

Gender Specific Health Effects Following Exposure to Ethylene Glycol Monoethyl Ether among Male and Female Workers

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Ethylene glycol monoethyl ether (EGEE) is a solvent commonly used in industry and consumer goods. This compound is known to have toxic effects on reproductive and haematological organs in a number of species. To investigate whether there is any difference in the health effects following exposure to EGEE, we examined 19 male and 32 female workers exposed to high concentration of this compound in two factories manufacturing photopolymer sensitization plate. The mean age was 24.8 and 33.9 years for male and female, respectively. Average RBC count, hemoglobin levels and hematocrit value were normal in both groups. However, there were 5 out of 19 male subjects with an RBC count, hemoglobin concentration or hematocrit lower than the standards, whereas only 2 out of 32 female workers showed lower values of these indices. The blood level of prolactin was abnormally higher in 26.3% male workers, but only 15.6% in female subjects. As for the effects on reproductive system, there were 4 women reported abnormal menstruation, but almost all married women had children. On the other hand, there were 7 male workers showing lower sperm counts or progressive sperm percentage than the standards. Overall, our study showed that although male and female workers were exposed to similarly high concentration of EGEE in their workplaces, the health effects both in the degree of damage and target organs seemed different; subsequent health problems possibly due to EGEE exposure may be more severe in men than in women.