Online supplement

Hypertensive adults exhibit lower myelin content: A multicomponent relaxometry and diffusion MRI study

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Table S1. *Regression coefficient (β), including standard error (SE) in italics, and significance (p-value) of Myelin Water Fraction vs. Hypertension, age, smoking, sex, diabetes, and cholesterol across 14 WM ROIs. The multiple regression model is given by: MWF ~ β_0 + β_{age} × age + $\beta_{Hypertension}$ × Hypertension + β_{SBP} × SBP + $\beta_{Smoking}$ × Smoking + β_{sex} × sex + $\beta_{Diabetes}$ × Diabetes + $\beta_{Cholesterol}$ × Cholesterol. The regression model accounted for sex, smoking status, diabetes status and hypertension as categorical variables. Bolded p-values indicate statistical significance (p < 0.05) or close-to-significance (p < 0.1).*

ROIs	Myelin Water Fraction (MWF)						
	Hypertension	Age	SBP	Smoking	Sex	Diabetes	Cholesterol
	β (SE) *10^-2	β (SE) *10^-4	β (SE) *10^-4	β (SE) *10^-3	β (SE) *10^-3	β (SE) *10^-2	β (SE) *10^-5
WB	-1.97 (*0.68*), **0.010**	-9.64 (*1.76*), **<0.001**	2.76 (*2.17*), 0.390	3.10 (*5.72*), 0.831	-4.44 (*5.84*), 0.856	0.82 (*1.56*), 0.898	1.51 (*9.14*), 0.959
FL	-2.43 (*0.67*), **0.006**	-11.2 (*1.73*), **<0.001**	4.34 (*2.14*), 0.390	4.52 (*5.64*), 0.831	-4.89 (*5.76*), 0.856	0.34 (*1.54*), 0.898	1.06 (*9.00*), 0.959
OL	-1.55 (*0.87*), **0.090**	-8.43 (*2.23*), **<0.001**	1.36 (*2.76*), 0.670	4.26 (*7.25*), 0.831	-4.04 (*7.41*), 0.856	1.34 (*1.98*), 0.898	-0.60 (*11.6*), 0.959
PL	-2.41 (*0.78*), **0.010**	-10.1 (*2.00*), **<0.001**	3.85 (*2.47*), 0.390	3.35 (*6.50*), 0.831	-11.4 (*6.64*), 0.856	0.41 (*1.77*), 0.898	-3.44 (*10.4*), 0.959
TL	-1.84 (*0.82*), **0.038**	-9.28 (*2.10*), **<0.001**	2.16 (*2.60*), 0.570	3.99 (*6.84*), 0.831	-3.86 (*6.98*), 0.856	1.57 (*1.86*), 0.898	2.56 (*10.9*), 0.959
CRB	-0.50 (*0.73*), 0.500	-6.70 (*1.89*), **<0.001**	0.02 (*2.33*), 0.994	-5.70 (*6.14*), 0.831	1.69 (*6.27*), 0.856	1.76 (*1.67*), 0.898	4.81 (*9.80*), 0.959
CC	-2.06 (*0.69*), **0.010**	-9.01 (*1.77*), **<0.001**	2.91 (*2.19*), 0.390	-1.65 (*5.76*), 0.836	-7.33 (*5.88*), 0.856	1.24 (*1.57*), 0.898	2.47 (*9.20*), 0.959
IC	-1.40 (*0.71*), **0.067**	-9.61 (*1.83*), **<0.001**	1.26 (*2.26*), 0.670	2.71 (*5.94*), 0.831	1.72 (*6.07*), 0.856	1.04 (*1.62*), 0.898	7.69 (*9.49*), 0.959
CR	-3.03 (*0.88*), **0.006**	-11.8 (*2.27*), **<0.001**	4.39 (*2.80*), 0.390	0.24 (*7.37*), 0.831	-2.25 (*7.53*), 0.830	-0.33 (*2.01*), 0.898	2.76 (*11.8*), 0.959
CP	-0.70 (*0.63*), 0.285	-4.07 (*1.61*), **0.013**	-1.21 (*1.99*), 0.670	4.19 (*5.23*), 0.831	1.40 (*5.34*), 0.856	2.25 (*1.43*), 0.898	10.6 (*8.36*), 0.959
TR	-2.20 (*0.83*), **0.015**	-10.1 (*2.14*), **<0.001**	2.68 (*2.65*), 0.488	2.52 (*6.96*), 0.836	0.36 (*7.11*), 0.960	0.24 (*1.90*), 0.898	1.31 (*11.1*), 0.959
FOF	-2.37 (*0.77*), **0.010**	-10.7 (*1.98*), **<0.001**	3.33 (*2.45*), 0.390	4.31 (*6.44*), 0.831	4.36 (*6.58*), 0.856	-0.24 (*1.76*), 0.898	4.85 (*10.3*), 0.959
LF	-2.28 (*0.80*), **0.010**	-9.92 (*2.06*), **<0.001**	3.37 (*2.55*), 0.390	3.02 (*6.70*), 0.831	-3.19 (*6.85*), 0.856	0.25 (*1.83*), 0.898	1.44 (*10.7*), 0.959
Fr	-2.24 (*0.76*), **0.010**	-10.6 (*1.95*), **<0.001**	2.96 (*2.41*), 0.390	3.26 (*6.35*), 0.831	-3.68 (*6.49*), 0.856	1.04 (*1.73*), 0.898	-1.92 (*10.1*), 0.959

MWF, myelin water fraction; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; IC, internal capsule; CR, corona radiata; CC, corpus callosum; TR, thalamic radiation; FOF, fronto-occipital fasciculus; LF, longitudinal fasciculus; Fr, forceps.

Table S2. *Regression coefficient (β), including standard error (SE) in italics, and significance (p-value) of Longitudinal relaxation rate (R_1) vs. Hypertension, age, smoking, sex, diabetes, and cholesterol across 14 WM ROIs. The multiple regression model is given by: R_1 ~ β_0 + β_{age} × age + $\beta_{Hypertension}$ × Hypertension + β_{SBP} × SBP + $\beta_{Smoking}$ × Smoking + β_{sex} × sex + $\beta_{Diabetes}$ × Diabetes + $\beta_{Cholesterol}$ × Cholesterol. The regression model accounted for sex, smoking status, diabetes status and hypertension as categorical variables. Bolded p-values indicate statistical significance (p < 0.05) or close-to-significance (p < 0.1).*

ROIs	Longitudinal relaxation rate (R_1)						
	Hypertension	Age	SBP	Smoking	Sex	Diabetes	Cholesterol
	β (SE) *10^-5	β (SE) *10^-6	β (SE) *10^-6	β (SE) *10^-5	β (SE) *10^-5	β (SE) *10^-5	β (SE) *10^-7
WB	-5.76 (*1.74*), **0.004**	-1.71 (*0.45*), **<0.001**	1.18 (*0.55*), **0.075**	0.13 (*1.46*), 0.987	-2.53 (*1.49*), 0.215	-2.19 (*3.97*), 0.989	0.44 (*2.32*), 0.999
FL	-6.77 (*1.61*), **0.001**	-2.06 (*0.41*), **<0.001**	1.60 (*0.51*), **0.034**	0.91 (*1.34*), 0.987	-2.66 (*1.37*), 0.215	-3.65 (*3.66*), 0.989	0.67 (*2.15*), 0.999
OL	-4.18 (*1.98*), **0.043**	-1.41 (*0.51*), **0.008**	0.70 (*0.63*), 0.315	0.34 (*1.66*), 0.987	-2.12 (*1.70*), 0.260	-1.11 (*4.53*), 0.989	-1.28 (*2.65*), 0.999
PL	-6.05 (*1.75*), **0.003**	-1.87 (*0.45*), **<0.001**	1.22 (*0.56*), **0.075**	0.25 (*1.47*), 0.987	-3.41 (*1.50*), 0.215	-3.60 (*4.00*), 0.989	-2.05 (*2.34*), 0.999
TL	-4.91 (*1.83*), **0.011**	-1.77 (*0.47*), **<0.001**	1.05 (*0.58*), **0.097**	-0.25 (*1.53*), 0.987	-2.36 (*1.56*), 0.250	-0.06 (*4.17*), 0.989	-0.87 (*2.44*), 0.999
CRB	-2.63 (*1.78*), 0.145	-1.09 (*0.46*), **0.021**	0.45 (*0.57*), 0.413	-1.10 (*1.49*), 0.987	-2.64 (*1.52*), 0.215	-0.06 (*4.07*), 0.989	0.02 (*2.38*), 0.999
CC	-7.41 (*1.82*), **0.001**	-1.90 (*0.47*), **<0.001**	1.35 (*0.58*), **0.075**	-1.10 (*1.52*), 0.987	-3.39 (*1.55*), 0.215	-1.86 (*4.14*), 0.989	-0.15 (*2.43*), 0.999
IC	-4.91 (*1.74*), **0.008**	-1.77 (*0.45*), **<0.001**	1.18 (*0.55*), **0.075**	-0.57 (*1.45*), 0.987	-1.99 (*1.49*), 0.259	-0.76 (*3.97*), 0.989	-0.19 (*2.32*), 0.999
CR	-7.79 (*1.93*), **<0.001**	-2.16 (*0.50*), **<0.001**	1.30 (*0.61*), **0.075**	0.10 (*1.61*), 0.987	-2.02 (*1.65*), 0.830	-4.19 (*4.40*), 0.989	-0.83 (*2.58*), 0.999
CP	-3.70 (*1.77*), **0.043**	-0.50 (*0.46*), 0.273	0.57 (*0.56*), 0.336	0.27 (*1.48*), 0.987	-1.48 (*1.51*), 0.356	-0.26 (*4.04*), 0.989	1.11 (*2.37*), 0.999
TR	-5.70 (*1.88*), **0.006**	-2.04 (*0.48*), **<0.001**	1.07 (*0.60*), **0.097**	-0.50 (*1.57*), 0.987	-2.16 (*1.61*), 0.259	-2.27 (*4.29*), 0.989	-1.27 (*2.51*), 0.999
FOF	-5.95 (*1.85*), **0.004**	-2.09 (*0.48*), **<0.001**	1.14 (*0.59*), **0.086**	0.63 (*1.55*), 0.987	-0.85 (*1.58*), 0.592	-2.89 (*4.22*), 0.989	-0.02 (*2.47*), 0.999
LF	-5.63 (*1.88*), **0.006**	-2.02 (*0.49*), **<0.001**	1.33 (*0.60*), **0.075**	0.14 (*1.58*), 0.987	-2.38 (*1.61*), 0.250	-3.06 (*4.30*), 0.989	-1.58 (*2.52*), 0.999
Fr	-6.12 (*1.87*), **0.004**	-2.02 (*0.48*), **<0.001**	1.21 (*0.59*), **0.080**	-0.07 (*1.56*), 0.987	-2.93 (*1.59*), 0.215	-1.57 (*4.26*), 0.989	-1.40 (*2.49*), 0.999

R_1, longitudinal relaxation rate; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; IC, internal capsule; CR, corona radiata; CC, corpus callosum; TR, thalamic radiation; FOF, fronto-occipital fasciculus; LF, longitudinal fasciculus; Fr, forceps.

Table S3. *Regression coefficient (β), including standard error (SE) in italics, and significance (p-value) of Transverse relaxation rate (R_2) vs. Hypertension, age, smoking, sex, diabetes, and cholesterol across 14 WM ROIs. The multiple regression model is given by: $R_2 \sim \beta_0 + \beta_{age} \times age + \beta_{Hypertension} \times Hypertension + \beta_{SBP} \times SBP + \beta_{Smoking} \times Smoking + \beta_{sex} \times sex + \beta_{Diabetes} \times Diabetes + \beta_{Cholesterol} \times Cholesterol$. The regression model accounted for sex, smoking status, diabetes status and hypertension as categorical variables. Bolded p-values indicate statistical significance ($p < 0.05$) or close-to-significance ($p < 0.1$).*

ROIs	Transverse relaxation rate (R_2)						
	Hypertension β (SE) *10^-3	**Age** β (SE) *10^-5	**SBP** β (SE) *10^-5	**Smoking** β (SE) *10^-4	**Sex** β (SE) *10^-4	**Diabetes** β (SE) *10^-3	**Cholesterol** β (SE) *10^-6
WB	-1.20 (*0.46*), **0.021**	-6.12 (*1.17*), **<0.001**	0.99 (*1.45*), 0.786	-0.33 (*3.81*), 0.931	-3.13 (*3.89*), 0.870	0.82 (*1.04*), 0.829	3.55 (*6.09*), 0.940
FL	-1.45 (*0.45*), **0.009**	-6.95 (*1.15*), **<0.001**	2.11 (*1.42*), 0.786	1.80 (*3.74*), 0.931	-2.59 (*3.82*), 0.870	0.61 (*1.02*), 0.829	2.49 (*5.97*), 0.940
OL	-1.19 (*0.57*), **0.052**	-5.61 (*1.47*), **<0.001**	0.32 (*1.82*), 0.861	-1.23 (*4.79*), 0.931	-5.52 (*4.89*), 0.870	0.93 (*1.31*), 0.829	-0.56 (*7.65*), 0.942
PL	-1.35 (*0.53*), **0.021**	-7.06 (*1.37*), **<0.001**	1.84 (*1.70*), 0.786	-2.97 (*4.46*), 0.931	-9.07 (*4.56*), 0.700	0.36 (*1.22*), 0.846	-1.38 (*7.13*), 0.940
TL	-1.28 (*0.54*), **0.027**	-5.55 (*1.38*), **<0.001**	1.11 (*1.71*), 0.786	0.59 (*4.50*), 0.931	-3.73 (*4.59*), 0.870	1.26 (*1.23*), 0.829	3.56 (*7.18*), 0.940
CRB	-0.20 (*0.51*), 0.693	-4.71 (*1.30*), **<0.001**	0.43 (*1.61*), 0.861	-4.20 (*4.24*), 0.931	0.88 (*4.34*), 0.903	0.52 (*1.16*), 0.829	4.19 (*6.77*), 0.940
CC	-1.72 (*0.55*), **0.009**	-6.78 (*1.42*), **<0.001**	1.02 (*1.76*), 0.786	-3.86 (*4.62*), 0.931	-3.07 (*4.72*), 0.870	1.80 (*1.26*), 0.829	6.15 (*7.39*), 0.940
IC	-0.84 (*0.43*), **0.065**	-5.48 (*1.11*), **<0.001**	0.87 (*1.37*), 0.786	2.85 (*3.61*), 0.931	0.17 (*3.68*), 0.963	0.99 (*0.98*), 0.829	5.37 (*5.76*), 0.940
CR	-1.71 (*0.53*), **0.009**	-5.84 (*1.37*), **<0.001**	1.31 (*1.70*), 0.786	0.46 (*4.47*), 0.931	1.79 (*4.56*), 0.870	0.24 (*1.22*), 0.846	5.44 (*7.13*), 0.940
CP	-0.31 (*0.48*), 0.561	-3.54 (*1.23*), **<0.001**	-1.11 (*1.52*), 0.786	1.73 (*3.99*), 0.931	-1.81 (*4.08*), 0.870	1.87 (*1.09*), 0.829	7.63 (*6.37*), 0.940
TR	-1.38 (*0.53*), **0.021**	-5.34 (*1.37*), **0.005**	0.43 (*1.69*), 0.861	2.33 (*4.44*), 0.931	2.31 (*4.53*), 0.870	0.64 (*1.21*), 0.829	3.24 (*7.09*), 0.940
FOF	-1.52 (*0.51*), **0.010**	-6.71 (*1.30*), **<0.001**	1.34 (*1.61*), 0.786	3.17 (*4.24*), 0.931	3.32 (*4.33*), 0.870	0.30 (*1.16*), 0.846	5.27 (*6.77*), 0.940
LF	-1.29 (*0.50*), **0.021**	-5.35 (*1.29*), **<0.001**	0.53 (*1.59*), 0.861	1.38 (*4.18*), 0.931	-2.71 (*4.27*), 0.870	0.59 (*1.14*), 0.829	1.77 (*6.68*), 0.940
Fr	-1.57 (*0.51*), **0.009**	-6.38 (*1.30*), **<0.001**	1.41 (*1.61*), 0.786	0.62 (*4.23*), 0.931	-1.41 (*4.32*), 0.870	0.97 (*1.15*), 0.829	1.09 (*6.76*), 0.940

R_2, transverse relaxation rate; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; IC, internal capsule; CR, corona radiata; CC, corpus callosum; TR, thalamic radiation; FOF, fronto-occipital fasciculus; LF, longitudinal fasciculus; Fr, forceps.

Table S4. *Regression coefficient (β), including standard error (SE) in italics, and significance (p-value) of Fractional Anisotropy vs. Hypertension, age, smoking, sex, diabetes, and cholesterol across 14 WM ROIs. The multiple regression model is given by: $FA \sim \beta_0 + \beta_{age} \times age + \beta_{Hypertension} \times Hypertension + \beta_{SBP} \times SBP + \beta_{Smoking} \times Smoking + \beta_{sex} \times sex + \beta_{Diabetes} \times Diabetes + \beta_{Cholesterol} \times Cholesterol$. The regression model accounted for sex, smoking status, diabetes status and hypertension as categorical variables. Bolded p-values indicate statistical significance ($p < 0.05$) or close-to-significance ($p < 0.1$).*

ROIs	Fractional Anisotropy (FA)						
	Hypertension β (SE) *10^-2	**Age** β (SE) *10^-4	**SBP** β (SE) *10^-4	**Smoking** β (SE) *10^-3	**Sex** β (SE) *10^-3	**Diabetes** β (SE) *10^-3	**Cholesterol** β (SE) *10^-5
WB	-1.20 (*0.53*), **0.041**	-6.87 (*1.36*), **<0.001**	0.48 (*1.66*), 0.774	-3.78 (*4.42*), 0.884	-2.98 (*4.50*), 0.830	-2.99 (*11.8*), 0.931	-0.93 (*6.95*), 0.950
FL	-2.51 (*0.51*), **<0.001**	-8.65 (*1.31*), **<0.001**	3.34 (*1.60*), **0.089**	-0.62 (*4.26*), 0.884	-6.37 (*4.34*), 0.830	-7.57 (*11.4*), 0.950	-2.56 (*6.70*), 0.950
OL	-1.81 (*0.56*), **0.006**	-10.3 (*1.44*), **<0.001**	3.38 (*1.77*), **0.094**	3.42 (*4.70*), 0.884	1.56 (*4.79*), 0.830	-3.57 (*12.5*), 0.931	11.3 (*7.39*), 0.676
PL	-1.08 (*0.78*), 0.168	-5.02 (*2.00*), **0.015**	5.16 (*2.45*), **0.089**	6.23 (*6.50*), 0.884	2.53 (*6.63*), 0.830	8.61 (*17.4*), 0.931	12.1 (*10.2*), 0.676
TL	-5.52 (*1.36*), **<0.001**	-19.3 (*3.49*), **<0.001**	8.74 (*4.28*), **0.089**	-13.2 (*11.4*), 0.884	-3.14 (*11.6*), 0.830	-19.4 (*30.3*), 0.931	-2.99 (*17.9*), 0.950
CRB	-2.50 (*1.14*), **0.044**	-7.99 (*2.93*), **0.009**	8.94 (*3.59*), **0.089**	5.33 (*9.53*), 0.884	2.09 (*9.71*), 0.830	-13.9 (*25.4*), 0.931	21.9 (*15.0*), 0.676
CC	-1.87 (*0.70*), **0.021**	-11.8 (*1.79*), **<0.001**	4.18 (*2.19*), **0.094**	1.22 (*5.81*), 0.884	5.74 (*5.93*), 0.830	-10.9 (*15.5*), 0.931	0.58 (*9.15*), 0.950
IC	-2.60 (*1.14*), **0.041**	-6.35 (*2.93*), **0.033**	1.56 (*3.59*), 0.125	-1.52 (*9.53*), 0.884	3.91 (*9.71*), 0.830	3.14 (*25.4*), 0.931	7.75 (*15.0*), 0.950
CR	-2.04 (*0.64*), **0.006**	-10.4 (*1.64*), **<0.001**	3.72 (*2.01*), **0.094**	2.28 (*5.32*), 0.884	10.2 (*5.43*), 0.830	-10.2 (*14.2*), 0.931	10.9 (*8.38*), 0.676
CP	-1.64 (*0.92*), **0.091**	-7.91 (*2.35*), **0.001**	6.06 (*2.88*), **0.089**	1.97 (*7.64*), 0.884	3.55 (*7.79*), 0.830	-3.50 (*20.4*), 0.931	8.65 (*12.0*), 0.950
TR	-1.76 (*0.77*), **0.041**	-6.86 (*1.98*), **0.001**	3.96 (*2.43*), 0.125	7.70 (*6.45*), 0.884	7.40 (*6.58*), 0.830	-5.60 (*17.2*), 0.931	16.3 (*10.2*), 0.676
FOF	-3.24 (*0.90*), **0.002**	-15.0 (*2.29*), **<0.001**	4.98 (*2.81*), 0.103	-5.96 (*7.47*), 0.884	-2.18 (*7.61*), 0.830	-4.38 (*19.9*), 0.931	2.98 (*11.8*), 0.950
LF	-6.49 (*0.34*), **0.074**	-7.54 (*0.87*), **<0.001**	2.38 (*1.06*), **0.089**	-1.66 (*2.82*), 0.884	-3.21 (*2.87*), 0.830	-5.02 (*7.52*), 0.931	-1.29 (*4.43*), 0.950
Fr	-6.92 (*0.45*), 0.136	-8.91 (*1.15*), **<0.001**	3.01 (*1.41*), **0.089**	-1.41 (*3.74*), 0.884	-2.02 (*3.81*), 0.830	0.16 (*9.98*), 0.988	-3.94 (*5.88*), 0.950

FA, fractional anisotropy; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; IC, internal capsule; CR, corona radiata; CC, corpus callosum; TR, thalamic radiation; FOF, fronto-occipital fasciculus; LF, longitudinal fasciculus; Fr, forceps.

Table S5. *Regression coefficient (β), including standard error (SE) in italics, and significance (p-value) of Medial Diffusivity vs. Hypertension, age, smoking, sex, diabetes, and cholesterol across 14 WM ROIs. The multiple regression model is given by: MD ~ β_0 + β_{age} × age + $\beta_{Hypertension}$ × Hypertension + β_{SBP} × SBP + $\beta_{Smoking}$ × Smoking + β_{sex} × sex + $\beta_{Diabetes}$ × Diabetes + $\beta_{Cholesterol}$ × Cholesterol. The regression model accounted for sex, smoking status, diabetes status and hypertension as categorical variables. Bolded p-values indicate statistical significance (p < 0.05) or close-to-significance (p < 0.1).*

ROIs	Medial Diffusivity (MD)						
	Hypertension	Age	SBP	Smoking	Sex	Diabetes	Cholesterol
	β (SE) *10^-5	β (SE) *10^-6	β (SE) *10^-6	β (SE) *10^-5	β (SE) *10^-5	β (SE) *10^-5	β (SE) *10^-7
WB	1.68 (*1.47*), 0.276	2.46 (*0.38*), **<0.001**	-0.58 (*0.46*), 0.231	1.39 (*1.23*), 0.525	4.47 (*1.25*), **0.009**	-0.37 (*3.28*), 0.912	-1.44 (*1.93*), 0.801
FL	2.77 (*1.67*), 0.128	3.92 (*0.43*), **<0.001**	-1.32 (*0.52*), **0.066**	2.02 (*1.39*), 0.431	2.97 (*1.42*), 0.114	-1.90 (*3.71*), 0.912	-0.76 (*2.19*), 0.801
OL	2.99 (*0.91*), **0.021**	2.03 (*0.23*), **<0.001**	-0.75 (*0.29*), **0.066**	0.44 (*0.76*), 0.653	2.02 (*0.77*), **0.076**	-0.35 (*2.03*), 0.912	-0.54 (*1.19*), 0.801
PL	2.21 (*1.52*), 0.175	0.67 (*0.39*), **0.089**	-0.81 (*0.48*), 0.148	0.86 (*1.27*), 0.638	-0.40 (*1.29*), 0.759	4.45 (*3.39*), 0.484	-0.77 (*1.99*), 0.801
TL	5.67 (*2.12*), **0.032**	2.23 (*0.54*), **<0.001**	-1.68 (*0.67*), **0.066**	2.37 (*1.77*), 0.431	1.02 (*1.81*), 0.661	-1.01 (*4.73*), 0.912	-2.40 (*2.79*), 0.801
CRB	4.55 (*2.01*), **0.042**	2.95 (*0.52*), **<0.001**	-1.16 (*0.63*), 0.164	1.64 (*1.68*), 0.546	2.12 (*1.71*), 0.339	-1.62 (*4.47*), 0.912	-1.50 (*2.64*), 0.801
CC	5.79 (*2.02*), **0.030**	1.98 (*0.52*), **<0.001**	-0.95 (*0.63*), 0.164	1.58 (*1.68*), 0.546	0.87 (*1.71*), 0.661	-7.33 (*4.49*), 0.484	-1.24 (*2.65*), 0.801
IC	4.05 (*1.80*), **0.042**	2.34 (*0.46*), **<0.001**	-1.10 (*0.56*), 0.121	-1.09 (*1.50*), 0.638	3.15 (*1.53*), 0.114	0.69 (*4.00*), 0.912	1.09 (*2.36*), 0.801
CR	2.97 (*1.21*), **0.037**	1.32 (*0.31*), **<0.001**	-0.16 (*0.38*), 0.670	0.05 (*1.01*), 0.962	0.69 (*1.03*), 0.830	4.07 (*2.69*), 0.484	0.19 (*1.59*), 0.801
CP	5.01 (*1.78*), **0.030**	2.45 (*0.46*), **<0.001**	-1.25 (*0.56*), **0.099**	2.21 (*1.49*), 0.431	1.01 (*1.52*), 0.645	9.11 (*3.98*), 0.345	-0.77 (*2.34*), 0.801
TR	2.82 (*1.11*), **0.036**	1.11 (*0.28*), **<0.001**	-0.66 (*0.35*), 0.121	0.33 (*0.93*), 0.782	1.60 (*0.94*), 0.186	3.29 (*2.47*), 0.484	0.63 (*1.46*), 0.801
FOF	3.52 (*1.56*), **0.042**	1.36 (*0.40*), **0.001**	-0.73 (*0.49*), 0.164	1.74 (*1.30*), 0.431	2.66 (*1.33*), 0.114	1.09 (*3.48*), 0.912	-1.25 (*2.05*), 0.801
LF	3.75 (*2.14*), 0.119	6.10 (*0.55*), **<0.001**	-1.35 (*0.67*), 0.121	2.49 (*1.79*), 0.431	4.00 (*1.82*), 0.114	-3.30 (*4.78*), 0.912	-2.53 (*2.81*), 0.801
Fr	2.16 (*2.98*), 0.470	7.84 (*0.76*), **<0.001**	-1.43 (*0.94*), 0.164	3.38 (*2.49*), 0.431	3.44 (*2.54*), 0.313	-8.44 (*6.64*), 0.484	-1.41 (*3.91*), 0.801

MD, medial diffusivity; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; IC, internal capsule; CR, corona radiata; CC, corpus callosum; TR, thalamic radiation; FOF, fronto-occipital fasciculus; LF, longitudinal fasciculus; Fr, forceps.

Table S6. *Regression coefficient (β), including standard error (SE) in italics, and significance (p-value) of Radial Diffusivity vs. Hypertension, age, smoking, sex, diabetes, and cholesterol across 14 WM ROIs. The multiple regression model is given by: RD ~ β_0 + β_{age} × age + $\beta_{Hypertension}$ × Hypertension + β_{SBP} × SBP + $\beta_{Smoking}$ × Smoking + β_{sex} × sex + $\beta_{Diabetes}$ × Diabetes + $\beta_{Cholesterol}$ × Cholesterol. The regression model accounted for sex, smoking status, diabetes status and hypertension as categorical variables. Bolded p-values indicate statistical significance (p < 0.05) or close-to-significance (p < 0.1).*

ROIs	Radial Diffusivity (RD)						
	Hypertension	Age	SBP	Smoking	Sex	Diabetes	Cholesterol
	β (SE) *10^-5	β (SE) *10^-6	β (SE) *10^-6	β (SE) *10^-5	β (SE) *10^-5	β (SE) *10^-5	β (SE) *10^-7
WB	2.62 (*1.60*), 0.122	2.87 (*0.41*), **<0.001**	-0.59 (*0.50*), 0.261	-1.63 (*1.33*), 0.522	4.42 (*1.36*), **0.023**	-0.57 (*3.55*), 0.940	-1.47 (*2.09*), 0.842
FL	4.29 (*1.76*), **0.026**	4.34 (*0.45*), **<0.001**	-1.41 (*0.55*), **0.059**	1.99 (*1.47*), 0.522	3.29 (*1.49*), 0.145	-1.71 (*3.91*), 0.940	-0.42 (*2.31*), 0.878
OL	3.99 (*1.13*), **0.002**	2.75 (*0.29*), **<0.001**	-0.93 (*0.35*), **0.059**	0.34 (*0.94*), 0.972	1.77 (*0.96*), 0.241	-0.42 (*2.51*), 0.940	-1.51 (*1.48*), 0.842
PL	1.84 (*1.46*), 0.229	1.03 (*0.37*), **0.004**	-0.84 (*0.46*), **0.092**	-0.10 (*1.22*), 0.972	-0.77 (*1.24*), 0.628	3.02 (*3.25*), 0.875	-1.51 (*1.92*), 0.842
TL	10.1 (*2.60*), **0.002**	3.75 (*0.67*), **<0.001**	-1.88 (*0.82*), **0.064**	2.71 (*2.17*), 0.522	1.39 (*2.21*), 0.628	1.55 (*5.78*), 0.940	-2.01 (*3.41*), 0.842
CRB	5.21 (*2.17*), **0.026**	2.40 (*0.56*), **<0.001**	-1.53 (*0.68*), **0.064**	1.04 (*1.81*), 0.884	1.74 (*1.85*), 0.548	0.11 (*4.83*), 0.981	-2.84 (*2.85*), 0.842
CC	6.10 (*1.85*), **0.004**	2.42 (*0.47*), **<0.001**	-1.07 (*0.58*), **0.092**	1.17 (*1.55*), 0.790	0.13 (*1.58*), 0.989	6.45 (*4.13*), 0.688	-1.20 (*2.43*), 0.842
IC	6.02 (*1.90*), **0.005**	2.33 (*0.49*), **<0.001**	-1.13 (*0.60*), **0.092**	-0.22 (*1.59*), 0.972	2.59 (*1.62*), 0.264	-2.63 (*4.24*), 0.940	-0.38 (*2.50*), 0.878
CR	4.27 (*1.21*), **0.002**	1.84 (*0.31*), **<0.001**	-0.39 (*0.38*), 0.310	0.09 (*1.01*), 0.972	0.01 (*1.03*), 0.830	3.94 (*2.69*), 0.688	-0.71 (*1.59*), 0.842
CP	5.30 (*1.78*), **0.007**	2.49 (*0.46*), **<0.001**	-1.34 (*0.56*), **0.064**	1.62 (*1.48*), 0.555	0.94 (*1.51*), 0.628	6.23 (*3.96*), 0.688	-1.65 (*2.33*), 0.842
TR	3.76 (*1.06*), **0.002**	1.41 (*0.27*), **<0.001**	-0.88 (*0.33*), **0.059**	-0.03 (*0.89*), 0.972	0.85 (*0.91*), 0.548	2.12 (*2.37*), 0.875	-0.93 (*1.40*), 0.842
FOF	6.11 (*1.94*), **0.005**	2.60 (*0.50*), **<0.001**	-1.16 (*0.61*), **0.092**	2.42 (*1.62*), 0.522	2.85 (*1.65*), 0.248	1.46 (*4.33*), 0.940	-1.12 (*2.55*), 0.842
LF	3.86 (*2.13*), **0.094**	6.35 (*0.55*), **<0.001**	-1.42 (*0.67*), **0.073**	2.39 (*1.78*), 0.522	3.98 (*1.81*), 0.145	-2.90 (*4.75*), 0.940	-2.27 (*2.80*), 0.842
Fr	2.24 (*3.02*), 0.460	8.21 (*0.77*), **<0.001**	-1.51 (*0.95*), 0.136	3.25 (*2.52*), 0.522	3.32 (*2.57*), 0.398	-8.00 (*6.72*), 0.832	0.94 (*3.96*), 0.878

RD, radial diffusivity; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; IC, internal capsule; CR, corona radiata; CC, corpus callosum; TR, thalamic radiation; FOF, fronto-occipital fasciculus; LF, longitudinal fasciculus; Fr, forceps.

Table S7. *Regression coefficient (β), including standard error (SE) in italics, and significance (p-value) of Axial Diffusivity vs. Hypertension, age, smoking, sex, diabetes, and cholesterol across 14 WM ROIs. The multiple regression model is given by: $AxD \sim \beta_0 + \beta_{age} \times age + \beta_{Hypertension} \times Hypertension + \beta_{SBP} \times SBP + \beta_{Smoking} \times Smoking + \beta_{sex} \times sex + \beta_{Diabetes} \times Diabetes + \beta_{Cholesterol} \times Cholesterol$. The regression model accounted for sex, smoking status, diabetes status and hypertension as categorical variables. Bolded p-values indicate statistical significance (p < 0.05) or close-to-significance (p < 0.1).*

ROIs	Axial Diffusivity (AxD)						
	Hypertension	**Age**	**SBP**	**Smoking**	**Sex**	**Diabetes**	**Cholesterol**
	β *(SE)* *10^-5	β *(SE)* *10^-6	β *(SE)* *10^-6	β *(SE)* *10^-5	β *(SE)* *10^-5	β *(SE)* *10^-5	β *(SE)* *10^-7
WB	3.07 *(1.70)*, **0.086**	3.06 *(0.43)*, **<0.001**	-0.58 *(0.53)*, 0.277	1.77 *(1.41)*, 0.609	4.38 *(1.44)*, **0.045**	-0.64 *(3.78)*, 0.867	-1.46 *(2.23)*, 0.905
FL	5.01 *(1.83)*, **0.012**	4.54 *(0.47)*, **<0.001**	-1.44 *(0.58)*, **0.069**	1.93 *(1.53)*, 0.609	3.38 *(1.56)*, 0.158	-1.49 *(4.08)*, 0.867	-0.29 *(2.40)*, 0.905
OL	4.47 *(1.29)*, **0.003**	3.11 *(0.33)*, **<0.001**	-1.00 *(0.40)*, **0.069**	0.33 *(1.07)*, 0.883	1.64 *(1.09)*, 0.385	-0.53 *(2.87)*, 0.867	-1.95 *(1.69)*, 0.905
PL	1.61 *(1.59)*, 0.336	1.21 *(0.41)*, **0.004**	-0.92 *(0.50)*, **0.098**	-0.30 *(1.32)*, 0.883	-1.16 *(1.35)*, 0.634	1.83 *(3.54)*, 0.867	-1.67 *(2.08)*, 0.905
TL	12.3 *(3.16)*, **0.002**	4.43 *(0.81)*, **<0.001**	-2.01 *(0.99)*, **0.081**	2.80 *(2.63)*, 0.678	1.54 *(2.68)*, 0.763	3.32 *(7.03)*, 0.867	-1.75 *(4.14)*, 0.905
CRB	5.54 *(2.36)*, **0.030**	2.10 *(0.60)*, **<0.001**	-1.71 *(0.74)*, **0.069**	0.78 *(1.97)*, 0.883	1.67 *(2.01)*, 0.634	-0.97 *(5.25)*, 0.867	-3.46 *(3.09)*, 0.905
CC	6.27 *(1.83)*, **0.003**	2.62 *(0.47)*, **<0.001**	-1.14 *(0.57)*, **0.081**	0.92 *(1.53)*, 0.883	-0.24 *(1.56)*, 0.880	6.20 *(4.07)*, 0.867	-1.12 *(2.40)*, 0.905
IC	7.07 *(2.22)*, **0.004**	2.27 *(0.57)*, **<0.001**	-1.16 *(0.70)*, 0.124	0.31 *(1.85)*, 0.883	2.57 *(1.89)*, 0.415	-4.42 *(4.95)*, 0.867	-0.73 *(2.92)*, 0.905
CR	4.90 *(1.30)*, **0.002**	2.09 *(0.33)*, **<0.001**	-0.49 *(0.41)*, 0.256	0.16 *(1.09)*, 0.883	-0.39 *(1.11)*, 0.830	3.89 *(2.90)*, 0.867	-1.09 *(1.71)*, 0.905
CP	5.36 *(1.91)*, **0.011**	2.52 *(0.49)*, **<0.001**	-1.37 *(0.60)*, **0.069**	1.28 *(1.59)*, 0.847	0.86 *(1.62)*, 0.763	4.52 *(4.25)*, 0.867	-2.13 *(2.50)*, 0.905
TR	4.22 *(1.22)*, **0.003**	1.56 *(0.31)*, **<0.001**	-0.98 *(0.38)*, **0.069**	-0.19 *(1.02)*, 0.883	0.45 *(1.04)*, 0.776	1.38 *(2.71)*, 0.867	-1.75 *(1.60)*, 0.905
FOF	7.40 *(2.21)*, **0.003**	3.21 *(0.57)*, **<0.001**	-1.38 *(0.69)*, **0.081**	2.73 *(1.84)*, 0.609	2.93 *(1.88)*, 0.385	1.72 *(4.92)*, 0.867	-0.96 *(2.90)*, 0.905
LF	3.87 *(2.14)*, **0.086**	6.47 *(0.55)*, **<0.001**	-1.47 *(0.67)*, **0.074**	2.36 *(1.78)*, 0.609	3.92 *(1.82)*, 0.158	-2.80 *(4.76)*, 0.867	-2.13 *(2.80)*, 0.905
Fr	2.23 *(3.05)*, 0.465	8.41 *(0.78)*, **<0.001**	-1.56 *(0.96)*, 0.124	3.16 *(2.54)*, 0.609	3.21 *(2.59)*, 0.439	-8.03 *(6.79)*, 0.867	-0.70 *(4.00)*, 0.905

AxD, axial diffusivity; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; IC, internal capsule; CR, corona radiata; CC, corpus callosum; TR, thalamic radiation; FOF, fronto-occipital fasciculus; LF, longitudinal fasciculus; Fr, forceps.