Effect of environmental endocrine disruptors on female reproductive functions

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Any substance that can interfere with normal hormone function can be considered an endocrine disruptors (EDs). There arethree ways that these substances can disrupt normal hormone activity: hormone mimics, hormone blockers and hormone triggers.Endocrine disruptors are classified into three classes:Phytoestrogen, pharmaceuticals and environmental endocrine disruptors (EEDs), all these substances have numerous harmful effects on the health except phytoestrogen which has some beneficial effects e.g protect against cancer, replace the pharmaceutical drugs used in hormone replacement therapy and so we can avoid its harmful effect on health.Exposure to endocrine disruptors can occur in every place in the environment at home, work, water, food , air , drugs, hospitals. Chemicals suspected of acting as endocrine disruptors are found in insecticides, herbicides, fungicides that are used in agriculture as well as at homes. Industrial workers can be exposed to chemical such as detergents, resins and plasticizers. Endocrine Disruptors can also enter the air or water as by-product of many chemicals and manufacturing processes or when plastic is used to make hospital intravenous bags. Many endocrine disruptors are persistent in the enviroment, and accumulate in adipose tissue, so the greatest exposure comes from eating fatty food and fish from contaminated water.The possible health effect include; birth defects, alternation insexual and functional development, neurological disorders, diabetesmellitus, immunological disorders, early puberty in young girls,endometriosis, cancer breast, colon, vagina and cervix, It alsoincludes sexual differentiation of the brain and other oestrogen target tissues, structural abnormities of the oviduct, uterus, cervix and vagina that can be a contributing factor to sub-fertility, abortion,Ir defeci and rice a sperm count. Alother effects include developmental, mental, behavioral disorder, anger, inattention, decrease mental capacity, gross and fine eye-hand coordination.Our study concentrated on the effect of various Ells on female reproductive system. Results of previous studies in this field has shown that:1- Exposure of women to hormonally active substances as in agricultural workers exposed to pesticides and fertilizers, female wood workers exposed to formaldehyde have an increased risk of infertility. Other environmental contaminants such as Polycarbonated Biphenyl Isomers (PCB), mercury, lead, solvents, plasticizers, oils, soaps, make up, hairsprays, nail polish, adjuvant, and also special habits as smoking, caffeine use, alcohol consumption, all have an impact on fertility through different mechanisms, It can alter steroid genesis, affect

oocyte quality, and alter sperm-egg interactionand cause congenital malformation in female reproductivetract. 2-Environmental chemicals may cause spontaneous abortion andectopic pregnancy. Factors that are known to cause these effects are:-therapeutic agents exposures as chemotherapy, i4cUivn and auathotlictio apt cxpourc, Oft211110chlorinc,CAAAMIC pesticides, heavy Hohlcrolonpv in(also substance abuse related to cocaine, morphine, LysergicAcid (LSD25), Heroin and barbiturates. Consumption of these addictive drugs may also cause accidental hemorrhage, congenital fetal malformation, congenital addiction of the baby, withdrawal symptoms after labour and respiratory depression.3-Evidence of a possible relationship between environmental exposures and the risk of various cancers do exist. Pesticides including organochlorine, organophosphorous, arsenic, mercury and also herbicides especially atrazine herbicides are diagnosed as human carcinogen, it is used in the cultivation of corn, fruits, vegetables and grapes for producing wine, these are risk factors for causing ovarian cancer, endometrial cancer and to less extent breast cancer. Polycarbonated Biphenyl Isomers and Dichloro- Diphenyl- Trichloro-ethane (DDT) also associated with increase the risk of endometrial cancer and breast cancer. There is also an association between Hormone Replacement Therapy (HRT) and endometrial cancer is muchstronger than that between Hormone Replacement Therapyarid breast cancer.4-Human exposure to the group of chemicals Poly Halogenated Aromatic Hydrocarbon include (diaoxin, furans and biphenyls) can cause endometriosis via their ability to disruptimmune and endocrine system function.5-Alternation in sexual reproductive behavior have been°Nei.VeCt in mil vf ivnWmithaii of linclunno Di rupticChemicals (EDCs) Malformation in the sexual orsans have11166C1 wilereDiphenyl- Trichloro-ethane and its degradation products,Polycarbonated Biphenyl Isomers and many chemicals including phthalate ester were found. Also chemicals such as chlorinated pesticide, phthalate ester, alkyl phenols cause the observed high incidence of premature sexual development focused specifically on girls premature thelarch.Search on endocrine disruptors provides powerful new evidence that may explain the increase in health problems that are occurring nation wide. The effect of endocrine disruptors also provides powerful evidence explaining why we must stop exposure. In order to reduce the risk of exposure, we must educate our selves about endocrine disruptors, if we eat fish from lakes, rivers or bays check if they are contaminated, avoid heating food in plastic container or storing fatty food in plastic containers. Young childrenDo not smoke or drink alcohol especially if you are pregnant or planning to be pregnant, don’t use make up, hair sprays, coloringproduct or nail polish, avoid using glues, paints, floor and carpetcleaner. Do not use lawn chemicals, pesticides, herbicides, fungicides, or micro biocides. Also avoid using pharmaceuticals thatcan act as disruptors e.g. drug estrogens-birth control pills,diethylstilboestrol and cimetidine. We must support efforts to get strong government regulation of and increased research on endocrinecimiiriitISSil E:1:1111 Crdlg ’ON ICVIh cifcW tohumans and wildlife is not free of controversy. Other studies should address this issue, particularly that of critical stage susceptibility to endocrine-disrupting chemicals and alterations in sexual development of humans and other animal species.It is also clear that further research is required for the development of new in vitro and in vivo assays. Also prior to the incorporation of

any of these assays into a screening protocol, they should be subjected to a vigorous evaluation to determine their advantages and limitations, as well as to define how this information will be used in risk assessment and regulatory arenas. Screens and assays is the rate-limiting factor that is slowing down removal of endocrine disruptors from the environment.