

## **P-8**

### **APPLICATION OF THE ALKALINE COMET ASSAY FOR DETECTING DNA DAMAGE IN KOREAN YOUNG MEN**

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The alkaline Comet assay has been used with increasing popularity to investigate the level of DNA damage in terms of strand breaks and alkaline labile sites in biomonitoring studies within the last decade in western countries. The purpose of this study was to evaluate the contribution of food consumption and smoking habits on H<sub>2</sub>O<sub>2</sub> induced oxidative DNA damage in Korean population. The study population consisted of 61 Korean healthy male volunteers, ages 20-28. Food frequencies and smoking habits were investigated by questionnaire. After blood collecting, the Comet assay in peripheral lymphocytes was carried out. Tail moment (TM) and tail length (TL) of the Comet assay were used to measure DNA damage in lymphocytes of the subjects. Statistically significant positive correlations were observed between DNA damage and smoking habits expressed as cigarettes smoked per day and pack years. Consumption frequencies of fruits and the intake of fruit juice were inversely associated with the TM and TL. However, there were no correlations between the consumption frequencies of vegetable and DNA damages of the subjects. The results indicate that the Comet assay was a simple rapid and sensitive method for detecting lymphocyte DNA damage induced by cigarette smoking and consumption of fruits or fruits juice could potentially modify the damaged DNA in human peripheral lymphocytes of Korean young men.