

BB

Total Fatty Acid Composition of Plasma from Matthew Wulf

	<u>09-03-98</u>	<u>04-05-98</u>	<u>18-5-98</u>	<u>26-5-98</u>	<u>23-6-98</u>	<u>18-8-98</u>
12:0 (lauric acid)	277.32	94.97	46.66	29.79	32.38	25.13
14:0 (myristic acid)	391.81	182.03	122.43	79.12	81.49	84.54
16:0 (palmitic acid)	3131.12	2623.99	2426.74	2081.31	1910.81	1923.23
16:1ω7 (palmitoleic acid)	304.49	204.29	193.32	152.14	109.21	107.80
18:0 (stearic acid)	834.45	897.76	732.95	640.86	641.42	528.38
18:1ω9 (oleic acid)	2210.27	1858.76	1838.06	1509.08	1216.74	1394.70
18:1ω7 (vaccenic acid)	158.35	163.72	163.58	122.19	89.12	88.32
18:2ω6 (linoleic acid)	3381.53	3555.48	2615.87	2024.54	1380.79	1396.58
18:3ω6 (gamma-linolenic acid)	46.82	16.44	22.29	15.96	12.19	12.51
18:3ω3 (alpha-linolenic acid)	79.41	88.40	61.32	37.29	30.04	38.77
20:0 (arachidic acid)	24.72	24.04	21.57	19.85	17.39	12.84
20:1ω9 (gadoleic acid)	38.88	28.11	31.55	24.72	22.39	19.06
20:2ω6 (eicosadienoic acid)	45.15	47.24	37.07	25.82	20.69	17.49
20:3ω9 (eicosatrienoic acid)	16.58	7.45	8.42	6.94	8.42	7.41
20:3ω6 (dihomo-gamma linolenic acid)	205.26	129.18	117.49	89.66	91.95	67.77
20:4ω6 (arachidonic acid, AA)	544.10	630.80	429.38	347.59	428.00	364.05
20:5ω3 (eicosapentaenoic acid, EPA)	35.11	55.12	66.21	58.15	110.92	86.81
22:0 (docosanoic acid)	23.30	25.22	23.54	19.59	24.12	18.30
22:1ω9 (erucic acid)	8.95	8.30	10.22	5.96	5.50	3.08
22:4ω6 (adrenic acid)	21.64	19.19	18.10	13.54	22.94	15.87
22:5ω6 (docosapentaenoic acid)	18.70	16.05	13.38	8.91	13.99	11.44
22:5ω3 (clupanodonic acid)	18.21	17.35	20.42	16.44	36.24	51.46
22:6ω3 (docosahexaenoic acid, DHA)	47.66	172.52	178.40	169.69	228.16	267.01
24:0 (lignoceric acid)	42.73	43.64	39.98	35.15	46.35	25.34
24:1ω9 (nervonic acid)	108.29	117.26	98.81	88.81	85.77	51.06
26:0 (cerotic acid)	6.80	4.73	3.72	2.62	4.88	2.48
26:1ω9 (hexacosenoic acid)	16.25	10.75	8.29	5.85	6.19	3.30
Pristanic Acid	tr	tr	tr	tr	6.18	8.94
Phytanic Acid	1.26	2.87	3.18	3.98	11.73	20.14
24:0/22:0	1.834	1.730	1.698	1.794	1.922	1.385
24:1ω9/22:0	4.648	4.649	4.198	4.533	3.556	2.790
26:0/22:0	0.292	0.188	0.158	0.134	0.202	0.136
26:1ω9/22:0	0.697	0.426	0.352	0.299	0.257	0.180
Plasmalogens	44.2	50.5	48.3	41.0	107.8	68.2
16DMA/16	0.009	0.011	0.010	0.009	0.027	0.018
18DMA/18	0.013	0.017	0.018	0.017	0.050	0.036
18:1DMA/18:1	0.003	0.004	0.005	0.006	0.017	0.009

DHA levels in Matthew have progressively increased since he started the treatment with DHA. Now his DHA levels are totally normal, and the VLCFA levels have decreased, despite the diet much richer in fat than before. This tendency started in March, when a DHA supplement was given (Neuramins) and is more pronounced now. Being external in origin, phytanic and pristanic acids have increased, but the levels are still quite low and do not represent any danger. This is merely the reflection of the complete diet Matthew is taking and, in our experience, this tendency always levels off after a time with the treatment. Although AA has decreased somewhat, the per cent value (5.44%) is still normal. If Matthew eats enough meat AA will not decrease any further. (values are nmol/ml of plasma)

M. Wulf -
infantile Refsum's
Results on DHA

9/29/98
Looks great!
K. Steiner


Vall d'Hebron

Total Fatty Acid Composition of Erythrocytes and from the Wulf

	<u>04-05-98</u>	<u>18-5-98</u>	<u>26-5-98</u>	<u>23-6-98</u>	<u>18-8-98</u>
12:0 (lauric acid)	0.56	0.45	0.24	0.65	0.20
14:0 (myristic acid)	4.41	3.05	2.50	3.85	2.98
16:0 (palmitic acid)	168.98	176.19	187.19	174.87	158.00
16:1 ω 7 (palmitoleic acid)	1.24	1.02	1.80	2.36	1.33
18:0 (stearic acid)	100.62	107.36	111.55	107.73	99.61
18:1 ω 9 (oleic acid)	63.76	77.59	82.48	77.27	68.48
18:1 ω 7 (vaccenic acid)	7.32	8.96	9.36	6.67	6.05
18:2 ω 6 (linoleic acid)	78.72	82.08	80.76	70.51	58.67
18:3 ω 6 (gamma-linolenic acid)	0.24	0.33	0.31	0.35	0.00
18:3 ω 3 (alpha-linolenic acid)	0.94	1.05	0.55	0.73	0.64
20:0 (arachidic acid)	1.26	1.18	1.26	1.98	1.39
20:1 ω 9 (gadoleic acid)	1.28	2.55	1.26	1.70	1.13
20:2 ω 6 (eicosadienoic acid)	2.89	2.81	2.65	2.82	1.81
20:3 ω 9 (eicosatrienoic acid)	0.30	0.19	0.33	0.46	0.46
20:3 ω 6 (dihomo-gamma linolenic acid)	13.88	13.46	12.75	12.34	8.24
20:4 ω 6 (arachidonic acid, AA)	79.48	81.53	81.22	77.53	69.89
20:5 ω 3 (eicosapentaenoic acid, EPA)	3.55	4.12	5.59	10.87	11.24
22:0 (docosanoic acid)	4.49	4.33	4.13	4.93	4.90
22:1 ω 9 (erucic acid)	0.25	0.83	0.35	0.51	0.48
22:4 ω 6 (adrenic acid)	13.42	13.04	12.04	10.10	7.27
22:5 ω 6 (docosapentaenoic acid)	6.81	6.13	5.31	4.22	2.11
22:5 ω 3 (clupanodonic acid)	10.22	10.72	10.71	11.53	9.63
22:6 ω 3 (docosahexaenoic acid, DHA)	22.35	26.20	29.27	40.88	40.21
24:0 (lignoceric acid)	15.84	16.64	16.06	17.46	11.07
24:1 ω 9 (nervonic acid)	29.35	30.85	32.26	31.10	27.57
26:0 (cerotic acid)	1.15	1.00	0.95	1.36	1.34
26:1 ω 9 (hexacosenoic acid)	1.93	2.09	1.79	2.08	1.59
Pristanic Acid	ND	ND	ND	ND	ND
Phytanic Acid	ND	ND	ND	0.12	0.07
24:0/22:0	3.527	3.844	3.884	3.541	2.259
24:1 ω 9/22:0	6.533	7.126	7.802	6.307	5.626
26:0/22:0	0.255	0.230	0.230	0.275	0.273
26:1 ω 9/22:0	0.429	0.484	0.432	0.423	0.325
Plasmalogens	27.79	31.36	33.14	34.35	36.67
16DMA/16	0.067	0.068	0.068	0.079	0.098
18DMA/18	0.118	0.129	0.127	0.128	0.143
18:1DMA/18:1	0.060	0.058	0.062	0.074	0.085

A normalization of the DHA levels, together with an increase in plasmalogens, has been noticed in Matthew since he started the treatment with DHA ethyl ester. There is a tendency for AA to decrease, although the AA/LA ratio is now more normal than before. (figures are pmol/million of RBC).