

# Neuro-VisAge: a supervised learning strategy to support biomarkers detection for neurological disorders and visualization of age effect on brain activity

Igor Duarte Rodrigues, *Laboratory of Bioinformatics, Visualization and Systems (LaBio), Department of Computer Science, Universidade Federal de Viçosa, Viçosa, Brazil 0000-0002-3076-8657*

Juciara da Costa Silva, *Laboratory of Molecular and Structural Gynecology, Department of Obstetrics and gynecology, Universidade de São Paulo, São Paulo, Brazil, 0000-0003-2316-6129*

Emerson Assis de Carvalho, *Laboratory of Software Development, Computer Department, Instituto Federal do Sul de Minas, Machado, MG, Brazil, 0000-0001-5028-2243*

Sabrina de Azevedo Silveira, *Laboratory of Bioinformatics, Visualization and Systems (LaBio), Department of Computer Science, Universidade Federal de Viçosa, Viçosa, Brazil, 0000-0002-4723-2349*

## NEURO-VISAGE EQUATIONS

The raw sample on the Neuro-VisAge comprises the tuple average and standard deviation of each ROI of each subject. We grouped the values of each age. Therefore, Neuro-VisAge shows two averages (Equations 1 and 2) and two standard deviations (Equations 3 and 4).

$$AA = Average_a(Average_{X_j}) \quad (1)$$

$$AS = Average_a(STD_{X_j}) \quad (2)$$

$$SA = STD_a(Average_{X_j}) \quad (3)$$

$$SS = STD_a(STD_{X_j}) \quad (4)$$

$$AF = Average_{FIQ}(STD_{X_j}) \quad (5)$$

$$SF = STD_{FIQ}(Average_{X_j}) \quad (6)$$

For all equations,  $a$  represents a set of subjects of the same age, ranging from six to 56, and  $X_j$  represents all values of an ROI from a subject; therefore, the  $AA$  from Equation 1 represents the average for age  $a$  of the functional activity average of all subjects of age  $a$  for the ROI  $j$ . Equation 2 represents the average for age  $a$  of the functional activity standard deviation of all subjects of age  $a$  for the ROI  $j$ . Equation 3 represents the standard deviation for age  $a$  of the functional activity average of all subjects of age  $a$  for the ROI  $j$ . Equation 4 represents the standard deviation for age  $a$  of the functional activity standard deviation of all subjects of age  $a$  for the ROI  $j$ . Finally, Equations 5 and 6 represent the average and standard deviation analog from the other, but they group the subjects by FIQ instead of age.

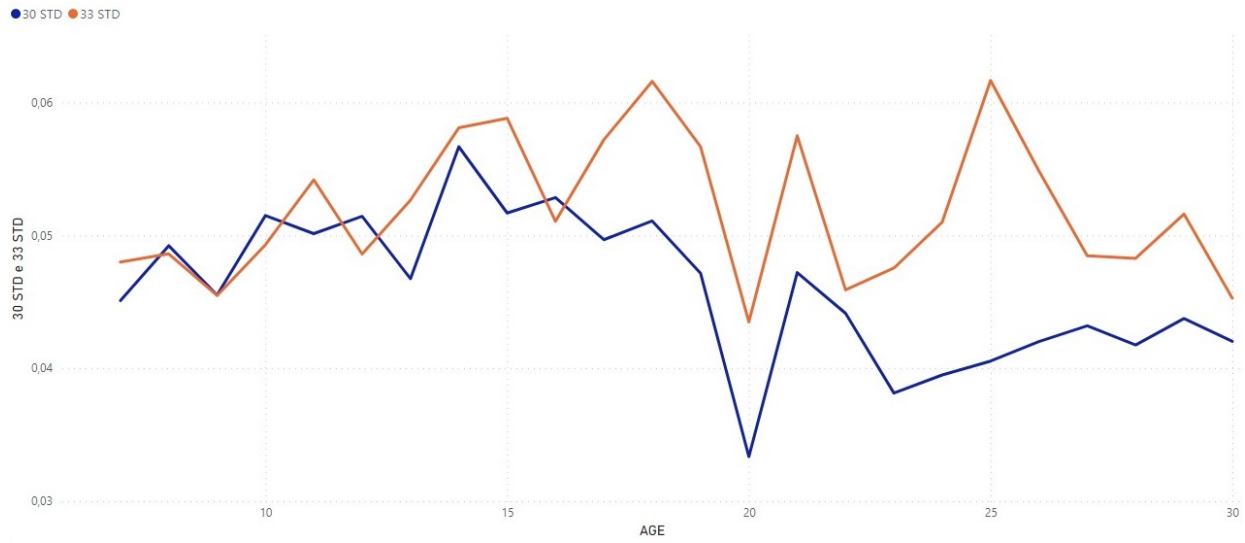


Fig. S1. The standard deviation of ROIs 30 and 33 for the features standard deviation by age group (based on Equation 4) shows a low variation on ROI 30 from 17 to 30 years.

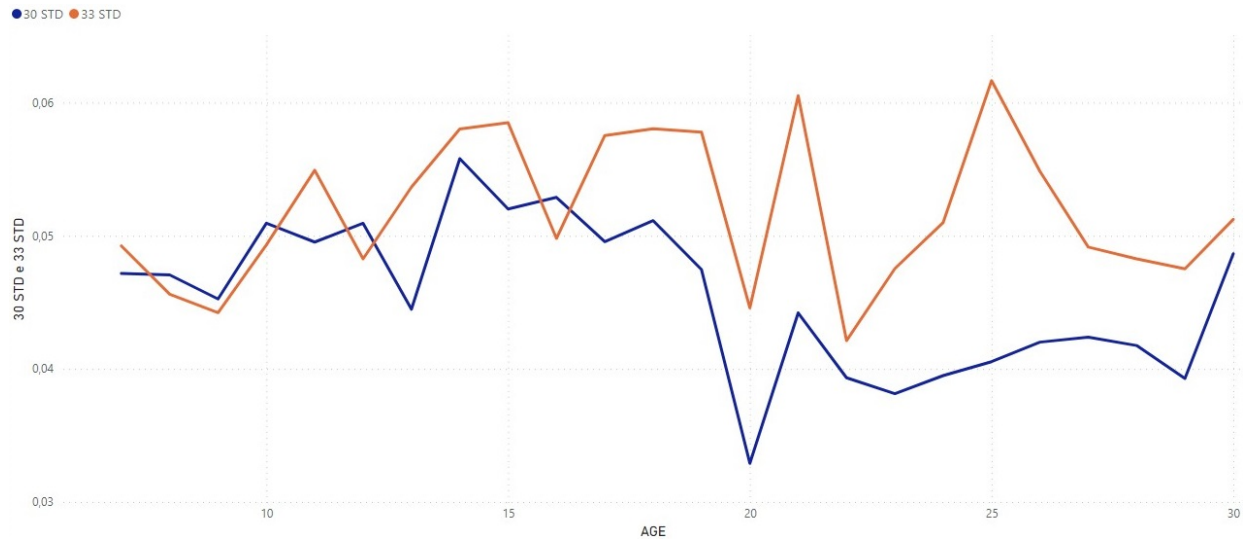


Fig. S2. A comparison between the features standard deviation of ROIs 30 and 33 by age group for males (based on Equation 4) shows a more significant separation for the two ROIs compared to Figure S1 representing all subjects.

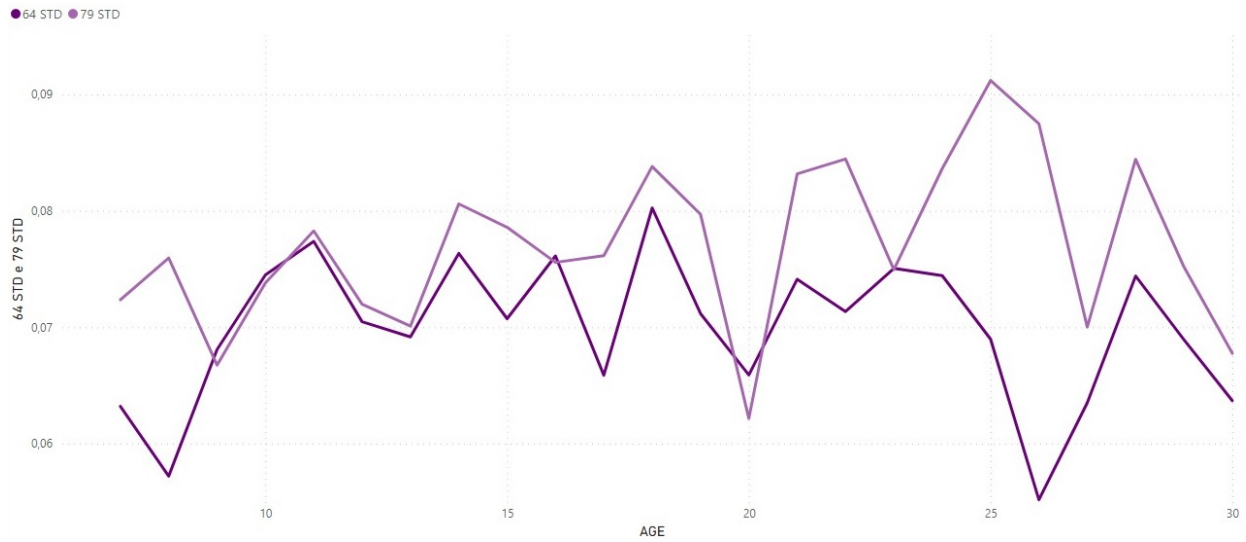


Fig. S3. The standard deviation of ROIs 64 and 79 for the features standard deviation by age group (based on Equation 4) shows that ROIs 64 and 79 are close until age 23, creating a distance from each other after 23 years.

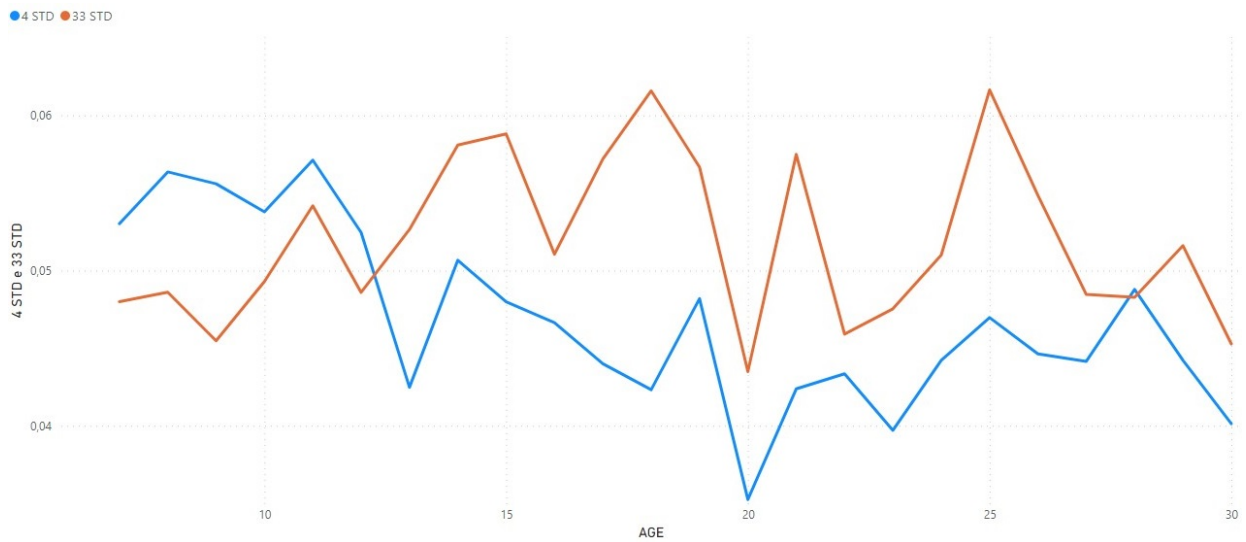


Fig. S4. The standard deviation of ROIs 4 and 33 for the features standard deviation by age group (based on Equation 4) shows that ROI 33 starts to have more extensive variation, reinforcing the functional differences between subjects younger than 11 and those older than 11.

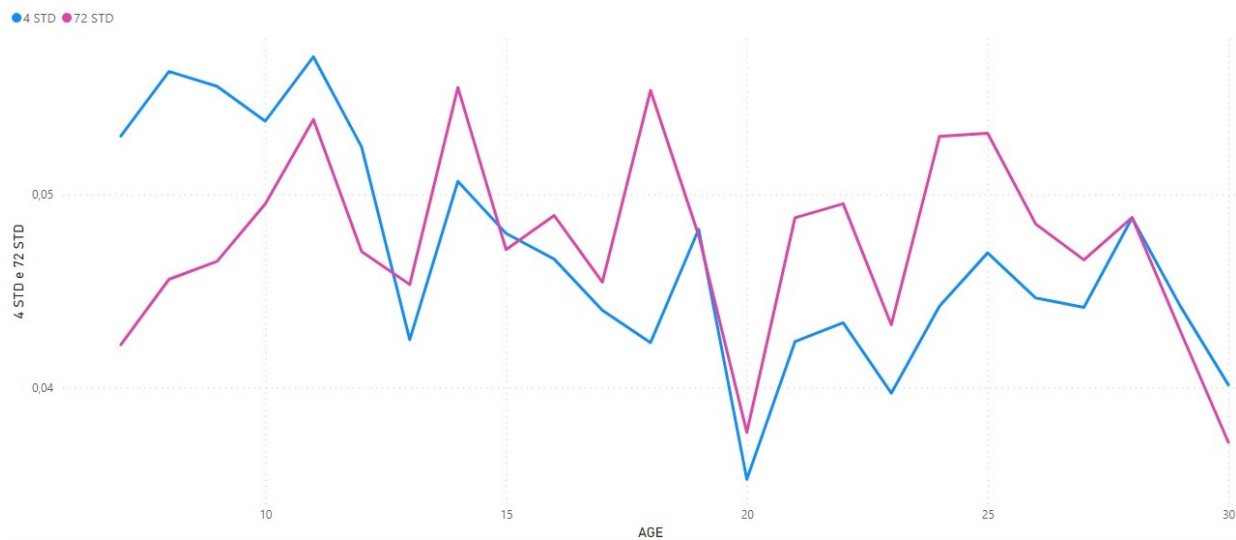


Fig. S5. The standard deviation of ROIs 4 and 72 for the features standard deviation by age group (based on Equation 4) shows that ROI 72 starts to have more extensive variation, reinforcing the functional differences between subjects younger than 11 and those older than 11.

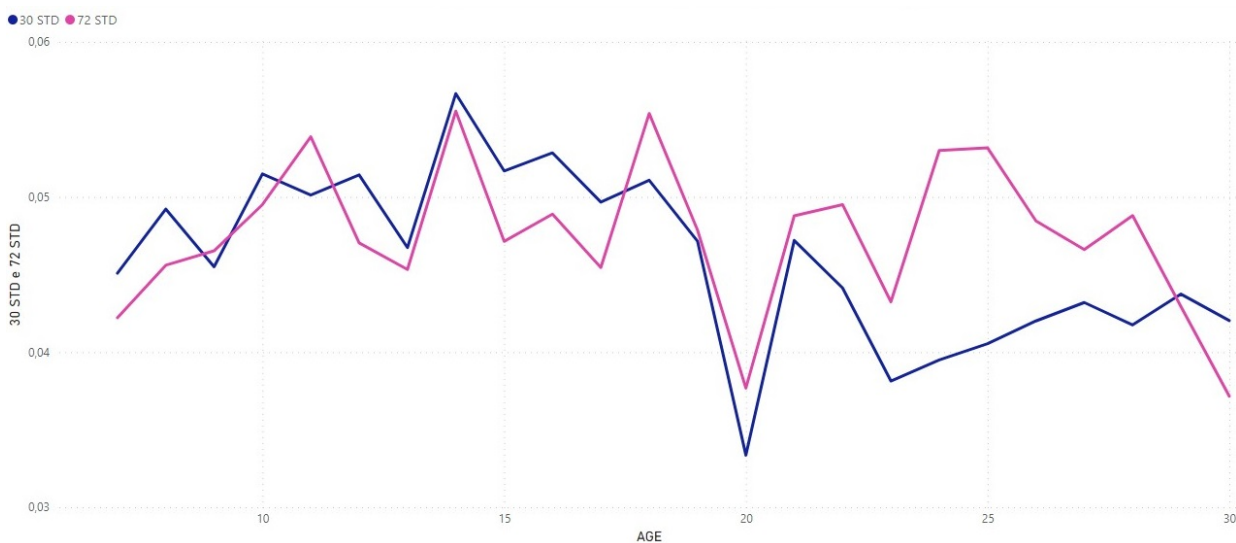


Fig. S6. The standard deviation of ROIs 30 and 72 for the features standard deviation by age group (based on Equation 4), ROI 30 shows a more significant difference between 11 and 17 years than ROI 72, inverting after that.

TABLE S1: Subjects demographic

ABIDE ID	Age	Sex	ABIDE ID	Age	Sex	ABIDE ID	Age	Sex
51476	39	1	50047	15	1	51102	14	1
51477	42	1	50048	11	1	51103	14	1
51478	19	1	50050	14	1	51104	15	1
51479	20	2	50051	12	1	51105	15	1
51480	20	2	50052	33	1	51106	15	1
51481	27	1	50058	23	1	51107	15	1
51482	21	2	50059	21	2	51109	16	1
51483	20	1	50060	20	1	51110	16	1
51484	23	1	50193	14	1	51111	16	1
51485	23	1	50194	13	1	51112	19	1
51486	22	1	50195	12	1	51113	22	1
51487	17	1	50196	12	1	51114	22	1
51488	23	1	50197	14	1	51116	25	1
51489	34	1	50198	15	1	51117	28	1
51490	44	1	50199	15	1	51118	29	1
51491	56	1	50200	13	1	51121	10	1
51492	18	1	50201	13	2	51122	11	1
51493	29	2	50203	16	1	51123	12	1
50657	21	1	50204	14	1	51124	12	1
50669	30	2	50205	14	2	51126	16	1
50772	12	1	50206	8	2	51128	16	1
50773	10	1	50208	13	2	51129	17	1
50774	10	1	50209	16	1	51130	19	1
50775	11	1	50210	16	1	51131	19	1
50776	9	1	50211	16	1	51146	20	1
50777	8	1	50213	12	2	51147	20	1
50778	9	2	50214	14	1	51148	20	1
50779	9	1	50215	16	2	51149	20	1
50780	9	2	50217	12	1	51150	22	1
50781	9	1	51180	7	2	51151	23	1
50782	10	1	51181	9	1	51152	23	1
50783	10	2	51182	10	1	51153	26	1
50785	10	1	51183	8	1	51154	30	1
50786	8	1	51184	9	2	51155	30	1
50787	10	1	51185	8	1	51156	21	1
50788	10	2	51186	8	1	50157	10	1
50789	9	1	51187	8	1	50158	11	1
50790	8	2	51188	8	2	50159	10	1
50812	9	2	51189	9	1	50160	11	1
50814	8	1	51190	8	1	50161	9	1
50816	9	1	51191	9	1	50166	8	1
50817	9	1	51192	10	2	50167	10	1
50818	11	1	51193	9	1	50168	9	1
50819	9	1	51194	12	1	50169	11	1
50820	8	2	51196	11	1	50170	10	1
50821	11	1	51197	12	1	50171	10	1
50822	12	1	51198	12	1	50102	14	1
50682	23	1	51199	12	1	50104	16	1
50683	24	1	50257	14	1	50105	17	1
51369	32	1	51138	12	1	50040	24	1
51370	32	2	51139	19	1	50041	27	1
51373	46	1	51140	15	1	50042	33	1

Continued on next page

TABLE S1 – continued from previous page

ABIDE ID	Age	Sex	ABIDE ID	Age	Sex	ABIDE ID	Age	Sex
51332	23	1	51141	15	1	50044	17	1
51333	24	1	51142	14	1	50045	15	1
51334	27	1	51250	14	1	50046	20	1
51335	23	1	51251	12	1	50374	9	2
51336	26	1	51252	10	1	50375	11	2
51338	30	1	51253	11	1	50377	11	1
51339	29	1	51254	14	1	50379	14	2
51340	29	1	51255	14	1	50382	28	1
51342	23	1	51256	15	1	50385	17	1
51343	30	1	51257	13	1	50386	17	1
51344	22	1	51260	13	1	50387	14	1
51345	35	1	51261	17	1	50388	26	1
51346	25	1	51262	11	1	50390	14	1
51347	24	1	51264	13	2	50391	17	1
51356	10	1	51265	15	1	50414	13	2
51357	11	1	51266	14	1	50415	17	1
51360	7	1	51267	11	2	50416	14	1
51036	8	2	51268	17	1	50417	13	1
51038	8	2	51269	14	1	50418	14	1
51039	8	2	51271	12	1	50419	15	1
51040	8	2	51272	13	1	50421	15	1
51041	8	2	51273	12	1	50424	17	1
51042	8	2	51275	15	1	50425	16	1
51044	10	2	51276	13	1	50426	13	1
51045	11	2	51277	12	1	50427	15	1
51046	11	2	51279	13	2	50428	15	1
51047	12	2	51280	9	1	50433	18	1
51048	12	2	51281	11	1	50434	18	1
51049	13	2	51282	12	2	50435	16	1
51050	13	2	51303	13	2	50436	13	1
51051	14	2	51305	12	2	50437	14	1
51052	14	2	51306	11	1	50438	15	1
51053	14	2	51307	12	1	50439	22	1
51054	14	2	51308	9	1	50440	23	1
51055	15	2	51309	11	1	50441	27	1
51056	17	2	51311	11	1	50442	26	1
51057	21	2	51312	12	1	50443	17	1
51058	22	2	51313	13	1	50444	24	1
51059	22	2	51314	13	1	50445	18	1
51060	22	2	51315	13	1	50446	27	1
51061	27	2	51316	12	1	50447	12	1
51062	27	2	50327	15	1	50448	10	1
51063	29	2	50329	17	1	50449	18	1
51064	7	1	50330	16	1	50455	31	1
51065	10	1	50332	10	1	50463	28	1
51066	18	1	50334	11	1	50466	39	1
51365	23	1	51137	13	1	50038	13	2
51083	8	1	50353	13	2	50564	7	1
51084	9	1	50355	10	1	50566	9	1
51085	9	1	50356	17	2	50567	17	1
51086	10	1	50357	9	2	50568	13	1
51087	10	1	50358	9	1	50569	16	2
51088	10	1	50360	13	1	50570	16	1

Continued on next page

**TABLE S1 – continued from previous page**

<b>ABIDE ID</b>	<b>Age</b>	<b>Sex</b>	<b>ABIDE ID</b>	<b>Age</b>	<b>Sex</b>	<b>ABIDE ID</b>	<b>Age</b>	<b>Sex</b>
51089	10	1	50361	18	2	50571	11	1
51090	11	1	50362	11	1	50572	15	2
51091	11	1	50363	9	1	50573	14	1
51093	11	1	50364	10	1	50574	10	1
51094	12	1	50365	15	1	50575	14	1
51095	12	1	50366	8	1	50576	8	2
51096	13	1	50367	10	1	50577	15	1
51097	13	1	50368	17	1	51099	13	1
51098	13	1	50369	14	2	51100	14	1
50373	17	2	50370	12	1	51101	14	1
50685	23	1	50259	19	1	50107	21	1
50687	22	1	50260	20	1	50111	14	1
50688	21	1	50261	20	1	50112	17	1
50691	22	1	50262	21	1	50113	15	2
50692	22	1	50263	19	1	50114	20	2
50698	28	1	50264	25	1	50115	23	1
50699	21	1	50266	15	1	50116	15	1
50701	18	1	50267	17	1	50117	21	1
50703	29	1	50268	14	1	50030	25	1
50706	22	1	50269	14	1	50031	12	1
50707	22	1	50270	19	1	50032	19	1
50709	25	1	50271	19	1	50033	12	1
50710	27	1	51132	24	1	50034	14	1
51362	33	1	51133	12	1	50035	17	1
51363	32	1	51134	16	1	50036	13	2
51364	26	1	51135	13	1	50037	19	1
51067	23	1	50335	17	1	50467	19	1
51068	31	1	50336	14	2	50468	39	1
51069	8	1	50337	11	1	50469	28	1
51070	7	1	50338	13	2	50551	15	1
51071	10	1	50340	16	2	50552	12	1
51072	11	1	50342	12	1	50553	9	1
51073	12	1	50343	13	2	50554	8	1
51074	12	1	50344	18	1	50555	14	2
51075	14	1	50345	17	1	50556	10	1
51076	16	1	50346	18	1	50557	14	2
51077	17	1	50347	15	1	50558	13	2
51078	6	1	50348	19	2	50559	12	1
51079	7	1	50349	18	1	50560	9	1
51080	8	1	50350	12	1	50561	13	1
51081	8	1	50351	16	1	50562	10	1
51082	8	1	50352	15	1	50563	13	2
50372	10	1						

TABLE S2  
 AUTOMATED ANATOMICAL LABELING (ID AND NAME)

ID	Label Name	ID	Label Name	ID	Label Name
0	Precentral_L	39	ParaHippo_R	78	Heschl_L
1	Precentral_R	40	Amygdala_L	79	Heschl_R
2	Front_Sup_L	41	Amygdala_R	80	Temp_Sup_L
3	Front_Sup_R	42	Calcarine_L	81	Temp_Sup_R
4	Front_Sup_Orb_L	43	Calcarine_R	82	Temp_Pole_Sup_L
5	Front_Sup_Orb_R	44	Cuneus_L	83	Temp_Pole_Sup_R
6	Front_Mid_L	45	Cuneus_R	84	Temp_Mid_L
7	Front_Mid_R	46	Lingual_L	85	Temp_Mid_R
8	Front_Mid_Orb_L	47	Lingual_R	86	Temp_Pole_Mid_L
9	Front_Mid_Orb_R	48	Occip_Sup_L	87	Temp_Pole_Mid_R
10	Front_Inf_Oper_L	49	Occip_Sup_R	88	Temp_Inf_L
11	Front_Inf_Oper_R	50	Occip_Mid_L	89	Temp_Inf_R
12	Front_Inf_Tri_L	51	Occip_Mid_R	90	Cereb_C1_L
13	Front_Inf_Tri_R	52	Occip_Inf_L	91	Cereb_C1_R
14	Front_Inf_Orb_L	53	Occip_Inf_R	92	Cereb_C2_L
15	Front_Inf_Orb_R	54	Fusiform_L	93	Cereb_C2_R
16	Rolandic_Oper_L	55	Fusiform_R	94	Cereb_3_L
17	Rolandic_Oper_R	56	Postcentral_L	95	Cereb_3_R
18	Supp_Mot_Area_L	57	Postcentral_R	96	Cereb_4_5_L
19	Supp_Mot_Area_R	58	Parietal_Sup_L	97	Cereb_4_5_R
20	Olfactory_L	59	Parietal_Sup_R	98	Cereb_6_L
21	Olfactory_R	60	Parietal_Inf_L	99	Cereb_6_R
22	Front_Sup_Medial_L	61	Parietal_Inf_R	100	Cereb_7b_L
23	Front_Sup_Medial_R	62	SupraMarginal_L	101	Cereb_7b_R
24	Front_Med_Orb_L	63	SupraMarginal_R	102	Cereb_8_L
25	Front_Med_Orb_R	64	Angular_L	103	Cereb_8_R
26	Rectus_L	65	Angular_R	104	Cereb_9_L
27	Rectus_R	66	Precuneus_L	105	Cereb_9_R
28	Insula_L	67	Precuneus_R	106	Cereb_10_L
29	Insula_R	68	Paracent_Lobule_L	107	Cereb_10_R
30	Cingulum_A_L	69	Paracent_Lobule_R	108	Vermis_1_2
31	Cingulum_A_R	70	Caudate_L	109	Vermis_3
32	Cingulum_M_L	71	Caudate_R	110	Vermis_4_5
33	Cingulum_M_R	72	Putamen_L	111	Vermis_6
34	Cingulum_P_L	73	Putamen_R	112	Vermis_7
35	Cingulum_P_R	74	Pallidum_L	113	Vermis_8
36	Hippocampus_L	75	Pallidum_R	114	Vermis_9
37	Hippocampus_R	76	Thalamus_L	115	Vermis_10
38	ParaHippo_L	77	Thalamus_R		



TABLE S3  
P–VALUE FOR UP TO 16 YEARS COMPARED TO 17 TO 30

ROI	P–value average	P–value STD
2	0.892	<b>0.010</b>
3	0.889	<b>0.007</b>
4	0.882	<b>0.000</b>
5	0.869	<b>0.000</b>
30	0.899	<b>0.000</b>
31	0.917	0.075
32	0.883	0.121
33	0.890	0.658
34	0.869	0.426
35	0.860	0.910
64	0.894	0.696
65	0.890	0.158
72	0.901	0.209
73	0.895	0.063
78	0.925	0.583
79	0.907	0.173

Bold values highlighting the p–values lower than 0.05 representing statistical differences between the two groups evaluated.

TABLE S4  
P–VALUE FOR UP TO 11 YEARS COMPARED TO 12 AND OLDER

ROI	P–value average	P–value STD
2	0.068	0.065
3	0.066	0.053
4	0.068	<b>0.000</b>
5	0.065	<b>0.000</b>
30	0.067	0.389
31	0.067	0.740
32	0.067	<b>0.026</b>
33	0.068	0.038
34	0.064	0.259
35	0.062	<b>0.012</b>
64	0.063	0.526
65	0.066	<b>0.018</b>
72	0.068	0.486
73	0.068	0.239
78	0.068	0.618
79	0.066	0.450

Bold values highlighting the p–values lower than 0.05 representing statistical differences between the two groups evaluated.

TABLE S8: P–value for five years groups compared

ROI	P–value average	P–value STD
6 to 10 compared to 11 to 15		
2	<b>0.026</b>	0.708
3	<b>0.025</b>	0.913
4	<b>0.025</b>	<b>0.035</b>
5	<b>0.025</b>	<b>0.005</b>
30	<b>0.026</b>	0.255
31	<b>0.026</b>	0.083
32	<b>0.026</b>	0.073
33	<b>0.027</b>	<b>0.003</b>
34	<b>0.027</b>	0.219
35	<b>0.028</b>	<b>0.003</b>
64	<b>0.026</b>	0.086
65	<b>0.026</b>	0.036
72	<b>0.025</b>	0.201

Continued on next page

**TABLE S8 – continued from previous page**

<b>ROI</b>	<b>P-value average</b>	<b>P-value STD</b>
73	<b>0.025</b>	0.508
78	<b>0.024</b>	0.027
79	<b>0.024</b>	0.388
11 to 15 compared to 16 to 20		
2	0.072	0.066
3	0.073	0.195
4	0.074	<b>0.029</b>
5	0.076	<b>0.014</b>
30	0.069	0.117
31	0.065	0.287
32	0.074	0.752
33	0.072	0.936
34	0.074	0.334
35	0.073	0.437
64	0.070	0.657
65	0.076	0.831
72	0.070	0.119
73	0.073	0.898
78	0.068	0.908
79	0.070	0.945
16 to 20 compared to 21 to 25		
2	0.217	0.327
3	0.219	0.203
4	0.227	0.694
5	0.221	0.950
30	0.208	<b>0.048</b>
31	0.205	0.236
32	0.218	0.814
33	0.211	0.249
34	0.212	0.051
35	0.197	0.428
64	0.208	0.688
65	0.221	0.352
72	0.217	0.605
73	0.223	0.246
78	0.221	0.283
79	0.219	0.201
21 to 25 compared to 26 to 30		
2	0.734	0.407
3	0.743	0.537
4	0.724	0.626
5	0.736	0.767
30	0.758	0.852
31	0.766	0.974
32	0.740	0.687
33	0.750	0.726
34	0.748	0.763
35	0.775	0.091
64	0.755	0.167
65	0.749	0.533
72	0.750	0.314
73	0.742	0.798
78	0.751	0.578
Continued on next page		

**TABLE S8 – continued from previous page**

<b>ROI</b>	<b>P-value average</b>	<b>P-value STD</b>
79	0.760	0.370
26 to 30 compared to 31 to 35		
2	0.062	0.931
3	0.064	0.639
4	0.066	0.363
5	0.064	0.403
30	0.063	0.875
31	0.066	0.565
32	0.065	0.708
33	0.065	0.570
34	0.065	0.918
35	0.067	0.853
64	0.063	0.286
65	0.064	0.804
72	0.065	0.638
73	0.064	0.600
78	0.068	0.411
79	0.069	0.899
31 to 35 compared to 36 to 40		
2	0.761	0.142
3	0.756	0.212
4	0.749	0.712
5	0.751	0.944
30	0.761	0.565
31	0.744	0.369
32	0.753	0.478
33	0.740	0.219
34	0.761	0.606
35	0.758	0.299
64	0.754	0.946
65	0.754	0.593
72	0.749	0.388
73	0.748	0.194
78	0.756	0.168
79	0.748	0.430
36 to 40 compared to 41 to 45		
2	0.156	0.183
3	0.155	0.632
4	0.158	0.216
5	0.151	0.422
30	0.152	0.483
31	0.139	0.817
32	0.155	0.931
33	0.154	0.742
34	0.158	0.112
35	0.167	0.860
64	0.168	0.879
65	0.184	0.722
72	0.141	0.933
73	0.150	0.900
78	0.138	0.982
79	0.136	0.979
36 to 40 compared to 41 to 56		
Continued on next page		

**TABLE S8 – continued from previous page**

<b>ROI</b>	<b>P-value average</b>	<b>P-value STD</b>
2	<b>0.039</b>	0.693
3	<b>0.039</b>	0.878
4	<b>0.040</b>	0.518
5	<b>0.040</b>	0.600
30	<b>0.038</b>	0.391
31	<b>0.036</b>	0.620
32	<b>0.038</b>	0.882
33	<b>0.037</b>	0.722
34	<b>0.040</b>	0.157
35	<b>0.043</b>	0.839
64	<b>0.039</b>	0.668
65	<b>0.045</b>	0.702
72	<b>0.037</b>	0.751
73	<b>0.037</b>	0.850
78	<b>0.037</b>	0.785
79	<b>0.037</b>	0.882

Bold values highlighting the p-values lower than 0.05 representing statistical differences between the two groups evaluated.

TABLE S5  
P-VALUE FOR UP TO 22 YEARS COMPARED TO 23 AND OLDER

ROI	P-value average	P-value STD
2	0.952	0.063
3	0.952	<b>0.008</b>
4	0.953	<b>0.006</b>
5	0.944	<b>0.015</b>
30	0.951	<b>0.000</b>
31	0.957	<b>0.015</b>
32	0.944	0.480
33	0.944	0.279
34	0.943	0.354
35	0.954	0.059
64	0.954	0.781
65	0.974	0.165
72	0.966	0.184
73	0.961	0.451
78	0.962	0.367
79	0.964	0.795

Bold values highlighting the p-values lower than 0.05 representing statistical differences between the two groups evaluated.

TABLE S6  
P-VALUE FOR UP TO 11 YEARS COMPARED TO 12 TO 17

ROI	P-value average	P-value STD
2	<b>0.040</b>	0.603
3	<b>0.039</b>	0.574
4	<b>0.041</b>	<b>0.002</b>
5	<b>0.039</b>	<b>0.000</b>
30	<b>0.038</b>	0.195
31	<b>0.037</b>	0.143
32	<b>0.039</b>	0.080
33	<b>0.040</b>	<b>0.025</b>
34	<b>0.038</b>	0.326
35	<b>0.037</b>	<b>0.003</b>
64	<b>0.036</b>	0.375
65	<b>0.038</b>	0.056
72	<b>0.039</b>	0.958
73	<b>0.039</b>	0.690
78	<b>0.038</b>	0.242
79	<b>0.038</b>	0.720

Bold values highlighting the p-values lower than 0.05 representing statistical differences between the two groups evaluated.

TABLE S7  
P-VALUE FOR 11 TO 17 YEARS COMPARED TO 18 AND OLDER

ROI	P-value average	P-value STD
2	0.810	<b>0.001</b>
3	0.813	<b>0.001</b>
4	0.828	<b>0.003</b>
5	0.833	<b>0.004</b>
30	0.813	<b>0.000</b>
31	0.807	<b>0.006</b>
32	0.822	0.658
33	0.822	0.092
34	0.832	0.293
35	0.848	0.292
64	0.817	0.677
65	0.819	0.395
72	0.799	0.127
73	0.801	0.106
78	0.792	0.060
79	0.792	0.555

Bold values highlighting the p-values lower than 0.05 representing statistical differences between the two groups evaluated.

TABLE S9  
P-VALUE FOR GROUPS OF TEN YEARS SPANS

ROI	P-value average	P-value STD
from 0 to 10 compared to 11 to 20		
2	0.076	0.789
3	0.074	0.550
4	0.074	<b>0.002</b>
5	0.073	<b>0.000</b>
30	0.077	0.524
31	0.078	0.143
32	0.076	<b>0.044</b>
33	0.080	<b>0.002</b>
34	0.078	0.311
35	0.081	<b>0.004</b>
64	0.078	0.094
65	0.076	<b>0.020</b>
72	0.075	0.393
73	0.075	0.460
78	0.073	<b>0.016</b>
79	0.073	0.370
ROI	P-value average	P-value STD
from 11 to 20 compared to 21 to 30		
2	0.400	<b>0.034</b>
3	0.404	<b>0.019</b>
4	0.411	<b>0.040</b>
5	0.397	0.098
30	0.395	<b>0.000</b>
31	0.399	<b>0.023</b>
32	0.397	0.757
33	0.391	0.099
34	0.384	0.052
35	0.369	0.739
64	0.396	0.626
65	0.406	0.214
72	0.411	0.546
73	0.412	0.138
78	0.430	0.329
79	0.421	0.176
from 21 to 30 compared to 31 to 40		
2	<b>0.022</b>	0.951
3	<b>0.023</b>	0.674
4	<b>0.024</b>	0.310
5	<b>0.023</b>	0.335
30	<b>0.022</b>	0.970
31	<b>0.022</b>	0.672
32	<b>0.023</b>	0.788
33	<b>0.022</b>	0.858
34	<b>0.023</b>	0.771
35	<b>0.023</b>	0.274
64	<b>0.022</b>	0.467
65	<b>0.023</b>	0.854
72	<b>0.023</b>	0.924
73	<b>0.022</b>	0.948
78	<b>0.024</b>	0.218
79	<b>0.024</b>	0.492
from 31 to 40 compared to 41 to 50		
2	<b>0.024</b>	0.325
3	<b>0.025</b>	0.453
4	<b>0.025</b>	0.280
5	<b>0.023</b>	0.362
30	<b>0.023</b>	0.108
31	<b>0.020</b>	0.316
32	<b>0.024</b>	0.675
33	<b>0.024</b>	0.555
34	<b>0.026</b>	<b>0.009</b>
35	<b>0.029</b>	0.596
64	<b>0.028</b>	0.625
65	<b>0.035</b>	0.819
72	<b>0.020</b>	0.962
73	<b>0.023</b>	0.282
78	<b>0.019</b>	0.743
79	<b>0.019</b>	0.738

Bold values highlighting the p-values lower than 0.05 representing statistical differences between the two groups evaluated.

TABLE S10  
P-VALUE FOR 31 TO 40 COMPARED TO 41 TO 54

ROI	P-value average	P-value STD
2	<b>0.024</b>	0.325
3	<b>0.025</b>	0.453
4	<b>0.025</b>	0.280
5	<b>0.023</b>	0.362
30	<b>0.023</b>	0.108
31	<b>0.020</b>	0.316
32	<b>0.024</b>	0.675
33	<b>0.024</b>	0.555
34	<b>0.026</b>	<b>0.009</b>
35	<b>0.029</b>	0.596
64	<b>0.028</b>	0.625
65	<b>0.035</b>	0.819
72	<b>0.020</b>	0.962
73	<b>0.023</b>	0.282
78	<b>0.019</b>	0.743
79	<b>0.019</b>	0.738

Bold values highlighting the p-values lower than 0.05 representing statistical differences between the two groups evaluated.