

**흡연이 체내 산화적 손상과 관련된 지표에 미치는 영향-일부 십대 여성
흡연자를 중심으로-**

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Influence of smoking on markers of oxidative stress in teenage girls in Korea

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Tobacco use can be associated with increased oxidative stress, as it is a rich source of numerous oxidants and reactive oxygen species. While smoking is recognized to be a significant health problem in older subjects, there is a surprising shortage of information on the health consequences of smoking in teenagers. In the present study, we investigated the effect of cigarette smoking on serum antioxidant status and oxidative damage in a population of teenage girls in Korea. Blood pressure was lower in smokers than in non-smokers, values for both groups were within normal range. Serum Cu, Fe and Mg concentrations were similar in the two groups. Serum Zn concentrations were higher in the smokers. The activities of several serum oxidant defense enzymes, including selenium glutathione peroxidase (Se-GSH-Px), glutathione reductase (GSH-Red), and extracellular superoxide dismutase (EC SOD), were lower in smokers than in non-smokers. Serum ascorbic acid and folate concentrations were lower in smokers than in non-smokers. Consistent with the above, serum thiobarbituric acid reactive substances (TBARS) were higher in smokers than in non-smokers. Thus, cigarette smoking has a negative effect on numerous arms of the oxidant defense system in teenagers with a short smoking history. Excessive oxidative stress was present in the smokers as evidenced by high serum TBARS, and low serum ascorbic acid and folate concentrations. Serum mineral concentrations were not different in young smokers and non-smokers, suggesting that changes in mineral concentrations reported in adult smokers may be secondary to chronic disease. Collectively, the above findings may show that this increased oxidative stress by cigarette smoking represents a risk factor for the development of age related chronic disease.