

Medical Significance of Forensic Pharmacology and Toxicology

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Perspective

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ABOUT THE STUDY

The fields of toxicology and pharmacology are so closely related to one another that they are usually viewed as two halves of the same coin. Both forensic toxicology and pharmacology include the study of how medicines impact biological systems. Any synthetic or natural chemical that has an impact on a person's biochemistry or psychological health is referred to as a "drug". However, there are some significant differences between these two fields of medical knowledge.

In order to explore the diverse impacts that various chemicals have on different organisms, this give importance on focusing and performing research and testing on a broad range of known and unidentified molecules. Pharmacologists usually study different diseases or conditions in an effort to develop new drugs to treat them. Pharmacologists therefore place greater emphasis on the therapeutic and palliative effects of diverse compounds than the harmful effects of these chemicals, which are more significant in the field of toxicology.

Comparatively to pharmacology, toxicology is the study of how drugs, poisons, and venoms affect living organisms. As implied by its name, toxicologists focus on the toxic properties of these substances. This area of research investigates the effects of dosage, the factors that influence the strength of chemical toxins, and the path through which toxins enter an organism. Even though it has a laboratory focus, toxicological research can have an immediate effect on people or the environment.

Forensic pharmacology

Pharmacologists are called upon when drugs have been found in the systems of either the victim or the accused in a forensic situation. Examination of the type of substance used, its advantages and disadvantages for the body, and the amounts mostly used may have a substantial impact on the case's outcome.

The pharmacologist can look into the effects of any medications discovered in the victim's body to see if they played a role in the death if there has been a fatality. Cases where accusations of murder and manslaughter are made, as

well as cases where an accidental overdose claim is made, are examples of this. The pharmacologist will testify as an expert witness regarding the effects of the types and amounts of drugs—both legal and illicit—found in the deceased's system on the human body.

Forensic toxicology

When drug usage or poisoning is suspected of a crime, a forensic toxicologist will be called in to help with the criminal investigation. This may be used by both the prosecution and defense. The toxicologist frequently visits a crime scene to search for any evidence that could indicate toxic-related interferences, such as pill bottles, illegal drugs, or trace residue. The toxicologist will next return to the lab to look through the material's chemical makeup in an effort to determine whether it was toxic and, if so, what dosage was necessary to be detrimental. In order to ascertain whether harmful compounds are present, forensic toxicologists also test physiological fluids. For instance, a blood sample will be taken if it is believed that the driver was intoxicated at the time the sample was drawn, and the person's blood alcohol level at that time will be determined. Although blood samples are the most popular method for screening for chemical exposure, toxins can also be discovered in urine samples and other physiological fluids. Glands can also be used to offer a rough timeline of when a chemical entered the body, even though they only provide a medium to long term record of exposure and can also be affected by hair color and roughness.