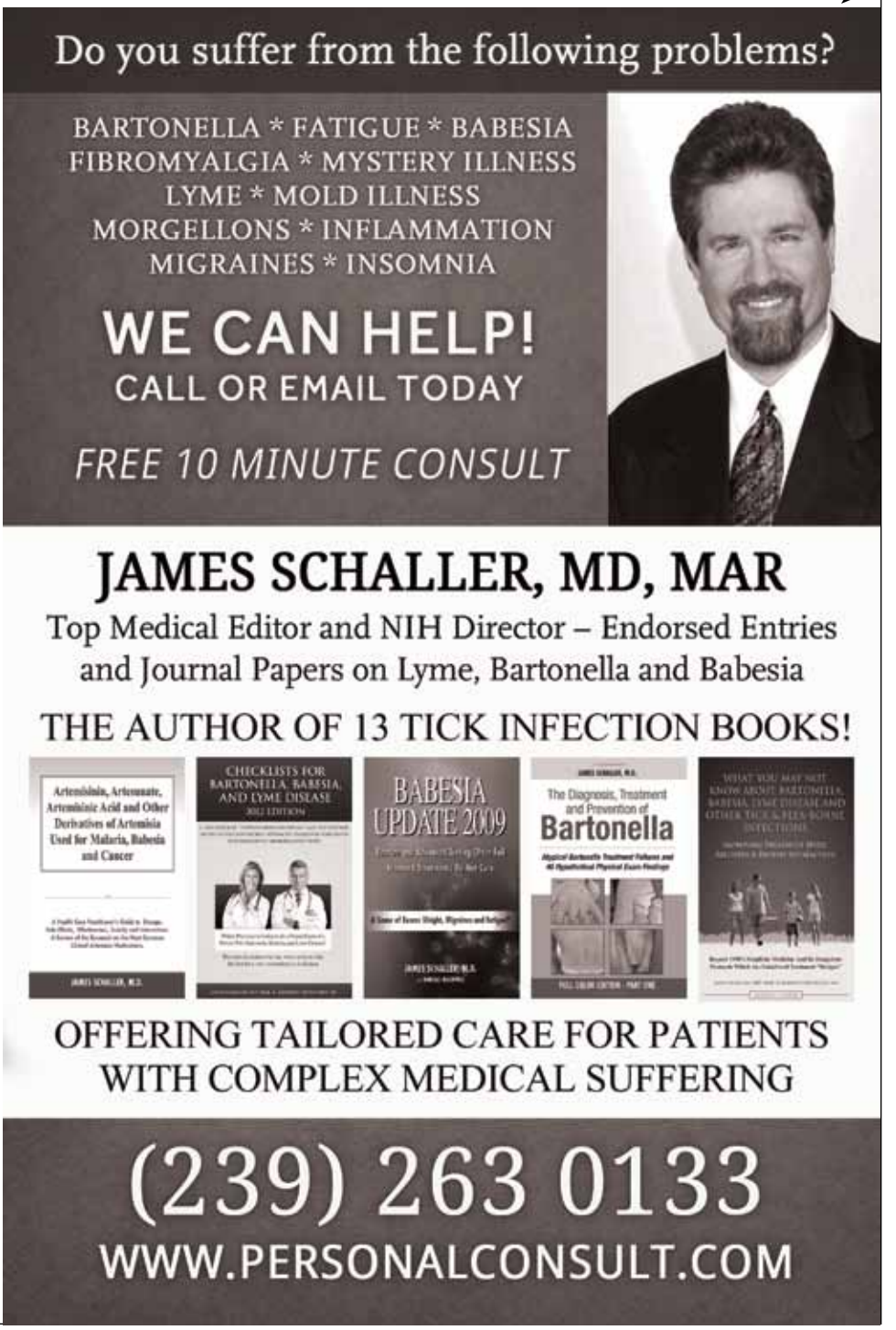
increasing exposure of inhaled oxidants in the respiratory system. In addition, vitamin C has shown to help asthmatics by lowering histamine levels.[11]

Fatty acids are important mediators of allergy and inflammation because of their ability to form inflammatory prostaglandins, thromboxanes, and leukotrienes.[12] Altering dietary intakes can significantly increase or decrease inflammation, depending on the type of fatty acid increased. Flaxseed and fish oil are the most commonly consumed supplements, but food sources such as salmon, mackerel, walnuts, and flax offer substantial levels of the beneficial omega-3 fat to the diet.[12] Barros et al. (2011) demonstrated that higher intakes of omega-3 polyunsaturated fatty acids (PUFAs and alpha-linoleic acid (ALA) were associated with good asthma control, while the risk for uncontrolled asthma increased with a higher omega-6 to omega-3 ratio.[13] Leukotrienes are recognized as contributors to the inflammatory process of asthma; specifically, leukotriene E4 mediates many of the principle features of asthma, such as bronchial constriction, hyperresponsiveness, and increased vascular permeability.[7] It is important to measure dietary (PUFA) treatment response based on these outcomes over the course of therapy, which might reflect ongoing improvement in airway function.

In addition, recent evidence has shown that low dietary magnesium (Mg) intake can also have an impact on the occurrence and management of asthma. The average intake of Mg by adults in the US ranges between 143 and 266mg/day, a level well below the RDA.[11] Magnesium is critical to many cellular functions and participates in more than 300 enzymatic reactions, but its role in asthma has been attributed to the promotion of relaxation of the bronchial smooth muscles.[12,14] In smooth muscles, magnesium decreases intracellular calcium by blocking its entry and its release from the endoplasmic reticulum and by inhibiting calcium interaction with myosin results in muscle relaxation, dilating airways and facilitating easier breathing.[14] Magnesium is available in several different forms, but absorption has been shown most optimally when bound to citrate or aspartate, although 25 to 75mg/kg doses of intravenous Mg sulfate have been a well proved and clinically acceptable measure to halt acute asthma attacks and acute exacerbations of COPD.[11,14] Due to the chronic inflammatory nature of asthma and a Mg deficiency's being associated with impaired lung function and increased inflammation, exhaled nitric oxide (NO) and C-reactive protein (CRP) are often measured to assess bronchial and systemic inflammation.[15] Total serum Mg levels are also valuable to assess micronutrient status during and after nutritional treatment.

Research findings herein have been found to be inconclusive among comparable studies. With that, nutritional supplementation has not been fully proved effective, but does not exclude the possibility that a therapeutic diet with adequate nutrient intake may protect against the development of symptomatic asthma.

Contraindications of Supplementation

Vitamin C is extremely safe in most individuals. Diarrhea and intestinal distension or gas is the most common side complaint associated with supplementation. Vitamin C administration up to 10g/day has not shown any negative physiological effects.[11] Magnesium sulfate is generally ➤