

LDL Cholesterol						
Analytical Performance Specification			RCV Calculation			
Matrix	BV Estimate	median CV estimate	lower CI limit	higher CI limit	Comments	Date Updated
Serum/plasma	👤	8.3	6.6	10.1		21/9/2023
Serum/plasma	👥	26.6	18.5	37.6		21/9/2023

Colour Key for References

Included In Meta Analysis Not Included In Meta Analysis

Reference	Dataset	Estimate of CVI	Estimate of CVG	Gender	Age	State of Well Being	Matrix	Sampling Interval
Age dependence of within-subject biological variation of nine common clinical chemistry analytes Carobene A, Graziani MS, Lo Cascio C, Tretti L, Cremonese E, Yabarek T, Gambaro G and Ceriotti F., Clin Chem Lab Med, 841-4, 50, 2012	View	11.2		Mixed		Healthy	Serum	1 per Week
Short-term intraindividual variability in lipoprotein measurements: the atherosclerosis risk communities (ARIC) study Chambless LE, McMahon RP, Brown SA, Patsch W, Heiss G and Shen Y, Am J Epidem, 1069-1081, 0136, 1992	View	6.4		Mixed		Healthy	Plasma	1 per Week
Short-term intraindividual variability in lipoprotein measurements: the atherosclerosis risk communities (ARIC) study Chambless LE, McMahon RP, Brown SA, Patsch W, Heiss G and Shen Y, Am J Epidem, 1069-1081, 0136, 1992	View	7.8		Mixed		Healthy	Plasma	1 per Week
Variability of plasma lipids and lipoproteins: the Jerusalem I inid								

<div>the Jerusalem Lipid Research Clinic Study</div> <div><div><div>View</div></div></div> <div>12.8</div> <div>Males</div> <div>40.0</div> <div>Healthy</div> <div>Plasma</div> <div>1 per Month</div> <div><div>Friedlander Y, Kark JD and Stein Y, Clin Chem, 1121-6, 31, 1985</div></div> <div>View</div>
<div>Variability of plasma lipids and lipoproteins: the Jerusalem Lipid Research Clinic Study</div> <div><div><div>View</div></div></div> <div>12.5</div> <div>Males</div> <div>60.0</div> <div>Healthy</div> <div>Plasma</div> <div>1 per Month</div> <div><div>Friedlander Y, Kark JD and Stein Y, Clin Chem, 1121-6, 31, 1985</div></div> <div>View</div>
<div>Significance of various parameters derived from biological variability for lipid and lipoprotein analyses</div> <div><div><div>View</div></div></div> <div>5.6</div> <div>21.3</div> <div>Mixed</div> <div>Healthy</div> <div>Serum</div> <div>1 per Week</div> <div><div>Pagani F and Panteghini M, Clin Biochem, 415-20, 26, 1993</div></div> <div>View</div>
<div>Variability in cholesterol measuraments: comparison of calculated and direct LDL cholesterol determinations</div> <div><div><div>View</div></div></div> <div>6.6</div> <div>Males</div> <div>Healthy</div> <div>Serum</div> <div>1 per Month</div> <div><div>Schechtman G, Patsches M and Sasse EA, Clin Chem, 732-7, 42, 1996</div></div> <div>View</div>
<div>Variación biológica de lípidos y lipoproteínas séricas en individuos sanos y pacientes con enfermedad renal crónica terminal</div> <div><div><div>View</div></div></div> <div>7.3</div> <div>43.2</div> <div>Mixed</div> <div>Healthy</div> <div>Serum</div> <div>1 per Week</div> <div><div>Corte Z and Venta R, Rev Lab Clin, 88-95, 7, 2014</div></div> <div>View</div>
<div>Variation in concentrations of lipids, lipoprotein lipids, and apolipoproteins A-I and B in plasma from healthy women</div> <div><div><div>View</div></div></div> <div>13.6</div> <div>18.5</div> <div>Females</div> <div>Healthy</div> <div>Plasma</div> <div>1 per Other</div> <div><div>Brown SA, Boerwinkle E, Kashanian FK, Swanson N and Patsch W, Clin Chem, 207-10, 36, 1990</div></div> <div>View</div>

30, 1990

View

Biological variation of glucose, insulin and lipids in lean, insulin-sensitie and obese, insulin-resistant chinese males without diabetis

View

9.8

19.8

Males

Healthy

Serum

1 per Week

Rizi EP, Baig S, Toh SA and Khoo CM, Pathology , 510-2, 48, 2016

View

Age dependence of within-subject biological variation of nine common clinical chemistry analytes

View

8.4

Mixed

Healthy

Serum

1 per Week

Carobene A, Graziani MS, Lo Cascio C, Tretti L, Cremonese E, Yabarek T, Gambaro G and Ceriotti F., Clin Chem Lab Med, 841-4, 50, 2012

View

Biological variation of glucose, insulin and lipids in lean, insulin-sensitie and obese, insulin-resistant chinese males without diabetis

View

10.5

16.1

Males

Healthy

Serum

1 per Week

Rizi EP, Baig S, Toh SA and Khoo CM, Pathology , 510-2, 48, 2016

View

A longitudinal study of the biological variability of plasma lipoproteins in healthy young adults

View

10.4

Males

28.0

Healthy

Serum

1 per Other

Mjøs O, Rao S,Bjørø, Henden T, Thelle D,Førde O and Miller N, Atherosclerosis, 75-81, 34, 1979

View

The EuBIVAS: within- and between-subject biological variation data for electrolytes, lipids, urea, uric acid, total protein, total bilirubin, direct bilirubin and glucose

View

8.46

28.2

Mixed

Healthy

Serum

1 per Week

Aarsand AK, Diaz-Garzón J, Fagard G, Sirtori CR, et al

Fernandez-Calle P, et al, Clin Chem, 1380-93, 64(9), 2018

View

Biological variability of Cholesterol, Triglyceride, Low- and High-density lipoprotein Cholesterol, Lipoprotein(a), and Apolipoproteins A-I and B

View

9.2

Mixed

Healthy

Plasma

2 per Month

Marcovina SM, Gaur VP and Albers JJ, Clin Chem, 574-8, 40, 1994

View

Biological variation of lipids and lipoproteins in fingerstick blood

View

7.5

Mixed

40.3

Healthy

Serum

1 per Month

Kafonek SD, Donovan L, Lovejoy KL and Bachorik PS, Clin Chem, 2002-7, 42, 1996

View

Biological variation of lipids and lipoproteins in fingerstick blood

View

5.4

Mixed

40.3

Healthy

Whole blood

1 per Month

Kafonek SD, Donovan L, Lovejoy KL and Bachorik PS, Clin Chem, 2002-7, 42, 1996

View

Within-person fluctuations of serum cholesterol and lipoproteins

View

9.6

Mixed

Healthy

Serum

1 per Week

Mogadam M, Ahmed S, Mensch A and Godwin I, Arch Intern Med, 1645-8, 150, 1990

View

Diurnal and monthly intra-individual variability of the concentration of lipids, lipoproteins and apoproteins

View

5.2

Mixed

Healthy

Serum

1 per Week

Wasenius A, Stugaard M, Otterstad JE, Froyshov D, Scand J Clin Lab Invest, 632-42, 50, 1990

View

A longitudinal study of the biological variability of plasma lipoproteins

in healthy young adults	View	11.8		Females	28.0	Healthy	Serum	1 per Other
Mjøs O, Rao S,Bjørø, Henden T, Thelle D,Førde O and Miller N, Atherosclerosis, 75-81, 34, 1979								
View								
Significance of various parameters derived from biological variability for lipid and lipoprotein analyses	View	5.1	26.3	Mixed		Healthy	Serum	1 per Week
Pagani F and Panteghini M, Clin Biochem, 415-20, 26, 1993								
View								
Variability in cholesterol measuraments: comparison of calculated and direct LDL cholesterol determinations	View	6.5		Males		Healthy	Serum	1 per Month
Schectman G, Patsches M and Sasse EA, Clin Chem, 732-7, 42, 1996								
View								
Variación biológica de lípids y lipoproteínas séricas en individuos sanos y pacientes con enfermedad renal crónica terminal	View	7.0	33.4	Mixed		Healthy	Serum	1 per Week
Corte Z and Venta R, Rev Lab Clin, 88-95, 7, 2014								
View								
Biological variation data applied to the selection of serum lipid ratios used as risk markers of coronary heart disease.	View	13.7	24.5	Males		Healthy	Serum	1 per Month
Ortolá J, Castiñeiras MJ, Fuentes-Arderiu X., Clin Chem, 56-9, 38, 1992								
View								
Biological variation of glucose, insulin and lípids in lean, insulin-sensitie and obese, insulin-resistant chinese males without diabetis	View	13.9	25.8	Males		Healthy	Serum	1 per Week
Rizi EP, Baig S, Toh SA and Khoo CM, Pathology, 510-2								

Knowl Clin Pathology , 2016, 48, 2016

View

Variability of plasma lipids and lipoproteins: the Jerusalem Lipid Research Clinic Study

Friedlander Y, Kark JD and Stein Y, Clin Chem, 1121-6, 31, 1985

View

12.1

Females

40.0

Healthy

Plasma

1 per Month

View

Variability of plasma lipids and lipoproteins: the Jerusalem Lipid Research Clinic Study

Friedlander Y, Kark JD and Stein Y, Clin Chem, 1121-6, 31, 1985

View

11.3

Females

60.0

Healthy

Plasma

1 per Month

View

Variability of plasma lipids and lipoproteins: the Jerusalem Lipid Research Clinic Study

Friedlander Y, Kark JD and Stein Y, Clin Chem, 1121-6, 31, 1985

View

13.7

Males

17.0

Healthy

Plasma

1 per Month

View

The EuBIVAS: within- and between-subject biological variation data for electrolytes, lipids, urea, uric acid, total protein, total bilirubin, direct bilirubin and glucose

Aarsand AK, Diaz-Garzón J, Fernández-Calle P, et al, Clin Chem, 1380-93, 64(9), 2018

View

6.82

21.6

Females

60.0

Healthy

Serum

1 per Week

View

Prognostic utility of biochemical markers of cardiovascular risk: impact of biological variability

Alexander KS, Kazmierczak SC, Snyder CK, Oberdorf JA and Farrell DH, Clin Chem Lab Med , 1875-82, 51(9), 2013

View

10.3

19.3

Mixed

Healthy

Serum

1 per Month

View

Circadian rhythmic

variations in serum concentrations of clinically important lipids

[View](#)

8.6

Mixed

29.5

Healthy

Serum

4 per Hour

Rivera-Coll A, Fuentes-Arderiu X and Díez-Noguera A, Clin Chem, 1549-53, 40, 1994

[View](#)

Prognostic utility of biochemical markers of cardiovascular risk: impact of biological variability

[View](#)

7.8

20.4

Mixed

Healthy

Serum

2 per Week

Alexander KS, Kazmierczak SC, Snyder CK, Oberdorf JA and Farrell DH, Clin Chem Lab Med , 1875-82, 51(9), 2013

[View](#)

Variación biológica de lípids y lipoproteínas séricas en individuos sanos y pacientes con enfermedad renal crónica terminal

[View](#)

11.9

74.2

Mixed

Non-healthy

Serum

1 per Month

Corte Z and Venta R, Rev Lab Clin, 88-95, 7, 2014

[View](#)

Diurnal and monthly intra-individual variability of the concentration of lipids, lipoproteins and apoproteins

[View](#)

5.1

Mixed

Healthy

Serum

3 per Hour

Wasenius A, Stugaard M, Otterstad JE, Froyshov D, Scand J Clin Lab Invest, 632-42, 50, 1990

[View](#)

The EuBIVAS: within- and between-subject biological variation data for electrolytes, lipids, urea, uric acid, total protein, total bilirubin, direct bilirubin and glucose

[View](#)

8.55

27.0

Males

35.0

Healthy

Serum

1 per Week

Aarsand AK, Diaz-Garzón J, Fernández-Calle P, et al, Clin Chem, 1380-93, 64(9), 2018

[View](#)

Covariance of metabolic

and hemostatic risk indicators in men and women.

Riese H, Vrikkotte TGM, Meijer P, Kluft C, De Geus EJC, Fibrinolysis & Proteolysis, 1-12, 14, 2001

View

7.6

29.8

Females

30.19

Healthy

Serum

2 per Day

View

Covariance of metabolic and hemostatic risk indicators in men and women.

Riese H, Vrikkotte TGM, Meijer P, Kluft C, De Geus EJC, Fibrinolysis & Proteolysis, 1-12, 14, 2001

View

6.5

21.8

Females

36.71

Healthy

Serum

2 per Day

View

Covariance of metabolic and hemostatic risk indicators in men and women.

Riese H, Vrikkotte TGM, Meijer P, Kluft C, De Geus EJC, Fibrinolysis & Proteolysis, 1-12, 14, 2001

View

6.5

23.5

Males

45.23

Healthy

Serum

2 per Day

View

Age dependence of within-subject biological variation of nine common clinical chemistry analytes

Carobene A, Graziani MS, Lo Cascio C, Tretti L, Cremonese E, Yabarek T, Gambaro G and Ceriotti F., Clin Chem Lab Med, 841-4, 50, 2012

View

6.6

Mixed

Healthy

Serum

1 per Week

View

Biological variation of glucose, insulin and lipids in lean, insulin-sensitie and obese, insulin-resistant chinese males without diabetis

Rizi EP, Baig S, Toh SA and Khoo CM, Pathology , 510-2, 48, 2016

View

17.4

32.8

Males

Non-healthy

Serum

1 per Week

View

Analytical and biological variability in biomarker measurement in the Hispanic Community

Health Stud (Stat of

Health Study/Study of Latinos									
Thyagarajan B, Howard AG, Durazo-Arvizu R, Eckfeldt JH, Gellman MD, Kim RS, Liu K, Mendez AJ, Penedo FJ, Talavera GA, Youngblood ME, Zhao L and Sotres-Alvarez D, Clin Chim Acta, 129-137, 463, 2016	View	27.42	Mixed			Healthy	Serum	1 per Month	
View									
Analytical and biological variability in biomarker measurement in the Hispanic Community Health Study/Study of Latinos									
Thyagarajan B, Howard AG, Durazo-Arvizu R, Eckfeldt JH, Gellman MD, Kim RS, Liu K, Mendez AJ, Penedo FJ, Talavera GA, Youngblood ME, Zhao L and Sotres-Alvarez D, Clin Chim Acta, 129-137, 463, 2016	View	9.7		Mixed		Healthy	Serum	1 per Month	
View									
Biological variability of lipoproteins and apolipoproteins in patients referred to a lipid clinic									
Kafonek SD, Derby CA and Bachorik PS, Clin Chem, 864-72, 38, 1992	View	7.6		Females	9.0	Non-healthy	Plasma	"No Sampling Intervals"	
View									
The EuBIVAS: within- and between-subject biological variation data for electrolytes, lipids, urea, uric acid, total protein, total bilirubin, direct bilirubin and glucose									
Aarsand AK, Diaz-Garzón J, Fernández-Calle P, et al, Clin Chem, 1380-93, 64(9), 2018	View	9.24	22.5	Females	34.0	Healthy	Serum	1 per Week	
View									
Biological variability of lipoproteins and apolipoproteins in patients referred to a lipid clinic									
Kafonek SD, Derby CA and Bachorik PS, Clin Chem, 864-	View	8.0		Females	52.0	Non-healthy	Plasma	"No Sampling Intervals"	

72, 38, 1992

View

Biological variability of lipoproteins and apolipoproteins in patients referred to a lipid clinic

View

7.0

Males

51.0

Non-healthy

Plasma

"No Sampling Intervals"

Kafonek SD, Derby CA and Bachorik PS, Clin Chem, 864-72, 38, 1992

View

Biological variability of lipoproteins and apolipoproteins in patients referred to a lipid clinic

View

7.7

Males

9.0

Non-healthy

Plasma

"No Sampling Intervals"

Kafonek SD, Derby CA and Bachorik PS, Clin Chem, 864-72, 38, 1992

View

Biological variability of lipoproteins and apolipoproteins in patients referred to a lipid clinic

View

7.8

Mixed

28.0

Non-healthy

Plasma

"No Sampling Intervals"

Kafonek SD, Derby CA and Bachorik PS, Clin Chem, 864-72, 38, 1992

View

Variability of plasma lipids and lipoproteins: the Jerusalem Lipid Research Clinic Study

View

12.5

Females

17.0

Healthy

Plasma

1 per Month

Friedlander Y, Kark JD and Stein Y, Clin Chem, 1121-6, 31, 1985

View

Variación biológica de lípidos y lipoproteínas séricas en individuos sanos y pacientes con enfermedad renal crónica terminal

View

9.8

53.6

Mixed

Non-healthy

Serum

1 per Month

Corte Z and Venta R, Rev Lab Clin, 88-95, 7, 2014

View



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