

## Investigation of Heavy Metals and Nitrate Level in Drinking Water and the Side Effects on Public Health in the Capital City of Iran

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**Abstract :** Regarding to the dramatic rise of cancer prevalence of cancers in Iran and also base on the investigations around environmental factors which causes cancer, The air and water pollution is in high level in Iran's capital city this issue motivated us to start an investigation on concentration of heavy metals and nitrate in Tehran's Tap water, additionally we investigated the effects of this contaminations on public health, it is clear that heavy metals and also nitrate are causes cancers directly and indirectly, we divided the city to four districts: (1) North, (2) East, (3) West, (4) South and totally collected over 30 samples from noted districts, we obvious difference in concentrations, after a study we founded the reasons of this difference, the old distribution system, non-standard sewage disposal system, travel up from contaminated rains, releasing industrial wastes waters without any pretreatment, the most important one is the old distribution system, Tehran is an old city hence distribution system is old too we know that the old water pipes were built from alloys which containing several of this harmful heavy metals, releasing of this heavy metals from pipes to the tap water is one of the most Important reasons, as the result we presented the concentrations by districts and the alternatives to decreasing the level of this contaminations.

**Keywords :** water quality, heavy metals, drinking water, environmental toxinology

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