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Antioxidants Rich Foods May Influence Chronic Obstructive Pulmonary Disease Evolution

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It is well known that chronic obstructive pulmonary disease (COPD) is associated with high oxidative stress and there may be a relation between consumption of antioxidants rich food and a better outcome in COPD.

Starting from this hypothesis, the impact of a Mediterranean diet (mostly consisting in as fresh fruits, fruit juices and vegetables) was observed in a prospective study which involved 120 individuals (Dept. of Critical Care Medicine, University of Thessaly School of Medicine). They were randomised either to a free diet or to an antioxidant rich diet. Both groups were informed about the beneficial effect of antioxidants. The subjects were observed for three years. The inclusion criteria were: diagnosis of COPD according to the GOLD definition and ability to perform pyrometer. Exclusion criteria consisted in: history of lung cancer, bronchial asthma or other respiratory disease and continuous use of systemic steroids more than 30 days prior. Study ended in 2009, results showing a higher mean consumption of foods containing antioxidants in the IG than in the CG ($p<0.05$). The percentage predicted forced expiratory volume in one second (FEV1) was used as a surrogate marker of lung function decline in COPD to asses subject response to the two types of diet and a significantly better outcome was noticed in the group with antioxidants rich diet ($p = 0.03$). The effect of sex, age, smoking status, co morbid conditions and exacerbation was analysed in order to asses their impact, showing no statistically significant influence.

In these conditions a dietary shift to higher-antioxidant food intake may be associated with improvement in lung function, and, in this respect, dietary interventions might be considered in COPD management. This may be due to the fact that fruits and vegetables contain antioxidant vitamins such as vitamin C, E and beta-carotene (they exert antioxidant and anti-inflammatory properties), which may protect the lungs from oxidative damage by supporting the normal hydration of airway surfaces and converting oxygen radicals to less-reactive forms.

Comment on a paper:
E. Keranis, D. Makris, P. Rodopoulou, et al. – Impact of dietary shift to higher-antioxidant foods in COPD: a randomized trial. *Eur Resp J* 2010, 36; 4: 774-780