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PRESS RELEASE

IIT (ISM) Research reveals the carcinogenic effects of exposure to Trihalomethanes found in drinking water generated due to chlorination of water

A research of IIT (ISM) Dhanbad brought to light the fact that use of chlorines for treatment of water may have carcinogenic effects as Chlorination of water leads to formation of Trihalomethanes, the prolonged exposure of which may have Carcinogenic effects on human beings.

The study the finding of which were published recently in various scientific journals further threw light on the fact that not only carcinogenic effects but the prolonged exposure of Trihalomethanes may have other non-carcinogenic adverse effects like low birth weight in babies, premature birth and miscarriages.

The fact came to light as per findings of a Ministry of Human Resource Development (MHRD) sponsored study conducted by a two member team of Department of Environmental Science & Engineering led by Professor SK Gupta and who was assisted by Research Scholar Minashree Kumari during which meta-analysis of altogether 78 research work of different parts of world was carried out.

Though, there are different pathways of introduction of Trihalomethanes in Human System including, ingestion, dermal contact and inhalation but ingestion through drinking water is the major pathway of introduction” said Professor Gupta and added as part of study they have also checked the samples of five Drinking Water Treatment Plants including three of Jharkhand and two of neighboring Bengal.

“The outcome of research will help the policy makers to take proper control measures to restrict the concentration of Trihalomethanes in Drinking Water Systems” said professor SK Gupta and added that the problem lies more in Developing countries as they do not adopt the proper disinfection practices which are in accordance with guidelines of World Health Organization and other relevant agencies.

“The use of alternate disinfectants like mono chloramine instead of chlorine may help to adequately control the Trihalomethanes concentration in water but the best way to prevent Trihalomethanes concentration is use of hybrid system of adsorption cum coagulation in water treatment plants since the Trihalomethase” further explained SK Gupta.

“Though the use of alternate disinfectants like mono chloramine may reduce the concentration or Trihalomethanes by 30% but it may lead to development of Nitrosamines which itself has Carcinogenic properties but research on usage of alternative disinfectant which may obliterate the effect of Trihalomethanes is under progress” further said Professor Gupta.

“Regular monitoring of natural organic carbon level should also be made mandatory to prevent the concentration of Trihalomethanes in Water” further suggested Gupta and added the formation of Trihalomethanes also depends on Presence of Natural Organic Matter (NOM) present in Water and the usage of Applied Chlorine dose.

“As part of the study we have investigated the worldwide scenario of Trihalomethanes including of Russia, USA, Spain, Turkey, Hong Kong, Korea, Thailand, Australian, Saudi Arabia, Canada, Egypt etc” elaborated Gupta.

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