
For paper - remove the MS_16 else need to keep amending the n used. Paper will have an n of 7

Would suggest making the story around the white matter findings for:

right & left white matter GPC+PCh strong positive relationships with %Transferrin (right r = 0.81, p = 0.026; left r = 0.81, p = 0.028) & HB (right r 0.96, p = 0.001; left r = 0.88, p = 0.009)

and potentially include:

right & left white matter myo-Inositol negative relationship with Alcohol intake (Right r = -0.86, p = 0.013, Left r = -0.082, p = 0.025)

MS MRS correlation analysis with symptoms (EDSS) and other biological markers

Normal distribution of all numerically valued variables

Pearson's correlation analyses with factors of age and EDSS scores

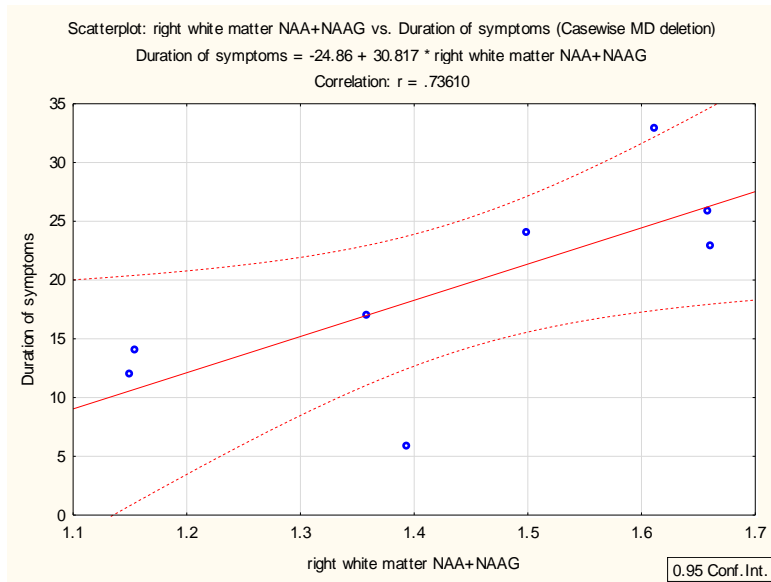
n = 8

Variable	Correlations (MS MRS EDSS & Biological)					
	Age Symptoms	Age Diagnosed	Age at scan time	Duration of symptoms	Duration of diagnosis	EDSS SCORE
right midline grey matter Ins	-0.348194	0.064699	-0.085054	0.420584	-0.182378	-0.458648
right midline grey matter NAA	-0.481173	-0.227591	-0.397305	0.337986	-0.090404	-0.544281
right midline grey matter GPC+PCh	-0.482279	-0.062392	-0.474732	0.272244	-0.409218	-0.566424
right midline grey matter NAA+NAAG	-0.469476	-0.146866	-0.490565	0.240296	-0.304439	-0.653887
left midline grey matter Ins	0.261570	0.557438	0.566091	0.120646	-0.206320	-0.079364
left midline grey matter NAA	-0.448793	-0.399369	-0.323531	0.356136	0.234028	-0.557438
left midline grey matter GPC+PCh	-0.119409	0.352320	-0.006079	0.164308	-0.512791	-0.385982
left midline grey matter NAA+NAAG	-0.556802	-0.644686	-0.439332	0.408862	0.464936	-0.363518
right white matter Ins	-0.105041	0.141009	0.221070	0.341379	0.029645	0.545304
right white matter NAA	-0.509759	-0.123799	-0.202436	0.548001	-0.034800	-0.670491
right white matter GPC+PCh	-0.000773	0.050710	-0.206751	-0.178647	-0.290162	-0.008574
right white matter NAA+NAAG	-0.569951	-0.086394	-0.084406	0.736102	0.035475	-0.398115
left white matter Ins	-0.059943	-0.214249	0.320850	0.364075	0.645129	0.730716
left white matter NAA	-0.341510	0.067913	0.143457	0.609753	0.053146	0.121364
left white matter GPC+PCh	0.053550	0.016710	-0.218457	-0.265977	-0.253595	0.229426
left white matter NAA+NAAG	-0.252675	0.358869	0.091541	0.438450	-0.419615	-0.575297

Closer inspection of significant relationships found:

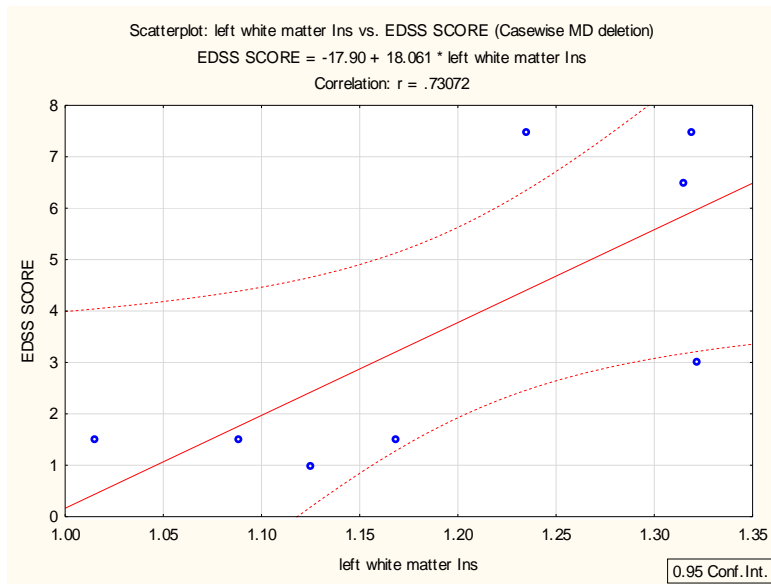
1. right white matter NAA+NAAG and duration of symptoms

	Correlations (MS MRS EDSS & Biological) Marked correlations are significant at $p < .05000$ N=8 (Casewise deletion of missing data)
Variable	Duration of symptoms
right white matter NAA+NAAG	.7361
	p=.037



left white matter Ins and EDSS score

	Correlations (MS MRS EDSS & Biological) Marked correlations are significant at $p < .05000$ N=8 (Casewise deletion of missing data)
Variable	EDSS SCORE
left white matter Ins	.7307
	p=.039



Pearson's correlation analyses with biological factors which are linear

n = 7

Variable	Correlations (MS MRS EDSS & Biological)								
	Marked correlations are significant at p < .05000 N=7 (Casewise deletion of missing data)								
	Serum Iron	Serum Transferrin	% Transferrin saturation	Serum Ferritin	Serum Folate	Homocysteine	HB	Vit B12	
right midline grey matter Ins	-0.035917	0.179401	-0.051697	-0.161615	-0.026017	-0.744815	-0.428490	0.633957	-(
right midline grey matter NAA	-0.136398	0.092643	-0.132979	-0.010829	0.189822	-0.799516	-0.409924	0.514322	-(
right midline grey matter GPC+PCh	0.677570	0.186913	0.692631	-0.636665	0.443731	-0.763682	0.319748	0.231998	-(
right midline grey matter NAA+NAAG	0.008957	-0.027812	0.050213	-0.102417	0.440775	-0.694574	-0.151009	0.065934	-(
left midline grey matter Ins	-0.135876	-0.717860	0.022805	0.190381	0.098986	-0.057743	0.173315	-0.458444	(
left midline grey matter NAA	-0.409015	-0.470245	-0.310577	0.384263	0.070835	-0.385923	-0.246539	0.098590	(
left midline grey matter GPC+PCh	0.448060	-0.439645	0.578256	-0.252297	0.460988	-0.262953	0.546332	-0.537387	-(
left midline grey matter NAA+NAAG	-0.513488	-0.535908	-0.442084	0.850325	-0.267824	0.137324	-0.336868	-0.061668	(
right white matter Ins	0.701717	-0.321859	0.754417	0.134160	-0.128363	0.400690	0.600707	-0.481521	(
right white matter NAA	0.099092	-0.447046	0.204327	-0.000474	-0.086602	-0.186408	0.065841	-0.169143	-(
right white matter GPC+PCh	0.724957	-0.279334	0.814174	-0.358003	0.562314	0.091701	0.958250	-0.674280	-(
right white matter NAA+NAAG	0.266528	-0.336192	0.325756	0.155133	-0.354527	0.169128	0.060914	-0.261763	-(
left white matter Ins	0.183898	-0.490332	0.237633	0.610896	-0.449932	0.542264	0.276472	-0.189006	(
left white matter NAA	0.469409	-0.444708	0.559813	0.188366	-0.085576	-0.125323	0.314413	-0.114350	-(
left white matter GPC+PCh	0.744159	-0.157389	0.807372	-0.325325	0.592886	-0.094944	0.878149	-0.409500	-(
left white matter NAA+NAAG	0.385880	-0.241121	0.471253	-0.382017	0.114104	-0.428436	0.256266	-0.022451	-(

Variable	Correlations (MS MRS EDSS & Biological)							
	Marked correlations are significant at p < .05000 N=7 (Casewise deletion of missing data)							
	Fibrinogen	Cholesterol	Alcohol intake	BMI	Physical Activity	Folate SCORE	Fruit/veg/fibre SCORE	Saturated and Trans fat SCORE
right midline grey matter Ins	-0.346713	-0.446226	0.657524	0.090266	0.221325	-0.455797	-0.268938	-0.103029
right midline grey matter NAA	-0.623485	-0.527937	0.631980	0.255486	0.195011	-0.346787	-0.408236	0.094598
right midline grey matter GPC+PCh	-0.107449	-0.281114	0.295658	-0.009932	0.235300	-0.080742	-0.190580	-0.356795
right midline grey matter NAA+NAAG	-0.482985	-0.314182	0.469015	0.514857	0.408738	-0.165974	-0.690101	0.001364
left midline grey matter Ins	-0.242760	0.465648	0.005336	0.330932	0.161623	0.212397	-0.314024	0.228816
left midline grey matter NAA	-0.723201	-0.068748	0.316503	0.252068	-0.025193	-0.020967	-0.238411	0.466283
left midline grey matter GPC+PCh	-0.045724	0.355180	-0.100536	0.364677	0.265227	0.257039	-0.432897	-0.135952
left midline grey matter NAA+NAAG	-0.484169	0.219085	-0.158108	0.460526	-0.431636	-0.132732	-0.248162	0.403017
right white matter Ins	0.504283	0.704132	-0.858966	0.296381	-0.536549	0.029196	-0.080148	-0.472933
right white matter NAA	0.022834	0.386002	0.087452	0.305242	0.168426	-0.098954	-0.344455	-0.142227
right white matter GPC+PCh	0.153358	0.380901	-0.550100	-0.039825	-0.076203	0.583920	0.085023	-0.112245
right white matter NAA+NAAG	0.448158	0.617841	-0.295204	0.494095	-0.068007	-0.296927	-0.428688	-0.476727
left white matter Ins	0.124670	0.612453	-0.817439	0.035218	-0.930833	0.029081	0.322333	0.012484
left white matter NAA	-0.024306	0.423408	-0.372180	0.322603	-0.437642	-0.119797	-0.190722	-0.232693
left white matter GPC+PCh	-0.057798	0.139561	-0.475193	-0.119702	-0.240804	0.502112	0.174488	-0.049684
left white matter NAA+NAAG	0.034867	0.182617	0.206684	0.043438	0.257224	-0.024498	-0.172891	-0.240667

Closer inspection of significant correlations:

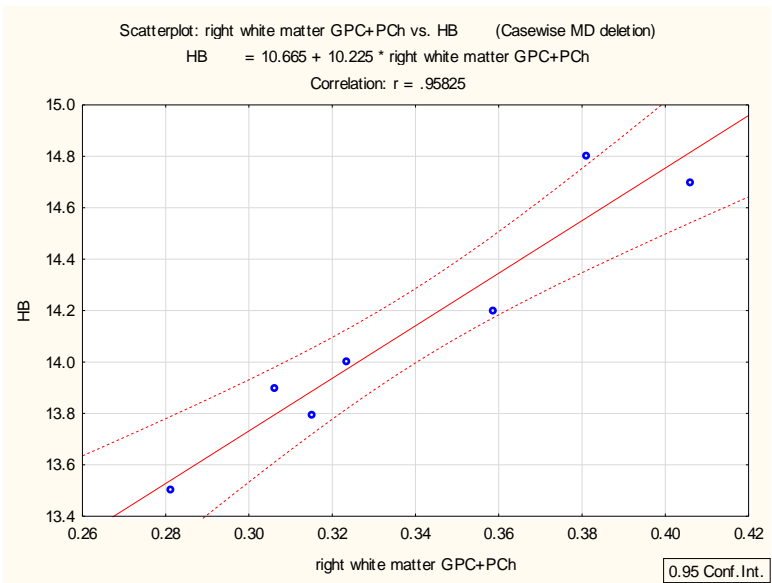
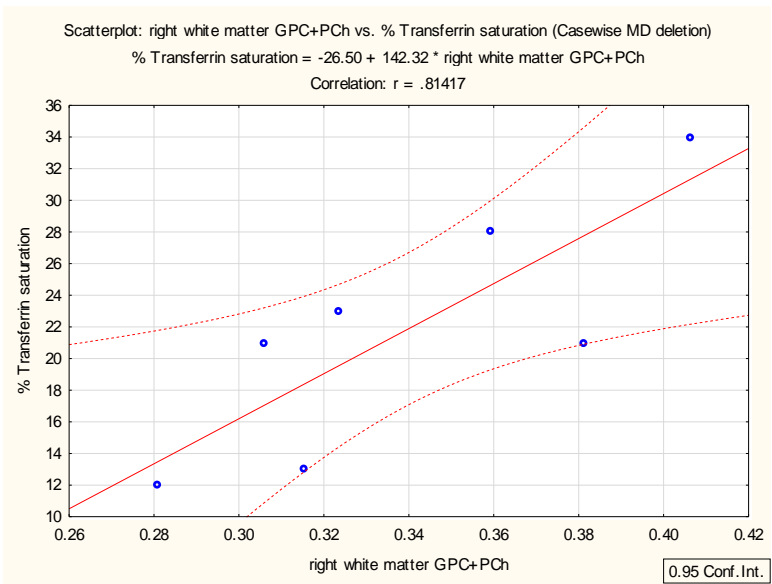
Grey matter - not very strong - no story

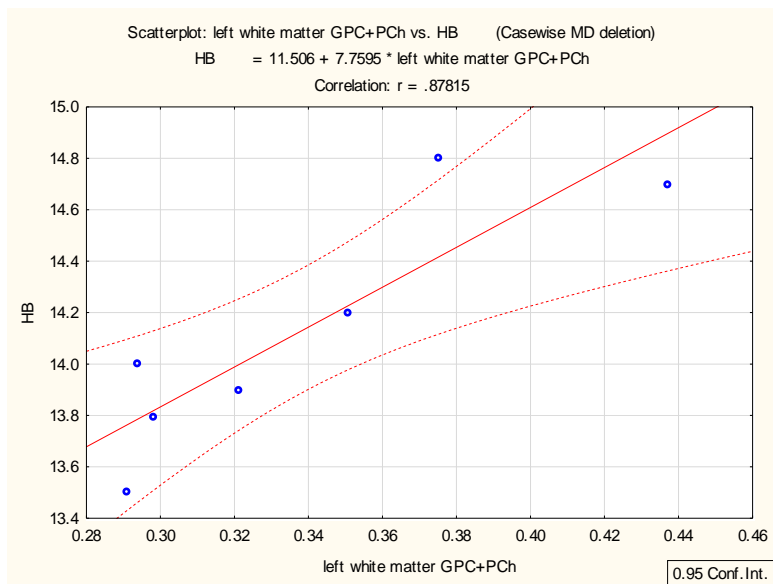
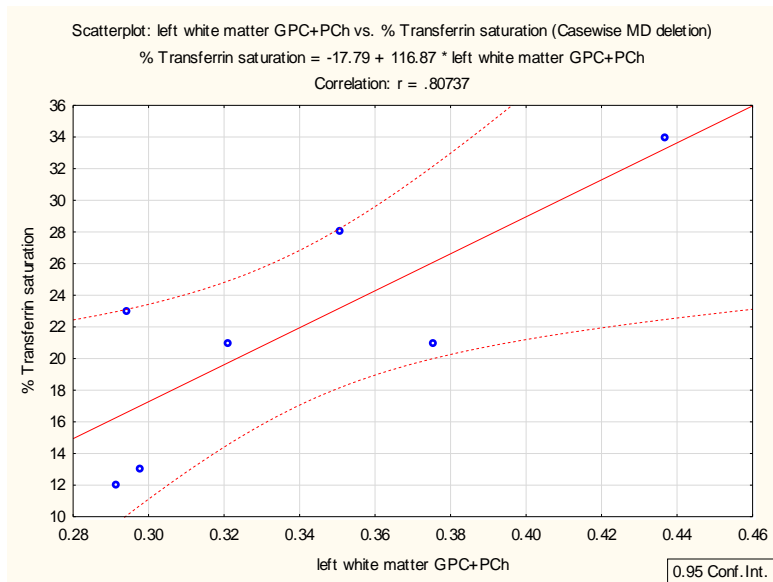
Variable	Correlations (MS MRS EDSS & Biological)			
	Serum Ferritin	Homocysteine	CRP	Alcohol
right midline grey matter Ins	-.1616 p=.729	-.7448 p=.055	-.6322 p=.128	
right midline grey matter NAA	-.0108 p=.982	-.7995 p=.031	-.4604 p=.298	
right midline grey matter GPC+PCh	-.6367 p=.124	-.7637 p=.046	-.9006 p=.006	
right midline grey matter NAA+NAAG	-.1024 p=.827	-.6946 p=.083	-.3271 p=.474	
left midline grey matter Ins	.1904 p=.683	-.0577 p=.902	.1521 p=.745	
left midline grey matter NAA	.3843 p=.395	-.3859 p=.393	.0583 p=.901	
left midline grey matter GPC+PCh	-.2523 p=.585	-.2630 p=.569	-.2288 p=.622	
left midline grey matter NAA+NAAG	.8503 p=.015	.1373 p=.769	.5663 p=.185	

White matter - better story...

Variable	Correlations (MS MRS EDSS & Biological)	
	HB	% Transferrin saturation
right white matter GPC+PCh	.9582 p=.001	.8142 p=.026
left white matter GPC+PCh	.8781 p=.009	.8074 p=.028

right & left white matter strong positive relationships with %Transferrin (right r = 0.81, p = 0.026; left r = 0.81, p = 0.028) & HB (right r 0.96, p = 0.001; left r = 0.88, p = 0.009)

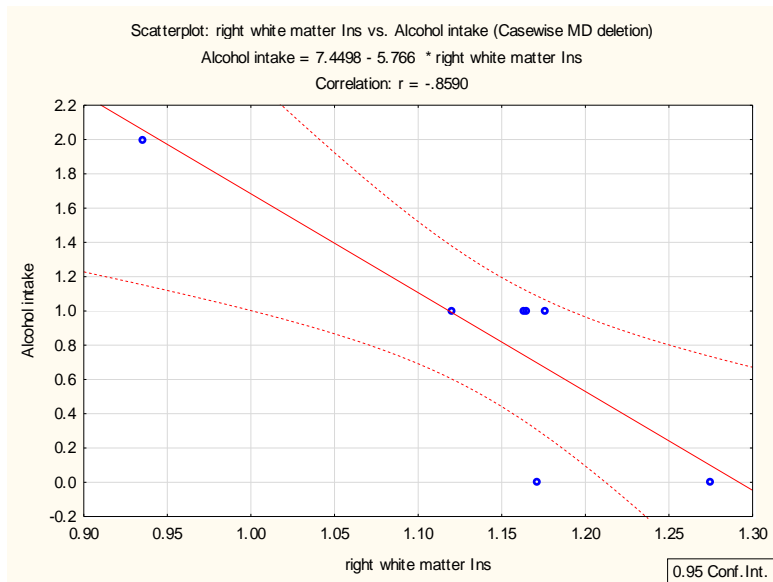




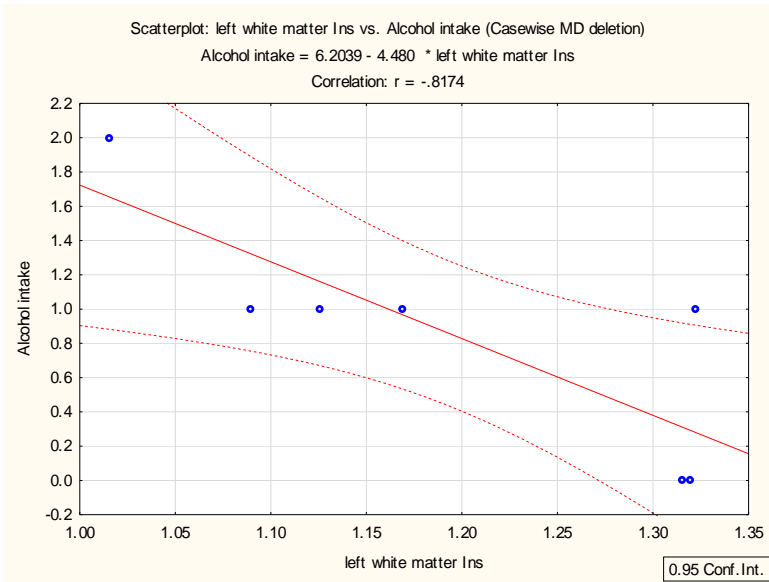
right & left white matter myo-Inositol negative relationship with Alcohol intake (Right $r = -0.86$, $p = 0.013$, Left $r = -0.082$, $p = 0.025$)

left white matter myo-Inositol strong negative correlations with physical activity ($r = -0.93$, $p = 0.002$)

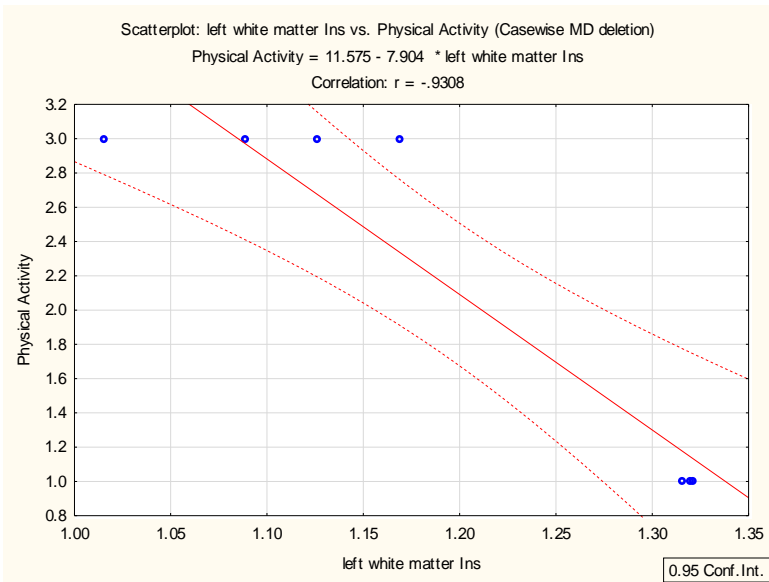
Correlations (MS MRS EDSS & Biologic; Marked correlations are significant at p < .05 N=7 (Casewise deletion of missing data))		
Variable	Alcohol intake	Physical Activity
right white matter Ins	-0.8590 p=.013	-0.5365 p=.214
left white matter Ins	-0.8174 p=.025	-0.9308 p=.002



may be of interest



may be of interest



Data distribution does not look valuable

*****END*****