

A Brief View On Toxicology and the Factors That Influence Chemical Toxicity

Masao Hijikata*

School of Social Sciences, Waseda University, Japan

Ancient in practice, toxicology came to be known simplistically as the 'science of poisons,' a poison being any substance that, at a given dosage, is competent of causing a destructive result when administered, [1] either by accident or by intention, to a living being.

Toxicology is the scientific study of adverse results that occur in living organisms due to chemicals. It involves observing and reporting signs and symptoms that arise following exposure to toxic substances [1-4]. Toxicologists will investigate the mechanisms by which these substances exert toxicity, as well as how to discover the presence of those substances in various sample types. Additionally, toxicology also involves assessing how to effectively treat animals and/or individuals who've been exposed to certain toxicants.

Modern toxicology goes past the investigation of adverse effects to use harmful agents as devices in molecular science studies to explore occasions occurring at molecular and gene cell level.

Toxicological studies includes the discovery, identification, and evaluation of hazards following from human exposure to chemicals (smoke, food, and work environment), open health angles of poisonous agents within the environment (discuss, water, and soil), and testing of novel pharmaceutical items.

Toxicologists are further involved in the improvement of standards and regulations outlined to protect the environment and human wellbeing from the harmful effects of chemical toxicants.

Subdivisions of Toxicology

There are a number of subdivisions to the science of toxicology, and those vary according to the particular interests of the toxicologist concerned. No single classification system of categorization is entirely satisfactory. About 35 years prior, in any case, T.A [3]. Loomis divided the science of toxicology into 3 major subdivisions: environmental, economic, and forensic. These subdivisions were in large portion based on how people would come in touch with potentially harmful chemicals. Generally, the scheme is still valid today.

Basic principles

The goal of toxicity assessment is to identify adverse effects of a substance. Adverse impacts depend on main variables: i) routes of exposure (verbal, inward breath, or dermal) and ii) dosage (term and concentration of presentation). To explore dosage, [2] substances are examined in each acute and chronic model. Generally, distinctive sets of experiments are conducted to decide whether a substance causes cancer and to examine other shapes of toxicity.

Factors that influence chemical toxicity:

- Dosage
- Both large single exposures (acute) and continuous little exposures (incessant) are studied.
- Route of exposure
- Ingestion, inhalation or skin absorption

- Other factors
- Species
- Age
- Sex
- Health
- Environment
- Individual characteristics

The discipline of evidence-based toxicology strives to transparently, consistently, and objectively assess available scientific evidence in order to answer questions in toxicology, [3] the study of the adverse results of chemical, physical, or biological sellers on living organisms and the environment, including the prevention and amelioration of such effects. Evidence-based toxicology has the potential to address issues in the toxicological community about the constraints of current approaches to assessing the state of the science. These include issues related to transparency in decision making, synthesis of different types of proof, and the assessment of bias and credibility. Evidence-based toxicology has its roots in the large movement towards evidence-based practices.

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*Corresponding author: Masao Hijikata, School of Social Sciences, Waseda University, Japan, E-mail: hijikata@waseda.jp

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