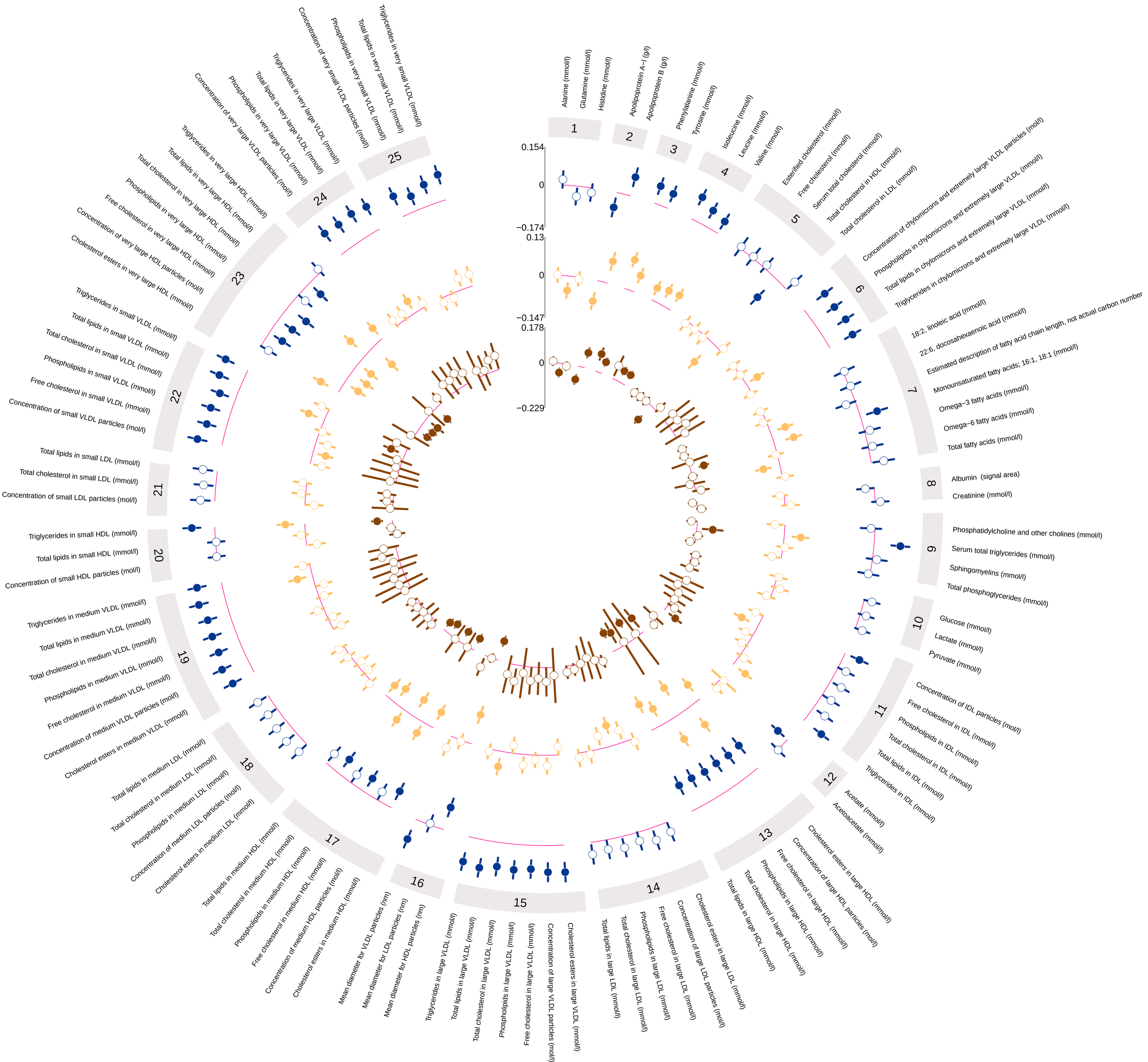
1
Alanine (mmol/l)
Glutamine (mmol/l)
Histidine (mmol/l)
2
Apolipoprotein A−I (g/l)
Apolipoprotein B (g/l)
3
Phenylalanine (mmol/l)
Tyrosine (mmol/l)
4
Isoleucine (mmol/l)
Leucine (mmol/l)
Valine (mmol/l)
5
Esterified cholesterol (mmol/l)
Free cholesterol (mmol/l)
Serum total cholesterol (mmol/l)
Total cholesterol in HDL (mmol/l)
Total cholesterol in LDL (mmol/l)
6
Concentration of chylomicrons and extremely large VLDL particles (mol/l)
Phospholipids in chylomicrons and extremely large VLDL (mmol/l)
Total lipids in chylomicrons and extremely large VLDL (mmol/l)
Triglycerides in chylomicrons and extremely large VLDL (mmol/l)
7
18:2, linoleic acid (mmol/l)
22:6, docosahexaenoic acid (mmol/l)
Estimated description of fatty acid chain length, not actual carbon number
Monounsaturated fatty acids; 16:1, 18:1 (mmol/l)
Omega−3 fatty acids (mmol/l)
Omega−6 fatty acids (mmol/l)
Total fatty acids (mmol/l)
8
Albumin (signal area)
Creatinine (mmol/l)
9
Phosphatidylcholine and other cholines (mmol/l)
Serum total triglycerides (mmol/l)
Sphingomyelins (mmol/l)
Total phosphoglycerides (mmol/l)
10
Glucose (mmol/l)
Lactate (mmol/l)
Pyruvate (mmol/l)
11
Concentration of IDL particles (mol/l)
Free cholesterol in IDL (mmol/l)
Phospholipids in IDL (mmol/l)
Total cholesterol in IDL (mmol/l)
Total lipids in IDL (mmol/l)
Triglycerides in IDL (mmol/l)
12
Acetate (mmol/l)
Acetoacetate (mmol/l)
13
Cholesterol esters in large HDL (mmol/l)
Concentration of large HDL particles (mol/l)
Free cholesterol in large HDL (mmol/l)
Phospholipids in large HDL (mmol/l)
Total cholesterol in large HDL (mmol/l)
Total lipids in large HDL (mmol/l)
14
Cholesterol esters in large LDL (mmol/l)
Concentration of large LDL particles (mol/l)
Free cholesterol in large LDL (mmol/l)
Phospholipids in large LDL (mmol/l)
Total cholesterol in large LDL (mmol/l)
Total lipids in large LDL (mmol/l)
15
Cholesterol esters in large VLDL (mmol/l)
Concentration of large VLDL particles (mol/l)
Free cholesterol in large VLDL (mmol/l)
Phospholipids in large VLDL (mmol/l)
Total cholesterol in large VLDL (mmol/l)
Total lipids in large VLDL (mmol/l)
Triglycerides in large VLDL (mmol/l)
16
Mean diameter for HDL particles (nm)
Mean diameter for LDL particles (nm)
Mean diameter for VLDL particles (nm)
17
Cholesterol esters in medium HDL (mmol/l)
Concentration of medium HDL particles (mol/l)
Free cholesterol in medium HDL (mmol/l)
Phospholipids in medium HDL (mmol/l)
Total cholesterol in medium HDL (mmol/l)
Total lipids in medium HDL (mmol/l)
18
Cholesterol esters in medium LDL (mmol/l)
Concentration of medium LDL particles (mol/l)
Phospholipids in medium LDL (mmol/l)
Total cholesterol in medium LDL (mmol/l)
Total lipids in medium LDL (mmol/l)
19
Cholesterol esters in medium VLDL (mmol/l)
Concentration of medium VLDL particles (mol/l)
Free cholesterol in medium VLDL (mmol/l)
Phospholipids in medium VLDL (mmol/l)
Total cholesterol in medium VLDL (mmol/l)
Total lipids in medium VLDL (mmol/l)
Triglycerides in medium VLDL (mmol/l)
20
Concentration of small HDL particles (mol/l)
Total lipids in small HDL (mmol/l)
Triglycerides in small HDL (mmol/l)
21
Concentration of small LDL particles (mol/l)
Total cholesterol in small LDL (mmol/l)
Total lipids in small LDL (mmol/l)
22
Concentration of small VLDL particles (mol/l)
Free cholesterol in small VLDL (mmol/l)
Phospholipids in small VLDL (mmol/l)
Total cholesterol in small VLDL (mmol/l)
Total lipids in small VLDL (mmol/l)
Triglycerides in small VLDL (mmol/l)
23
Cholesterol esters in very large HDL (mmol/l)
Concentration of very large HDL particles (mol/l)
Free cholesterol in very large HDL (mmol/l)
Phospholipids in very large HDL (mmol/l)
Total cholesterol in very large HDL (mmol/l)
Total lipids in very large HDL (mmol/l)
Triglycerides in very large HDL (mmol/l)
24
Concentration of very large VLDL particles (mol/l)
Phospholipids in very large VLDL (mmol/l)
Total lipids in very large VLDL (mmol/l)
Triglycerides in very large VLDL (mmol/l)
25
Concentration of very small VLDL particles (mol/l)
Phospholipids in very small VLDL (mmol/l)
Total lipids in very small VLDL (mmol/l)
Triglycerides in very small VLDL (mmol/l)
0.154
0
−0.174
0.13
0
−0.147
0.178
0
−0.229
Kettunen
Interval
Meta−analysis
P > 0.05/22
1. Amino acids
2. Apolipoproteins
3. Aromatic amino acids
4. Branched−chain amino acids
5. Cholesterol
6. Extremely large VLDL
7. Fatty acids
8. Fluid balance
9. Glycerides and phospholipids
10. Glycolysis related metabolites
11. IDL
12. Ketone bodies
13. Large HDL
14. Large LDL
15. Large VLDL
16. Lipoprotein particle size
17. Medium HDL
18. Medium LDL
19. Medium VLDL
20. Small HDL
21. Small LDL
22. Small VLDL
23. Very large HDL
24. Very large VLDL
25. Very Small VLDL