

SERVICE DELIVERABLES FOR BLOOD ANALYSIS

Research Use only

All listed biomarkers are available for Serum and Heparin plasma samples.

Biomarkers marked with * are not available for EDTA plasma samples.

Biomarkers marked with ** are not available for Citrate plasma samples.

Name	Unit	Name	Unit
Cholesterol		Branched-chain amino acids	
Total cholesterol	mmol/l	Isoleucine	mmol/l
VLDL cholesterol	mmol/l	Leucine	mmol/l
Remnant cholesterol (non-HDL, non-LDL -cholesterol)	mmol/l	Valine	mmol/l
LDL cholesterol	mmol/l	Aromatic amino acids	
HDL cholesterol	mmol/l	Phenylalanine	mmol/l
HDL2 cholesterol	mmol/l	Tyrosine	mmol/l
HDL3 cholesterol	mmol/l	Glycolysis related metabolites	
Total esterified cholesterol	mmol/l	Glucose	mmol/l
Total free cholesterol	mmol/l	Lactate	mmol/l
Glycerides and phospholipids		Pyruvate *	mmol/l
Total triglycerides	mmol/l	Citrate **	mmol/l
Triglycerides in VLDL	mmol/l	Glycerol *	mmol/l
Triglycerides in LDL	mmol/l	Ketone bodies	
Triglycerides in HDL	mmol/l	Acetate	mmol/l
Phosphoglycerides	mmol/l	Acetoacetate	mmol/l
Ratio of triglycerides to phosphoglycerides	ratio	Beta-hydroxybutyrate	mmol/l
Total cholines	mmol/l	Fluid balance	
Phosphatidylcholines	mmol/l	Creatinine	mmol/l
Sphingomyelins	mmol/l	Albumin	signal area
Apolipoproteins		Inflammation	
Apolipoprotein B	g/l	Glycoprotein acetyls	mmol/l
Apolipoprotein A1	g/l	Lipoprotein subclasses	
Ratio of apolipoprotein B to apolipoprotein A1	ratio	Chylomicrons and extremely large VLDL (particle diameters from 75 nm upwards)	
Fatty acids		Concentration of chylomicrons and extremely large VLDL particles	mol/l
Total fatty acids	mmol/l	Total lipids in chylomicrons and extremely large VLDL	mmol/l
Degree of unsaturation	degree	Phospholipids in chylomicrons and extremely large VLDL	mmol/l
Omega-3 fatty acids	mmol/l	Cholesterol in chylomicrons and extremely large VLDL	mmol/l
Omega-6 fatty acids	mmol/l	Cholesteryl esters in chylomicrons and extremely large VLDL	mmol/l
Polyunsaturated fatty acids	mmol/l	Free cholesterol in chylomicrons and extremely large VLDL	mmol/l
Monounsaturated fatty acids	mmol/l	Triglycerides in chylomicrons and extremely large VLDL	mmol/l
Saturated fatty acids	mmol/l	Very large VLDL (average diameter 64 nm)	
Docosahexaenoic acid	mmol/l	Concentration of very large VLDL particles	mol/l
Linoleic acid	mmol/l	Total lipids in very large VLDL	mmol/l
Fatty acid ratios		Phospholipids in very large VLDL	mmol/l
Ratio of omega-3 fatty acids to total fatty acids	%	Cholesterol in very large VLDL	mmol/l
Ratio of omega-6 fatty acids to total fatty acids	%	Cholesteryl esters in very large VLDL	mmol/l
Ratio of polyunsaturated fatty acids to total fatty acids	%	Free cholesterol in very large VLDL	mmol/l
Ratio of monounsaturated fatty acids to total fatty acids	%	Triglycerides in very large VLDL	mmol/l
Ratio of saturated fatty acids to total fatty acids	%	Amino acids	
Ratio of docosahexaenoic acid to total fatty acids	%	Alanine	mmol/l
Ratio of linoleic acid to total fatty acids	%	Glutamine	mmol/l
Amino acids		Glycine *	mmol/l
Alanine	mmol/l	Histidine	mmol/l
Glutamine	mmol/l		
Glycine *	mmol/l		
Histidine	mmol/l		

Name	Unit	Name	Unit
Large VLDL (average diameter 53.6 nm)		Small LDL (average diameter 18.7 nm)	
Concentration of large VLDL particles	mol/l	Concentration of small LDL particles	mol/l
Total lipids in large VLDL	mmol/l	Total lipids in small LDL	mmol/l
Phospholipids in large VLDL	mmol/l	Phospholipids in small LDL	mmol/l
Cholesterol in large VLDL	mmol/l	Cholesterol in small LDL	mmol/l
Cholesteryl esters in large VLDL	mmol/l	Cholesteryl esters in small LDL	mmol/l
Free cholesterol in large VLDL	mmol/l	Free cholesterol in small LDL	mmol/l
Triglycerides in large VLDL	mmol/l	Triglycerides in small LDL	mmol/l
Medium VLDL (average diameter 44.5 nm)		Very large HDL (average diameter 14.3 nm)	
Concentration of medium VLDL particles	mol/l	Concentration of very large HDL particles	mol/l
Total lipids in medium VLDL	mmol/l	Total lipids in very large HDL	mmol/l
Phospholipids in medium VLDL	mmol/l	Phospholipids in very large HDL	mmol/l
Cholesterol in medium VLDL	mmol/l	Cholesterol in very large HDL	mmol/l
Cholesteryl esters in medium VLDL	mmol/l	Cholesteryl esters in very large HDL	mmol/l
Free cholesterol in medium VLDL	mmol/l	Free cholesterol in very large HDL	mmol/l
Triglycerides in medium VLDL	mmol/l	Triglycerides in very large HDL	mmol/l
Small VLDL (average diameter 36.8 nm)		Large HDL (average diameter 12.1 nm)	
Concentration of small VLDL particles	mol/l	Concentration of large HDL particles	mol/l
Total lipids in small VLDL	mmol/l	Total lipids in large HDL	mmol/l
Phospholipids in small VLDL	mmol/l	Phospholipids in large HDL	mmol/l
Cholesterol in small VLDL	mmol/l	Cholesterol in large HDL	mmol/l
Cholesteryl esters in small VLDL	mmol/l	Cholesteryl esters in large HDL	mmol/l
Free cholesterol in small VLDL	mmol/l	Free cholesterol in large HDL	mmol/l
Triglycerides in small VLDL	mmol/l	Triglycerides in large HDL	mmol/l
Very small VLDL (average diameter 31.3 nm)		Medium HDL (average diameter 10.9 nm)	
Concentration of very small VLDL particles	mol/l	Concentration of medium HDL particles	mol/l
Total lipids in very small VLDL	mmol/l	Total lipids in medium HDL	mmol/l
Phospholipids in very small VLDL	mmol/l	Phospholipids in medium HDL	mmol/l
Cholesterol in very small VLDL	mmol/l	Cholesterol in medium HDL	mmol/l
Cholesteryl esters in very small VLDL	mmol/l	Cholesteryl esters in medium HDL	mmol/l
Free cholesterol in very small VLDL	mmol/l	Free cholesterol in medium HDL	mmol/l
Triglycerides in very small VLDL	mmol/l	Triglycerides in medium HDL	mmol/l
IDL (average diameter 28.6 nm)		Small HDL (average diameter 8.7 nm)	
Concentration of IDL particles	mol/l	Concentration of small HDL particles	mol/l
Total lipids in IDL	mmol/l	Total lipids in small HDL	mmol/l
Phospholipids in IDL	mmol/l	Phospholipids in small HDL	mmol/l
Cholesterol in IDL	mmol/l	Cholesterol in small HDL	mmol/l
Cholesteryl esters in IDL	mmol/l	Cholesteryl esters in small HDL	mmol/l
Free cholesterol in IDL	mmol/l	Free cholesterol in small HDL	mmol/l
Triglycerides in IDL	mmol/l	Triglycerides in small HDL	mmol/l
Large LDL (average diameter 25.5 nm)		Lipoprotein particle sizes	
Concentration of large LDL particles	mol/l	Average diameter for VLDL particles	nm
Total lipids in large LDL	mmol/l	Average diameter for LDL particles	nm
Phospholipids in large LDL	mmol/l	Average diameter for HDL particles	nm
Cholesterol in large LDL	mmol/l	Relative lipoprotein lipid concentrations	
Cholesteryl esters in large LDL	mmol/l	Chylomicrons and extremely large VLDL ratios	
Free cholesterol in large LDL	mmol/l	Phospholipids to total lipids ratio in VLDL chylomicrons and extremely large	%
Triglycerides in large LDL	mmol/l	Cholesterol to total lipids ratio in chylomicrons and extremely large VLDL	%
Medium LDL (average diameter 23 nm)		Cholesteryl esters to total lipids ratio in chylomicrons and extremely large VLDL	%
Concentration of medium LDL particles	mol/l	Free cholesterol to total lipids ratio in chylomicrons and extremely large VLDL	%
Total lipids in medium LDL	mmol/l	Triglycerides to total lipids ratio in chylomicrons and extremely large VLDL	%
Phospholipids in medium LDL	mmol/l		
Cholesterol in medium LDL	mmol/l		
Cholesteryl esters in medium LDL	mmol/l		
Free cholesterol in medium LDL	mmol/l		
Triglycerides in medium LDL	mmol/l		

Name	Unit	Name	Unit
Very large VLDL ratios		Very large HDL ratios	
Phospholipids to total lipids ratio in very large VLDL	%	Phospholipids to total lipids ratio in very large HDL	%
Cholesterol to total lipids ratio in very large VLDL	%	Cholesterol to total lipids ratio in very large HDL	%
Cholesteryl esters to total lipids ratio in very large VLDL	%	Cholesteryl esters to total lipids ratio in very large HDL	%
Free cholesterol to total lipids ratio in very large VLDL	%	Free cholesterol to total lipids ratio in very large HDL	%
Triglycerides to total lipids ratio in very large VLDL	%	Triglycerides to total lipids ratio in very large HDL	%
Large VLDL ratios		Large HDL ratios	
Phospholipids to total lipids ratio in large VLDL	%	Phospholipids to total lipids ratio in large HDL	%
Cholesterol to total lipids ratio in large VLDL	%	Cholesterol to total lipids ratio in large HDL	%
Cholesteryl esters to total lipids ratio in large VLDL	%	Cholesteryl esters to total lipids ratio in large HDL	%
Free cholesterol to total lipids ratio in large VLDL	%	Free cholesterol to total lipids ratio in large HDL	%
Triglycerides to total lipids ratio in large VLDL	%	Triglycerides to total lipids ratio in large HDL	%
Medium VLDL ratios		Medium HDL ratios	
Phospholipids to total lipids ratio in medium VLDL	%	Phospholipids to total lipids ratio in medium HDL	%
Cholesterol to total lipids ratio in medium VLDL	%	Cholesterol to total lipids ratio in medium HDL	%
Cholesteryl esters to total lipids ratio in medium VLDL	%	Cholesteryl esters to total lipids ratio in medium HDL	%
Free cholesterol to total lipids ratio in medium VLDL	%	Free cholesterol to total lipids ratio in medium HDL	%
Triglycerides to total lipids ratio in medium VLDL	%	Triglycerides to total lipids ratio in medium HDL	%
Small VLDL ratios		Small HDL ratios	
Phospholipids to total lipids ratio in small VLDL	%	Phospholipids to total lipids ratio in small HDL	%
Cholesterol to total lipids ratio in small VLDL	%	Cholesterol to total lipids ratio in small HDL	%
Cholesteryl esters to total lipids ratio in small VLDL	%	Cholesteryl esters to total lipids ratio in small HDL	%
Free cholesterol to total lipids ratio in small VLDL	%	Free cholesterol to total lipids ratio in small HDL	%
Triglycerides to total lipids ratio in small VLDL	%	Triglycerides to total lipids ratio in small HDL	%
Very small VLDL ratios			
Phospholipids to total lipids ratio in very small VLDL	%		
Cholesterol to total lipids ratio in very small VLDL	%		
Cholesteryl esters to total lipids ratio in very small VLDL	%		
Free cholesterol to total lipids ratio in very small VLDL	%		
Triglycerides to total lipids ratio in very small VLDL	%		
IDL ratios			
Phospholipids to total lipids ratio in IDL	%		
Cholesterol to total lipids ratio in IDL	%		
Cholesteryl esters to total lipids ratio in IDL	%		
Free cholesterol to total lipids ratio in IDL	%		
Triglycerides to total lipids ratio in IDL	%		
Large LDL ratios			
Phospholipids to total lipids ratio in large LDL	%		
Cholesterol to total lipids ratio in large LDL	%		
Cholesteryl esters to total lipids ratio in large LDL	%		
Free cholesterol to total lipids ratio in large LDL	%		
Triglycerides to total lipids ratio in large LDL	%		
Medium LDL ratios			
Phospholipids to total lipids ratio in medium LDL	%		
Cholesterol to total lipids ratio in medium LDL	%		
Cholesteryl esters to total lipids ratio in medium LDL	%		
Free cholesterol to total lipids ratio in medium LDL	%		
Triglycerides to total lipids ratio in medium LDL	%		
Small LDL ratios			
Phospholipids to total lipids ratio in small LDL	%		
Cholesterol to total lipids ratio in small LDL	%		
Cholesteryl esters to total lipids ratio in small LDL	%		
Free cholesterol to total lipids ratio in small LDL	%		
Triglycerides to total lipids ratio in small LDL	%		

If Nightingale is not able to deliver the Service Deliverables due to inability of Nightingale's Service to analyse the data with more than 20% of metabolic measures missing for a Sample, there will be no charge for the respective Sample.