

and prescription drugs, cosmetics, and solvents comprise the most frequent human toxic exposures. The resulting biologic effect of combined exposure to several agents can be characterized as synergistic, additive, Potentiation & antagonistic Synergism—when the effect of two chemicals is greater than the effect of individual chemicals e.g. carbontetrachloride + alcohol = more toxic to the liver than the sum of the individual drugs Additive effect—when the total pharmacological action of two or more chemicals taken together is equivalent to the summation of their individual pharmacological action. Route of entry of exposures reported was by mouth in most cases: 77% were the result of ingestion, 7.0% were transdermal, 5.9% were ophthalmic; and 5.5% were by inhalation. In general, nearly everyone is at risk of acute and chronic toxic exposures to hazardous substances in the ambient environment. During adolescence and young adulthood the exposures are more likely to be intentional, either through suicide attempts or experimentation with drugs or alcohol. It can be acute (toxic event which occurs soon after acute or limited exposure), or chronic (apply to an event which occurs many weeks, months or years after exposure). Hazard – is the likelihood that injury will occur in a given situation or setting: the conditions of use and exposure are primary considerations. Risk – is defined as the expected frequency of the occurrence of an undesirable effect arising from exposure to a chemical or physical agent. Exposures are equally reported in males and females. It is a qualitative term which depends on the amount of chemical absorbed, severity of the exposure, dose & others. Acute exposure is a single exposure – or multiple exposures occurring over 1 or 2 days. Chronic exposure is multiple exposures continuing over a longer period of time. Site of exposure was a residence in 91.9% of all, followed by the workplace, schools and health facilities. B) Presence of mixtures Humans normally come in contact with several (or many) different chemicals concurrently or sequentially. Young children and elderly are most likely to be accidentally exposed to drugs or household chemicals at home. More than 72.4% of all poison exposures occur in children and adolescents less than 17 years of age. However, adult men have been reported to be more at risk of occupational exposures than adult woman. Most poison exposures do not result in clinical toxicity. Poison (Toxicant) – a chemical that may harm or kill an organism Toxicity – is the ability of a chemical agent to cause injury. Toxin – a poison of natural origin. 3