

**DIABETES 2020:** Neurobehavioral and hematological health disorders among fuel supply station workers**Heba K. Allam,***Menoufia University, USA*

Gasoline and its constituents are one of the most hazardous chemicals to the nervous and hematological systems. Excessive exposure to benzene cause harm to the bone marrow, which causes a decrease in the number of circulating blood cells, anemia, thrombocytopenia, leukopenia, and aplastic anemia. This study aimed to study neurobehavioral and hematological health disorders among fuel supply station workers and its relation to the workplace environment. A cross sectional study was carried out on 92 workers in all licensed fuel supply stations in Shebin El Kom district, Menoufia governorate, and 92 nonoccupationally exposed matched participants matched for age and sex were selected as a nonexposed group. Environmental studies for light chain aromatic hydrocarbons [benzene, toluene, ethyl benzene, and xylene (BTEX components)] were carried out. Neurobehavioral test battery and complete blood picture were applied. Results The mean values of BTEX levels ( $3.69 \pm 1.88$ ,  $120.59 \pm 1.17$ ,  $133.70 \pm 7.20$ , and  $114.35 \pm 6.86$  ppm; respectively) were higher than the threshold limit value of the American Conference of Governmental and Industrial Hygienists (0.5, 100, 100, and 100 ppm for BTEX; respectively). Fuel supply station workers had significantly lower performance on the neurobehavioral test battery than nonexposed participants ( $P < 0.001$ ). Hematological findings including hemoglobin% and platelet count were significantly lower among the exposed workers ( $13.73 \pm 1.13$  and  $247.36 \pm 57.69$ ; respectively) than the nonexposed participants ( $14.18 \pm 0.94$  and  $268.46 \pm 46.83$ ; respectively) ( $P = 0.004$  and  $0.007$ ; respectively). Conclusion: Exposure to BTEX concentrations higher than permissible levels resulted in deteriorated performance on the

neurobehavioral test battery and abnormal hematological findings in exposed workers. Regular use of good quality personal protective equipment especially masks and gloves and periodic medical examination is highly recommended.

A sickliness is a reduction in number of red platelets (RBCs) or not exactly the ordinary amount of hemoglobin in the blood. However, it can incorporate diminished oxygen-restricting capacity of every hemoglobin atom because of disfigurement or need numerical advancement as in some different sorts of hemoglobin inadequacy.

Iron deficiency is the most well-known confusion of the blood. There are a few sorts of sickliness, created by an assortment of basic causes. Weakness can be arranged in an assortment of ways, in light of the morphology of RBCs, fundamental etiologic instruments, and recognizable clinical spectra, to make reference to a couple. The three principle classes of pallor incorporate unnecessary blood misfortune (intensely, for example, a discharge or constantly through low-volume misfortune), over the top platelet decimation (hemolysis) or inadequate red platelet creation (incapable hematopoiesis). In light of 2005-2006 assessments, the Centers for Disease Control and Prevention has expressed that around 5.5 million Americans a year are either admitted to a clinic or seen by a doctor, with some type of weakness as their essential analysis.

Manifestations of weakness incorporate Plummer-Vinson disorder, candidal contaminations. Modified taste sensation, smooth, red difficult consuming impression of tongue, filiform followed by fungiform papillae decay

may likewise be seen. Others incorporate summed up stomatitis, rakish cheilitis and gum disease.

Oral sign of iron deficiency incorporate rakish cheilitis, summed up stomatitis, candidiasis and gum disease. There will be whiteness of lips and oral mucosa. Patients may have a smooth, red difficult tongue, experience consuming impression of tongue or upset taste sensation. Decay of filiform and fungiform papillae may likewise happen.

A blood disease or hematological danger is a kind of dangerous malignancy that begins, influences, or includes the blood, bone marrow, or lymph nodes.[63] These tumors incorporate leukemias, lymphomas, and myelomas. These specific kinds of diseases can emerge as deserted develop cell types that have separated from hematopoietic antecedent cells (frequently in the bone marrow) and start to rapidly multiply through the circulatory system where it can then regularly invade different organs and tissues. Others can include the development of tumors from lymphoblasts from inside the lymphoid tissue.

Occurrence of influenced individuals with a type of blood malignant growth has been consistent expanding over late years; be that as it may, due to some extent to early identification techniques and resulting headways in the treatment of the illnesses, death rates have kept on diminishing.