

Supplementary table 1 – Comparison of cord serum metabolites between metformin, insulin, and diet treatment groups

	Unit	Diet		Insulin		Metformin		p-values			
		median [IQR]	n	median [IQR]	n	median [IQR]	n	Overall	Diet vs insulin	Diet vs metformin	Insulin vs metformin
Triglycerides											
Total triglycerides	mmol/l	0.36 [0.28–0.46]	113	0.31 [0.26–0.44]	97	0.32 [0.25–0.43]	98	0.22	0.24	0.39	0.96
Triglycerides in VLDL	mmol/l	0.14 [0.1–0.22]	113	0.12 [0.086–0.21]	97	0.13 [0.076–0.22]	98	0.27	0.28	0.43	0.99
Triglycerides in LDL	mmol/l	0.085 [0.073–0.095]	113	0.077 [0.068–0.089]	97	0.079 [0.068–0.086]	98	0.091	0.17	0.13	1
Triglycerides in HDL	mmol/l	0.057 [0.048–0.071]	113	0.052 [0.045–0.067]	97	0.055 [0.046–0.066]	98	0.32	0.29	0.73	0.75
Triglycerides in chylomicrons and extremely large VLDL	mmol/l	0 [0–0]	113	0 [0–0]	97	0 [0–0]	98	0.6	0.89	0.84	0.57
Triglycerides in very large VLDL	mmol/l	0 [0–0.0031]	113	0 [0–0]	97	0 [0–0.0048]	98	0.47	0.43	0.93	0.7
Triglycerides in large VLDL	mmol/l	0.011 [0–0.03]	113	0.0073 [0–0.023]	97	0.0037 [0–0.03]	98	0.42	0.69	0.42	0.86
Triglycerides in medium VLDL	mmol/l	0.043 [0.02–0.075]	113	0.032 [0.01–0.066]	97	0.032 [0.00046–0.069]	98	0.27	0.38	0.32	0.97
Triglycerides in small VLDL	mmol/l	0.055 [0.042–0.073]	113	0.047 [0.038–0.069]	97	0.05 [0.039–0.069]	98	0.17	0.16	0.42	0.83
Triglycerides in very small VLDL	mmol/l	0.039 [0.033–0.047]	113	0.035 [0.031–0.045]	97	0.037 [0.032–0.043]	98	0.078	0.084	0.24	0.81
Triglycerides in HDL	mmol/l	0.063 [0.055–0.071]	113	0.059 [0.051–0.067]	97	0.059 [0.052–0.065]	98	0.098	0.18	0.14	1
Triglycerides in large LDL	mmol/l	0.058 [0.051–0.068]	113	0.055 [0.048–0.064]	97	0.056 [0.048–0.06]	98	0.19	0.34	0.2	1
Triglycerides in medium LDL	mmol/l	0.017 [0.014–0.02]	113	0.016 [0.014–0.018]	97	0.016 [0.013–0.018]	98	0.18	0.31	0.2	1
Triglycerides in small LDL	mmol/l	0.0067 [0.0057–0.0081]	113	0.0061 [0.0053–0.0073]	97	0.0062 [0.0056–0.0073]	98	0.16	0.18	0.3	0.95
Triglycerides in very large HDL	mmol/l	0.0033 [0.0027–0.0041]	113	0.0033 [0.0025–0.0041]	97	0.0031 [0.0027–0.0039]	98	0.34	0.54	0.33	0.99
Triglycerides in large HDL	mmol/l	0.012 [0.0089–0.015]	113	0.012 [0.0078–0.015]	97	0.011 [0.0092–0.015]	98	0.7	0.76	0.74	0.98
Triglycerides in medium HDL	mmol/l	0.018 [0.014–0.022]	113	0.016 [0.013–0.021]	97	0.017 [0.013–0.022]	98	0.34	0.31	0.87	0.65
Triglycerides in small HDL	mmol/l	0.024 [0.021–0.029]	113	0.022 [0.019–0.028]	97	0.023 [0.02–0.029]	98	0.16	0.15	0.74	0.47
Cholesterol											
Total cholesterol	mmol/l	2 [1.6–2.5]	113	1.9 [1.7–2.3]	97	1.9 [1.6–2.3]	98	0.4	0.76	0.38	0.78
Total cholesterol minus HDL-C	mmol/l	1.2 [0.89–1.6]	113	1.1 [0.91–1.4]	97	1.1 [0.84–1.3]	98	0.2	0.52	0.19	0.73
Remnant cholesterol (non-HDL, non-LDL, cholesterol)	mmol/l	0.62 [0.54–0.77]	113	0.59 [0.5–0.69]	97	0.58 [0.51–0.68]	98	0.046	0.11	0.07	0.99
VLDL cholesterol	mmol/l	0.25 [0.18–0.32]	113	0.22 [0.16–0.28]	97	0.21 [0.16–0.28]	98	0.039	0.082	0.07	0.99
Clinical LDL cholesterol	mmol/l	0.63 [0.32–1]	113	0.59 [0.38–0.85]	97	0.54 [0.27–0.83]	98	0.31	0.75	0.29	0.69
LDL cholesterol	mmol/l	0.57 [0.32–0.82]	113	0.58 [0.38–0.71]	97	0.54 [0.27–0.69]	98	0.29	0.72	0.28	0.63
HDL cholesterol	mmol/l	0.81 [0.73–0.95]	113	0.82 [0.72–0.95]	97	0.82 [0.74–0.92]	98	0.86	0.85	0.97	0.94
Cholesterol in chylomicrons and extremely large VLDL	mmol/l	0 [0–0]	113	0 [0–0]	97	0 [0–0]	98	0.63	0.88	0.87	0.6
Cholesterol in very large VLDL	mmol/l	0 [0–0.012]	113	0 [0–0]	97	0 [0–0.0097]	98	0.36	0.33	0.82	0.68
Cholesterol in large VLDL	mmol/l	0.013 [0–0.029]	113	0.011 [0–0.026]	97	0.0069 [0–0.026]	98	0.23	0.49	0.24	0.8
Cholesterol in medium VLDL	mmol/l	0.019 [0.0034–0.051]	113	0.016 [0.0025–0.035]	97	0.012 [0.00046–0.033]	98	0.14	0.37	0.14	0.87
Cholesterol in small VLDL	mmol/l	0.065 [0.045–0.086]	113	0.055 [0.039–0.075]	97	0.053 [0.036–0.074]	98	0.049	0.11	0.078	0.93
Cholesterol in very small VLDL	mmol/l	0.13 [0.11–0.14]	113	0.12 [0.11–0.14]	97	0.12 [0.11–0.13]	98	0.11	0.32	0.11	0.88
Cholesterol in IDL	mmol/l	0.38 [0.34–0.44]	113	0.36 [0.33–0.41]	97	0.36 [0.33–0.41]	98	0.18	0.31	0.21	0.99
Cholesterol in large LDL	mmol/l	0.37 [0.17–0.52]	113	0.35 [0.24–0.46]	97	0.33 [0.15–0.45]	98	0.28	0.7	0.27	0.68
Cholesterol in medium LDL	mmol/l	0.13 [0.076–0.18]	113	0.11 [0.075–0.16]	97	0.11 [0.061–0.16]	98	0.26	0.59	0.26	0.73
Cholesterol in small LDL	mmol/l	0.09 [0.072–0.11]	113	0.086 [0.072–0.1]	97	0.084 [0.067–0.098]	98	0.22	0.57	0.22	0.67
Cholesterol in very large HDL	mmol/l	0.1 [0.087–0.12]	113	0.11 [0.091–0.12]	97	0.1 [0.085–0.12]	98	0.63	0.99	0.73	0.64
Cholesterol in large HDL	mmol/l	0.23 [0.16–0.3]	113	0.23 [0.17–0.3]	97	0.23 [0.17–0.28]	98	0.77	0.93	0.93	0.75
Cholesterol in medium HDL	mmol/l	0.24 [0.2–0.28]	113	0.25 [0.21–0.29]	97	0.24 [0.21–0.28]	98	0.73	0.75	0.83	0.97
Cholesterol in small HDL	mmol/l	0.25 [0.23–0.28]	113	0.25 [0.22–0.28]	97	0.25 [0.22–0.28]	98	1	1	1	1
Total lipids											
Total lipids in lipoprotein particles	mmol/l	3.8 [3.2–4.6]	113	3.7 [3.2–4.3]	97	3.7 [3.1–4.2]	98	0.46	0.68	0.45	0.91
Total lipids in VLDL	mmol/l	0.55 [0.38–0.74]	113	0.47 [0.33–0.65]	97	0.45 [0.34–0.63]	98	0.09	0.14	0.15	1
Total lipids in LDL	mmol/l	0.89 [0.59–1.2]	113	0.87 [0.65–1.1]	97	0.84 [0.53–1]	98	0.26	0.68	0.25	0.66
Total lipids in HDL	mmol/l	1.7 [1.6–2]	113	1.8 [1.6–2]	97	1.8 [1.6–2]	98	0.86	0.87	0.92	0.98
Total lipids in chylomicrons and extremely large VLDL	mmol/l	0 [0–0]	113	0 [0–0]	97	0 [0–0]	98	0.6	0.88	0.84	0.58
Total lipids in very large VLDL	mmol/l	0 [0–0.022]	113	0 [0–0]	97	0 [0–0.02]	98	0.42	0.4	0.89	0.69
Total lipids in large VLDL	mmol/l	0.033 [0–0.074]	113	0.023 [0–0.065]	97	0.016 [0–0.069]	98	0.35	0.62	0.34	0.84
Total lipids in medium VLDL	mmol/l	0.093 [0.028–0.16]	113	0.071 [0.018–0.13]	97	0.055 [0.0013–0.12]	98	0.12	0.22	0.16	0.89
Total lipids in small VLDL	mmol/l	0.15 [0.11–0.2]	113	0.12 [0.097–0.18]	97	0.13 [0.093–0.18]	98	0.085	0.12	0.16	1
Total lipids in very small VLDL	mmol/l	0.24 [0.21–0.27]	113	0.23 [0.2–0.26]	97	0.23 [0.2–0.25]	98	0.078	0.17	0.099	0.98
Total lipids in IDL	mmol/l	0.57 [0.51–0.69]	113	0.56 [0.5–0.63]	97	0.55 [0.5–0.62]	98	0.23	0.4	0.24	0.96
Total lipids in large LDL	mmol/l	0.57 [0.32–0.75]	113	0.54 [0.39–0.68]	97	0.52 [0.3–0.66]	98	0.28	0.71	0.26	0.68
Total lipids in medium LDL	mmol/l	0.2 [0.13–0.27]	113	0.18 [0.13–0.24]	97	0.17 [0.11–0.24]	98	0.25	0.56	0.25	0.74
Total lipids in small LDL	mmol/l	0.15 [0.13–0.18]	113	0.15 [0.13–0.17]	97	0.14 [0.12–0.16]	98	0.17	0.48	0.16	0.7
Total lipids in very large HDL	mmol/l	0.21 [0.17–0.24]	113	0.21 [0.17–0.25]	97	0.2 [0.16–0.24]	98	0.69	1	0.77	0.69
Total lipids in large HDL	mmol/l	0.46 [0.34–0.58]	113	0.47 [0.35–0.59]	97	0.46 [0.37–0.56]	98	0.88	0.94	0.99	0.87
Total lipids in medium HDL	mmol/l	0.49 [0.42–0.57]	113	0.5 [0.44–0.57]	97	0.5 [0.44–0.56]	98	0.8	0.85	0.83	1
Total lipids in small HDL	mmol/l	0.61 [0.55–0.68]	113	0.6 [0.56–0.67]	97	0.6 [0.55–0.69]	98	0.95	0.94	0.98	1
Lipoprotein particle concentrations											
Total concentration of lipoprotein particles	mmol/l	0.011 [0.0094–0.013]	113	0.011 [0.0099–0.013]	97	0.011 [0.0097–0.013]	98	0.95	0.98	1	0.92
Concentration of VLDL particles	mmol/l	7.2e-05 [5.6e-05–9.4e-05]	113	6.4e-05 [4.9e-05–8e-05]	97	6.4e-05 [5e-05–8.1e-05]	98	0.087	0.15	0.14	1
Concentration of LDL particles	mmol/l	0.00034 [0.00023–5e-04]	113	0.00032 [0.00022–0.00043]	97	3e-04 [0.00019–0.00041]	98	0.15	0.46	0.15	0.69
Concentration of HDL particles	mmol/l	0.011 [0.009–0.012]	113	0.011 [0.0095–0.012]	97	0.011 [0.0093–0.012]	98	0.91	0.93	0.98	0.93
Concentration of chylomicrons and extremely large VLDL particles	mmol/l	0 [0–0]	113	0 [0–0]	97	0 [0–0]	98	0.61	0.87	0.85	0.59
Concentration of very large VLDL particles	mmol/l	0 [0–8.4e-07]	113	0 [0–0]	97	0 [0–7.3e-07]	98	0.41	0.37	0.86	0.71
Concentration of large VLDL particles	mmol/l	1.9e-06 [0–3.6e-06]	113	1.5e-06 [0–3.2e-06]	97	1.4e-06 [0–3.3e-06]	98	0.34	0.6	0.33	0.85
Concentration of medium VLDL particles	mmol/l	7.4e-06 [2e-06–1.3e-05]	113	5.3e-06 [1e-06–9.7e-06]	97	4.4e-06 [4.7e-08–9.6e-06]	98	0.092	0.2	0.12	0.88
Concentration of small VLDL particles	mmol/l	1.9e-05 [1.4e-05–2.6e-05]	113	1.5e-05 [1.2e-05–2.4e-05]	97	1.7e-05 [1.2e-05–2.4e-05]	98	0.11	0.14	0.21	0.99
Concentration of very small VLDL particles	mmol/l	4.1e-05 [3.7e-05–4.9e-05]	113	4e-05 [3.4e-05–4.6e-05]	97	3.9e-05 [3.5e-05–4.4e-05]	98	0.12	0.27	0.13	0.92
Concentration of IDL particles	mmol/l	0.00013 [9.3e-05–0.00017]	113	0.00012 [9.9e-05–0.00015]	97	0.00012 [9.4e-05–0.00015]	98	0.35	0.71	0.33	0.77
Concentration of large LDL particles	mmol/l	0.00016 [9.3e-05–0.00027]	113	0.00014 [9.2e-05–0.00021]	97	0.00013 [6.8e-05–0.00021]	98	0.15	0.47	0.15	0.68
Concentration of medium LDL particles	mmol/l	8.4e-05 [5.1e-05–0.00012]	113	7.1e-05 [4.5e-05–0.00011]	97	6.7e-05 [3.9e-05–0.00011]	98	0.18	0.41	0.2	0.76
Concentration of small LDL particles	mmol/l	1e-04 [8.6e-05–0.00012]	113	9.7e-05 [8.6e-05–0.00011]	97	9.5e-05 [8.3e-05–0.00011]	98	0.15	0.46	0.13	0.77
Concentration of very large HDL particles	mmol/l	0.00033 [0.00027–4e-04]	113	0.00033 [0.00027–4e-04]	97	0.00032 [0.00027–0.00038]	98	0.66	0.99	0.69	0.73
Concentration of large HDL particles	mmol/l	0.0013 [0.00087–0.0017]	113	0.0013 [0.00091–0.0018]	97	0.0013 [0.00097–0.0016]	98	0.88	0.96	0.97	0.87

Concentration of medium HDL particles	mmol/l	0.0025 [0.0018–0.0028]	113	0.0023 [0.0019–0.0028]	97	0.0023 [0.0019–0.0027]	98	0.86	0.88	0.91	0.99
Concentration of small HDL particles	mmol/l	0.0068 [0.0059–0.0076]	113	0.0068 [0.006–0.0075]	97	0.0066 [0.0059–0.0079]	98	0.95	1	0.97	0.94
Phospholipids											
Total phospholipids in lipoprotein particles	mmol/l	1.4 [1.2–1.6]	113	1.4 [1.2–1.6]	97	1.4 [1.2–1.6]	98	0.81	0.92	0.81	0.96
Phospholipids in VLDL	mmol/l	0.13 [0.096–0.19]	113	0.12 [0.083–0.16]	97	0.12 [0.082–0.16]	98	0.078	0.12	0.13	1
Phospholipids in LDL	mmol/l	0.24 [0.19–0.3]	113	0.23 [0.2–0.27]	97	0.23 [0.19–0.27]	98	0.31	0.67	0.3	0.72
Phospholipids in HDL	mmol/l	0.89 [0.78–0.99]	113	0.9 [0.8–1]	97	0.91 [0.81–0.99]	98	0.79	0.86	0.8	1
Phosphoglycerides	mmol/l	1.3 [1.1–1.5]	112	1.2 [1–1.4]	97	1.2 [1–1.4]	97	0.37	0.55	0.37	0.98
Ratio of triglycerides to phosphoglycerides	ratio	0.27 [0.24–0.36]	112	0.27 [0.23–0.32]	97	0.27 [0.23–0.33]	97	0.23	0.21	0.62	0.72
Total cholines	mmol/l	1.5 [1.2–1.7]	113	1.4 [1.2–1.7]	97	1.4 [1.2–1.6]	98	0.4	0.58	0.41	0.97
Phosphatidylcholines	mmol/l	1.2 [1–1.4]	113	1.2 [1–1.4]	97	1.2 [1–1.4]	98	0.45	0.49	0.57	1
Sphingomyelins	mmol/l	0.19 [0.15–0.24]	113	0.19 [0.16–0.23]	97	0.18 [0.15–0.22]	98	0.51	0.98	0.67	0.5
Phospholipids in chylomicrons and extremely large VLDL	mmol/l	0 [0–0]	113	0 [0–0]	97	0 [0–0]	98	0.61	0.88	0.85	0.59
Phospholipids in very large VLDL	mmol/l	0 [0–0.0068]	113	0 [0–0]	97	0 [0–0.0045]	98	0.42	0.38	0.84	0.75
Phospholipids in large VLDL	mmol/l	0.0081 [0–0.018]	113	0.0068 [0–0.016]	97	0.0049 [0–0.016]	98	0.32	0.6	0.32	0.82
Phospholipids in medium VLDL	mmol/l	0.02 [0.0036–0.033]	113	0.013 [0.00096–0.025]	97	0.012 [7.6e-06–0.026]	98	0.094	0.22	0.12	0.84
Phospholipids in small VLDL	mmol/l	0.031 [0.021–0.042]	113	0.025 [0.017–0.034]	97	0.025 [0.017–0.035]	98	0.08	0.16	0.12	0.96
Phospholipids in very small VLDL	mmol/l	0.07 [0.063–0.08]	113	0.067 [0.059–0.076]	97	0.067 [0.06–0.073]	98	0.07	0.15	0.095	1
Phospholipids in HDL	mmol/l	0.15 [0.12–0.17]	113	0.14 [0.12–0.16]	97	0.14 [0.12–0.16]	98	0.46	0.79	0.46	0.78
Phospholipids in large LDL	mmol/l	0.13 [0.1–0.17]	113	0.13 [0.1–0.16]	97	0.13 [0.1–0.15]	98	0.36	0.75	0.34	0.76
Phospholipids in medium LDL	mmol/l	0.052 [0.038–0.068]	113	0.048 [0.038–0.062]	97	0.047 [0.035–0.062]	98	0.27	0.62	0.26	0.77
Phospholipids in small LDL	mmol/l	0.056 [0.051–0.061]	113	0.055 [0.05–0.059]	97	0.054 [0.05–0.058]	98	0.12	0.45	0.12	0.66
Phospholipids in very large HDL	mmol/l	0.099 [0.081–0.12]	113	0.1 [0.081–0.12]	97	0.097 [0.076–0.12]	98	0.72	0.99	0.81	0.71
Phospholipids in large HDL	mmol/l	0.22 [0.17–0.27]	113	0.22 [0.17–0.28]	97	0.22 [0.18–0.26]	98	0.91	0.92	1	0.92
Phospholipids in medium HDL	mmol/l	0.23 [0.21–0.27]	113	0.24 [0.21–0.27]	97	0.24 [0.21–0.27]	98	0.73	0.82	0.74	1
Phospholipids in small HDL	mmol/l	0.33 [0.3–0.38]	113	0.33 [0.31–0.37]	97	0.33 [0.31–0.38]	98	0.99	0.98	1	1
Particle diameter											
Average diameter for VLDL particles	nm	35 [34–36]	113	35 [34–35]	97	34 [33–36]	98	0.19	0.26	0.28	1
Average diameter for LDL particles	nm	23 [22–23]	113	23 [22–23]	97	23 [22–23]	98	0.15	0.5	0.14	0.63
Average diameter for HDL particles	nm	9.8 [9.6–9.9]	113	9.8 [9.6–10]	97	9.8 [9.6–9.9]	98	0.86	0.94	0.98	0.84
Apoproteins											
Apolipoprotein B	g/l	0.28 [0.2–0.4]	113	0.26 [0.2–0.33]	97	0.24 [0.18–0.33]	98	0.15	0.43	0.14	0.73
Apolipoprotein A1	g/l	0.76 [0.66–0.86]	113	0.78 [0.68–0.87]	97	0.78 [0.69–0.86]	98	0.77	0.82	0.8	1
Ratio of apolipoprotein B to apolipoprotein A1	ratio	0.37 [0.27–0.47]	113	0.35 [0.26–0.42]	97	0.31 [0.24–0.41]	98	0.052	0.23	0.054	0.69
Fatty acids											
Total fatty acids	mmol/l	7.7 [6.7–8.7]	113	7.3 [6.6–8.2]	97	7.4 [6.7–8.1]	98	0.15	0.21	0.25	0.95
Degree of unsaturation	degree	0.83 [0.71–0.94]	113	0.79 [0.65–0.91]	97	0.79 [0.67–0.89]	98	0.17	0.25	0.24	1
Omega-3 fatty acids	mmol/l	0.28 [0.21–0.39]	113	0.26 [0.19–0.36]	97	0.28 [0.18–0.38]	98	0.17	0.18	0.35	0.97
Omega-6 fatty acids	mmol/l	2.9 [2.6–3.1]	113	2.8 [2.6–3]	97	2.8 [2.6–3]	98	0.18	0.21	0.32	0.99
Polysaturated fatty acids	mmol/l	3.2 [2.9–3.5]	113	3 [2.8–3.3]	97	3.1 [2.8–3.3]	98	0.094	0.12	0.2	0.93
Monounsaturated fatty acids	mmol/l	1.7 [1.4–2]	113	1.5 [1.3–1.8]	97	1.5 [1.4–1.8]	98	0.16	0.2	0.28	0.93
Saturated fatty acids	mmol/l	2.7 [2.4–3.1]	113	2.6 [2.4–3]	97	2.7 [2.4–2.9]	98	0.31	0.38	0.41	1
Linoleic acid	mmol/l	1.9 [1.6–2.2]	113	1.7 [1.6–2]	97	1.8 [1.6–2.1]	98	0.052	0.056	0.18	0.87
Docosahexaenoic acid	mmol/l	0.34 [0.28–0.41]	113	0.31 [0.26–0.36]	97	0.31 [0.28–0.36]	98	0.021	0.031	0.1	0.65
Fatty acid ratios											
Ratio of omega-3 fatty acids to total fatty acids	%	3.8 [3.1–4.9]	113	3.6 [2.8–4.6]	97	3.5 [2.6–4.7]	98	0.23	0.26	0.37	0.99
Ratio of omega-6 fatty acids to total fatty acids	%	38 [36–40]	113	38 [37–40]	97	39 [37–40]	98	0.51	0.57	0.59	0.99
Ratio of polysaturated fatty acids to total fatty acids	%	42 [41–44]	113	42 [41–43]	97	42 [41–43]	98	0.87	0.94	0.86	0.98
Ratio of monounsaturated fatty acids to total fatty acids	%	22 [20–23]	113	21 [20–23]	97	22 [20–23]	98	0.29	0.28	0.56	0.85
Ratio of saturated fatty acids to total fatty acids	%	36 [35–37]	113	36 [36–37]	97	36 [36–37]	98	0.025	0.027	0.22	0.43
Ratio of linoleic acid to total fatty acids	%	25 [23–27]	113	24 [23–26]	97	24 [23–26]	98	0.059	0.055	0.36	0.52
Ratio of docosahexaenoic acid to total fatty acids	%	4.4 [4–4.9]	113	4.2 [3.9–4.5]	97	4.3 [4.1–4.6]	98	0.059	0.057	0.43	0.41
Ratio of polysaturated fatty acids to monounsaturated fatty acids	ratio	1.9 [1.8–2.1]	113	2 [1.8–2.1]	97	2 [1.8–2.2]	98	0.41	0.41	0.61	0.96
Ratio of omega-6 fatty acids to omega-3 fatty acids	ratio	9.7 [7.5–13]	113	11 [8.2–15]	97	11 [7.7–15]	98	0.23	0.25	0.39	0.98
Amino acids											
Alanine	mmol/l	0.46 [0.4–0.53]	113	0.45 [0.4–0.52]	97	0.53 [0.45–0.59]	98	1.7e-05***	0.8	3e-04**	6.9e-05***
Glutamine	mmol/l	0.49 [0.41–0.56]	72	0.49 [0.44–0.56]	55	0.48 [0.41–0.58]	52	0.85	1	0.86	0.88
Glycine	mmol/l	0.25 [0.22–0.29]	113	0.24 [0.22–0.27]	97	0.25 [0.22–0.28]	98	0.79	0.78	0.93	0.93
Histidine	mmol/l	0.1 [0.093–0.11]	113	0.11 [0.097–0.11]	97	0.11 [0.097–0.12]	98	0.35	0.65	0.55	0.83
Total concentration of branched-chain amino acids (leucine + isoleucine + valine)	mmol/l	0.4 [0.36–0.45]	113	0.39 [0.35–0.43]	96	0.41 [0.36–0.45]	98	0.19	0.8	0.46	0.16
Isoleucine	mmol/l	0.06 [0.05–0.069]	113	0.058 [0.05–0.069]	97	0.061 [0.053–0.068]	98	0.52	0.96	0.63	0.55
Leucine	mmol/l	0.12 [0.1–0.13]	113	0.11 [0.1–0.13]	97	0.11 [0.1–0.13]	98	0.72	0.81	0.97	0.74
Valine	mmol/l	0.22 [0.2–0.25]	113	0.22 [0.2–0.24]	96	0.23 [0.2–0.26]	98	0.064	0.82	0.17	0.075
Phenylalanine	mmol/l	0.086 [0.079–0.093]	113	0.085 [0.078–0.093]	97	0.089 [0.08–0.098]	98	0.19	0.99	0.24	0.27
Tyrosine	mmol/l	0.061 [0.055–0.067]	113	0.065 [0.057–0.072]	97	0.063 [0.055–0.07]	98	0.17	0.15	0.79	0.46
Glucose metabolism											
Glucose	mmol/l	4.3 [3.4–5.4]	113	4 [3.4–5]	97	4.4 [3.4–5.4]	98	0.68	0.87	0.9	0.67
Lactate	mmol/l	5.8 [4.8–7.4]	113	5.8 [4.5–7.6]	97	6.1 [5–7.6]	98	0.57	0.99	0.61	0.64
Pyruvate	mmol/l	0.11 [0.08–0.14]	71	0.12 [0.086–0.15]	54	0.11 [0.09–0.15]	52	0.89	0.88	0.95	1
Citrate	mmol/l	0.031 [0.025–0.038]	113	0.033 [0.026–0.038]	97	0.032 [0.025–0.039]	98	0.51	0.5	0.87	0.77
Glycerol	mmol/l	0.12 [0.091–0.15]	103	0.12 [0.092–0.14]	92	0.11 [0.092–0.15]	95	0.95	0.94	0.97	1
3-Hydroxybutyrate	mmol/l	0.16 [0.078–0.29]	113	0.15 [0.08–0.26]	96	0.17 [0.075–0.31]	97	0.63	0.93	0.83	0.58
Acetate	mmol/l	0.037 [0.029–0.047]	113	0.037 [0.03–0.048]	97	0.039 [0.031–0.049]	98	0.34	0.9	0.3	0.64
Acetoacetate	mmol/l	0.0012 [0–0.0031]	113	0.0013 [0–0.0036]	97	0.00041 [0–0.0027]	98	0.59	0.9	0.79	0.58
Acetone	mmol/l	0.037 [0.023–0.052]	113	0.035 [0.021–0.05]	97	0.037 [0.023–0.06]	98	0.45	0.78	0.81	0.42
Inflammation											
Glycoprotein acetyls	mmol/l	0.5 [0.45–0.58]	113	0.47 [0.44–0.55]	97	0.5 [0.46–0.55]	98	0.17	0.2	0.84	0.31

Overall p-value is calculated using the Kruskal-Wallis test, and for between group comparisons using the Dwass-Steel test. IQR: interquartile range. * p < 0.01, ** p < 0.001, *** p < 0.0001