Water born diseases in Iraq in relation to climatic changes

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Definition

- **Waterborne diseases** are caused by *pathogenic microorganisms* that most commonly are transmitted in contaminated fresh water.
لا يمكنني قراءة النص العربي في الصورة. من فضلك قم بإعادة إرسال الصورة مع النص العربي المطلوب قراءته.
• Causes of waterborne diseases in Iraq
  - Old water network system with the presence of cracks lead to mix the drinking water with sewages
  - Lack of major and minor water purification projects
  - Lack of chlorine and alum in most water purification projects
  - Low water levels in the rivers especially Euphrates and presence of dirty water lands
  - Lack of workers training in most purification projects in how to add chlorine and alum to water
  - Lack sewage treatment before being drained to the river
Cholera in Iraq
IDPs in Iraq
IDPs in Iraq
Typhoid fever in Iraq

- Typhoid fever, also known simply as typhoid, is a bacterial infection due to *Salmonella typhi* that causes symptoms. Prevention of the disease include providing clean drinking water, better sanitation, and better handwashing.
توزيع الإصابات لعام (2015) حسب المحافظات

Governorate distribution

THI-QAR
SULAYMANIYAH
BASRAH
BAGHDAD-KARKH
MUTHANNA
KIRKUK
DIYALA
DIWANIYA
NAJAF
ERBIL
BAGHDAD-RESAF
MISSAN
SALAH AL-DIN
DAHUK
BABYLON
NINGWA
WASSIT
ANBAR
KERBALA
Hepatitis A in Iraq

- Hepatitis, an inflammation of the liver, has a number of infectious and non-infectious causes. Two of the viruses that cause hepatitis (hepatitis A and E) can be transmitted through water and food. Anbar and salah aldein is endemic in hepatitis A.
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Water pollution

Twenty samples of the sediments were collected from the Tigris River and some of its tributaries of northern Iraq and twelve samples from the Miocene and Quaternary sediments. The study is conducted to define and assess the paleoenvironmental pollution by some heavy metals in these sediments. The study indicates a polluted level of some heavy metals mainly Cr, Cu, Ni, Pb and Zn. Clay and heavy minerals may form the main sources for this natural pollution (Natural Pollution By Some Heavy Metals in the Tigris River, Northern Iraq, Article 4, Volume 3, Issue 2, Spring 2009, Page 189-198, Research Center for Dams and Water Resources, Mosul University, Iraq)
lead and mercury pollution

- Scientists who studied hair samples of the population in Fallujah found that levels of lead were five times higher in the hair of children with birth defects than in other children; mercury levels were six times higher. Children with defects in Basra had three times more lead in their teeth than children living in non-impacted areas (Iraq records huge rise in birth defects, New study links increase with military action by Western forces, Sarah Morrison @S_R_Morrison, Saturday 13 October 2012)
a study was conducted to assess the degree of chemical pollution and impact caused by Al-Baiji Oil Refinery of Iraq on its own environment. Six heavy metals concentrations were estimated in selected samples of soil and water collected from different sites in oil refinery by using atomic absorption spectrophotometry. These metals were cadmium, copper, nickel, lead, vanadium and zinc. Estimation of pollutant gases utilized a portable digital device. Results showed that some of the heavy metals tested (Cu and Zn) were at acceptable levels whereas the other four heavy metals (cadmium, nickel, lead and vanadium) revealed higher values than maximum allowable limits. Determination of hydrogen sulphide (H₂S), nitrogen dioxide (NO₂), carbon monoxide (CO) and oxygen (O₂) gases were also done. Acceptable concentrations of H₂S (4.16)ppm and CO (29.5)ppm were recorded, while those of NO₂ (0.108)ppm and O₂ (20.6%)ppm were not acceptable. Inhalation of metal particles might be more dangerous than through gastrointestinal tract (GIT) or dermal routes. Concentration of gaseous pollutants was almost close to the acceptable concentrations, with exception of nitrogen dioxide which was noted to be more than the acceptable limits (British Journal of Applied Science & Technology, ISSN: 2231-0843, Vol.: 4, Issue.: 15 (21-31 May), Estimation of Environmental Chemical Pollution of Al-Baiji Oil Refinery in Iraq, Mohemid M. Al-Jebouri, A. H. Al-Samarrai and Riydh A. Abdeljabar: Department of Microbiology, College of Medicine, University of Tikrit, Tikrit, Iraq. Department of Biology, College of Education, University of Tikrit, Iraq, 3Department of Biology, College of Science, University of Tikrit, Iraq).
Thank you