BOSTON HEART FATTY ACID BALANCE™

The *good*.

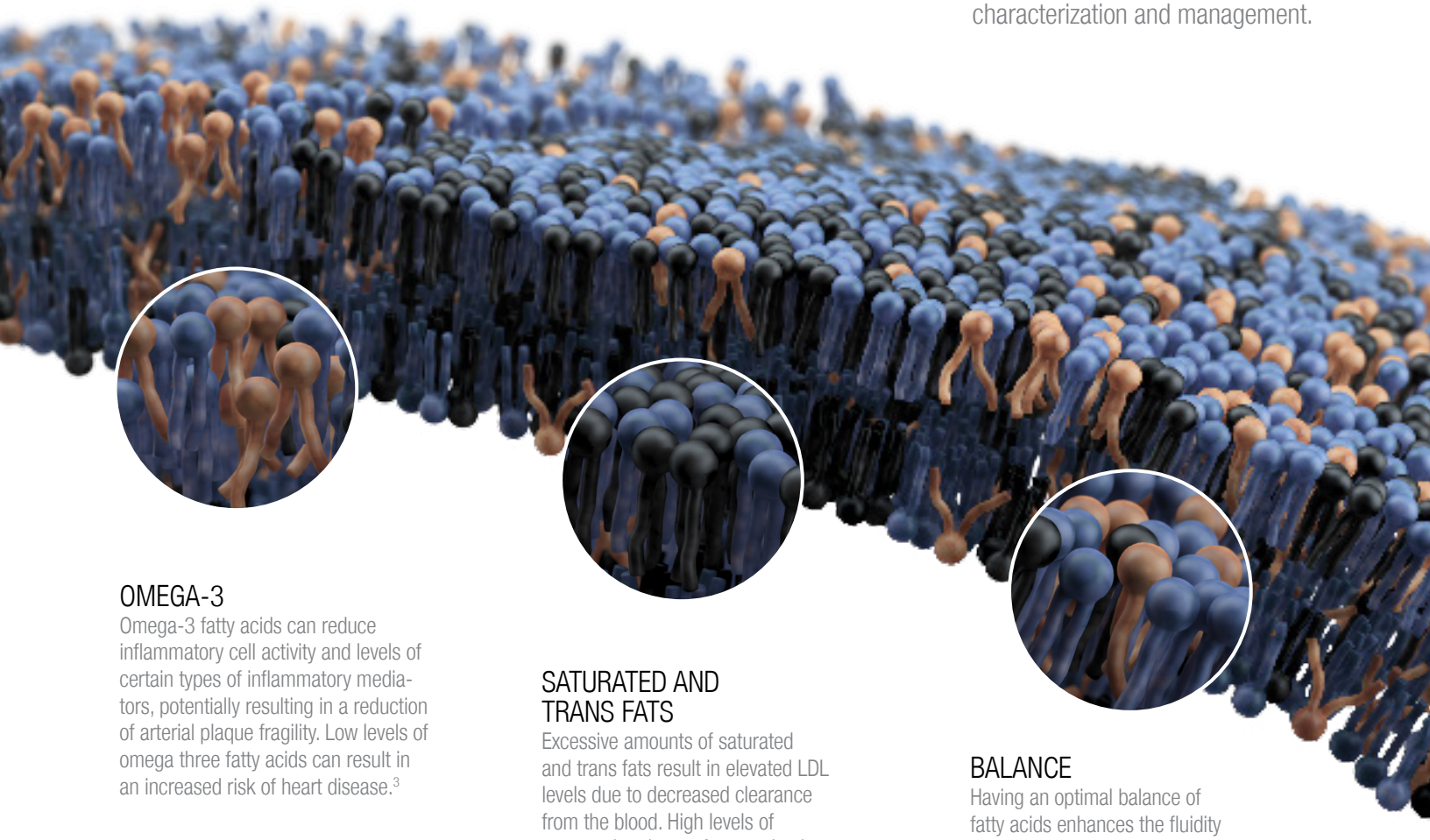
Fatty acids are essential to heart health. Their benefits include improved cholesterol balance, improved immune system function, reduced inflammation, and reduced rates of heart disease and atherosclerosis.[1,2]

The *bad*.

Current Western diets tend to be deficient in essential omega-3 fatty acids and excessive in saturated and trans fats. The resulting imbalance can promote the pathogenesis of many diseases, including cardiovascular disease.[1,2]

And the ***balanced.***

Knowing your patients' fatty acid balance can help you make informed recommendations to decrease their risk of heart disease. The Boston Heart Fatty Acid Balance™ test measures selected key fatty acids for the purposes of cardiovascular disease characterization and management.



OMEGA-3

Omega-3 fatty acids can reduce inflammatory cell activity and levels of certain types of inflammatory mediators, potentially resulting in a reduction of arterial plaque fragility. Low levels of omega three fatty acids can result in an increased risk of heart disease.[3]

SATURATED AND TRANS FATS

Excessive amounts of saturated and trans fats result in elevated LDL levels due to decreased clearance from the blood. High levels of saturated and trans fats can lead to increased risk of heart disease.[1,2]

BALANCE

Having an optimal balance of fatty acids enhances the fluidity and permeability of cell membranes. An optimal balance of fatty acids is, therefore, a key predictor of cardiovascular health.

HELP YOUR PATIENTS GET TO A HEALTHIER HEART.

In addition to test results, Boston Heart provides valuable treatment considerations to help you determine the most effective treatment strategy for reducing your patients' risk of heart disease.

Test Name	Optimal	Borderline	Increased Risk	Interpretation	Notes	Previous Results 07.17.18
Boston Heart Fatty Acid Balance™ Test[1]						
Saturated Fatty Acid Index	29.7			Saturated FA Index is OPTIMAL.		29.6
	<30.0	30.0-33.0	>33.0 %			
Trans Fatty Acid Index	0.39			Trans FA Index is OPTIMAL.		0.48
	<0.50	0.50-0.70	>0.70 %			
Unsaturated/Saturated Ratio	2.33			Unsaturated/Saturated Ratio is OPTIMAL.		2.32
	>2.25	2.00–2.25	<2.00			
Omega-3 Fatty Acid Index		2.72		Omega-3 FA Index is BORDERLINE. A lower Omega-3 FA index is associated with an increased risk for CVD. Eicosapentaenoic Acid (EPA) level is LOW. Increased EPA levels have been associated with lower risk of heart disease. Docosahexaenoic Acid (DHA) level is BORDERLINE. Increased DHA levels have been associated with a lower risk of heart disease. Consider recommending consumption of at least 2-3 meals of oily fish such as salmon, sardines, herring, tuna, and mackerel weekly or a fish oil or EPA supplement.		2.67
	>4.50	2.50-4.50	<2.50 %			
EPA			16.4			17.9
	>50.0	20.0-50.0	<20.0 µg/mL			
DHA		61.0				43.7
	>100.0	60.0-100.0	<60.0 µg/mL			
ALA		19.6		Alpha Linolenic Acid (ALA) level is BORDERLINE. Higher levels of ALA have been associated with a lower risk of CVD. Consider recommending increasing intake of walnuts, chia seeds, ground flaxseeds, or flaxseed oil.		13.0
	>30.0	14.0–30.0	<14.0 µg/mL			
EPA/AA Ratio			0.05	EPA/AA Ratio is LOW. Some authorities indicate that an EPA/AA ratio of >0.75 is optimal, usually only achieved with supplementation.		0.07
	>0.17	0.07-0.17	<0.07			
AA/EPA Ratio			18.36	AA/EPA Ratio is HIGH. Some authorities indicate that an AA/EPA ratio of <1.33 is optimal, usually only achieved with supplementation.		15.09
	<5.88	5.88-14.29	>14.29			
	Low	Mid	High			
Monounsaturated Fatty Acid Index	19.9			Values are reported according to the lowest, middle and highest thirds of our reference population. Dietary monounsaturated fats from plant sources reduce heart disease risk; however, blood levels of monounsaturated fats do not necessarily correlate closely with dietary intake. More data are needed on the complex effects of omega-6 fatty acids on cardiovascular risk.		20.4
	<20.0	20.0-23.0	>23.0 %			
Omega-6 Fatty Acid Index			46.2			45.8
	<39.0	39.0-43.0	>43.0 %			
Linoleic Acid (LA)		990.5				764.4
	<930.0	930.0-1150.0	>1150.0 µg/mL			
Arachidonic Acid (AA)		301.2				270.7
	<250.0	250.0-320.0	>320.0 µg/mL			
Omega-3/Omega-6 Ratio		0.07				0.07
	<0.07	0.07-0.10	>0.10			

The Boston Heart Fatty Acid Balance test measures select key fatty acids for the purposes of cardiovascular risk assessment and disease management.

- The test measures all the 15 major plasma fatty acids, and reports a Saturated Fatty Acid Index, Trans Fatty Acid Index, Monounsaturated Fatty Acid Index, Omega-3 Fatty Acid Index and the Unsaturated/Saturated Ratio Index.

Take test results to the next level. **Ask about the Boston Heart Lifestyle Program.**

ORDERING INFORMATION

Specimen requirements: 1.0 mL plasma collected in an EDTA plasma separator tube (pearl top).

Patient must be fasting for at least 8 hours at the time of collection. Fasting includes refraining from taking supplements, such as fish oil.

TEST NAME	CODE
Fatty Acid Balance	**575**

Please report the indication that best describes the reason for ordering the test. Two commonly used indications are listed below:

- ☑ Mixed hyperlipidemia (E78.2) or other/unspecified hyperlipidemia (E78.4, E78.5)
- ☑ Coronary atherosclerosis (I25.10)

Shipping requirements: Ship on frozen cold packs. Refer to the standard packaging instructions on the *Boston Heart Instructions for Specimen Preparation and Handling sheet for further information.*

Note: Boston Heart Fatty Acid Balance™ test can be used in conjunction with the Boston Heart Cholesterol Balance® test to provide a more complete picture of your patients' lipid profiles.

REFERENCES: 1. Schaefer EJ. Lipoproteins, nutrition, and heart disease. *Am J Clin Nutr.* 2002;75(2):191-212. 2. Eckel RH, Jakicic JM, Ard JD, et al. 2013 AHA/ACC guideline on lifestyle management to reduce cardiovascular risk: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol.* 2014;63:2960-2984. 3. Itakura H, Yokoyama M, Matsuzaki M, et al; JELIS Investigators. Relationships between plasma fatty acid composition and coronary artery disease. *J Atheroscler Thromb.* 2011;18(22):99-107.

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