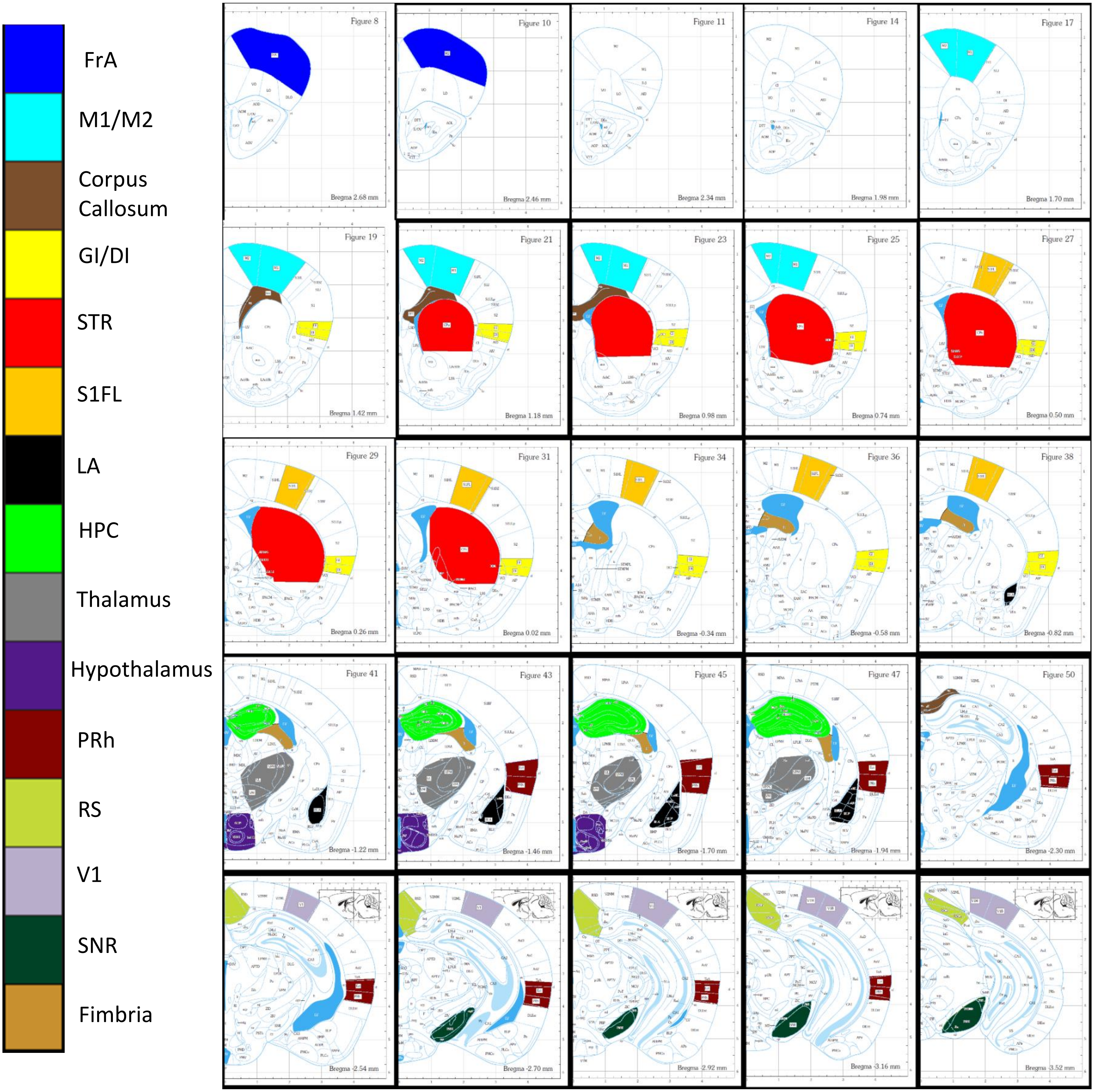
Supplementary Table 1. Summary of statistical comparisons between young adult and aged animals. Table shows tissue class and arterial territory assignments, as well as abbreviations for each area surveyed. Post-hoc comparisons between young adult and aged animals in vessel density, vessel tortuosity, mean vessel diameter, and cortical thickness are shown for each region, tissue class or perfusion territory.

Young-adult vs. Aged Comparisons					Density				Tortuosity				Diameter				Low Density Subsections				(Cortical) Thickness			
Abbreviation	Full name	Tissue Type	Arterial Territory	Territory Reference	Adjusted P	t	DF	% Change (Young adult-aged)	Adjusted P	t	DF	% Change (Young adult-aged)	Adjusted P	t	DF	% Change (Young adult-aged)	Adjusted P	t	DF	% Change (Young adult-aged)	Adjusted P	t	DF	% Change (Young adult-aged)
C. Callosum	Corpus Callosum	White matter	ACA	Images from (Endepols et al.,	<0.0001	7.194	48.8	-26.83	0.4899	2.071	47.31	-0.68552	0.9995	0.852	50.02	1.444328	0.0002	4.844	55.44	126.6047	0.5714	1.612	44.87	6.885645
Fimbria	Fimbria	White matter	ACA	(Thomas et al., 2011)	0.0826	2.874	55.59	-11.63	0.8631	1.563	51.68	-0.59473	0.0008	4.427	48.23	7.930941	0.9757	1.244	49.64	30.28617				
FrA	Frontal Association Cortex	Cortical	ACA	Images from (Endepols et al.,	0.0759	2.907	54.82	-7.824	0.0432	3.131	48.9	0.600343	0.6291	1.889	56.83	2.54152	0.9999	0.763	53.11	-36.7971				
GI/DI	Insular Cortex	Cortical	MCA	Images from (Rousselet et al.,	0.9087	1.47	53.4	-3.289	0.2569	2.409	51.41	0.512821	0.0019	4.131	53.39	5.590513	>0.9999	0.0999	53.96	3.795893	0.002	3.856	58.62	-5.72391
PRh/Ect	Perirhinal/Ectorhinal Cortex	Cortical	MCA	Images from (Rousselet et al.,	<0.0001	5.976	52.11	-16.04	0.7094	1.793	49	0.426621	0.0007	4.652	35.87	7.80759	0.591	1.944	47.09	53.73953	0.0014	3.978	58.5	-6.07073
M1/M2	Primary/Secondary Motor Cortex	Cortical	ACA	Images from (Endepols et al.,	<0.0001	5.967	54.77	-10.01	0.1429	2.669	49.99	0.599829	0.1572	2.638	45.92	3.51972	0.8716	1.55	46.39	80.94824	0.0078	3.429	58.4	-5.62891
S1FL	Forelimb Primary Somatosensory	Cortical	MCA	Images from (Rousselet et al.,	0.0013	4.207	61.17	-7.214	0.0889	2.854	52.17	0.515907	0.0207	3.395	47.56	4.828974	0.1792	2.569	52.68	95.3304	0.0024	3.802	59.82	-6.17733
RS	Retrosplenial Cortex	Cortical	PCA	Images from (Xiong et al., 2017)	0.0089	3.659	51.35	-7.915	0.7957	1.674	49.98	0.429923	0.0003	4.781	42.62	8.438384	>0.9999	0.5952	44.66	-28.1231	0.0478	2.807	53.35	-4.02641
V1	Primary Visual Cortex	Cortical	PCA	(Pula & Yuen, 2017)	0.997	1.001	56.55	-2.144	0.0224	3.414	38.82	0.598802	>0.9999	0.3276	49.06	-0.41708	>0.9999	0.07711	46.38	-2.32558	0.0005	4.336	52.19	-5.51172
HPC	Dorsal Hippocampus	Subcortical	PCA	(Erdem et al., 1993)	0.0007	4.421	56.5	-9.855	0.0264	3.369	36.72	0.599315	<0.0001	5.883	41.21	9.084084	0.9982	0.954	52.99	28.09917				
STR	Striatum (Caudate/Putamen)	Subcortical	MCA	(Feekes & Cassell, 2006)	0.0582	3.002	56.56	-4.598	0.4014	2.19	45.83	0.427716	<0.0001	5.347	49.38	7.820513	0.9928	1.095	38.72	92.99641				
Thalamus	Thalamus	Subcortical	PCA	(Schmahmann, 2003)	0.2904	2.342	58.22	-4.266	0.5514	1.999	42.29	0.344828	<0.0001	6.603	46.72	10.07121	>0.9999	0.5395	43.47	38.53484				
Hypothalamus	Hypothalamus	Subcortical	PCA	(Daniel, 1966)	0.0096	3.613	56.57	-11.09	0.0505	3.106	40.79	0.684346	0.8696	1.552	49.67	2.735174	>0.9999	0.539	48.77	17.74222				
LA	Lateral Amygdala	Subcortical	MCA	(Merksz et al., 1978)	>0.9999	0.0201	41.76	-0.07518	0.0064	3.764	51.33	0.861326	0.9982	0.9538	52.4	1.921132	0.9996	0.8469	35.81	46.00688				
SNR	Substantia Nigra Pars Reticulata	Subcortical	MCA	(Sonne & Beato, 2019)	0.081	2.88	56.27	-7.34	0.0809	2.904	46.81	0.85034	0.9887	1.142	57.69	1.869631	0.001	4.535	34.42	169.4276				
ACA	Anterior Cerebral Artery				<0.0001	5.911	56.73	-12.8327									0.0228	2.769	54.9	56.45514				
MCA	Middle Cerebral Artery				0.0005	4.335	44.91	-7.73626									0.1087	2.134	51.46	43.79865				
PCA	Posterior Cerebral Artery				0.0007	4.125	59.73	-6.6942									0.1097	2.128	53.63	41.56311				
WM	White Matter				<0.0001	6.614	50.76	-22.4813									0.0007	3.962	51.86	84.23272				
CGM	Cortical Gray Matter				<0.0001	5.33	54.07	-8.65645									0.998	0.1599	45.06	-4.41696				
SGM	Subcortical Gray Matter				0.0008	4.125	54.6	-5.83602									0.0401	2.56	50.02	52.99632				

Supplementary Table 2. Summary of previous research estimating vessel loss with aging. Review of existing literature on microvascular loss, excluding studies that focused on arterioles or larger vessels. Includes information on subject species, brain region, method of vascular labeling, age, measurement metric, and time-adjusted magnitude of change in vessel density. Negative values indicate vessel loss. Some values are approximations based on interpretations of figures.

Author	Animal	Area	Method	Age	months	metric	% change	% change / 12 months
(Hunziker et al., 1979)	Human	Precentral gyrus	Alkaline phosphatase	19-94 y/o (group means approx 32-90)	696	length	-2	0
(Hunziker et al., 1979)	Human	Precentral gyrus	Alkaline phosphatase	19-94 y/o (group means approx 32-90)	696	volume	1	0
(Meier-Ruge et al., 1980)	Human	Putamen	Alkaline phosphatase	19-94 y/o (group means approx 32-90)	696	length	60	1
(Meier-Ruge et al., 1980)	Human	Putamen	Alkaline phosphatase	19-94 y/o (group means approx 32-90)	696	volume	84	1.5
(Meier-Ruge et al., 1980)	Human	Cortex	Alkaline phosphatase	19-94 y/o (group means approx 32-90)	696	length	-4	-0.1
(Meier-Ruge et al., 1980)	Human	Cortex	Alkaline phosphatase	19-94 y/o (group means approx 32-90)	696	volume	-3	-0.1
(Bell and Ball, 1981)	Human	Hippocampus	Alkaline phosphatase	38-74 y/o	432	length	-16	-0.4
(Mann et al., 1986)	Human	Frontal cortex	Alkaline phosphatase	26-96 y/o	840	length	-46	-0.7
(Mann et al., 1986)	Human	Frontal cortex	Alkaline phosphatase	26-96 y/o	840	area	-35	-0.5
(Mann et al., 1986)	Human	Temporal cortex	Alkaline phosphatase	26-96 y/o	840	length	No change	0
(Mann et al., 1986)	Human	Temporal cortex	Alkaline phosphatase	26-96 y/o	840	area	No change	0
(Bell and Ball, 1990)	Human	Visual cortex	Alkaline phosphatase	31-79 y/o	576	length	-16	-0.3
(Abernethy et al., 1993)	Human	PVN hypothalamus	Alkaline phosphatase	30-85 y/o	660	length	-49	-0.9
(Abernethy et al., 1993)	Human	Supraoptic hypothalamus	Alkaline phosphatase	30-85 y/o	660	length	No change	0
(Buée et al., 1994)	Human	Cortex	Vascular HSPG	49-79 y/o	360	area	-28	-0.9
(Farkas et al., 2006)	Human	White matter	Hematoxylin-eosin staining	40-90y/o	600	length	No change	0
(Brown et al., 2007b)	Human	White matter	Alkaline phosphatase	57-90 y/o	396	area	-64	-1.9
(Brown et al., 2007b)	Human	Cortex	Alkaline phosphatase	57-90 y/o	396	area	-69	-2.1
(Burns et al., 1981)	Macaque	Frontal cortex	Microfil	10-20y/o	120	area	-22.2	-2.2
(Burns et al., 1981)	Macaque	Frontal cortex	Microfil	4-20y/o	192	area	-27.8	-1.7
(Sturrock, 1977)	Mouse	Indusium griseum					No change	
(Murugesan et al., 2012)	Mouse	Cortex	CD31	7-23 m/o	16	length	-19.3	-14.5
(Murugesan et al., 2012)	Mouse	White matter	CD31	7-23 m/o	16	length	-34.5	-25.9
(Murugesan et al., 2012)	Mouse	Hippocampus	CD31	7-23 m/o	16	length	-26.4	-19.8
(Moeini et al., 2018)	Mouse	S1 barrel cortex	Fluroescent plasma label	7.5-26 m/o	18.5	volume	-17	-11
(Reeson et al., 2018)	Mouse	S1 cortex	Evans Blue plasma label	3.5-16.5 m/o	13	number	-8	-7.4
(Klein and Michel, 1977)	Rat	Frontal and Occipital cortex	Windel's thionin	6-25 m/o	19	number	-21	-13.3
(Bär, 1978)	Rat	Occipital cortex		6-30 m/o	24		19	9.5
(Knox and Oliveira, 1980)	Rat	Cortex	Toluidine blue	4-23 m/o	19	number	-7.9	-5
(Burns et al., 1981)	Rat	Frontal cortex	Microfil	35-800 d/o	25.5	area	39	18.4
(Wilkinson et al., 1981)	Rat	Cortex	Latex and luconyl blue perfusion	13-120 w/o	27	number	10	4.4
(Hinds and McNelly, 1982)	Rat	Olfactory bulb	Toluidine blue	3-36 m/o	33	length	-15	-5.5
(Casey and Feldman, 1985)	Rat	Brainstem	Toluidine blue	3-33 m/o	30	volume	-27.4	-11
(Buchweitz-Milton and Weiss, 1987)	Rat	Cortex	Alkaline phosphatase, FITC dextran	9-30.5 m/o	21.5	length	-29.5	-16.5
(Hughes and Lantos, 1987)	Rat	Cortex	Toluidine blue	3-22.5 m/o	19.5	number	10	6.2
(Meier-Ruge and Schulz-Dazzi, 1987)	Rat	Parietal cortex	Alkaline phosphatase	12-36 m/o	24	volume	1	0.5
(Meier-Ruge and Schulz-Dazzi, 1987)	Rat	Parietal cortex	Alkaline phosphatase	12-36 m/o	24	length	-7.5	-3.8
(Black et al., 1989)	Rat	Visual cortex	Toluidine blue	12-22 m/o	10		No change	
(Jucker and Meier-Ruge, 1989; Jucker et al., 1990)	Rat	Hippocampus	Alkaline phosphatase	18-27.5 m/o	9.5	number	-21	-26.5
(Jucker and Meier-Ruge, 1989; Jucker et al., 1990)	Rat	Parietal cortex	Alkaline phosphatase	18-27.5 m/o	9.5	number	-26	-32.8
(Amenta et al., 1995a)	Rat	Frontal cortex	Alkaline phosphatase	12-24 m/o	12	number	-41.8	-41.8
(Amenta et al., 1995a)	Rat	Frontal cortex	Alkaline phosphatase	12-24 m/o	12	length	-30.1	-30.1
(Amenta et al., 1995a)	Rat	Occipital cortex	Alkaline phosphatase	12-24 m/o	12	number	-36.9	-36.9
(Amenta et al., 1995a)	Rat	Occipital cortex	Alkaline phosphatase	12-24 m/o	12	length	-5.6	-5.6
(Amenta et al., 1995a)	Rat	Hippocampus	Alkaline phosphatase	12-24 m/o	12	number	-48.7	-48.7
(Amenta et al., 1995a)	Rat	Hippocampus	Alkaline phosphatase	12-24 m/o	12	length	-25	-25
(Amenta et al., 1995b)	Rat	Frontal cortex	Alkaline phosphatase	12-27 m/o	15	number	-28.2	-22.6
(Amenta et al., 1995b)	Rat	Frontal cortex	Alkaline phosphatase	12-27 m/o	15	length	-11.6	-9.3
(Amenta et al., 1995b)	Rat	Occipital cortex	Alkaline phosphatase	12-27 m/o	15	number	-17.8	-14.2
(Amenta et al., 1995b)	Rat	Occipital cortex	Alkaline phosphatase	12-27 m/o	15	length	-12.2	-9.7
(Amenta et al., 1995b)	Rat	Ammons horn	Alkaline phosphatase	12-27 m/o	15	number	-26.5	-21.2
(Amenta et al., 1995b)	Rat	Ammons horn	Alkaline phosphatase	12-27 m/o	15	length	-14.7	-11.8
(Amenta et al., 1995b)	Rat	Dentate	Alkaline phosphatase	12-27 m/o	15	number	-19.4	-15.5
(Amenta et al., 1995b)	Rat	Dentate	Alkaline phosphatase	12-27 m/o	15	length	20.4	16.3
(Villena et al., 2003)	Rat	LGN	Toluidine blue	3-28 m/o	25	length	69.3	33.3
(Villena et al., 2003)	Rat	LGN	Toluidine blue	3-28 m/o	25	number	19.4	9.3
(Villena et al., 2003)	Rat	LGN	Toluidine blue	3-28 m/o	25	volume	36.4	17.5
(Villena et al., 2003)	Rat	LGN	Toluidine blue	3-28 m/o	25	area	29	13.9
(Villena et al., 2003)	Rat	LGN	Toluidine blue	18-28 m/o	10	length	-3.1	-3.7
(Villena et al., 2003)	Rat	LGN	Toluidine blue	18-28 m/o	10	number	-3.2	-3.8
(Villena et al., 2003)	Rat	LGN	Toluidine blue	18-28 m/o	10	volume	-6.3	-7.6
(Villena et al., 2003)	Rat	LGN	Toluidine blue	18-28 m/o	10	area	-4.7	-5.6
(Villar-Cheda et al., 2009)	Rat	Substantia Nigra	RECA1	4-14 m/o	10	number	-14	-16.8
(Villar-cheda et al., 2009)	Rat	Substantia Nigra	RECA1	4-24 m/o	20	number	-21	-12.6
(Ndubuizu et al., 2010)	Rat	Cortex	GLUT-1	3-24 m/o	21	number	-10.3	-5.9
(Ndubuizu et al., 2010)	Rat	Corpus Callosum	GLUT-1	3-24 m/o	21	number	-2.6	-1.5
(Ndubuizu et al., 2010)	Rat	Striatum	GLUT-1	3-24 m/o	21	number	2.8	1.6
(Ndubuizu et al., 2010)	Rat	Hippocampus	GLUT-1	3-24 m/o	21	number	-10.3	-5.9
(Shao et al., 2010)	Rat	White matter	Collagen 4	7-27 m/o	20	length	-18.6	-11.2
(Shao et al., 2010)	Rat	White matter	Collagen 4	7-27 m/o	20	volume	-23.5	-14.1
(Zhang et al., 2012)	Rat	Hippocampus	RECA1	5-34 m/o	29	length	-40	-16.6
(Desjardins et al., 2014)	Rat	S1 cortex	Fluroescent plasma label	3-24 m/o	21	number	-18.7	-10.7
(Desjardins et al., 2014)	Rat	S1 cortex	Fluroescent plasma label	3-24 m/o	21	volume	-20.6	-11.8
(Tang et al., 2016)	Rat	Cortex & Striatum	Lectin	3-24 m/o	21	number	-3.5	-2
(Tang et al., 2016)	Rat	Cortex & Striatum	GLUT-1	3-24 m/o	21	number	-10.6	-6.1
(Schager & CE Brown, current)	Mouse	Corpus Callosum	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-26.8	-20.1
(Schager & CE Brown, current)	Mouse	Fimbria	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-11.6	-8.7
(Schager & CE Brown, current)	Mouse	FrA	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-7.8	-5.9
(Schager & CE Brown, current)	Mouse	GI/DI	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-3.3	-2.5
(Schager & CE Brown, current)	Mouse	PRh/Ect	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-16	-12
(Schager & CE Brown, current)	Mouse	M1/M2	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-10	-7.5
(Schager & CE Brown, current)	Mouse	S1FL	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-7.2	-5.4
(Schager & CE Brown, current)	Mouse	RS	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-7.9	-5.9
(Schager & CE Brown, current)	Mouse	V1	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-2.1	-1.6
(Schager & CE Brown, current)	Mouse	HPC	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-9.9	-7.4
(Schager & CE Brown, current)	Mouse	STR	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-4.6	-3.4
(Schager & CE Brown, current)	Mouse	Thalamus	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-4.3	-3.2
(Schager & CE Brown, current)	Mouse	Hypothalamus	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-11.1	-8.3
(Schager & CE Brown, current)	Mouse	LA	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-0.1	-0.1
(Schager & CE Brown, current)	Mouse	SNR	FITC Dextran Plasma Label	3.5-19.5 m/o	16	length	-7.3	-5.5

Supplementary Figure 1. Visual guide of sampling areas. Figure describes stereotaxic levels and bounds of sampling locations for each brain area. These bounds guided ROI locations for each area in microsphere analysis and determined bounds and possible stereotaxic levels for confocal microscopy of vascular density.



Supplementary Data References

1. Abernethy WB, Bell MA, Morris M, et al. Microvascular Density of the Human Paraventricular Nucleus Decreases with Aging but Not Hypertension. *Experimental Neurology* 1993; 121: 270–274.

2. Bär T. Morphometric evaluation of capillaries in different laminae of rat cerebral cortex by automatic image analysis: changes during development and aging. *Adv Neurol* 1978; 20: 1–9.

3. Bell MA, Ball MJ. Morphometric comparison of hippocampal microvasculature in ageing and demented people: Diameters and densities. *Acta Neuropathol* 1981; 53: 299–318.

4. Bell MA, Ball MJ. Neuritic plaques and vessels of visual cortex in aging and Alzheimer's dementia. *Neurobiology of Aging* 1990; 11: 359–370.

5. Black JE, Polinsky M, Greenough WT. Progressive failure of cerebral angiogenesis supporting neural plasticity in aging rats. *Neurobiol Aging* 1989; 10: 353–358.

6. Brown WR, Moody DM, Thore CR, et al. Vascular dementia in leukoaraiosis may be a consequence of capillary loss not only in the lesions, but in normal-appearing white matter and cortex as well. J Neurol Sci 2007; 257: 62–66.

7. Buchweitz-Milton E, Weiss HR. Perfused capillary morphometry in the senescent brain. Neurobiol Aging 1987; 8: 271–276.

8. Buée L, Hof PR, Bouras C, et al. Pathological alterations of the cerebral microvasculature in Alzheimer's disease and related dementing disorders. Acta Neuropathol 1994; 87: 469–480.

9. Burns EM, Kruckeberg TW, Gaetano PK. Changes with age in cerebral capillary morphology. Neurobiol Aging 1981; 2: 283–291.

10. Casey MA, Feldman ML. Aging in the rat medial nucleus of the trapezoid body. III. Alterations in capillaries. Neurobiol Aging 1985; 6: 39–46.

11. Daniel PM. The blood supply of the hypothalamus and pituitary gland. Br Med Bull 1966; 22: 202–208.

12. Desjardins M, Berti R, Lefebvre J, et al. Aging-related differences in cerebral capillary blood flow in anesthetized rats. Neurobiology of Aging 2014; 35: 1947–1955.

13. Endepols H, Mertgens H, Backes H, et al. Longitudinal assessment of infarct progression, brain metabolism and behavior following anterior cerebral artery occlusion in rats. Journal of Neuroscience Methods 2015; 253: 279–291.

14. Erdem A, Yaşargil G, Roth P. Microsurgical anatomy of the hippocampal arteries. J Neurosurg 1993; 79: 256–265.

15. Farkas E, de Vos RAI, Donka G, et al. Age-related microvascular degeneration in the human cerebral periventricular white matter. Acta Neuropathol 2006; 111: 150–157.

16. Feekes JA, Cassell MD. The vascular supply of the functional compartments of the human striatum. Brain 2006; 129: 2189–2201.

17. Hinds JW, McNelly NA. Capillaries in aging rat olfactory bulb: a quantitative light and electron microscopic analysis. Neurobiol Aging 1982; 3: 197–207.

18. Hughes CCW, Lantos PL. A morphometric study of blood vessel, neuron and glial cell distribution in young and old rat brain. Journal of the Neurological Sciences 1987; 79: 101–110.

19. Hunziker O, Abdel'Al S, Schulz U. The aging human cerebral cortex: a stereological characterization of changes in the capillary net. J Gerontol 1979; 34: 345–350.

20. Jucker M, Bättig K, Meier-Ruge W. Effects of aging and vincamine derivatives on pericapillary microenvironment: stereological characterization of the cerebral capillary network. Neurobiol Aging 1990; 11: 39–46.

21. Jucker M, Meier-Ruge W. Effects of brovincamine on stereological capillary parameters in adult and old Fischer-344 rats. Microvasc Res 1989; 37: 298–307.

22. Klein AW, Michel ME. A morphometric study of the neocortex of young adult and old maze-differentiated rats. Mech Ageing Dev 1977; 6: 441–452.

23. Knox CA, Oliveira A. Brain aging in normotensive and hypertensive strains of rats. III. A quantitative study of cerebrovasculature. Acta Neuropathol 1980; 52: 17–25.

24. Mann DM, Eaves NR, Marcyniuk B, et al. Quantitative changes in cerebral cortical microvasculature in ageing and dementia. Neurobiol Aging 1986; 7: 321–330.

25. Meier-Ruge W, Hunziker O, Schulz U, et al. Stereological changes in the capillary network and nerve cells of the aging human brain. Mech Ageing Dev 1980; 14: 233–243.

26. Meier-Ruge W, Schulz-Dazzi U. Effects of brovincamine on the stereological parameters of corticocerebral capillaries. Life Sciences 1987; 40: 943–949.

27. Merksz M, Ambach G, Palkovits M. Blood supply of the rat amygdala. Acta Morphol Acad Sci Hung 1978; 26: 139–171.

28. Pula JH, Yuen CA. Eyes and stroke: the visual aspects of cerebrovascular disease. Stroke Vasc Neurol 2017; 2: 210–220.

29. Rousselet E, Kriz J, Seidah NG. Mouse Model of Intraluminal MCAO: Cerebral Infarct Evaluation by Cresyl Violet Staining. J Vis Exp 2012; e4038.

30. Schmahmann JD. Vascular syndromes of the thalamus. Stroke 2003; 34: 2264–2278.

31. Shao W-H, Li C, Chen L, et al. Stereological Investigation of Age-Related Changes of the Capillaries in White Matter. The Anatomical Record 2010; 293: 1400–1407.

32. Sonne J, Beato MR. Neuroanatomy, Substantia Nigra. In: StatPearls. Treasure Island, FL: StatPearls Publishing, 2019.

33. Sturrock RR. Quantitative and morphological changes in neurons and neuroglia in the indusium griseum of aging mice. J Gerontol 1977; 32: 647–658.

34. Tang Y, Wang L, Wang J, et al. Ischemia-induced Angiogenesis is Attenuated in Aged Rats. Aging and disease 2016; 7: 326–335.

35. Thomas AG, Koumellis P, Dineen RA. The Fornix in Health and Disease: An Imaging Review. RadioGraphics 2011; 31: 1107–1121.

36. Villar-Cheda B, Sousa-Ribeiro D, Rodriguez-Pallares J, et al. Aging and Sedentarism Decrease Vascularization and VEGF Levels in the Rat Substantia Nigra. Implications for Parkinson's Disease. J Cereb Blood Flow Metab 2009; 29: 230–234.

37. Wilkinson JH, Hopewell JW, Reinhold HS. A quantitative study of age-related changes in the vascular architecture of the rat cerebral cortex. Neuropathol Appl Neurobiol 1981; 7: 451–462.

38. Zhang R, Kadar T, Sirimanne E, et al. Age-related memory decline is associated with vascular and microglial degeneration in aged rats. Behavioural Brain Research 2012; 235: 210–217.