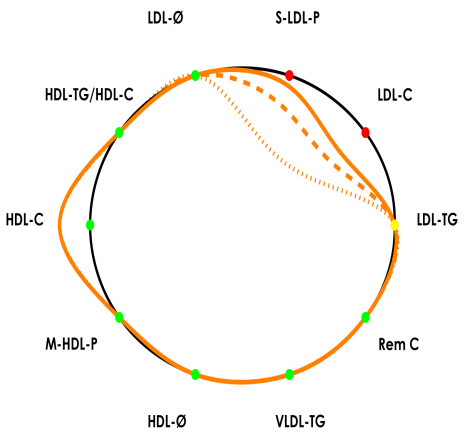
LIPOSCALE®

Test Liposcale®

Liposcale Test® is an advanced lipoprotein analysis based on Nuclear Magnetic Resonance (NMR) spectroscopy that directly measures lipid content, number and size of lipoprotein particles. The Liposcale report is divided in two sections. First section includes information on traditional lipid panel, concentrations of large, intermediate, and small VLDL, LDL, and HDL particles, average particle sizes of VLDL, LDL and HDL, as well as the lipidic contour. Second section includes information on extended lipoprotein panel -including cholesterol and triglyceride content in VLDL, IDL, LDL and HDL particles-, and patient clinical outcome.

PARAMETER	RESULT[3]	RECOMMENDED VALUE		
		Cardiovascular risk[4]		
Lipidic profile[1]		Very high-risk	High-risk	Moderate/low-risk
TOTAL CHOLESTEROL	**232 mg/dL**			< 200
LDL CHOLESTEROL[2]	**150 mg/dL**	< 70	< 100	< 115
HDL CHOLESTEROL	**76 mg/dL**			> ♂40 ♀50
TRIGLYCERIDES	**51 mg/dL**			< 150
REMNANT CHOLESTEROL	**6 mg/dL**			< 30
NON-HDL CHOLESTEROL	**156 mg/dL**	< 100	< 130	< 145
Particle number (associated with cardiovascular risk)				
VLDL PARTICLES	**11 nmol/L**			< 70
LDL PARTICLES	**1439 nmol/L**	< 700	< 1000	< 1150
LDL PARTICLES (SMALL)	**667 nmol/L**	< 380	< 550	< 630
HDL PARTICLES	**35 µmol/L**			> 24
HDL PARTICLES (MEDIUM)	**10.6 µmol/L**			> 8.2
Particle size (diameter)				
VLDL PARTICLES	**42.39 nm**			42.03 - 42.36
LDL PARTICLES	**21.33 nm**			> 20.91
HDL PARTICLES	**8.22 nm**			> 8.21

Lipidic Contour



S-LDL-P	Small LDL particles
LDL-C	LDL Cholesterol
LDL-TG	LDL Triglycerides
Rem C	Remnant cholesterol
VLDL-TG	VLDL Triglycerides
HDL-Ø	HDL particle size
M-HDL-P	Medium HDL particles
HDL-C	HDL Cholesterol
HDL-TG/HDL-C	Ratio of HDL Triglycerides/HDL Cholesterol
LDL-Ø	LDL particle size
Moderate/low CV risk	
High CV risk	
Very high CV risk	

What does the Lipidic Contour represent?

The lipidic contour is a graphical model which allows a quick and global evaluation of patient's lipoprotein metabolism beyond classical parameters. It combines the information from the 10 variables associated with cardiovascular (CV) risk, which are represented in colours:

🔴 The variable contributes to increase CV risk. The area of the region delimited by the orange curve will decrease when the value is:
> recommended value for S-LDL-P, LDL-C, LDL-TG, Rem C, VLDL-TG and HDL-TG/HDL-C
< recommended value for HDL-Ø, M-HDL-P, HDL-C and LDL-Ø

🟢 Opposite case. The variable is associated with lower CV risk.

🟡 Patient outcome is similar to the recommended value.

The orange contour represents a moderate/low-risk patient situation compared to the values of a general population of 6.000 individuals (black circle). Orange discontinuous contours represent both high and very high-risk patients (see legend).

[1]All parameters have been determined by NMR spectroscopy. There may be variability when compared to other analytical methods.
[2]LDL cholesterol is calculated in a direct way and does not include IDL cholesterol
[3]Traffic light colours above have been established for moderate/low-risk patients.
[4]Risk categories were defined according to ESC/EAS Guidelines for the Management of Dyslipidaemias (2016). High-risk includes familial hypercholesterolaemia, diabetes mellitus with no organ damage, moderate chronic kidney disease (GFR 30-59) or calculated SCORE between 5-10. Very high-risk includes documented CV disease, diabetes mellitus with target organ damage, severe chronic kidney disease (GFR<30) or calculated SCORE>10.

CHN	Example 1	REPORT DATE	29/03/2019

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PARAMETER	RESULT	RECOMMENDED TARGET VALUE [5]	PERCENTILES OF THE REFERENCE POPULATION [6] 25%	50%	75%
Cholesterol content in principal lipoproteins					
VLDL-C (mg/dL)	<1	< 22	6	11	17
IDL-C (mg/dL)	5	< 9	7	9	13
LDL-C (mg/dL)	150*	< 115	110	130	150
HDL-C (mg/dL)	76	>50 ♀ - >40 ♂	48	56	64
REMNANT-C (mg/dL)	6	< 30	14	21	30
NON-HDL-C (mg/dL)	156*	< 145	130	150	180
HDL-TG/HDL-C	0.08	< 0.25	0.16	0.21	0.27
Triglycerides content in principal lipoproteins			25%	50%	75%
VLDL-TG (mg/dL)	19	< 98	39	54	78
IDL-TG (mg/dL)	7	< 12	8	10	13
LDL-TG (mg/dL)	19*	< 19	12	15	19
HDL-TG (mg/dL)	6	< 12	9	12	15
Particle size (diameter)			25%	50%	75%
VLDL-Ø (nm)	42.39*	42.03 - 42.36	42.06	42.21	42.36
LDL-Ø (nm)	21.33	> 20.91	20.91	21.11	21.29
HDL-Ø (nm)	8.22	> 8.21	8.21	8.26	8.31

PARAMETER	RESULT	RECOMMENDED TARGET VALUE [5]	PERCENTILES OF THE REFERENCE POPULATION [6] 25%	50%	75%
Particle number (full)					
TOTAL VLDL-P (nmol/L)	11	< 70	27	38	56
Large (L-VLDL-P) (nmol/L)	0.26	< 1.62	0.73	0.99	1.35
Medium (M-VLDL-P) (nmol/L)	1.65	< 7.51	3.04	4.28	6.08
Small (S-VLDL-P) (nmol/L)	9	< 61	23	32	49
TOTAL LDL-P (nmol/L)	1439*	< 1150	1120	1300	1500
Large (L-LDL-P) (nmol/L)	227*	< 180	170	200	230
Medium (M-LDL-P) (nmol/L)	544*	< 340	310	400	500
Small (S-LDL-P) (nmol/L)	667*	< 630	610	690	790
TOTAL HDL-P (µmol/L)	35	> 24	24	28	32
Large (L-HDL-P) (µmol/L)	0.29	> 0.24	0.25	0.28	0.32
Medium (M-HDL-P) (µmol/L)	10.6	> 8.2	8.5	9.7	11
Small (S-HDL-P) (µmol/L)	24	> 15	15	18	21

[5]Recommended target values established for moderate/low CV risk patients. For high CV risk patients recommended target values are LDL-C<100 mg/dL; non-HDL-C<130 mg/dL; LDL-P<1000 nmol/L and S-LDL-P<550 nmol/L.For very high CV risk patients recommended target values are LDL-C<70 mg/dL; non-HDL-C<100 mg/dL; LDL-P<700 nmol/L and S-LDL-P<380 nmol/L.
[6]Reference population data generated with 6000 subjects, men and women of different ages (15 to 85 years old).
*Higher/lower than the reference population.
Percentiles in reference population are represented in bars. Those variables clearly associated with CVD risk appear in a colour scale. Alternatively, variables in which CVD relation has not been clearly established appear in grey. Red colour indicates increased risk of CVD whereas green indicates lower risk.

Patient's clinical outcome

Altered lipoprotein parameters relevant for clinical diagnosis:

- Increased levels of LDL and no HDL cholesterol
- Increased levels of LDL triglycerides
- Increased levels of large, medium and small LDL particles
- Large VLDL particle size

If you want to know more about lipoproteins or LIPOSCALE® get in: www.liposcale.com

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