**Zinc** Regulates immune system including allergic response; Deficiency can exacerbate asthma symptoms.\(^{31,32}\)

**Selenium** Part of the enzyme (called glutathione peroxidase) that protects against asthmatic lung tissue damage; Supplementation trials are promising.\(^{27,28,29,30}\)

**Vitamin A** Prevents exercise-induced asthma; Regulates bronchial responsiveness.\(^{25,26}\)

**Vitamin B6** Binds with the chemical that causes airway constriction (histamine) and inactivates it; The common asthma drug theophylline depletes B6.\(^{23,24}\)

**Vitamin C** Dilates bronchial airways; Inhibits histamine-induced constriction of airways; Needed for production of epinephrine, which mitigates asthma attacks.\(^{21,22}\)

**Vitamin D** Higher levels increase lung capacity in asthmatics; Deficiency increases severity of asthma attacks.\(^{18,19,20}\)

**Vitamin E** In pulmonary epithelial tissue (inside surface of lungs), vitamin E fights inflammatory enzymes that cause asthmatic symptoms.\(^{10,11,12,13}\)

**Choline** Animal and human studies show that taking choline strongly suppresses oxidative stress in lung tissue caused by asthma.\(^{14,15}\)

**Folate** Plays a key role in cellular immunity; Low folate status linked to severity of an allergic response.\(^{16,17}\)

**Magnesium** Promotes relaxation of bronchial smooth muscle; Inhibits histamine release; Reduces tendency to develop anaphylaxis; Low intracellular levels linked to asthma severity.\(^{1,2,3,4}\)

**Carnitine** Protects the surface of the lungs; Improves pulmonary function in asthmatics; Decreases inflammation in lung tissue.\(^{5,6,7}\)

**Coenzyme Q10** Steroid medications for asthma cause damage to mitochondria (site of cellular energy production); CoQ10 repairs this damage and may reduce corticosteroid dosage in asthmatics.\(^{8,9}\)
REFERENCES


Additional references at http://www.spectrace.com/online-library-mnt-asthma-abstract/