

P61. DNA METHYLATION STATUS IN EXPOSURE TO INDUSTRIAL SOLVENTS AND METALS

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In working places there are acute and chronic effects due to occupational exposures and solvent or metal toxicology concerns safety of working place besides public health. These exposed molecules cause pathologic effects in cell cycle and gene expression by increasing inflammatory response, inhibiting antioxidant mechanisms of cells, causing lipid peroxidation and inhibiting DNA repair. Recent studies focused on various solvent and metal exposures and alterations in DNA methylation status.

DNA methylation plays a regulator role in general and regional stage. Especially CpG dinucleotides in highly repetitive DNA sequences such as satellite DNA play an important role in genomic stability. Alterations in DNA methylation as regional hypermethylation or hypomethylation are reported to be related to many diseases. In many studies about the role of epigenetics in human diseases focused on the relation between alterations in DNA methylation and diseases and environmental effects on DNA methylation variations.

It is reported that there is a relation between many environmental agents such as toxins, stress, heavy metals and epigenetic alterations. Until today in some of the studies, DNA methylation stages were determined in people exposed to many occupational chemicals. However there are not many studies investigating DNA repair gene methylations in occupationally exposed groups. Usage of DNA methylation as a biomarker for people with environmental or occupational exposure may be important for determining workers under risk and taking precautions.