The study of mechanism of the DNA damage of Japanese healthy people.

Hiroshi Yamauchi[1)], Masahito Aminaka[1)], Katusmi Yoshida[1)], Kouichiro Sera[2)]

1) St. Marianna University School of Medicine, Department of Preventive Medicine
2-16-1 Sugao, Miyamae-ku, Kawasaki, 216-8511 Japan

2) Iwate Medical University, Cyclotron Research Center
348-58 Tomegamori, Takizawa, Iwate, 020-0173 Japan

The DNA damage is generated by the exposure of oxidized stress. This research introduces the biological health effect monitoring method, which evaluates the DNA damage caused to the arsenic exposure by 8-hydroxydeoxyguanosine (8-OHdG) concentration in urine. Subjects of a research is 248 people. The average concentrations of arsenic in urine of Japanese healthy people is 45.6±36.6 □g As/g creatinine. The average concentrations of 8-OHdG in urine of Japanese healthy people is 15.4±5.6 ng/mg creatinine. The sex difference and age difference did not recognize in the 8-OHdG levels in urine. It is thought that the measurement of 8-OHdG concentrations in urine is an effective, biological health effect monitoring method of the arsenic exposure. A significant correlation was recognized between 8-OHdG in urine and genotoxicity metals (Cr, As, Ni). The participation of genotoxicity metal was suggested in factor analysis. The results of this research proved that basis of necessity to reduce exposure dose of genotoxicity metals for a commoner people.