

ESSENTIAL FATTY ACIDS (Red Cell)

Essential fatty acids are essential to the human body and have benefits for our heart, brain, eyes and joints. By reducing inflammation, blood clots and improving membrane function, essential fats are associated with a lower risk of heart complications – including heart disease, plaque build-up and heart attacks – both in persons with a history of heart disease and in healthy individuals. Essential fats are important for optimal brain development in babies and mental function, particularly later in life.

Essential fatty acids is a comprehensive assessment of total saturated and monounsaturated fats, omega 3 index, saturated and monosaturated fats, 4 x omega-3 fatty acids, 7 x omega-6 fatty acids, 4 x monounsaturated fatty acids, 6 x saturated fatty acids, 3 groups of trans fatty acids, 5 composites (group sums) and 2 ratios - the omega-6:omega-3 and arachidonic acid to eicosapentanoic acid ratio (AA:EPA).

We've become conditioned to think of fat as 'bad'. Omega-3 fats (technically fatty acids), however, are essential to the human body, and have benefits for our heart, brain, eyes and joints. By reducing inflammation, blood clots and improving membrane function, omega-3 fats are associated with a lower risk of heart complications – including heart disease, plaque build-up and heart attacks – both in persons with a history of heart disease and in healthy individuals.

Omega-3 fats also seem to be important for optimal brain development in babies, and mental function, particularly later in life. For pregnant women, an intake of omega-3 fats supports normal visual development in the foetus. In short, the addition of omega-3 fats to the diet is important to maintaining both our physical and mental health.

There are potential benefits of omega-3 oils in a wide range of medical conditions. While optimal levels have not yet been defined for EPA and DHA in all circumstances, the Omega-3 Index may be used to document improved omega-3 levels in people who want to reduce risk for several maladies.

SIGNS AND SYMPTOMS ASSOCIATED WITH LOW ESSENTIAL FATTY ACIDS

Dry flaky skin	Cracking, peeling skin
Colour variation of skin	Excessive thirst
Excessive ear wax	Dry mouth/throat
Menstrual cramps	Dry eyes
Vaginal dryness	Premenstrual breast tenderness
Dry, lacklustre, brittle hair	Brittle fingernails
Small bumps on back of upper arms	Dandruff or cradle cap

Red cell and whole blood analyses can provide the best reflection of tissue essential fatty acid status, as there is considerably more day-to-day variation in the plasma tests than in the red cell (or whole blood)-based tests.

We would suggest that for blood spot assay, the omega-6:omega-3 ratio should be 4.6 or less, and the AA:EPA ratio should be 9 or less.

For the red blood cell assay, the omega-6:omega-3 ratio should be 2.6 or less, and the AA:EPA ratio should be 15 or less.

ESSENTIAL FATTY ACID (red cell) [Test code: 5011]

- ❖ Total Saturated fats, Total Monounsaturated fats, Total Omega-3, Total Omega-6, Total Omega-9; Omega-3:Omega-6, Omega-6:Omega-3, AA:EPA, Omega-3 Index; Omega-3 fatty acids - alpha linoleic acid (ALA), eicosapentanoic acid (EPA), docosapentanoic acid (DPA), docosahexanoic acid (DHA); Omega-6 fatty acids – linoleic acid (LA), gamma linolenic acid (GLA), eicosadienoic acid (EDA), arachidonic acid (AA), docosatraenoic acid (DTA), docosapentanoic acid (DPA); Monounsaturated fats (palmitoleic, oleic, gondoic, nervonic acids), Saturated fats (myristic, palmitic, stearic, arachidic, behenic, lignoceric acids); Total Trans fatty acids, Trans fat Index

Other fatty acid tests available

- **AA:EPA Ratio (blood spot) [5001]:** AA (arachidonic acid), EPA (eicosapentaenoic acid)
- **AA:EPA Ratio (red cell) [5002]:** AA (arachidonic acid), EPA (eicosapentaenoic acid)
- **Omega 3 Index (red cell) [5029]:** Total saturated fats, Total monosaturated fats, Total omega 3, 6 & 9, EPA, DHA

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