



## Overview on a Drug Elimination

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### ABOUT THE STUDY

Drug elimination means removing of the administered drug from the body. This is categorized in two ways: either the un-metabolized drug is excreted intact, or the metabolic biotransformation changes followed by excretion. The main organs effected due to drug excretion are the kidney (kidney excretion) and liver (bile excretion). Other organs, such as the lungs, which are volatile or gaseous substances, may be involved in excretion. Some drugs may also be excreted by sweat, saliva, and tears. Breast milk is another route of drug excretion. Milk is more acidic than plasma. Therefore, basic compounds can easily accumulate in milk. This is an important factor in estimating the amount of medicine given to breast-fed babies. Drugs excreted in urine and bile is water-soluble. Lipophilic drugs cannot be excreted before they are metabolized to more polar compounds. Drugs that are excreted with little change are unaffected by metabolic interactions. Their removal can be impaired by age, illness, or renal or hepatic dysfunction due to concomitant medications, especially those removed by active transport. This leads to a decrease in drug clearance and an extension of its elimination half-life. Therefore, in these situations, it is necessary to adjust the dose and interval of the drug.

As soon as we consume all kinds of drugs by snuffing, smoking, swallowing, etc., our body begins to break down substances. It sounds simple but actually a very complicated process. Each drug has its own unique journey in the body. No matter which drug someone uses, it starts with the bloodstream. When a drug enters the human body, it is naturally distributed through body fluids and tissues. This is also true for alcohol, illicit substances and prescription drugs. Most drugs are not evenly distributed throughout the body and can accumulate in different areas at different rates. After the drug leaves the bloodstream, they can move to various tissues in the body. Some medicines are stored in the body's adipose tissue, depending on various factors. In

particular, fat-soluble drugs concentrate in adipose tissue and dissolve in fat. In contrast, water-soluble drugs remain in the bloodstream instead of entering adipose tissue. Fat-soluble drugs quickly enter the brain. This means that people taking fat-soluble drugs may experience the effects quickly. Examples of fat-soluble drugs include some anxiolytics such as clorazepate and certain antibiotics such as rifampicin. Individuals in one group are more likely to store large amounts of fat-soluble drugs than others. For example, obese people can store more fat-soluble medicines than lean people. Elderly people also store large amounts of fat-soluble medicines regardless of waiting time. This is because body fat percentage usually increases with age.

Drugs stored in adipose tissue usually break down naturally. Traces of these medicines can remain in human hair, blood, and urine while they are stored in adipose tissue. Some medicines stay in the blood, urine, and hair for a period of time. For example, LSD stays in the blood for about 3 hours. Cannabis, on the other hand, can stay in the blood for up to 336 hours. The drug is detected in the urine for 3 to 30 days and in the hair for up to 90 days. Drugs have to leave the body naturally, but there are many ways to reduce the symptoms that can occur when the body removes substances. There are various treatments that not only help someone conveniently remove substances from their body, but also help them lead a healthy and clean life without the need for specific medicines. Treatment of substance abuse and addiction is usually provided at a rehabilitation center or other type of medical facility. Treatments vary from person to person, but usually include a combination of treatments, medications, support groups, and so on. Some drugs are also excreted in saliva, sweat, breast milk, and even the breathing air. Most are excreted in small quantities. Excretion of the drug in breast milk is important only because the drug can affect breast-fed babies. Excretion into the exhaled breath is the main route to eliminate inhaled anesthetics.

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