

Essential and Metabolic Fatty Acids Analysis (RBCs)



46-50 Coombe Road
New Malden
Surrey KT3 4QF

63 Zillicoa Street
Asheville, NC 28801
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Patient: **SAMPLE
PATIENT**

DOB:

Sex:

MRN:

Omega 3 Fatty Acids

Analyte	(cold water fish, flax, walnut)	Reference Range
α-Linolenic (ALA) 18:3 n3	0.14	>= 0.09 wt %
Eicosapentaenoic (EPA) 20:5 n3	0.86	>= 0.16 wt %
Docosapentaenoic (DPA) 22:5 n3	2.53	>= 1.14 wt %
Docosahexaenoic (DHA) 22:6 n3	7.3	>= 2.1 wt %
% Omega 3s	10.9	>= 3.8

Omega 9 Fatty Acids

Analyte	(olive oil)	Reference Range
Oleic 18:1 n9	11	10-13 wt %
Nervonic 24:1 n9	3.2	2.1-3.5 wt %
% Omega 9s	14.2	13.3-16.6

Saturated Fatty Acids

Analyte	(meat, dairy, coconuts, palm oils)	Reference Range
Palmitic C16:0	17	18-23 wt %
Stearic C18:0	16	14-17 wt %
Arachidic C20:0	0.23	0.22-0.35 wt %
Behenic C22:0	0.98	0.92-1.68 wt %
Tricosanoic C23:0	0.22	0.12-0.18 wt %
Lignoceric C24:0	2.9	2.1-3.8 wt %
Pentadecanoic C15:0	0.11	0.07-0.15 wt %
Margaric C17:0	0.27	0.22-0.37 wt %
% Saturated Fats	37.4	39.8-43.6

Methodology: GCMS

Omega 6 Fatty Acids

Analyte	(vegetable oil, grains, most meats, dairy)	Reference Range
Linoleic (LA) 18:2 n6	9.6	10.5-16.9 wt %
γ-Linolenic (GLA) 18:3 n6	0.09	0.03-0.13 wt %
Dihomo-γ-linolenic (DGLA) 20:3 n6	1.10	>= 1.19 wt %
Arachidonic (AA) 20:4 n6	22	15-21 wt %
Docosatetraenoic (DTA) 22:4 n6	3.24	1.50-4.20 wt %
Eicosadienoic 20:2 n6	0.18	<= 0.26 wt %
% Omega 6s	36.4	30.5-39.7

Monounsaturated Fats

Omega 7 Fats	Reference Range
Palmitoleic 16:1 n7	0.24 <= 0.64 wt %
Vaccenic 18:1 n7	0.65 <= 1.13 wt %

Trans Fat

Elaidic 18:1 n9t	0.27 <= 0.59 wt %
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Delta - 6 Desaturase Activity

	Upregulated	Functional	Impaired	Reference Range
Linoleic / DGLA 18:2 n6 / 20:3 n6	8.7			6.0-12.3

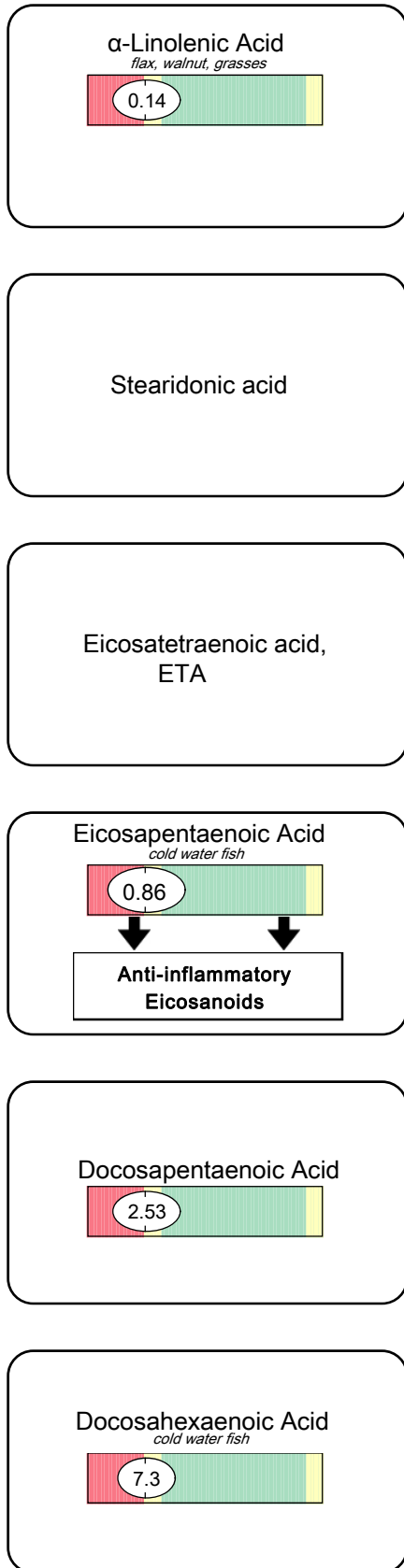
Cardiovascular Risk

Analyte	Reference Range
Omega 6s / Omega 3s	3.4 3.4-10.7
AA / EPA 20:4 n6 / 20:5 n3	26 12-125
Omega 3 Index	

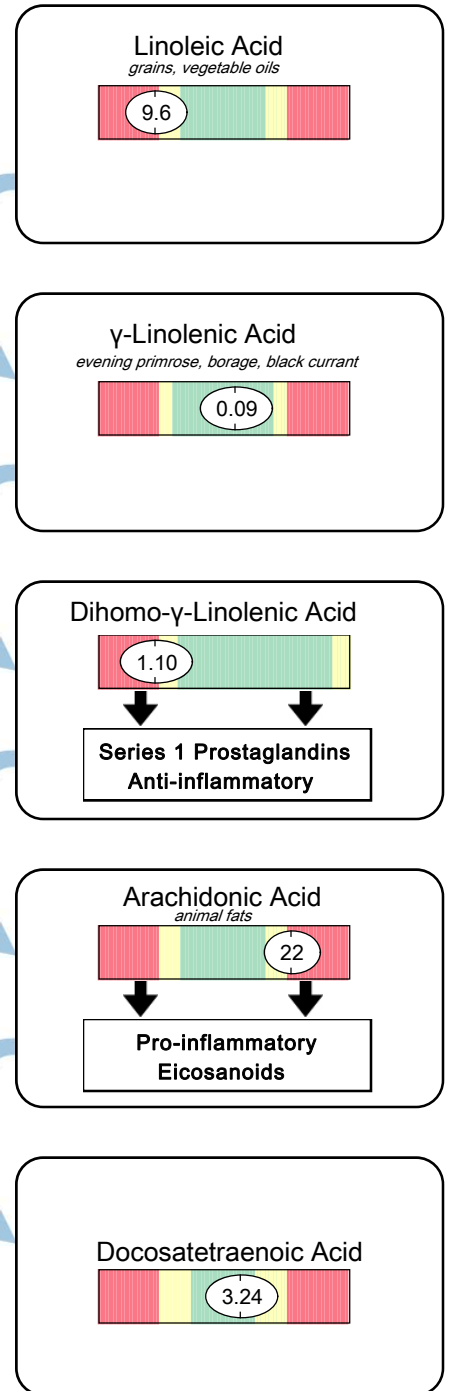
The Essential Fatty Acid reference ranges are based on an adult population.

Essential Fatty Acid Metabolism

Omega 3 Family



Omega 6 Family



Delta-6 Desaturase

Vitamin and Mineral Cofactors:

FAD (B2), Niacin (B3)
Pyridoxal-5-phosphate (B6)
Vitamin C, Insulin, Zn, Mg

Elongase

Vitamin and Mineral Cofactors:

Niacin (B3)
Pyridoxal-5-phosphate (B6)
Pantothenic Acid (B5)
Biotin, Vitamin C

Delta-5 Desaturase

Vitamin and Mineral Cofactors:

FAD (B2), Niacin (B3)
Pyridoxal-5-phosphate (B6)
Vitamin C, Insulin, Zn, Mg

Elongase

Vitamin and Mineral Cofactors:

Niacin (B3)
Pyridoxal-5-phosphate (B6), Biotin
Pantothenic Acid (B5), Vitamin C

Elongase Delta-6 Desaturase

Vitamin and Mineral Cofactors:

FAD (B2), Niacin (B3)
Pyridoxal-5-phosphate (B6), Biotin
Vitamin C, Zn, Mg, Carnitine
Pantothenic Acid (B5)

This test was developed and its performance characteristics determined by Genova Diagnostics, Inc. It has not been cleared by the U.S. Food and Drug Administration.

Commentary

The **Reference Range** is a statistical interval representing 95% or 2 Standard Deviations (2 S.D.) of the reference population. One Standard Deviation (1 S.D.) is a statistical interval representing 68% of the reference population. Values between 1 and 2 S.D. are not necessarily abnormal. Clinical correlation is suggested. (See example below)

Result within Ref Range, but outside 1-SD

