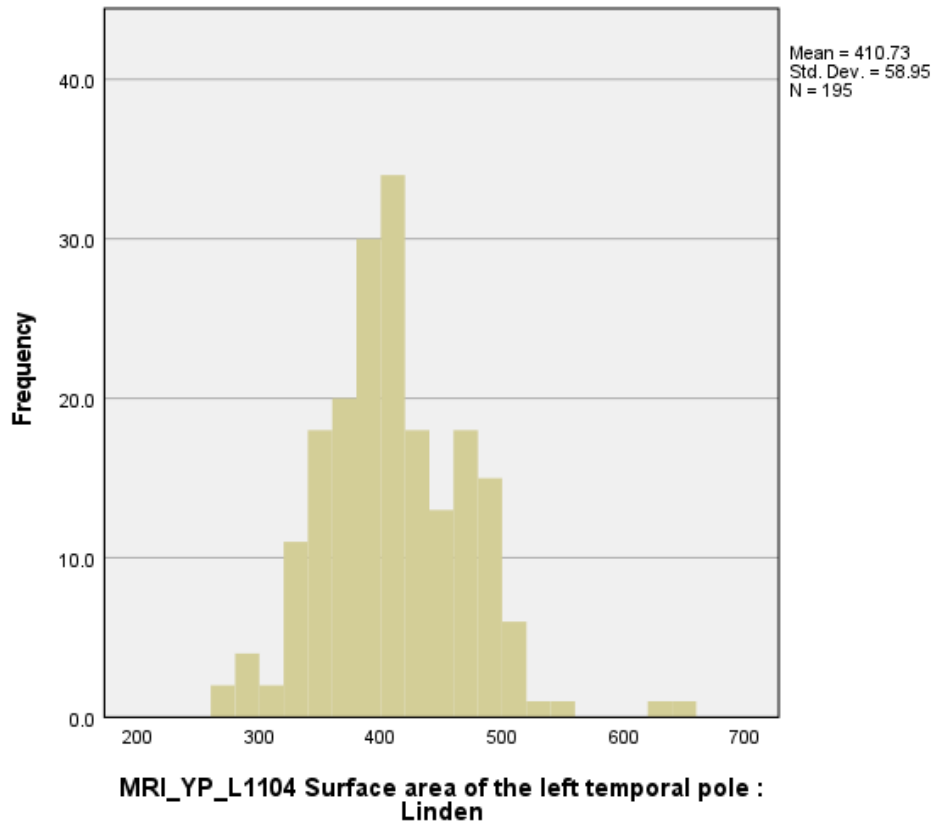


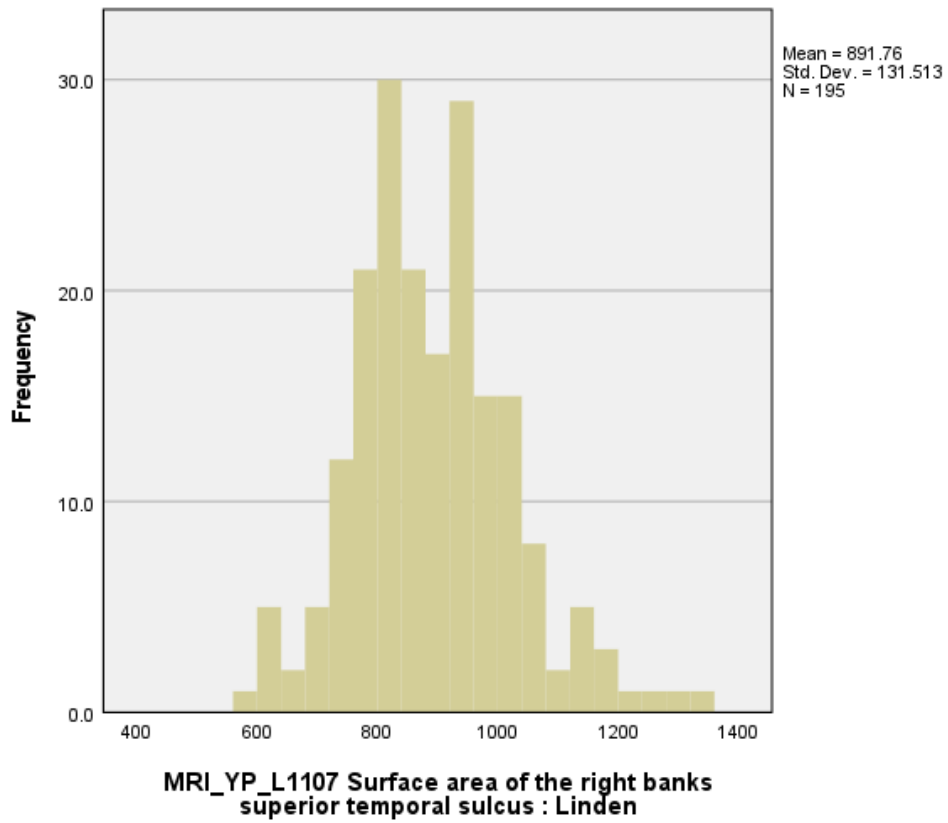
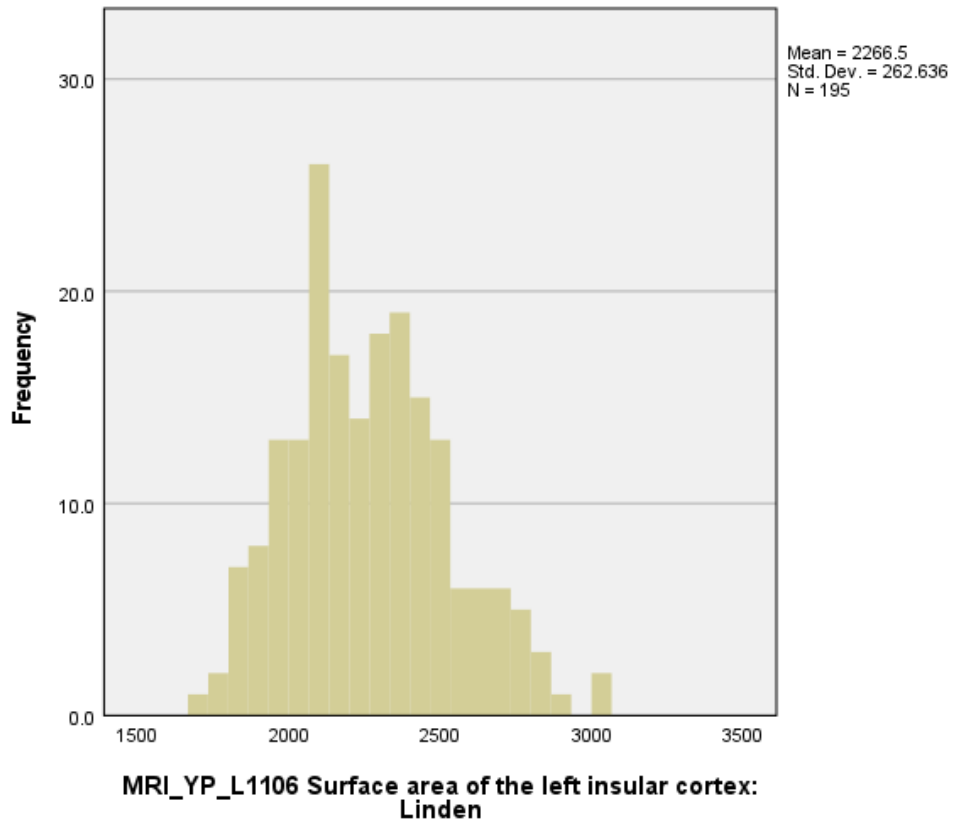
MRI_YP_L1097 Surface area of the left rostral anterior cingulate cortex : Linden

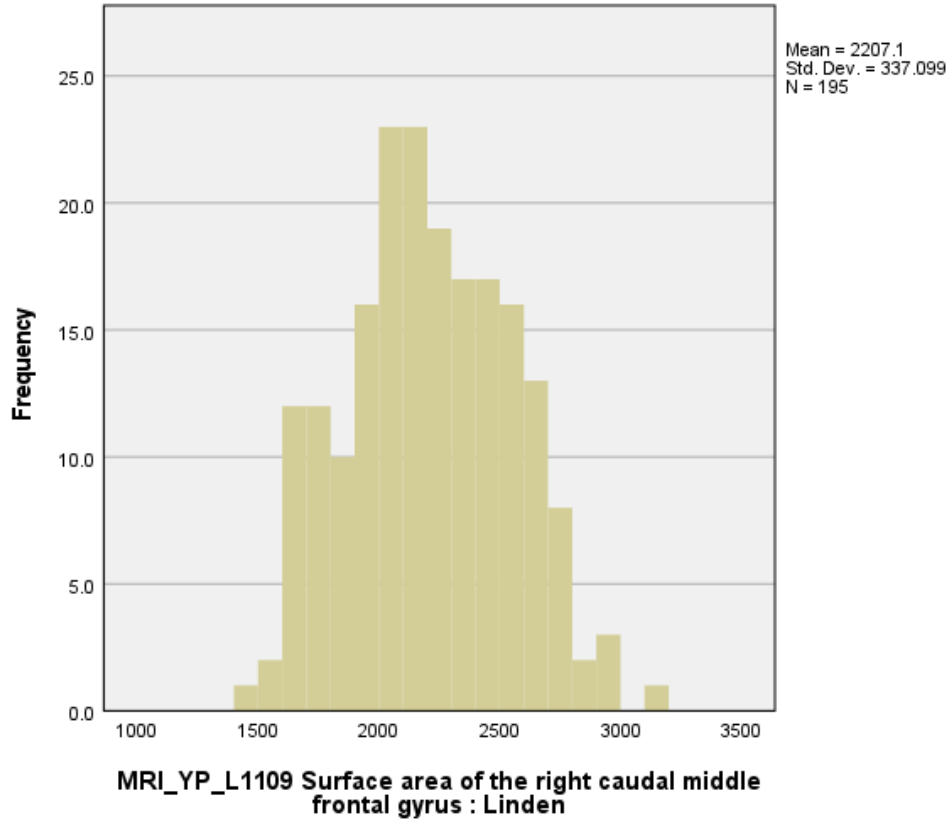
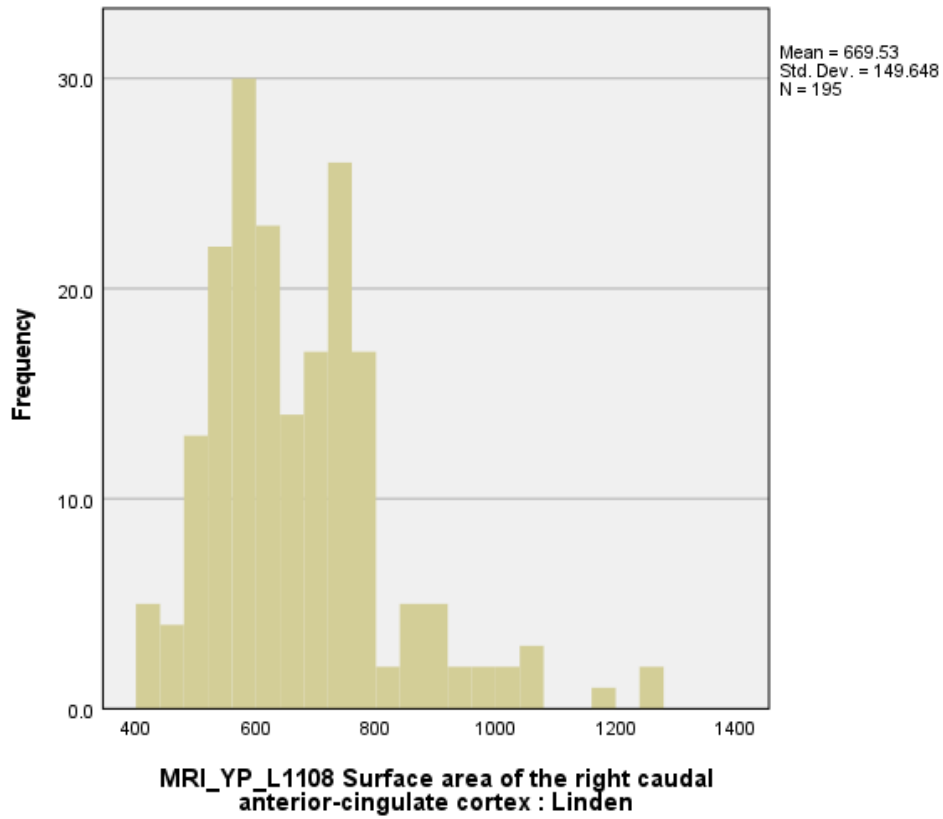


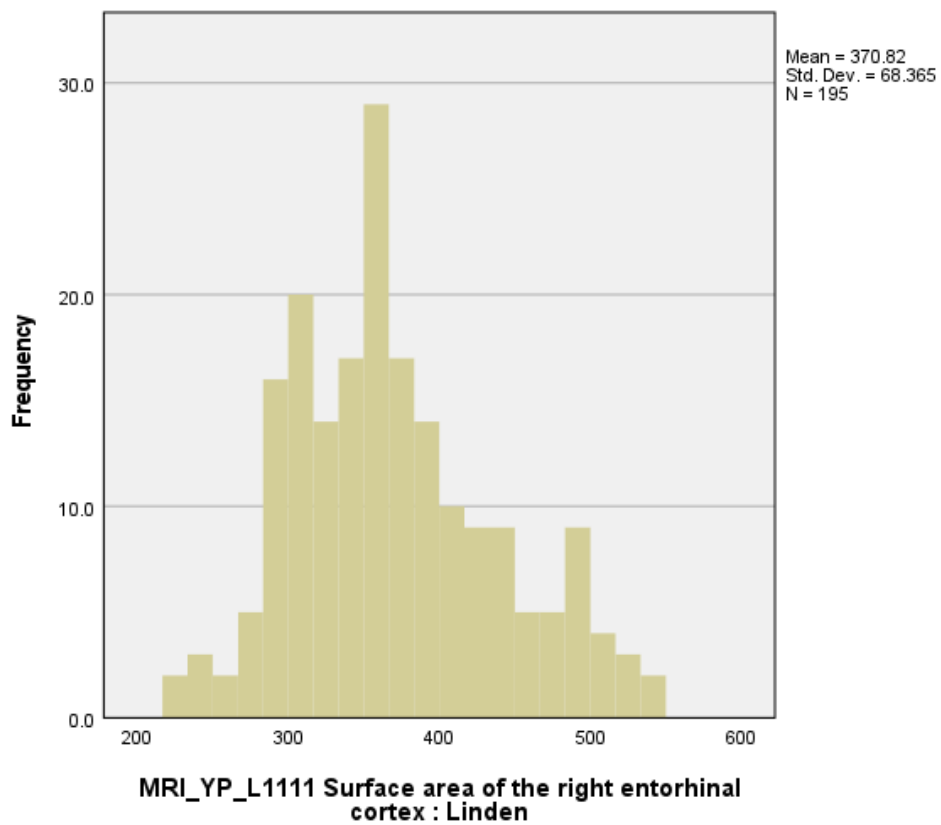
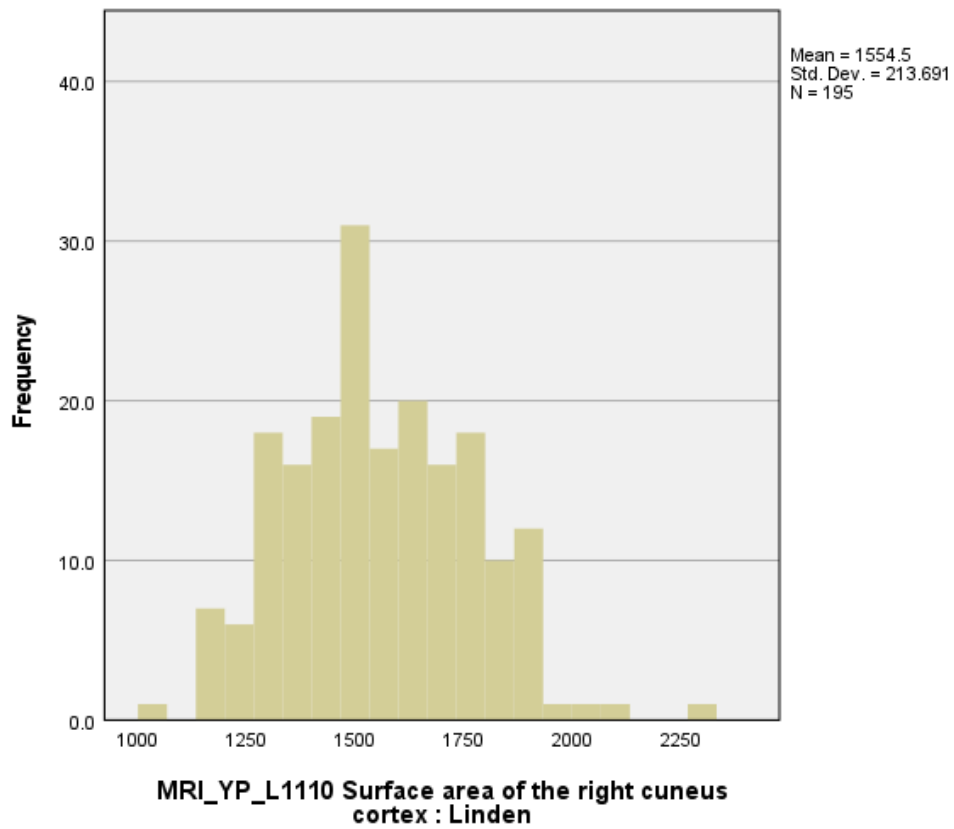


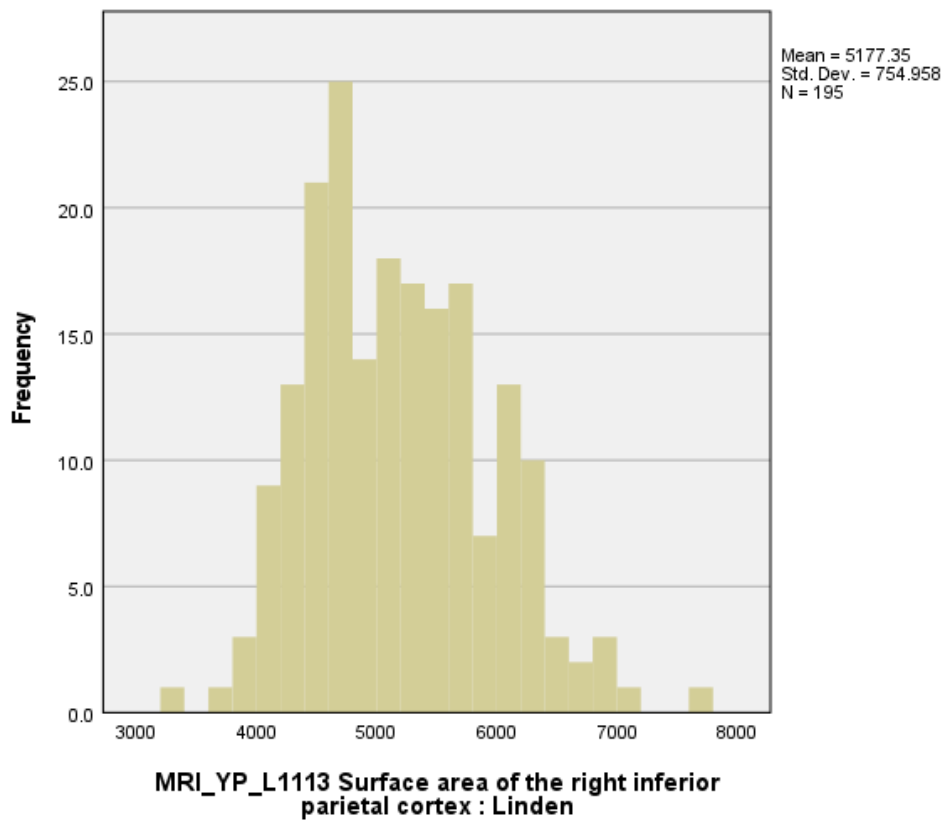
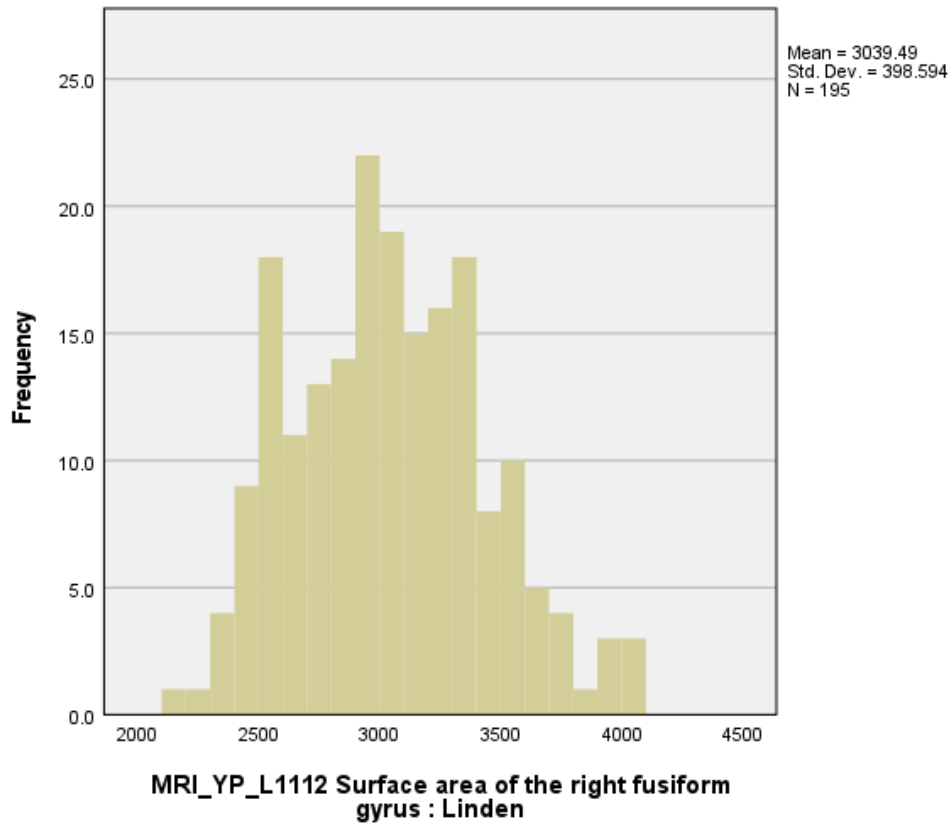


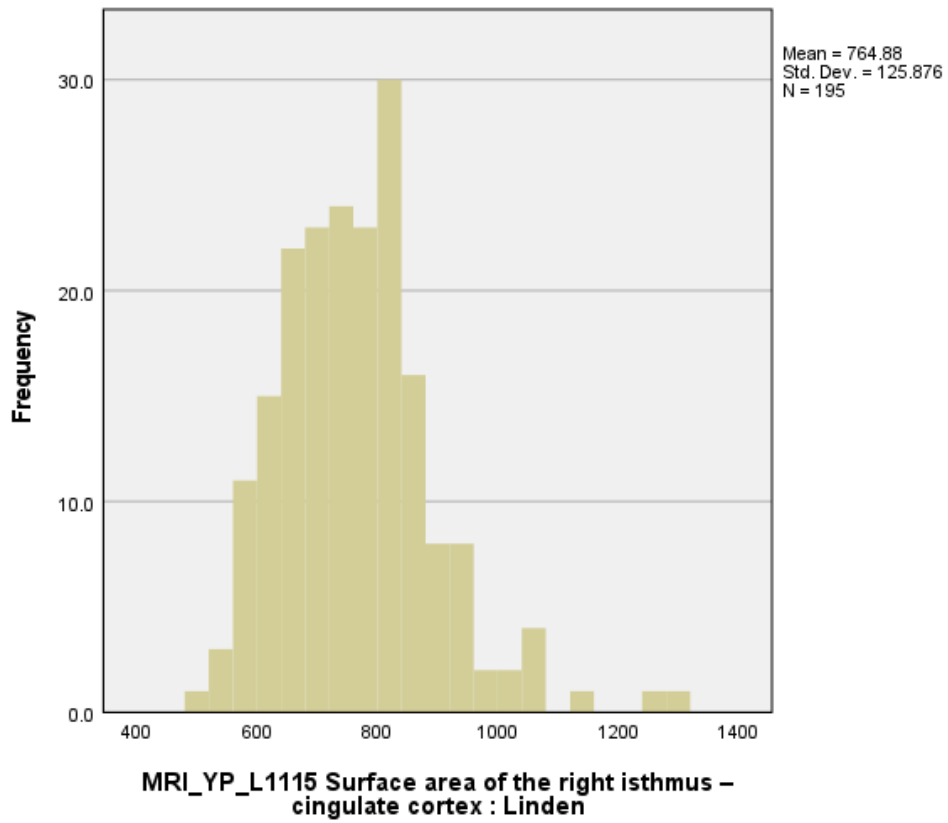
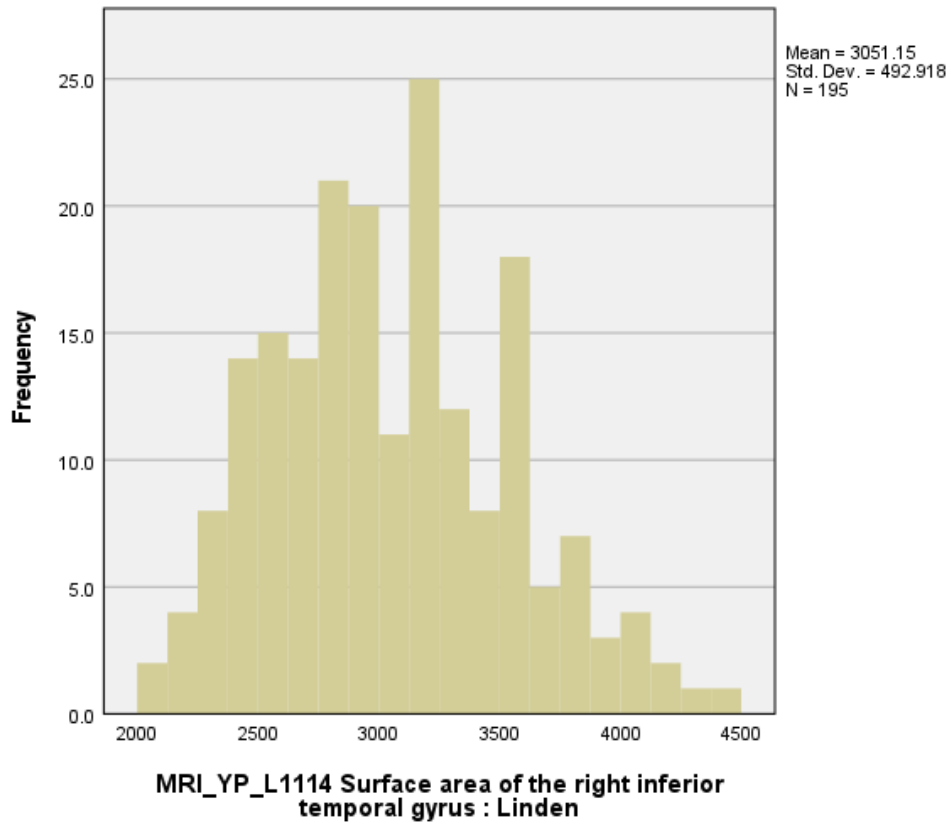


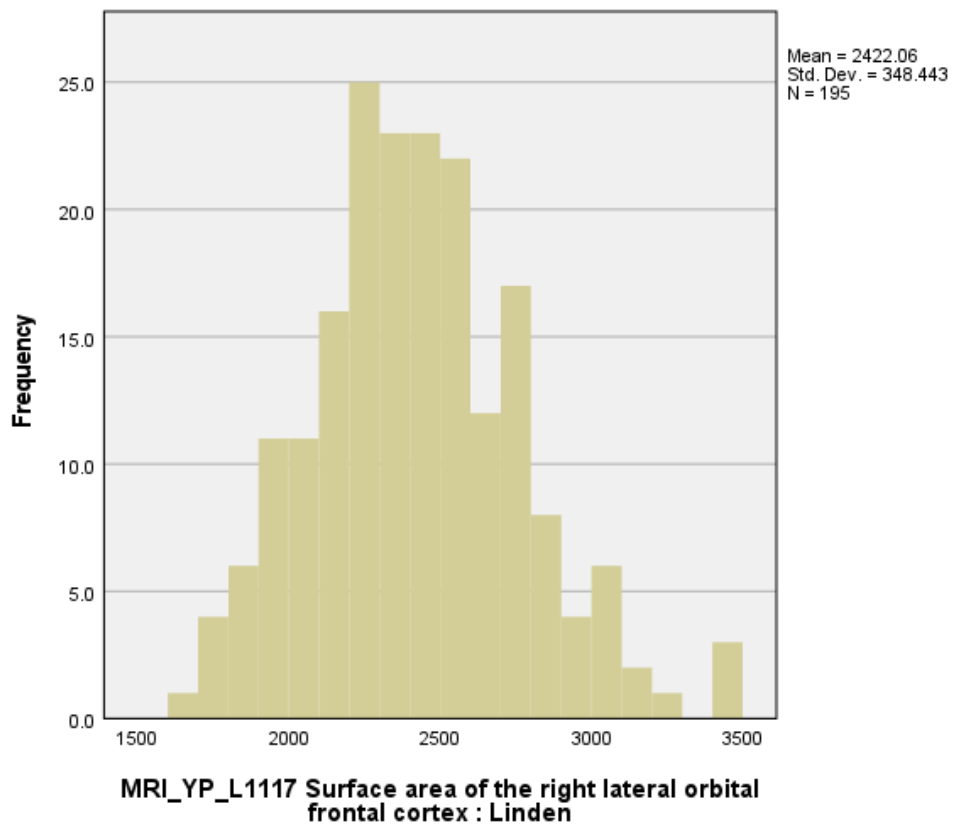
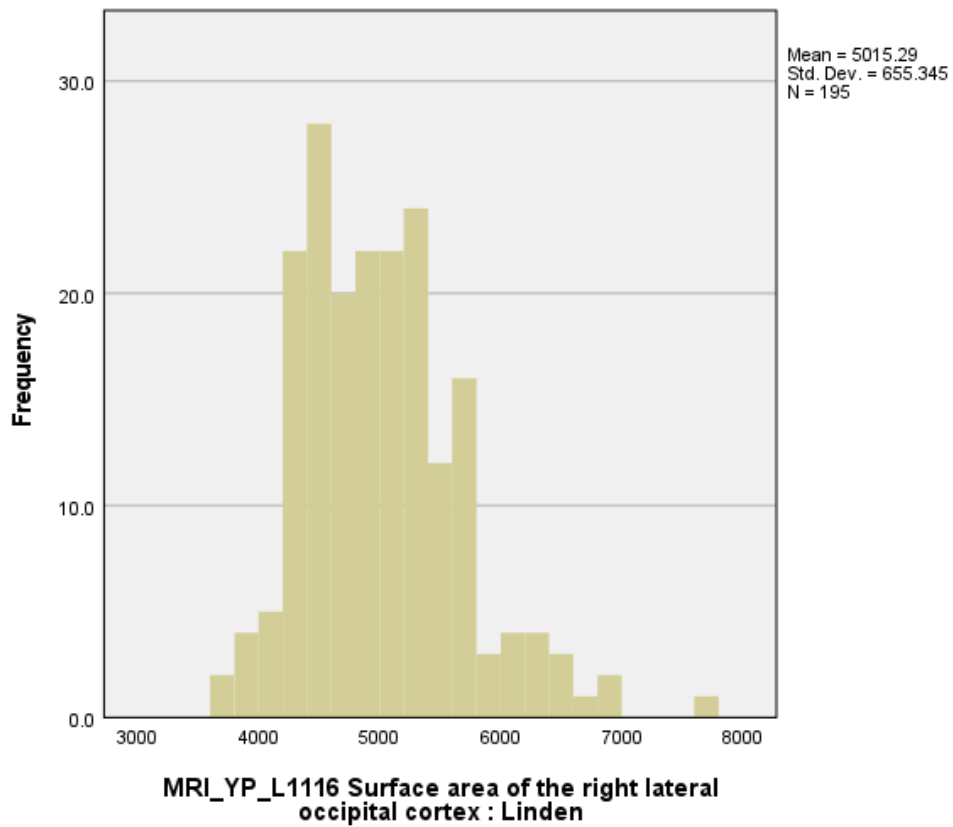


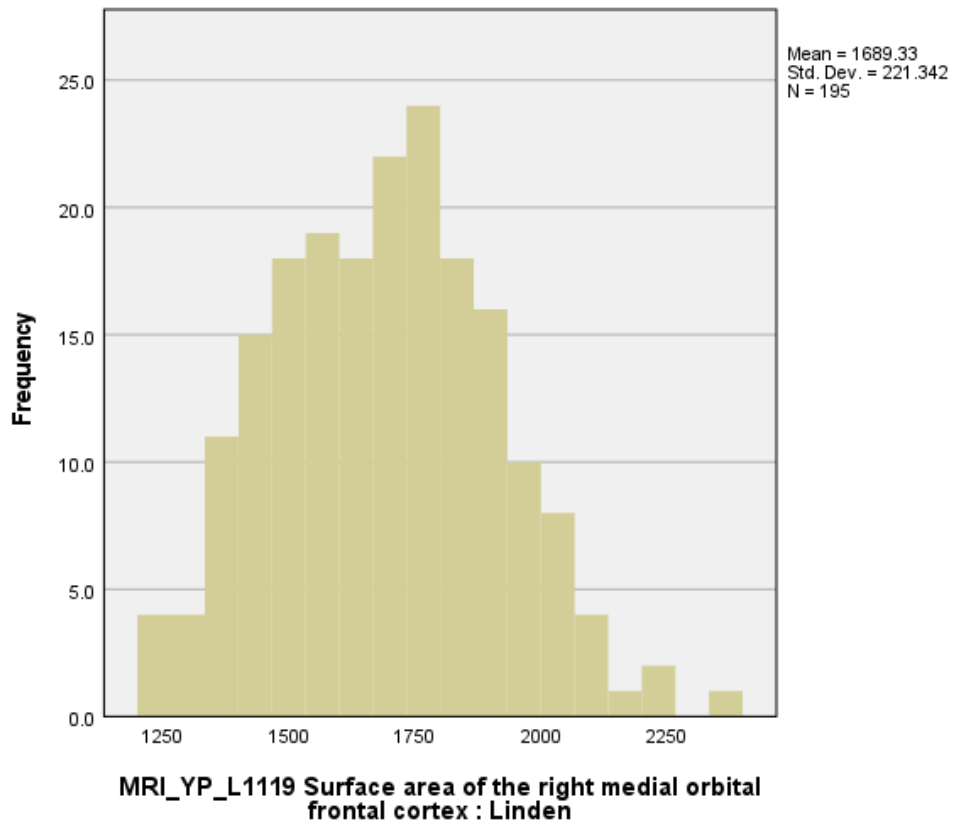
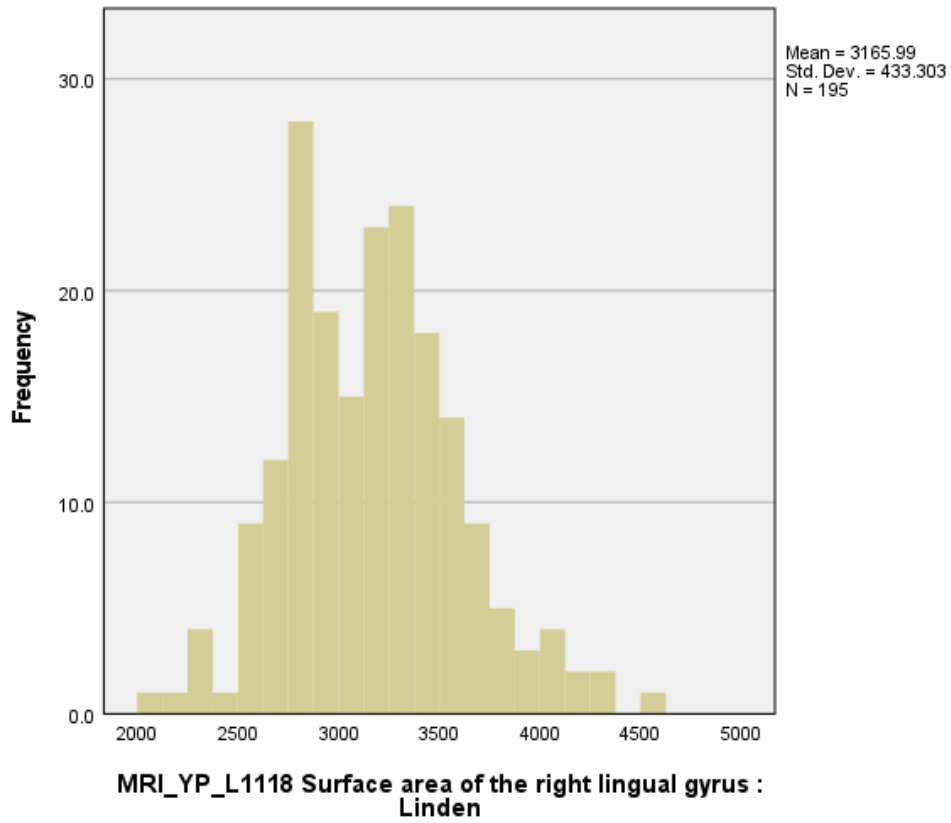


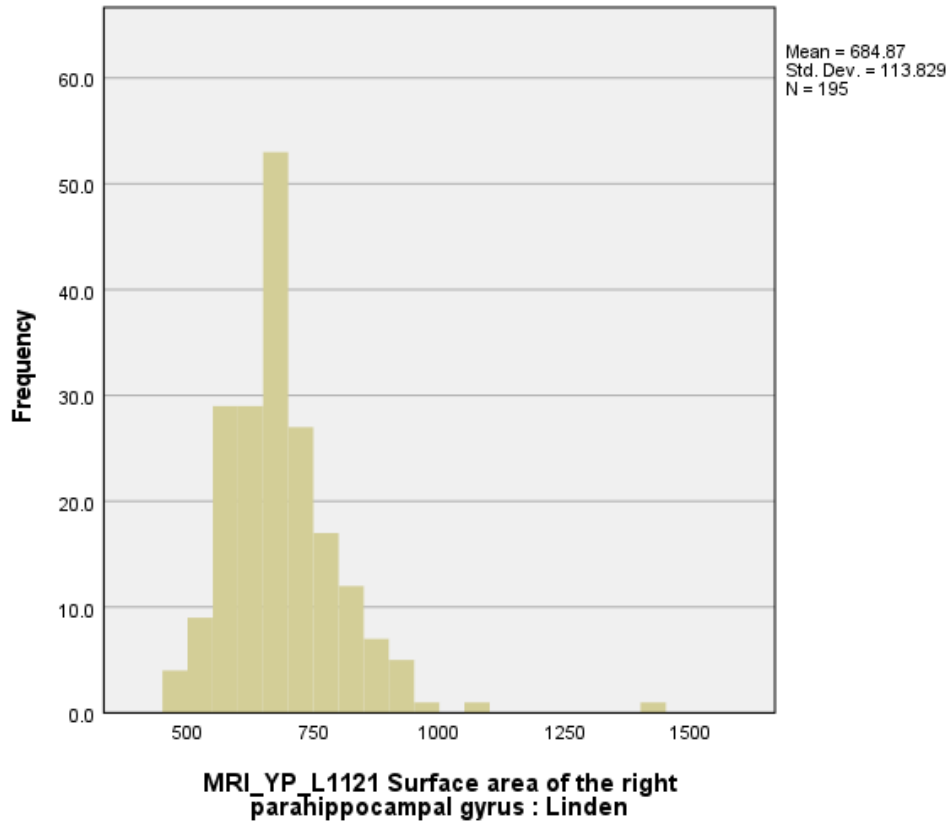
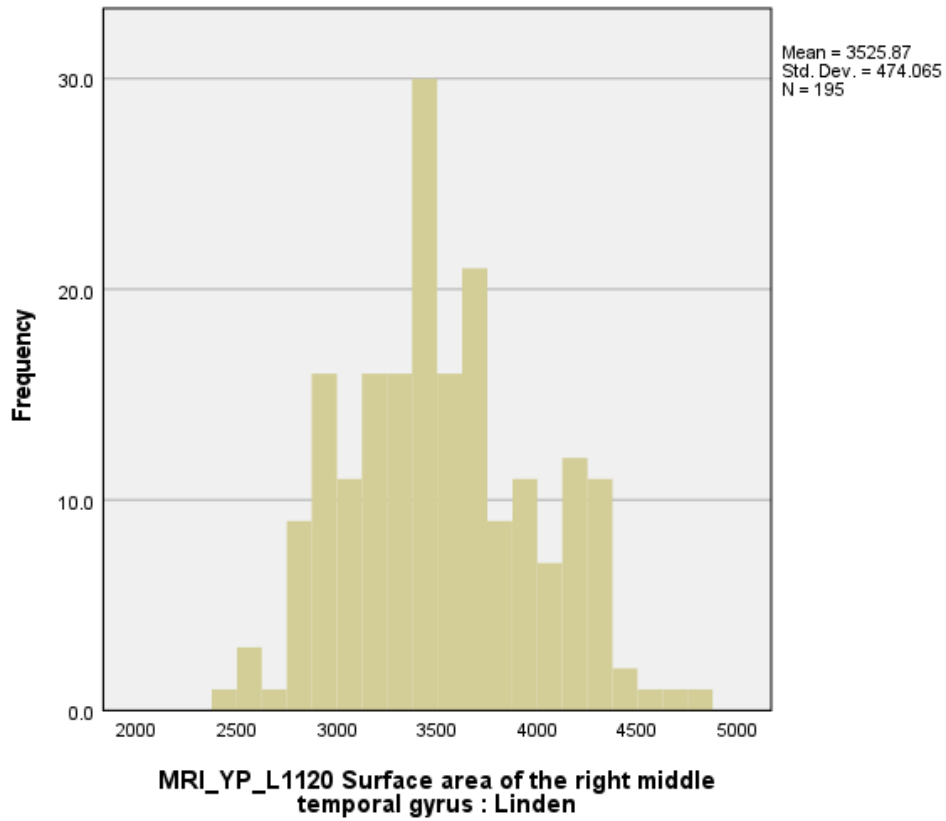


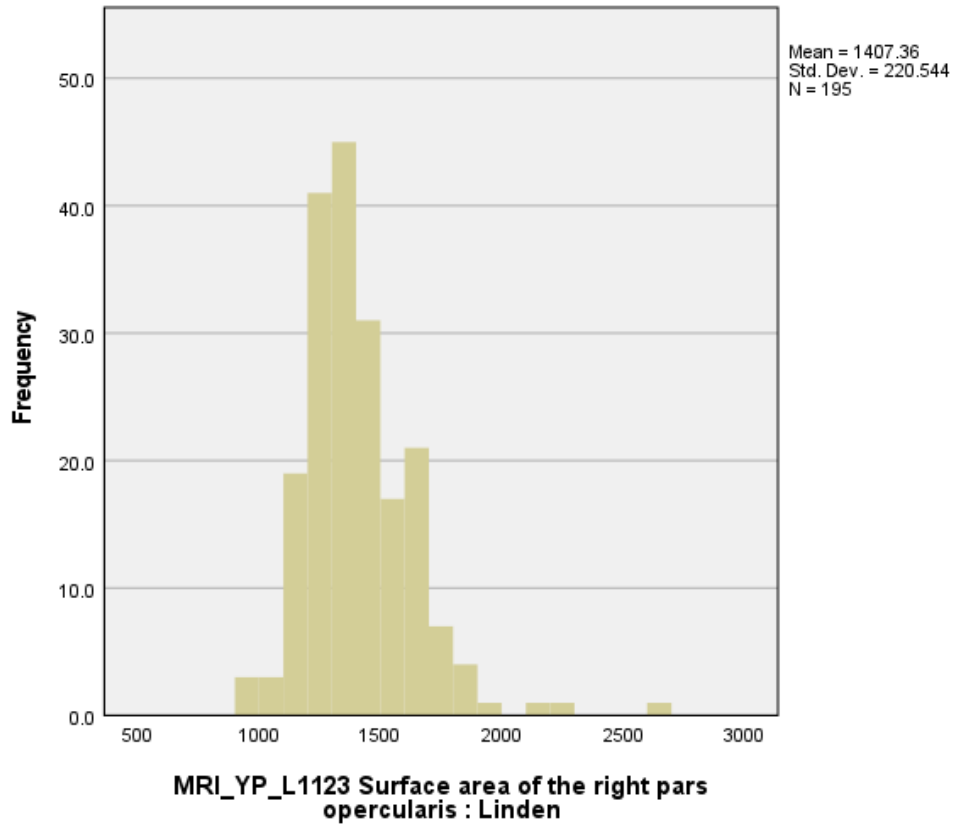
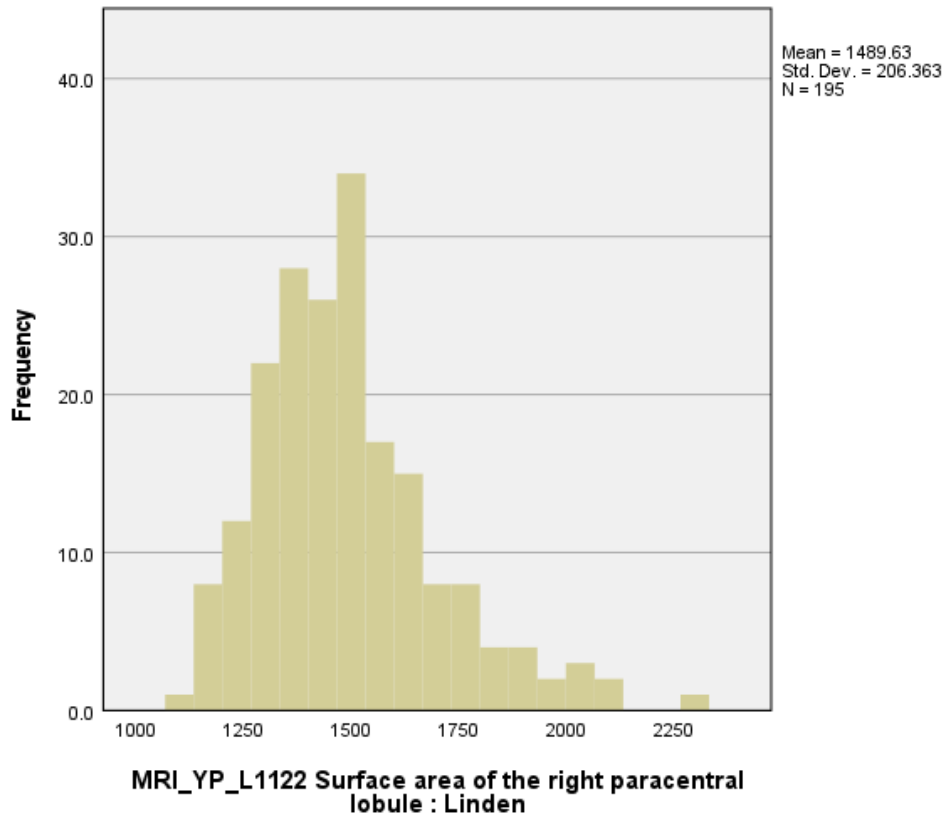


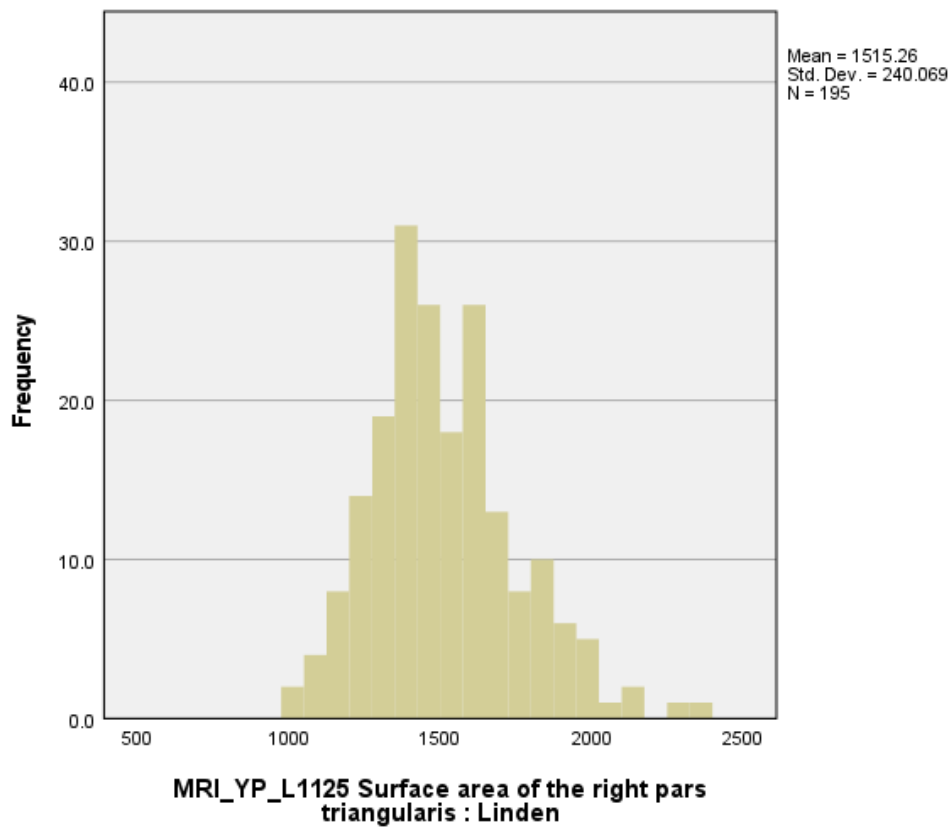
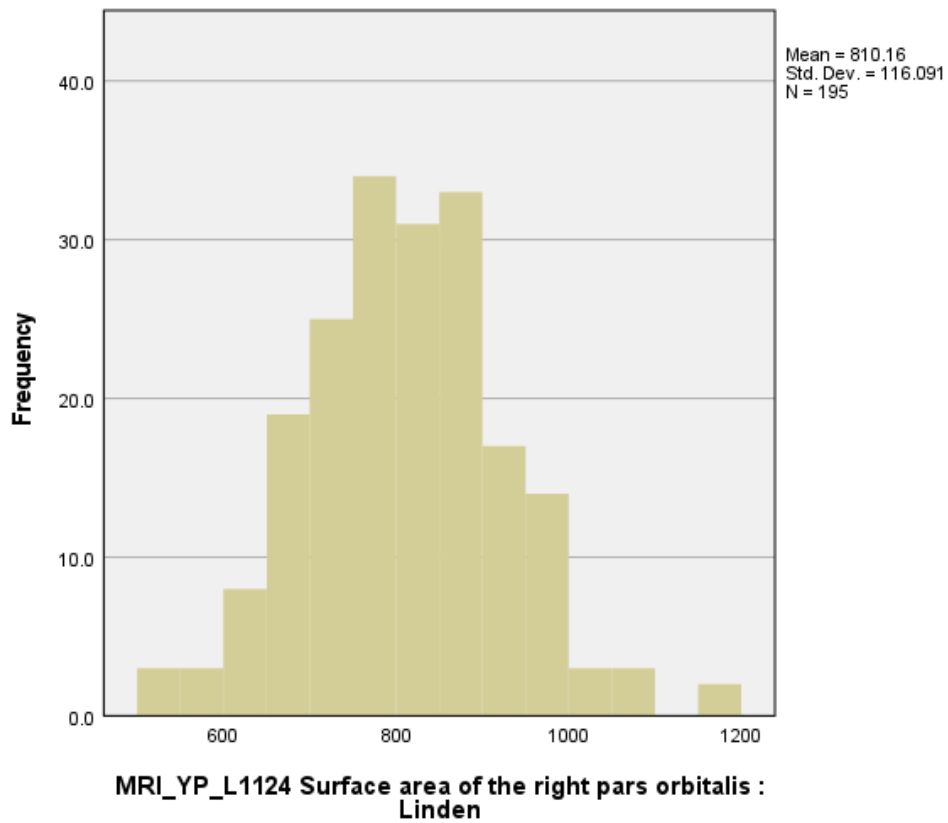


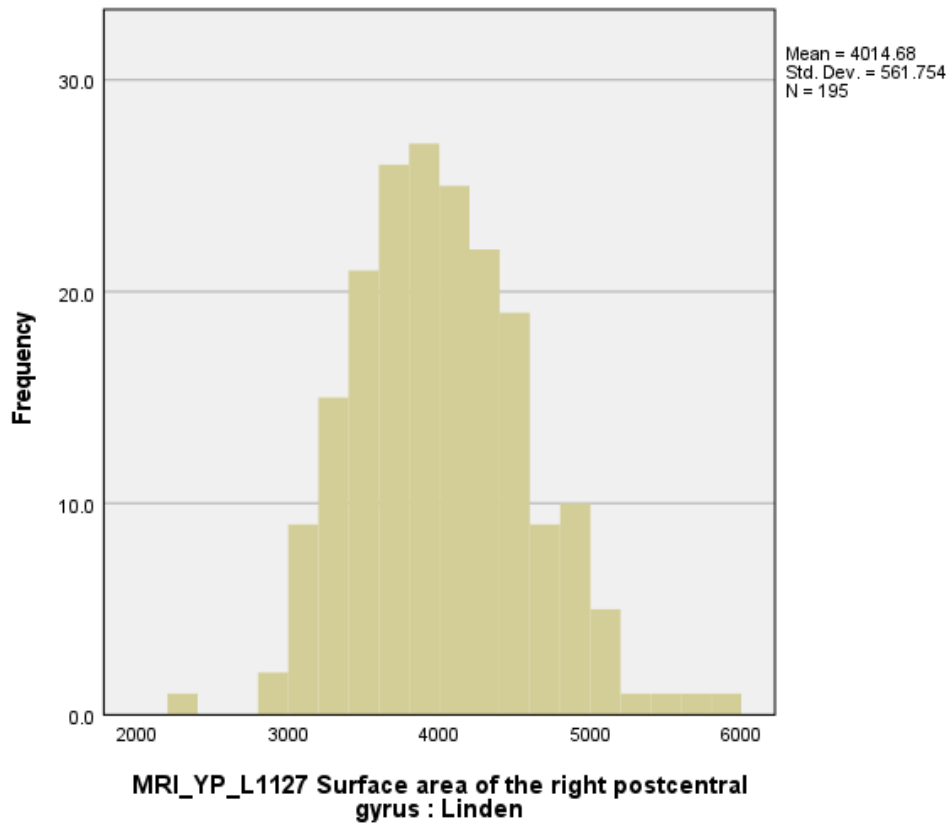
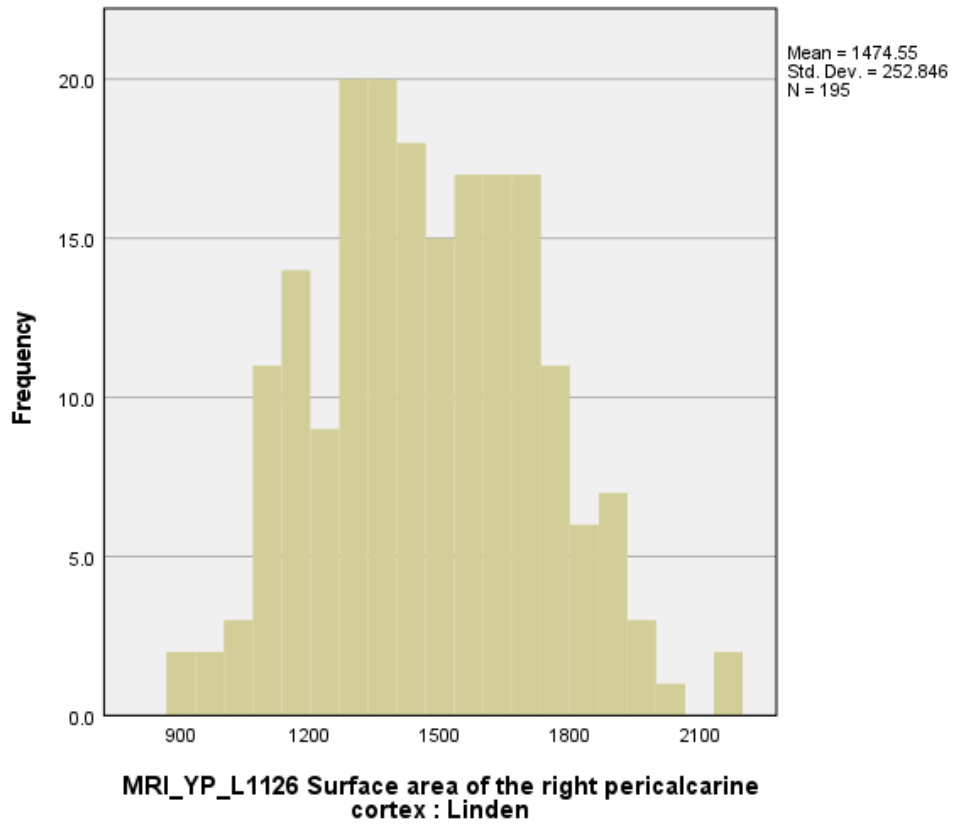


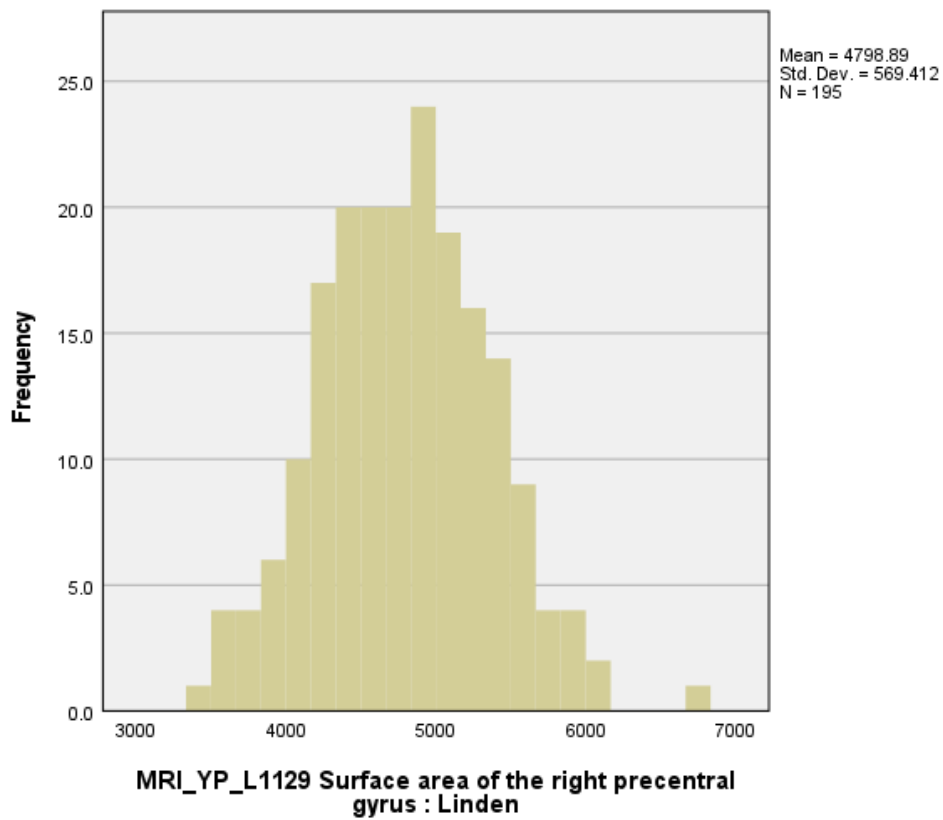
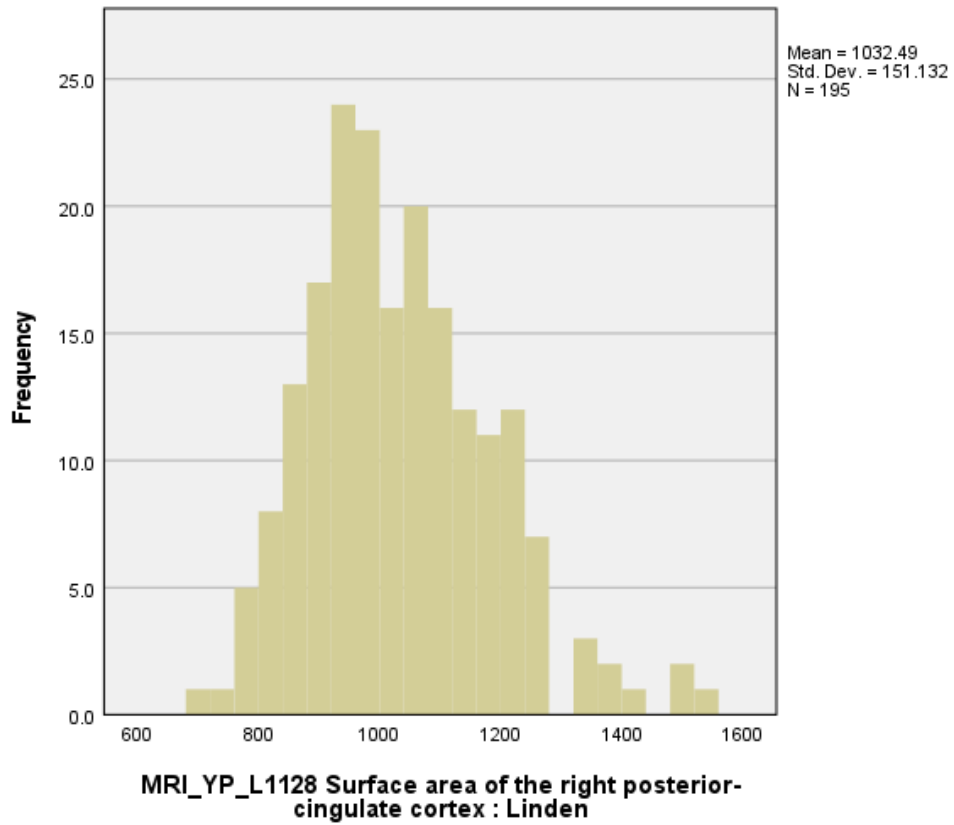


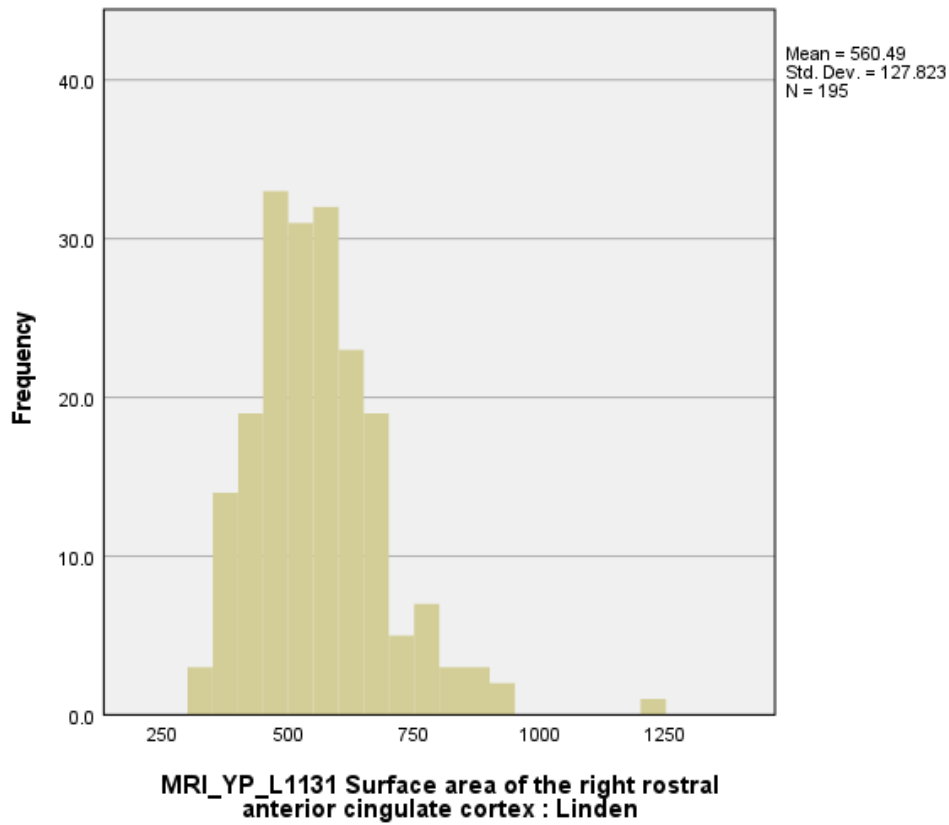
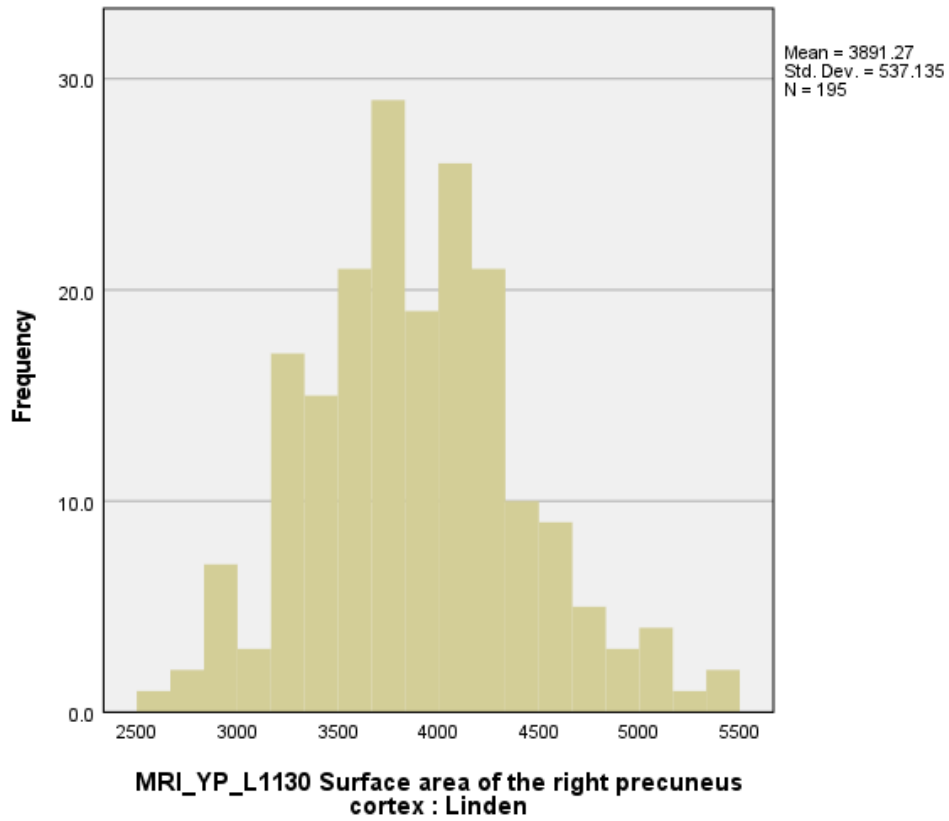


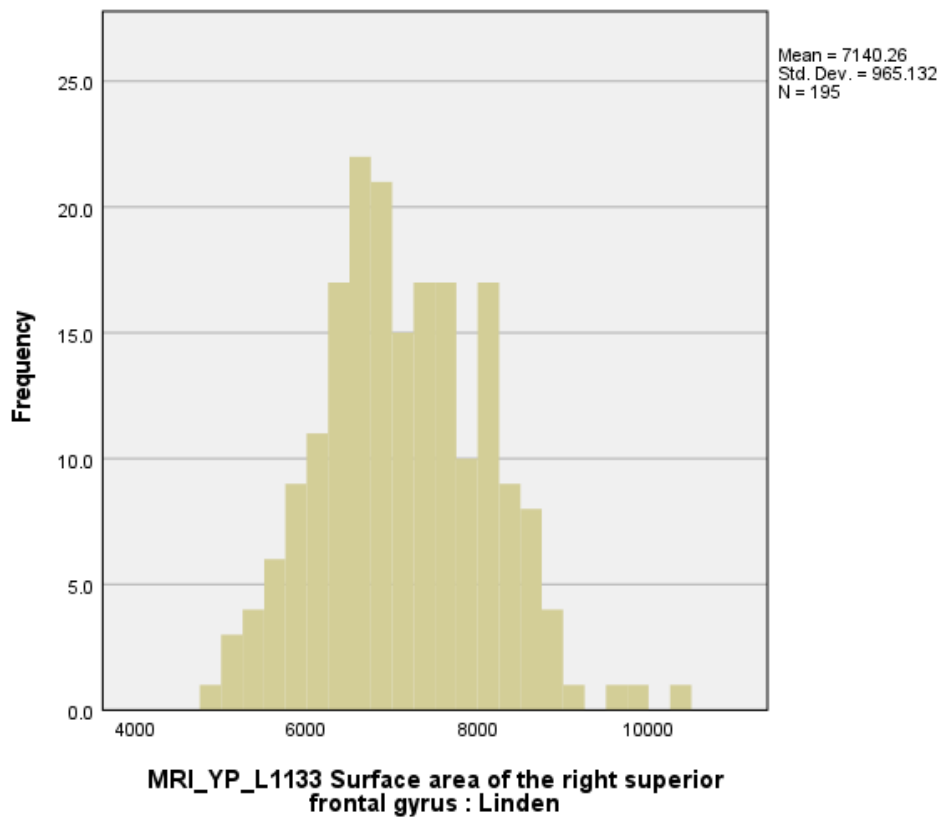
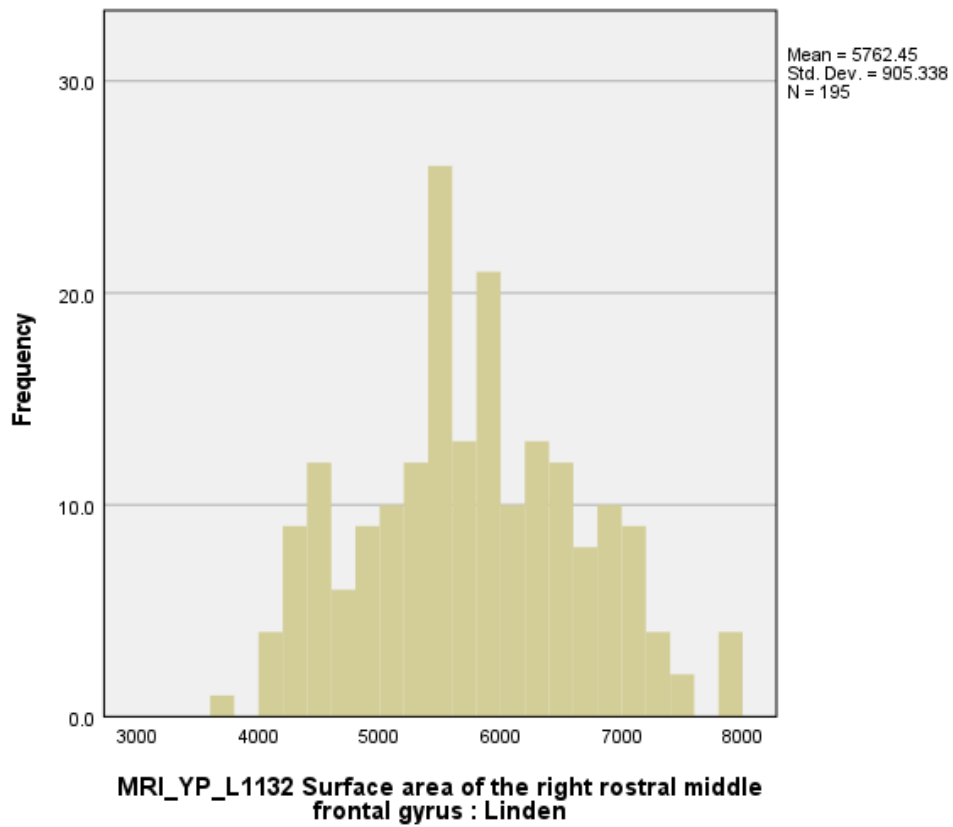


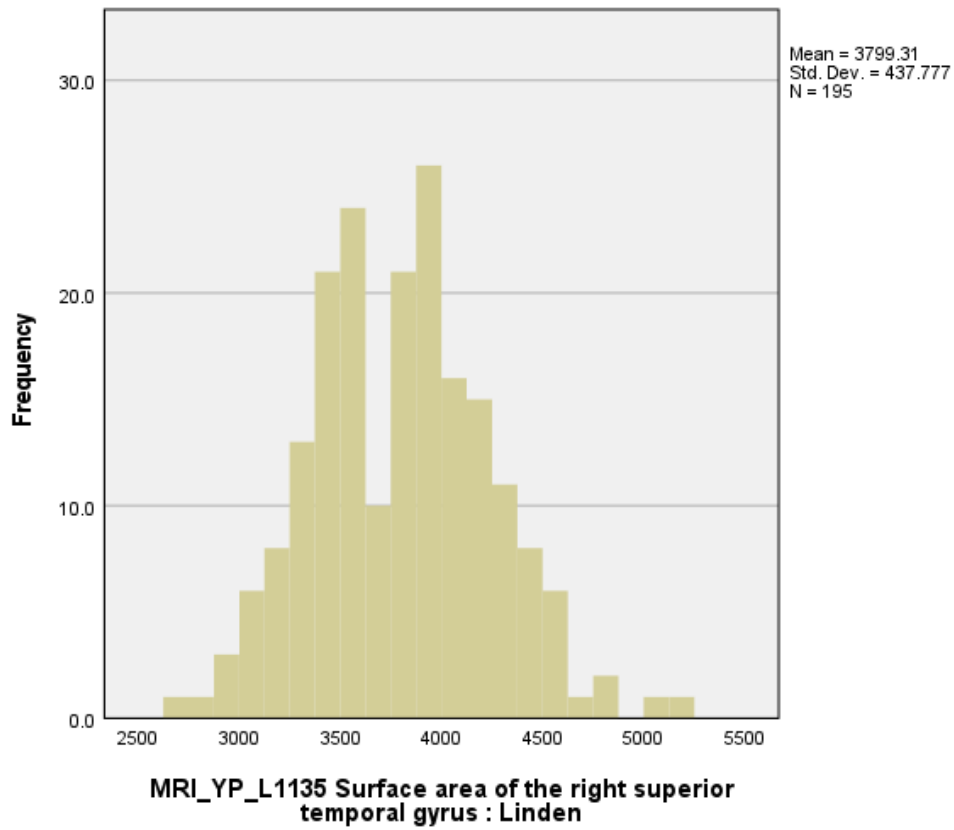
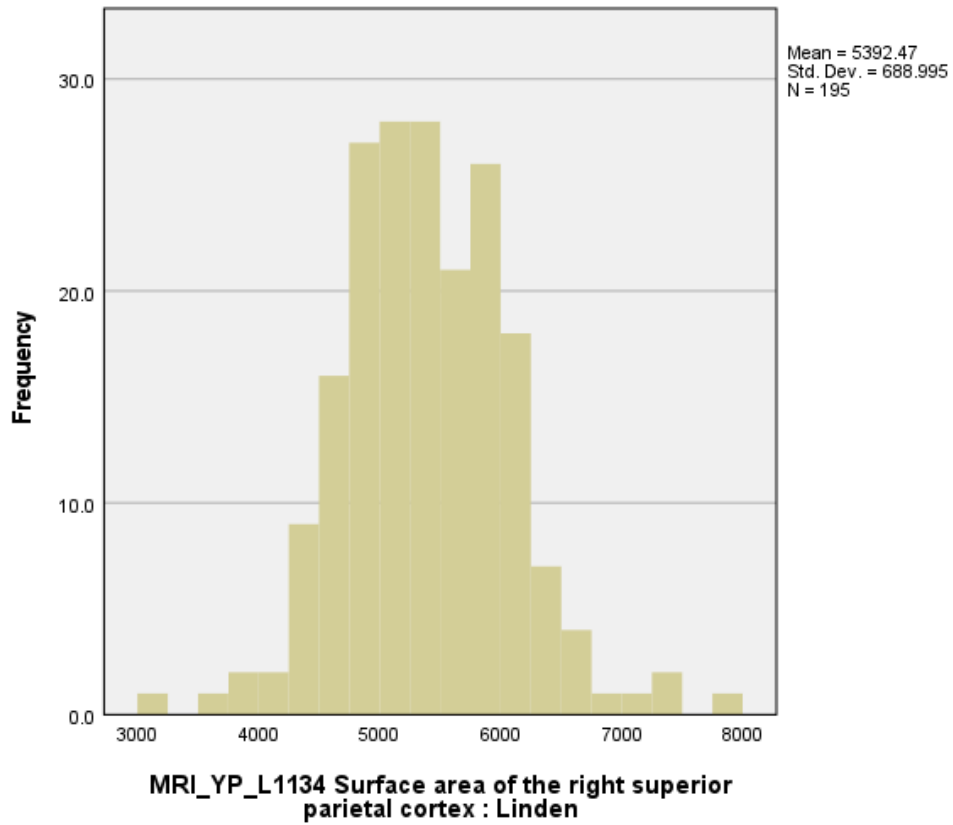


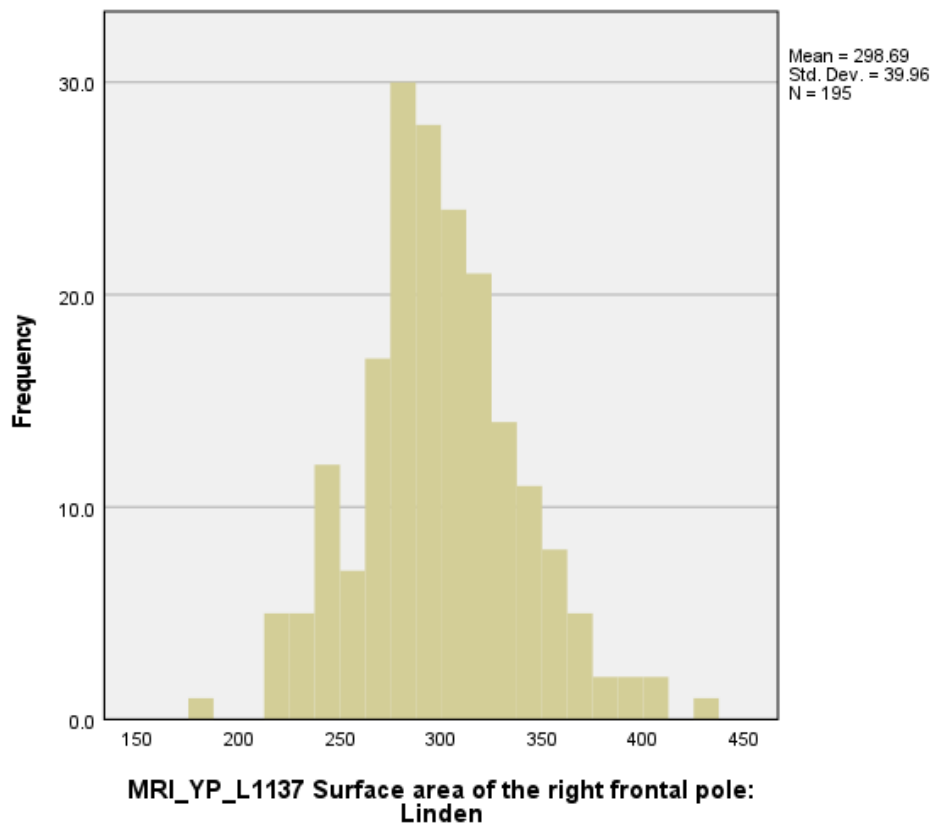
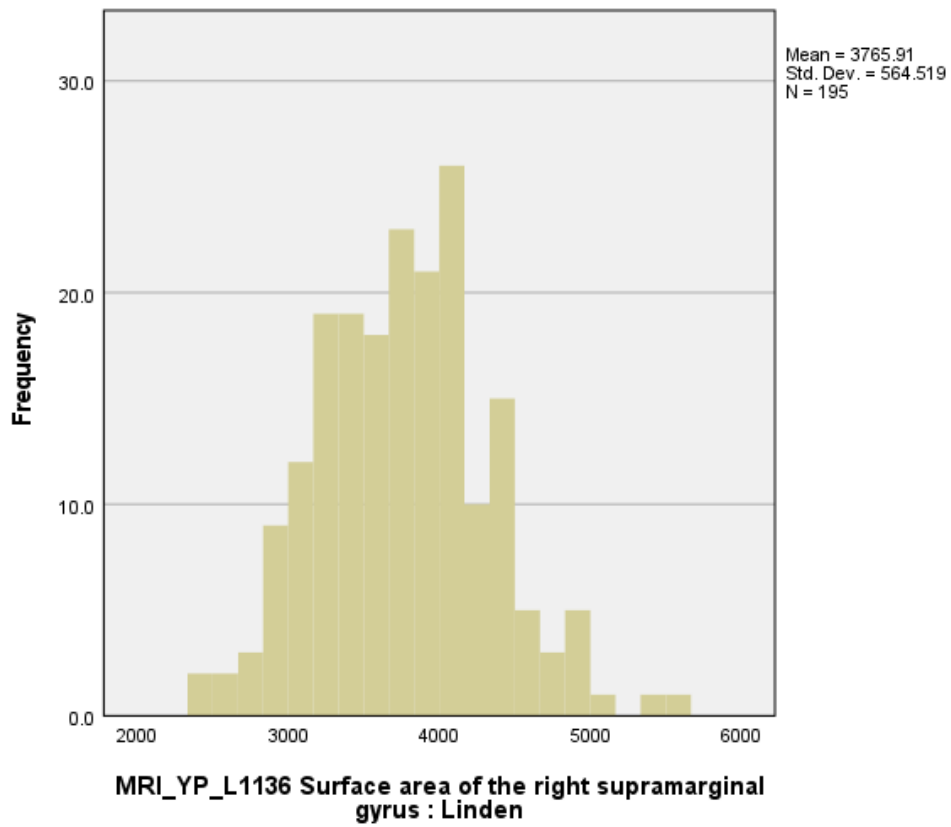


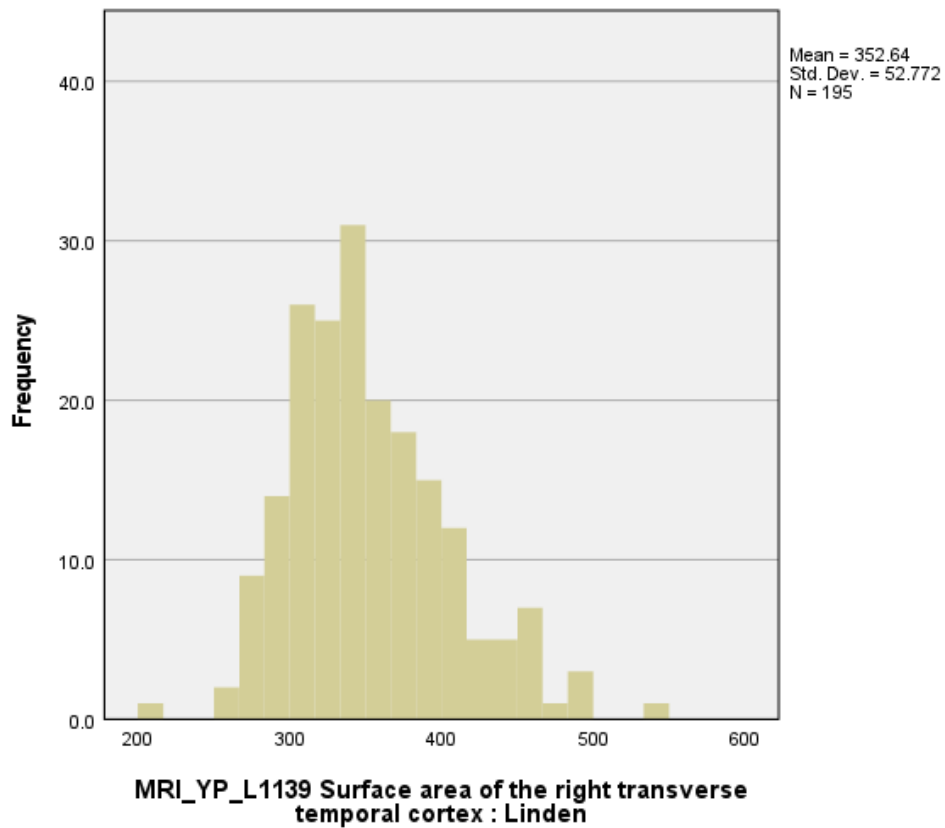
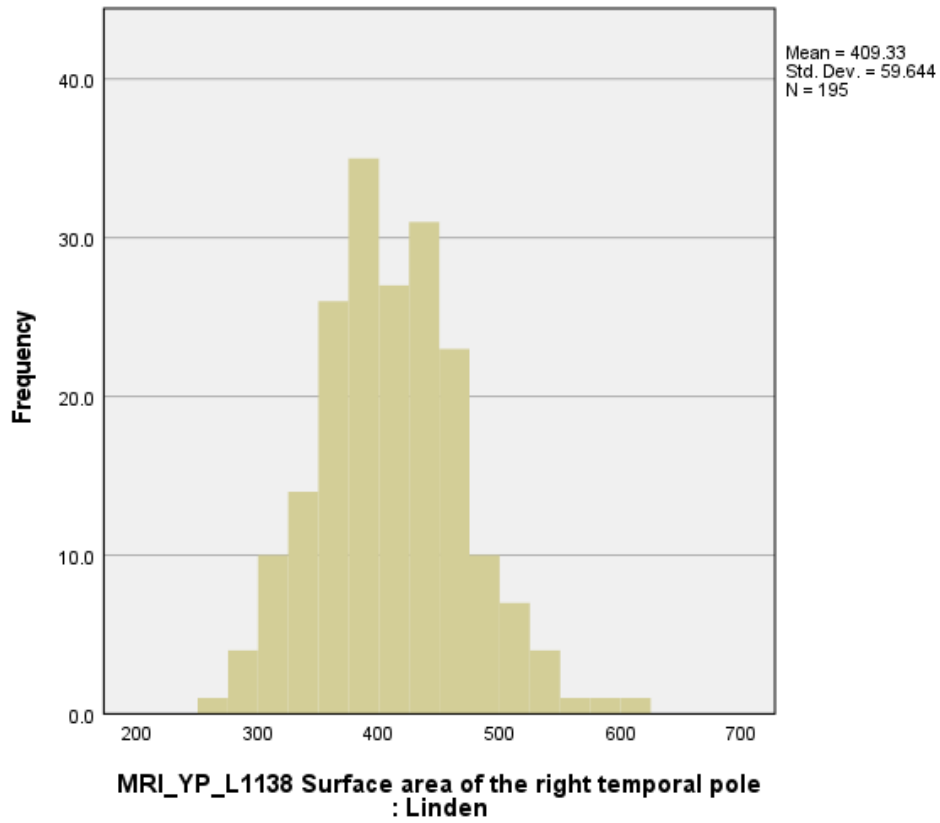


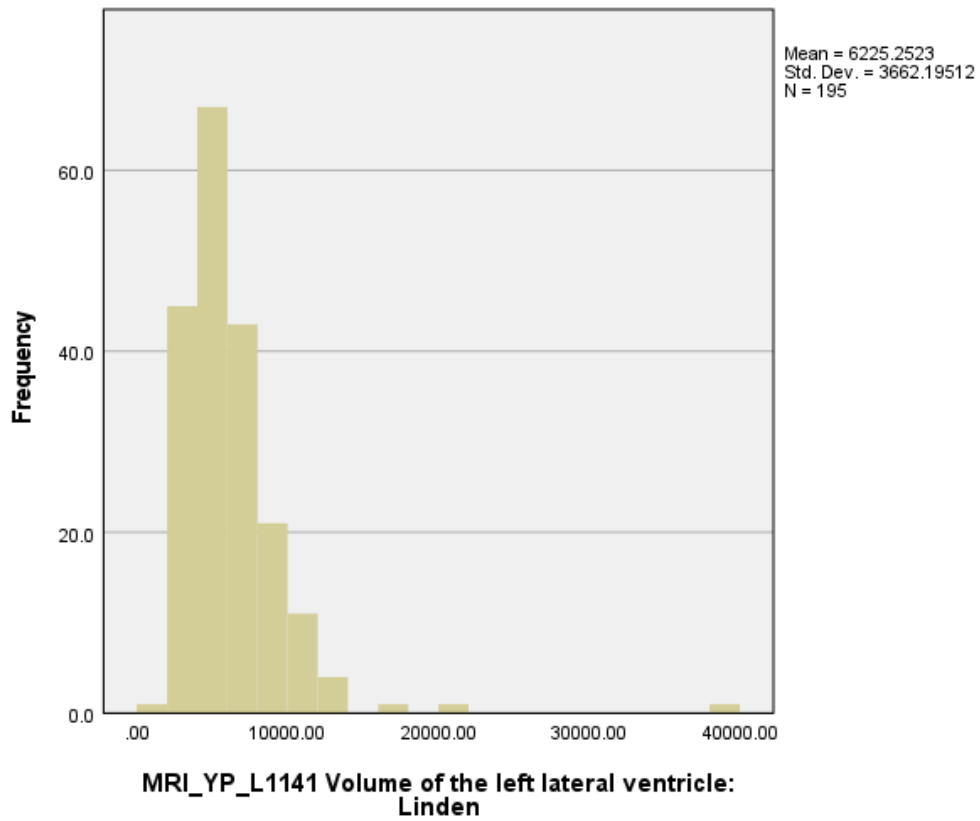
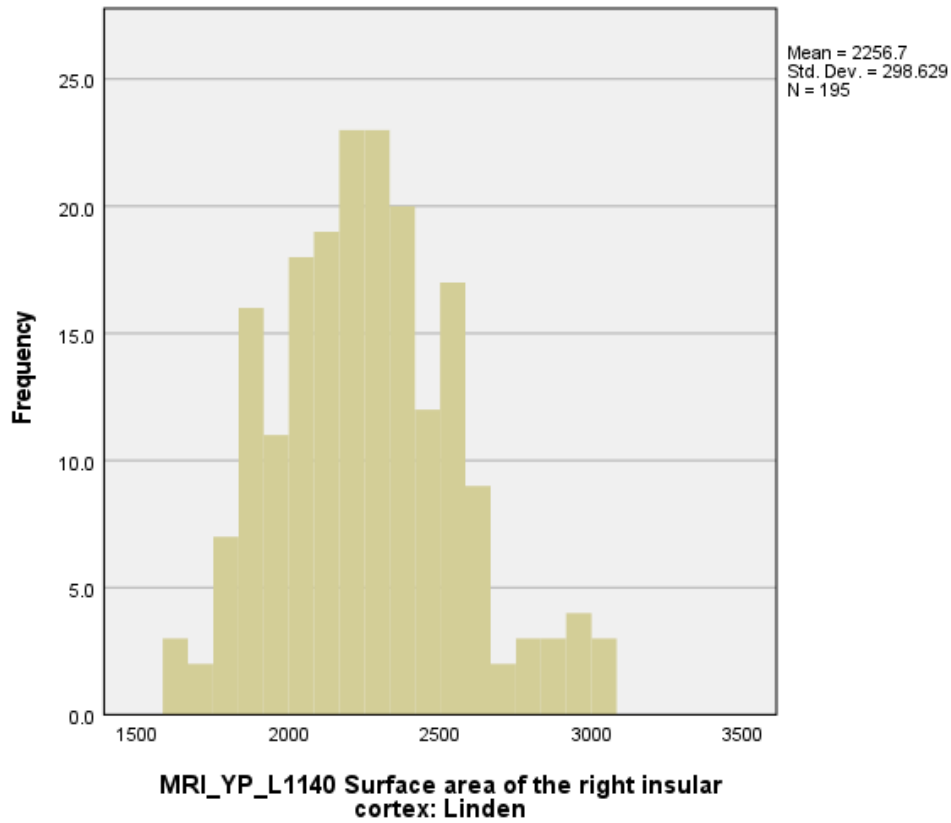


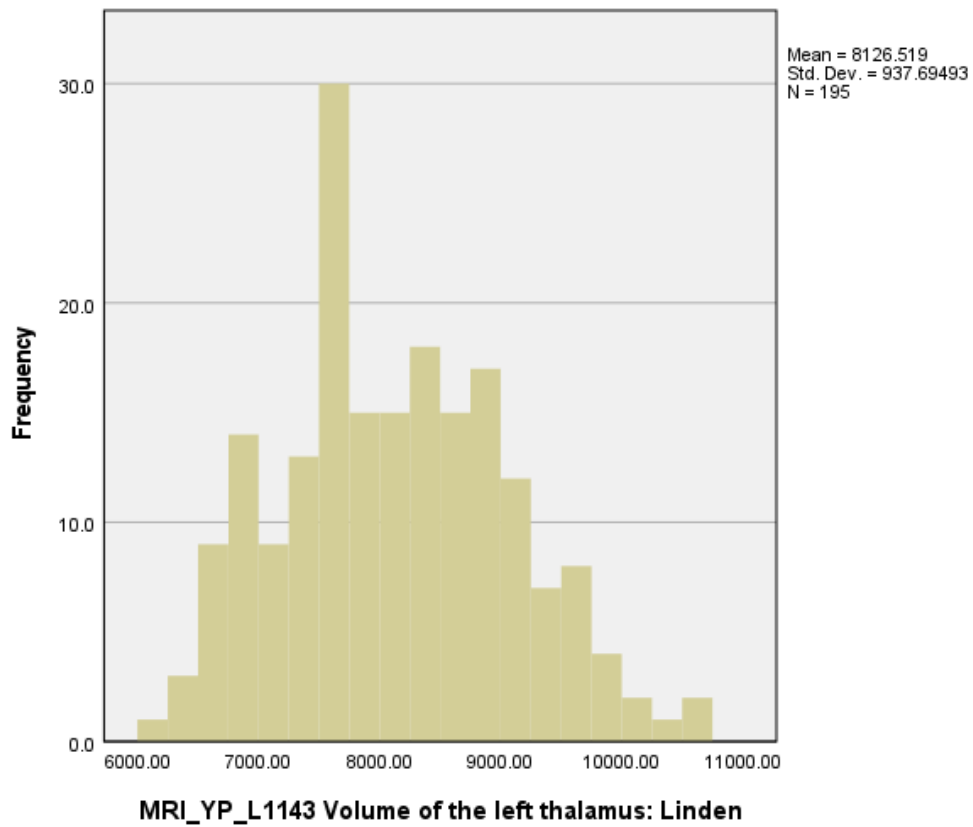
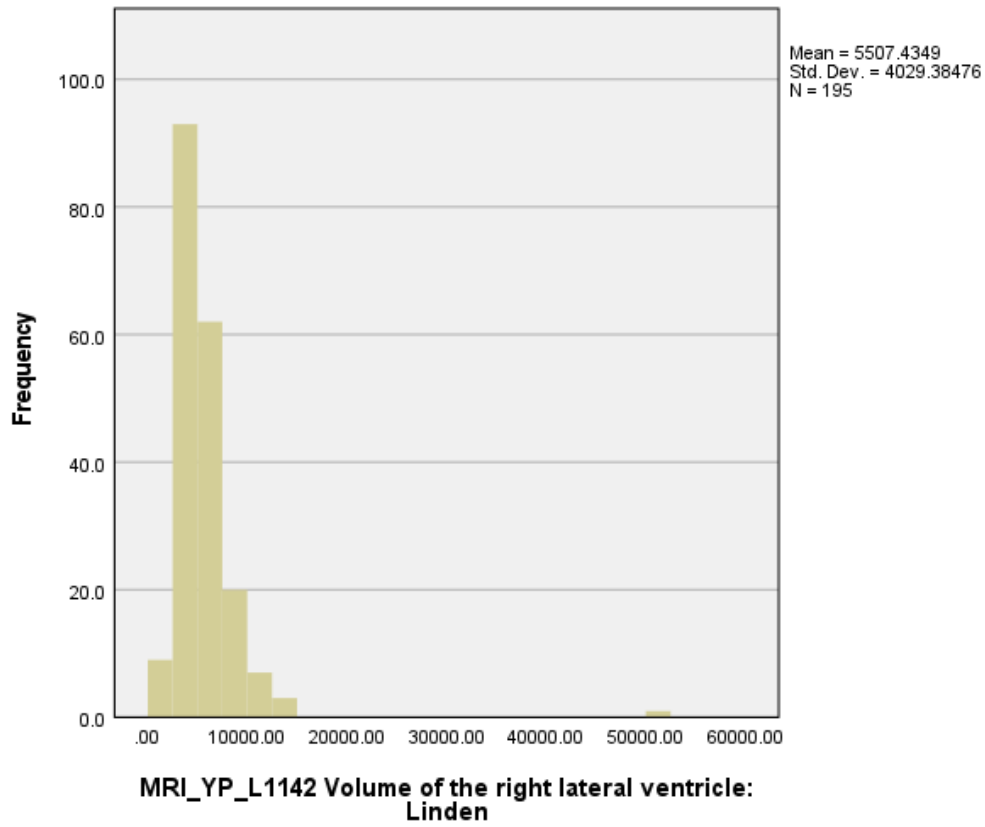


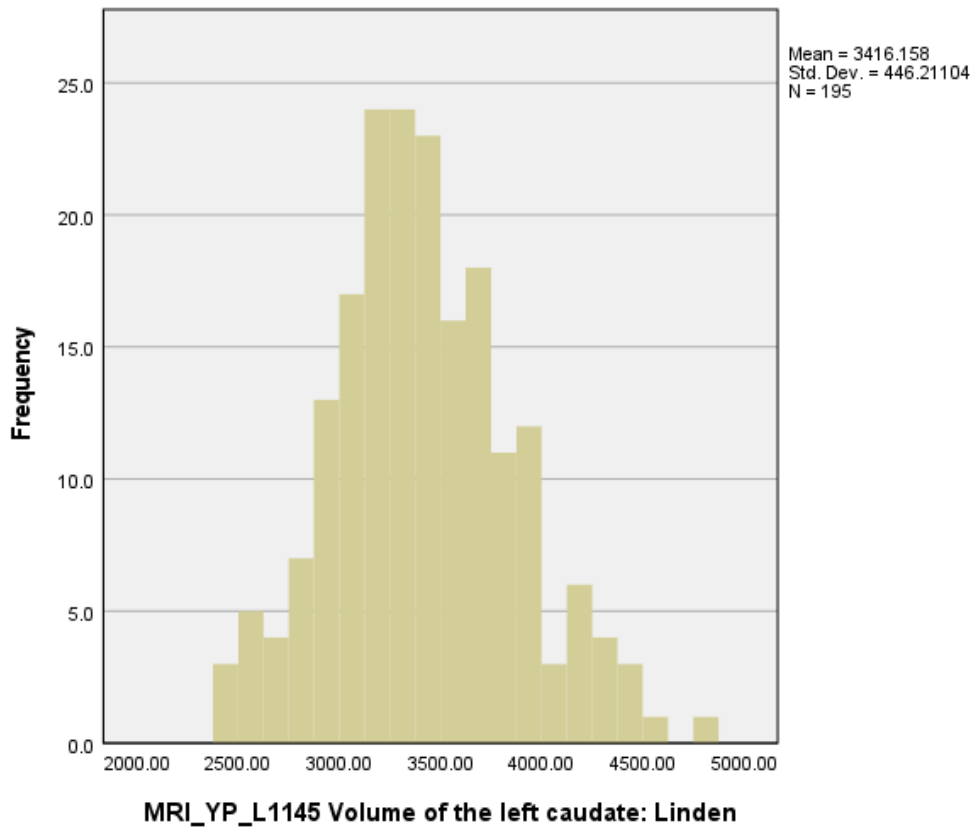
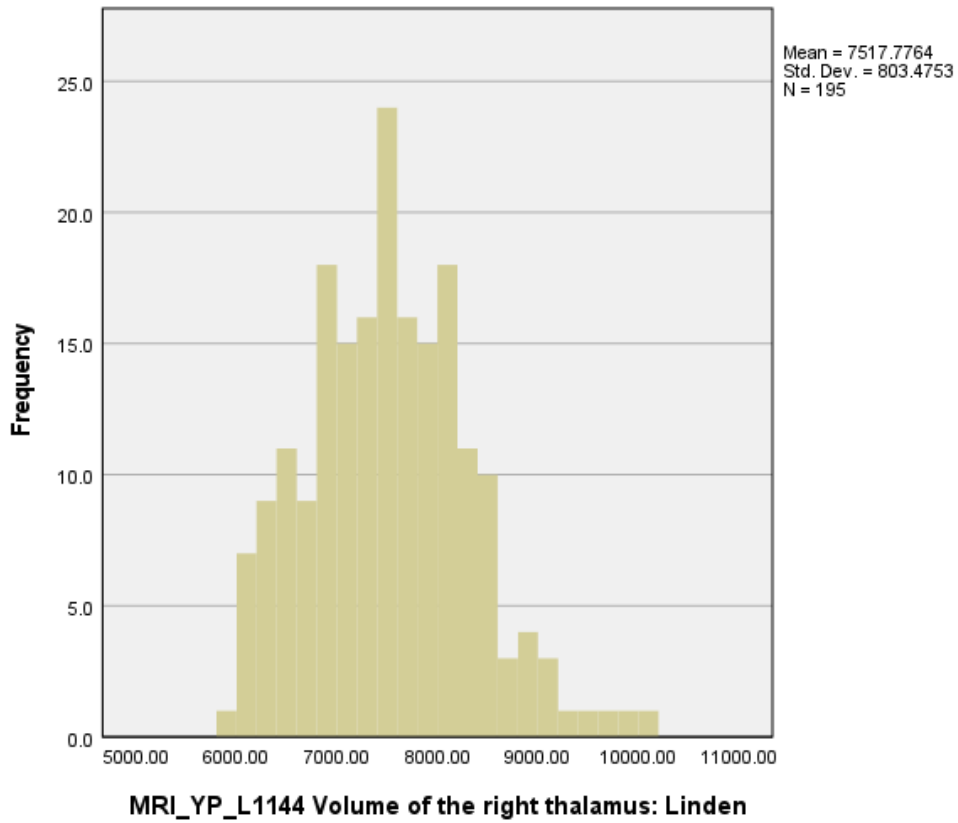


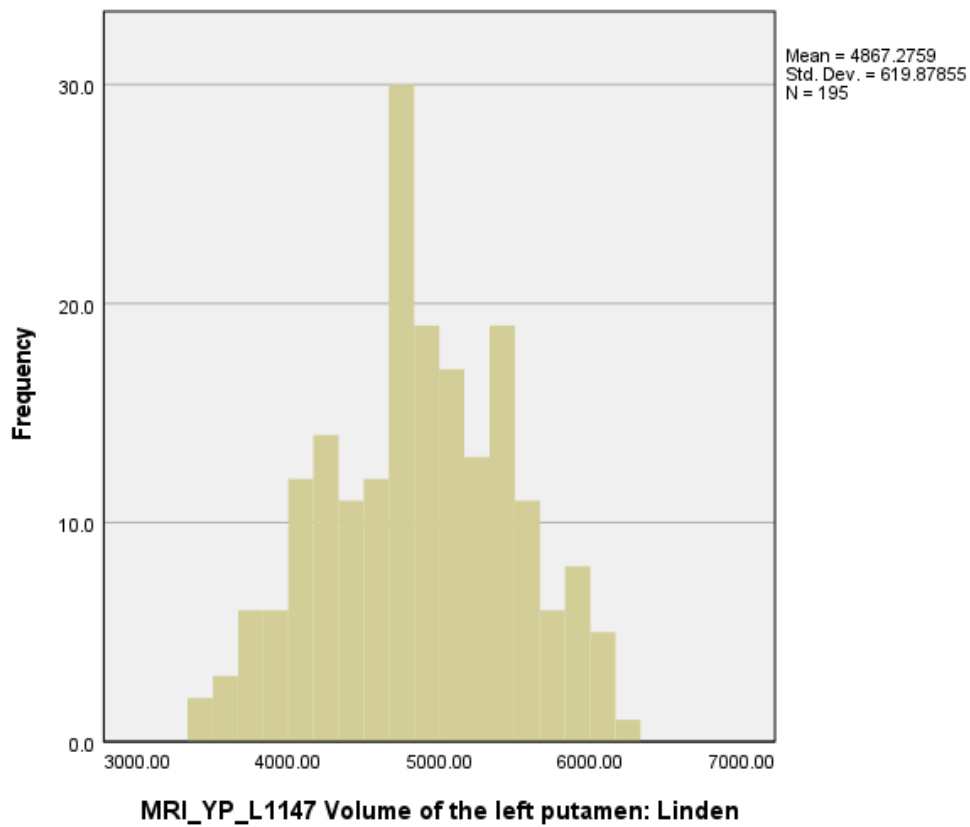
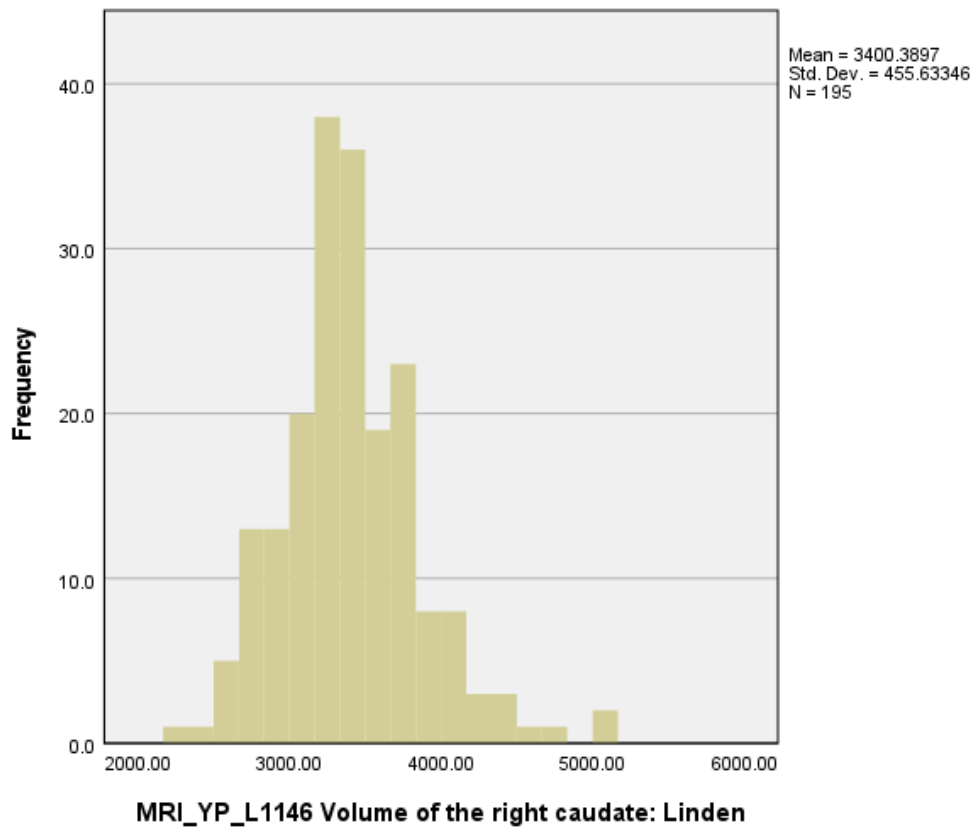


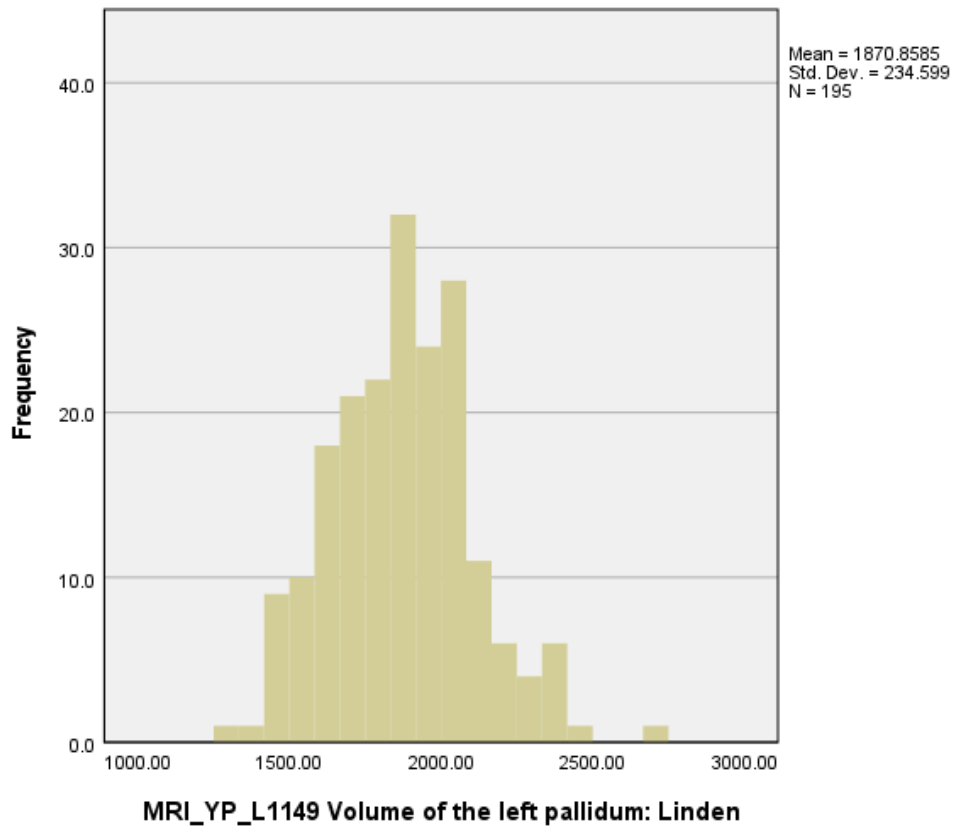
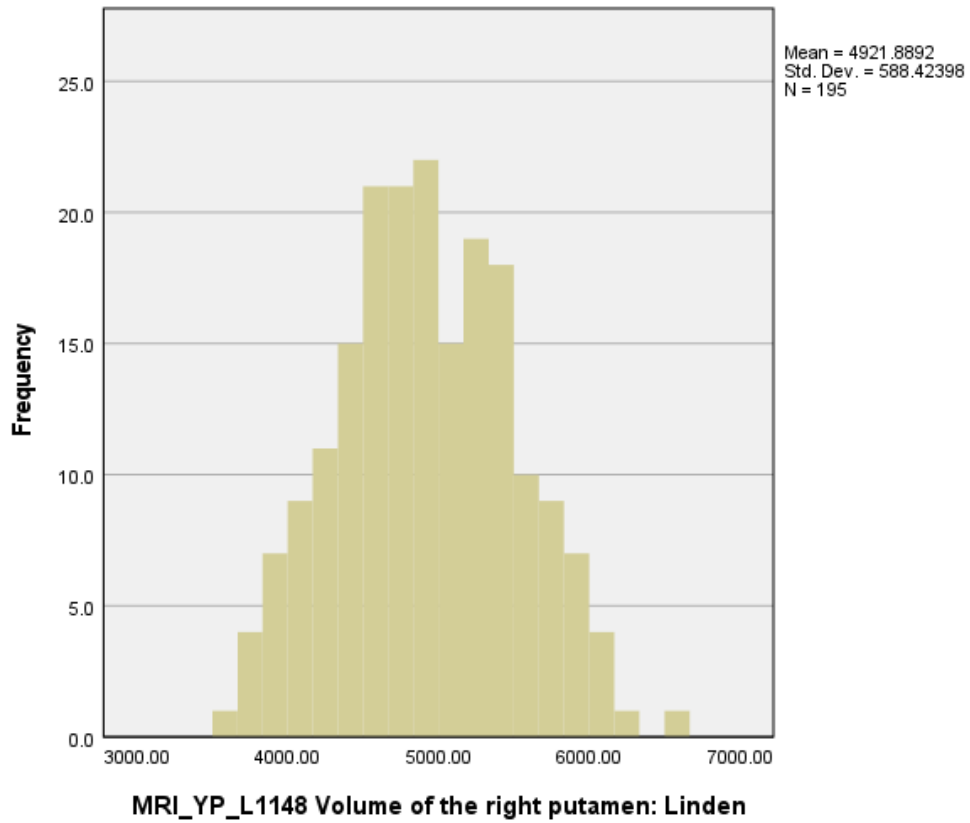


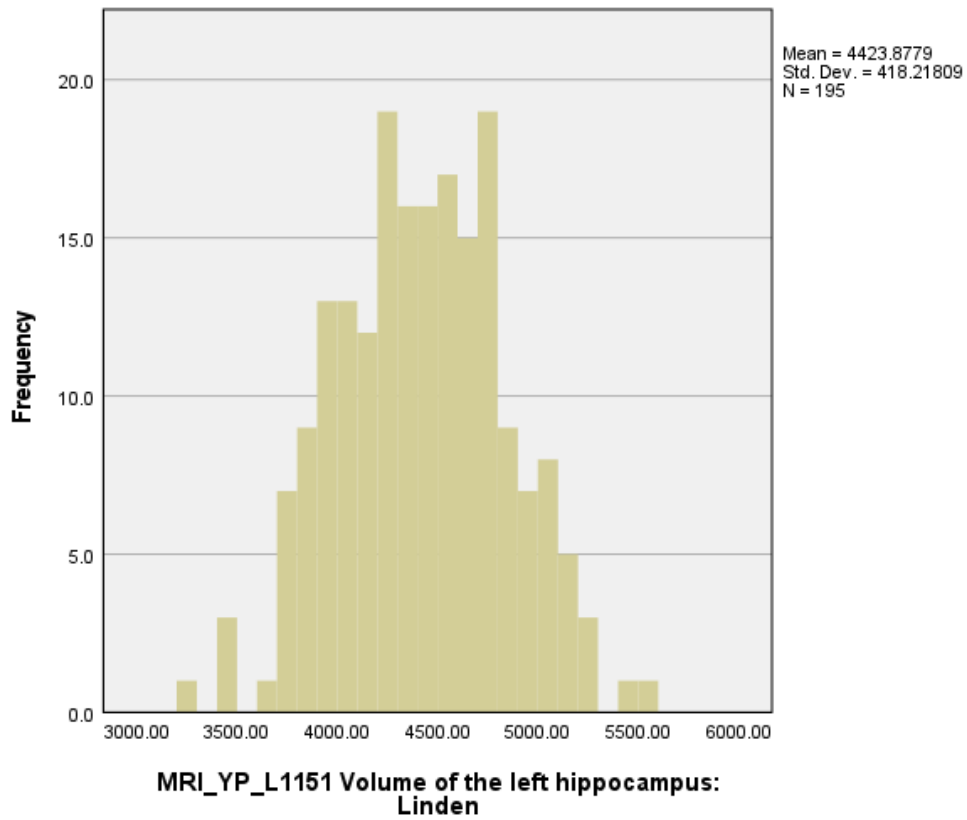
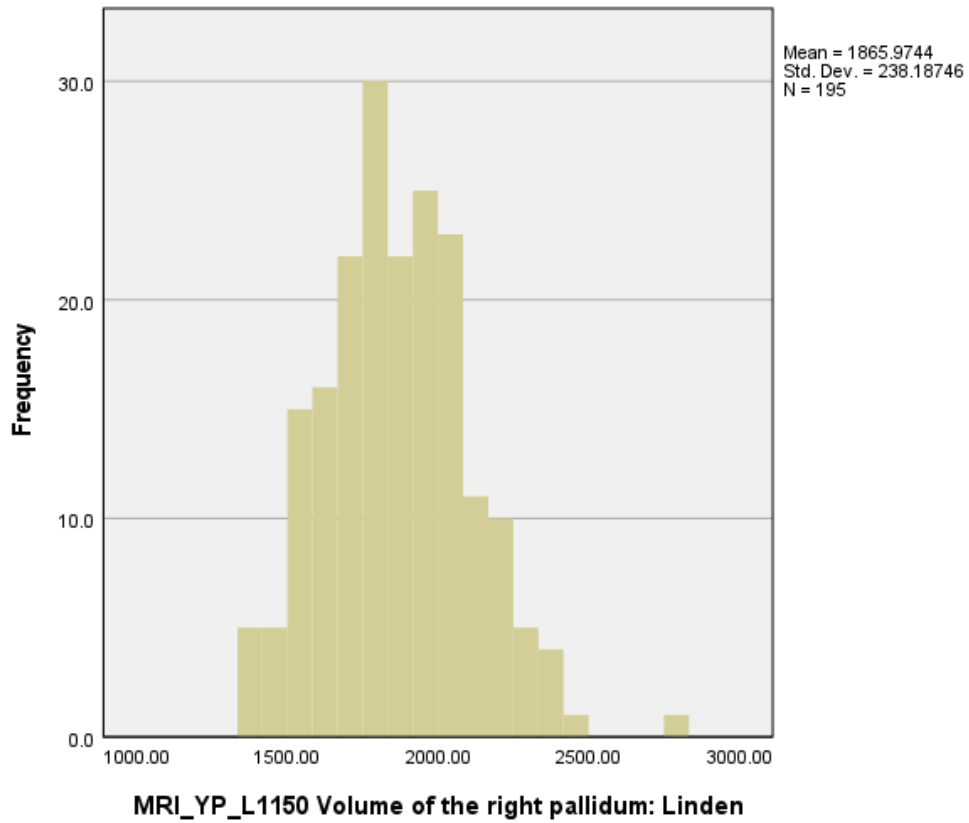


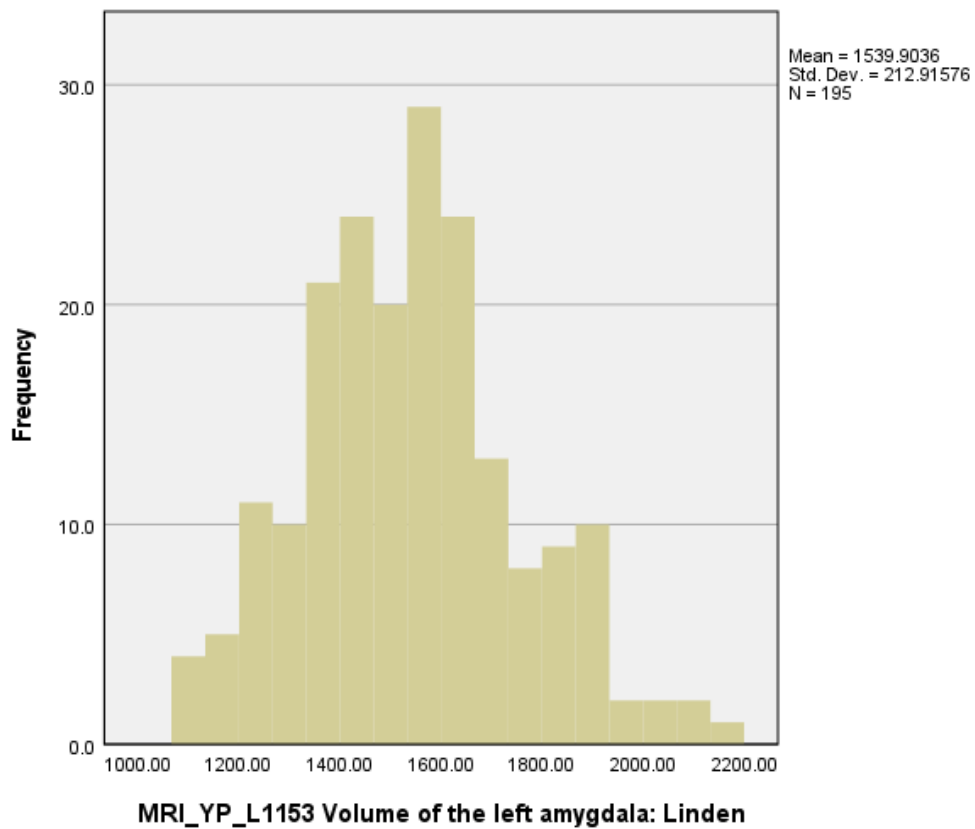
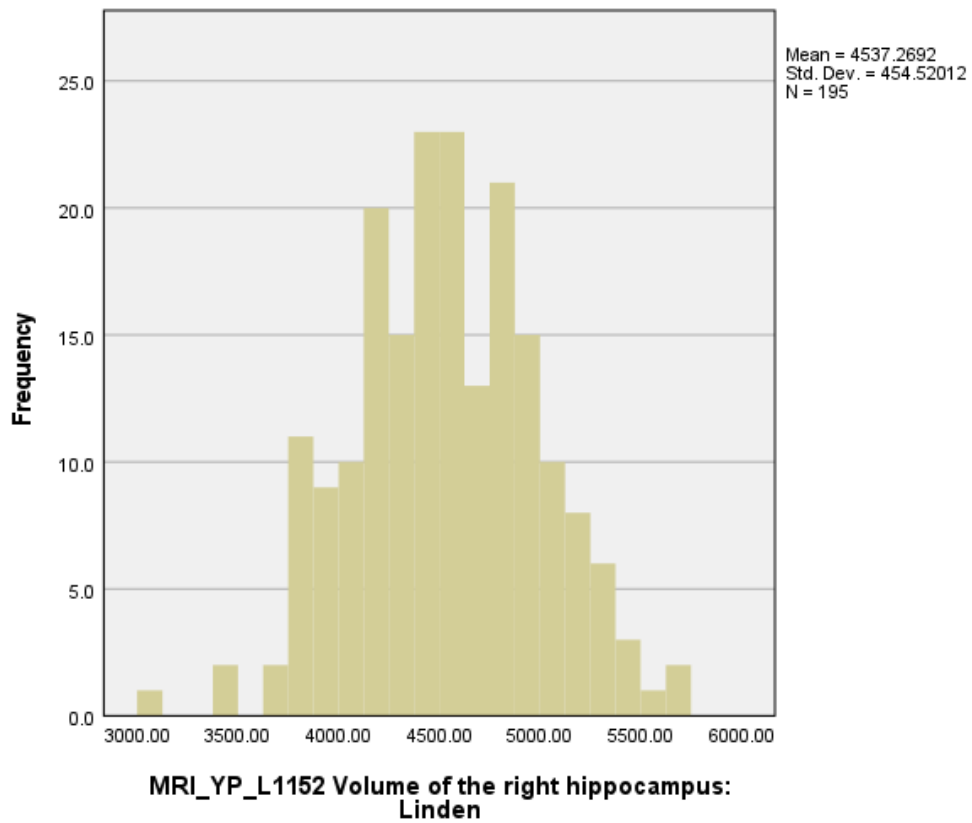


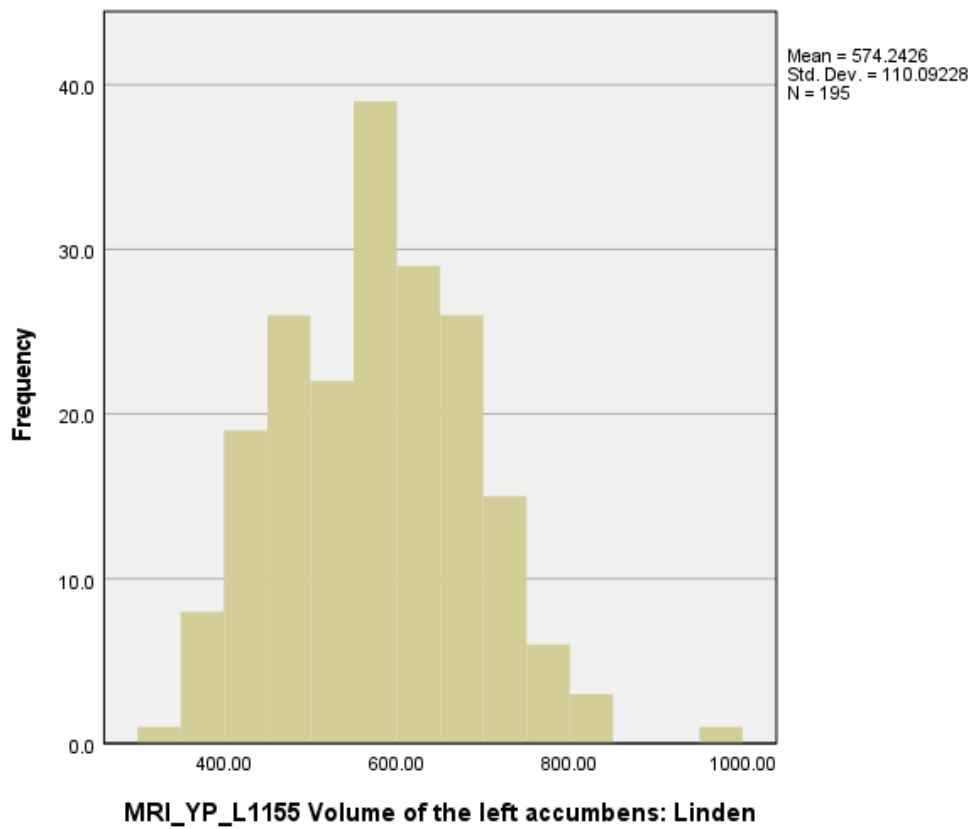
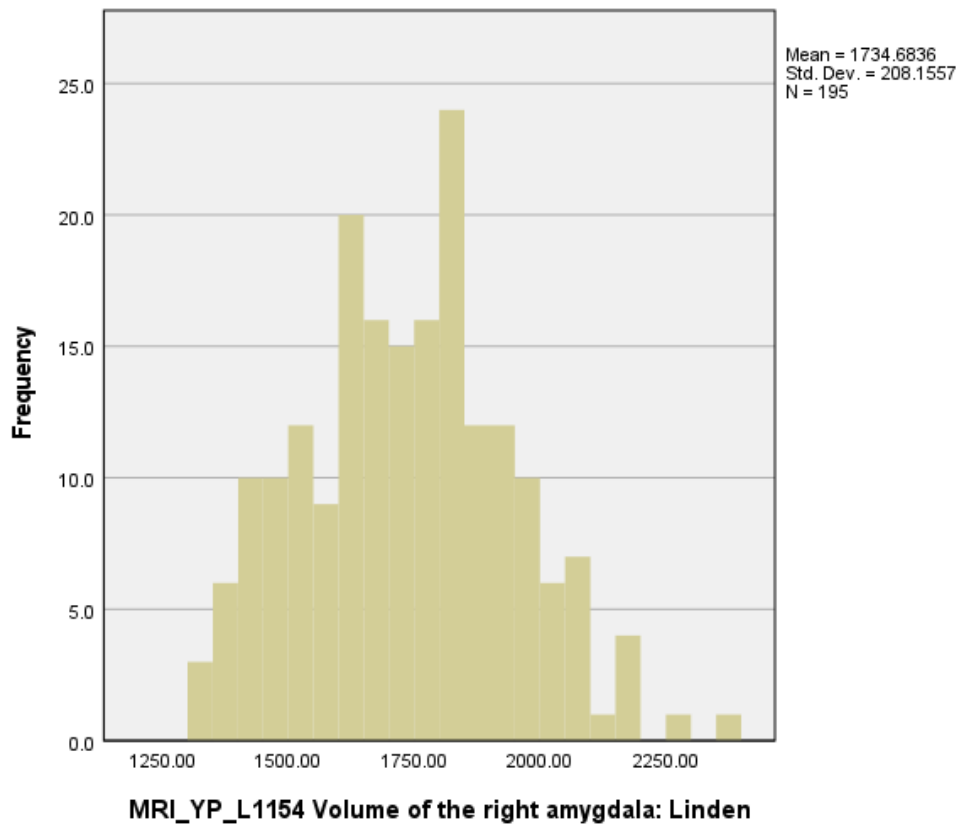


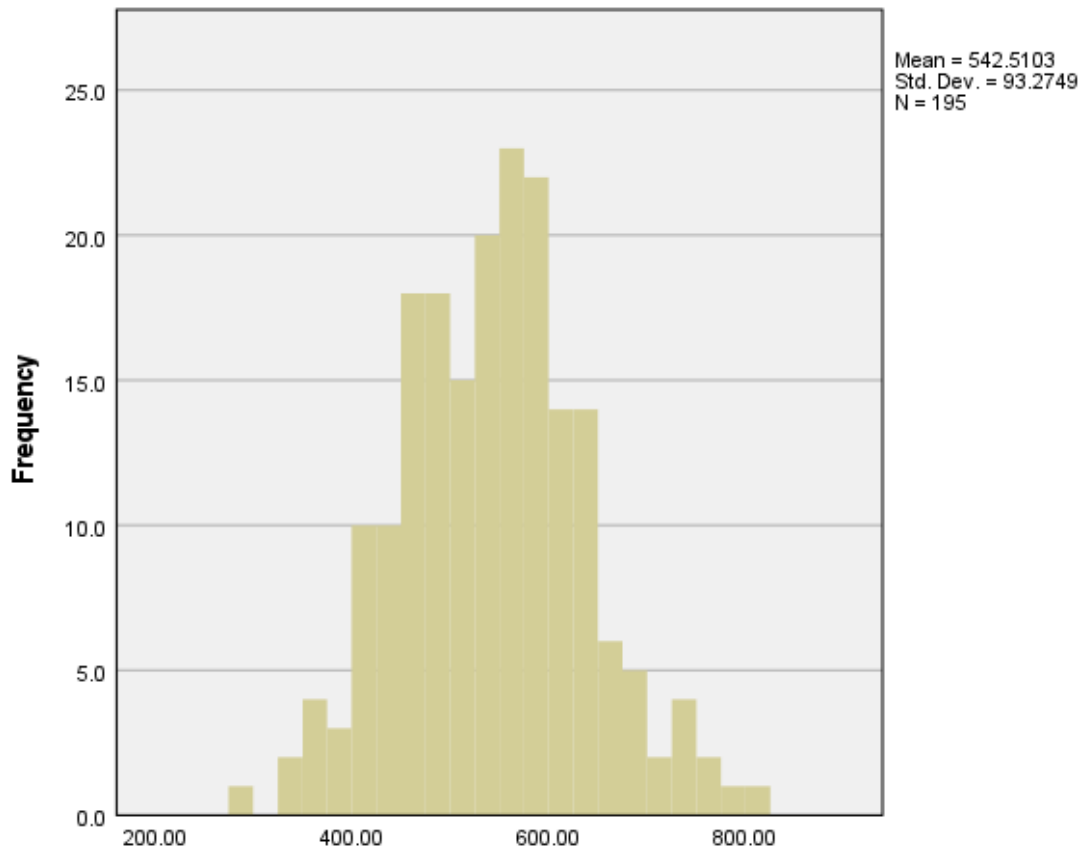












MRI_YP_L1156 Volume of the right accumbens: Linden

MRI_YP_L1157 Quality control rating for the cortical parcellation: Linden

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 pass	137	.7	70.3	70.3
1 moderate	54	.3	27.7	97.9
2 fail	4	.0	2.1	100.0
Total	195	1.0	100.0	
Missing -10 Did not take part in MRI studies	19614	95.7		
-9 MRI data not available	2	.0		
-7 Did not take part in Linden study	694	3.4		
Total	20310	99.0		
Total	20505	100.0		

MRI_YP_L1158 Quality control rating for the subcortical segmentation: Linden

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 pass	183	.9	93.8	93.8
	1 moderate	6	.0	3.1	96.9
	2 fail	6	.0	3.1	100.0
	Total	195	1.0	100.0	
Missing	-10 Did not take part in MRI studies	19614	95.7		
	-9 MRI data not available	2	.0		
	-7 Did not take part in Linden study	694	3.4		
	Total	20310	99.0		
Total		20505	100.0		